

Appendix 17.2 Archaeological Assessment

**ARCHAEOLOGICAL ASSESSMENT
AT
WOODBROOK,
(SHANGANAGH AND CORK LITTLE)
COUNTY DUBLIN**

LICENCE NUMBER: 19E0098

FOR: AEVAL UNLIMITED COMPANY

I.T.M.: 725941/720644

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ABSTRACT

Irish Archaeological Consultancy Ltd has prepared this report on behalf of Aeval Unlimited Company, to study the impact, if any, on the archaeological and historical resource of proposed residential development at Woodbrook, Shankill, Co. Dublin which is within the townlands of Cork Little and Shanganagh (ITM 725941/720644). The report was undertaken by Liza Kavanagh of IAC Ltd under licence 19E0098. It follows a previous geophysics report carried out by John Nicholls of Target Archaeological Geophysics in March 2019.

Archaeological testing was carried from 17th to the 30th of April 2019 using a mechanical excavator fitted with a flat grading bucket. The trenches targeted, geophysical anomalies and open green space to fully investigate the archaeological potential of the site. Testing revealed 17 areas of archaeological potential, which have been designated as Archaeological Areas (AA) 1-17 for the purposes of this report.

Phase 1 of the current development involves the construction of c. 400 dwellings (both houses and apartments) as well as road infrastructure, services and landscaping. Ground disturbances associated with the proposed development will result in a direct and negative impact on the following sites:

- AA 1 (Bronze Age enclosure)
- AA 3 (two ring ditches and associated features)
- AA 4 (linear and pit features)
- AA 5 (multiple pit features)
- AA 6, AA 7 and AA 8 (multiple pit features)
- AA 10, AA 11 and AA 14 (single pit or hearth features)
- AA 15 (hearth)
- AA 17 (historic well and associated drainage features)

Preservation in-situ is considered to be the most appropriate manner in which to ensure the conservation of archaeological remains. However, it is not possible to avoid impacts on sites AA 1, AA 3-8, AA 10-11, AA 14-15 and AA 17, due to the requirements of the design layout. As such, it is recommended that the archaeological sites be preserved by record (archaeological excavation), prior to construction taking place. This should be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the DoCHG and the National Museum of Ireland.

Phase 1 of the golf course development within the area to the east of the railway will see extensive ground disturbances associated with the proposed landscaping. Ground disturbances associated with the proposed development will result in a direct and negative impact on the following sites:

- AA 2 (possible bivallate enclosure with burial)
- AA 16 (pit)

it is not possible to avoid impacts on sites AA 2 and AA 16 as part of the golf course development due to the landscaping requirements. As such and in order to ameliorate negative impacts, the archaeological sites within the development area will be preserved by record (archaeological excavation), prior to construction taking place. This will be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the DoCHG and the National Museum of Ireland.

AA 9 (linear features), AA 12 and AA 13 (isolated pit features) are all located in Phase 2 of the development lands, which will form part of a Phase 2 application. The impact of the development on these areas will be reported on as part of any future Phase 2 application.

There may be an adverse impact on previously unrecorded archaeological feature or deposits that have the potential to survive beneath the current ground level outside of the footprint of the excavated test trenches. This will be caused by ground disturbances associated with the proposed development. It is therefore recommended that all topsoil stripping associated with the proposed development be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation *in-situ* or by record. Any further mitigation will require approval from the National Monuments Service of the DoCHG.

CONTENTS

ABSTRACT	I
CONTENTS	III
List of Figures	iv
List of Plates	iv
1 INTRODUCTION.....	1
1.1 General.....	1
1.2 The Development	1
2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND	2
2.1 Background	2
2.2 Summary of Previous Archaeological Fieldwork.....	8
2.3 Cartographic Analysis	9
2.4 Summary of GEOPHYSICAL Results.....	10
3 ARCHAEOLOGICAL TESTING	11
3.1 General.....	11
3.2 Testing Results	11
3.3 Summary of Preliminary Osteological Analysis	17
3.4 Conclusions.....	18
4 IMPACT ASSESSMENT AND MITIGATION STRATEGY.....	21
4.1 Impact Assessment.....	21
4.2 Mitigation.....	22
5 REFERENCES.....	23
APPENDICES.....	I
Appendix 1 Trench Results	i
Appendix 2 Contexts	x
Appendix 3 RMP Sites within the Surrounding Area	xvi
Appendix 4 Stray Finds within the Surrounding Area	xviii
Appendix 5 Legislation Protecting the archaeological Resource.....	xix
Appendix 6 Impact Assessment & the Cultural Heritage Resource	xxii
Appendix 7 Mitigation Measures & the Cultural Heritage Resource	xxiv

FIGURES

PLATES

LIST OF FIGURES

- Figure 1 Site location showing test-trench location
Figure 2 Plan of proposed development
Figure 3 Extract from RMP showing nearby archaeological sites
Figure 4 Extract from the first edition 6-inch OS map (1836) showing the proposed development area
Figure 5 Detail plan of test trenches and archaeological areas - M1 (north) and M3
Figure 6 Detail plan of test trenches and archaeological areas - M1 (south), M2 and M4-M6
Figure 7 Detail plan of test trenches and archaeological areas - M7 and M8

LIST OF PLATES

- Plate 1 Sk. 1 Skull in Ditch C94, facing south
Plate 2 Bone disturbed during investigation of slot trench in C94
Plate 3 T1 overview, facing east
Plate 4 T36 Overview, facing west-northwest
Plate 5 T100 Hand Excavated 1m x 1m slot, facing west
Plate 6 T65 Overview, facing north
Plate 7 AA 1 Ditch C107 in T96, facing northwest
Plate 8 AA 1 Pit C75 in T58, facing north
Plate 9 AA 1 Pit C111 in T97, facing north
Plate 10 AA 2 Ditch C97 in T85, facing northwest
Plate 11 AA 2 Ditch C94 in T84, facing north-northeast
Plate 12 AA 2 Linear feature C91 in T83 facing south-southeast
Plate 13 AA 3 Ditch C36 in T34, facing east-southeast
Plate 14 AA 3 Ditch C39 in T35, facing north
Plate 15 AA 3 Linear features C49 and C50 in T40, facing north
Plate 16 AA 4 Ditch C33 in T32, facing north
Plate 17 AA 4 Pit C59 in T41, facing north
Plate 18 AA 5 Pit C3 in T2, facing south
Plate 19 AA 6 Linear C13 and Pit C15 in T22, facing west
Plate 20 AA 7 Pit C27 in T28, facing south-southeast
Plate 21 AA 9 Ditch C83 in T60, facing south
Plate 22 AA 10 Pit C21 in T23, facing southeast
Plate 23 AA 11 Pit C65 in T44, facing north
Plate 24 AA 12 Pit C71 in T56, facing southeast
Plate 25 AA 14 Pit C31 in T30, facing north
Plate 26 AA 15 Possible Hearth C87 in T67, facing northwest
Plate 27 AA 16 Pit C103 in T90, facing southeast
Plate 28 AA 17 Well C11 in T6, facing southeast
Plate 29 AA 17 Backfilled well C12 in T6, facing northwest
Plate 30 AA 17 Ditch C7 in T5, facing southeast

1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken at Woodbrook (Shanganagh and Cork Little), Shankill, Co. Dublin, prior to a proposed residential development. This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the proposed development area. The assessment (Licence Ref.: 19E0098) was undertaken by Liza Kavanagh of Irish Archaeological Consultancy Ltd (IAC), on behalf of Aeval Unlimited Company.

Test trenching was carried out between 17th to the 30th of April 2019. This was carried out using a 13 tonne 360 degree tracked excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of 103 trenches were mechanically investigated across the test area which measured 4766 linear metres. Of these a total of 50 linear meters were investigated by hand-dug trenches. This assessment follows on from a geophysical survey carried out by John Nicholls of Target Archaeological Geophysics in March 2019 (18R0223). Both the geophysical survey and programme of testing has been carried out to inform an archaeological EIAR chapter.

The results of the geophysical survey highlighted the location of a circular enclosure (AA 1), a partial possible bivallate enclosure (AA 2) and two ring-ditches (AA 3). It also recorded further anomalies of potential interest including zones of increased responses and discrete anomalies indicating a possible early field system (not extant). The archaeological potential of these small-scale positives was investigated as part of test trenching works. Many of these responses corresponded with areas of archaeological potential but some had a natural soil/geological, recent landuse or modern ferrous origin.

A total of 17 Archaeological Areas were identified during archaeological testing. This includes a Bronze Age enclosure (32m in diameter); a possible early medieval enclosure containing the remains of an adult male inhumation; two small ring ditch enclosures; at least 12 linear features; a total of 25 pits and a red-brick well with associated drainage.

1.2 THE DEVELOPMENT

Phase 1 of the development consists of c. 400 dwellings, a main spine road, open spaces and site development and landscape works on c. 10ha. Further phases will incorporate the entire Woodbrook site, c. 21ha, and comprise c. 1,320 residential units and all associated infrastructures and services (Figure 2).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 BACKGROUND

The proposed development area is located at Woodbrook, Shankill, Co. Dublin in the southern portion of the Woodbrook – Shanganagh LAP, within the townlands of Cork Little and Shanganagh. These townlands are located in the parish of Oldconnaught and Rathmichael and the barony of Rathdown. The DART line separates the development area into two portions. The eastern portion is comprised of two fields, that are currently located in Shanganagh Park, which is bordered by Woodbrook Golf Club to the south and east. The townland boundary between Cork Little and Shanganagh forms the southern boundary. The western boundary is formed by the DART line.

The western section of the development area is comprised of open fields (and associated pipeline wayleave). The park and Shanganagh Cemetery border this portion of the development to the north and west. The remainder of the western boundary is formed by the Dublin Road, which is also the townland boundary between Aske and Cork Little. The townland boundary between Cork Little and Shanganagh traverses east-northeast to west-southwest through the upper limits of the western half of the development. The golf club lies to the immediate east and to the immediate south are the demesne landscapes of Corke Lodge and Woodbrook House.

2.1.1 Prehistoric Period

Mesolithic Period (c. 7000–4000BC)

The Mesolithic Period is the earliest time from which there is clear evidence for prehistoric activity in Ireland. During this period people hunted, foraged and gathered food and appear to have had a mobile lifestyle. The most common evidence found to show the presence of Mesolithic communities at a site are scatters of worked flint material, a by-product from the production of flint implements.

The current archaeological evidence suggests that south County Dublin was inhabited by the end of the Mesolithic period, although much of the artefactual and monumental evidence has been eliminated by a combination of the growth of the built-up area and coastal erosion (Stout and Stout 1992, 5). At this time people made crude flint tools known as Larnian Flakes. Small numbers of these flakes have been found at Dalkey Island, Dun Laoghaire and Rathfarnham and may indicate small-scale transient settlement along the riverbanks and seashores (Corlett 1999, 10). The earliest evidence comes from middens, which contain material relating to the manufacture of stone tools and the collection of coastal resources such as shellfish, fish and birds (Liversage 1968, 144).

Neolithic Period (c. 4000–2500BC)

During the Neolithic period communities became less mobile and their economy became concentrated on the rearing of stock and cereal cultivation. This transition

was accompanied by major social change. Agriculture demanded an altering of the physical landscape, forests were rapidly cleared and field boundaries constructed. There was a greater concern for territory, which saw the construction of large communal ritual monuments called megalithic tombs, which are characteristic of the period. The most common type of megalithic tomb within the Rathdown area is the portal tomb. The earliest indicators of human occupation in the immediate vicinity of the proposed development consists of a Neolithic tomb in the townland of Shankill (DU026-132), c. 1.95km to the west.

Bronze Age Period (c. 2500–500BC)

The Bronze Age was marked by the widespread use of metal for the first time in Ireland. As with the transition from Mesolithic to Neolithic the transition into the early Bronze Age was accompanied by significant social change. Megalithic tombs were no longer constructed and the burial of the individual became typical. Cremated or inhumed bodies were often placed in a cist, which is a small stone box set into the ground or a stone lined grave. These were often accompanied by pottery. A number of burials were identified in the Dun Laoghaire Rathdown area in the 19th and 20th centuries, which may date to this period. Isolated stone-lined burials were noted during drainage works in Dalkey and two cist burials, possibly of Bronze Age date were identified at Stillorgan Park (NMI 1955:42-73) and Cabinteely (NMI R2454.1-3).

The most common Bronze Age site within the archaeological record is the burnt mound or *fulacht fiadh*. Over 4500 *fulachta fiadh* have been recorded in the country making them the most common prehistoric monument in Ireland (Waddell, 1998, 174). Although burnt mounds of shattered stone and charcoal-rich soil occur as a result of various activities that have been practiced from the Mesolithic to the present day, those noted in close proximity to a trough are generally interpreted as Bronze Age cooking/industrial sites. *Fulachta fiadh* generally consist of a low mound of burnt stone, commonly in horseshoe shape, and are found in low lying marshy areas or close to streams or rivers. Often these sites have been ploughed out and survive as a spread of heat shattered stones in charcoal-rich soil with no surface expression in close proximity to a trough. Much debate exists as to the function of these monuments. Current hypotheses range from transient cooking sites to more semi-permanent activities including textile dyeing or beer production. The closest example of a *fulacht fiadh* was uncovered in the townland of Shanganagh (DU026-116) by Paddy Healy located c. 470m to the north of the proposed development.

Human activity in the vicinity of the proposed scheme during the Bronze Age is also attested to by the site of 'Toole's Moat' in the townland of Oldconnaught (DU026-067) located c. 375m to the southwest of the proposed development. Excavations in advance of the Shankill-Bray By-Pass necessitated excavation of the site. Quarrying in the 1800s discovered archaeological material at the site and the remains of seven skeletons and associated bronze fibulae were recovered. Large-scale quarrying in the 1950s appears to have almost totally removed what would have been the original structure and the only feature uncovered was what appeared to be a portion of a post medieval ditch.

Iron Age Period (c. 500BC – AD500)

There is increasing evidence for Iron Age settlement and activity in recent years as a result of development-led excavations as well as projects such as LIARI (Late Iron Age and Roman Ireland). Yet, this period is distinguished from the rather rich remains of preceding Bronze Age and subsequent early medieval period by a relative paucity of evidence for material culture in Ireland. The Iron Age had traditionally been associated with the arrival of the Celts and the Celtic language in Ireland. The Celts were an Indo-European group who are thought to have originated probably in east-central Europe in the 2nd millennium BC. They were among the earliest to develop an Iron Age culture, as has been found at Hallstatt, Austria (c. 700BC).

The available evidence suggests that large defensive structures and earthworks known as promontory or hill forts were characteristic of the period. The former is a banked and ditched structure located above a steep cliff or bluff and often found in coastal areas. The hill fort or hill top enclosures are very interesting in that they are almost always multi-period. As a result, their dating is problematic but there appears to be some consensus that their peak use and greatest extents are dated to the Iron Age (Raftery 1994). There is no known evidence of Iron Age activity in the vicinity of the proposed development.

Early Medieval Period (AD500–1100)

The early medieval period is depicted in the surviving sources as entirely rural characterised by the basic territorial unit known as *túath*. Byrne (1973) estimates that there were probably at least 150 kings in Ireland at any given time during this period, each ruling over his own *túath*. During this sometimes-violent period, roughly circular defensive enclosures known as ringforts were constructed to protect farmsteads. Although most of the ringforts that have been excavated are shown to date to this period, some have earlier origins and may have been originally constructed during the Iron Age, or even earlier.

