

Chapter 4:

Archaeology & Cultural Heritage

4.0 ARCHAEOLOGY AND CULTURAL HERITAGE

4.1 INTRODUCTION

This chapter describes the likely significant effects of the proposed development on archaeology, architectural and cultural heritage. Detailed interrogation of the paper sources, field inspections, and ground investigations were undertaken in an attempt to identify any known cultural heritage sites and previously unrecorded features, structures and portable finds within the proposed development area.

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4.2 STUDY METHODOLOGY

This assessment determines, as far as reasonably possible from existing records, the nature of the cultural heritage resource within the footprint and a defined vicinity of the proposed development using appropriate methods of study.

As outlined by the Chartered Institute for Archaeologists, desk-based assessment is a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets.

Desk based assessment leads to the following:

- Determining the presence of known archaeological and built heritage sites that may be affected by the proposed development;
- Assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- Determining the impact (direct/ indirect) upon the known cultural heritage sites in the surrounding area (receiving environment) including the cumulative impact of Phases 1A, 1B and 1C The Willows; and
- Identifying mitigation measures based upon the results of the above research; and
- Describing the residual impact on the archaeological, architectural and cultural heritage resource.

Research for this assessment has been undertaken in four phases. The first phase comprised a paper survey of publicly available archaeological, architectural, historical and cartographic sources. The second phase involved field inspections of the proposed development area in November 2017 and September 2018. The third phase involved a geophysical survey of the available lands in January and June 2018 (Nicholls 2018, licence 18R0012, Appendix 4.1). The fourth, and final, phase comprised archaeological test trenching which was carried out September 2018 (Kavanagh and Tobin 2018, licence 18E0495, Appendix 4.2).

4.2.1 Guidance and Legislation

This assessment has been undertaken having regard to general EIA guidance as described in Chapter 1 and the following legislation and guidelines were also consulted as part of the assessment.

- National Monuments Act 1930 to 2014;
- The Planning and Development Acts 2000 to 2018;
- Planning & Development Regulations 2001–2018;
- Heritage Act, 1995, as amended;
- Heritage Act 2018;
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht and Islands; and
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 and the Local Government (Planning and Development) Acts 2000–2018.

4.2.2 Study Area

The archaeological, architectural and cultural heritage receiving environment is defined as an area measuring 500m from the red line boundary for the proposed development. Measurements have been taken from the proposed development boundary (red line boundary) to the upstanding remains of a site or structure. Where there are no upstanding remains, the measurement is taken to the centre of the site as indicated within Figure 4.1.

4.2.3 Site Visits

Field inspection is necessary to determine the extent and nature of archaeological and architectural remains and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information. Archaeological and architectural field inspections were carried out during November 2017 and September 2018 which entailed:

- Noting and recording the terrain type and land usage;
- Noting and recording the presence of known and previously unknown features of archaeological, architectural or cultural heritage significance;
- Verifying the extent and condition of recorded sites and structures (RMPs/ RPS/ NIAH); and
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin and of archaeological, architectural or cultural heritage significance.

4.2.4 Consultation

Following the initial research, a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the receiving environment and study area, as follows:

- Correspondence with the National Monument Service (NMS) of the Department of Culture, Heritage and the Gaeltacht (DCHG) in September and October 2018 regarding investigations at Dunshaughlin.
- Meeting with representatives of the NMS on 11th December 2018 in the Custom House to discuss the proposed mitigation measures. The recommended strategy was deemed to be appropriate in this regard.

The following were also informally consulted to gain baseline data for the study area in October 2018:

- Units in the DCHG including the Heritage Service, National Monuments and Historic Properties Section which include a number of datasets: Record of Monuments and Places; Sites and Monuments Record; Monuments in State Care Database; Preservation Orders; Register of Historic Monuments; Architectural Advisory Unit and Underwater Archaeology Unit;
- National Museum of Ireland, Irish Antiquities Division: topographical files of Ireland;
- National Inventory of Architectural Heritage: County Meath; and
- Meath County Council: Planning Section.

4.2.5 Categorisation of the Baseline Environment - Paper Survey

A paper survey is a document search undertaken as part of the desktop study of the baseline data. The following sources were examined and a list of areas of archaeological, architectural and cultural heritage potential was compiled:

- Record of Monuments and Places for County Meath;
- Sites and Monuments Record for County Meath;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Meath County Development Plan 2013–2019;
- Aerial photographs;
- Excavations Bulletin (1970–2018);
- National Inventory for Architectural Heritage.

Further information is provided below on the key data sources.

Record of Monuments and Places (RMP)

Section 12(1) of the National Monuments (Amendment) Act 1994 provides that the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Culture, Heritage and the Gaeltacht) shall establish and maintain a record of monuments and places where they believe there are monuments. The record comprises of a list of monuments and relevant places and mapping showing each monument and relevant place in respect of each county in the State. Sites recorded on the RMP all receive statutory protection under the National Monuments Act.

Sites and Monuments Record (SMR)

The SMR holds documentary evidence and records of field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection. As a result these are omitted from the RMP. SMR sites are also listed on a website maintained by the DCHG.

National Monuments in the State Care Database

This is a list of all the National Monuments in the State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of each monument.

A National Monument receives statutory protection and 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).

The Minister for the Department of Environment, Heritage and Local Government (now the Minister for Culture, Heritage and the Gaeltacht) 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.

Preservation Orders List

Preservation Orders and/or Temporary Preservation Orders, can be assigned to a site or sites that are deemed to be in danger of injury or destruction. Orders are allocated under the National Monuments Act, 1930. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the National Monuments Act, 1954. 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 (DCHG).

Register of Historic Monuments

This register was established under Section 5 of the National Monuments (Amendment) Act 1987 and requires the Minister to establish and maintain such a record. Historic monuments and archaeological areas included in the register are afforded statutory protection pursuant to the regime under the National Monuments Acts 1930 to 2014. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the RMP.

Topographical files of the National Museum of Ireland

This is the national archive of all known finds recorded by the National Museum of Ireland. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

Cartographic sources

These are important in tracing land use development within the receiving environment of the proposed development as well as providing important topographical information on areas of archaeological potential and the construction of buildings. Cartographic analysis of all relevant maps has been made to identify any topographical anomalies or structures that no longer remain within the landscape.

The cartographic sources consulted include:

- Down Survey Map, Barony Map of 'Rattoth' and Parish Map of 'Dunsaghlin', c. 1655;
- William Larkin's, Map of the County of Meath, 1812; and
- Ordnance Survey 6-inch and 25-inch maps of Meath (1836 and 1909).

Documentary Sources

Documentary sources (as identified above) were consulted to compile background information on the archaeological, architectural and cultural heritage receiving environment of the proposed development.

Development Plan

Development Plans contain a catalogue of all the Protected Structures, archaeological sites and Architectural Conservation Areas within every county. The development plan of relevance that was examined as part of this assessment is the Meath County Development Plan 2013–2019.

The National Inventory of Architectural Heritage (NIAH)

The NIAH is a government based organisation tasked with making a nationwide record of locally, regionally, nationally and internationally significant structures, which in turn provides county councils with a guide as to what structures to list within the Record of Protected Structures. The NIAH have also carried out a nationwide desk based survey of historic gardens, including demesnes that surround large houses.

Aerial Photographic Coverage

This is an important source of information regarding the precise location of sites and their extent. It also provides information on the terrain and its likely potential for archaeology. Ordnance Survey aerial photographs (1995, 2000, and 2005), Google Earth coverage (2003–2018) and Bing Maps were examined for this assessment.

Excavations Bulletin

This is a summary publication that has been produced every year since 1970. This summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This information is also available online from 1970–2018. Information from this resource is vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files.

4.2.6 Geophysical Survey

Geophysical surveys are used to create ‘maps’ of subsurface archaeological features. Features are the non-portable part of the archaeological record, whether standing structures or traces of human activities left in the soil. Geophysical instruments can detect buried features when their electrical or magnetic properties contrast measurably with their surroundings. In some cases, individual artefacts, especially metal, may be detected as well. Readings, which are taken in a systematic pattern, become a dataset that can be rendered as image maps. Survey results can be used to guide excavation and to give archaeologists insight into the pattern of non-excavated parts of the site. Unlike other archaeological methods, the geophysical survey is not invasive or destructive. A geophysical survey was undertaken to inform this assessment between January and May 2018 within the proposed development area (Nicholls 2018, Licence 18R0012). A summary of the geophysical report is presented in Section 4.3.7 and the full text included in Appendix 4.1.

4.2.7 Archaeological Test Trenching

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’ (IFA 2014a, 4). A program of archaeological testing based on the results of the geophysical survey was carried out in the proposed development area in September 2018. This was undertaken by Liza Kavanagh of IAC under licence 18E0495. A summary of the testing report is presented in Section 4.3.8 and the full text included in Appendix 4.2.

4.2.8 Impact Assessment Methodology

In order to assess, distil and present the findings of this study, the following definitions apply:

- ‘Cultural Heritage’ where used generically, is an over-arching term applied to describe any combination of archaeological, architectural and cultural heritage features, where;

- the term ‘archaeological heritage’ is applied to objects, monuments, buildings or landscapes of an (assumed) age typically older than AD 1700 (and recorded as archaeological sites within the Record of Monuments and Places);
- the term ‘architectural heritage’ is applied to structures, buildings, their contents and settings of an (assumed) age typically younger than AD 1700;
- the term ‘cultural heritage’, where used specifically, is applied to other (often less tangible) aspects of the landscape such as historical events, folklore memories and cultural associations. This designation can also accompany an archaeological or architectural designation or describe features that have a more recent origin, but retain cultural heritage significance; and
- For the purposes of this report the terms ‘architectural heritage’ and ‘built heritage’ have the same intended meaning and are used interchangeably.

The Impact Definitions identified in Section 3.7 of the draft ‘Guidelines on the Information to be Contained in Environmental Impact Assessment Reports’ (2017) are used.

4.3 THE EXISTING RECEIVING ENVIRONMENT (BASELINE SITUATION)

The site (c. 28.3ha) is situated to the north of the R147 /Dublin Road immediately bordering ‘The Willows Phase 1A, 1B and 1C’ residential developments in Dunshaughlin townland, Co. Meath. The land comprises undeveloped pasture and arable fields (Figure 4.1) with a slight south-facing slope, rising to a low peak in the north (c. 100m OD). The site is bound to the north and northwest by existing residential estates and the Dunshaughlin Business Park. The surrounding landscape is characterised by low land boggy pasture and arable land.

There are no recorded monuments situated within the application area although a *fulacht fia* ME044-010 is present c. 90m to the southeast (Figure 4.2). The zone of notification for the historic town of Dunshaughlin (ME044-033) extends c. 325m to the west; however only one sub-constraint is situated within a 1km radius, Motte ME044-033001 c. 390m to the west.

4.3.1 Archaeological & Historical Background

Prehistoric Period

While recent discoveries may provide evidence of an Upper Palaeolithic human presence in Ireland (Dowd and Carden, 2016), the Mesolithic (c. 7000–4000BC) is the earliest time for which there is widespread evidence of human occupation of the island. People of the Mesolithic led transient lifestyles based on hunting, foraging and fishing. It is likely they lived in small groups which migrated to exploit seasonal resources along rivers and coastlines (Woodman et al. 1997). Often the only traces of Mesolithic activity are shell middens or scatters of flint material produced as by-products in the production of flint implements. There are no recorded sites of a Mesolithic date within the vicinity of the proposed development site however remains of a Mesolithic fishing platform have been excavated at Clowanstown c. 5km north.

The Neolithic Period (c. 4000–2500BC) saw the introduction and adoption of agriculture as a way of life to Ireland. Agriculture demanded the clearance of forests and the construction of field boundaries. Settlements became more permanent with rectangular houses becoming common, sometimes with evidence of internal hearths and sub-divisions of the internal space. A new concern of territory and a claim to land on which to farm contributed to the construction of large megalithic tombs (i.e. Court Cairns, Portal Tombs, Passage Tombs, and Wedge Tombs).

These monuments acted as funerary tombs and ceremonial centres, as well as providing an ancestral connection to the land. Their construction would have required significant social organisation and cooperation and there is evidence that some sites remained in use at least intermittently for hundreds of years. County Meath is known for its rich tradition in passage tombs, with the *Bru na Boinne* UNESCO World Heritage Site located c. 21km to the north. There is a total of 52 passage tombs recorded in County Meath, which does not include unclassified

megalithic tombs which may represent unidentified passage tombs. While there are no recorded megalithic tombs in the vicinity of the proposed development site the sheer number of tombs in the wider landscape of County Meath suggests a large population of Neolithic people in the region. Nearby evidence for Neolithic habitation includes a rectangular plank-built house excavated at Johnstown 1 in advance of the M3 Road Scheme 1.2km west (Elder and Ginn 2009a, Reg. No. E003041). Further ephemeral evidence for prehistoric activity can be gleaned from the record of stray artefacts held by the National Museum, such as the polished stone axe (NMI 1977:1215) retrieved from Cooksland townland c. 2.5km to the north.

The Bronze Age (c. 2500–800BC) began with widespread advances in metallurgy. The most common indication of Bronze Age activity is the *fulacht fia* or burnt mound. These are sites which were used for heating water using hot stones in a trough, possibly for a variety of purposes, such as cooking, tanning, dyeing and bathing. Very often, these sites survive only as spreads of charcoal rich soil with heat-affected stone inclusions having been heavily disturbed by later agricultural activity. A *fulacht fia* (ME044-010) is recorded c. 95m to the southwest of the proposed development site. Further evidence for probable burnt mound activity, in the form of truncated spreads of burnt material, was identified within the proposed development area during the 2018 testing programme, designated as AA1 and AA2 (Kavanagh and Tobin 2018, Appendix 4.2).

During the Bronze Age, megalithic tombs were no longer constructed with emphasis moving from a communal approach to burial to a focus on the individual. A later Bronze Age or early Iron Age ringditch associated with three cremation pits was excavated at Johnstown 4 in advance of the M3 Road Scheme, c. 1.6km to the northwest (Elder and Ginn 2009b, Reg. No. E003052). In addition, a complex kiln-type feature excavated at Johnstown 3, further to the west, revealed a mix of pottery types although an early Bronze Age date has been obtained from animal bone and charcoal (Elder and Ginn 2009c, Reg. No. E003043).

A possible ring-barrow was identified during testing within the current proposed development area, designated as AA3 (Kavanagh and Tobin 2018, Appendix 4.2). The site which comprises two concentric circular ditches measures c. 30m north-south. There are 21 recorded ring-barrows in Archaeological Survey of Co. Meath, the most significant cluster of which is situated at Tara 10km to the north-northwest. Ring-barrows have been recently excavated along the route of the M3 Road Scheme.

The Iron Age (c. 800BC – AD400) is distinguished from the rather rich remains of preceding Bronze Age and subsequent early medieval period by a relative paucity of evidence in Ireland. However, 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). Of the archaeology identified along the M3 Road Scheme the site nearest to the proposed development area, Rath Hill 1, contained minor evidence for Iron Age metal working; c. 850m to the south (Elder and O'Hara 2009; Reg. No. E003040). Further evidence for Iron Age activity was recorded c. 1.3–1.5km to the west at Johnstown 1 and Johnstown 2 (Elder and Ginn 2009a, Reg. No. E003041; Schweitzer and Ginn 2009, Reg. No. E003042).

Early Medieval Period (AD400–1100)

During this period, Ireland is depicted in the surviving historical sources as entirely rural. The area of proposed development was located within the territory of the *Deisí Breg*, in Brega; fertile land bound by the Rivers Boyne and Liffey. Situated in the hinterland of Tara (7km north) the Royal site of Lagore is also present c. 2km to the northwest. Lagore Crannóg (ME038-027) was constructed of brushwood and peat interspersed with timber and it appears to have had at least three phases of occupation with successive palisades. Excavated during 1934–6 by Harvard Archaeological Expedition and it was dated with reference to historical sources from 7th to 10th centuries (www.archaeology.ie).

This period is characterised by the large-scale conversion to Christianity and the foundation of a large number of ecclesiastical sites throughout Ireland, in the centuries following the 5th century AD. These early churches tended to be constructed of wood or post-and-wattle (O'Sullivan et al 2014). Between the late 8th and 10th centuries,

mortared stone churches gradually replaced the earlier structures. Many of the sites, some of which were monastic foundations, may have originally been defined by an enclosing wall or bank similar to that found at the coeval secular sites.

The townland name Dunshaughlin derives from the foundation of a church by Bishop Sechnall or Secuninus, known as *Domhnach-Seachnail* (the church of Seachnall), sent to assist St. Patrick in AD 439 (Gwynn and Hadcock 1970, 35). Seachnall is thought to have been a relative of Patrick and upon his death in 447 he was reputed to be the first bishop to be buried in the country (archaeology.ie). Bhreathnach (1999) noted that Dunshaughlin seems to have been a matrix ecclesia, a church with a number of dependant chapels such as the one at Ratoath. The church (ME044-033002) is situated on a broad, low hill within the west edge of the reclaimed Little Lagore Lough c. 1km north of the proposed development area. A former ecclesiastical enclosure (ME044-033009) is partially fossilised in the street-pattern of the town. The monastery was repeatedly attacked and burned during the 11th and 12th centuries AD suggesting the wealth and status of site was attractive. It is suggested that this site may have been the church of the *Sil nÁedo Slaine*, Kings of Lagore crannog (ME028-027), c. 1.7km to the east but this is not confirmed.

Secular habitation sites in the early medieval period include crannógs, cashels and ringforts in addition to unenclosed settlements, which are more difficult to identify in the archaeological record. The ringfort or rath is considered to be the most common indicator of settlement during the early medieval period. An enclosed early medieval settlement was excavated at Johnstown 1 in advance of the M3 Road Scheme, 1.2km west of the proposed development area (Elder and Ginn 2009a, Reg. No. E003041). The settlement had an associated complex of pits, postholes, stakeholes, and curvilinear features (interpreted as possible dwellings), enclosed by a 50m diameter sub-circular ditch. The settlement extended beyond the footprint of the construction corridor and as such elements are preserved *in-situ*. Further evidence for recorded settlement in the area includes the ringfort (ME044-020) c. 2.9km south in Rathregan. A bone gaming piece (NMI IA/L/1944) was retrieved from this site.

Medieval Period (AD 1100–1600)

The beginning of the medieval period is characterised by the arrival of the Anglo-Normans in 1169 at the behest of Diarmuid mac Murrough, the disenfranchised king of Leinster. Subsequent marriage of one of these knights Richard de Clare to mac Murroughs daughter Aoife led to the sub-division of the Kingdom of Leinster with great swathes of land parcelled out among de Clare's followers. This time period is synonymous with castle-building, both masonry and earthwork, as well as the creation of new towns. Dunshaughlin became a seigniorial manor of Hugh de Lacy and the earthwork (ME044-033001) 450m west of the proposed development area could be a motte built by him. It is formed by a flat-topped grass-covered circular mount with a basal diameter of 34m. Dunshaughlin is thought to have been incorporated as a town at some point (Lewis 1837, 1, 589), although its history is not well known. Subsequently the church at Dunshaughlin became parochial, and it is listed in the ecclesiastical taxation (1302-06) of Pope Nicholas IV 'Denclynschael' (archaeology.ie).

