ARCHAEOLOGICAL AND ENVIRONMENTAL HERITAGE
at

BUTTEVANT, COUNTY CORK

Eamonn Cotter ma,miai, *Consulting Archaeologist*

Ballynanelagh, Rathcormac, Co. Cork

August 2010

This Project has been funded by the Irish Government under the National Development Plan, 2007 - 2013.

ARCHAEOLOGICAL AND ENVIRONMENTAL HERITAGE

at

BUTTEVANT, COUNTY CORK

Eamonn Cotter ma,miai, ***Consulting Archaeologist***

Ballynanelagh, Rathcormac, Co. Cork

August 2010

ARCHAEOLOGICAL AND ENVIRONMENTAL HERITAGE

at

BUTTEVANT, COUNTY CORK

A report prepared for the Buttevant Heritage Group by

Eamonn Cotter ma,miai, ***Consulting Archaeologist***

Ballynanelagh, Rathcormac, Co. Cork. *August 2010*

Introduction

This report was commissioned by the Buttevant Heritage group as part of a wider project to develop the tourist and amenity potential of the historic town of Buttevant, and follows on a broader study of the heritage of Buttevant prepared by Tobar Archaeological Services. The present report concentrates on an area of waste ground to the east of the Friary, between the town and the Awbeg River and extending from immediately east of the Roman Catholic graveyard south to the corn mill (see Fig 1). It is proposed to develop this area as a local and tourist amenity. The brief was to report on the Archaeology, Ecology and Topography of the area. This report examines these three aspects in detail, and will make recommendations for the future development of the area. The Archaeology section includes a detailed study of the town walls and proposes a previously unidentified circuit.

The Historical Background

The medieval town

The Norman presence in Buttevant dates from the earliest phases of the Norman colonisation of Ireland. In 1177 King Henry of England granted the kingdom of Cork jointly to Milo de Cogan and Robert FitzStephen, the western half to the former and the eastern half to the latter. FitzStephen in turn granted parts of his territories, including Muscridonegan in North Cork, of which Buttevant became the principal manor, to his nephew Philip de Barry (MacCotter 1996, 64-80). Phillip was succeeded by his son William, who was in turn succeeded by his son David (O'Murchadha 1996, 23). In 1234 this David was granted a fair and market at Buttevant. The thirteenth century was clearly a period of huge investment in Buttevant by the Barrys. The grant of a fair and market clearly indicates the establishment of a town and manor early in the century, followed by the establishment of two monasteries, an Augustinian Abbey to the south at Ballybeg founded in 1229, and a Franciscan Friary founded within the town *c.* 1251. What little remains of the original castle suggests that it too was built in this century, probably in the second half. The earliest evidence for town walls dates to 1317, when money owed to the exchequer was released to the town *"to enclose it with walls"* and a further grant, in 1375, refers to a *"north gate"* (Thomas 1992, 28). The walls are again mentioned in 1479

on the will of one David Lombard of Buttevant (Ó Brien 1993, 131). In addition the town is said to have had "*several small town 'castles'*" (Nicholls 1993, 176), though it is not clear at what date they were constructed. Only one, Lombard's Castle, survives today. It is an urban tower house of the 15/16th century period, though there may well have been an earlier castle on the site.

From the evidence of the first edition Ordnance Survey maps it can be seen that the medieval town of Buttevant was a highly organised, planned unit, laid out on a regular rectangular grid pattern, with the lengths of the tenement properties exhibiting a high degree of uniformity along both sides of the central main street. This level of planning and this grid pattern of streets are found in many medieval towns across Europe, most notably perhaps in southwestern France, where a large number of planned fortified towns were established in the thirteenth century. One prominent academic has already noted this comparison between Buttevant and these French towns, known as *bastides* (O'Keeffe 2004, 162).

The foundation of the medieval town of Buttevant should therefore be seen, not just in the context of the Norman invasion of Ireland, but in the context of a great European expansion of commerce and trade, which involved rapid population growth, expansion and the development of agriculture, and the foundation of thousands of towns.

The name Buttevant

The name *Buttevant* is believed to be of Medieval, Norman origin, replacing the native Irish name *Kilnamullagh*. The origins of both names have given rise to some confusion with various interpretations being put forward.

In his seminal work on Irish placenames P.W. Joyce notes that the town is referred to in the Annals of the Four Masters *sub anno* 1251 as *Cill-na-Mullach*. Joyce accepts the translation of this as "the church of the hillocks or summits", and asserts categorically "the name admits of no other interpretation" (1995, 392-3). He further asserts that a local translation of the name as "the church of the curse (*mallacht*)" is wrong and is "an invention of later times". However, the Irish Placenames Commission records several instances of the name *Kill-na-mallach* (the church of the curse) and have accepted this as the official version. This is the version now used in modern Ordnance Survey maps.

Whatever the true version, the translation 'church of the hillocks or summits' is certainly appropriate. The site of the original church, now occupied by a nineteenth century Church of Irelan church and graveyard, is located on a limestone plateau high above the River Awbeg and the surrounding landscape, especially to the south, does include several hillocks.

The name Buttevant has also given rise to some debate and is widely believed to derive from the French phrase '*boutez-en-avant'*, said to have been the war-cry of the Norman Barry family who conquered the area in the late 12th century. However, as noted by the antiquarian Westropp in 1901 the name '*Boutavant*' has been applied to fortifications in France, Britain and Ireland from at least the late 12th century up to the 16th century (Westropp 1901, 87). The historian Powicke notes that by the end of 1198 "… an advance work, called in consequence *Boutavant*…" had been erected on the River Seine, "…above the Isle of Andelys…" (Powicke 1961, 193-4). The context was the struggle between King Richard of England and Philip of France for control of Normandy and the *Boutavant* in question was one of a number of fortifications built by Richard prior to his construction of the massive fortress of Chateau-Gaillard, one of the most impressive of the Medieval European castles. At Corfe castle in Dorset in England the name *Butavant* is found in several 13th century references and is believed to refer to the tower "…at the exposed angle of the west bailey…" (Colvin 1963, 619-23). One of the towers along the walls of Dublin city is named *Butavant* as early as *c.* 1250 and *Buttevantes' Tower* in the sixteenth century (Thomas 1992, 83-4). It was located at the exposed north east corner before the town's defences were extended northwards towards the Liffey. Thus the name does appear to have the meaning of 'push forward' and can be seen to be applied in the sense of an advance or projecting fortification. In the context of Buttevant therefore the building of the castle there could be seen as a 'push forward' into North Cork by the Barrys from their base in East Cork (centred on Castlelyons and Barryscourt). It could also be seen in the context of the immediate location of the castle, on a prominent limestone ridge jutting forward over the river. The name Buttevant is therefore more likely to derive from this source rather than from the Barry motto. It is in fact more likely that both are derived from the same source, rather than one from the other.

Section 1 - ARCHAEOLOGY

1.1 The Archaeological context

The principal surviving archaeological monuments in Buttevant today are the Medieval Friary, located in the centre of the town, Lombard's Castle, probably an urban tower house, located on the main street a short distance south of the Friary, the Medieval Buttevant Castle, located a short distance to the south-east of the town, Buttevant Bridge to the north of the town and a nineteenth-century corn mill on the east side of the town. Traces of a Medieval church also survive on the boundary wall along the north side of Mill Lane. The 19th century Catholic Church stands in the centre of the town near the Friary, and a well-preserved early 19th-century Church of Ireland church is located in the cemetery to the south of the town. It is known from documentary references that Buttevant was a walled town, and the evidence for these walls is discussed below.

From the point of view of the present proposed development the significant buildings are the Friary, immediately to the west, the bridge, visible to the north, and the mill, at the southern end of the area.

The Franciscan Friary

The most immediate monument to the area which is the subject of this report is the Friary (Plate 1). This has been fully described elsewhere (Leask 1960, 110; Power 2000, 548) and it is not necessary to go into detail here. It will suffice to say that it is an architecturally and historically significant building of the thirteenth century with some fifteenth century additions. It is a national Monument in the ownership of the National Monuments Service, and is listed as a Protected Structure in the Cork County Development Plan 2009.

Plate 1*: Franciscan Friary with Catholic church on the right, seen from the east bank of the river. Note medieval tower incorporated into corner of church, and remains of medieval wall running north from corner of Friary. The survey area is immediately below the Friary*

Buttevant Bridge

Buttevant Bridge is located *c.*250m north of the development area. The bridge was built in two phases with the southern, downriver side being the earliest and reckoned to date to the thirteenth century (Power 2000, 636). The earlier section is describes as having for pointed segmental arches, with roughly cut limestone voussoirs. O'Keeffee and Simmington in their study of Irish stone bridges regard it as being of thirteenth century date and therefore *'a landmark bridge in the national context'* (quoted in Power, op. cit.).

***Plate 2**: Buttevant bridge from the southeast*

The corn mill

The mill is one of the most prominent buildings along the east side of the town and is located at the southern end of the survey area. It is a substantial and well-preserved building standing six storeys high, and was built *c.* 1810 (Power 2000, 701). It is known that Buttevant had a mill in medieval times and references suggest it stood in the region of where the present mill now stands (MacCotter and Nicholls 1996, 29). The Down Survey map of *c*. 1650 shows a mill further to the south on the east bank of the river.

Plate 3*: Buttevant mill, from the east*

1.2 The town walls – documentary evidence

In her work *The walled towns of Ireland* Avril Thomas states that "The evidence for a medieval walled town at Buttevant …. is quite well established for the 14th century…" (Thomas, vol 2, 231). The evidence derives primarily from two medieval references to murage. In 1317 the sum of £105 owing to the exchequer was released "*to enclose it with walls*", while a further grant in 1375 refers to the "north gate" (ibid. 28). Borlase, in his history of the rebellion of the 1640's refers briefly to Buttevant but does not mention town walls (Borlase, 82). By contrast he refers to Kilmallock as a town "…environed with a strong wall..". The lack of reference to walls at Buttevant suggests that it was not a place of strength at that time and that the walls were perhaps somewhat decayed by then.

Charles Smith in 1750 records that parts of the walls were still standing at that time. He writes "*There are still to be seen the remains of a wall that surrounded the town; and they also shew the traces of an outward wall, which enclosed the other, and took up a considerable circuit of ground*" (Smith, 313). The reference to 'traces' of an outward wall suggests that a full outer circuit did not survive in Smith's time, and it is unclear if this outer circuit completely enclosed the town.

The town of Buttevant today consists principally of one long street running north-south, parallel to the river which flows on its east side, and several cross-streets. Property boundaries run east and west from the main street. Behind the street-front properties several back lanes run from the cross-streets parallel to the main street, separating the houses from their garden plots. The town's bridge, the medieval element of which still survives, is located at the northern extremity of the town, and the castle at the southern extremity. The site of the medieval church is located some 150m south of the town and is today the site of a Church of Ireland church and graveyard.

The town is therefore laid out on a distinctly regular grid pattern common to many Irish and European medieval towns, and its layout has been compared by one writer to the fortified towns of south west France (O'Keeffe 2004, 162) The same writer described Buttevant as *"one of the most interesting but perhaps perplexing of all mediaeval Irish towns"* (ibid.).

Thomas proposes three possible circuits for the town walls, and divides the town into three sections: 1 - a central section with the Franciscan Friary at its centre and extending from Kerry Lane in the south to the unnamed cross-street to the north of the Friary (the latter street also forms the townland boundary between Buttevant and Creggane townlands); 2 – a north section extending from the townland boundary to the bridge; 3 – a south section extending to the "castle/parish church areas" (Thomas 1992, 29). This scenario leaves the bridge, the castle and the parish church outside the walls, and indeed two of Thomas's proposed circuits also leave the present market-house (presumably the site of the medieval market) outside, a situation which would have been most unusual given that these elements are almost invariably enclosed within the walls (though the castle is occasionally outside). Thomas notes the exclusion of the bridge to the north and the parish church to the south as particularly curious and suggests that the graveyard to the south of the town was not the site of the original parish church (Thomas, 29).