The Rathdown area was well-populated during this period with a large number of ecclesiastical centres established in the area (Rathmichael, Tully, Shankill and Kilternan) and close proximity to the coastal resource. It is therefore surprising that there is not greater evidence for settlement in the form of ringforts within the area, the closest example is c. 2.4km to the west (DU026-053). It is possible that there was no need for a large number of defended settlements within the area as Rathdown was out of reach of the constant attention of the Kings of Meath to the north of Dublin city and the Kings of Leinster to the west of the Wicklow Mountains. It is also possible that many of the sites were removed during the medieval period, when the arrival of the Anglo-Normans and their new techniques of warfare rendered the ringfort obsolete (Corlett 1999, 53).

In the early medieval period south Dublin and adjoining areas of north Wicklow formed part of the territory of *Cualu*, which was controlled by the *Dál Messin Corb*, a former royal family of *Laigin*. Following their loss of power, they withdrew over the mountains to the coast around Arklow and the *Uí Théig* became the leading tribe in the area. In the 8th century the *Uí Théig* were replaced by a branch of the *Uí Briúin*

family lending the name *Uí Briúin Chualann* to the territory now known as Rathdown (Corlett 1999, 35). During the early medieval period powerful ecclesiastic and secular settlements expanded and a mosaic of kingdoms formed across the country. The *Mac Turcaill* dynasty controlled large tracts of land at this time, including lands in *Uí Briúin Cualann* stretching south from Tully to the Dargle River in Bray (Murphy and Potterton 2010, 88). It was at this time that important ecclesiastical centres were being founded across the country.

The early medieval period saw the introduction of Christianity to Ireland and with it the arrival of churches into the Irish landscape. Early medieval ecclesiastical enclosures are recorded at Shanganagh (DU026-054001-4), c. 550m to the north-northwest and Cork Great (DU026-068-9), c. 610m to the south of the development.

The remains of the early medieval ecclesiastical complex at Shanganagh lie within the boundary of the Shanganagh demesne. It is possible that the site, known as Killtuck, was dedicated to *Toca mAeda mSenaic* brother of *Crimthann Cualann*, King of Leinster who died in the early 7th century (Corlett 1999, 137). A considerable portion of the walls of the church were standing along with another small square structure when the site was visited in the 19th century by Eugene O'Curry of the Ordnance Survey (Ball 1902, 119). Today the remains of the church consist of the foundations of a small stone building measuring 10.6m by 5.49m. A number of stone monuments identified at the site have since been relocated. One, a small stone cross, is located in the grounds of St. Ann's Church in Shankill while another cross is located beside a lane in Rathmichael (Corlett 1999, 137). A rectangular enclosure, visible on a vertical aerial photograph, once surrounded the site.

The site of Cork Abbey is recorded by O'Curry of the Ordnance Survey as another possible early medieval foundation. He suggested that the monastery may have been founded by St. Curcagh of the *Cill Curcaighe* whose festival is celebrated on 21 July and that a burial place was uncovered nearby (Ball 1902-1920). The construction of Cork Abbey house in the 18th century has erased any upstanding early medieval remains from the site. The house itself was demolished in the mid-20th century and lends its name to a modern housing estate constructed on the site. A holy well known as the Abbey well is marked in the grounds of Cork Abbey on Duncan's map of 1821 and the first edition Ordnance Survey map, 1843.

Medieval Period (AD1100–1600)

The beginning of the medieval period was characterised by political unrest that originated from the death of Brian Borumha in 1014 at the Battle of Clontarf. *Diarmait MacMurchadha*, deposed King of Leinster, sought the support of mercenaries from England, Wales and Flanders to assist him in his challenge for kingship. Norman involvement in Ireland began in 1169, when Richard de Clare and his followers landed in Wexford to support *MacMurchadha*. Two years later de Clare (Strongbow) inherited the Kingdom of Leinster and by the end of the 12th century the Normans had succeeded in conquering much of the country (Stout and Stout 1997, 53).

The arrival of the Anglo-Normans and ensuing social upheaval led to the significant changes in land ownership and settlement. Much of Rathdown was granted to Walter de Ridelesford before 1176 by Strongbow, however it appears that Henry II took back some of these lands though as he wanted to keep much of Dublin and its surroundings to himself. A large part of Rathdown then became part of the royal estate of Obrun. This estate included parts of Ballycorus, Kilternan, Powerscourt and Corke (Murphy and Potterton 2010, 85). The greatest landowner within the region under the Norman regime was the Archbishop of Dublin, who retained those lands owned since before the invasion, including Dalkey, Rathmichael and Shankill. A portion of the district of Shanganagh, then known as Rathsalchan and Kiltuck, belonged to the Priory of the Holy Trinity (Ball 1902, 117). Another portion of the land, known as the seigniorship of Shanganagh, belonged to the Vicars-Choral of St. Patrick's Cathedral. The lands of Cork, extending from Little Bray to Shanganagh, were held by Fulk de Cantilupe. The lands were subsequently leased to the Priory of the Holy Trinity. Towards the close of the 13th century they were held under the Crown by Geoffrey de Lysenham and were occupied by the Belinges family (Ball 1902, 119).

By end of the 13th century many of the English settlers had withdrawn on account of the war in Scotland. The Irish tribes took advantage of this and carried out many raids on those that remained. During the course of the Scottish invasion under Edward Bruce during 1315-1317, Irish tribes occupied many outlying districts in County Dublin with the remainder being uncultivated and laid to waste. Towards the middle of the 14th century steps were made to restrict the military capacity of the Irish tribes and to protect the remaining area of Anglo-Norman influence. A military garrison was stationed at Bray and the lands in the area were re-invested with new tenants including the Lawless and Walsh families who remained in the area for many centuries.

There are a large number of fortified buildings within the Rathdown area and this was in part due to the presence of the Pale. The Pale was defined as a hinterland around the centre of Anglo-Norman rule based in Dublin. During the 15th century the 'Subsidised Castles Act' provided grants of ten pounds to encourage the construction of castles to defend the Pale against the native Irish. The partial remains of a tower house survive c. 1.9km to the north of the proposed development in the Shanganagh townland (DU026-031001). The tower house, Shanganagh Castle, was constructed in 1408 by Thomas Lawless but by the mid-15th century the family had, as elsewhere in the surrounding area, been supplanted by a member of the Walsh family. The structure was constructed of granite and remains of battlements and a wall-walk are visible on the northwest side (Turner 1983, no. 63).

The Pale defences were also strengthened during this period, by the construction of earthen banks and ditches. In 1494 an act of parliament required landowners to construct a line of defences along the borders of the Pale. The remains of a linear earthwork (DU026-124 and WI004-005), possibly a section of the Pale defences, are located on the site of the present county boundary, which runs through the Old Bray Golf Club, c. 885-895m to the south. Its appearance is similar to sections of the earthwork recorded elsewhere in the county. The earthwork is strategically located at

the summit of a natural rise in the ground level which may represent the edge of the former valley of the Dargle River. The line of the earthwork is depicted on the first edition Ordnance Survey map, 1843 as a tree-lined path and forms part of the townland boundary between Ravenswell and Cork Great.

Post medieval Period (AD1600-1900)

The Civil Survey of 1654-56 (Simington 1945) was the first relatively comprehensive survey of land ownership in Ireland - dating from the Cromwellian confiscation of land after the rebellion of 1641 and the subsequent civil war. It can also include brief descriptions of major buildings such as castles, churches or mills. In 1641 the survey records John Walsh as the landowner of Shanganagh and James Walsh as the owner of the townlands Cork (Cork Great and Cork Little), 'Connagh' (Old Connaught) and a portion of 'litle Brey' (Little Bray); however, by 1670 John Walsh owned them all.

Even with the turmoil of the English civil war and arrival of Cromwell in Ireland, the population of southeast Dublin and northeast Wicklow prospered. The 17th century saw dramatic rise in the establishment of large residential houses around the country. The large country house was only a small part of the overall estate of a large landowner and provided a base to manage often large areas of land that could be located nationwide. Lands associated with the large houses were generally turned over to formal gardens, which were much the style of continental Europe. Gradually this style of formal avenues and geometric gardens designs was replaced during the mid-18th century by the adoption of parkland or demesne landscapes – which enabled the viewing of a large house within a designed 'natural' setting. Although the creation of a parkland landscape involved working with nature, rather than against it, considerable constructional effort went into their creation. Earth was moved, field boundaries disappeared, streams were diverted to form lakes and quite often roads were completely diverted to avoid travelling anywhere near the main house or across the estate.

A number of large houses and demesne landscapes once surrounded the area containing the proposed development. These included Woodbrook House, Corke Lodge, The Orchard, Beauchamp House, Wilford House, Shanganagh Castle, St. James Parsonage/Askefield House, The Aske and Cuilin. These buildings were accompanied by naturalised demesne landscapes, some of which today have become substantially denuded due to suburban residential development. The best-preserved building and landscape within the vicinity of the proposed development area is Woodbrook House and demesne, located to the immediate south of the proposed development.

In 1793 the newly established French Republic was at war with Great Britain and a number of other continental countries (Kerrigan 1974a, 107). In 1803 an Act of Parliament was passed to allow for the acquisition of land for coastal defences in Britain and Ireland (Kerrigan 1974b, 148). A total of 27 Martello towers were constructed between Bray in County Wicklow to Balbriggan in north County Dublin to protect the city and Dublin Bay from a possible French landing (Kerrigan 1974b, 148). There are two Martello towers recorded in the wider area at Cork Great (DU026-070), c. 700m to the south-southeast and Shanganagh (DU026-055), c. 640m to the north-

northeast. The towers along with their defensive batteries are depicted on John Taylor's Map of the Environs of Dublin, 1816 and on the first edition Ordnance Survey map (1836). The towers at Cork Great and Shanganagh are no longer extant and are likely to have been lost as a result of coastal erosion. A pair of earthen tree-lined banks running northwest to southeast through the green field area to the west of Shanganagh Cliffs Estate represented the remains of a path known as "Battery Wood" (Turner 1983). The path leads to a battery, the location of which was ill-chosen as it was to the rear of some rising ground and did not command a view of the shore (Joyce 1912, 62). The dwelling, which accommodated the garrison, was still standing in the early 20th century and is represented today by the remains of a stone-built wall to the east of the coastal path.

The branch of the Dublin and South Eastern Railway was constructed running south from Harcourt Street Station to Bray in the mid-19th century. The route of which runs to the immediate east of the proposed development.

2.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

A review of the Excavations Bulletin (1970-2018) has shown that no previous archaeological investigations have been carried out within the proposed development area. Investigations carried out within the surrounding area are summarised below:

Monitoring of geotechnical investigations in advance of the Shanganagh-Bray main drainage scheme was carried out to the immediate east of the western half of the development area (Licence: 05E0392; Bennett 2005:530). Further monitoring for the scheme was carried out during the installation of a 6km pipeline through the townlands of Ravenswell, Cork Great, Cork Little and Shanganagh, c. 135m to the east (Licence: 11E0304; Bennett 2011:228). No features of archaeological significance were discovered during the course of the works.

In advance of the construction of the Shankill/Bray By-Pass excavations were carried out at the sites of "Toole's Moat" and Palermo, Old Connaught Avenue, c. 405m to the southwest of the proposed development area (Licence Ref.: E000505). At "Toole's Moat" several skeletons and bronze fibulae had previously been discovered during quarrying. Investigations discovered a post medieval ditch with a corroded piece of iron and a fragment of a clay pipe. At the Palermo estate an octagonal shaped area was investigated. Post medieval delft and corroded iron fragments were recovered, suggesting the feature was ornamental and associated with the demesne (Keeley 1989).

During 2010 archaeological testing was carried out at the site of the proposed Luas line B2, c. 460m southwest of the development area. This resulted in the identification of a burnt spread, which may represent the remains of a Bronze Age *fulacht fiadh* (Bennett 2010:286, Licence 10E0345).

2.3 CARTOGRAPHIC ANALYSIS

William Petty's Down Survey, Map of the Barony of Rathdown and Parish of Connough and Rathmichaell, c. 1655

This map depicts the townlands of Cork Little and Cork Great as one larger townland: 'Corke'. The land is owned by James Walsh and is recorded as 183 acres. Shanganagh lies to its immediate north and its 400 acres are recorded as being owned by John Walsh. No features are shown within either townland.

John Rocque's An Actual Survey of the County of Dublin, 1760

Rocque's map depicts the area of the proposed development in more detail than Petty's map, as roads and topographical features are depicted. 'Corke' has been split into Little Cork and Old Cork. The area of the proposed development consists of open fields with a road leading south to Bray from Dublin on the western limit. A structure that represents Wood Lawn House/Corke Lodge (RPS 1869) is depicted to the immediate south within a garden fronting onto an east-west road. Woodbrook House (RPS 1870) is located to the southeast, also fronting onto the road. A moat is annotated to the southwest (RMP DU026-067). The building south of this represents Wilford House (RPS 1873). Shanganagh Park House (RPS 1792) is marked on the northern limit of the Shanganagh townland, which is comprised of open fields. A mile marker (NIAH 60260172) is annotated to the north of the proposed development area.

John Taylor's Map of the Environs of Dublin, 1816

There have not been any changes within the area of the proposed development. The wider area has undergone growth and St James' Church (RPS 1863) is annotated as a chapel to the immediate west of the proposed development and there are a few dwellings depicted along the road to the immediate south of the chapel. Wilford, Woodlawn, and Woodbrook are still depicted to the south. The ruins of Kiltuck Church (RMP DU026-054001) are depicted to the north of the proposed development beside the Shanganagh Castle estate (RPS 1845; RMP DU026-120). The milestone is no longer depicted.

First Edition Ordnance Survey Map, 1836, scale 1:1560 (Figure 4)

This map is the first to depict the area of the proposed development accurately, it is shown as being located in six open fields and five fields in the demesne landscape of Shanganagh Castle. A monument (NIAH 60260147) associated with Shanganagh Castle is depicted in the demesne. A gravel pit is marked to the immediate east of the western half of the development at the townland boundary with Shanganagh and Cork Little.

The demesne landscapes of Wood Brook, Wood Lawn, Oak Lawn (RPS 1866), Beauchamp (RPS 1862), Wilfort House, Shanganagh Castle, Aske Cottage (RPS 1860), and Moatfield Cottage (RPS 1868) are visible. The dwellings along the Bray Road depicted south of the chapel on Taylor's map are no longer standing. The moat is no longer annotated but is depicted within a forest with roads leading to Moatfield and Wilfort.

Ordnance Survey Map, 1909, scale 1:2500

The proposed development area now lies in seven open fields and six demesne fields of Shanganagh Castle. The gravel pit is now located on the northern side of the townland boundary. The church is named as St. James' Church for the first time and Hackett Memorial Hall (RPS 1858) is depicted to the west. The monument is no longer shown to the north. The forested area around 'Toole's Moat' has diminished and it is now encircled by a road. Several of the houses in the surrounding area have changed names; Wood Lawn House is now the Estate Office of Woodbrook, Oak Lawn to The Aske, Aske Cottage to St James' Parsonage and Moatfield Cottage to Highnam Lodge. The Dublin and South Eastern Railway has been constructed by this time and two branches of the railway converge c. 100m to the east of the development and continue onto Bray. These two branches terminate in Kingstown (Dún Laoghaire) and Harcourt Street.

2.4 SUMMARY OF GEOPHYSICAL RESULTS

The results from the geophysical survey within the proposed development west and east of the Dart Railway are here summarised below (Nichols 2018). The survey highlighted the location of four enclosure sites (Figure 5-7). These include:

- A circular enclosure, measuring c. 32m in diameter, just northeast of the centre of M3, designated as AA 1;
- Two smaller circular enclosures c. 5-8m in diameter to the southwest in M4, designated as AA 3;
- The suspected eastern portion of a larger enclosure site to the west in M8, designated as AA 2;

Interpretation of the enclosure remains recorded in M8 has been significantly complicated by magnetic disturbance caused by the proximity of the Dart Railway, which is located immediately to the west.