Post-medieval Period (AD 1600–1900)

The 17th century witnessed the concentrated and systematic reduction of all of Ireland to English authority, largely through conflicts and the forced settlements known as 'The Plantations'. As part of the process of achieving colonial dominion a number of surveys and mapping programmes were completed throughout the post-medieval period. The Down Survey (1656–58) used the collected cadastral information to map all forfeited lands; overseen by the surgeon-general of the English army, William Petty and a number of former soldiers. It was not just a project of mapping but of social engineering that was underpinned by a massive 'transfer' in landownership from Irish Catholics to English Protestants. As the lands at Dunshaughlin were in Protestant ownership at the time of the survey they are not recorded in any detail, merely noted as 'unforfeited lands'.

Following the pacification of the county, the 17th and 18th centuries saw a dramatic rise in the establishment of large residential houses. 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 landscapes – to be able to view a large house within a natural setting. The only demesne lands of note, recorded in the first edition 6-inch OS map (1836), is that associated with Lagore House, c. 2km to the northeast.

There are a number of scattered post-medieval settlements or farmsteads within the townlands surrounding Dunshaughlin and within the town itself. The town was well-established by the early 19th century with a courthouse, constabulary, post office and two churches recorded in the first edition OS map. The medieval church (ME044-033002) was recorded in good repair in the 17th century with the chancel partially ruined by the 18th century (archaeology.ie). The first edition 6-inch OS map of 1836 depicts a small structure in the northeast of the proposed development site fronting onto a laneway.

The foundations of a post-medieval windmill were excavated at Rath Hill 1, in advance of the M3 Road Scheme in 2006 c. 700m to the southwest (Elder and O'Hara 2009; Registration No. E003040). This is not illustrated on the historic mapping.

A Union Workhouse (NIAH Ref.: 14404403–4) was established in the district between 1835 and 1845, c. 950m southeast of the proposed development area. The large H-plan workhouse building, associated administration block front onto the Dublin Road, with the smaller fever hospital situated to the rear. A pathway leads north from the fever hospital to the burial ground (now recorded as a Famine graveyard), within the northwest limit of Ballinlough townland.

4.3.2 Summary of Previous Archaeological Fieldwork

The SHD application site lies immediately north of The Willows Phase 1B and Phase 1C sites which have previously been subject to archaeological investigation. Monitoring was carried out on Phase 1B lands under licence 17E0658, following geophysical survey (Nicholls, 2017, licence 17R0137). Nothing of archaeological significance was identified. Phase 1C lands were subject to geophysical survey (Nicholls, 2018, licence 18R0012) and test-trenching (Kavanagh 2018, licence 18E0507). While a number of anomalies were identified during the geophysical survey, these were confirmed as geological during testing. No features of archaeological potential were identified.

Recent geophysical survey and subsequent test trenching carried out with a proposed residential development c. 200m west did not identify any archaeological remains (Murphy 2014). Excavations along the M3 Road Scheme (Clonee to North of Kells), revealed a small number of archaeological settlement sites c. 1–2km west and northwest of the proposed development area. These ranged in date from the Neolithic, Bronze Age, Iron Age, early medieval and post-medieval periods suggesting a continuous occupation of the surrounding landscape.

4.3.3 Cartographic Analysis

Down Survey Barony Map of 'Rattoth' and Parish Map of 'Dunsaghlin', c. 1655

The Parish map for Dunshaughlin shows the townland as a blank plot of land annotated as unforfeited land (1384 acres). The Barony Map for Ratoath similarly shows the lands as unforfeited with no detail regarding settlement or church locations.

Larkin's Map of County Meath, 1812

This map does not provide great detail however it illustrates topographical features and approximate outlines of buildings and settlements. The area of proposed development is shown to the northeast of the Dublin Road, south

of Dunshaughlin Town, in an area annotated as ‘Twelve Acres’. Scattered houses line the roadway leading south-southeast from the settlement and one is shown within the proposed development site. The motte (ME044-033001) is shown as a large raised feature in the landscape, to the north-northwest of site, within the southern limit of the settlement. Further north the Church (ME044-033002) is illustrated dominating the town. This map shows the bog at Lagore to the east of Dunshaughlin where a crannog was excavated previously. Horner (2007) notes that much of this area has been drained and altered to accommodate housing, new roads and land fill.

First Edition Ordnance Survey Map, 1836, scale 1:10560

This is the first accurate historic mapping coverage of the area containing the proposed scheme. The proposed development site is shown as a number of fields (Figure 3). A small structure is depicted in the northeast corner of the proposed development site, along the bordering roadway.

Ordnance Survey Map, 1909, scale 1:2500 (Figure 3)

There had been no significant change to the proposed development site by the time of this map in 1909.

4.3.4 County Development Plan

The Meath County Development Plan (2013–2019) details the archaeological constraints (Recorded Monuments and Protected Structures) and the objectives with regard to their protection and conservation. In addition to the Record of Monuments and Places (RMP) and the Record of Protected Structures (RPS) an Industrial Heritage Survey of the county has also been undertaken. There are no recorded monuments situated within the application area although a *fulacht fia* ME044-010 is present c. 95m to the southeast (Figure 4.2). The zone of notification for the historic town of Dunshaughlin (ME044-033) extends c. 325m to the northwest; however only one sub-constraint is situated within a 500m radius, Motte ME044-033001 c. 390m to the west.

Table 4.1: Recorded Cultural Heritage sites located within the receiving environment

SMR No.	Classification	Distance to Site	Statutory Protection
ME044-010	<i>Fulacht fia</i>	c. 90m southeast	RMP
ME044-033	Settlement Cluster Dunshaughlin	c. 325m west	RMP
ME044-033001	Motte	c. 390m west	RMP
ME044-033002	Church	c. 760m northwest	RMP
ME044-033011	Graveyard		
ME044-033009	Enclosure		
ME044-033003–6, 010	Architectural fragment, Font Stone sculpture, Graveslab, Stone Sculpture		
ME044-033008	Industrial site	c. 840m northwest	SMR
ME044-033007	House – 16th/17th century	c. 850m northwest	RMP

4.3.5 Aerial Photographic Analysis

Inspection of the aerial photographic coverage and satellite imagery of the application site held by the Ordnance Survey (1995, 2000, and 2005) and Google Earth (2005–2017) has been carried out as part of this assessment. No previously unidentified features of archaeological potential were noted.

4.3.6 Field Inspection

The field inspection sought to assess the site, its previous and current land use, the topography and any additional information relevant to the report. During the course of the field investigation the proposed development

site and its surrounding environs were inspected (Figure 4.1). The site was initially inspected in November 2017. The development site comprises a mixture of well-maintained pasture in the southwest and southeast, densely overgrown scrubland to the north and previously disturbed rough pasture to the northeast.

The site comprises all or part of seven fields of flat pastoral and arable agricultural land, to the north of the Phase 1B and 1C residential developments in Dunshaughlin townland (Plates 4.1–4.9). No features of archaeological potential were noted within the study area although the fields had been recently ploughed at the time of inspection. The land appeared waterlogged although there was no areas of standing water. Deep drainage ditches have been excavated along the field boundaries. Along the northern site boundary the former laneway, shown on the 1840s mapping, is represented by a heavily overgrown hollow. There is no visible trace of the structure shown on the first edition OS map (Figure 4.3). While the slope is gentle the northern third of site forms a ridge of relative high ground overlooking the land to the south. The ground falls to the north and east of the site, and is not overlooked from any vantage. The land bordering the Phase 1B site has been subject to a moderate level of construction related disturbance, with storage of topsoil along the field boundaries. There is no above ground evidence for the *fulacht fia* ME044-010 situated in the adjacent field c. 90m east (Plate 4.10). The recorded motte ME044-033001 is not visible from the site, nor are any of the built heritage features in the town (noted below in Sections 4.3.9–10).

4.3.7 Geophysical Survey

A geophysical survey was undertaken within the SHD application site (Fields M1–M8) between January and May 2018 (Nicholls 2018, licence 18R0012, Figure 4.4). A full copy of this report is included in Appendix 4.1. Features of archaeological potential were indicated in survey areas M5, M7 and M8 in the northern half of site. The anomalies have been assigned numbers and are discussed fully in the survey report; mentioned below as Geophysical Anomaly # (GA#).

The remains of two circular annular enclosures were identified in M6 and M7 located on a ridge of high ground extending northwest–southeast. The enclosure (GA8) in M6 defined by two concentric circular ditches measuring c. 29m and c.9m in diameter. Potential outlying pit/linear remains, notably responses GA9–10 to the northwest, are indicated by poorly defined positives and weak trends. Further isolated and magnetically weak positives are indicated in M6, notably responses GA11 and GA12 to the northwest and south of survey centre. Faint linear trends are also indicated in the results, the majority of which are expected to be of limited archaeological potential. Remains of an early field system have (GA13-14) been recorded extending northwest–southeast and northeast–southwest across the approximate centre of M6.

The smaller enclosure in M7 (GA15) is represented by a single ditch measuring c. 7m in diameter. A further weak circular trend (GA16) was noted c. 10m to the east of this enclosure which may be of archaeological interest. Poorly defined linear responses and trends (GA17) to the south in M7 are also evident. These are expected to represent remains of former drainage. Remains of an early field system (GA18) extend through the centre of M7.

To the south in M5 a possible *fulacht fia* site, or a group of large pits (GA5), is indicated in the centre of the field. An archaeological interpretation for weakly magnetic positives (GA 6 and 7) southeast of survey centre and at the western survey edge should also not be dismissed. Given the abundance of ferrous debris recorded throughout M5 a modern ferrous origin for responses GA6 and GA7 is possible.

A further circular enclosure was recorded from survey in M8, outside of the SHD application site boundary. This enclosure lies c. 15m east of the proposed development area and appears to represent a single sub-oval ditch measuring c. 25m east–west (long axis).

Weakly positive, small-scale responses are also apparent in the results from survey in areas M2, M4a, and M5-M7. Whilst an archaeological origin for these anomalies should not be dismissed a modern ferrous or natural soil/geological origin is expected for the majority. Faint linear trends also evident throughout M2–M8 are deemed

to be of limited archaeological significance. The remains of a probable former boundary are suggested by a weak linear trend traversing M2 northwest–southeast to the north of survey centre.

No responses of an archaeological significance were identified in field M1 and M3 although modern ferrous debris was noted frequently. The results from survey in M4b are dominated by modern ferrous disturbance caused by steel-capped boreholes at the southern edge.

4.3.8 Archaeological Testing

A total of 53 trenches, measuring 4,747.5 linear meters, were excavated within the defined SHD application area over the course of seven days (Figure 4.5). A full report on the archaeological testing carried out under licence 18E0495 has been prepared (Kavanagh and Tobin 2018) of which a copy is included in Appendix 4.2. A summary of the findings is included here.

A total of six areas containing features of archaeological potential (AA1–6) were identified by this investigation. The most significant of these is a probable ring-barrow designated as AA3 which comprises of a set of concentric circular ditches measuring c. 30m north–south. Two spreads of burnt mound material were noted in AA1 and AA2, the latter associated with two pits, and three single pits were noted in AA4–6. All these features are indicative of Bronze-Age habitation in the locale which correspond with the recorded *fulacht fia*, ME044-010, c. 420m to the southeast of AA2.

AA3 appears to be the heavily truncated remains of a ring-barrow. The Archaeological Survey of Ireland describes a ring-barrow as a circular or oval raised area (generally c. 1m above the ground level) enclosed by a fosse (ditch) and outer bank, with or without an entrance (www.archaeology.ie). There are 21 recorded ring-barrows in the Sites and Monuments Record for County Meath, of which the most significant cluster is situated at Tara 10km to the north-northwest. Ring-barrows have been recently excavated along the route of the M3 Road Scheme.

With respect to AA3, the fact that no above-ground element of a mound survives, the shallow nature of the surviving ditches, and apparent lack of an eastern return to the enclosure, all suggest that the barrow has been heavily truncated by agricultural activity over the years.

Archaeological Areas 1–2 are located in the southern fields and Archaeological Areas 3–6 are clustered in the northwest field along a high ridge. With the exception of one of these features in AA4 all of the archaeology was suggested by a geophysical signature. All of the other geophysical anomalies were identified as representing natural geological variations. The testing has indicated that the results of the geophysical survey are accurate, i.e. areas indicated as having no archaeology are confirmed as such, and as such we now have a good understanding of the site.

The features recorded at AA1–6 are considered on current evidence to be of local significance.

4.3.9 Recorded Protected Structures

Meath County Development Plan 2013-2019 recognises the statutory protection afforded to protected structures. Protected structures within the receiving environment of the proposed development are detailed in Appendix 4.5, whereas aims and objectives relating to the architectural resource are included in Appendix 4.7. There are no Architectural Conservation Areas (ACAs) located within the receiving environment of the proposed development. There are no protected structures situated within the proposed development area, nor within its immediate vicinity. There are seven structures located within the receiving environment of the proposed scheme (Table 4.2). The nearest of these is Sechnal House and outbuildings (RPS MH044-212, MH044-213) situated c. 160m to the west. Only one of the structures is also a recorded monument, motte (RPS MH044-210, RMP ME044-033001).

Table 4.2: Protected Structures located within the receiving environment

RPS No.	Classification	Description	Distance to Site
MH044-213	House	Sechnal House, gates, railings and outbuildings	160m west
MH044-212	Stables	Stables associated with Sechnal House	
MH044-211	House	Detached three-bay two storey house, c. 1920	280m northwest
MH044-210	Motte	Norman Motte in graveyard of church	390m west
MH044-209	Church	Dunshaughlin Library (former church)	440m west
MH044-208	Water pump	Cast iron water pump, c. 1870	440m northwest
MH044-207	School	Church hall (former school)	460m northwest

4.3.10 National Inventory of Architectural Heritage

Inclusion within the NIAH does not confer statutory protection. However, as some of the buildings are listed within the Record of Protected Structures, these buildings are subject to statutory protection under the Planning and Development Acts 2000–2018. There are no structures present within the proposed development site. A review of the National Inventory of Architectural Heritage (NIAH) has shown that there are six structures located within the receiving environment (c. 500m radius). All of these sites are also designated as Record of Protected Structures in the County Development Plan (see above).

Table 4.3: NIAH sites located within the receiving environment

NIAH No.	Classification	Description	Distance to Site
14335025	House	Sechnal House, gates, railings and outbuildings	160m west
14335022	Stables	Stables associated with Sechnal House	
14335019	House	Detached three-bay two storey house, c. 1920	280m northwest
14335018	Church	Dunshaughlin Library (former church)	440m west
14335017	Water pump	Cast iron water pump, c. 1870	440m northwest
14335015	School	Church hall (former school)	460m northwest

4.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development will involve the construction of 912 residential units, a neighbourhood centre, including 2 no. retail units, a café / restaurant unit, a primary healthcare / gym, a community facility and a childcare facility, all associated open space, a section of the Outer Relief Road, internal roads, cycle and pedestrian infrastructure, services and all other associated development. The development also includes car and cycle parking, ESB substations, boundary treatment, foul and surface water drainage, attenuation tanks, other services and all other associated development.

The proposed development will require the removal of topsoil across the development area and varying levels of excavation to facilitate the construction of foundations and access roads. Archaeology identified in AA1–6 lies between the topsoil and subsoil horizon and as such the proposed groundworks will negatively impact on any surviving remains. Due consideration was given by the Design Team for the preservation *in-situ* of the archaeology in AA1–6. However, this is not possible due to the layout and design requirements of the proposed development. In particular, the preservation of the sites is difficult to accommodate in respect of providing an appropriate density and layout of development on the subject lands, while also providing open space on the lands zoned for open space and recreational uses which form a part of the overall development site, as required by the Planning Authority / An Bord Pleanála. In addition, the location of AA3 would present difficulties in terms of retaining this feature within an open space area and providing a satisfactory layout of housing in this area of the site. An associated constraint imposed by the archaeological features would be that the area would not be able to

be used for attenuation volume. Maximising attenuation volume in the public open space is critical to ensure requirements of the Local Authorities standards and the Greater Dublin Strategic Drainage Study are met.

4.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

4.5.1 Archaeology

Desktop research and field inspection did not reveal any above-ground evidence for previously unrecorded archaeological remains. The footprint of the SHD application area was subject to geophysical survey and archaeological test trenching and the results of both surveys inform this impact assessment. A total of six areas containing features of archaeological potential (designated as AA1–6) were identified during test trenching, the most significant of which is a probable ring-barrow (prehistoric burial monument) in AA3. In addition, two spreads of burnt mound material were noted at AA1 and AA2, the former associated with two pits, and three single pits in AA4–6. These features are indicative of Bronze-Age habitation in the locale which correspond with the recorded *fulacht fia*, ME044-010, situated outside of the application area. The features in AA1-6 are heavily truncated and are considered on current evidence to be of local significance.

Due consideration was given to options for redesigning the development to avoid impacting AA1-6. Difficulties encountered by the design team included maintenance of appropriate density and layout, and the use of open space as attenuation. As such groundworks associated with the proposed development will have a direct significant negative impact on the in-situ archaeological remains in AA1–6.

The testing has indicated that the results of the geophysical survey are accurate, i.e. areas indicated as having no archaeology are confirmed as such, and as such we now have a good understanding of the site. There may, however, be direct negative impacts on previously unrecorded small-scale archaeological features or deposits that have the potential to survive beneath the current ground level outside of the tested areas. This will be caused by ground disturbances associated with the proposed development. Impacts may range from moderate negative to significant negative.

4.5.2 Built Heritage

There are no features of architectural value situated within the proposed development area or its immediate vicinity therefore there is no potential impact to the built heritage resource.

4.6 POTENTIAL CUMULATIVE IMPACTS

Consideration has been given to the Phase 1B and Phase 1C developments in The Willows to the immediate south of the proposed development area. No archaeology was identified in either of these areas during investigations (Geophysical Survey, Test Trenching, and Monitoring) and as such there is no further cumulative impact of the three developments proceeding than that identified above.

4.7 'DO NOTHING' IMPACT

If the proposed development were not to proceed there would be no negative impact on the archaeological, architectural or cultural heritage resource.