However, it is clear that Thomas was unaware of some sources of information and did not have the benefit of MacCotter and Nicholls translation of the *Pipe Roll of Cloyne*, published four years after her work. Thomas assumed that the southern extent of the town ended at the point where the main street abandons its straight north-south course and veers sharply to the west, and she describes the market-house in this area as being

"…almost beyond the town..". In fact it is clear from documentary and cartographic evidence that this street originally continued in a straight line south to Ballybeg, through what is now the entrance to the Church of Ireland graveyard. Indeed it course can still be traced in the field to the south of the graveyard. The road south from the town only assumed its present course at the whim of an early nineteenth-century occupant of the castle, Sir James Anderson, so that it no longer ran through his demesne (Grove-White vol 1, 364). This account is borne out by the evidence of Charles Vallancey's map of 1796 (TCD MS2891) and the Grand Jury map of Cork of 1811 (Fig. 5), both of which agree in showing the road continuing in a straight line south to Ballybeg, with the town extending on each side as far as what is now the access lane to the Church of Ireland graveyard, but was then a continuation of the Knockbarry road. That the town in medieval times also extended as far south as the graveyard is clearly suggested by an entry in the *Pipe Roll of Cloyne*, which describes the lands held of the lord Bishop (of Cloyne) by David Barry. These include the castle of Buttevant, its orchard, and the tenements lying between Mill Street "*…as far as the roadway and church of St Bridget on the south side…"* (MacCotter and Nicholls 1996, 29). Further references in the Pipe Roll to *"the parish church of Buttevant"* and *"the church of St Brigid of Buttevant"* clearly show that this graveyard was indeed the site of the medieval parish church, contrary to Thomas's suggestion.

There can therefore be little doubt that the medieval town extended as far south as what is now the Church of Ireland graveyard, and it is likely that this area was the core of the town, incorporating the castle, the mill, the parish church and the market. This realisation has numerous implications for our current understanding of medieval Buttevant. One is the distinct possibility that archaeological remains of the medieval town may lie relatively undisturbed under the open fields to the south west of the castle and west and south of the Church of Ireland graveyard. Another is the possible location of a south gate to the town. The only evidence we have for town gates is a 1375 reference to the *North Gate* (Thomas, 28). From this specific reference it is reasonable to assume the presence also of a south gate. It is suggested by Thomas (p 29), and is generally assumed, that the south gate was located at Lombard's castle, partly because of its location near the presumed southern end of the town and partly because of a flanking tower projecting onto

the street from the main tower and giving the impression of a narrowing of the street at this point. However, Lombard's castle is likely to have been an urban tower house, the residence of a wealthy burgher of the town and is therefore more likely to have been well within the town rather than at one of the gates. Also, since it is clear that the town extended further to the south, as detailed above, the south gate, if such existed, may have been located outside the modern town (see below for discussion of the southern perimeter wall). The third implication of this theory is of course for the location of the town walls. Since the evidence clearly indicates that the town extended as far as the parish church, it is likely that the church was enclosed within the town walls. We must now turn to possible evidence for those walls.

1.3 The town walls – physical evidence

The outer wall

The main evidence for an outer wall circuit comes from Charles Smith (quoted above). His assertion that the outer wall "*..took up a considerable circuit of ground"* suggest that it was located quite a distance out from the inner wall. A possible candidate for this outer wall is a field boundary which extends to the northwest from the main road approximately 100m south of the market house and which forms the boundary between the townlands of Buttevant and Knockbarry (Fig. 3). This boundary is more substantial than other field boundaries in the area, comprising an earthen bank *c.*1m high and almost 2m thick, with well constructed stone facing on its southwest side. The bank appears much lower from the east side where ground level is *c.*0.6m higher than it is on the west side.

***Plate 4**:The Buttevant/Knockbarry townland boundary from the south*

It is likely that this boundary formerly continued towards the southeast before the present main road was built in the early nineteenth century. If one extends its trajectory in this direction on the map one finds that it strikes the southern boundary of the Church of Ireland graveyard. The present walls surrounding the graveyard are relatively modern and presumably date to the construction of the C. of I. church (1826). However, to the immediate east of the south east corner of the graveyard there are traces of an earlier boundary, now much degraded, comprising of two parallel earthen banks with a fosse between. The southern bank stands *c.*0.5m high and is 0.8m wide with traces of stone facing on its northern side; the northern bank is *c.*0.4m high and 1.2m wide. These embankments run along the cliff edge south of the graveyard, then turn westwards just east of the graveyard, where they appear to have been cut by the graveyard wall. On this trajectory they are approximately aligned with the boundary just described and may well have been a continuation of it (Fig. 3).

This theory therefore suggests that the southern town wall was a stone-faced earthen bank (or perhaps a double bank) commencing on the cliff-edge near the south-east corner of the graveyard, curving gently towards the north-west, intersecting with the main street at the western end of the graveyard, and continuing to curve to the north-west, to Kerry

Lane. At this point the townland boundary turns east and runs along Kerry Lane for *c.*50m before turning north and running directly north. The earthen bank is not found to the north of Kerry Lane however and the boundary there is a row of trees of recent origin. It may be that this wall or embankment is the 'outer wall' referred to by Smith as enclosing the other, inner, wall, which itself surrounded the town. We must now look for evidence of this inner wall.

The inner wall – eastern perimeter

Unfortunately, among the myriad walls edging the back lanes and marking the property boundaries behind Buttevant's houses none can be positively identified as medieval, particularly on the western side of the main street. Along the eastern perimeter of the town long stretches of walling survive extending along the cliff-edge from the castle to the corn mill and from north of the mill to the northeast corner of the Roman Catholic graveyard, though with some significant gaps. An attempt was made to use mortar analysis to provide clues as to the relative ages of these walls, but this was unsuccessful. Mortar samples were taken from thirteen different points including some from castle walls known to date to the thirteenth century and others known to date to the nineteenth. The samples were manually broken down and examined visually, and rated according to hardness, colour, weight/density and aggregate size. However, no clear pattern emerged and the analysis was inconclusive. Following that a series of close-up photographs was taken at different points along the walls to see if any pattern emerged from a study of the different construction styles. This proved to be somewhat more rewarding.

Broad similarities were noted in three sections of walling in particular (Fig. 3). These were: 1) a section beginning at the northeast corner of the castle and running northwards; 2) a section forming the boundary between Mill Lane and the grounds of the Convent of Mercy; and 3) a section extending northwards from the northeast corner of the Franciscan Friary. These three sections are built of uncoursed limestone rubble, with a high proportion of large blocks of *c.*0.2m high and 0.4m to 0.6m long. The faces of the stones are smooth but unworked, displaying the natural cleavage of the rock. By contrast, other, later walls in the vicinity tend to have a higher proportion of smaller stones, are built in

regular courses, and the stones are roughly hammer-dressed giving a rougher, more angular face.

Section 1 is built on a rock shelf half-way down the near-vertical cliff-face below the castle, which stands on top of the cliff. As such it enhances the natural defensive capabilities of the cliff and could be seen as forming part of the castles defenses. By contrast the later property boundary wall to the north is built along the top of the cliff. The wall continues north for *c.*15m, apparently all of a single phase of construction. It then turns northeast following the base of the cliff for *c.* 25m, before turning north again. There is evidence of repair and rebuild in this second section, and it is unclear how much, if any, is original. As it continues north its base rises gradually until it runs practically on the top edge of the cliff where it forms the eastern boundary to a private house and garden. This section is of more modern appearance. To the east of the garden boundary, further down the cliff, there is now an isolated section of walling *c.* 10m long and 3m high. It is mostly obscured by moss and ivy, but the construction method does appear to be similar to that of section 1. It seems likely that this section was part of an earlier, originally continuous wall which extended from the castle along the lower cliff face to the corn mill.

Section 2 is located near the southeast corner of the grounds of the Convent of Mercy, forming the boundary wall between Mill Lane and the convent grounds, immediately west of the mill. The first edition 6 inch OS map shows an "*Old RC Chapel"* here, and what is now Mill Lane was then *Chapel Lane*.
Some 30m to the west of the corner the junction of the older walling with the more modern is clearly visible (Plate 5), illustrating the contrast between the two styles.

Plate 5*: Wall on north side of Mill Lane. Note break in construction styles to right of ranging rod. Older wall to right, modern wall to left.*

The more recent wall (probably 19th century) continues to the west along Mill Lane, while the older wall continues to the east towards the southeast corner of the convent grounds. Dense ivy obscures much of the wall towards the corner. The corner itself, and the wall extending north from it, forming the eastern boundary of the Convent grounds, are clearly also of recent origin, though built on the foundations of an earlier wall which can be seen near ground level. From the northeast corner of the Convent grounds as far as School Lane (immediately north of the 'School' on the 25" map in Fig 3) the wall was densely overgrown and inaccessible at the time of this survey. To the north of School Lane there was a great deal of ivy cover, but it was possible to see that some sections were similar in construction style to the 13th century section described above, though there was also evidence of modern repair. Immediately south of the Franciscan Friary there is a gap of *c.* 30m in the wall. There is no doubt that the wall was originally continuous in this area as is clearly shown in an early 20th century photograph (Plate 6 below).

Section 3 of the three similar wall sections runs from the northeast corner of the Friary northwards for *c.* 10m after which it is mostly collapsed to ground level (see Plate 1 above). Again it is clear from the Grove-White photograph that it originally continued to the northeast corner of the Roman Catholic graveyard (Plate 6). As noted the construction style is similar to that of Sections 1 and 2.

***Plate 6**: Reproduction of a photograph of 1909 showing the Friary from the east (Grove-White vol 1 part 2, facing p 350). Note continuous wall running north and south from east end of Friary.*

It is possible to suggest a date for one of these sections, that between Mill Lane and the Convent grounds, near its eastern end. As noted above this was formerly the site of a Catholic church, and is also thought to have been the site of a medieval nunnery mentioned by Charles Smith in 1750 (Power 2000, 550, 617). It is likely that the medieval nunnery was used as a parish church after the medieval parish church to the south of the town was closed in the post-Reformation period.

The outline of a blocked window can be seen on the south face of this wall. The window still survived in the mid nineteenth century when it was described as a *"…small trefoil-headed two light window…"* (Brash 1852, 96). The same author also describes some moulded stone on this wall, noting that "… moulded caps are worked on the stone...". These must surely be the capitals now incorporated into the grotto erected in the window embrasure on the inner (north) face of the wall. The form of the capitals, coupled with Brash's description, indicates this was a thirteenth century window, therefore it can be assumed that this section of walling was of that date.

Given the similarity of construction style of this wall section and the sections to the castle and north of the Friary, it can be proposed with some confidence therefore that these three wall sections are medieval in date.

The inner wall – southern perimeter

Along the southern perimeter of the town, in addition to the possible outer wall already described there is likely also to have been an inner wall, though there is no obvious survival of this. There is however one possible candidate for this element of the circuit, namely the southern boundary of the modern school grounds across the road from the market house. A cursory glance at this wall shows the regular linear coursing typical of more recent walls in the area. However, a closer look reveals that the lowest courses, close to ground level, are of a different construction style, and are likely to belong to an earlier wall (Plate 7 below). This earlier work can only be seen on the southern boundary wall of the school grounds, though not at the extreme western end, where the wall turns north-westwards. It is tempting to see this as part of the original southern town wall, possibly extending from the curtain wall of the castle in the east, across the main street and linking with the western perimeter wall just south of the market house.

Plate 7*: Southern boundary wall to modern school grounds, from north. Note different construction style near base*

1.4 The town walls – topographic evidence

Within the town itself, while elements of the surviving walling may well be medieval, none could be positively identified as such, with the exception of course of Lombard's Castle. All that can be attempted here is a suggested wall circuit based on the topography of the town.