The geophysical survey of the site has also recorded further anomalies within the site boundary, which may be of potential interest. These are mainly located in the western portion of the proposed development, and include zones of increased response and discrete anomalies in M1, which extend north-northwest from survey centre; a possible early field system in M3; and a multitude of weakly magnetic trends, zone of increased response and small-scale positives in M4. The archaeological potential of these responses should not be ignored. However, the weakly magnetic nature of many of these anomalies, combined with natural soil/geological variations across the site, has caused some difficulty with interpretation. A potential natural soil/geological, recent land use or modern ferrous origin for these anomalies should not be entirely dismissed. Remnants of former boundaries are indicated in M1-M3, with magnetic disturbance from high voltage overhead power cables (M1 and M3) and the Dart Railway (M7-M8) also present. Low-level variations in response associated with natural soil/geological variation are also evident in M1, M3-M4 and M7.

3 ARCHAEOLOGICAL TESTING

3.1 GENERAL

Test trenching took place from Wednesday the 17th of April and continued over the course of nine working days, using a 13 tonne 360 degree tracked excavator equipped with a flat, toothless bucket under strict archaeological supervision. A total of 103 trenches were excavated within the area of proposed development. The layout of test trenches was designed to investigate the archaeological potential of all geophysical anomalies identified by Target Geophysics (18R0223) in March 2019; with further trenches located in the open areas (Figure 5-7). Any investigated deposits were preserved by record. This was by means of written, drawn and photographic records.

A detailed table of the trench results is included in Appendix 1 and a description of the archaeological contexts is included in Appendix 2. Where potential archaeological remains have been identified within the proposed development area, these are described as Archaeological Areas (AA) and numbered sequentially for ease of reference.

Approximately 50m of trenches were excavated by hand. These 11 trenches targeted four possible enclosures, with five excavated across the 32m diameter probable Bronze Age enclosure with an additional trench in the centre of the enclosure (AA 1). Three were excavated across the remains of the possible early medieval enclosure (AA 2) and one each targeting the small ring ditch enclosures (AA 3). Each of these trenches was stripped of sod by machine before a 1m x 1m slot was excavated by hand to establish the depth of topsoil. Once this was established the machine stripped the topsoil from the area in level spits 50mm in depth, stopping when subsoil was beginning to appear. The trench was then cleaned by hand and all targeted archaeology was investigated by hand.

The test trenches were excavated to determine, as far as reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains threatened by the proposed development. Test trenching was also carried out to clarify the nature and extent of existing disturbance and intrusions and to assess the degree of archaeological survival in order to formulate further mitigation strategies. These are designed to reduce or offset the impact of the proposed development scheme.

3.2 TESTING RESULTS

The topsoil excavated from site is a dark brown sandy clay with occasional stone inclusions, noted to a depth of 0.25m to 0.42m. The subsoil on site varied from mottled orange-brown sandy clay with common decayed stone inclusions to beige-yellow grey silty clay. Gravel bands and increased concentrations of decayed stone inclusions are common throughout also.

Archaeological Features

A total of 17 areas of archaeological significance were identified during test trenching. These comprise a 32m diameter circular probable Bronze Age enclosure and external pits (AA 1); two parallel curvilinear ditches, one of which contains the remains of an adult male. This may represent an early medieval enclosure with two associated linear features to the south (AA 2). Two ring ditches adjacent to four linears and three pits (AA 3); three linear features and a nearby pit (AA 4); four areas of multiple pit features (AA 5-8); two linear features in close proximity to AA 1 (AA 9); six areas containing single pit or hearth features (AA 10 – AA 16) and a red brick well, with contemporary drainage and backfilled well features (AA 17).

Archaeological Area 1

Archaeological Area 1 (AA 1) consists of a 32m diameter enclosure ditch, with three fills. The ditch varied in width from 2.5-3.3m and in depth from 0.68-0.86m. Six possible pits were also recorded, all located to the north and northwest of the enclosure (Figure 5, Plate 7-9). No internal features were identified during the course of the assessment.

The geophysical survey indicated the remains of a circular enclosure 32m in diameter within M3. Testing revealed the enclosure ditch has gradually sloping sides and a pointed base (C107), filled with three deposits. These consist of a primary fill of grey clay with occasional animal bone inclusions (C110), a secondary deposit of charcoal rich clay with animal bone and burnt bone (C109) and a final deposit of orange brown sandy clay (C108).

Two artefacts were recovered from the enclosure. Find 1, a flint lithic, was uncovered from the tertiary deposit of the ditch within T96, while Find 2 consists of a sherd of Bronze Age pottery recovered from the secondary fill of the ditch within T100. A large sub-oval pit (C111) cuts through the inner ditch of the enclosure within T97. This pit is filled with a charcoal rich stony clay (C112).

There are six possible pits to the north and northwest of the enclosure (C107). These correspond with a number of small scale positive and weak linear responses indicated in the geophysical survey, in the vicinity of the enclosure. A number of these anomalies were determined non-archaeological except for six possible pits within T58, T59 and T97. These include four small pits ranging in plan from sub-circular to irregular and two large shallow pits (C73, C75, C77, C78, C81 and C105). These pits are filled with a variety of deposits broadly described as mottled brown sandy silts with varying amounts of charcoal flecks and small stone inclusions (C74, C76, C79, C80, C82 and C106). These features are may relate to the activity associated with the probable Bronze Age enclosure although this interpretation remains cautious as it is clear from the cutting of the ditch (C107) by pit (C111) that later activity also took place in the vicinity of the enclosure.

Archaeological Area 2

Archaeological Area 2 (AA 2) consists of ditch features that may represent two concentric enclosure ditches, and two associated linear features to the south of the enclosure (Figure 7, Plates 1-2 and 10-12).

The geophysical survey indicated weakly positive curvilinear anomalies and trends (32) to the west of M8, suggesting the footprint of a possible enclosure, composed of two concentric curvilinear ditches. The interpretation by the geophysicists of this possible enclosure was significantly complicated by magnetic disturbance caused by the proximity of the Dart Railway, immediately to the west.

Three hand excavated trenches (T84, T85 and T86) targeted the footprint of this anomaly, with extensions to the southeast, east and northeast respectively. Due to the complications of the interpretation of the geophysical survey it is tentatively suggested that the ditch found in T84, the southern trench, represents the inner enclosure ditch whereas the ditches noted in T85 and T86 to the north represent the outer ditch. As this was not definitively confirmed during testing these three ditch sections have been assigned individual context numbers (C94, C97 and C100) with a strong possibility that C97 and C100 represent the same ditch.

The inner enclosure ditch (C94) has gradually sloping sides, and the slot excavated through it was not completed due to the presence of a human skull (SK1), lying on its right side, with a west–east orientation. The left cranium was slightly disturbed during hand investigation. The disturbed elements of the skull comprise an almost complete, albeit fragmented, temporal (petrous, mastoid, and squama), lateral half of left orbit and parietal. Preliminary examination of the fragments (by Osteologist Maeve Tobin See Section 3.3) suggest the remains are of a mature (late adolescent or adult) male. A proximal hand phalange and a fragment of rib were retrieved from the soil around the head, which may indicate historic disturbance or an unusual position of the body. Three large stones are noted directly above the skull and may represent collapsed cobbling or remains of a stone lining.

At this stage of the planning process it was deemed prudent to preserve these remains in-situ, pending the final decision on the scale of development to take place here. All fragments of cranium (bar one), the phalange and the rib fragment were returned to the ditch cutting as close as was reasonably possible to their original location and a layer of soil from the original ditch fill was packed around them. The disturbed bone was not placed within a plastic bag to avoid condensation or collection of water around the remains. A board was placed above the skull between the stones, still present in the section of the ditch cutting to offer rigid protection to the remains should future excavation take place here. The trench was then packed with terram and the original fill of the ditch including all animal bone inclusions was backfilled above the terram by hand before the overall trench was backfilled by machine.

The fill surrounding the skull is a moderate to loose compaction of brown sandy clay. The fill directly around the skull was noted as a much looser compaction when

compared to the rest of the deposit. Inclusions of gravel and snail shell are common within this deposit and rare inclusions of animal bone above the large stones within the ditch were also noted (C95). This deposit is at least 0.6m deep, beneath a secondary deposit of mottled orange brown sandy silty clay with common to frequently occurring inclusions of small stones and decayed stone (C96), 0.2m deep.

To the northeast a north–south orientated ditch with steep sides and a flat base (C97) corresponds with the outer ditch indicated within the Geophysical Survey. A slot excavated through this ditch revealed two deposits, including a primary deposit of orange grey-brown sandy clay with small stone and snail shell inclusions as well as rare animal bone (C98) and a secondary fill of beige grey-brown silty clay with frequent decayed stone inclusions (C99). To the north-northwest Hand Excavated T86 also targeted the outer ditch of the possible enclosure, revealing a steeply sloping sides and a flat base (C100), filled by a primary fill of mid-brown silty sand (C101) with inclusions of small stone, snail shell and rare animal bone and a secondary fill of mottled orange brown sandy silty clay (C102) with decayed stone. There are many similarities between cuttings C97 and C100 and when considering the results of the geophysical survey it is likely that they are part of the same outer enclosure ditch.

To the southeast of these enclosure ditches are two linear features (C89 and C91), which may be related to the activity associated with this double ditched enclosure. A northwest–southeast linear feature (C89) is filled with a single deposit of dark grey clay with frequent charcoal flecks. This feature extends beyond the limit of the trench but is not noted in T83 to the northwest. North of this a second linear feature orientated north–south (C91), is filled with two deposits, a primary deposit of charcoal stained clayey silt (C92) and a secondary deposit of brown clayey silt and decayed stone (C93). This feature extends beyond the limit of the trench but is not represented in T82 to the south or T84 to the north.

Archaeological Area 3

Archaeological Area 3 (AA 3) consists of two ring ditch enclosures (C34 and C35), four linear features (C46, C49, C50 and C51), one of which cuts through a pit (C44), and two pits (C55 and C57). The Geophysical Survey indicated two small circular enclosures c. 5-8m in diameter as well as a number of weak linear trends and small scale positive responses within AA 3 (Figure 6, Plate 13-15).

The southern ring ditch is 1.9m wide and 0.43m deep (C36) and contains two sandy clay deposits (C37 and C38) whereas to the northeast the second ring ditch (1.66m wide x 0.5m deep) (C39) contains four deposits of sandy clay and silt (C40, C41, C42 and C43). There are no notable inclusions within these fills beyond small stones and pebbles. To the north and west-northwest of the ring ditches is a shallow linear (C46) filled with two silty deposits (C47 and C48). The base of this feature cuts through a truncated pit (C44) with a charcoal rich stony fill (C45). Ring ditches are a common monument in the Irish landscape and are most frequently interpreted as funerary sites and territory markers.

North of this linear feature are three northwest–southeast parallel linear features consisting of narrow “v-shaped” cuts (C49, C50 and C51) filled with charcoal rich stony clay (C52, C53 and C54). It is possible that these features are agricultural furrows, showing evidence of disturbance to a possible burnt mound feature, although there is a notable absence of frequent burnt stone. To the east two pits (C55 and C57), a sub-circular pit and a sub-rectangular pit, are both filled with deposits of charcoal flecked clay (C56 and C58, respectively). These shallow narrow features contain similar deposits that appear to be related to burnt mound material and may be evidence of ploughing disturbance to a nearby, as of yet, unidentified *fulacht fiadh*. These linear features and nearby pits possibly form part of a wider Bronze Age landscape.

Archaeological Area 4

Archaeological Area 4 (AA 4) comprises three linear features and a pit to the east-northeast of AA 3 (Figure 6, Plate 16 and 17). The pit is a truncated sub-oval pit (C59) filled with charcoal flecked grey brown clay (C60), more than 50m east-northeast of the similar pits in AA 3. The three linear features (C61, C63 and C33) to the northeast, east and east-southeast, respectively, of this pit are broad (1.7-2m wide), shallow features (0.25-0.34m deep) filled with charcoal flecked clay deposits (C62, C64 and C35). To the east-southeast linear feature C33 has a primary charcoal rich deposit (C34). These features correspond with weak linear responses indicated in the Geophysical survey and may be representative of a former boundaries.

Archaeological Area 5 - 8

Archaeological Area 5, 6, 7 and 8 all represent small areas containing relatively isolated remains of archaeological potential. AA 5 is located to the northwest of M1, with AA 6 to the south in M2. AA 7 and AA 8 are both within M6 in the southeast of the development lands (Figures 5 and 6, Plate 18-20).

AA 5 consists of two pits (C3 and C4) filled with silty sand deposits with frequent charcoal flecked inclusions (C5 and C6).

AA 6 consists of three pits (C15, C17 and C19) and a linear feature (C13). The pits are broadly described as sub-circular with dark black charcoal rich fills with stone inclusions (C16, C18 and C20). The “v-shaped” linear feature (C13) is adjacent to pit C15 and is filled with a charcoal flecked silty clay (C14). This north–south orientated feature is not present to the south. The Geophysical survey indicated these areas of archaeology as the position of weak trends within M1 and small scale positive responses within M2.

AA 7 is located in the eastern end of M6 in the footprint of T28, where it comprises two pits: a large sub-circular pit (C27) filled charcoal flecked silty clay (C29) and an adjacent small sub-oval pit (C28) filled with burnt clay (C30).

AA 8, to the west, consists of two irregularly shaped adjacent shallow pits (C23 and C24) filled with burnt clay and charcoal rich deposits (C25 and C26).

Archaeological Area 9

Archaeological Area 9 consists of two ditch features within the footprint of T60, indicated in the geophysical survey as weak linear responses possibly reflective of former land use (Figure 5, Plate 21). Upon investigation it is tentatively suggested that these features are archaeological in origin, owing to their scale and location, in close proximity to AA 1 (30m to the east). These wide ditches (1.1-1.9m) (C83 and C85), run perpendicular to each other and are filled brown sandy clay deposits with frequent decayed stone inclusions (C84 and C86).

Archaeological Area 10-16

Archaeological Area 10, 11, 12, 13, 14, 15 and 16 comprise single pit or hearth features located at least 50m from any other area of archaeological significance (Figures 5-7, Plate 22-27).

AA 10 comprises an irregular pit (C21) filled with red heat affected clay (C22) within M2, indicated on the geophysical survey adjacent to a poorly defined linear feature, non-archaeological.

AA 11 is adjacent to the eastern boundary of M4, to the northeast of AA 4, and consists of shallow sub-oval pit (C65) with charcoal rich clay (C66), not indicated by the geophysical survey, likely due to its shallow and truncated nature.

AA 12 to the west-northwest comprises a sub-rectangular pit (C71) with red heat affected clay (C72), also not indicated by the geophysical survey.

AA 13 (c. 35m northeast of AA 12), a sub-oval pit (C67) is filled with three deposits including two heat affected clay deposits, separated by a lens of charcoal (C68, C69 and C70).

AA 14, in the western section of M5 consists of a sub-oval pit (C31) with gradually sloping sides, filled with a grey occasional charcoal flecked clay (C32).

AA 15, in the northeast of M3, is a hearth feature (C87) comprising a black charcoal rich clay mottled with a red heat affected clay (C88).

AA 16, to the east of M8, consists of a shallow sub-oval pit (C105) filled with a dark brown stony sandy clay (C106), not indicated on the geophysical survey.