4.8 AVOIDANCE, REMEDIAL & MITIGATION MEASURES

4.8.1 Archaeology

Construction Phase

CH PRE-CONST 1: It is acknowledged that preservation *in-situ* of archaeological sites is the preferable option. However given the difficulties of redesigning the layout of the development, coupled with the truncated nature of the archaeological remains, preservation by record of the features in AA1–6 is recognised as an acceptable form of archaeological mitigation in this instance. This will be carried out by a licence-eligible archaeologist in consultation with the National Monuments Service of the DoCHG. Full provision will be made available for the resolution of any archaeological remains, both on site and during the post excavation process, should that be deemed the appropriate manner in which to proceed.

CH PRE-CONST 2: A buffer of 10m surrounding the remains has been set out on Figure 4.5 and 4.6 and these areas are considered to be the minimum excavation areas. No groundworks or construction works will be carried out within these area without prior consultation with the project archaeologist.

CH PRE-CONST 3: All topsoil stripping and ground disturbances associated with the proposed development will 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.

Operational Phase

There are no proposed mitigation measures during the operational phase of the project.

4.8.2 Built Heritage

Construction Phase

No mitigation is required regarding the built heritage resource.

Operation Phase

No mitigation is required regarding the built heritage resource.

4.9 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

Should all mitigation measures, recommended above, be carried out fully and successfully there will be no predicted residual impact to the Archaeological, Built Heritage and Cultural Heritage resource by the proposed development.

4.10 MONITORING

The mitigation measures recommended above, including the monitoring of works by qualified archaeologists would support effective monitoring during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the recommended mitigation measures.

No monitoring is required during the post-development phase of works

4.11 REINSTATEMENT

Following the above mitigation measures no reinstatement measures will be required.

4.12 INTERACTIONS

There are no interactions to note for this impact assessment.

4.13 DIFFICULTIES ENCOUNTERED IN COMPILING

No difficulties were encountered while undertaking this impact assessment.

4.14 REFERENCES

- Bennett, I. (ed.) 1987–2010 *Excavations: Summary Accounts of Archaeological Excavations in Ireland*. Bray. Wordwell.
- Bhreathnach, E. 1999 *Authority and supremacy in Tara and its hinterland c. 950–1200*. *Discovery Programme Reports* 5, 1–23.
- Chartered Institute for Archaeologists 2014a *Standards & Guidance for Field Evaluation*.
- Chartered Institute for Archaeologists 2014b *Standards & Guidance for Archaeological Excavation*.
- Chartered Institution of Field Archaeologists 2014c *Standards & Guidance for an Archaeological Watching Brief (Monitoring)*.
- Department of Arts, Heritage, Gaeltacht and the Islands. 1999a *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin. Government Publications Office.
- Department of Arts, Heritage, Gaeltacht and the Islands. 1999b *Policy and Guidelines on Archaeological Excavation*. Dublin. Government Publications Office.
- Dowd, M. and Carden, R. 2016 *First evidence of a Late Upper Palaeolithic human presence in Ireland*. *Quaternary Science Reviews* 139, 158–63.
- Elder, S. and Ginn, V. 2009a *Archaeological excavation report, E3041 Johnstown 1, County Meath*. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.
- Elder, S. and Ginn, V. 2009b *Archaeological excavation report, E3052 Johnstown 4, County Meath*. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.
- Elder, S. and Ginn, V. 2009c *Archaeological excavation report, E3043 Johnstown 3, County Meath*. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.
- Elder, S. and O’Hara, R. 2009 *Archaeological excavation report, E3040 Rath Hill 1, County Meath*. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.
- Environmental Protection Agency. 2017 *Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)*. Dublin. Government Publications Office.

Environmental Protection Agency. 2017 Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. Dublin. Government Publications Office.

Gwynn, A. and Hadcock R. N. 1970 *Medieval Religious Houses, Ireland*. Harlow. Longmans.

Horner, A. 2007 *Mapping Meath in the early 19th century with an atlas of William Larkin's map of County Meath, 1812*. Dublin. Wordwell.

Kavanagh, L. and Tobin, M. 2018 Archaeological Assessment at The Willows (SHD Application Site) Dunshaughlin, Co. Meath (licence 18E0495). Unpublished report prepared by IAC Ltd for Rockture 1.

Lewis, S. 1837 (online edition) Topographical Dictionary of Ireland.

Meath County Development Plan 2013–2019.

National Monument Section, Department of Culture, Heritage and The Gaeltacht. Sites and Monuments Record, County Meath.

National Museum of Ireland. Topographical Files, County Meath.

Nicholls, J. 2018 Geophysical Survey Report – The Willows, Dunshaughlin, Co. Meath (Licence 18E0012). Report prepared by Target Geophysical Surveys for IAC Ltd.

Nicholls, J. 2017 Geophysical Survey Report – The Willows, Dunshaughlin, Co. Meath (Licence 17E0137). Report prepared by Target Geophysical Surveys for IAC Ltd.

O'Sullivan, A., McCormick, F., Kerr, T. R., Harney, L. 2014 *Early Medieval Ireland AD 400-1100 the evidence from archaeological excavations* Dublin: Royal Irish Academy.

Schweitzer, H. and Ginn, V. 2009 Archaeological excavation report, E3042 Johnstown 2, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Woodman, P.C., Monaghan, N., McCarthy, M. 1997 The Irish Quaternary Fauna Project. *Quaternary Science Reviews* 16, 129-159.

Cartographic Sources

Down Survey Barony Map of 'Rattoth' and Parish Map of 'Dunsaghlin', c. 1655

William Larkin, *Map of the County of Meath*, 1812

Ordnance Survey maps of County Meath, 1836, 1882 and 1909

Electronic Sources

www.excavations.ie – Summary of archaeological excavation from 1970–2018.

Murphy, D. 2014 'Johnstown & Rath Hill, 14E0388', Excavations.ie database of Irish excavation reports, 2014:253
<http://www.excavations.ie/report/2014/Meath/0024350/>

www.archaeology.ie – DoCHG website listing all SMR sites.

www.osiemaps.ie – Ordnance Survey aerial photographs dating to 1995, 2000 & 2005 and 6-inch/25-inch OS maps.

www.bingmaps.com – Satellite imagery of the proposed development area.

www.googleearth.com – Satellite imagery of the proposed development area.

www.booksulster.com/library/plnm/placenamesC.php - Contains the text from Irish Local Names Explained by P.W Joyce (1870).

www.logainm.ie –Placenames Database of Ireland launched by *Fiontar agus Scoil na Gaelige* and the DoCHG.

Glossary

SMR	Sites and Monuments Record
RMP	Recorded Monuments and Places (Protected under the National Monuments Acts and the Planning Acts).
Nat. Mon.	National Monuments, in State ownership (O) or Guardianship (G).
ZON	Zone of Notification relating to RMP designation.
RPS	Recorded Protected Structure (as set out in the County Development Plan).

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Plate 4.13: T15 AA3, Inner ditch C8, facing north-northwest

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Plate 4.16: T5 AA4, Pit C10, facing northeast

Plate 4.17: T2 AA5, section through Pit C11, facing east

Plate 4.18: T1 AA6, Pit C12, facing northeast

Chapter 4:

FIGURES AND PLATES



Figure 4.1: Extract from Google Earth (May 2017) showing proposed development area

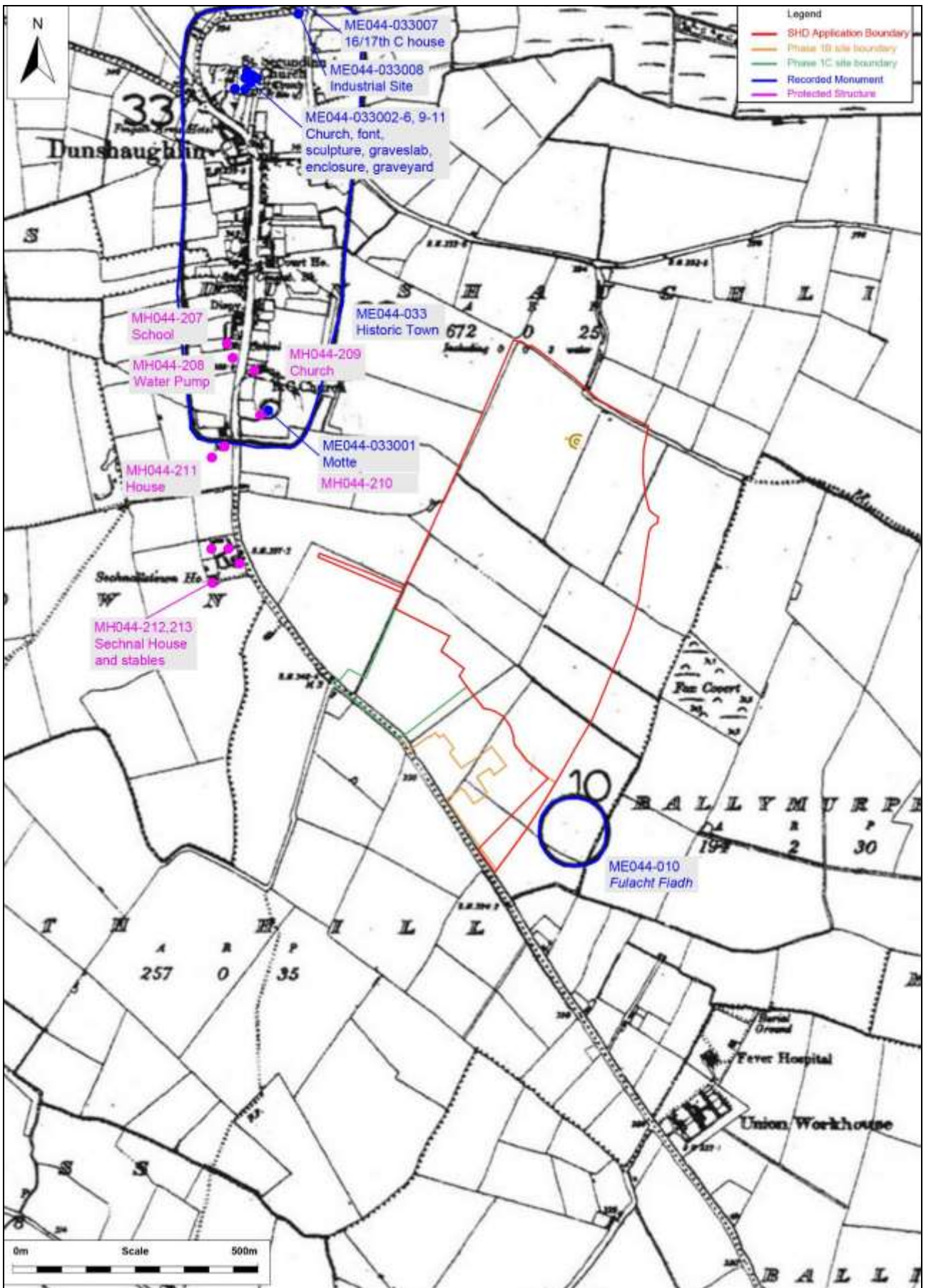


Figure 4.2: Extract from RMP map showing Recorded Monuments and Built Heritage in the vicinity

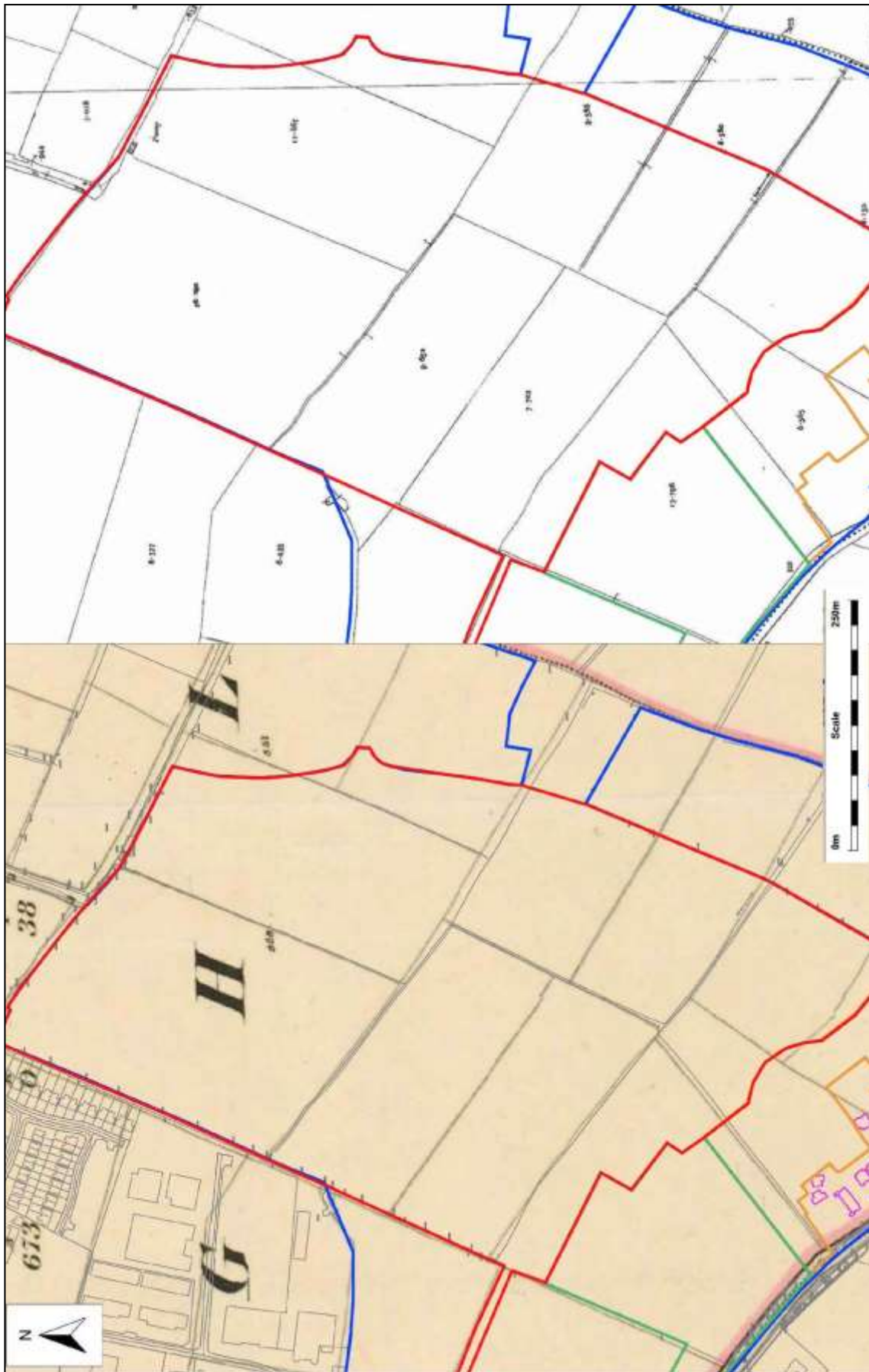


Figure 4.3: Extract historic OS maps (1836 and 1909) showing area of proposed development

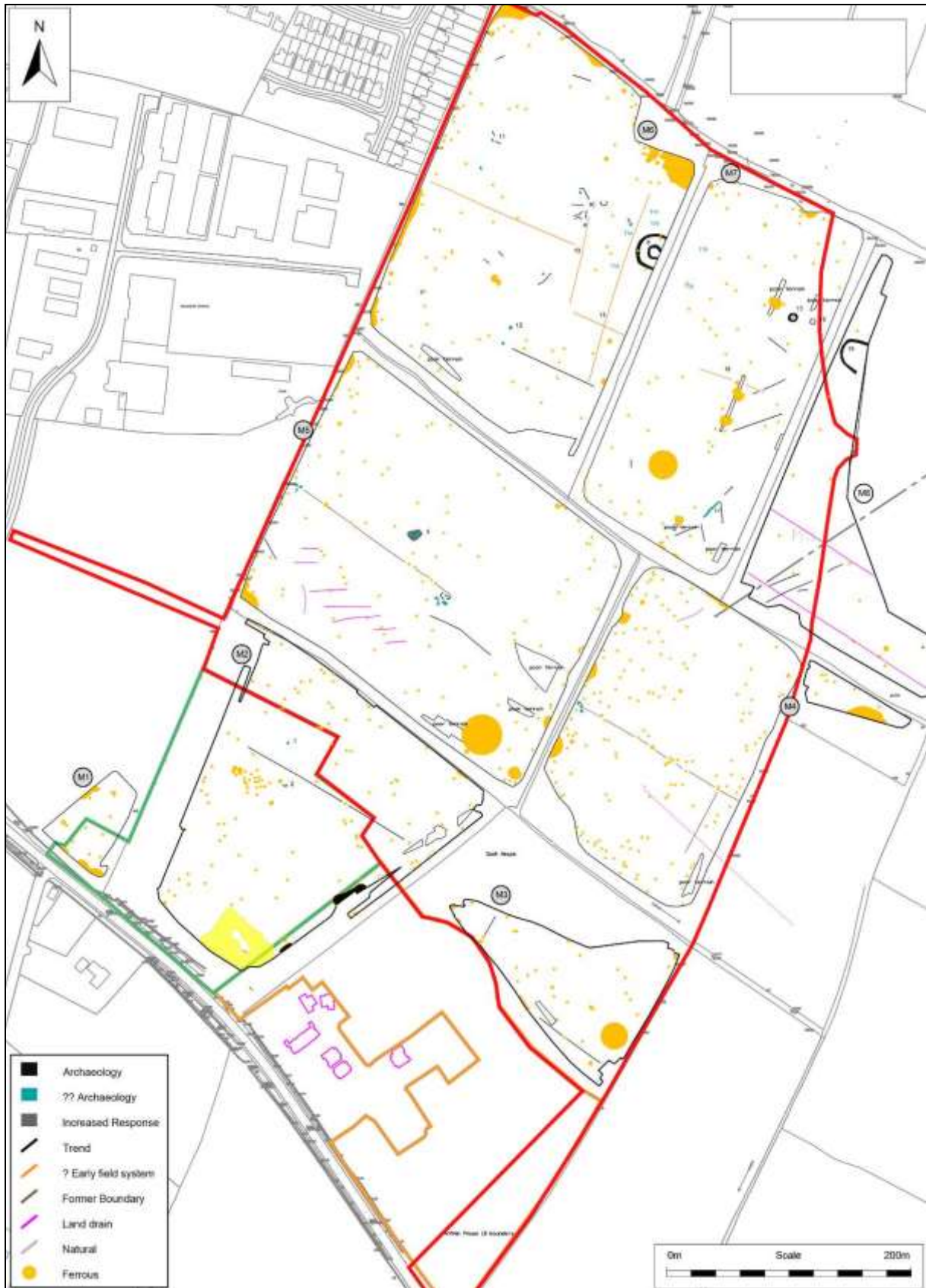


Figure 4.4: Interpretation of geophysical survey results (Nichols 2018)