The western perimeter

Along the western and northern perimeter of the town Thomas identified an outer and inner wall line (Fig. 4). Her proposed outer line can be dismissed on two grounds: firstly the section to the south of Kerry Lane is not depicted on the first edition of the 6 inch map, but is shown on the 25 inch map and is therefore clearly the boundary to a property constructed towards the end of the 19th century; secondly, to the north of Kerry Lane there are significant gaps in the line, and one extensive area of open ground with no

property boundaries. Her inner line here is much more plausible. On the 1st edition OS map this line is more or less continuous (though staggered in several areas and with one noticeable break) from the northern end of the market house to a wall running west from the main street just opposite the present Catholic Church (Wall A in Fig. 2). Four factors make this wall significant. Firstly, it forms a noticeable break in the topography of the properties. To the south of it, as noted above, the western boundary to the properties forms an almost continuous line to the market house. To the north however there is a large open space with a lime kiln and no properties (see Fig. 2; the 25 inch map on Fig 3 shows a new property immediately to the north occupying the site of the lime kiln). Secondly, the properties to the north are longer and less regular, whereas those to the south are of uniform length. Thirdly, ground level to the south of the wall is higher than that to the north, suggesting a greater build up of soil on the south (inner) side of the wall, as one would expect if this was a town wall. Fourthly if one projects the line of Wall A eastwards across the street it runs more or less directly towards the old tower incorporated into the Catholic Church (see Plate 1 above). This tower was almost certainly part of the boundary of the Franciscan Friary, and may well have been incorporated into the town defences.

The eastern perimeter

Turning now to the eastern town boundary it is noticeable from the nineteenth century maps (Figs 1 and 2) that in the area stretching from the north east corner of the Catholic graveyard south to the *Fever Hospital* (now the Convent) the property boundaries stop short of the riverbank – in fact they are bounded by a high stone wall, leaving an open area between the wall and the riverbank accessible from School Lane and from Mill Lane. This boundary provides uniformity to the extents of the properties here so that they are of equal length to those on the west side of the street. However, in the area north of the Catholic graveyard the properties extend fully to the riverbank and are of irregular size, like their opposite counterparts on the west side of the street. This indicates a clear difference on either side of what is now the north wall of the Catholic graveyard and suggests that wall follows the line of the original town wall. Its position in relation to the

Franciscan Friary suggests that it also formed the northern boundary of the Friary precincts.

On the basis of the factors outlined above it is therefore possible to propose the following circuit for the medieval town walls (see Fig 2): beginning at a point immediately southwest of the Market House the circuit runs northwards in an almost continuous line as far as Wall A (described above); at this point it turns eastwards and runs to the old tower, now part of the R.C. church; from here it runs northwards for *c.*10m then runs eastwards again, stopping *c.*15m short of the riverbank, then running south, linking with the corners of the Friary and continuing southwards to the northeast corner of the convent grounds. From this point there are two possibilities: it may have continued to the southeast towards the mill, then along the cliff to the castle, or alternatively it may have run southwards through the present convent grounds, along the line of the lane which runs southwards from Mill Lane towards the castle, possibly linking up with an outer curtain wall of the castle. The latter scenario is probably the more accurate for two reasons. Firstly it would mean that properties on the east side of the main street were of the same length as those on the west side, thereby continuing the high degree of uniformity which can be seen further north in the town, and secondly it would leave the castle and its orchard, which, according to the Pipe Roll of Cloyne was on the south side of Mill Street (MacCotter and Nicholls 1996, 29), walled off from the town. Similarly the medieval mill, assuming it was in the same position as the present mill, would have been separated from the town but easily accessible by the lords of the castle, who presumably controlled it.

The southern perimeter

As noted above (Section 1.3) the wall which forms the southern boundary of the school grounds is built on older foundations. These older foundations may well be the remains of the southern perimeter of the town walls, which could have run westwards from the curtain wall of the castle along the line of the present south wall school grounds, crossing the main street at the point where the latter now veers to the west (a possible location for a south gate), then continuing westwards to meet the western perimeter wall to the south of the market house.

If this was the line of the southern town wall it leaves a relatively flat, open area extending another *c.* 50 south of the town wall immediately west of the castle. At the southern edge of this area there is a slight east-west ridge which may mark the location of another boundary. Beyond this ground level dips significantly between the castle and the Church of Ireland graveyard, so that it is unlikely there were any buildings or properties in this area. O'Keeffe (2004, 163) has suggested that the medieval market and fair would have been held *"immediately outside the entrance to the castle"*. If that was so then this flat area immediately outside the town walls and immediately outside the castle, with the town gates and market house only a short distance away, would have been an ideal location for those fairs and markets.

2.0 Discussion

The possible circuit of the town walls of Buttevant outlined above includes two main elements, an inner stone wall completely enclosing the town, and an outer element around the southern side comprising a stone-faced earthen bank. The latter might well be the outer wall referred to by Smith in 1750, though whether or not it completely enclosed the town is uncertain. Smith's reference to "traces" of an outer wall suggest that very little of it survived, and his suggestion that it "enclosed" the inner wall may simply been speculation on his part.

The wall circuits proposed here enclose all the principal elements of a medieval town: the castle, parish church and fair green area enclosed by the outer wall, while the inner wall encloses the market house and the tenements. The large open space to the rear of the market house, outside the inner wall but enclosed by the outer wall, could have functioned as a fair green, though it has been suggested that a fair green might also have been located in the area close to the castle. Furthermore it would mean the mill, market house, parish church and possible south gate were clustered within view of the castle and within easy reach of each other. It also encloses the Franciscan Friary, a building which is frequently said by modern commentators to be more usually located outside the town walls. However, as Avril Thomas's study shows, Friaries are located within the walls in a number of towns, e.g. Drogheda, Clonmel, Kilkenny and Waterford. Where they are located within the town they are usually at a corner, as is the case in three of these four

examples. In the circuit proposed here for Buttevant the Friary is located within the northeast corner of the town, a position which is by no means unusual.

The one important element of the medieval town not enclosed by this proposed circuit is the bridge, located a considerable distance to the north. However the depiction of Buttevant in an eighteenth century map of the south of Ireland (Vallencey 1796) shows a break in the river at the end of a lane just north of the castle. This depiction is identical to that of the present bridge to the north of the town and suggests there may have been another bridge at the end of Mill Lane. This would have been a suitable position for a bridge, close to the castle and at a narrow point in the river just below the mill pond. Construction of the present mill and its associated races and sluices has of course wiped out any trace of such a bridge, if indeed it ever existed.

3.0 The proposed amenity development

The development area

The area which it is proposed to develop as a tourist and local amenity is a long narrow strip of land on the west bank of the Awbeg River, stretching from the northeast corner of the Roman Catholic graveyard in the north to the corn mill in the south. The area is easily accessible from the centre of the town via School Lane or further south via Mill Lane. As can be seen from the Ordnance Survey maps the area was flooded until recent times to create a mill-pond providing power for the corn mill. The ground surface is rough and uneven with occasional large stones protruding, suggesting modern infill. The southern end of the field, to the south of School Lane, has extensive cover of light scrub, mainly briars, nettles etc. (Pl 8). The northern portion is clearer as it is currently being grazed by horses (Pl. 7). Along the western edge of the field there are mounds of stone rubble, much of which presumably comes from the collapsed portions of the wall which formerly bordered the field.

Development of the area may involve, among other things, levelling of the ground surface, removal of scrub, removal or tidying of rubble, and fencing

A number of issues will need to be addressed in relation to the proposed development of the area, mainly Archaeological and Health and Safety.

***Plate 8**: Northern end of survey area, from south. Note Friary to left and traces of medieval town wall.*

***Plate 9**: Southern end of survey area, from north. Note top of mill among trees in right background. Boundary wall hidden by vegetation to right.*

Scrub removal

As noted above there is extensive scrub cover over much of the southern half of the area, which will require removal. This will need to be carried out by hand as it may cover collapsed stone from medieval walls, particularly along the western edge of the area. Further north there is also a certain amount of scrub some of which clearly covers stone rubble. Again care will need to be taken as the rubble mounds may contain architectural fragments from the nearby Friary.

The scrub removal might also include removal of the overburden of ivy from the surviving walls along the western edge of the area. Initially this should involve only pruning back of loose branches. No attempt should be made to pull ivy from the wall as this will dislodge loose stones. Nor should the ivy be killed off as this might only hasten the deterioration of the wall. Killing off the ivy should only be done as part of an established programme of conservation of the walls. This is unlikely to be done in the early phases of the development.

Health and Safety

As noted above much of the surface is rough and uneven and may need to be levelled for safety reasons. Where levelling of the surface is required consideration should be given to introducing topsoil rather than digging in light of the archaeologically sensitive nature of the area.

Another safety issue is the mounds of stone rubble along the eastern edge of the field. These have presumably come from the collapsed wall. In the long term consideration could be given to actually rebuilding this wall, particularly the section that has completely collapsed, immediately south of the Friary. This however would be a long-term aim. In the short term the stone could be gathered together in a number of consolidated stacks and fenced off. This too should be done under archaeological supervision so as to identify fragments of architectural stone which might be present. Already during the course of the present study one piece of cut stone was noted in the rubble close to the Friary.

Fencing

As noted above a *c.*30m section of the original wall is missing just south of the Friary. As part of the development this section would need to be fenced off from the private property to the west. Fencing should also be carried out along the boundary wall to the north of the Friary, to prevent access to and from the adjacent graveyard. It is clear that access in this area is currently damaging the remains of the original wall. Some fencing off will also be required on the northern boundary of the site.

Archaeological Impact

Although the area was part of a mill-pond until modern times, and appears to have been infilled relatively recently, it should nevertheless be treated as an archaeologically sensitive area given the proximity of the medieval Friary and the medieval town wall. The first edition six-inch map shows a strip of land *c.*10m wide between the wall and the edge of the mill-pond, which may well hold undisturbed medieval layers, and the

antiquity of the mill-pond is uncertain so that archaeological layers may also be present under the modern infill.
Sub-surface works should therefore be kept to a minimum and should only be carried out under licensed archaeological supervision. Similarly, removal of rubble should be carried out under archaeological supervision so the architectural fragments included in the rubble could be identified and recorded.

3.1 **Amenity proposal**

Ideally, development of the site should be kept to a minimum so as to retain a certain 'unspoilt' character in so far as possible. At a minimum though a certain amount of seating will be required, as will litter bins. An information plaque giving some details of the Friary and the mill, the two most immediate monuments, could also be considered.
In the long term the development of this area should be seen in the context of a larger scale amenity development extending south along the riverbank past the castle and on down to Ballybeg Abbey to the south of the town.

The local Heritage Group have proposed a three-phase programme of works, of which the present report forms Phase 1. The remaining phases are:

Phase Two;
Physical work to clear over grown vegetation and basic maintenance at the base of the remains of the town wall, and riverbank, abiding by best heritage practice and supervision.
Phase Three;
Landscaping, providing gravel paths, stone seating, information boards and signage.

Phasing of the development will of course depend to a large extent on the availability of funding and of labour, and the work may need to be extended over a 4-phase progaramme.
The following phasing is proposed:

Phase 1: (this phase would be concentrated on the northern half of the area)

- Clear scrub. Prune back (but do not remove) ivy from walls
- Fence off gaps in walling along the western and northern perimeter of the site. This could comprise simple timber post-and-rail fencing.
- Level out any areas which are felt to be a safety hazard (preferably by introducing soil rather than digging)
- Tidy some of the scattered rubble, mark it with light, temporary fencing, and erect signs warning of danger.
- Place seating and litter bins.

Phase 2: (concentrate on southern half)

- Clear scrub from southern half of area
- Tidy up rubble mounds, fence and erect danger signs.
- Install seating and litter bins.
- Carry out further surface levelling if considered necessary.

Phase 3:

- Carry out any further surface levelling, if necessary.
- Install further seating if necessary.
- Conservation and consolidation of the wall along the western perimeter of the site to the north of the Friary, to prevent further deterioration.

Phase 4:

- Conservation of existing wall to the south of the Friary – the extent of conservation required will become clear after ivy is cut back.

Phase 5

- Reconstruction of missing wall to the south of the Friary. This is not a high priority and should be seen very much as a long-term optional aim.