Archaeological Area 17

Archaeological Area 17 (AA 17) comprises the remains of a well, a backfilled well and associated drainage features of limited archaeological potential, in the northwest of M1, south of AA 5 (Figure 5, Plate 28-30). The Geophysical survey indicated a zone of increased response (1-2), discrete positives (3-4) and linear response (5) investigated in the footprint of T5, T6, T7 and T103. Discrete positive (3) corresponds with the remains of a historic well (C11), which consists of a northeast-southwest limestone and mortar wall, along the north of a circular mortar bonded, red-brick opening, damaged to the south and southeast. The interior of the well and above it is backfilled

with grey and beige sandy deposit with mortar and charcoal inclusions as well as broken red brick and other rubble.

To the southeast discrete positive response (4) corresponds with the infilling of an adjacent historic well. Here an excavated slot exposed three deposits consisting of backfilled material (C12) including brown clay and stone, stone and mortar dump and historic topsoil. This backfilling extended outwards from this point and appears to a lesser extent in the surrounding trenches, corresponding with the zones of increased response (1-2) from the survey.

To the north of this backfilled material is the remains of a stone capped culvert at a depth of 1.2m within a straight sided linear trench (C7). This culvert is sealed beneath three deposits of sandy clay and stone (C8, C9 and C10). This culvert travels in a northwest–southeast direction where it likely meets and corresponds with a north–south linear feature (C113) of similar composition in T103. This straight sided linear trench contains no culvert but is backfilled with two sandy clay and stone deposits (C104 and C105), similar to those backfilled above the culvert. These features are of limited archaeological potential and correspond with post medieval drainage works.

A still extant well with sub-rectangular cement surrounds is noted within M3 to the south of AA 1, corresponding with a zone of increased response noted by the Geophysical survey. The well was partial sealed by a dump of large boulders, which marks its position within the arable landscape, to prevent interference from farming activities.

Non Archaeological Features

The remains of a former field boundary marked on the first edition OS map, traverses T27. This is the only clear field boundary change noted from both the 1836 and 1909 maps. A tree lined partial boundary extends east-northeast–west-southwest within M3, the footprint of which is noted in T49 and possibly T70. A former boundary or land division indicated by the geophysical survey is apparent in T9, T103, T12, T13, T16, T20, T23 and T25. This does not correspond with any land division within the historic maps but appears as an agricultural drainage feature when investigated, due to the large amount of stone in the base of the feature.

Stone filled field drains and furrows are present throughout the tested area but are not common features, as the soil appears well drained. A historic well and a nearby backfilled well are noted within AA 17, as is a stone capped culvert). A second well, still open, albeit partially sealed by a large granite boulder, is present adjacent to T75 and corresponds with a zone of increased response within the geophysical survey. A number of large boulders were piled in the vicinity of this well, to mark its location within the arable farmland.

3.3 SUMMARY OF PRELIMINARY OSTEOLOGICAL ANALYSIS

Human skeletal remains were identified during the course of archaeological test trenching at in Shanganagh townland, Shankill, Co. Dublin on the morning of Tuesday 30th April 2019 (Figure 7, ITM 726138, 720945). These remains are interred within a

ditch (C94) targeted by a hand-excavated trench the location of which was indicated by the geophysical survey carried out by Target Archaeological Geophysics (Nicholls 2018, licence 18R0223).

A human skull was partially exposed during the hand-excavation of a slot trench (0.4m wide) across ditch (C94). The north-south aligned ditch measured c. 2.3m wide and it was excavated to a depth of 0.8m at which point bone was uncovered and excavation ceased. The human remains were completely skeletonised indicative of a historic deposition and the presence of the body within a ditch compares with known archaeological examples from the early medieval and medieval periods.

The skull lay on the right side, in a west-east orientation, and part of the left cranium had been disturbed during excavation. The disturbed elements comprise an almost complete, albeit fragmented, temporal (petrous, mastoid and squama), lateral half of left orbit, and parietal. Preliminary examination of the fragments on-site noted the presence of two sexual markers (mastoid and orbital margin) which suggest a male sex. The individual appeared to be relatively mature, of probable late adolescent or adult age. Moderate coalesced porosity, known as *cribra orbitalia*, was noted in the left orbit indicative of dietary deficiency or stress (Plate 1&2).

Exposure of the bone was kept to a minimum once it was confirmed that the skull was in-tact, and may represent a complete burial within the ditch. A proximal hand phalange and fragment of rib were retrieved from the soil around the head which either indicates some historic disturbance of the grave or an unusual position of the body (possibly with hands raised by the head).

It was determined that the best course of action regarding the human remains (SK1) was preservation in-situ. The reasons for this decision were as follows:

- 1) Only a very minor percentage of the skeleton was exposed with care being taken not to unduly expose any more than required to confirm an intact skull. Regarding the small number of fragments disturbed by our investigation these were visually inspected on-site by Maeve Tobin (osteologist). As per best practise these fragments were returned to the burial, as close to their original position as possible, pending future planning decisions. A single fragment of cranial vault was retained for the purpose of ¹⁴C dating should this be deemed appropriate as part of the planning impact assessment.
- 2) The skull was protected with a buffer consisting of a hard board, terram and backfilled soils, to prevent any accidental damage or crushing. The burial is at a depth of c. 1m beneath the current ground level and is unlikely to be disturbed by the current site use as parkland. The disturbed bone was not placed in a plastic bag to avoid condensation/collection of water around the remains.

3.4 CONCLUSIONS

Archaeological testing was carried out over the course of nine days from 17th to the 30th of April 2019, using a mechanical excavator fitted with a flat grading bucket.

Testing revealed 17 areas of archaeological significance, which have been designated as Archaeological Areas 1-17. These comprise a 32m diameter circular Bronze Age enclosure and external pits (AA 1); two parallel curvilinear ditches (one of which contains the remains of an adult male) possibly representing an early medieval enclosure with two associated linear features (AA 2); two ring ditches adjacent to four linear features and three pits (AA 3); three linear features and a nearby pit (AA 4); four areas of multiple pit features (AA 5-8); two linear features in close proximity to AA 1 (AA 9); six areas containing single pit or hearth features (AA 10 – AA 16) and a red brick well, with contemporary drainage and backfilled well features (AA 17).

Archaeological areas 9, 12 and 13 will not be impacted upon by the current phase of the proposed development. These will form part of Phase 2 of the proposed development and additional impact and mitigation strategies will be reported on these areas as part any future Phase 2 planning application.

AA 1 contains a large Bronze Age enclosure, dated due to the presence of Bronze Age pottery uncovered from one of the deposits within the ditch. There are no other Bronze Age enclosures known in the surrounding landscape but other nearby notable Bronze Age sites include burials excavated in the 19th century at the site of quarry, 375m to the southwest (DU026-067). A bronze fibulae was uncovered with these remains.

The geophysical survey over AA 2 tentatively suggests that the ditches hand excavated here form part of the partial remains of two parallel curvilinear ditches, that may represent the remains of a possible bivallate enclosure. The hand excavated slot trench into the suspected inner enclosure ditch of the enclosure partially revealed the skeleton of an adult male. Previous development works, including the construction of the Dart railway and the parallel gas pipeline, truncates the interior and western extents of this enclosure. It should be noted that no evidence of burial is colloquially known from these developments. This may suggest that the skeleton uncovered here may be an isolated example.

Burials within early medieval enclosures are a common element in the Irish archaeological landscape. At Cloncowan 2, County Meath, 13 burials were excavated from a ditch enclosure (O’Sullivan et al, 2008). The identification of human remains from the basal fill of an enclosure at Carroweighter 2, County Roscommon returned a date attributed to the Iron Age (Licence No. E004887, McIlreavy 2018).

The archaeology uncovered in AA 3 may also be related to the Bronze Age period. This is tentatively suggested by the possible burnt mound material found within the linear features in the north of this area. The two ring ditches noted in the south of AA 3 are a common feature in the Bronze Age landscape but are, nevertheless, a significant monument, which may have served as both territorial markers as well as funerary monuments. It is not possible to suggest whether this activity pre or post-dates the enclosure described above.

The linear and pit features identified in Archaeological Areas 4-8, 10-11 and 14-15, are most likely of local significance only, with no diagnostic features to attribute them to any specific time period or associate them with any specific activity type, from current evidence available.

AA 17 consists of red brick and stone well and drainage features of limited archaeological significance. These features are likely related to the extensive post medieval landscape evidenced in the vicinity of this development, including but not limited to, Beauchamp House to the west, Wilford House to the southwest and Askefield House to the northwest. There are 22 other NIAH sites within 500m of the proposed development, mostly possessing extant remains from the early 19th century.

4 IMPACT ASSESSMENT AND MITIGATION STRATEGY

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological resources potentially affected. Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping; disturbance by vehicles working in unsuitable conditions; and burial of sites, limiting access for future archaeological investigation.

4.1 IMPACT ASSESSMENT

- Phase 1 of the current development involves the construction of c. 400 dwellings (both houses and apartments) as well as road infrastructure, services and landscaping. Ground disturbances associated with the proposed development will result in a direct and negative impact on the following sites:
 - AA 1 (Bronze Age enclosure)
 - AA 3 (two ring ditches and associated features)
 - AA 4 (linear and pit features)
 - AA 5 (multiple pit features)
 - AA 6, AA 7 and AA 8 (multiple pit features)
 - AA 10, AA 11 and AA 14 (single pit or hearth features)
 - AA 15 (hearth)
 - AA 17 (historic well and associated drainage features)

- Phase 1 of the golf course development within the area to the east of the railway will see extensive ground disturbances associated with the proposed landscaping. Ground disturbances associated with the proposed development will result in a direct and negative impact on the following sites:
 - AA 2 (possible bivallate enclosure with burial)
 - AA 16 (pit)

- AA 9 (linear features), AA 12 and AA 13 (isolated pit features) are all located in Phase 2 of the development lands, which will form part of a Phase 2 application. The impact of the development on these areas will be reported on as part of any future Phase 2 application.

- There may be an adverse impact on previously unrecorded archaeological feature or deposits that have the potential to survive beneath the current ground level outside of the footprint of the excavated test trenches. This will be caused by ground disturbances associated with the proposed development.

4.2 MITIGATION

We recommend the following actions in mitigation of the impacts above.

- Preservation in-situ is considered to be the most appropriate manner in which to ensure the conservation of archaeological remains. However, it is not possible to avoid impacts on sites AA 1, AA 3-8, AA 10-11, AA 14-15 and AA 17, due to the requirements of the design layout. As such, it is recommended that the archaeological sites be preserved by record (archaeological excavation), prior to construction taking place. This should be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the DoCHG and the National Museum of Ireland.
- it is not possible to avoid impacts on sites AA 2 and AA 16 as part of the golf course development due to the landscaping requirements. As such and in order to ameliorate negative impacts, the archaeological sites within the development area will be preserved by record (archaeological excavation), prior to construction taking place. This will be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the DoCHG and the National Museum of Ireland.
- It is recommended that all topsoil stripping associated with the proposed development be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation *in-situ* or by record. Any further mitigation will require approval from the National Monuments Service of the DoCHG.

It is the developer's responsibility to ensure full provision is made available for the resolution of any archaeological remains, both on site and during the post excavation process.

Please note that all recommendations are subject to approval by the National Monument Section of the Heritage and Planning Division, Department of Culture, Heritage and the Gaeltacht.

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APPENDICES

APPENDIX 1 TRENCH RESULTS

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
1	75	2	0.32	East-northeast–west-southwest	No archaeology found. The geophysical survey indicated weak trends here, linear in shape. These were assessed within trench and determined non-archaeological and likely representative of modern drainage (Figure 5, Plate 3).
2	25	2	0.39	East-northeast–west-southwest	Archaeological Area 5. See section 3.2.
3	50	2	0.4	North-northeast–south-southwest	No archaeology found. The geophysical anomalies of natural soil or geological variation were targeted within T3. These were proven geological/non-archaeological. No other features noted (Figure 5).
4	25	2	0.37	East-northeast–west-southwest	No archaeology found. The geophysical anomaly of possible archaeological pit feature targeted but proved non-archaeological. No other features. Figure 6.
5	25	2	0.38	Northeast–southwest	Archaeological Area 17. See section 3.2.
6	25	2	0.45	Northwest–southeast	Archaeological Area 17. See section 3.2.
7	25	2	1.7	North–south	Archaeological Area 17. See section 3.2.
8	25	2	0.4	East-northeast–west-southwest	No archaeology found. The geophysical survey indicated a discrete positive sub-circular anomaly targeted by T8. This is a non-archaeological hollow filled with a mix of silt and topsoil.
9	25	2	1.5	North-northwest–south-southeast	No archaeology found. The geophysical survey indicated the presence of a former boundary/land division not indicated on the First or Second Edition mapping for the area. This ditch is noted within T9, extending east-northeast–west-southwest, with gently sloping sides and a flat base filled with mid-brown silty clay.
10	25	2	0.42	North–south	No archaeology found. The geophysical survey indicated the presence of a small scale sub-circular anomaly targeted by T10. The feature investigated at this location is likely representative of a root bowl, non-archaeological. Figure 6.
11	25	2	0.34	North–south	No archaeology found. The geophysical survey indicated the presence of a small scale sub-circular anomaly targeted by T11. A geological deposit of stony clay is noted in the location of this anomaly. Figure 6.
12	50	2	0.4	West-northwest–south-	No archaeology found. The geophysical survey indicated the presence of a former boundary/land division, targeted by T12. This feature is repeated in

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
				southeast	T13, T16, T20, T23, T25 and T103 and likely represents agricultural land improvement.
13	25	2	0.4	East-west	No archaeology found. The geophysical survey indicated the presence of a former boundary/ land division. This feature is repeated within T12, T16, T20, T23, T25 and T103. A sub-circular discrete response targeted by T13 is a geological feature/non-archaeological, a probable silt filled burrow. Figure 6.
14	25	2	0.36	Northeast-southwest	No archaeology found. The geophysical survey indicated the presence of an irregular shaped discrete positive response. This feature is non-archaeological and likely geological in origin. Figure 6.
15	25	2	0.33	East-west	No archaeology found. The geophysical survey indicated the presence of a linear discrete positive response and an adjacent linear trend, both targeted by T15. A northwest-southeast field drain is recorded at this approximate location. It is steep sided, with a gradual break of slope on its east side, filled with a base of stone overlain with clay, 0.5m wide and 0.3m deep. Figure 6.
16	25	2	0.35	East-west	No archaeology found. The geophysical survey indicated the presence of a former boundary/land division bounded on its east side by an irregular shaped discrete positive response. Upon investigation the boundary feature is noted as an agricultural drainage feature, also noted in T12 and T13. This features is also noted within T20, T23, T25 and T103. The discrete positive response is geological in origin, consisting of a shallow pocket of silt. Figure 6.
17	10	2	0.35	Northwest-southeast	No archaeology found. The geophysical survey indicated the presence of a weakly magnetic linear feature targeted by T17. This feature is a shallow linear, 1.5m wide and less than 0.2m deep filled with a sandy silt deposit, likely representative of a geological feature. Figure 6.
18	25	2	0.4	North-south	No archaeology found. The geophysical survey indicated the presence of a natural feature and a possible trend targeted by T18. These features are confirmed geological in origin. Figure 6.
19	25	2	0.34	Northeast-southwest	No archaeology found. The geophysical survey indicated the presence of a weakly magnetic linear response and a large sub-circular discrete positive response, targeted by T19. These features are geological in origin. Figure 6.
20	25	2	0.5	East-west	No archaeology found. The geophysical survey indicated the presence of a former boundary/land division and a small sub-circular discrete positive response. The former boundary is an agricultural drainage feature investigated in T12, T13 and T16 also. This feature is repeated in T23, T25 and T103. The discrete positive response is geological in origin.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					A second possible drainage feature is west of the agricultural drainage feature. It is described as a 3.2m wide, 0.12m deep, shallow ephemeral feature filled with mottled clay and occasional large stone. Figure 6.
21	10	2	0.36	North-south	No archaeology found. The geophysical survey indicated small sub-oval discrete positive responses targeted by T21. The identified pocket of clay is geological in origin, Figure 6.
22	25	2	0.36	East-northeast-west-southwest	Archaeological Area 6. See section 3.2.
23	30	2	0.33	East-west	Archaeological Area 10. See section 3.2.
24	25	2	0.24	East-west	No archaeology found. The geophysical survey indicated the presence of small scale positive response. The approximate location of these responses correspond to an east-west agricultural field drain, steep sided filled with a base of stone topped with a layer of clay. Figure 6.
25	50	2	0.32	East-west	No archaeology found. The geophysical survey indicated the presence of possible ferrous responses. The agricultural field drain noted previously in T12, T13, T16, T20, T23 and T103. A north-south stone filled drain crosses the east end of the trench.
26	100	2	0.42	East-northeast-west-southwest	Archaeological Area 8. See section 3.2.
27	120	2	0.36	East-northeast-west-southwest	No archaeology found.
28	10	2	0.33	Northwest-southeast	Archaeological Area 7. See section 3.2.
29	100	2	0.34	East-northeast-west-southwest	No archaeology found.
30	75	2	0.32	East-northeast-west-southwest	Archaeological Area 14. See section 3.2.
31	125	2	0.3	East-northeast-west-southwest	No archaeology found.
32	25	2	0.32	East-west	Archaeological Area 4. See section 3.2.
33	30	2	0.33	North-northeast-	No archaeology found. The geophysical survey indicated numerous small-scale and weakly magnetic