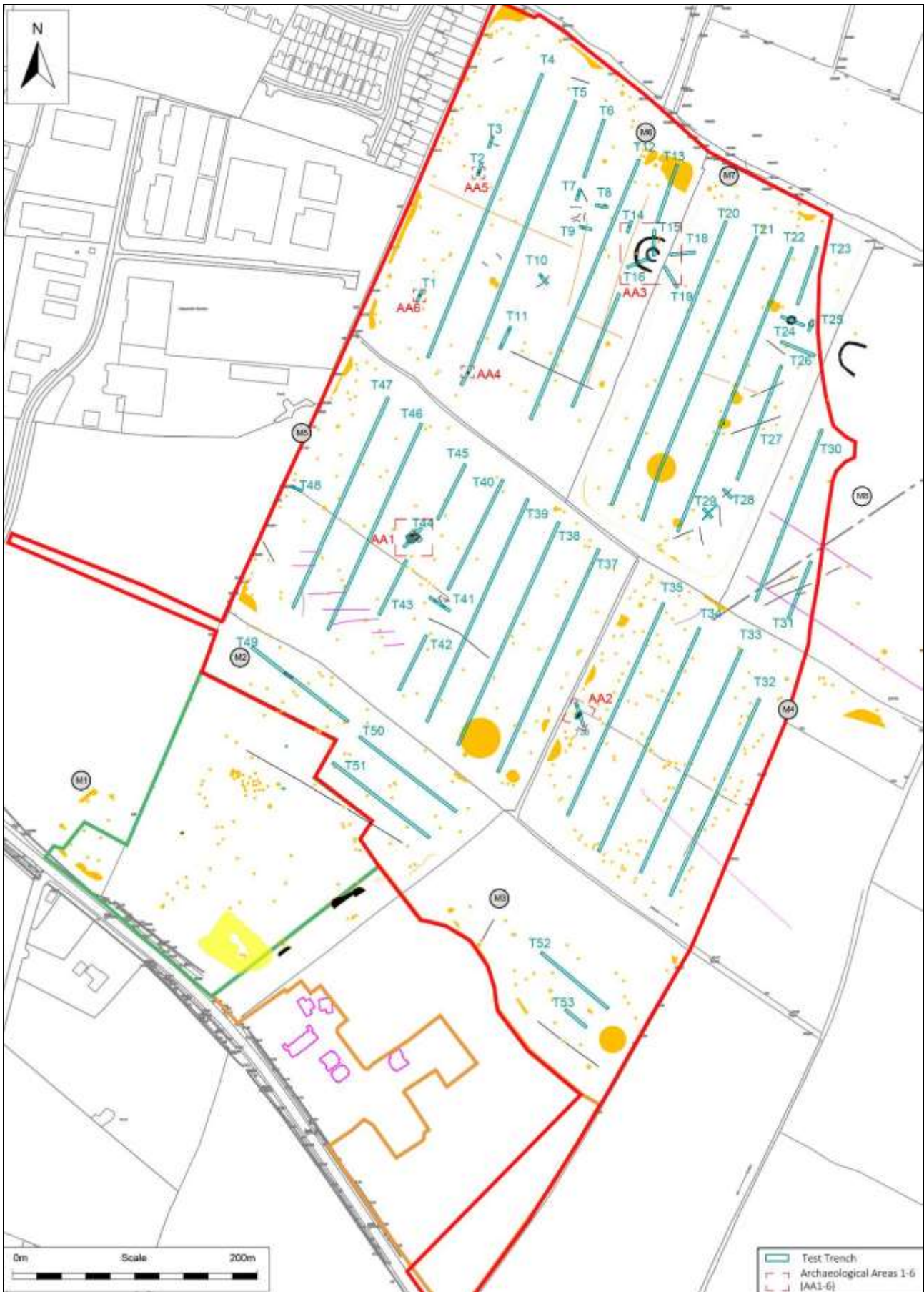


Figure 4.5: Location of test trenches showing Archaeological Areas 1-6 (Kavanagh & Tobin 2018)

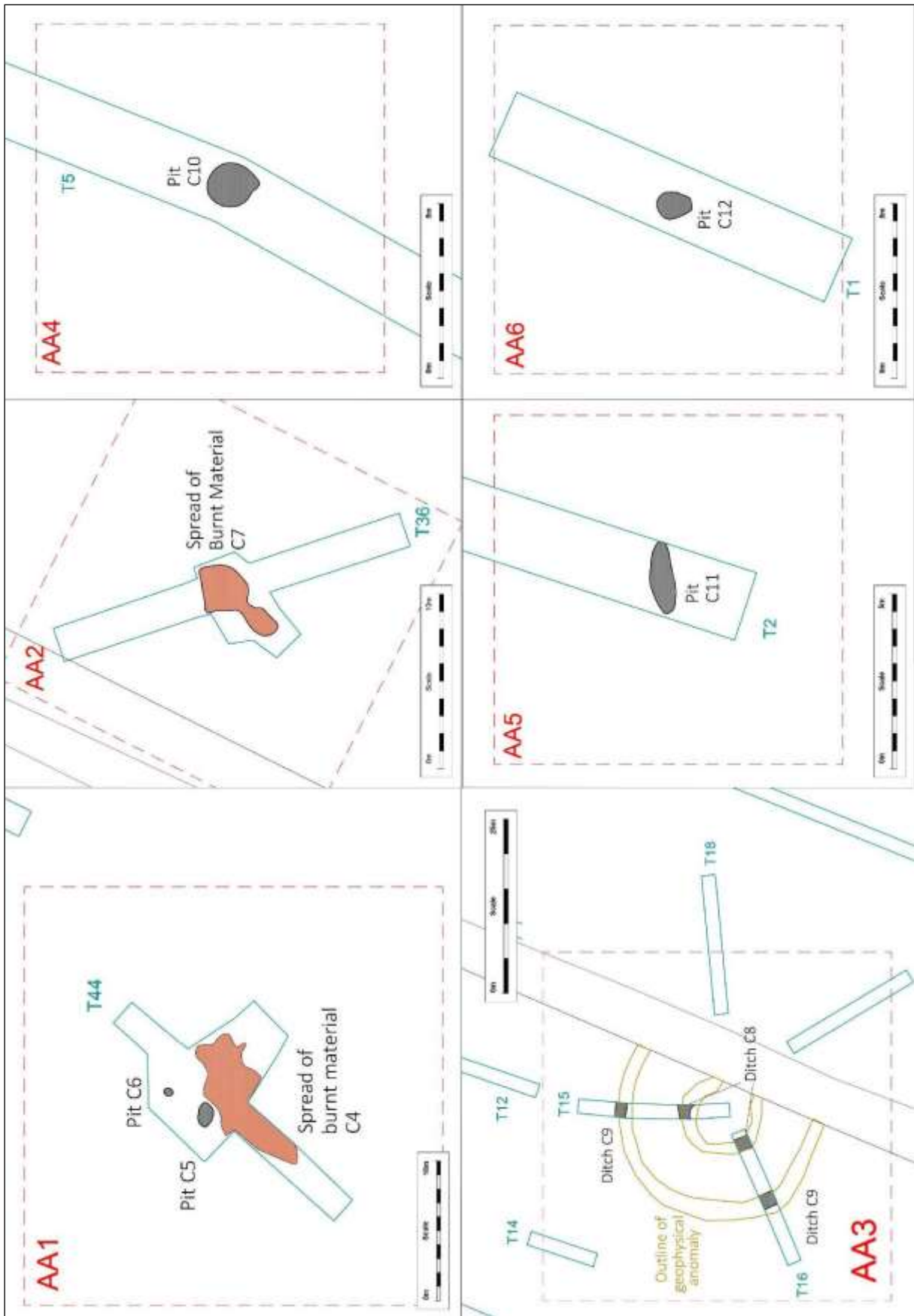


Figure 4.6: Plan of Archaeological Areas 1-6 (Kavanagh & Tobin 2018)



Plate 4.1: Southwest field, facing north



Plate 4.2: Field boundary with Phase 1C lands to south, facing east



Plate 4.3: Water-filled ditch along western field boundary, facing north



Plate 4.4: Northwest field, facing north



Plate 4.5: Overgrown former laneway along northern boundary of site, facing east



Plate 4.6: Northeast field, facing northeast



Plate 4.7: Southeast field, facing east



Plate 4.8: Southeast field, facing southeast



Plate 4.9: Previously disturbed ground on boundary with Phase 1B development, facing east



Plate 4.10: View towards *fulacht fia* ME044-010, facing east



Plate 4.11: T44 AA1, Burnt mound C4 and pits C5 and C6, facing west



Plate 4.12: T36 AA2, Burnt material C7, facing northeast



Plate 4.13: T15 AA3, Inner ditch C8, facing north-northwest



Plate 4.14: T16 AA3, section through inner ditch C8, facing south



Plate 4.15: T16 AA3, section through outer ditch C9 section, facing south



Plate 4.16: T5 AA4, Pit C10, facing northeast



Plate 4.17: T2 AA5, section through Pit C11, facing east



Plate 4.18: T1 AA6, Pit C12, facing northeast

APPENDIX 4.1 GEOPHYSICAL SURVEY REPORT (NICHOLS 2018)

Geophysical Survey Report
**The Willows, Dublin Road,
Dunshaughlin, Co. Meath**

Detection License
18R0012

Client
**Irish Archaeological Consultancy Ltd
on behalf of Rockture Ltd.**

Date
June 2018

Project
TAG1800IE23



TARGET REPORT 1800IE23

THE WILLOWS, DUBLIN ROAD, DUNSHAUGHLIN, CO. MEATH

PROJECT BACKGROUND

Geophysical survey was undertaken in connection with proposed development of 28.4ha of land located c.1km SE of Dunshaughlin, in County Meath. The survey was conducted to examine two development areas (Phase 1C and a Strategic Housing Development site) at The Willows development site in Dunshaughlin townland located E of the R147 Dublin Road and E-SE of Dunshaughlin Industrial Estate. This survey follows previous geophysical investigation in Phases 1A and 1B (detection license no. 17R0137, Nicholls, J.) of The Willows development (Meath County Council Planning Register No. RA/170407).

This report combines 2 phases of fieldwork completed at the site in January & May 2018, commissioned by IAC Ltd on behalf of Rockture Ltd. The survey aims were to identify the location, form and extent of buried archaeological remains, where present within the site boundary, and to advise further archaeological works, prior to the proposed development.

Coordinates	697474 751572 (ITM–central coordinate)
Townland	Dunshaughlin
County	County Meath
Landuse	Playing field, and mixed arable and pasture land
Landscape, soils geology	Flat to undulating lowland occupied by fine loamy drift of the Straffan (700d) association overlying carboniferous limestone of the Loughshinny and Lucan formations (Irish National Soils Map, 1:100,000k, V1b, 2014; Geological Survey Ireland Spatial Resources, Public Data Viewer Series).

Archaeology No recorded monuments are located within the boundary of the proposed development. One recorded monument, fulacht fiadh site RMP ME044-010, lies c.0.1km to the S/SE of the site boundary. Further RMPs are located within c.1km, to the N of the site and these relate mainly to the early medieval settlement of Dunshaughlin (ME044-033). Details of ME044-010 and ME044-033 are provided below:

SMR NO.	CLASS	TOWNLAND	ITM NORTHING
ME044-010	Fulachta fiadh	Dunshaughlin	697558, 751042
ME044-033	Settlement cluster	Dunshaughlin, Grangend, Knocks, Roestown (Ratoath By.), Cooksland	696880, 752322
ME044-033001	Castle/motte	Dunshaughlin	696912, 751900
ME044-033002	Church	Dunshaughlin	696865, 752586
ME044-033003	Architectural fragment	Dunshaughlin	696865, 752586

Fieldwork	16 th -19 th January & 23 th -24 th May 2018
Report issue	5 th June 2018
Author	John Nicholls MSc
Detection license	18R0012
Client	Irish Archaeological Consultancy Ltd. (IAC Ltd.) on behalf of Rockture Ltd.
Technique	High resolution magnetic gradiometry

1 TECHNICAL SURVEY INFORMATION

1.1 Data collection

1.1.1 High resolution magnetic gradiometer survey was conducted across all available portions of the proposed development undertaking a total 27.1 hectares of survey in 9 areas (M1-M3, M4a-M4b, and M5-M8). The survey employed an advanced multichannel fluxgate gradiometer system combined with real time kinematic (RTK) GPS. Magnetic gradiometer and GPS data were recorded simultaneously at rates of 75Hz and 1Hz respectively, conducting parallel instrument traverses 3.5m in width across the site with the instrumentation towed using an ATV.

1.2 Geophysical instrumentation

1.2.1 Details of the instrumentation employed for this project are provided below:

Technique(s)	Sensor spacing	Sample rate	Instrumentation	Sensitivity / precision
Fluxgate gradiometry (magnetometry)	0.5m	75Hz	Multi-channel fluxgate gradiometer array with 10-channel data logger	<35pT/VHz at 1Hz (650mm baseline)
RTK GPS	4.0m	1Hz	Trimble R4/R10 GNSS GPS operating in VRS mode	<0.1m (vertical & horizontal)

1.3 Data processing

1.3.1 Survey data was processed using in-house, open-source and commercial software. Following GPS and fluxgate gradiometer measurements on site all data was processed as follows:

Process	Description
1	Drift & zero median correction to balance data from entire sensor array
2	Gridding of corrected data via nearest neighbour interpolation
3	Greyscale generation at optimum range & export to tiff-format (.tiff & .wld)

1.3.2 To assure integrity of the processed data, and maintain close correlation with the original raw on-site measurements no additional smoothing, low or high pass filters were applied proceeding steps 1-3.

2 GENERAL CONSIDERATIONS & COMPLICATING FACTORS

2.1 Access & ground conditions

2.1.1 Geophysical survey extended across the southern corner of a playing field (M1), and low-lying arable and pasture fields (M2-M8) traversed to the N by a ridge of high ground. Fieldwork was conducted in January and May 2018 in accordance with cultivation plans of tenant farmers and the accessibility of terrain to geophysical survey.

2.1.2 Small areas of disturbed ground were excluded from investigation, notably to the N, S and W in M2; to the N and NW in M3; to the S and SW in M4a, to the S in M4b; and to the NE and SE in M8.

2.2 Modern interference

2.2.1 Numerous small-scale ferrous anomalies are evident throughout the results from survey in M1-M8. Ferrous responses are a common occurrence in magnetic survey data, and in most cases represent modern metal

debris contained within the topsoil. Larger zones of ferrous response have been recorded at the perimeter of survey in M1-M8, the majority deriving from disturbance associated with metal fences, gates and ferrous debris at the perimeter of survey, as well as a number of steel capped boreholes observed in M2, M3, M4b and M5.

- 2.2.2 The footprint of a possible former building or area recent landscaping is suggested by a sub-rectangular zone of magnetic disturbance to the S in M2.
- 2.2.3 Remains of former boundaries depicted on available historic mapping have been recorded in areas M4a and M5.
- 2.2.4 Buried land drains have been detected to the W in M5 and S in M8.

2.3 Natural variation

- 2.3.1 Weakly magnetic positive/negative linear responses to the N and W in M4a and M5 are indicative of low-level soil morphological/geological variations.

3 MAGNETOMETRY RESULTS

3.1 M1

3.1.1 No responses of archaeological significance have been recorded from survey in M1. The results from this survey location are dominated by modern ferrous debris.

3.2 M2

3.2.1 Small-scale and poorly defined positives (1-2) recorded NW of survey centre in M2 are expected to be of limited archaeological interest, and likely represent small-scale ferrous debris such as recorded elsewhere throughout M2.

3.2.2 The remains of a probable former boundary are suggested by a weak linear trend traversing M2 NW-SE to the N of survey centre.

3.2.3 No further responses of note are apparent in the results from survey in M2.

3.3 M3

3.3.1 No responses of archaeological significance have been recorded from survey in M3. Weak linear trends apparent to the S and NW are expected to be of limited significance.

3.4 M4a

3.4.1 An archaeological interpretation for poorly defined positive responses (4) at the western edge of M4a should not be dismissed. However, these anomalies coincide with the remains of a former boundary (5) extending across the approximate centre of M4a in a south-easterly direction. A modern ferrous origin for responses 4 should not be dismissed.

3.5 M4b

3.5.1 No responses of note are indicated by the results from survey in M4b. The results from survey in this location are dominated by modern ferrous disturbance caused by a steel-capped boreholes at the southern edge of survey.

3.6 M5

3.6.1 The location of a possible fulacht fiadh/burnt mound (5) or concentration of large pit type responses is suggested NW of survey centre in M5.

3.6.2 An archaeological interpretation for weakly magnetic positives (6 and 7) SE of survey centre and at the western survey edge should also not be dismissed. Given the abundance of ferrous debris recorded throughout M5 a modern ferrous origin for responses 6 and 7 is possible.

3.6.3 No further responses of note are evident in the results from survey in M5.

3.7 M6

3.7.1 Remains of an enclosure site (8) defined by two concentric circular ditches measuring 29m and 9m in diameter, have been recorded at the north-eastern edge of M6. Potential outlying pit/linear remains, notably responses 9-10 to the NW, are indicated by poorly defined positives and weak trends.

3.7.2 Further isolated and magnetically weak positives are indicated in M6, notably responses 11 and 12 to the NW and S of survey centre. Faint linear trends are also indicated in the results, the majority of which are expected to be of limited archaeological potential.

3.7.3 Remains of an early field system have (13-14) been recorded extending NW-SE and NE-SW across the approximate centre of M6.

3.7.4 No further responses of note are indicated by the results from survey in M6.

3.8 M7

3.8.1 A small circular enclosure (15) measuring c.7m in diameter has been recorded NE of survey centre in M7. A further weak circular trend (16) c.10m E of response 15 may also be of archaeological interest. Response 15 is at the limits of detection and interpretation remains uncertain.

3.8.2 Poorly defined linear responses and trends (17) to the S in M7 are also evident. These are expected to represent remains of former drainage.

3.8.3 Remains of an early field system (18) extend through the approximate centre of M7.

3.8.4 No further responses of note are indicated by the results from survey in M7.

3.9 M8

3.9.1 Remains of a circular enclosure (19), measuring c.25m in diameter have been recorded in M8 N of survey centre. This enclosure lies c.15m to the E beyond the site boundary.

3.9.2 Weak linear trends identified to the S/SW in M5 are expected to derive from localized variations in soil morphology and/or geology.