Bibliography

Borlase *The history of the excecrable Irish rebellion.* London. 1680

Brash, Richard R. (1852) 'The Local Antiquities of Buttevant', *Transactions of the Kilkenny Archaeological Society*, Vol. 2, No. 1, 83-96

Colvin, H M (1963) *The history of the King's works* vol 2. HMSO. London 619-623.

Joyce, P.W. (1913) *The origin and history of Irish Names of Places.* 1995 edition, Edmund Burke. Dublin.

MacCotter, P (1996) 'The sub-infeudation and descent of the FitzStephen/Carew moiety of Desmond'. *Journal of the Cork Historical and Archaeological Society* 101, 64-80.

MacCotter, P and Nicholls, K W (1996) *The pipe roll of Cloyne*. Cloyne Literary and Historical Society.

Nicholls, K W (1993) 'The development of Lordship in County Cork 1300-1600', *in* P Ó Flanagan and C G Buttimer (eds), *Cork History and Society*, 157-212. Geography Publications, Dublin.

Ó Brien, A F (1993) 'Politics, economy and society: the development of Cork and the Irish south-coast region *c*. 1170 to *c*. 1583', *in* P Ó Flanagan and C G Buttimer (eds), *Cork History and Society*, 83-156 Geography Publications, Dublin.

O'Keeffe, T (2004) 'Lordship and Colony' in *Mallow Field Club Journal* No.22.

O'Murchadha, D (1996) *Family names of County Cork.* The Collins Press. Cork

Powicke, M (1961) *The loss of Normandy*. 2nd edition (1st ed 1913). Manchester University Press. 193-4

Power D, and Lane S, et al (2000) *Archaeologicazl Inventory of County Cork.* Vol 4. The Stationery Office. Dublin.

Thomas, A (1992) *The walled towns of Ireland*. Irish Academic Press. Dublin. vol 2, 83-4

Westropp, T J (1901) 'The name Buttevant' *Journal of the Royal Society of Antiquaries* xxxi, 87.

www.logainm.ie – Irish Placenames Commission

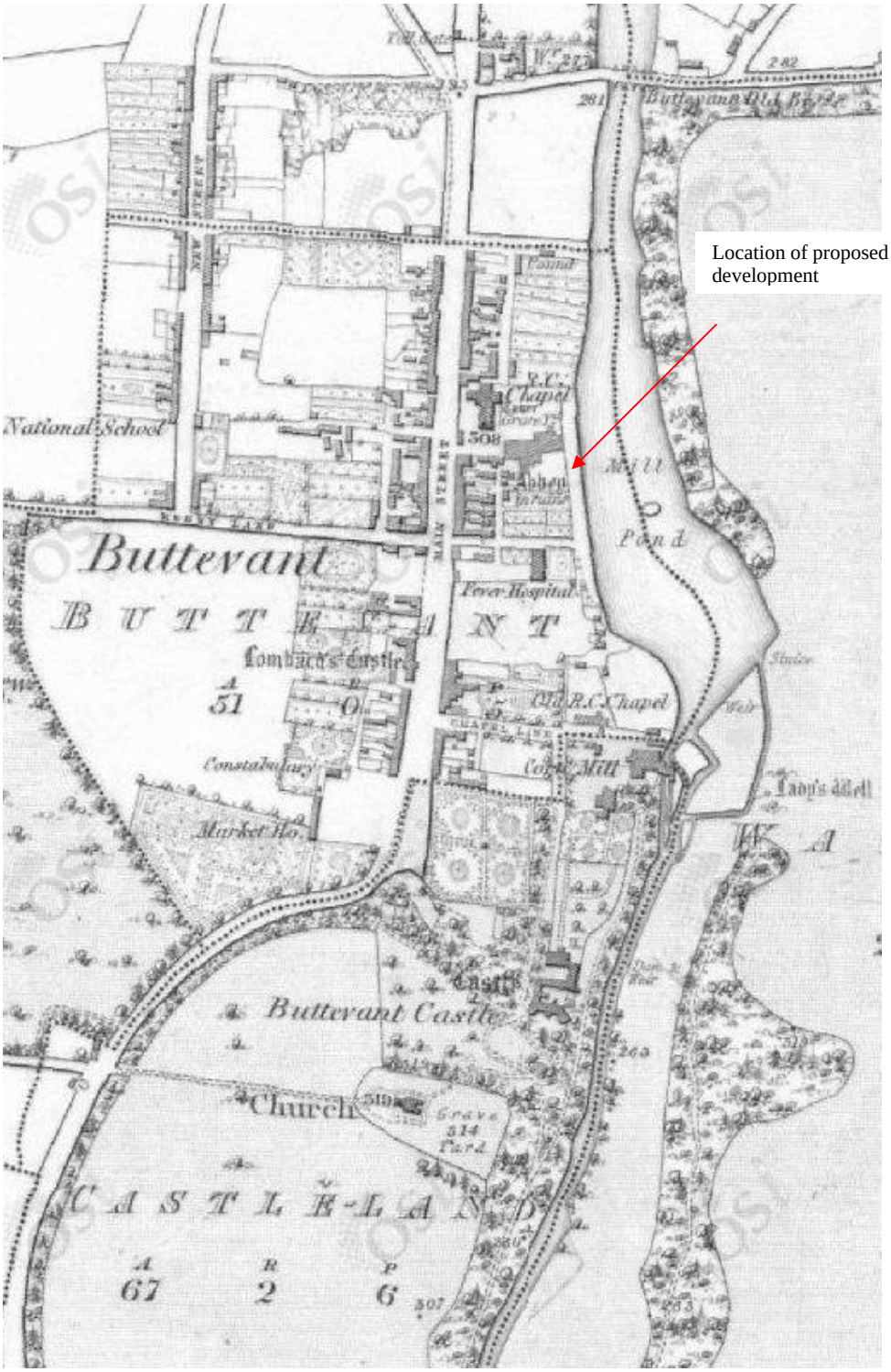


Fig 1 Extract from 1st ed six-inch OS map showing Buttevant in the 1840's.

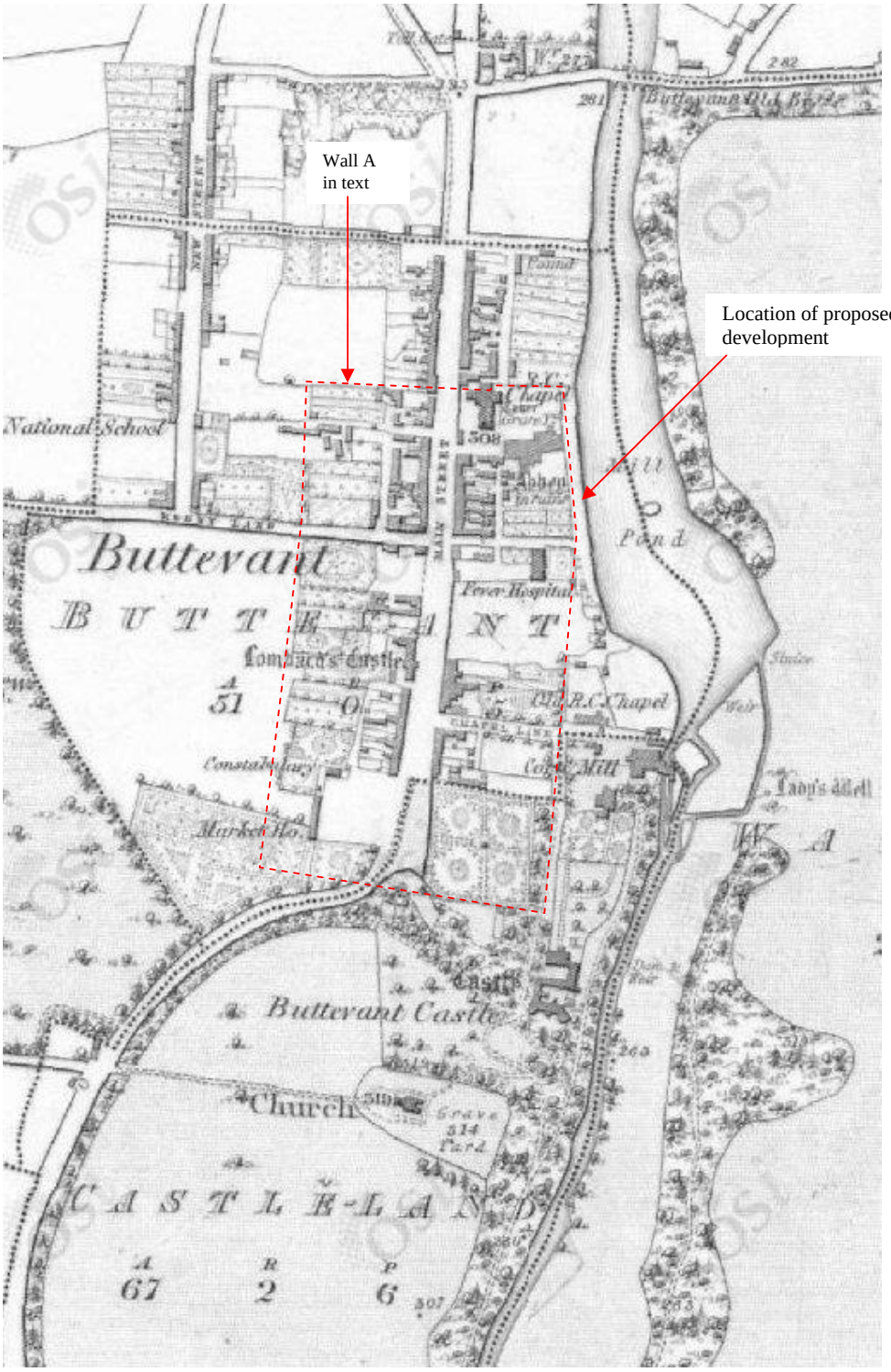


Fig 2 Extract from 1st ed six-inch OS map showing Buttevant in the 1840's with suggested outline of town walls. Note symbol for lime kiln immediately west of the northwest corner of the town wall.

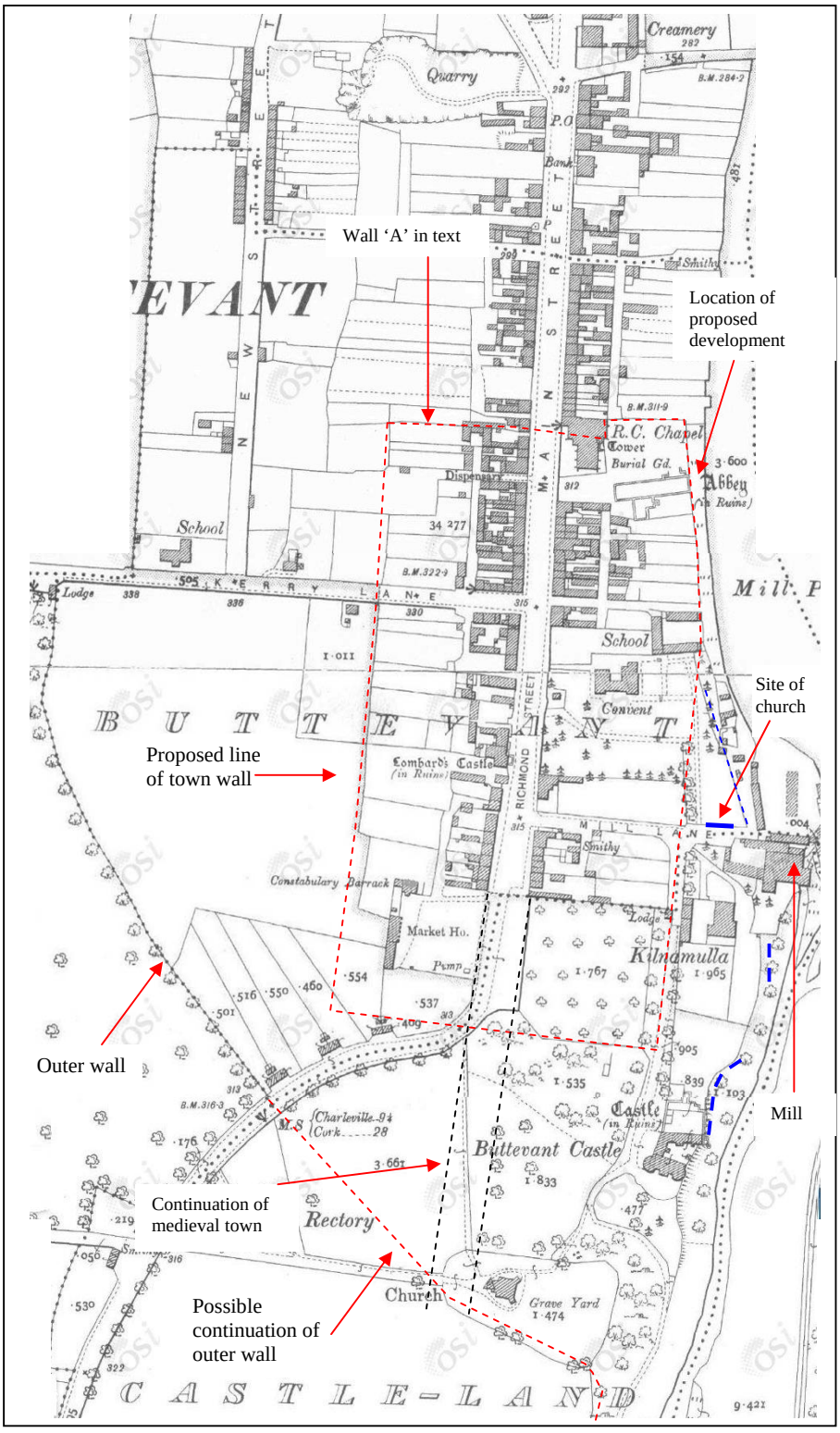


Fig 3 Extract from 25-inch OS map of Buttevant showing suggested location of medieval features