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
				south-southwest	positives. A possible anomaly was targeted by T33. A small area of root burning corresponds to this signature. Figure 6.
34	5	2	0.25	East-west	Archaeological Area 3. See section 3.2.
35	5	2	0.3	East-west	Archaeological Area 3. See section 3.2.
36	25	2	0.33	East-west	Archaeological Area 3. See section 3.2.
37	50	2	0.36	North-northeast-south-southwest	No archaeology found.
38	25	2	0.34	North-south	No archaeology found.
39	25	2	0.32	East-northeast-west-southwest	No archaeology found.
40	50	2	0.33	East-west	Archaeological Area 3. See section 3.2.
41	25	2	0.35	East-west	Archaeological Area 4. See section 3.2.
42	25	2	0.35	West-northwest-east-southeast	Archaeological Area 4. See section 3.2.
43	25	2	0.3	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated numerous small-scale and weakly magnetic positives, including a weak linear response corresponding with a shallow linear feature, determined modern due to inclusion of modern pot sherd. Figure 6.
44	30	2	0.3	East-northeast-west-southwest	Archaeological Area 11. See section 3.2.
45	50	2	0.3	East-northeast-west-southwest	Archaeological Area 4. See section 3.2.
46	25	2	0.36	East-west	No archaeology found. The geophysical survey indicated numerous small-scale and weakly magnetic positives, one of which was targeted by T46. Corresponding to this geophysical response is the remains a linear feature filled with stone, occasional red-brick and snail shell. Likely the remains of a former culvert /stone drain demolished during modern drainage works. Figure 6.
47	75	2	0.4	North-northeast-south-southwest	No archaeology found.
48	140	2	0.4	North-south	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. The linear features corresponding to these anomalies

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					are difficult to discern from the natural subsoil. One such linear feature is subject to investigation within T48. Here it is irregular in plan with undulating sides, varying in width between 0.45m and 1.2m, reaching a maximum depth of 0.3m. It is filled with an inorganic light grey clay and silt and likely represents a catch of soil between two subtly different variations in subsoil. Figure 5.
49	120	2	0.38	North-northeast-south-southwest	No archaeology found.
50	70	2	0.3	North-northeast-south-southwest	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. The linear features corresponding to these anomalies are difficult to discern from the natural subsoil. One such linear feature is subject to investigation within T50. No archaeological feature was discernible from the natural subsoil. Figure 5.
51	60	2	0.33	West-northwest-east-southeast	No archaeology found.
52	40	2	0.32	East-northeast-west-southwest	No archaeology found. The geophysical survey indicated two weak linear responses targeted by T52. The southwest of these is a broad and shallow irregular linear feature filled with silt flanked on each side by subsoil with increased decayed stone inclusions. The northeast of these responses is a drainage feature, with gradually sloping sides with a cache of drainage stone along its base. Figure 5.
53	30	2	0.33	Northeast-southwest	No archaeology found. The geophysical survey indicated a weak linear response targeted by T53. A narrow linear feature with undulating sides and a cache of stone at its base, corresponded with this weak linear response. This is likely an agricultural drainage feature of no archaeological significance. Figure 5.
54	25	2	0.28	Northeast-southwest	Archaeological Area 13. See section 3.2.
55	60	2	0.32	North-south	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. The linear features corresponding to these anomalies are difficult to discern from the natural subsoil. Two such linear features are subject to investigation within T55. The southern of the two appears as a band of silt between two subtle variations in the natural subsoil. The northern of the two is also geological in origin and not easily discernible from the natural subsoil. Figure 5.
56	125	2	0.37	North-south	Archaeological Area 12. See section 3.2.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
57	125	2	0.36	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. Two such linear anomalies are targeted within T57. The southern of these is irregular in plan with a shallow deposit of light orange-grey silt, likely geological in origin. The second is a broad and shallow linear feature filled with a deposit of inorganic clay over lying a gravelly base and may represent a truncated drainage feature. Figure 5.
58	25	2	0.4	East-northeast-west-southwest	Archaeological Area 1. See section 3.2.
59	25	2	0.36	North-northwest-south-southeast	Archaeological Area 1. See section 3.2.
60	75	2	0.38	East-northeast-west-southwest	Archaeological Area 9. See section 3.2.
61	75	2	0.4	East-northeast-west-southwest	No archaeology found. The geophysical survey indicated a number of small scale positive responses including that targeted by T61. Investigation of this feature determined it non-archaeological or likely geological in nature –large hollow with sterile silt fill. Figure 5.
62	40	2	0.37	North-northeast-south-southwest	No archaeology found.
63	110	2	0.36	Northeast-southwest	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. Two of these were targeted with T63. A small area of in situ burning/representing land clearance activities is noted in the north of the trench. A number of agricultural furrows are also noted. Figure 5.
64	75	2	0.38	North-south	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 which may represent the remains of an early field system. Two of these were targeted with T64. No features recorded. Figure 5.
65	75	2	0.37	North-south	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 which may represent the remains of an early field system. Two of these were targeted with T65. A number of furrows crossed the trench in an east-west direction. Figure 5, Plate 6.
66	25	2	0.3	Northeast-southwest	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					which may represent the remains of an early field system. One of these were targeted with T66. No features recorded. Figure 5.
67	30	2	0.25	Northeast–southwest	Archaeological Area 15. See section 3.2.
68	25	2	0.3	East-northeast–west-southwest	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted with T68. Much of the east end of the trench is disturbed by previous development with services trenches noted. Figure 5.
69	10	2	0.3	East-northeast–west-southwest	No archaeology found. The geophysical survey indicated a number of small scale positive responses including those targeted by T69. These responses proved non-archaeological and more representative of geological features, large boulders. Figure 5.
70	25	2	0.32	North-northwest–south-southeast	No archaeology found. The geophysical survey recorded a number of small scale positives and weak linear responses to the north, northeast, northwest and southeast of the possible Bronze Age enclosure (C107). Those to the northeast are targeted by T70, T71 and T72. A weak linear response travelling east–west in the north end of the trench corresponds with a tree line evident on the First Edition OS Maps. The ditch feature contained a fragment of modern pottery also. Figure 5.
71	20	2	0.35	East–west	No archaeology found. The geophysical survey recorded a number of small scale positives and weak linear responses to the north, northeast, northwest and southeast of the possible Bronze Age enclosure (C107). Those to the northeast are targeted by T70, T71 and T72. Those targeted by T71 are non-archaeological geological in origin. Figure 5
72	25	2	0.32	North-northwest–south-southeast	No archaeology found. The geophysical survey recorded a number of small scale positives and weak linear responses to the north, northeast, northwest and southeast of the possible Bronze Age enclosure (C107). Those to the northeast are targeted by T70, T71 and T72. Those targeted by T71 are non-archaeological geological in origin. Figure 5.
73	25	2	0.4	East–west	No archaeology found.
74	25	2	0.37	East–west	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted by T74. A number of shallow furrows crossed the trench in a northeast–southwest direction. A stone filled field drain crossed the trench on its east end on a northeast–southwest direction. Figure 5.
75	30	2	0.32	East–west	No archaeology found. An area of increased response and magnetic disturbance has been targeted by T75. This trench skirts the north side of an extant well,

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					closed off by the placement of a boulder. The sub-rectangular opening is marked by a poured cement surround, indicating its use in recent times. Figure 5.
76	25	2	0.4	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted by T76. No features found. Figure 5.
77	25	2	0.35	East-west	No archaeology found. The geophysical survey indicated a small scale positive response targeted by T77. This feature is geological in origin and consists of a large band of clayey silt within a natural hollow. Figure 5.
78	25	2	0.36	West-northwest-east-southeast	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted by T78. Root disturbance is evident here. Figure 5.
79	75	2	0.37	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted by T79. This feature is not clearly evident here. A number of agricultural furrows cross the trench in a northeast-southwest direction. Figure 5.
80	75	2	0.3	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated a number of linear anomalies within M3 may represent the remains of an early field system. One of these were targeted by T80. This feature is not clearly evident here. A number of agricultural furrows cross the trench in a northeast-southwest direction. Figure 5.
81	25	2	0.25	North-northwest-south-southeast	No archaeology found. The geophysical survey indicated a number of small scale positive responses such that targeted here by T81. This is evident of disturbance from modern development activities. A large deposits of very compact stony grey clay forming a modern working surface is evident here and likely related to adjacent drainage works or similar. Figure 5.
82	25	2	0.3	East-northeast-west-southwest	Archaeological Area 2. See section 3.2.
83	25	2	0.28	East-northeast-west-southwest	Archaeological Area 2. See section 3.2.
84	27	2	0.3	Northwest-southeast	Archaeological Area 2. See section 3.2.
85	15	2	0.32	East-west	Archaeological Area 2. See section 3.2.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
86	15	2	0.3	Northeast–southwest	Archaeological Area 2. See section 3.2..
87	150	2	0.27	Northwest–southeast	No archaeology found.
88	150	2	0.3	Northwest–southeast	No archaeology found.
89	150	2	0.32	Northwest–southeast	No archaeology found.
90	150	2	0.3	Northwest–southeast	Archaeological Area 16. See section 3.2.
91	100	2	0.32	North-northwest–south-southeast	No archaeology found.
92	100	2	0.33	North-northwest–south-southeast	No archaeology found.
93	100	2	0.3	North-northwest–south-southeast	No archaeology found.
94	30	2	0.32	West-northwest–east-southeast	No archaeology found. The geological survey indicated a small scale positive response within the footprint of T94. This corresponds to a small area of burning, at sod level, related to land clearance activities and not of archaeological significance. Figure 7.
95	25	2	0.3	East–west	No archaeology found.
96	25	2	0.42	North–south	Archaeological Area 1. See section 3.2.
97	25	2	0.4	East–west	Archaeological Area 1. See section 3.2.
98	25	2	0.28	Northwest–southeast	Archaeological Area 1. See section 3.2.
99	25	2	0.28	Northeast–southwest	Archaeological Area 1. See section 3.2.
100	19	2	0.28	East–west	Archaeological Area 1. See section 3.2.
101	5	2	0.35	-	No archaeology found.
102	20	2	0.28	North–south	No archaeology found.
103	25	2	0.38	East–west	Archaeological Area 17. See section 3.2.

APPENDIX 2 CONTEXTS

CONTEXT NO.	TRENCH NO.	DESCRIPTION
1	All	Topsoil – Dark brown sandy clay with occasional stone inclusions, excavated to a depth of 0.25m to 0.42m.
2	All	Subsoil- There are variations in the subsoil throughout the survey area. Mottled orange-brown sandy clay with common decayed stone inclusions to beige-yellow grey silty clay. Gravel bands and increased concentrations of decayed stone inclusions are common throughout also. Bands and hollows of silt are rare occurrences, but till noted in the assessment area.
3	T2	Shallow sub-oval pit. 0.52 x 0.43 x 0.05m +.
4	T2	Shallow sub-circular pit. 0.49m x 0.47m x 0.05m +.
5	T2	Fill of C3. Mid-grey silty and with frequent charcoal flecks and pebble inclusions.
6	T2	Fill of C4. Light brown silty sand with frequent charcoal flecked inclusions.
7	T5	Straight sided northwest-southeast linear trench containing stone capped culvert 2m wide x at least 1.2m deep.
8	T5	Upper fill of C7. Light brown sandy clay, 0.5m deep.
9	T5	Middle fill of C7. Light grey brown sandy clay, 0.46m deep.
10	T5	Primary fill of C7, sealing culvert. Mid grey-brown sandy clay with small rounded stone, at least 0.8m deep.
11	T6	Red brick and mortar bonded well flanked on its northwest by a northeast–southwest orientated shallow limestone wall. Well is backfilled with beige and dark sandy clay mix of deposits with inclusions of charcoal and mortar common. The well is damaged on its south and southeast sides. The diameter of the opening is approximately 1.8m with an exposed circumference of 2.5m. The exposed interior depth is 0.4. The adjacent wall is 0.7m wide exposed to a depth of 0.18m. The red brick building material is 0.22m long by 0.1m wide and 0.07m deep.
12	T6, T7, T103	Slot excavated through demolition layers revealed the edge of a former well backfilled with three deposits including a substantial deposit of rounded stone cobbles, red brick and mortar inclusions, and two sandy clay deposits indicative of historic topsoil. Full Depth of backfilled layers extends to a depth of 2.2m.
13	T22	Linear feature, north–south orientation, 0.5m wide and 0.25m deep. “V-shaped” cut.
14	T22	Fill of C13. Mid brown silty clay with occasional charcoal flecks.
15	T22	Circular pit. Steep sides. 0.9m long x 0.8m wide and 0.2m deep.
16	T22	Fill of C15. Dark grey black charcoal stained deposit with stone.
17	T22	Circular pit. Sharp break of slope at top. 0.5m in diameter. At least 0.15m deep.
18	T22	Fill of C17. Dark grey black charcoal stained clay with red heat affected stone.
19	T22	Circular feature, undulating cut. 0.8m in diameter, 0.18m deep.
20	T22	Fill of C19. Dark black-grey silty clay with charcoal flecks. Large stone inclusions.