3.9.3 No further responses of note are indicated by the results from survey in M8.

4 CONCLUSION

- 4.1 Remains of 2 enclosures have been recorded in M6 & M7. These are located on a ridge of high ground, which extends approximately NW-SE across the northern portion of the proposed development. These enclosure remains measure c.29m (M6) and 7m in diameter (M7). The enclosure site in M6 is defined by 2 concentric circular ditches.
- 4.2 The site of a possible fulacht fiadh or group of large pits is indicated NW of survey centre in M5.
- 4.3 Weakly positive, small-scale responses are also apparent in the results from survey in areas M2, M4a, and M5-M7. Whilst an archaeological origin for these anomalies should not be dismissed a modern ferrous or natural soil/geological origin is expected for the majority. Faint linear trends also evident throughout M2-M8 are deemed to be of limited archaeological significance.
- 4.4 A further circular enclosure has been recorded from survey in M8. This enclosure lies c.15m beyond the site boundary, in proximity to the eastern limit of the proposed development.

*** This conclusion must be read in conjunction with the detailed discussion of the results included in the main section of this report.**

BIBLIOGRAPHY

- English Heritage 2008, Geophysical survey in archaeological field evaluation, Research & Professional Guideline, No. 1.
- GRASS Development Team, 2013. Geographic Resources Analysis Support System (GRASS) Software, Version 6.4.3. Open Source Geospatial Foundation. <http://grass.osgeo.org>.
- Geological Survey Ireland Spatial Resources, Public Data Viewer Series
<https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aac3c228>
- GRASS Development Team, 2013. Geographic Resources Analysis Support System (GRASS) Software, Version 6.4.3. Open Source Geospatial Foundation. <http://grass.osgeo.org>.
- Irish National Soils Map, 1:250,000k, V1b(2014).Teagasc, Cranfield University. Jointly funded by the EPA STRIVE Research Programme 2007-2013 and Teagasc.
- QGIS Development Team, 2014. QGIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>.
- Schmidt A, Linford P, Linford N, David A, Gaffney C, Sarris A, and Fassbinder J , 2016 -EAC, Guidelines for the Use of Geophysics in Archaeology.

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APPENDIX

Technical Information: Magnetometry

MAGNETOMETRY

Introduction

Magnetometry represents one of a suite of geophysical techniques employed in archaeological prospection to inform invasive investigations such as trial trenching and excavation.

Frequently used to determine the often non-visible boundaries of archaeological remains, magnetometer surveys enable archaeologists to identify the location, form and extent of a diverse array of archaeological features no longer visible at the surface.



1. Advanced multi-channel magnetometer survey mapping the buried foundation of a 14th century castle (towed configuration with ATV).

Buried archaeological remains successfully identified using magnetometry include sites such as enclosure systems and deserted villages, hillforts and military encampments, henges and tumuli, villa/castle foundations, and ecclesiastical settlements.

Background to application

The basis for use of magnetometry in archaeological prospection derives from the abundance of natural iron oxides in most soils, and our ability to measure subtle variations in the magnetic properties of these iron oxides caused by human activity.

Discrete variations in soil magnetism associated with buried archaeological remains derive typically from in situ burning and organic enrichment of the soil, through activities such as cooking and heating; pottery manufacture and metal working; as well as use of fired building materials such as ceramic tiles and brick. These burnt, fired and organic rich deposits create subtle magnetic contrasts visible as discrete magnetic anomalies superimposed on the earth's geomagnetic field.



2. Results from magnetometer survey presented in greyscale format highlighting pit remains bordering an enclosure site and Roman villa.



3. Burnt & fired debris revealed following excavation of pit remains bordering an enclosure site and Roman villa.

Magnetometer surveys conducted in both commercial and research archaeological investigations enable determination of the location, form and extent of buried archaeological remains. Data acquired from these surveys can be quickly generated into georeferenced images and interpretation layers to inform subsequent trial trenching and excavation.

Technology

TARGET provides precise mapping and characterization of buried archaeological remains by employing an array of highly stable and sensitive fluxgate gradiometers (sensitivity < 0.04nT), combined with an advanced data logging system and cm precision GPS. This state-of-the-art geophysical instrumentation, which is capable of collecting extremely dense data sets, permits high resolution survey of archaeological sites from as small as 1ha in size, to larger scale investigation of sites up to 150ha or more.



4. Advanced multi-channel gradiometer system for magnetometer survey (manual configuration).



5. GPS tracks (red) highlighting lines of data collection & results from magnetometer fieldwork at a suspected burial ground.

TARGET undertakes high resolution magnetometer surveys as standard, recording data at c.5cm intervals with probe separations of 0.28m or 0.5m, for precise measurement and characterization of buried archaeological remains.

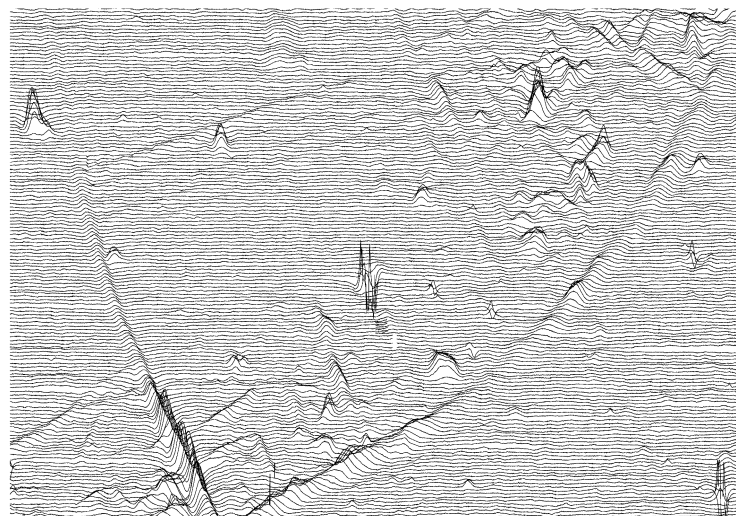
Data Display

Greyscale plots are the most common format for displaying magnetometer data. This display format assigns a cell to each datum according to its location on the grid. The display of each data point is conducted at very fine increments, allowing the full range of values to be displayed within a given data set. This display method also enables the identification of discrete responses barely visible above natural 'background' magnetic variation on site.

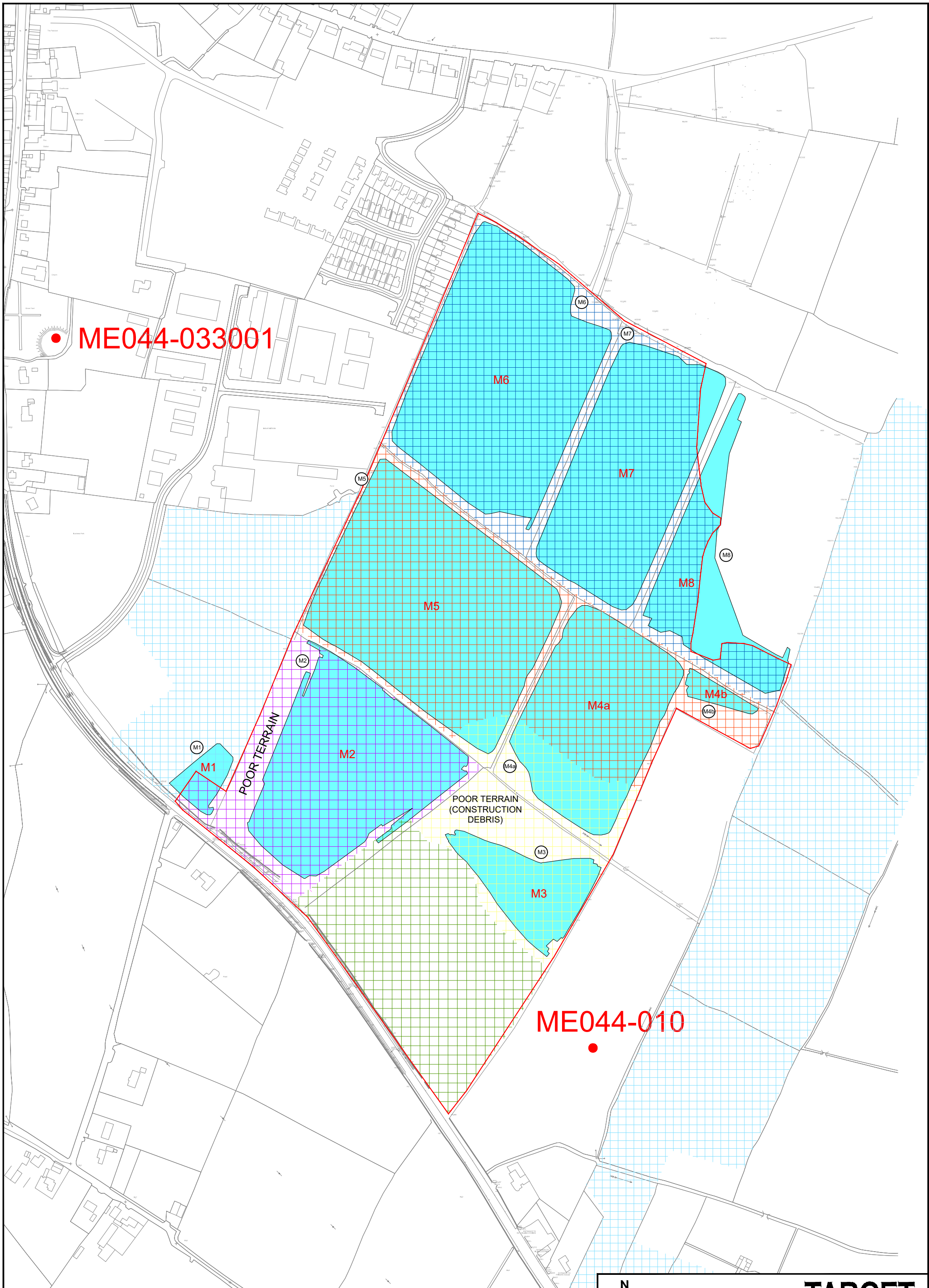


6. Greyscale from survey at the site of a deserted medieval village.

XY trace plots provide a near-perspective representation of measurements along individual lines of data recorded from each of the magnetometer sensors. The XY trace format is used as a conventional method for identifying responses which derive from modern ferrous debris. The XY trace display is particularly useful when identifying magnetically strong anomalies indicative of buried hearths, kilns and furnaces.



7. XY trace from survey at the site of a deserted medieval village

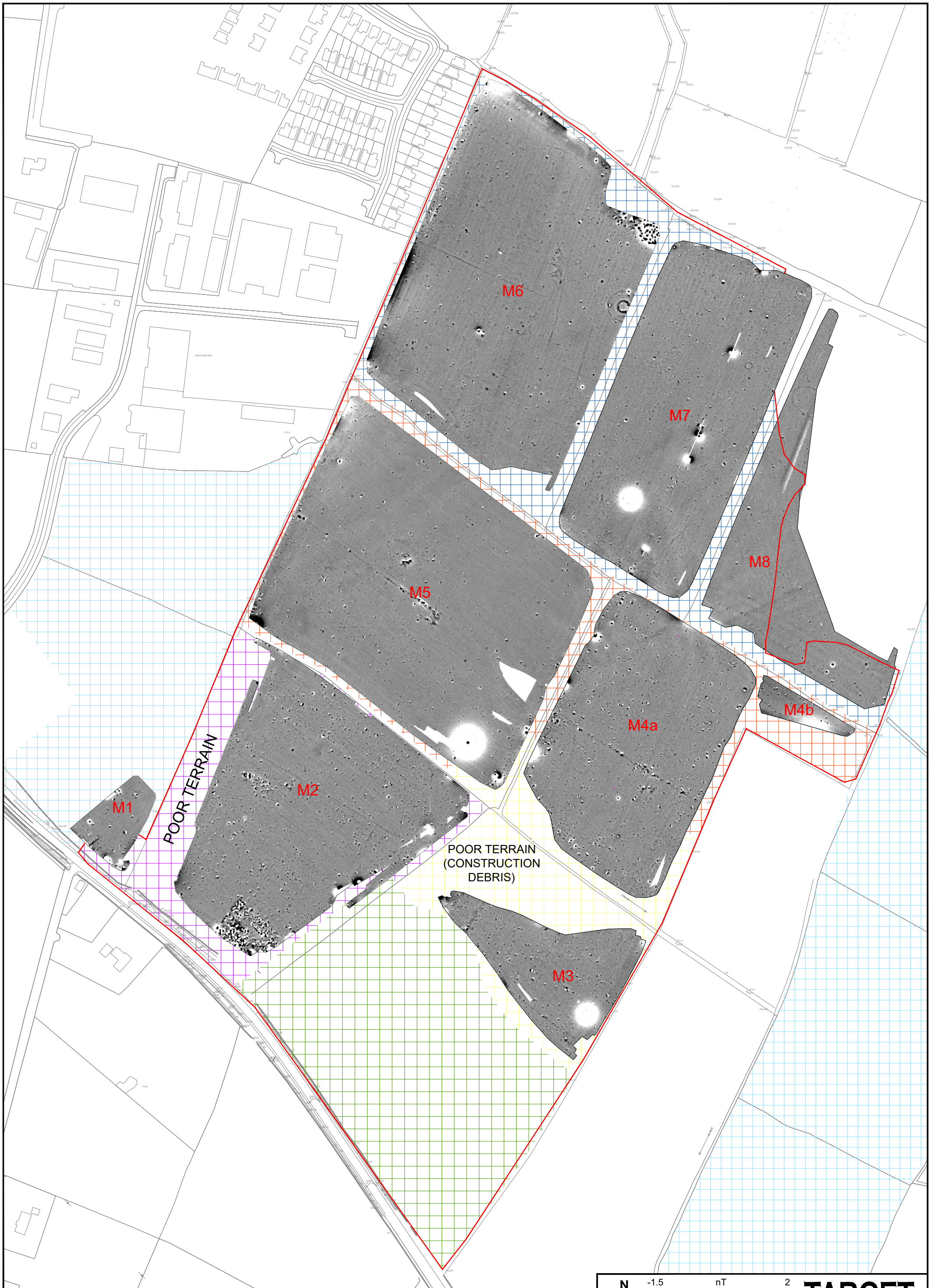


Drawing Survey location diagram, M1-M6
Client IAC Ltd. on behalf of Rockture Ltd.

Project The Willows, Dublin Road, Dunshaughlin, Co. Meath
Fig. 1 **Scale** 1:4000 @ A3 **TAG.** 1800IE23


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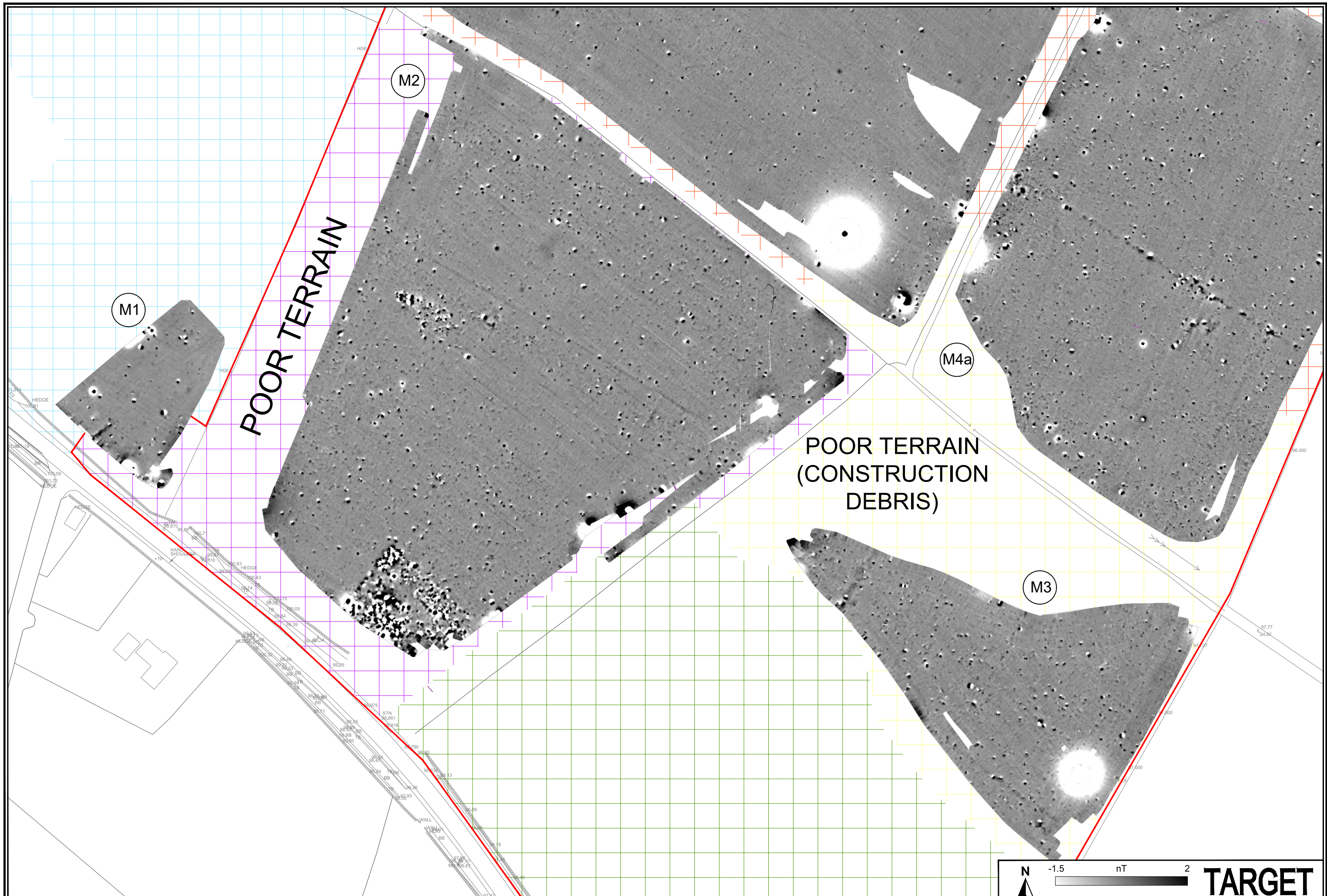
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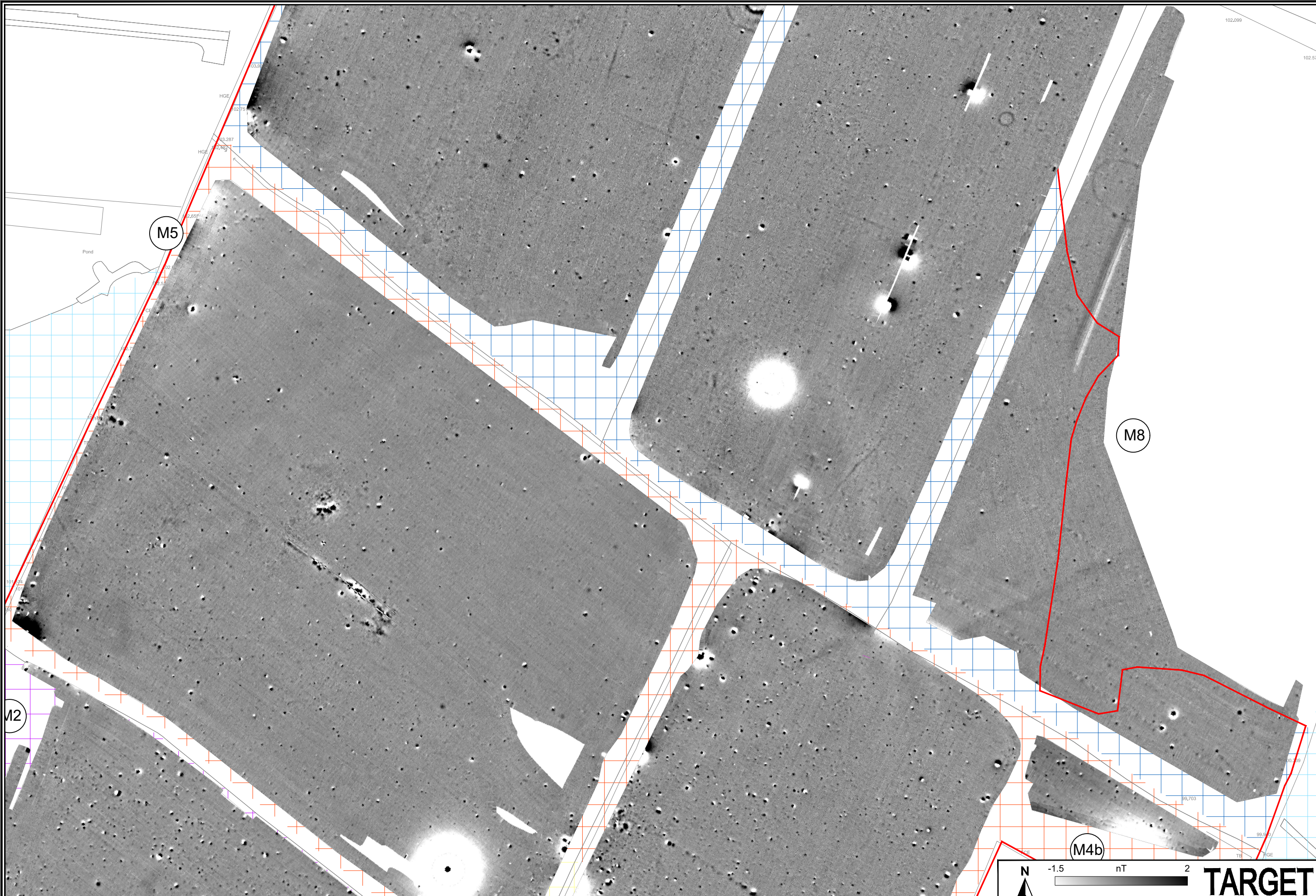
Drawing Greyscales 1
Client IAC Ltd. on behalf of Rockture Ltd.