Town walls ---------- Other medieval walls ----------

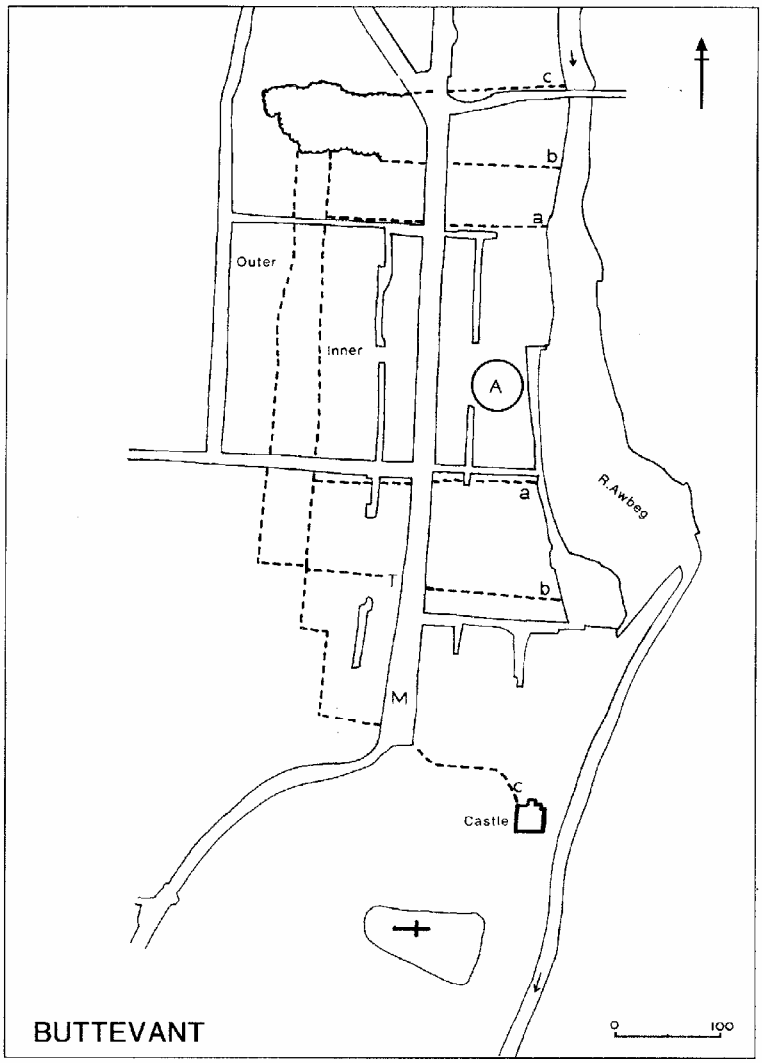


Fig 4 Suggested layout of medieval Buttevant from Avril Thomas *The walled towns of Ireland.* Thomas suggest three possible circuits, labelled a, b and c.

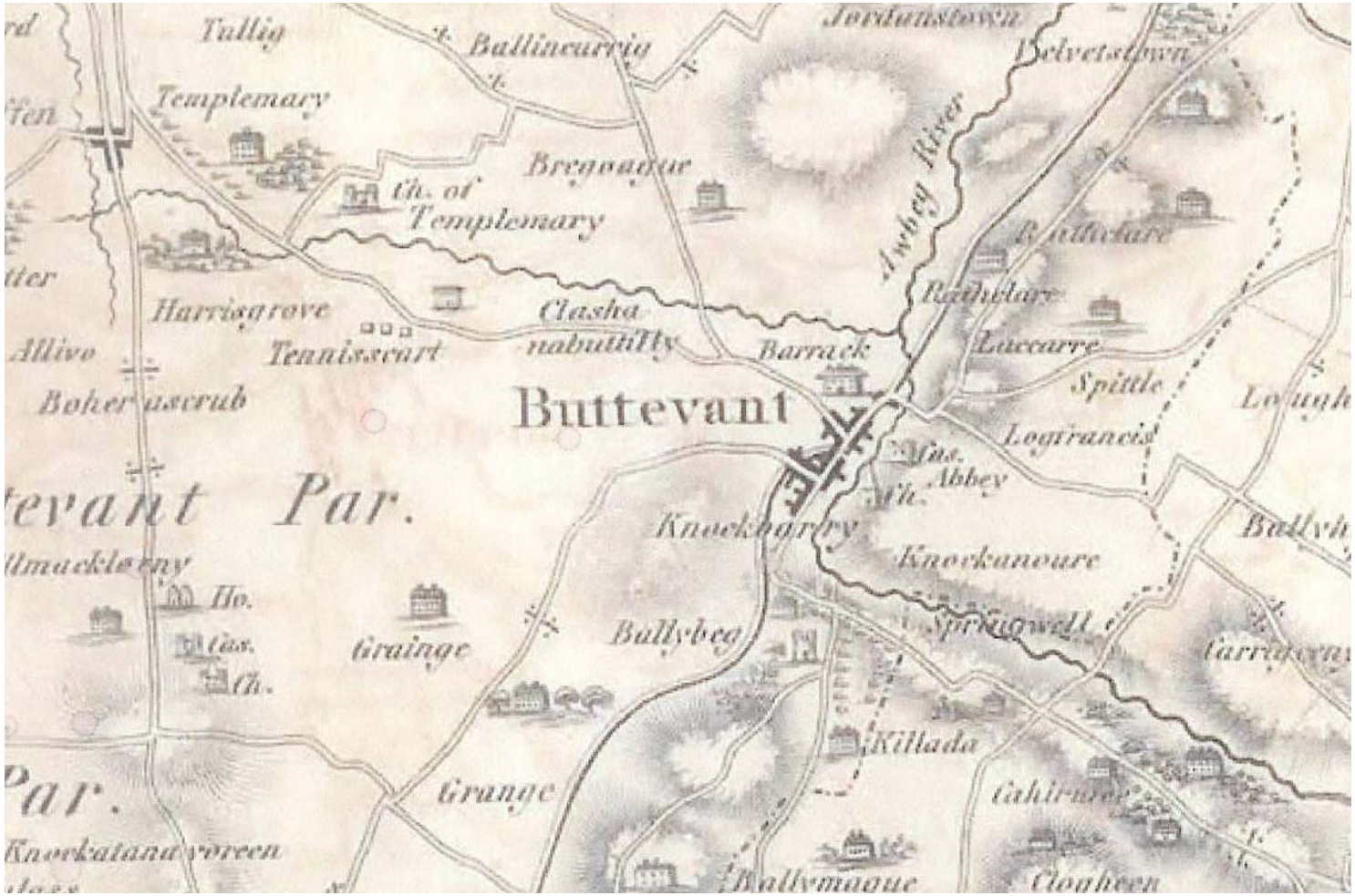


Fig 5 Buttevant as depicted on the Grand Jury map of Cork, 1811. Note original main street continuing southwards and modern road curving to west

Section 2 – THE ECOLOGICAL REPORT

Awbeg valley, Buttevant,

Co Cork

Ecological heritage

Report prepared for Eamonn Cotter

July 2010

Roger Goodwillie & Associates, Lavistown House, Kilkenny. Tel. 056-7765145

1. INTRODUCTION

This report is written to describe the ecology of the Awbeg River valley where it flows through Buttevant. It is prepared for Eamonn Cotter and the local Heritage Group

A visit was made in July 2010 (16/17th) so as to include an assessment of the local bats on the first evening. Other aspects of the flora and fauna were examined the following day. John Lucey (EPA) and Conor Kelleher (Bats Ireland) supplied much useful information and their help is acknowledged with thanks.

2. DESCRIPTION OF AREA

The Awbeg is a shallow limestone river where it flows beside the town, about 5-6m wide and less than 1m deep for the most part. There was formerly a dam at the corn mill which formed a mill pond of the river but this is now dry and the river has returned to its original course below the Franciscan Abbey. The river gradient is flat so that the low water speed allows vegetation to grow out from the banks into the channel. The river does rise during flood events to fill the floodplain and recreate the outline of the old mill pond.

The study area runs from old gardens at the northern end (the back of the Main Street houses), past the Abbey which has a grassy bank, to the boundaries of the present mill in the south. It thus includes one or two old buildings on the floodplain which are reached by laneway from the southern end.

2.1 Flora and Habitats

There are four distinct types of habitat on the site though they obviously grade into each other. The central feature is the Awbeg, a nutrient-rich and depositing river, with scattered willows on the banks which spread onto the banks where grazing pressure allows them. The river is well defined, especially on the western side and the soil of the floodplain is relatively dry and firm. Currently it is grazed grassland but it would be covered by tall herb and grass growth if left without horses. To the north and south the vegetation is taller as grazing is more sporadic. The habitat here also contains a number of alien plants which have either been thrown out of cultivation or introduced with general dumping. Lastly the Abbey provides old stone walls and a dry slope on the side of the valley.

The river contains a few fully aquatic plants such as the pondweeds *Potamogeton natans* and *P.densus*, water milfoil *Myriophyllum spicatum* and water starwort *Callitriche stagnalis*. It is edged with large plants tolerant of water flow such as common clubrush *Schoenoplectus lacustris*, bur reed *Sparganium erectum*, reed canary grass *Phalaris arundinacea* and flowering rush *Butomus umbellatus* with the water dropwort *Oenanthe aquatica*, a summer presence (Photo 1). At the edges there is shelter for smaller species, including

Berula erecta	lesser water parsnip
Apium nodiflorum	fool's watercress
Rorippa nasturtium-aquatica	watercress
Myosotis scorpioides	water forget-me-not
Mentha aquatica	water mint
Veronica catenata	pink water speedwell
Ranunculus sceleratus	celery-leaved buttercup
Lythrum salicaria	purple loosestrife

The osier *Salix viminalis* is the common willow on and near the banks at each end of the site though there is also some grey willow *S.cinerea*. A little red-osier dogwood *Cornus sericea* occurs at the southern end close to the mill. This is an introduced species that can spread along rivers and shade out most of the native flora. Scrambling on the trees is hedge bindweed *Calystegia sepium* or bittersweet *Solanum dulcamara* while wild angelica *Angelica sylvestris* is also frequent.