21	T23	Irregular shaped pit, noted on the southwest side of geophysical anomaly. 1.3m long x 0.7m wide x 0.2m deep.
22	T23	Fill of C21. Red heat affected clay silty clay with rare charcoal flecks.
23	T26	Irregular shaped truncated pit. 0.7m long x 0.45m wide x at least 0.05m deep.
24	T26	Irregular shaped truncated pit adjacent to C23. 0.6m long x 0.3m wide x at least 0.05m deep.
25	T26	Fill of C23. Burnt clay with charcoal stained silty clay with occasional stones.
26	T26	Fill of C24. Heat affected clay, with occasional charcoal flecks.
27	T28	Large sub-circular pit. 1.4m long x 1.1m wide and at least 0.15m deep.
28	T28	Sub-oval shallow pit, 0.43m long x 0.3m wide x 0.05m deep.
29	T28	Fill of C27. Grey brown occasional charcoal flecked silty clay with decayed stone inclusions.
30	T28	Fill of C28. Heat affected clay with occasional charcoal flecks.
31	T30	Sub-oval pit 1.3m long x 0.8m wide x 0.17m deep. Steeply sloping sides.
32	T30	Fill of C31. Grey deposit with charcoal flecked inclusions with occasional stone.
33	T32	Wide (1.8m) and shallow (0.26) linear feature.
34	T32	Primary fill of C33. Charcoal rich silty clay (1.1m wide x 0.14m deep)
35	T32	Secondary fill of C33. Beige silty deposit (1.8m wide x 0.1m deep)
36	T34	Ring ditch, 5-8m in diameter, depicted on geophysical survey. Moderately sloping sides. 1.9m wide x 0.43m deep.
37	T34	Primary fill of C36. Mid-grey sandy clay with frequent gravel and small stone. 1.6m wide x 0.36m deep.
38	T34	Secondary fill of C36. Light brown sandy clay with rare gravel and moderate small stone inclusions. 1.4m wide x 0.38m deep.
39	T35	Ring ditch 5-8m in diameter, depicted on geophysical survey. Steep sided with concave base. 1.66m wide x 0.5m deep. North-south orientation.
40	T35	Primary fill of C40. Mid-grey sandy clay with occasional small stones. 0.64m wide x 0.08m deep.
41	T35	Secondary fill of C40. Mottled orange-brown sandy silt with rare charcoal flecks and occasional small stones. 1.36m wide x 0.36m deep.
42	T35	Tertiary fill of C40. Mid-grey with mottled orange clayey sand with occasional to frequent small stones, occasional charcoal flecks and chunks. 1.14m wide x 0.24m deep.
43	T35	Final/Upper fill of C40. Mottled orange-brown sandy silt with occasional small stones and hair roots. 1.66m wide x 0.1m deep.
44	T36	Sub-circular pit, 0.6m in diameter x 0.1m deep. Cut by C46.
45	T36	Fill of C44. Shiny black silty clay fill.
46	T36	Shallow linear feature, 2.4m wide x 0.19m deep. Cutting C44.
47	T36	Primary fill of C46. Beige grey silty clay, 1.4m wide x 0.15m deep.
48	T36	Secondary fill of C46. Dark grey silty clay and charcoal flecks and gravel, 0.19m deep.
49	T40	Northwest-southeast orientated linear feature, "v-shaped" profile,

		0.6m wide x 0.17m deep.
50	T40	Northwest–southeast orientated linear feature, “v-shaped” profile, 0.3m wide x 0.23m deep.
51	T40	Northwest–southeast orientated linear feature, “v-shaped” profile, 0.25m wide x 0.2m deep.
52	T40	Fill of C49. Dark grey silty clay with occasional charcoal and heat affected stone.
53	T40	Fill of C50. Dark black charcoal stained clay occasional heat affected stone.
54	T40	Fill of C51. Black charcoal stained clay occasional heat affected stone.
55	T40	Sub-circular pit, steep sides, with gradual base. 1.3m long x 1.12m wide x 0.16m deep.
56	T40	Fill of C55. Dark grey brown silty clay with occasional charcoal flecks.
57	T40	Shallow sub-rectangular pit, gently sloping sides, 1.6m long x 0.5m wide x 0.1m deep.
58	T40	Fill of C57. Charcoal flecked clay with occasional small stone.
59	T41	Sub-oval truncated pit with gradually sloping sides, 0.46m long x 0.3m wide x 0.05m deep at least.
60	T41	Fill of C59. Grey brown clay with occasional charcoal flecks.
61	T45	Possible drainage ditch, with sharp break of slope at base, 2m wide x 0.34m deep.
62	T45	Fill of C61. Dark grey brown silty clay with occasional snail shell and charcoal flecks.
63	T42	Ditch, gently sloping sides, 1.7m wide x 0.25m deep.
64	T42	Fill of C63. Mid grey brown silty clay with rare charcoal flecks and occasional stone.
65	T44	Sub-oval pit, 0.55m long x 0.35m wide x 0.1m deep. Gently sloping sides.
66	T44	Fill of C65. Loose charcoal rich silty clay with large stone inclusions.
67	T54	Sub-oval pit, steeply sloping sides, 0.8m long x 0.65m wide x 0.15m deep.
68	T54	Primary fill of C67. Brownish red heat affected clay, 0.08m deep.
69	T54	Secondary deposit, 0.02m deep, lens of charcoal, fill of C67.
70	T54	Tertiary deposit, fill of C67. Mottled clay reddish brown, 0.05m deep.
71	T56	Sub-rectangular pit feature 0.44m long x 0.3m wide x 0.08m deep
72	T56	Fill of C71. Red heat affected clay, possible hearth.
73	T58	Small shallow sub-circular pit. 0.3m x 0.26m x 0.05m +. Filled by C74.
74	T58	Single fill of C73. Mottled mid-grey orange sandy silt. Frequent inclusions of small stones. Rare inclusions of charcoal flecks. 0.3m x 0.26m x 0.05m +.
75	T58	Large shallow pit, gently sloping sides. 1.56m x 1m x 0.1m. Filled by C76.
76	T58	Single fill of C75. Moderate to loose compaction of mottled mid-grey orange sandy silt with frequent inclusions of small and medium sized stones. Rare inclusions of charcoal flecks.

77	T59	Shallow truncated irregular pit. 1.35m x 0.66m x 0.06m +. Filled by C79.
78	T59	Shallow small irregular shaped pit adjacent to C77. 0.21m x 0.15m x 0.04m+. Filled by C80.
79	T59	Single fill of C77. Moderate to loose compaction of mottled mid-grey orange sandy silt with frequent small stones and occasional flecks of charcoal.
80	T59	Single fill of C78. Moderate compaction of mottled mid-grey orange sandy silt with frequent small stones and occasional flecks of charcoal.
81	T59	Large sub-circular pit extending beyond trench to the west. 1.84m x 1.11m x 0.09m.
82	T59	Single fill of C81. Mottled mid-grey brown loose sandy silt with frequent inclusions of charcoal flecks.
83	T60	Northeast-southwest ditch, gradually sloping sides, pointed base, 1.9m wide x 0.42m deep.
84	T60	Fill of C83. Mid grey brown sandy clay with frequent decayed stone inclusions.
85	T60	Northwest-southeast ditch, gradually sloping northeast side, steeply sloping southwest side, flat base, 1.1m wide x 0.34m deep.
86	T60	Fill of C85. Sterile mid orange brown silty clay with occasional decayed stone inclusions.
87	T67	Shallow gently sloping cut, 1.03m long x 0.58m wide x 0.1m deep.
88	T67	Fill of C87. Mottled mix of black charcoal rich sand and heat affected clay.
89	T82	Northwest-southeast broad shallow cut, with gradually sloping sides. 1.8m wide x 0.3m deep. Filled by C90.
90	T82	Fill of C89. Moderate to loose compaction of dark grey clay with frequent charcoal flecks.
91	T83	North-south linear feature. Steeply sloping sides, rounded base. Shallow step in the side of the cut on its northeast side. 1.3m wide x 0.4m deep.
92	T83	Primary fill of C91. Charcoal stained clayey silt with gravel inclusions. 0.25m deep.
93	T83	Secondary fill of C91. Dark grey to mid brown clayey silt. Decayed tone inclusions. 0.15m deep.
94	T84	Curvilinear ditch, orientated north-northeast-south-southwest. Depicted as the inner of two parallel curvilinear ditches by the Geophysical survey (Geophysical Anomaly 32) Gradually sloping sided ditch. Base not determined due to presence of SK1. 2.3m wide x 0.8m + deep.
95	T84	Primary exposed deposit within C94. Moderate to loose compaction of brown sandy clay. Sk1-Skull of adult male at exposed base (See Section 2.5). Three large stones are noted directly above the skull and may represent collapsed cobbling or a covering. It is noted that the compaction of soil around the skull is noticeably looser than the rest of the deposit. Inclusions of pebbles, snail shell, and occasional animal bone are also noted within this deposit. A piece of skull has been retained for dating purposes pending the outcome of the planning decision. 0.6m + deep.
96	T84	Secondary fill of C94. Mottled orange brown sandy silty clay with

		frequent small stones and decayed stone inclusions. 0.2m deep.
97	T85	Curvilinear ditch north–south orientation. Depicted as the outer of two parallel ditches by the geophysical survey. Possibly same as C100 curvilinear ditch. Steep sided, flat base. 2.25m wide x 0.85m deep.
98	T85	Primary fill of C97. Orange grey-brown sandy clay with gravel and snail shell inclusions as well as rare inclusions of animal bone (Sample 4), 0.55m deep.
99	T85	Secondary fill of C97. Beige grey-brown silty clay with frequent decayed stone inclusions. 0.3m deep.
100	T86	Curvilinear ditch northwest–southeast orientation. Possibly same as C97 as suggested by the Geophysical survey (Geophysical Anomaly 32). Steeply sloping sides, flat base. 2.3m wide x 0.8m deep.
101	T86	Primary fill C100. Mid-brown silty sand with frequent small stones and gravel inclusions, as well as snail shell and animal bone. 0.5m deep.
102	T86	Secondary fill of C100. Mottled orange-brown sandy silty clay with frequent small stone, pebbles and decayed stone inclusions. 0.4m deep.
103	T90	Shallow sub-oval pit, 0.4m long x 0.33m wide x 0.1m deep at least.
104	T90	Fill of C103. Grey silty sand with charcoal flecked inclusions.
105	T96	Sub-oval shallow pit. Gently sloping sides. 0.83m x 0.43m x 0.05m. Extends beyond the baulk to the west. Filled by C106.
106	T96	Fill of C105. Moderate compaction of dark brown sandy clay with stone inclusions. 0.83m x 0.43m x 0.05m. Extends beyond the trench to the west.
107	T96-T100	Enclosure ditch. Roughly 32m in diameter. Indicated on Geophysical survey as (13). Gradually sloping sides. Pointed base. Three fills. Edges difficult to define. It measures 2.5m to 3.3m wide and 0.68m to 0.86m deep. Cut by Pit C111. Filled by C108, C109, C110.
108	T96-T100	Tertiary fill of enclosure ditch (C107) evident in all excavated slots. Only fill of slot excavated in T96. Moderate to firm compaction of dark orange brown sandy clay, varying in depth from 0.2m to 0.8m. Find 1: Flint lithic retained from this deposit.
109	T98-T100	Secondary fill of enclosure ditch (C107), only evident in slots excavated in T98, T99 and T100. Charcoal rich sandy clay with frequent small stone inclusions. Occasional inclusions of animal bone, both burnt and unburnt noted also. Find 2: Bronze Age pottery sherd retained from this deposit as well as two samples of animal bone unburnt (Sample 1) and burnt (Sample 3). This deposit varied in depth from 0.2m to 0.45m.
110	T97-T100	Primary deposit of enclosure ditch (C107), evident in slots excavated in T97, T98, T99 and T100. Mid-grey sandy clay, moderate to firm compaction. Rare animal bone (Sample 2) inclusions. Rare charcoal flecked inclusions. Moderate inclusions of small stone.
111	T97	Shallow sub-oval pit. Extends beyond the trench to the north. 2m x 0.62m x 0.1m +. Cuts through C107. Filled by C112.
112	T97	Single fill of C111. Black silty sand with frequent charcoal inclusions. Frequent small stone inclusions also. 2m x 0.62m x 0.1m +
113	T103	Steep sided, flat base, north-south linear feature. Possibly same as T103, albeit without a culvert.

114	T103	Fill of C113, primary deposit, mid brown sandy clay with small stone and decayed stone, 0.6m deep. Possibly same as C10.
115	T103	Fill of C113, secondary deposit, mid grey brown sandy clay with charcoal inclusions, small stones and gravel, 0.35m deep. Possibly same as C9.

APPENDIX 3 RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.:	DU026-120
RMP STATUS:	Yes
TOWNLAND:	Shanganagh
PARISH:	Rathmichael
BARONY:	Rathdown
I.T.M.:	725604/721205
CLASSIFICATION:	Castle - unclassified
DIST. TO SITE:	c. 270m north
DESCRIPTION:	Nineteenth century correspondence relating to alterations being undertaken at Shanganagh Castle mention the remains of an old castle. Two cannon shot were recovered from the site prior to its re-building (Turner 1987, 58). The castle is located east of Kiltuc Church (DU026-054001-) at the foot of the Dublin Mountains.
REFERENCE:	www.archaeology.ie/ SMR file

SMR NO.:	DU026-067
RMP STATUS:	Yes
TOWNLAND:	Oldconnaught
PARISH:	Oldconnaught
BARONY:	Rathdown
I.T.M.:	725242/720028
CLASSIFICATION:	Burial
DIST. TO SITE:	c. 375m southwest
DESCRIPTION:	This burial was located on gently undulating ground which rises to a low ridge at the site. It comprises a slightly raised area, covered in trees. During quarrying in the area in the nineteenth century several skeletons and finds of bronze fibulae were uncovered here (Wakeman 1894). In 1989 archaeological excavations were carried out at the site prior to the construction of the Shankill/Bray By-Pass. The only feature uncovered was a ditch containing a piece of iron and a fragment of clay pipe which is likely to be post medieval in date (https://www.excavations.ie/report/1989/Dublin/0000861/).
REFERENCE:	www.archaeology.ie/ SMR file

SMR NO.:	DU026-116
RMP STATUS:	Yes
TOWNLAND:	Shanganagh
PARISH:	Rathmichael
BARONY:	Rathdown
I.T.M.:	725386/721219
CLASSIFICATION:	Fulacht fia
DIST. TO SITE:	c. 470m north
DESCRIPTION:	According to Rob Goodbody (pers. comm.) Paddy Healy excavated two fulacht fia sites in Castle Farm in 1990 in advance of a housing development. This site is located to the east of Kituc Church (DU026-0054001-).

REFERENCE:

www.archaeology.ie/ SMR file

APPENDIX 4 STRAY FINDS WITHIN THE SURROUNDING AREA

Information on artefact finds from the study area in County Dublin has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area.

MUSEUM NO	IA/174/62
TOWNLAND	Shanganagh
PARISH	Rathmichael
BARONY	Rathdown
FIND	Classical Antiquities
FIND PLACE	Shanganagh Castle
DESCRIPTION	Egyptian stelae
REFERENCE	NMI Topographical Files

APPENDIX 5 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site

illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Culture, Heritage and the Gaeltacht) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989*, Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable

development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

Dún Laoghaire-Rathdown County Development Plan, 2016–2022

The development plan contains the following policies with regard to the archaeological resource:

AH 1 Protection of Archaeological Heritage – It is Council policy to protect archaeological sites, national Monuments (and their setting), which have been identified in the Record of Monuments and Places (RMP), whilst at the same time reviewing and assessing the feasibility of improving public accessibility to the sites and monuments under the direct ownership or control of the Council or the state.

AH 2 Protection of Archaeological Material in-situ - It is Council policy to seek the preservation in-situ (or as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places, and of previously unknown sites, features and objects of archaeological interest that become revealed through development activity. In respect of decision making on development proposals affecting sites listed in the Record of Monuments and Places, the Council will have regards to the advice and/or recommendations of the Department of the Environment, Heritage and Local Government (now Department of Arts, Heritage and the Gaeltacht).

AH 3 Protection of Historic Towns – It is Council policy to protect the Historic town of Dalkey as identified by the Department of the Environment, Heritage and Local Government (now Department of Arts, Heritage and the Gaeltacht).