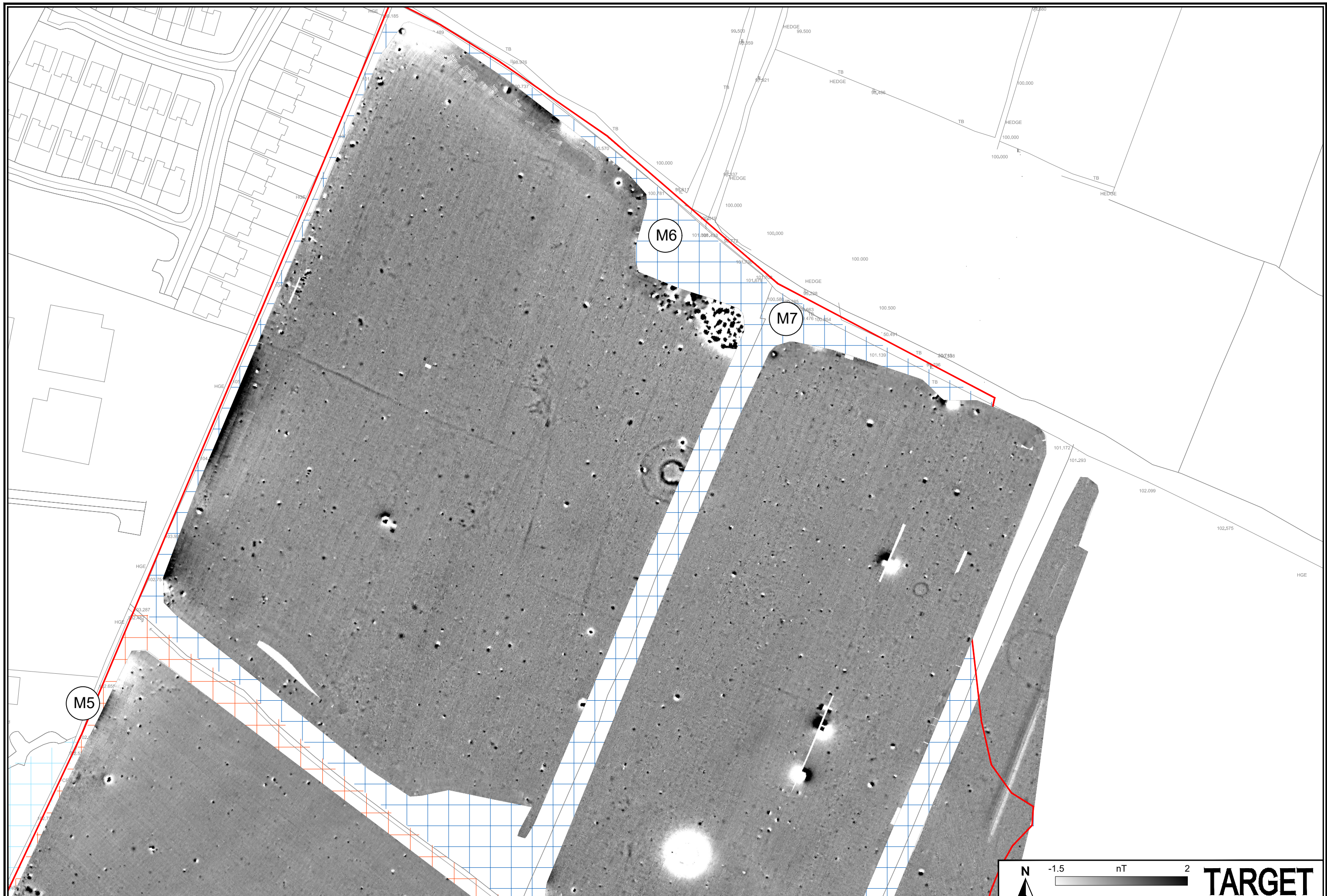
Project The Willows, Dublin Road, Dunshaughlin, Co. Meath
Fig. 2 **Scale** 1:3000 @ A3 **TAG.** 1800IE23

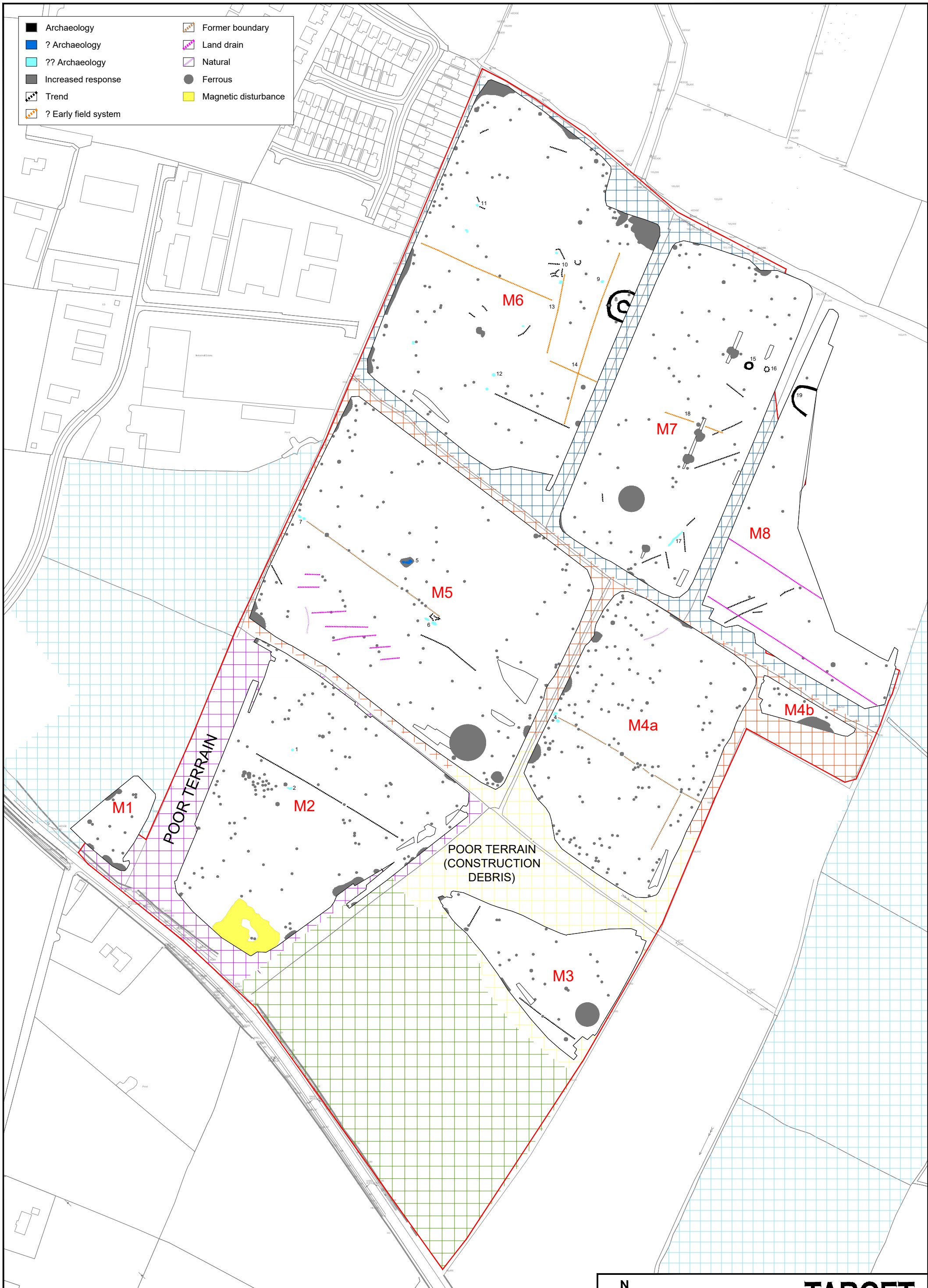

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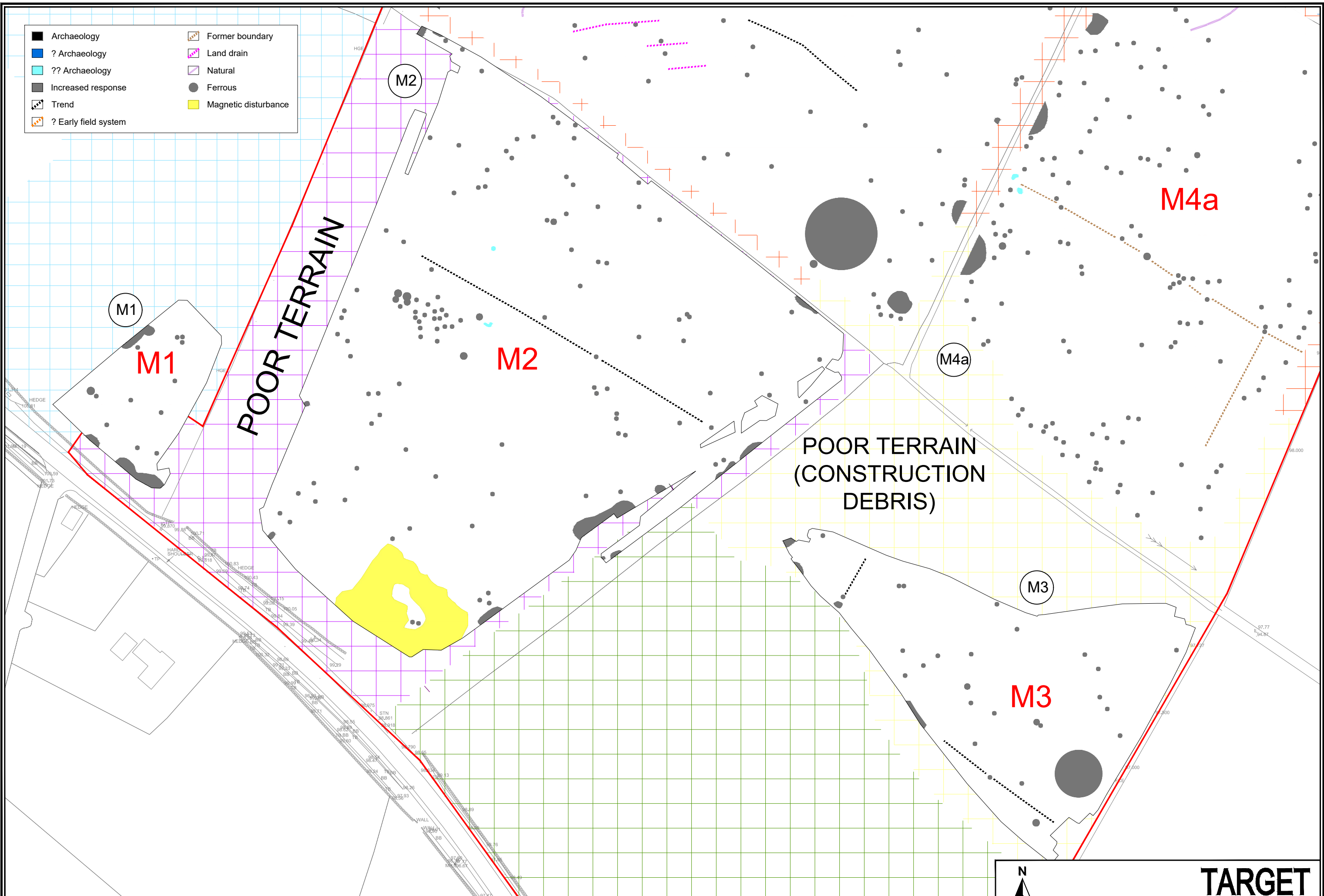








- Archaeology
- ? Archaeology
- ?? Archaeology
- Increased response
- ▬ Trend
- ▬ ? Early field system
- ▬ Former boundary
- ▬ Land drain
- ▬ Natural
- Ferrous
- Magnetic disturbance

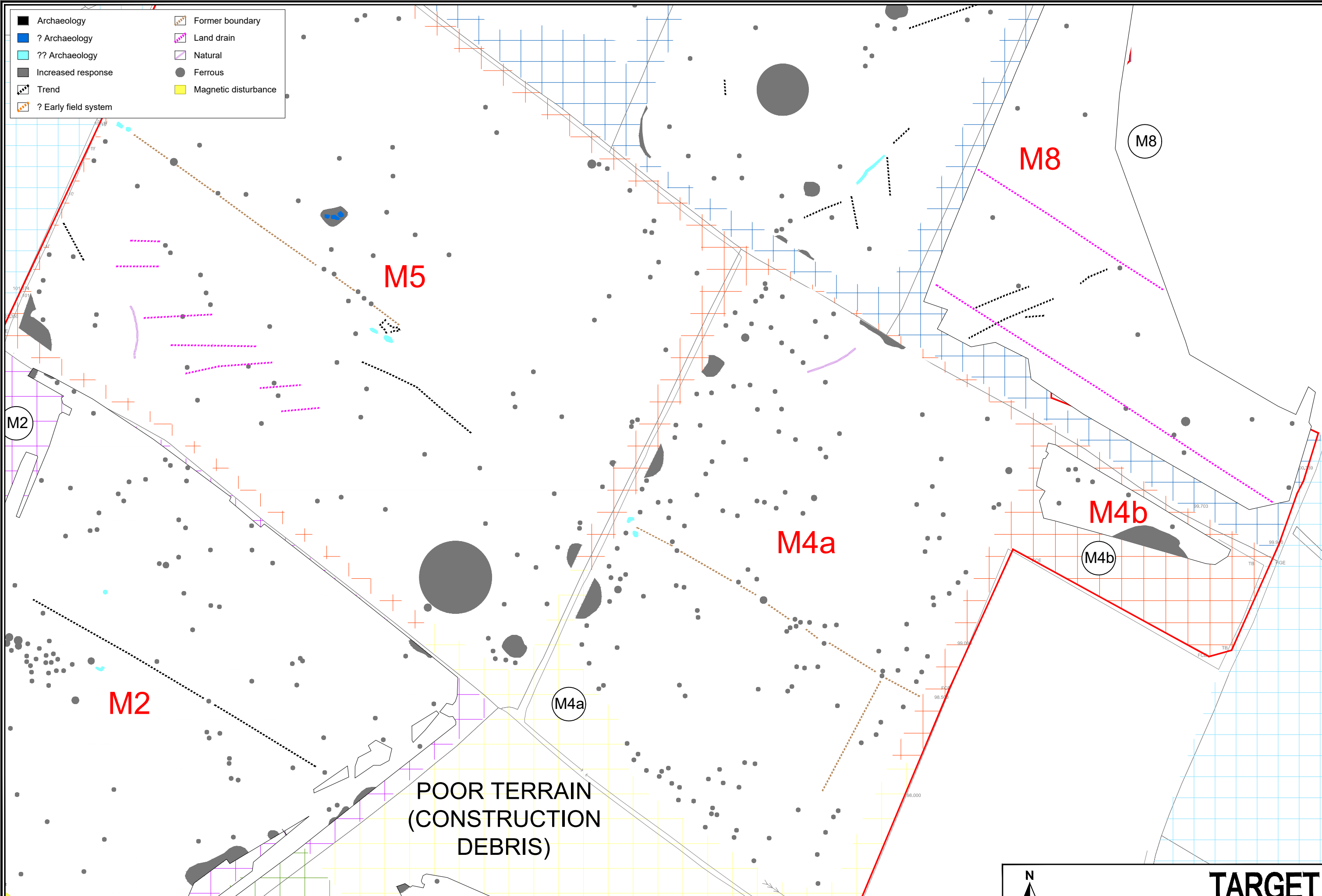


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- Increased response
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- ? Early field system
- Former boundary
- Land drain
- Natural
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- Magnetic disturbance