Away from the bank the ground rises onto the floodplain, a level area of nutrient-rich, silty soil (Photo 2). In the centre of the site – and also on the eastern bank – grasses predominate with creeping bent *Agrostis stolonifera*, meadow foxtail *Alopecurus pratensis*, false oat *Arrhenatherum elatius*, scutch *Elytrigia repens* and patches of reed canary grass *Phalaris arundinacea*. Broad-leaved species here include creeping thistle *Cirsium arvense*, broad-leaved dock *Rumex obtusifolius*, nettle *Urtica dioica*, ragwort *Senecio jacobaea*, creeping buttercup *Ranunculus repens*, amphibious bistort *Persicaria amphibia* and again, some bindweed *Calystegia sepium*. The eastern side is grazed more regularly but there are also lines of trees, especially of white willow *Salix alba*, one of which dominates the riverside Photo 3).

The overgrown parts of the floodplain have many of the same species as the ground that is grazed but to the north (Photo 4) these are augmented by large clumps of horseradish *Armoracia rusticana* and traveller's joy *Clematis vitalba*, as well as meadowsweet *Filipendula ulmaria*, marsh woundwort *Stachys palustris* and prickly sow thistle *Sonchus asper*. South of School Lane the native flora is better developed with hoary willowherb *Epilobium parviflorum*, wintercress *Barbarea vulgaris*, Yorkshire fog *Holcus lanatus*, cow parsley *Anthriscus sylvestris*, spear thistle *Cirsium vulgare* and ryegrass *Lolium perenne*. However there are many introduced species (Photo 5).

Symphytum x *uplandicum*	comfrey
Chamerion angustifolium	rose-bay
Conium maculatum	hemlock
Dipsacus fullonum	teasel
Aegopodium podagraria	ground elder
Petasites fragrans	winter heliotrope

The Abbey is an old stone building on the valley side with foundations extending down the slope. Much overgrown with wall pellitory *Parietaria judaica* and mosses, and in a few places by the small ferns polypody *Polypodium interjectum*, rustyback *Ceterach officinarum* and the spleenworts *Asplenium trichomanes* and *A.ruta-muraria*, it also provides a habitat for

Geranium robertianum	herb robert
Anisantha sterilis	barren brome
Umbilicus rupestris	wall pennywort
Malva sylvestris	common mallow
Vulpia bromoides	squirrel-tail fescue
Catapodium rigidum	hard grass
Verbascum thapsus	mullein

The grassy slope beside the Abbey (Photo 6) is characterised by field bindweed *Convolvulus arvensis* and black medick *Medicago lupulina* growing in a sward of false oat *Arrhenatherum elatius*, white clover *Trifolium repens* and field horsetail *Equisetum arvense*. Other weedy species occur on the platform above such as soft cranesbill *Geranium molle*, smooth sow thistle *Sonchus oleraceus*, petty spurge *Euphorbia peplus* and groundsel *Senecio vulgaris*. There is also a plant of the garden lady's mantle *Alchemilla mollis*.

2.2. Fauna

The larger river fauna includes salmon, brown trout, minnow, stickleback and freshwater crayfish. At the lower end of the river eel and stone loach are also recorded (Southern Regional Fisheries Board) so may occur at Buttevant. All of these are potential food for the otter, an animal seen on both the evening and daytime visits.

Water quality is moderate (Q 3-4) and this is a slight improvement over recent years (John Lucey). The invertebrates are limited in diversity but with some very numerous organisms. A few mayfly species occur, together with cased caddisflies, water shrimps *Gammarus* sp. and the hog louse *Asellus aquaticus*. Midge larvae (chironomids and ceratopogonids) are numerous and must be one of the major foods for swallows and sand martins by day and for bats at night. The evening visit produced high numbers of both common and soprano pipistrelle bats and up to 20 animals could be seen in the air at one time. Two centres of activity were the willow tree opposite the Abbey and the old bridge. Daubenton's bat skims food off the water surface, usually later in the evening while the Leisler's bat would also be expected. Downstream on the Awbeg at Cahermee Bridge a larger number of species occur (Conor Kelleher) with additional woodland bats such as Natterer's, whiskered and brown long-eared. Some of these may occur sporadically at Buttevant also.

Lampreys are a feature of the Blackwater system and both the brook/river lamprey and sea lamprey occur in the Awbeg (King & Linnane 2004). The sampling sites for their survey included one just above the town so that both species would move upriver for breeding, past the Abbey. Juvenile lampreys (when they are usually sampled) are impossible to distinguish so are referred to as brook/river though they may be of two species.

The birds seen on the visit are mainly associated with the river. The grey heron, little egret, kingfisher and moorhen were all present while there were two broods of mallard downstream from the old bridge. Grey wagtails also occur and in spring and autumn there are quite likely to be common or green sandpipers on migration. Smaller birds

dependant on trees and bushes were willow warbler, chiffchaff, wren, bullfinch, great tit, blackbird, song thrush, robin, bullfinch, chaffinch and goldfinch.

Noticeable members of the birdlife of the area are the jackdaws (12 prs?) which breed in the Abbey walls and are constantly flying around. There were also two hooded crows and a number of woodpigeons flying over the valley during the site visits.

3. EVALUATION

The Awbeg is of considerable value in an ecological sense. Not only does it run on limestone bedrock for almost its entire length, which is most unusual in County Cork, but it is also undrained (at least here) and therefore in an untouched condition. The quantity of water dropwort growing in the channel is one reflection of this, as is the marginal growth of plants in general. Viewed in the natural landscape of the site with the trees on the far bank they are of decided amenity value.

The whole site covered by this report (the floodplain) is included in the Blackwater River (Cork/Waterford) candidate SAC (Code 2170). The site synopsis is included below stressing the importance of organisms and habitats rare in a European context. The lamprey species, salmon, white-clawed crayfish and otter are such animals.

Some of the rarer plants of the area are water parsnip *Berula erecta* and flowering rush *Butomus umbellatus* (O'Mahony 2009) while the crayfish is the notable animal species. For many years it appeared that this was the only river in Cork with this organism but it has now been found in a different stream near Mallow (John Lucey). The otter is present on most rivers in the country but it was particularly visible on this stretch, while bats were present in large numbers. A roosting site for the common pipistrelle occurs in a house in the Main Street (Conor Kelleher).

4. FUTURE MANAGEMENT

The part of the site below the Abbey is easy to visit today because it has been grazed by horses in the recent past. Without this it would be covered in summer by a high growth (>1m) of grasses and herbs, as occurs to the south towards the mill. This suggests that that mowing of some sort will be required until the site is so visited that trampling will augment or take over its role.

Lawn mowing is unlikely to be practicable and is not desirable in an ecological sense so that mowing by sickle bar mower or strimmer is indicated. In the initial years mowing of clumps of dock and thistle should be done regularly (2-3 weeks) to eliminate these species. Thereafter only paths need be gone over a few times a year. One of the disadvantages of a riverside site is the natural richness of the soil which promotes the growth of agricultural weeds. These are limited by the shade of trees and bushes on a natural riverbank.

Some colonisation of the grassland by willows is likely to occur in un-mown places. This is a process which will increase the feeding value for bats and birds but also can be limited by occasional hand cutting.

It is recommended that the red-osier dogwood be removed during dry weather by cutting the stems and painting the stumps with suitable chemical. This is a 'notifiable activity' under the terms of the Wildlife Act 2000 so should be done in conjunction with the National Parks and Wildlife Service.

References

King. J.J. & Linnane, S.M. 2004. The status and distribution of lamprey and shad in the Slaney and Blackwater SAC's. *Irish Wildlife manual No 14*. NPWS, Dept of Environment, Heritage and Local Government, Dublin.

O'Mahony, T. 2009. *Wildflowers of Cork City and County*. Collins Press, Cork

Photo 1. Awbeg River with bur reed, flowering rush (pink), water dropwort (white) and fool's watercress

Photo 2. Grazed portion of floodplain with abundant creeping thistle. Abbey in distance

Photo 3. Floodplain from Abbey with white willows on east bank

Photo 4. Floodplain behind gardens north of area

Photo 5. Floodplain at southern end with teasel. Poplar tree marks edge of mill site

Photo 6. River from beside Abbey with osiers

Photo 7. Mullein at base of Abbey wall

SITE SYNOPSIS

BLACKWATER RIVER (CORK/WATERFORD) SITE CODE: 002170

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which includes the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site, flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Towns along, but not in the site, include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The Blackwater rises in boggy land of east Kerry , where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeraghs before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

The site is a candidate SAC selected for alluvial wet woodlands, a priority habitat on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter and the plant Killarney Fern.

Wet woodlands are found where river embankments, particularly on the River Bride, have broken down and where the channel edges in the steep-sided valley between Cappoquin and Youghal are subject to daily inundation. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almond-leaved Willow (*Salix alba* and *S. triandra*) with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Grey Willow (*S. cinerea*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort

(*Lycopus europaeus*), Guelder Rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh Marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*). Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Marsh Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*).

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the watertable and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed about with Grey Willows, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*) with locally abundant Starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio palustris*). One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Oak (*Quercus robur*) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive and includes Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Pondweed (*Potamogeton* spp.), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), Water-starwort (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock Water-dropwort, Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*.

The grassland adjacent to the rivers of the site is generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow-flag (*Iris pseudacorus),* Meadow-sweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus* spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech (*Fagus sylvatica*) and a few conifers, and sometimes of Rhododendron (*Rhododendron ponticum*) and Laurel. Oak woodland is well developed on sandstone about Ballinatray, with the acid Oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Greater Woodrush (*Luzula sylvatica*) and Buckler Ferns (*Dryopteris affinis, D. aemula*) occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west but there are many plants of

richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of Oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the Oak on the shallower slopes and here both Rhododendron and Cherry Laurel (*Prunus laurocerasus*) have invaded the woodland.

The Oak wood community in the Lismore and Glenmore valleys is of the classical upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur. Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Greater Woodrush, Bluebell (*Hyacinthoides non-scripta*), Wood Sorrel (*Oxalis acetosella*) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), Buckler Ferns (*D. dilatata, D. aemula*) and Lady Fern (*Athyrium felix-femina*). There are many mosses present and large species such as *Rhytidiadelphus* spp., *Polytrichum formosum, Mnium hornum* and *Dicranum* spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria* spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich with Pignut (*Conopodium majus*), Wild Garlic (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederae*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore (*Acer pseudoplatanus*), Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species, Cherry Laurel, dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix* spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

In places along the upper Bride, scrubby, semi-natural deciduous woodland of Willow, Oak and Rowan occurs with abundant Great Woodrush in the ground flora.

The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*) and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Marsh Orchid (*Dactylorhiza incarnata*).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's Nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and Shield Fern occur. There is some Wild Garlic, Three-nerved Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle in wet places. A Hazel stand at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow (*Salix cinerea* subsp. *oleifoila*) and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site with the best examples at Kinsalebeg in Co. Waterford and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater and large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green algae (filamentous, *Ulva* species and *Enteromorpha* sp.) occur in places, while fucoid algae are common on the more stony flats even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Sea-spurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser - at the edges. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couch-grass (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also

seen. On the Tourig River additional saltmarsh species found include Lavender (*Limoniun* spp.), Sea Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvy-grass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex* spp.) are found on channel edges.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris*), Curled Dock (*Rumex crispus*) and Yellow-horned Poppy (*Glaucium flavum*) occur with at a slightly higher level Sea Mayweed (*Tripleurospermum maritimum*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*). Other species present include Sea Rocket (*Cakile maritima*), Herb Robert (*Geranium robertianum*), Red Fescue (*Festuca rubra*) and Kidney Vetch (*Anthyllis vulneraria*). The top of the spit is more vegetated and includes lichens and bryophytes (including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*).

The site supports several Red Data Book plant species, i.e. Starved Wood Sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis,* Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the Flora (Protection) Order 1999. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion (*Silene dioica*), Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

The site is also important for the presence of several Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl-mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers.

The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by mighty pools, lovely streams, glides and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is very highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, are to be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket, *Metrioptera roselii* (Orthoptera: Tettigoniidae), has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 35, 1994/95-95/96) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater Estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute max. 2141, 1994/95). Staging Terns visit the site annually (Sandwich Tern (>300) and Arctic/Common Tern (>200), average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret now breed at the site (12 pairs in 1997, 19 pairs in 1998) and this represents about 90% of the breeding population in Ireland.