AH 4 Designation of Archaeological Landscapes – It is Council policy to identify, designate and protect Archaeological landscapes in co-operation with relevant government departments.

AH 5 Historic Burial Grounds – It is Council policy to protect historic burial grounds within the County and encourage their maintenance in accordance with good conservation practice.

AH 6 Underwater Archaeology – It is Council policy for all developments, which have the potential to impact on riverine, inter-tidal and sub-tidal environments to require an archaeological assessment prior to works being carried out.

APPENDIX 6 IMPACT ASSESSMENT & THE CULTURAL HERITAGE RESOURCE

POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as ‘the degree of change in an environment resulting from a development’ (Environmental Protection Agency 2003: 31). They are described as profound, significant or slight impacts on archaeological remains. They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.
- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.
- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.
- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.
- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.
- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

PREDICTED IMPACTS

The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site-specific terms, as may be provided by other specialists.

APPENDIX 7 MITIGATION MEASURES & THE CULTURAL HERITAGE RESOURCE

POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

DEFINITION OF MITIGATION STRATEGIES

ARCHAEOLOGICAL RESOURCE

The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution, however. Therefore, a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

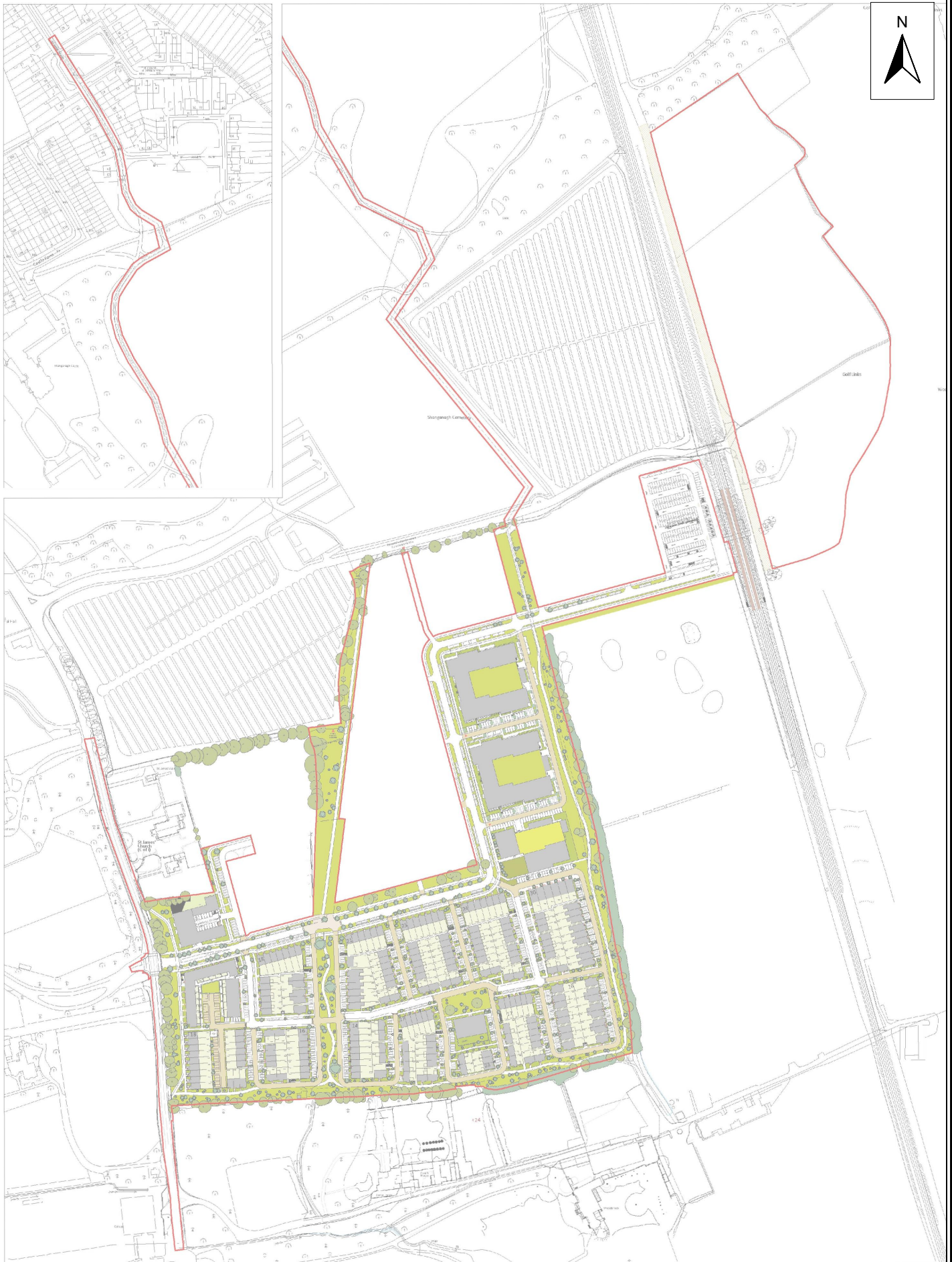
Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material or structures and where avoidance of the site is not possible. (CifA 2014b)

Archaeological Test Trenching can be defined as ‘a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality.’ (CifA 2014a)

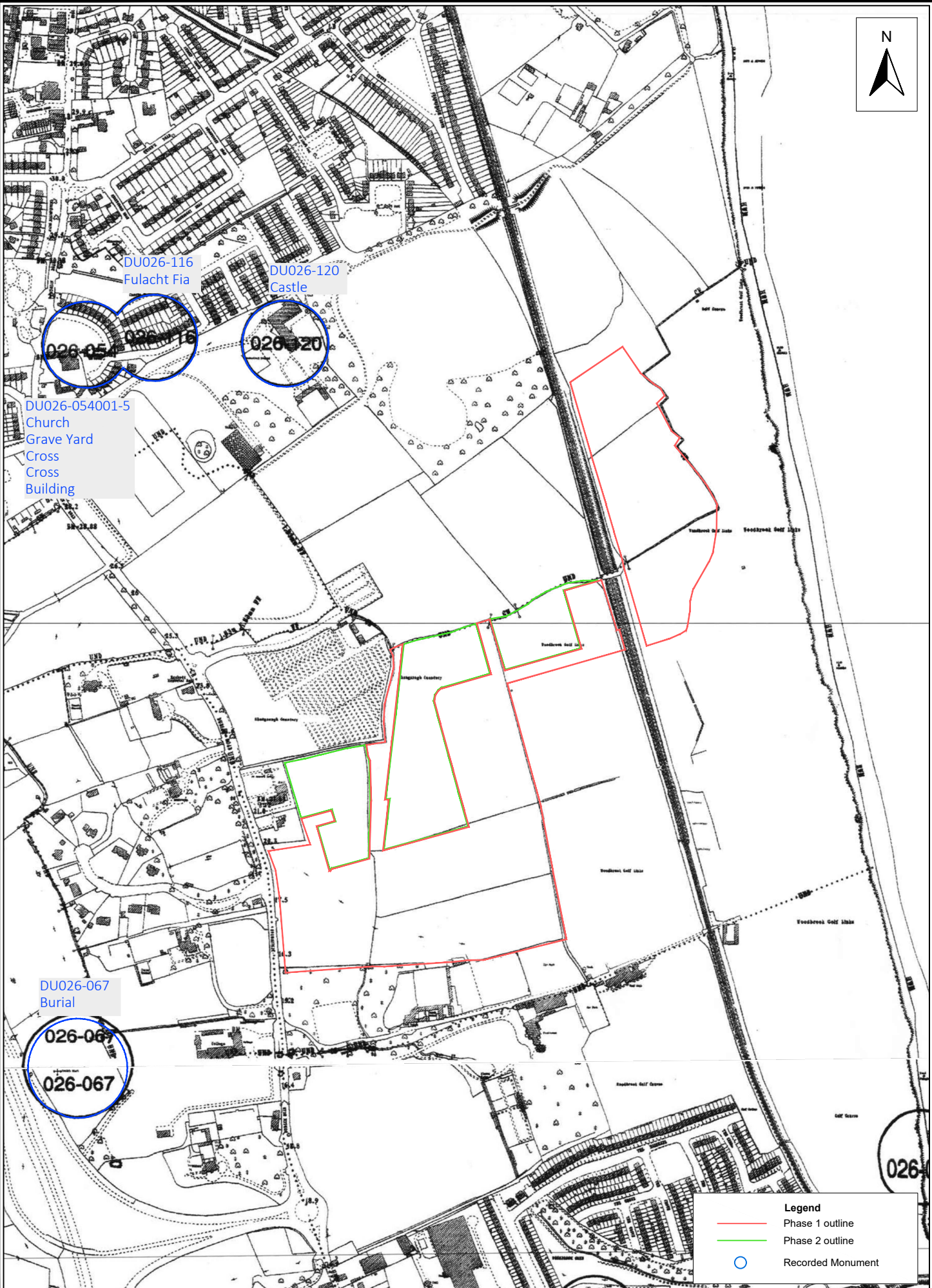
Archaeological Monitoring can be defined as a ‘formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.’ (CifA 2014c)



Title	Site location showing location of test trenches (Google Earth 2018)	Scale	1:5000@A4	Drawn by	KOM
Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
Client	Aeval Unlimited Company	Job no.	J3350	Fig.	1
				Rev.	-

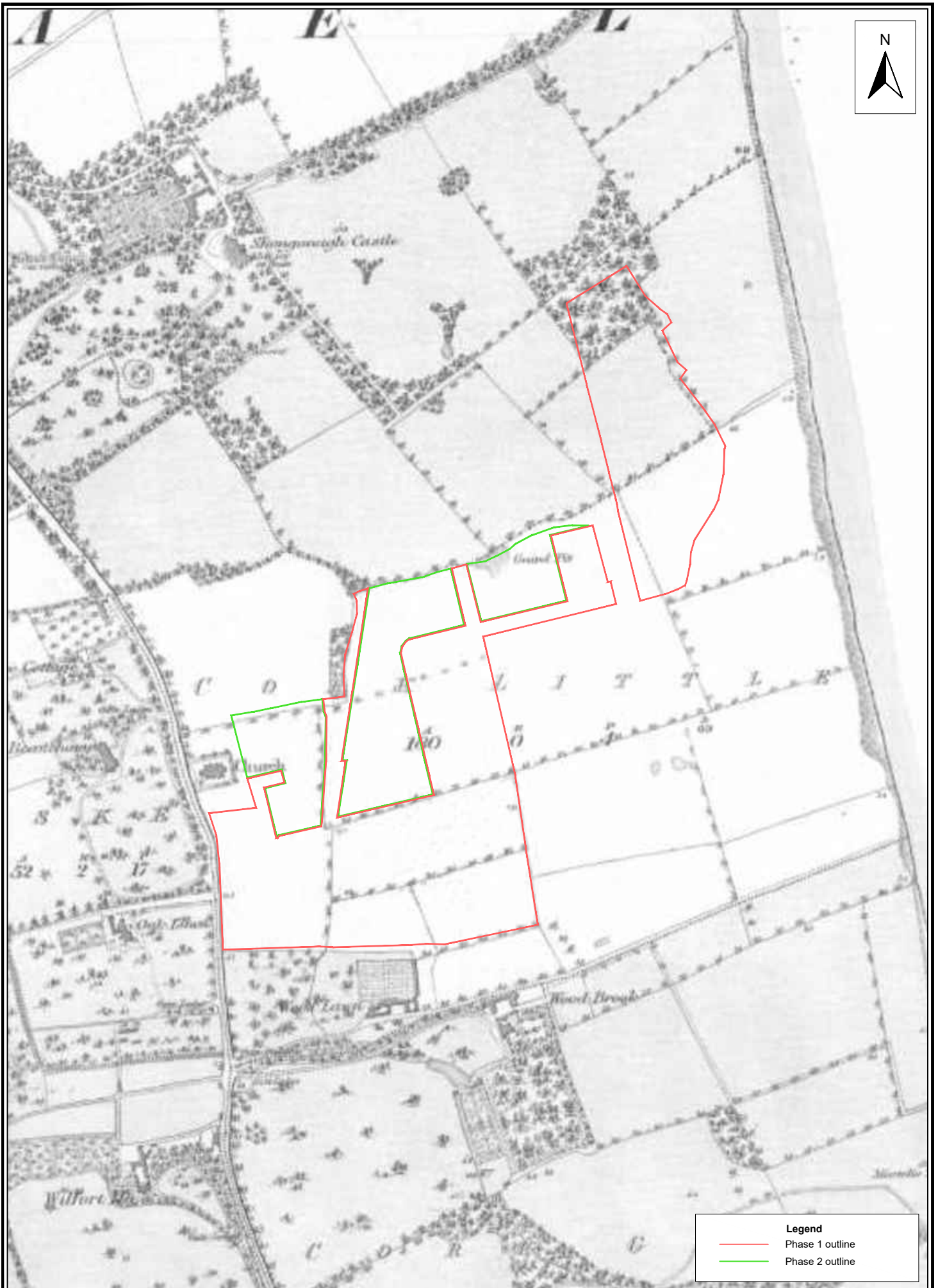


Title	Plan of the proposed development	Scale	1:5000@A4	Drawn by	KOM
Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
Client	Aeval Unlimited Company	Job no.	J3350	Fig.	2
				Rev.	-



Legend	
	Phase 1 outline
	Phase 2 outline
	Recorded Monument

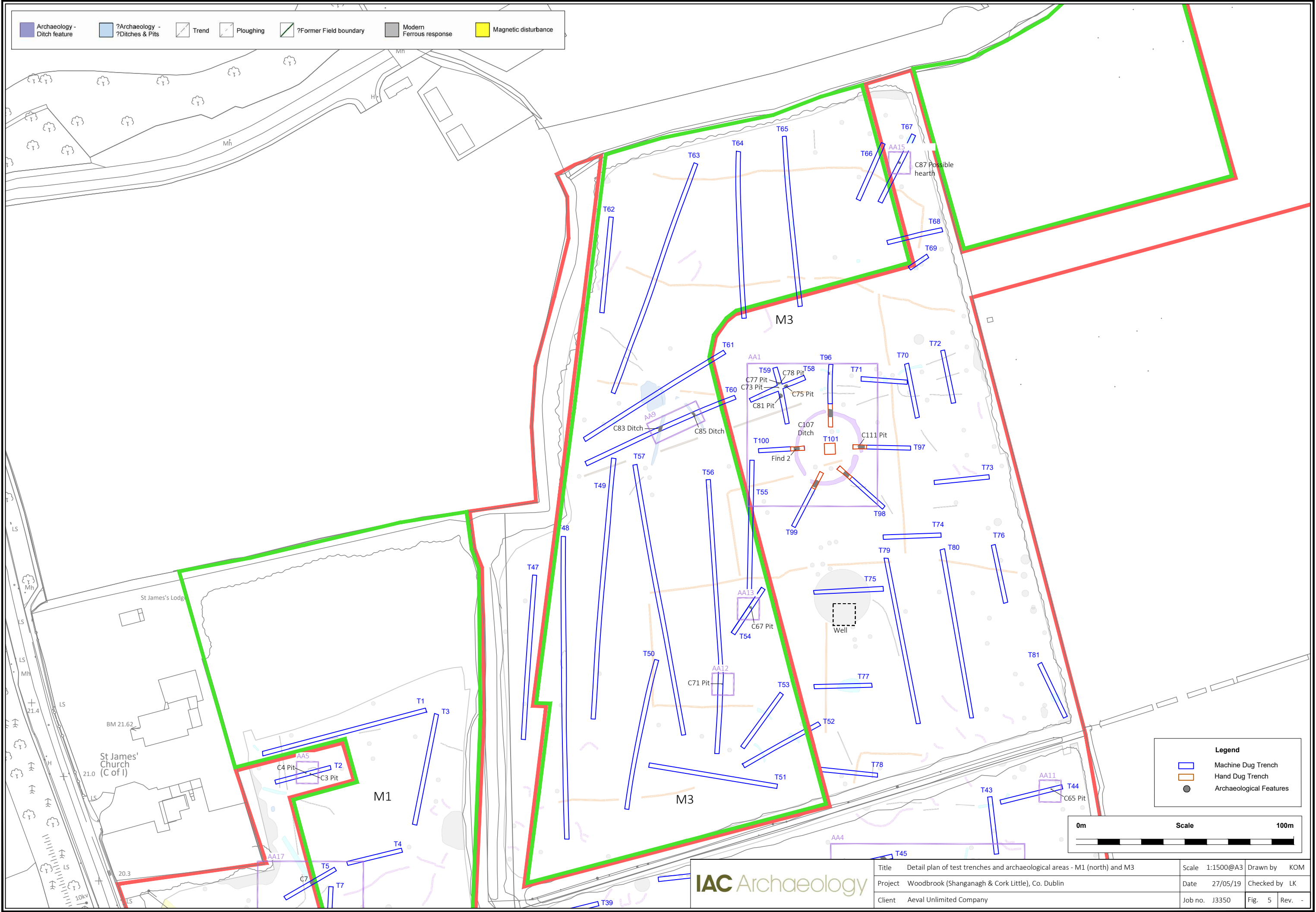
Title	Extract from RMP showing nearby archaeological sites	Scale	NTS@A4	Drawn by	KOM
Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
Client	Aeval Unlimited Company	Job no.	J3350	Fig.	3
				Rev.	-