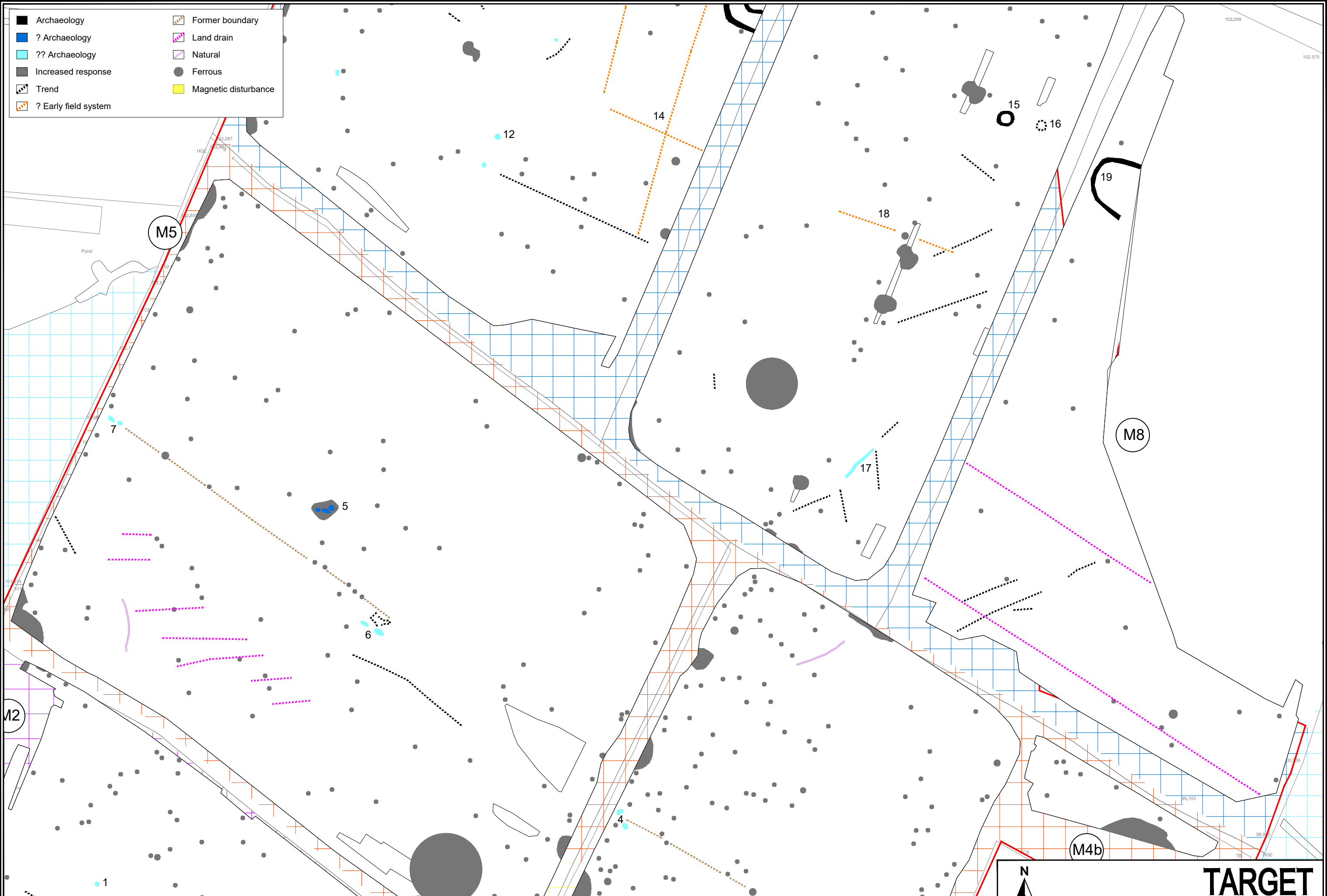


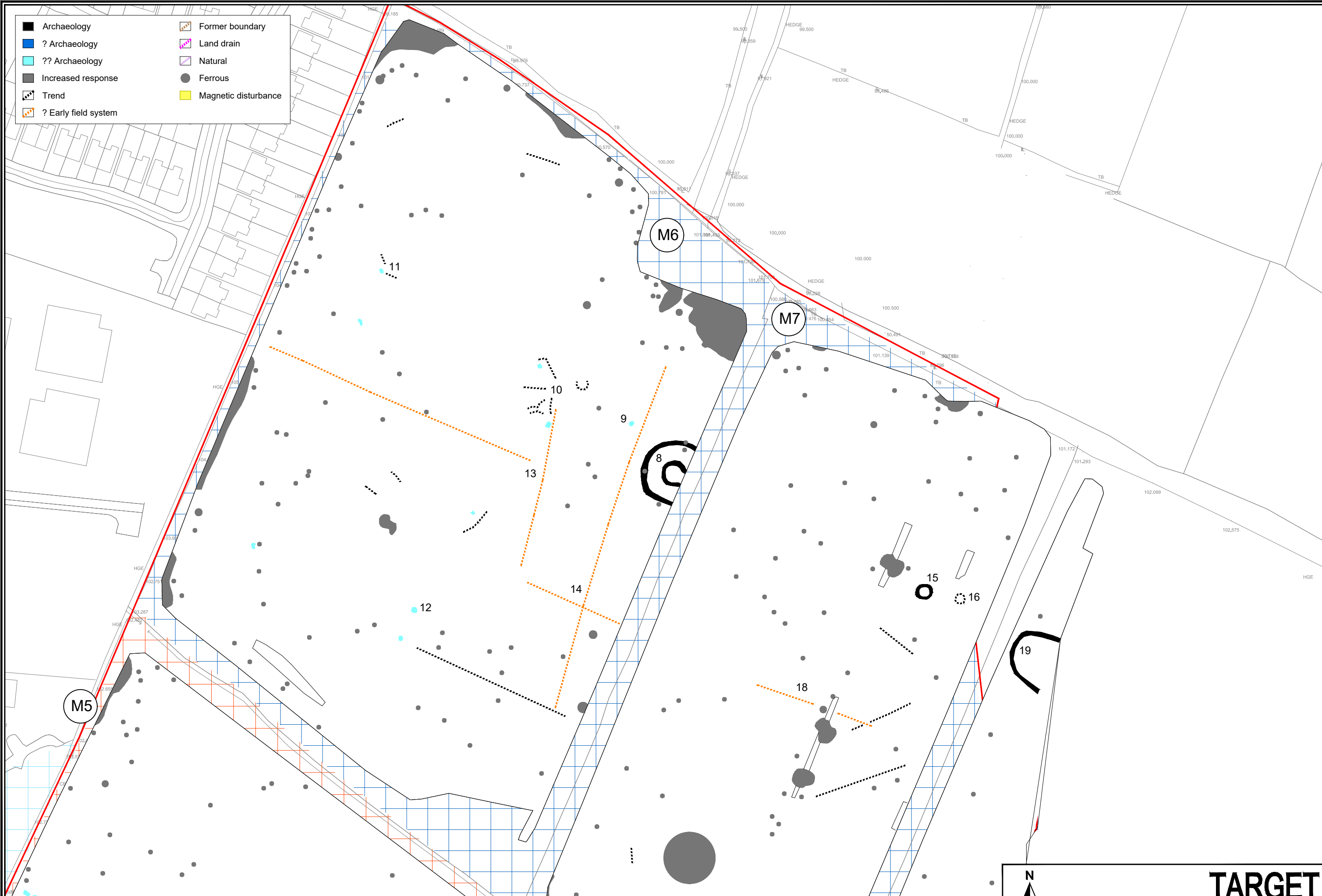
POOR TERRAIN
(CONSTRUCTION
DEBRIS)

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APPENDIX 4.2 ARCHAEOLOGICAL TESTING REPORT (KAVANAGH & TOBIN 2018)

**ARCHAEOLOGICAL ASSESSMENT
AT
THE WILLOWS (SHD APPLICATION SITE),
DUNSHAUGHLIN, CO. MEATH**

LICENCE NUMBER: 18E0495

ON BEHALF OF: ROCKTURE 1

I.T.M.: 697652, 751711

**LICENCEE: LIZA KAVANAGH
AUTHORS: LIZA KAVANAGH & MAEVE TOBIN**

DATE: OCTOBER 2018

IAC PROJECT REF.: J3183

ABSTRACT

Irish Archaeological Consultancy Ltd has prepared this report on behalf of Rockture 1, to study the impact, if any, on the archaeological and historical resource of a proposed SHD application site, which is located at The Willows, Dunshaughlin, Co. Meath (ITM: 697652, 751711). The report was undertaken by Liza Kavanagh of IAC Ltd under licence 18E0495.

A total of 53 trenches were excavated within the area of proposed development during September 2018. The trenches targeted geophysical anomalies and open green space. A total of six areas containing features of archaeological potential (AA1–6) were identified by this investigation, the most significant of which is a probable ring-barrow in AA3. In addition two spreads of burnt mound material were noted at AA1 and AA2, the former associated with two pits, and three single pits in AA4–6. The remains are heavily truncated and are considered on current evidence to be of local significance. Groundworks associated with the proposed development will have a direct negative impact on the *in-situ* archaeological remains in AA1–6.

The testing has indicated that the results of the geophysical survey are accurate, i.e. areas indicated as having no archaeology are confirmed as such, and as such we now have a good understanding of the site. There may, however, be an adverse impact on previously unrecorded small-scale archaeological features or deposits that have the potential to survive beneath the current ground level outside of the tested areas. This will be caused by ground disturbances associated with the proposed development.

It is acknowledged that preservation *in-situ* of archaeological remains is the preferable option wherever possible. Due consideration was given by the Design Team for the preservation *in-situ* of the archaeology in AA1-6. However, this is not possible due to the layout and design requirements of the proposed development. Given the difficulties of redesigning the layout of the development, as outlined in the report, coupled with the truncated nature of the remains on site, it is recommended that that preservation by record of the features in AA1-6 would be an acceptable form of archaeological mitigation. This should be carried out by a licence eligible archaeologist in consultation with the National Monuments Service of the DoCHG.

A buffer of 10m surrounding the remains has been set out on Figure 5 and 6 and these areas should be considered to be the minimum excavation areas. No groundworks or construction works should be carried out within these area without prior consultation with the project archaeologist.

It is also recommended that all topsoil tripping and ground disturbances 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.

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1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken at The Willows, Dunshaughlin, Co. Meath, prior to a Strategic Housing Development (SHD) application. This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the application area. The assessment (Licence Ref.: 18E0495) was undertaken by Liza Kavanagh of Irish Archaeological Consultancy Ltd (IAC), on behalf of Rockture Led.

Test trenching commenced on 20th September 2019 and continued for seven days. It was carried out using a 13 tonne 360 degree tracked excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of 53 trenches were mechanically investigated across the test area which measured 4,747.5 linear metres. This report follows on from a geophysical survey carried out by Target Archaeological Geophysics in June 2018 which indicated a number of potential archaeological features were present. The layout of trenches targeted all of the geophysical anomalies and the remaining open space.

A total of six areas containing features of archaeological (Archaeological Areas 1–6 [AA1–6]) potential were identified by this investigation, the most significant of which is a probable ring-barrow in AA3. In addition two spreads of burnt mound material were noted at AA1 and AA2, the former associated with two pits, and three single pits in AA4–6.

1.2 THE DEVELOPMENT

The proposed development consists of a strategic housing development comprising 912 no. residential units, a neighbourhood centre, including 2 no. retail units, a café / restaurant unit, a primary healthcare / gym, a community facility and a childcare facility, all associated open space, a section of the Outer Relief Road, internal roads, cycle and pedestrian infrastructure, services and all other associated development.

The 912 no. residential units proposed consist of 504 no. houses (single, two, and three storey), 186 no. duplex units (three storey), and 222 no. apartments (four and five storey).

The proposed neighbourhood centre facilities consist of a childcare facility with a GFA of 1,180 sq.m, a community facility with a GFA of 180 sq.m, 2 no. retail units with GFA of 1,160 sq.m and 220 sq.m, a café / restaurant unit with a GFA of 370 sq.m, and a primary healthcare / gym unit with a GFA of 1,160 sq.m.

The development also includes car and cycle parking, ESB substations, boundary treatment, foul and surface water drainage, attenuation tanks, other services and all other associated development.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 SUMMARY OF DESKTOP ASSESSMENT

2.1.1 General

There are no recorded monuments situated within the application area although a *fulacht fia* ME044-010 is present c. 95m to the southeast. The zone of notification for the historic town of Dunshaughlin (ME044-033) extends c. 325m to the northwest; however only one sub-constraint is situated within a 1km radius, motte ME044-033001 c. 390m to the west.

2.1.2 Prehistoric Period

Mesolithic Period (c. 7000–4000BC)

While recent discoveries may provide evidence of an Upper Palaeolithic human presence in Ireland (Dowd and Carden, 2016), the Mesolithic is the earliest time for which there is widespread evidence of human occupation of the island. People of the Mesolithic led transient lifestyles based on hunting, foraging and fishing. It is likely they lived in small groups which migrated to exploit seasonal resources. As a result, they depended heavily on coastal and riverine resources. Little settlement evidence survives from the Mesolithic. Often the only traces of Mesolithic activity are shell middens or scatters of flint material produced as by-products in the production of flint implements.

There are no recorded sites of a Mesolithic date within the vicinity of the proposed development site. However, a Mesolithic site has been excavated at Clowanstown, c. 5km north of the proposed development site. The remains of a fishing platform were discovered here during excavations prior to the M3 Clonee to north of Kells motorway. It has been suggested that fish (and fowl) formed a substantial portion of the diet of Mesolithic people in Ireland in comparison to their European contemporaries as many of the larger mammals hunted on the continent were not present in Ireland (Woodman et. Al. 1997).

Neolithic Period (c. 4000–2500BC)

The Neolithic saw the introduction and adoption of agriculture as a way of life to Ireland. Agriculture demanded the clearance of forests and the construction of field boundaries. Settlements became more permanent with rectangular houses becoming common, sometimes with evidence of internal hearths and sub-divisions of the internal space. A new concern of territory and a claim to land on which to farm contributed to the construction of large megalithic tombs. These monuments acted as tombs and ceremonial centres, as well as providing an ancestral connection to the land. Their construction would have required significant social organisation and cooperation and there is evidence that some sites remained in use at least intermittently for hundreds of years. There are four main types of megalithic tombs: court cairn tombs, portal tombs, passage tombs and wedge tombs.

County Meath is known for its rich tradition in passage tombs, with the Bru na Boinne UNESCO World Heritage Site located c. 21km to the north. There is a total of 52 passage tombs recorded in County Meath, which does not include unclassified megalithic tombs which may represent unidentified passage tombs. While there are no recorded megalithic tombs within the vicinity of the proposed development site the sheer number of tombs in the wider landscape of County Meath suggests a large population of Neolithic people in the area.

Evidence for Neolithic habitation in the vicinity, comprising a rectangular plank-built house, was revealed at Johnstown 1 in advance of the M3 Road Scheme 1.2km west of the proposed development area (Elder and Ginn 2009a, Reg. No. E003041). Further ephemeral evidence for prehistoric activity can be gleaned from the record of stray artefacts held by the National Museum. A polished stone axe (NMI 1977:1215) was retrieved from Cooksland townland c. 2.5km to the north of the proposed development area.

Bronze Age Period (c. 2500–800BC)

The Bronze Age began with widespread advances in metallurgy. The most common indication of Bronze Age activity is the fulacht fia or burnt mound. These are sites which were used for heating water using hot stones in a trough, possibly for a variety of purposes, such as cooking, tanning, dyeing and bathing. Very often, these sites survive only as spreads of charcoal rich soil with heat-affected stone inclusions having been heavily disturbed by later agricultural activity. A fulacht fia (ME044-010) is recorded c. 95m to the southwest of the proposed development site.

During the Bronze Age, megalithic tombs were no longer constructed with emphasis moving from a communal approach to burial to a focus on the individual. A later Bronze Age or early Iron Age ringditch associated with three cremation pits was excavated at Johnstown 4 in advance of the M3 Road Scheme, c. 1.6km northwest of the proposed development area (Elder and Ginn 2009b, Reg. No. E003052).

In addition, a complex kiln-type feature excavated at Johnstown 3, further to the west, revealed a mix of pottery types although an early Bronze Age date has been obtained from animal bone and charcoal (Elder and Ginn 2009c, Reg. No. E003043).

Iron Age Period (c. 800BC – AD400)

The Iron Age (500 BC – AD 400) is distinguished from the rather rich remains of preceding Bronze Age and subsequent early medieval period by a relative paucity of evidence in Ireland. However, 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). Of the archaeology identified along the M3 Road Scheme the site nearest to the proposed development area, Rath Hill 1, contained minor evidence for Iron Age metal working; c. 850m to the south (Elder and O’Hara 2009; Reg. No. E003040). Further evidence for Iron Age activity was recorded c. 1.3–1.5km to the west at Johnstown 1 and Johnstown 2 (Elder and Ginn 2009a, Reg. No. E003041; Schweitzer and Ginn 2009b, Reg. No. E003042).

2.1.3 Early Medieval Period (AD400–1100)

During this period, Ireland is depicted in the surviving historical sources as entirely rural. The area of proposed development area was located within the territory of the Deisí Breg, in Brega; fertile land bound by the Rivers Boyne and Liffey. Situated in the hinterland of Tara (7km north) the Royal site of Lagore is also present c. 2km to the northwest. Lagore Crannóg (ME038-027) was constructed of brushwood and peat interspersed with timber and it appears to have had at least three phases of occupation with successive palisades. Excavated during 1934–6 by Harvard Archaeological Expedition and it was dated with reference to historical sources from 7th to 10th centuries (www.archaeology.ie).

This period is characterised by the large-scale conversion to Christianity and the foundation of a large number of ecclesiastical sites throughout Ireland, in the centuries following the 5th century AD. These early churches tended to be constructed of wood or post-and-wattle (O’Sullivan et al 2014). Between the late 8th and 10th centuries, mortared stone churches gradually replaced the earlier structures. Many of the sites, some of which were monastic foundations, may have originally been defined by an enclosing wall or bank similar to that found at the coeval secular sites.

The townland name Dunshaughlin derives from the foundation of a church by Bishop Sechnall or Secuninus, known as Domhnach-Seachnail (the church of Seachnail), sent to assist St. Patrick in AD 439 (Gwynn and Hadcock 1970, 35). Seachnall is thought to have been a relative of Patrick and upon his death in 447 he was reputed to be the first bishop to be buried in the country ([archaeology.ie](http://www.archaeology.ie)). Bhreathnach (1999) noted that Dunshaughlin seems to have been a matrix ecclesia, a church with a number of dependant chapels such as the one at Ratoath. The church (ME044-033002) is situated on a broad, low hill within the west edge of the reclaimed Little Lagore Lough c. 1km north of the proposed development area. A former ecclesiastical enclosure (ME044-033009) is partially fossilised in the street-pattern of the town. The monastery was repeatedly attacked and burned during the 11th and 12th centuries AD suggesting the wealth and status of site was attractive. It is suggested that this site may have been the church of the Síol nÁedo Slaine, Kings of Lagore crannog (ME028-027), c. 1.7km to the east but this is not confirmed.