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2752), Teal (average peak 1316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1680), Knot (150), Dunlin (2293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig Estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers - 2 or 3 pairs at Dromana Rock; *c*. 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and *c*. 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in County Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in

some old buildings and in Castlehyde west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it is known to nearby to the south of Youghal. Dipper occurs on the rivers.

Landuse at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively; furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

14.1.2003

Section 3 – THE TOPOGRAPHICAL REPORT

Topographical Survey Report
Buttevant Co. Cork

Prepared by Oscar Ryan
for Eamonn Cotter and the Buttevant Heritage Group

June 2010

CONTENTS

1.0 INTRODUCTION

A pre-disturbance Topographical Survey was carried out in the town of Buttevant, Co. Cork as part of a proposed community development project. The object of the proposed project is to provide an amenity by way of a park / walk for the community of Buttevant. This survey forms part of Phase 1 of a Three Phase Plan. The Topographical Survey was conducted on Saturday May 29th by Oscar Ryan.

2.0 SURVEY AREA

The survey area was located immediately east of the town of Buttevant in Co. Cork, in an area of waste ground at the rear of the Franciscan Friary, between the Friary and the Awbeg River, adjacent to the Mill. This area is connected directly to the Main St via School Lane and Mill Lane. The total area surveyed was 4110.34sq.m.

3.0 METHOD

The site was surveyed using a Trimble 5800 GPS Unit (VRS) on a grid of 1-1.5 metre intervals. The raw data were then uploaded and processed in Autodesk Civil 3D 2009.

4.0 CONCLUSION

No evidence of any raised banks, uniformity or possible features were identified within the survey area on the 3D surface drawings or on the contour map.

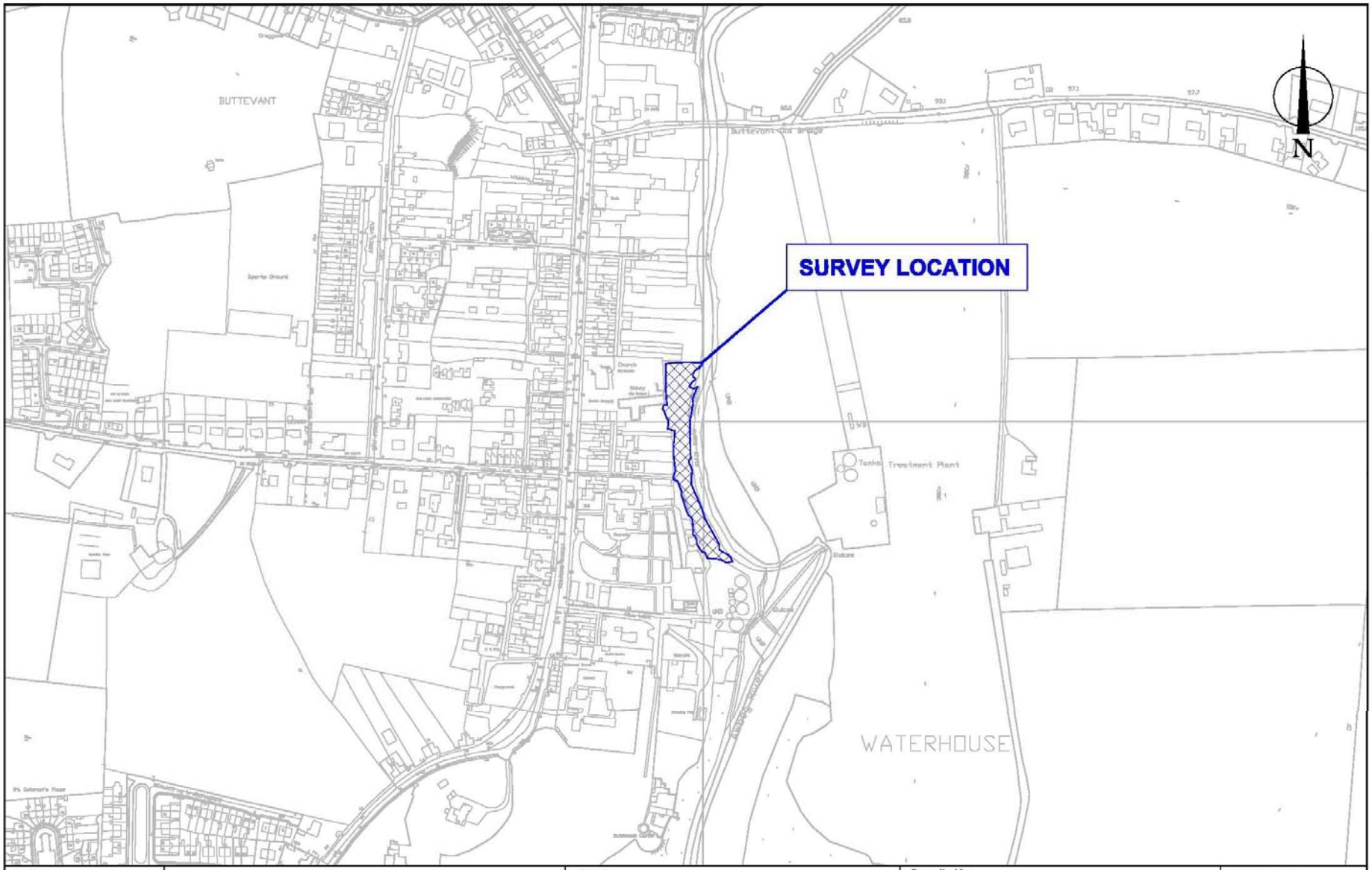
5.0 STATISTICS

GENERAL	VALUE
Revision No	0
No. Of Points	2921
Minimum X Co-ordinate	154358.643m
Minimum Y Co-ordinate	108857.102m
Maximum X Co-ordinate	154426.017m
Maximum Y Co-ordinate	109060.123m
Minimum Level	79.59m
Maximum Level	84.250m
Mean Level	81.389m

EXTENDED	VALUE
2D Suface Area	4045.69sq.m
3D Suface Area	4110.34sq.m
Minimum Gradient/Slope	0.16%

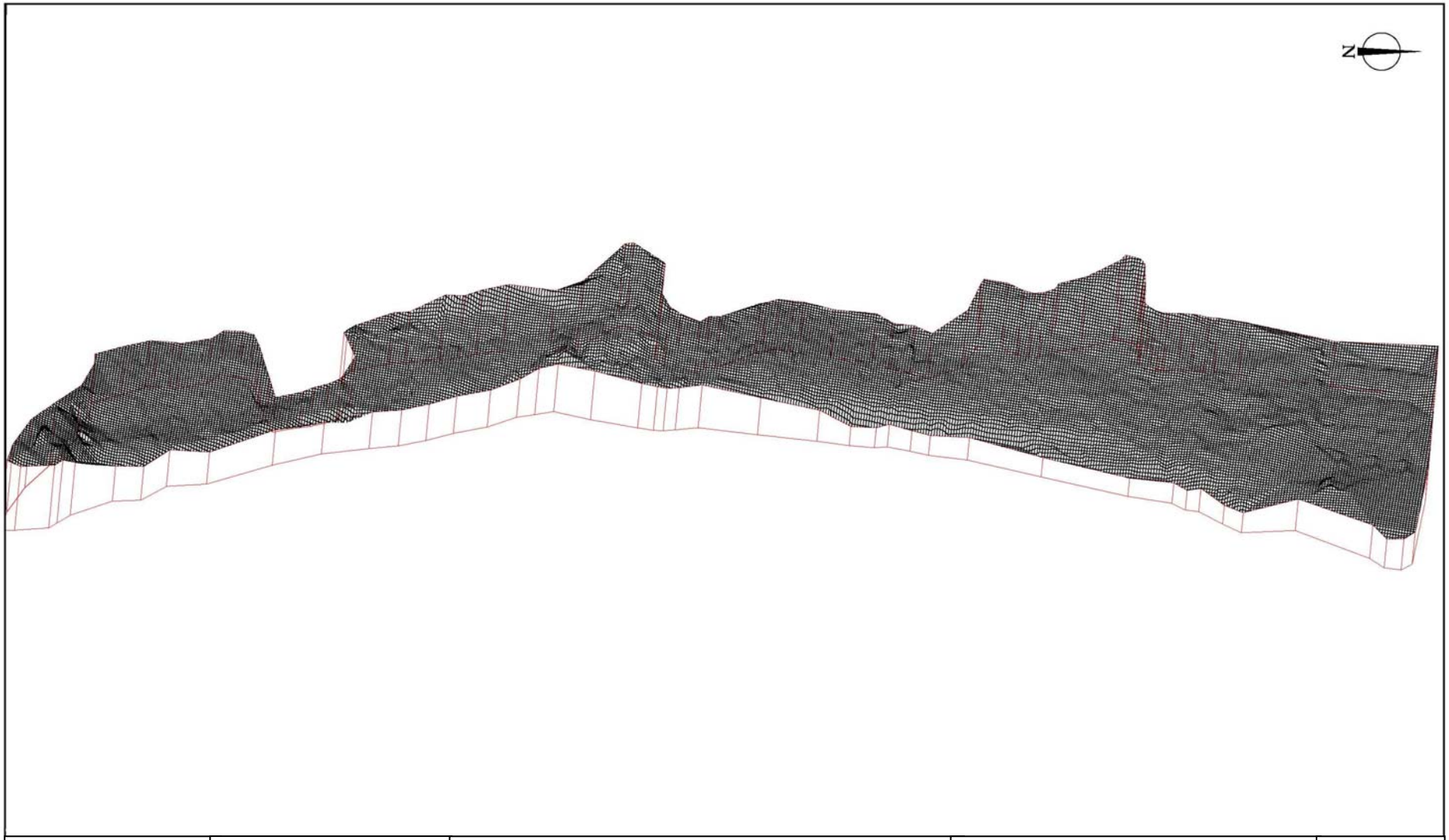
Maximum Gradient/Slope	4565.20%
Mean Gradient/Slope	13.21%

TIN	**VALUE**
Number of Triangles	5708
Maximum Triangle Area	2887sq.m
Minimum Triangle Area	0.0051sq.m
Maximum Triangle Length	14.711m
Minimum Triangle Length	0.017m