Legend	
—	Phase 1 outline
—	Phase 2 outline

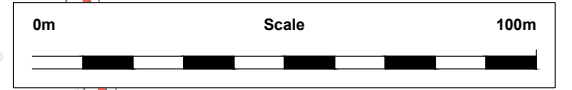
Title	Extract from the first edition 6-inch OS map (1836) showing the proposed development	Scale	NTS@A4	Drawn by	KOM
Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
Client	Aeval Unlimited Company	Job no.	J3350	Fig.	4
				Rev.	-

Archaeology - Ditch feature
 ?Archaeology - ?Ditches & Pits
 Trend
 Ploughing
 ?Former Field boundary
 Modern Ferrous response
 Magnetic disturbance

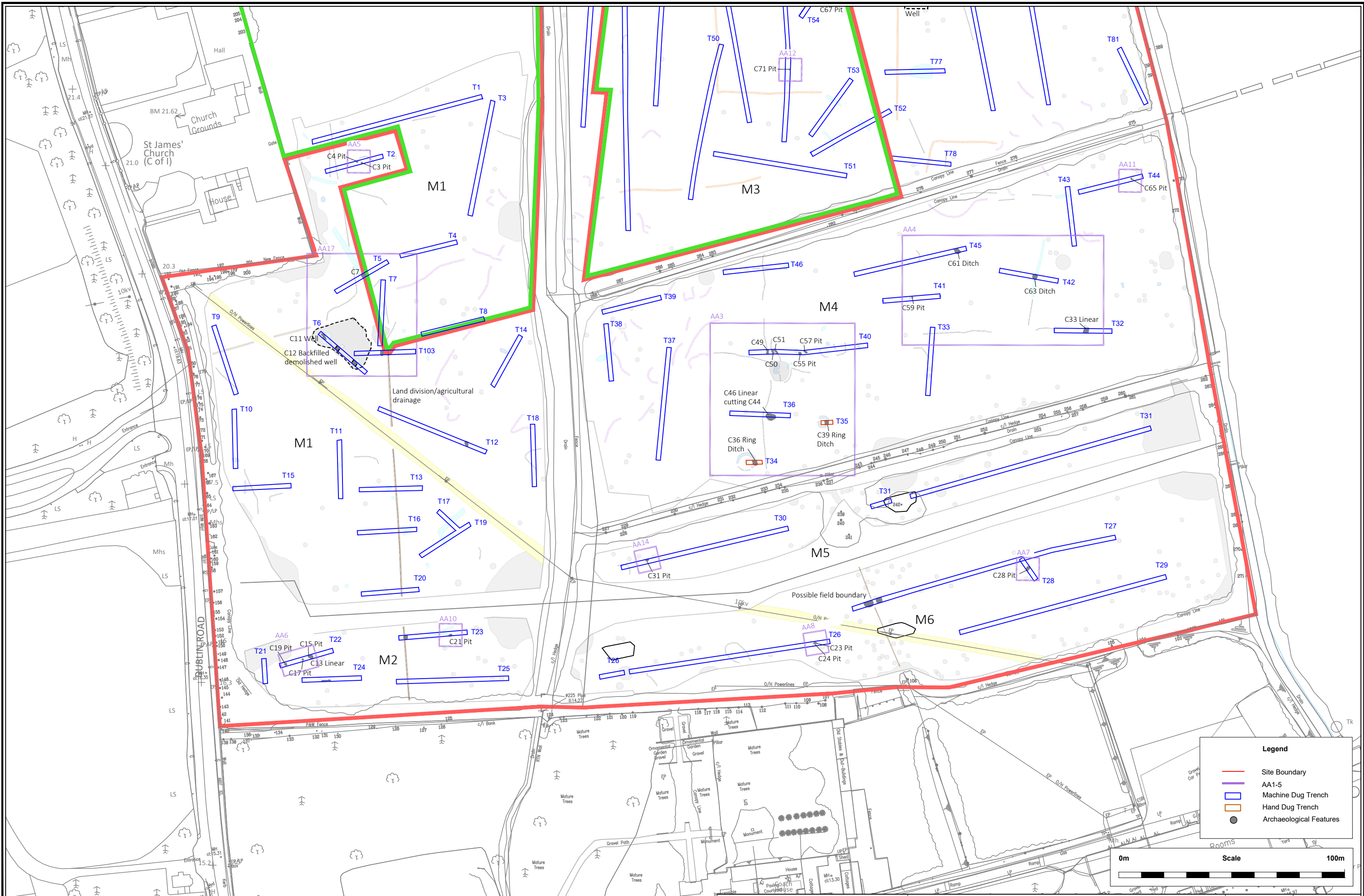


Legend

- Machine Dug Trench
- Hand Dug Trench
- Archaeological Features



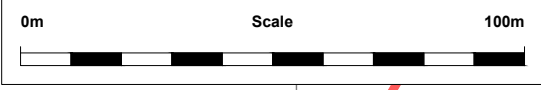
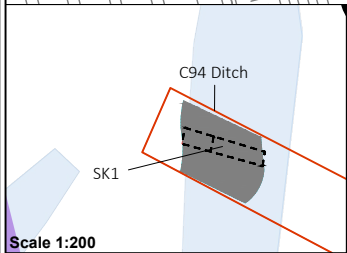
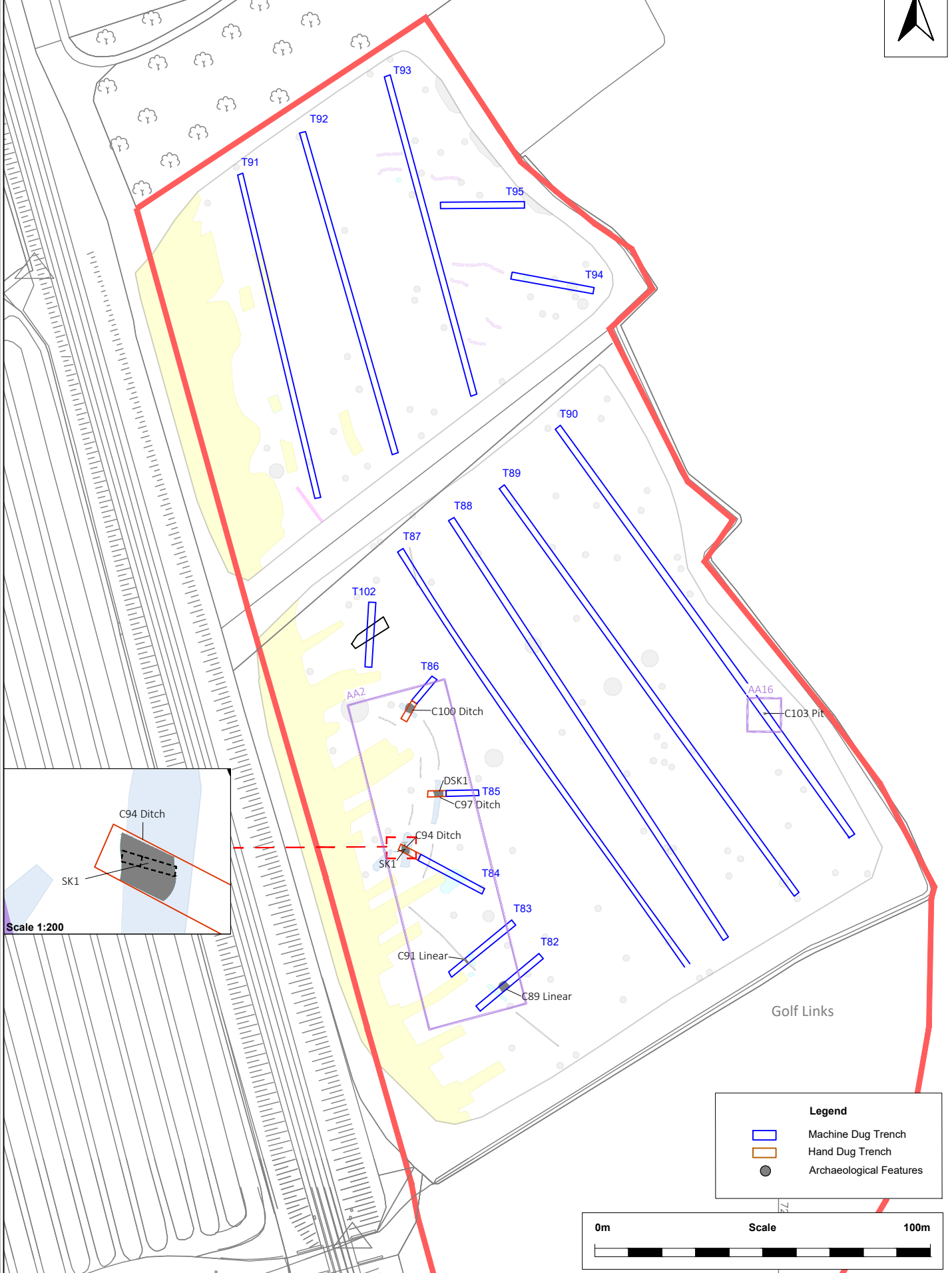
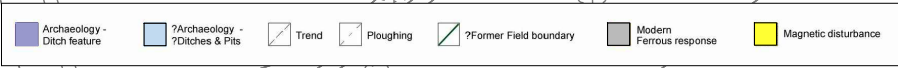
IAC Archaeology	Title	Detail plan of test trenches and archaeological areas - M1 (north) and M3	Scale	1:1500@A3	Drawn by	KOM
	Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
	Client	Aeval Unlimited Company	Job no.	J3350	Fig.	5
					Rev.	-



Archaeology - Ditch feature	?Archaeology - ?Ditches & Pits	Trend	Ploughing	?Former Field boundary	Modern Ferrous response	Magnetic disturbance
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IAC Archaeology

Title	Detail plan of test trenches and archaeological areas - M1 (south), M2 and M4-M6	Scale	1:1500@A3	Drawn by	KOM
Project	Woodbrook (Shanganagh & Cork Little), Co. Dublin	Date	27/05/19	Checked by	LK
Client	Aeval Unlimited Company	Job no.	J3350	Fig.	6
				Rev.	-



	Title Detail plan of test trenches and archaeological areas - M7 and M8		Scale 1:1500@A4		Drawn by KOM	
	Project Woodbrook (Shanganagh & Cork Little), Co. Dublin		Date 27/05/19		Checked by LK	
	Client Aeval Unlimited Company		Job no. J3350		Fig. 7	
					Rev. -	



Plate 1 Sk 1 Skull in Ditch C94, facing south

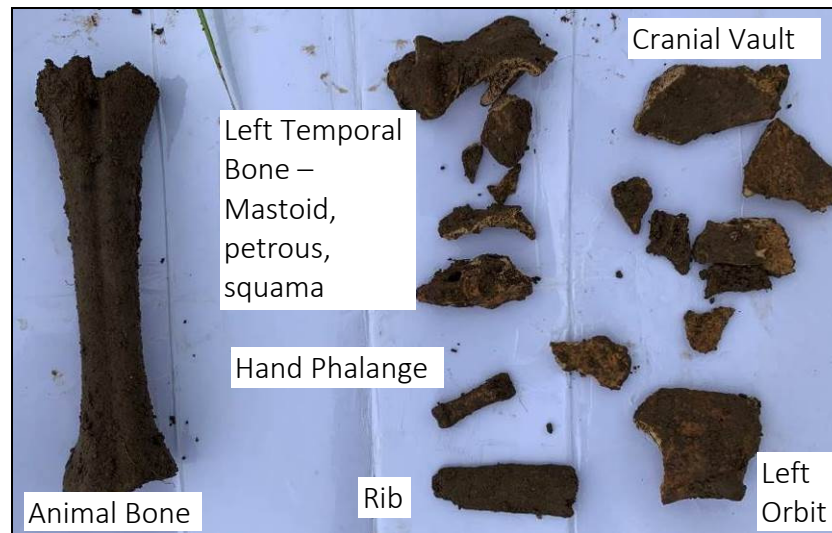


Plate 2 Bone disturbed during investigation of slot trench in C94



Plate 3 T1 overview, facing east



Plate 4 T36 Overview, facing west-northwest



Plate 5 T100 Hand Excavated 1m x 1m slot, facing west



Plate 6 T65 Overview, facing north



Plate 7 AA 1 Ditch C107 in T96, facing northwest



Plate 8 AA 1 Pit C75 in T58, facing north



Plate 9 AA 1 Pit C111 in T97, facing north



Plate 10 AA 2 Ditch C97 in T85, facing northwest



Plate 11 AA 2 Ditch C94 in T84, facing north-northeast



Plate 12 AA 2 Linear feature C91 in T83 facing south-southeast



Plate 13 AA 3 Ditch C36 in T34, facing east-southeast



Plate 14 AA 3 Ditch C39 in T35, facing north



Plate 15 AA 3 Liner features C49 and C50 in T40, facing north



Plate 16 AA 4 Ditch C33 in T32, facing north



Plate 17 AA 4 Pit C59 in T41, facing north



Plate 18 AA 5 Pit C3 in T2, facing south



Plate 19 AA 6 Linear C13 and Pit C15 in T22, facing west



Plate 20 AA 7 Pit C27 in T28, facing south-southeast



Plate 21 AA 9 Ditch C83 in T60, facing south



Plate 22 AA 10 Pit C21 in T23, facing southeast



Plate 23 AA 11 Pit C65 in T44, facing north



Plate 24 AA 12 Pit C71 in T56, facing southeast



Plate 25 AA 14 Pit C31 in T30, facing north



Plate 26 AA 15 Possible Hearth C87 in T67, facing northwest



Plate 27 AA 16 Pit C103 in T90, facing southeast



Plate 28 AA 17 Well C11 in T6, facing southeast



Plate 29 AA 17 Backfilled well C12 in T6, facing northwest



Plate 30 AA 17 Ditch C7 in T5, facing southeast