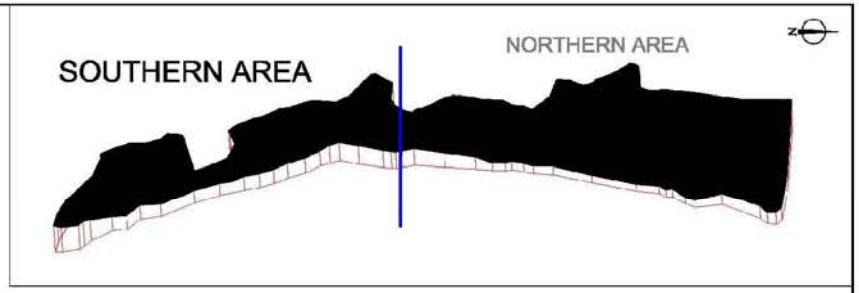


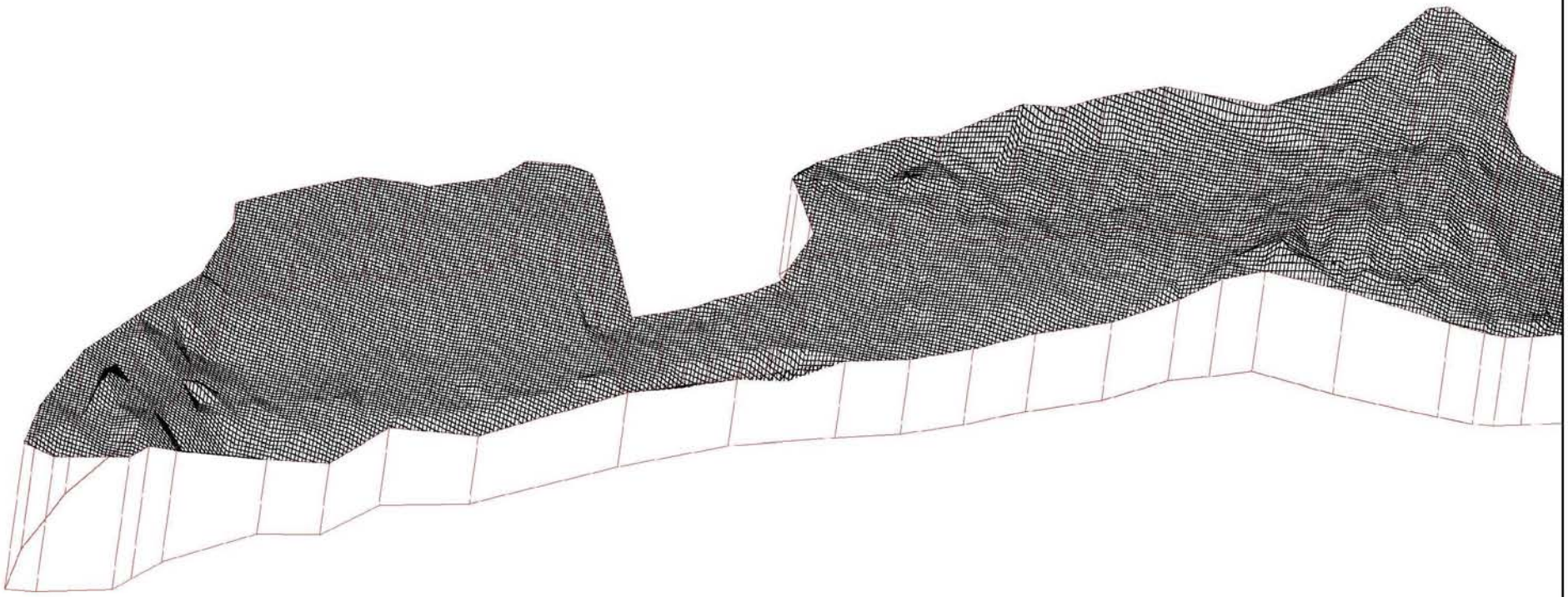
Project	Drawing Title	Client	Compiled by	CAD reference
Topographical Survey, Buttevant, Co. Cork.	**Figure 1**- Location of survey area on OS mapping.	Buttevant Heritage Group	O.Ryan	X-FL/09-001
		Date: June 2010	Compiled for: Eamonn Cotter, Consultant Archaeologist	Scale: 1:5000 @ A4

Project Topographical Survey, Buttevant, Co. Cork.	**Drawing Title** **Figure 2**- Plan of survey area showing general topographical information	**Client** Buttevant Heritage Group **Compiled for** Eamonn Cotter, Consultant Archaeologist	**Notes** SL Spot Level Exclusion Zone Survey Extents Boundary Fence	**Compiled by** O.Ryan **Date** June 2010	**CAD reference** X-FL/09-001 **Scale** 1: 500 @ A3

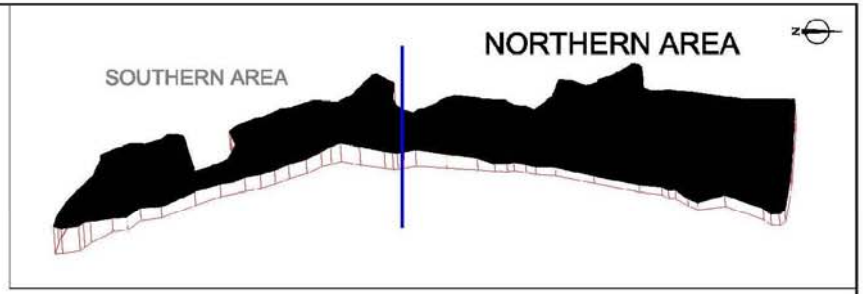


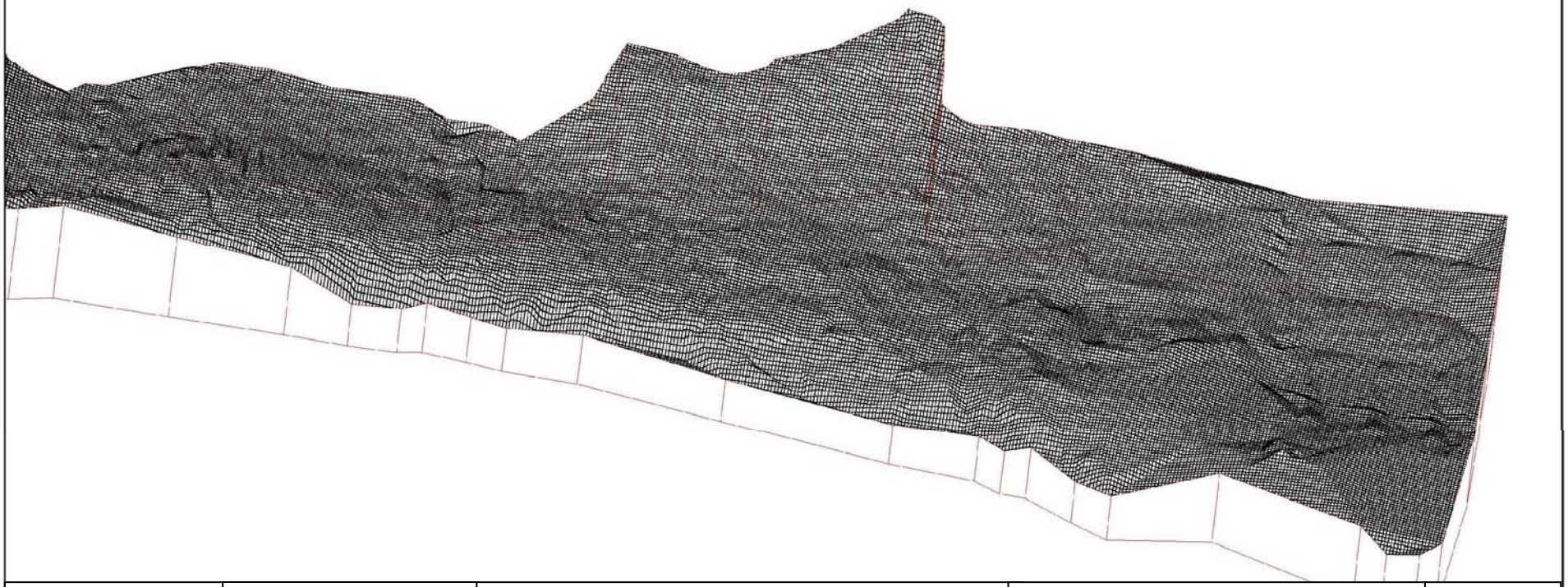
Project	Client	Drawing Title	Compiled by:	Date
Topographical Survey, Buttevant, Co. Cork	Buttevant Heritage Group	**Figure** 3 - 3D view of survey area displaying grid & borders, viewed from the east.	O. Ryan for Eamonn Cotter, Consultant Archaeologist	June 2010 **Scale** Not to scale



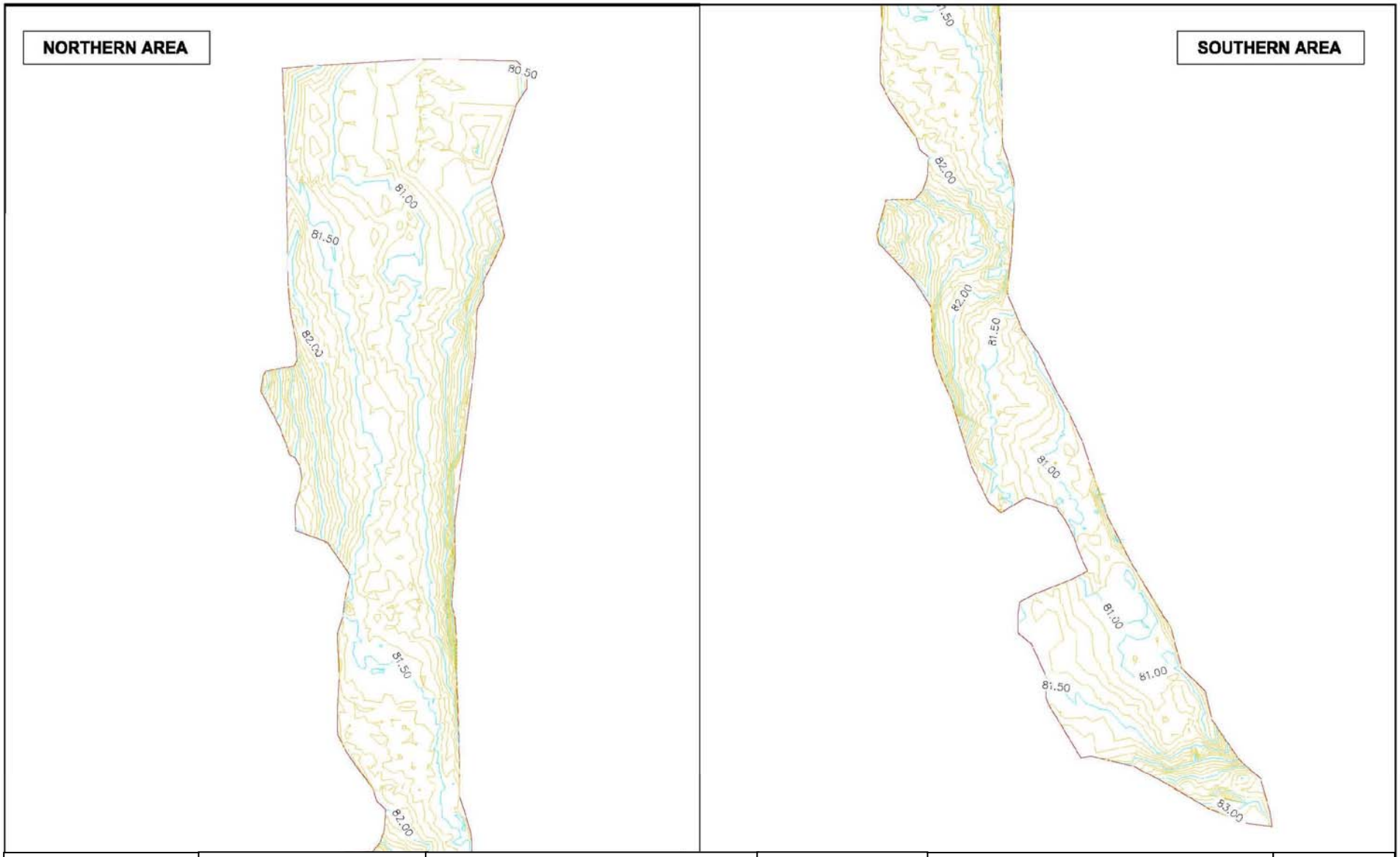


Project	Client	Drawing Title	Compiled by:	Date
Topographical Survey, Buttevant, Co. Cork	Buttevant Heritage Group	**Figure 4** - 3D view of southern half of survey area viewed from the east. Surface exaggeration factor: 2.5	O. Ryan for Eamonn Cotter, Consultant Archaeologist	June 2010 **Scale** Not to scale





Project	Client	Drawing Title	Compiled by:	Date
Topographical Survey, Buttevant, Co. Cork	Buttevant Heritage Group	**Figure 5** - 3D view of northern half of survey area viewed from the east. Surface exaggeration factor: 2.5	O. Ryan for Eamonn Cotter, Consultant Archaeologist	June 2010 **Scale** Not to scale



Project	Client	Drawing Title	Notes	Compiled by:	Date
Topographical Survey, Buttevant, Co. Cork	Buttevant Heritage Group	**Figure 6** – Contour plan of survey area	0.5m Contour 0.1m Contour	O. Ryan for Eamonn Cotter, Consultant Archaeologist	June 2010 **Scale** 1:500 @ A3