Secular habitation sites in the early medieval period include crannógs, cashels and ringforts in addition to unenclosed settlements, which are more difficult to identify in the archaeological record. The ringfort or rath is considered to be the most common indicator of settlement during the early medieval period. An enclosed early medieval settlement was excavated at Johnstown 1 in advance of the M3 Road Scheme, 1.2km west of the proposed development area (Elder and Ginn 2009a, Reg. No. E003041). The settlement had an associated complex of pits, postholes, stakeholes, and curvilinear features (interpreted as possible dwellings), enclosed by a 50m diameter sub-circular ditch. The settlement extended beyond the footprint of the construction corridor and as such elements are preserved in-situ. Further evidence for recorded settlement in the area includes the ringfort (ME044-020) c. 2.9km south in Rathregan. A bone gaming piece (NMI IA/L/1944) was retrieved from this site.

2.1.4 Medieval Period (AD1100–1600)

The beginning of the medieval period is characterised by the arrival of the Anglo-Normans in 1169 at the behest of Diarmuid mac Murrough, the disenfranchised king of Leinster. Subsequent marriage of one of these knights Richard de Clare to mac Murroughs daughter Aoife led to the sub-division of the Kingdom of Leinster with great swathes of land parcelled out among de Clare's followers.

This time period is synonymous with castle-building, both masonry and earthwork, as well as the creation of new towns. Dunshaughlin became a seigniorial manor of Hugh de Lacy and the earthwork (ME044-033001) 450m north of the proposed development area could be a motte built by him. It is formed by a flat-topped grass-covered circular mount with a basal diameter of 34m. Dunshaughlin is thought to have been incorporated as a town at some point (Lewis 1837, 1, 589), although its history is not well known. The church at Dunshaughlin became parochial at this time, and it is listed in the ecclesiastical taxation (1302-06) of Pope Nicholas IV 'Denclynschael' (archaeology.ie).

2.1.5 Post-medieval Period (AD1600-1900)

The 17th century witnessed the concentrated and systematic reduction of all of Ireland to English authority, largely through conflicts and the forced settlements known as 'The Plantations'. As part of the process of achieving colonial dominion a number of surveys and mapping programmes were completed throughout the post-medieval period. The Down Survey (1656–58) used the collected cadastral information to map all forfeited lands; overseen by the surgeon-general of the English army, William Petty and a number of former soldiers. It was not just a project of mapping but of social engineering that was underpinned by a massive 'transfer' in landownership from Irish Catholics to English Protestants. As the lands at Dunshaughlin were in Protestant ownership at the time of the survey they are not recorded in any detail, merely noted as 'unforfeited lands'.

Following the pacification of the county, the 17th and 18th centuries saw a dramatic rise in the establishment of large residential houses. 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 landscapes – to be able to view a large house within a natural setting. The only demesne lands of note, recorded in the first edition 6-inch OS map (1836), is that associated with Lagore House, c. 2km to the northeast.

There are a number of scattered post-medieval settlements or farmsteads within the townlands surrounding Dunshaughlin and within the town itself. The town was well established by the early 19th century with a courthouse, constabulary, post office and two churches recorded in the first edition OS map. The medieval church (ME044-033002) was recorded in good repair in the 17th century with the chancel partially ruined by the 18th century (archaeology.ie). The First Edition map of 1836 depicts a

small structure in the northeast of the proposed development site, situated along the adjacent roadway.

The foundations of a post-medieval windmill were excavated at Rath Hill 1, in advance of the M3 Road Scheme in 2006 c. 700m to the southwest (Elder and O'Hara 2009; Registration No. E003040). This is not illustrated on the historic mapping.

A Union Workhouse (NIAH Ref.: 14404403–4) was established in the district between 1835 and 1845, c. 950m southeast of the proposed development area. The large H-plan workhouse building, associated administration block front onto the Dublin Road, with the smaller fever hospital situated to the rear. A pathway leads north from the fever hospital to the burial ground (now recorded as a Famine graveyard), within the northwest limit of Ballinlough townland.

2.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

The SHD application site lied immediately north of Phase 1B and Phase 1C areas which have previously been subject to archaeological investigation. Monitoring was carried out on Phase 1B lands under licence 17E0658, following geophysical survey (Nicholls, 2017, Licence Ref.: 17R0137). Nothing of archaeological significance were identified. Phase 1C was subject to geophysical survey and test-trenching, under licence 18E0507. While a number of anomalies were identified during the geophysical survey (Nicholls, 2018, Licence Ref.: 18R0012), these were confirmed as geological during testing. No features of archaeological potential were identified.

Recent geophysical survey and subsequent test trenching carried out with a proposed residential development c. 200m west of the current site did not identify any archaeological remains (Murphy 2014). Excavations along the M3 Road Scheme (Clonee to North of Kells), revealed a small number of archaeological settlement sites c. 1–2km west and northwest of the proposed development area. These ranged in date from the Neolithic, Bronze Age, Iron Age, early medieval and post-medieval periods suggesting a continuous occupation of the surrounding landscape.

2.3 CARTOGRAPHIC ANALYSIS

Down Survey Barony Map of 'Rattoth' and Parish Map of 'Dunsaghlin', c. 1655

The Parish map for Dunshaughlin shows the townland as a blank plot of land annotated as unforfeited land (1384 acres). The Barony Map for Ratoath similarly shows the lands as unforfeited with no detail regarding settlement or church locations.

William Larkin's Map of County Meath, 1812

This map does not provide great detail however it illustrates topographical features and approximate outlines of buildings and settlements. The area of proposed development is shown to the northeast of the Dublin Road, south of Dunshaughlin Town, in an area annotated as 'Twelve Acres'. Scattered houses line the roadway leading south-southeast from the settlement although and one is shown within the

proposed development site. The motte (ME044-033001) is shown as a large raised feature in the landscape, to the north-northwest of site, within the southern limit of the settlement. Further north the Church (ME044-033002) is illustrated dominating the town. This map shows the bog at Lagore to the east of Dunshaughlin where a crannog was excavated previously. Horner (2007) notes that much of this area has been drained and altered to accommodate housing, new roads and land fill.

First Edition Ordnance Survey Map, 1836, scale 1:10560 (Figure 3)

This is the first accurate historic mapping coverage of the area containing the proposed scheme. The proposed development site is shown as a number of fields. A small structure is depicted in the northeast corner of the proposed development site, along the bordering roadway.

Ordnance Survey Map, 1909, scale 1:2500 (Figure 3)

There had been no significant change to the proposed development site by the time of this map in 1909.

2.4 SUMMARY OF GEOPHYSICAL RESULTS

A geophysical survey was undertaken within the SHD application site (M1–M8) between January and May 2018 (Nicholls 2018, Licence Ref.: 18R0012, Figure 4). Features of archaeological potential were indicated in survey areas M5, M7 and M8 in the northern half of site. The anomalies have been assigned numbers and are discussed fully in the survey report; mentioned below as Geophysical Anomaly # (GA#).

The remains of two circular annular enclosures were identified in M6 and M7 located on a ridge of high ground extending northwest–southeast. The enclosure (GA8) in M6 defined by two concentric circular ditches measuring c. 29m and c.9m in diameter. Potential outlying pit/linear remains, notably responses GA9–10 to the northwest, are indicated by poorly defined positives and weak trends. Further isolated and magnetically weak positives are indicated in M6, notably responses GA11 and GA12 to the northwest and south of survey centre. Faint linear trends are also indicated in the results, the majority of which are expected to be of limited archaeological potential. Remains of an early field system have (GA13-14) been recorded extending northwest–southeast and northeast–southwest across the approximate centre of M6.

The smaller enclosure in M7 (GA15) is represented by a single ditch measuring c. 7m in diameter. A further weak circular trend (GA16) was noted c. 10m to the east of this enclosure which may be of archaeological interest. Poorly defined linear responses and trends (GA17) to the south in M7 are also evident. These are expected to represent remains of former drainage. Remains of an early field system (GA18) extend through the centre of M7.

To the south in M5 a possible *fulacht fia* site, or a group of large pits (GA5), is indicated in the centre of the field. An archaeological interpretation for weakly magnetic positives (GA 6 and 7) southeast of survey centre and at the western survey

edge should also not be dismissed. Given the abundance of ferrous debris recorded throughout M5 a modern ferrous origin for responses GA6 and GA7 is possible.

A further circular enclosure was recorded from survey in M8, outside of the SHD application site boundary. This enclosure lies c. 15m east of the proposed development area and appears to represent a single sub-oval ditch measuring c. 25m east–west (long axis).

Weakly positive, small-scale responses are also apparent in the results from survey in areas M2, M4a, and M5-M7. Whilst an archaeological origin for these anomalies should not be dismissed a modern ferrous or natural soil/geological origin is expected for the majority. Faint linear trends also evident throughout M2–M8 are deemed to be of limited archaeological significance. The remains of a probable former boundary are suggested by a weak linear trend traversing M2 northwest–southeast to the north of survey centre.

No responses of an archaeological significance were identified in field M1 and M3 although modern ferrous debris was noted frequently. The results from survey in M4b are dominated by modern ferrous disturbance caused by steel-capped boreholes at the southern edge.

3 ARCHAEOLOGICAL TESTING

3.1 GENERAL

Test trenching took place between the 20th and the 28th of September 2018, using a 13 tonne 360 degree tracked excavator equipped with a flat, toothless bucket under strict archaeological supervision. A total of 53 trenches were excavated within the area of proposed development, of which 22 targeted geophysical anomalies (Plates 1–23). The trench layout was arranged to establish the most representative example of the remaining lands. The proposed lengths of T52 and T53 were curtailed by the presence of topsoil storage associated with Phase 1B of the development. Two trenches, T21 and T22, were impacted upon by the presence of manholes/services (Plate 16).

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. Any investigated deposits were preserved by record. This was by means of written, drawn and photographic records. 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

A total of 53 trenches, measuring 4,747.5 linear meters, were excavated within the defined SHD application area. The site comprises all or part of seven fields of flat pastoral and arable agricultural land, to the north of the Phase 1B and 1C residential developments.

Topsoil is fairly homogenous across the site and comprises a moderately compact mid-grey brown silty clay with occasional small stone inclusions. The subsoil varied slightly across the site but was predominantly a light beige/yellow silty clay with common inclusions of decayed stone (mainly shale). In wet areas near the field boundaries the subsoil is noted as a lighter blue-grey marl. In the three northerly fields the subsoil is darker, comprising a brown-orange colour of compact sandy clay with common decayed stone inclusions and areas of mineralisation. Frequent stony patches were noted in the subsoil relating to decayed bedrock deposits.

A total of six areas containing features of archaeological potential (AA1–6) were identified by this investigation (Plates 1–11). The most significant of these is a probable ring-barrow in T15 and T16 (AA3) which comprises of a set of concentric circular ditches measuring c. 30m north–south. Two spreads of burnt mound material were noted at T36 and T44 (AA1 and AA2), the latter associated with two pits, and three single pits were noted in T1, T2, and T5 (AA4–6). Archaeological Areas 1–2 are located in the southern fields and Archaeological Areas 3–6 are clustered in the northwest field. With the exception of one of these features (AA4 in T5) all of the

archaeology was indicated by a geophysical signature. All of the other geophysical anomalies were identified as representing natural geological variations.

A number of non-archaeological features were also recorded which are described below in Section 3.2.7. All of the features encountered are described further in Appendix 1 and in the Appendix 2.

3.2.1 Archaeological Area 1

T44 targeted geophysical anomaly 5 and revealed the remains of a truncated burnt mound deposit (C4) and two pits (C5 and C6) (Figure 6, Plates 1–3). The burnt mound material extends for c. 10m by 5m and survives to a depth of c. 0.2m. It comprises of grey black compacted silty clay with frequent inclusions of small angular burnt stone. Two pits (or possible troughs) are noted to the west of this spread. The larger, C5, measures 1.9m long by 1m wide and is filled with burnt mound material. The smaller pit, C6, measures 0.7m long and 0.5m wide and is also filled with burnt mound material. It is evident that the archaeology has been disturbed by modern agricultural plough furrows. It is likely this represents Bronze-Age settlement activity, possibly related to AA2, AA3 and the recorded *fulacht fia*, ME044-010, c. 560m to the southeast.

3.2.2 Archaeological Area 2

T36 targeted geophysical anomaly 4 and revealed the truncated remains of a burnt mound, C7 (Figure 6, Plate 4). The remains extend over an area measuring 5.7m by 2.3m and investigation suggests a depth of 0.35m. The depth of the sondage may indicate the presence of an underlying trough. No further features of archaeological potential were noted in the vicinity of C7. It is likely this represents Bronze-Age settlement activity, possibly related AA1, AA3 and with the recorded *fulacht fia*, ME044-010, c. 420m to the southeast.

3.2.3 Archaeological Area 3

T15 and T16 targeted geophysical anomaly GA8 which was confirmed as the remains of a probable ring-barrow, comprising of two concentric circular ditches measuring c.30m in diameter (Figure 6, Plates 5–8). The known extent of these ditches form a C-shape with no evidence of a likely return noted in T18 and T19 to the east of the field boundary. It is probably that the field boundary ditch has truncated the enclosure on its eastern return. The inner ditch, C8, measures 2m wide and at least 0.5m deep and has a gradual break of slope at top and steeply sloping sides. The base was not exposed during testing as the slot was not continued after an assemblage of disarticulated bone was exposed in the single fill of the ditch. The fill, C13 is a very compact dark grey charcoal flecked silt and clay, with occasional stone. The outer ditch, C9, measures 2.4m wide and at least 0.2m deep and has a gradual break of slope at top with gradually sloping sides. The friable remains of unburnt animal bone and teeth were present in the compact beige orange/brown silt and clay single fill of the ditch, C14. The small quantities of bone disturbed during testing from C8 and C9 were reviewed by an osteoarchaeologist and confirmed as animal in origin (Maeve Tobin pers. comm.). AA3 appears to represent further evidence of Bronze-Age habitation in the area, previously indicated by the recorded *fulacht fia*, ME044-010, c.

780m to the south; and potentially the burnt mound features identified in AA1 and AA2.

3.2.4 Archaeological Area 4

Located in the southwest end of T5 is the shallow remains of a possible pit, C10 (Figure 6, Plate 9). It measures 1.5m long and 1.2m wide with a gradual break of slope at top and gently sloping sides. Preliminary investigation suggests the depth of this feature is not greater than 0.12m. It is filled with a black shiny charcoal rich silty clay, C15. No further archaeological features were identified in the vicinity of AA4 however as this was not indicated by a geophysical signature it is possible that further such remains may exist beyond the limits of the trench.

3.2.5 Archaeological Area 5

T2 targeted a small oval geophysical anomaly and revealed the remains of a sub-oval pit, C11 in the southern limit of the trench. It measures 1.5m long and 0.5m wide and appears to be at least 0.22m deep (Figure 6, Plate 10). It has a sharp break of slope at top and gradually sloping sides with a concave base. It is filled with a very compact mid-grey brown silty clay, C16. No other archaeological features were noted in this area.

3.2.6 Archaeological Area 6

T1 targeted a small oval geophysical anomaly and revealed the remains of a sub-circular pit, C12 (Figure 6, Plate 11). The pit has a gradual break of slope and gradually sloping sides, measuring 0.9m long by 0.7m wide and 0.2m deep. It is filled with a brown black charcoal rich silty clay, C17. No other archaeological features were noted in this area.

3.2.7 Non-Archaeological Features

The remains of a possible stone surface, C3, was identified in T49 (Plate 12). It is possible that this reflects an old access through field boundaries, represented on the first edition OS map (Figure 3). Fragments of clay pipe were recovered from this feature. A slot was dug through this feature and the section drawn with a plan recorded by GPS. Due to its modern nature this feature was not considered to have archaeological significance.

The remains of a former east–west aligned field boundary was noted in T46 and T43, as depicted on the historic maps (Figure 3, Plate 13). A section was excavated through the ditch which revealed steeply sloping sides and contains a grey brown friable clay.

A number of post-medieval/modern features were also recorded, including stone filled land drains, agricultural furrows, areas of root burning and clay filled natural hollows (Plates 14–15). The field drains are filled with stones, and measure c. 0.25m in width; and often contained clay pipe fragments. Agricultural furrows are very common throughout the site running north–south, with slight variation between each but the majority measure between 0.25 and 0.4m in width and 0.1m in depth. They were filled with a light beige brown silty clay.

3.3 CONCLUSIONS

A total of 53 trenches, measuring 4,747.5 linear meters, were excavated within the defined SHD application area over the course of seven days. The site comprises all or part of seven fields of flat pastoral and arable agricultural land, to the north of the Phase 1B and 1C residential developments in Dunshaughlin townland. No features were indicated on the historic mapping however geophysical survey indicate the presence of archaeological activity.

A total of six areas containing features of archaeological potential (AA1–6) were identified by this investigation. The most significant of these is a probable ring-barrow designated as AA3 which comprises of a set of concentric circular ditches measuring c. 30m north–south. Two spreads of burnt mound material were noted in AA1 and AA2, the latter associated with two pits, and three single pits were noted in AA4–6. All these features are indicative of Bronze-Age habitation in the locale which correspond with the recorded *fulacht fia*, ME044-010, c. 420m to the southeast of AA2.

AA3 appears to be the heavily truncated remains of a ring-barrow. The Archaeological Survey of Ireland describes a ring-barrow as a circular or oval raised area (generally c. 1m above the ground level) enclosed by a fosse (ditch) and outer bank, with or without an entrance (www.archaeology.ie). There are 21 recorded ring-barrows in the Sites and Monuments Record for County Meath, of which the most significant cluster is situated at Tara 10km to the north-northwest. Ring-barrows have been recently excavated along the route of the M3 Road Scheme.

With respect to AA3, the fact that no above-ground element of a mound survives, the shallow nature of the surviving ditches, and apparent lack of an eastern return to the enclosure, all suggest that the barrow has been heavily truncated by agricultural activity over the years.

Archaeological Areas 1–2 are located in the southern fields and Archaeological Areas 3–6 are clustered in the northwest field along a high ridge. With the exception of one of these features in AA4 all of the archaeology was suggested by a geophysical signature. All of the other geophysical anomalies were identified as representing natural geological variations. The testing has indicated that the results of the geophysical survey are accurate, i.e. areas indicated as having no archaeology are confirmed as such, and as such we now have a good understanding of the site.

The features recorded at AA1-6 are considered on current evidence to be of local significance.

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

- A total of six areas containing features of archaeological potential (AA1–6) were identified by this investigation, the most significant of which is a probable ring-barrow in AA3. In addition, two spreads of burnt mound material were noted at AA1 and AA2, the former associated with two pits, and three single pits in AA4–6. The remains are heavily truncated and are considered on current evidence to be of local significance. Groundworks associated with the proposed development will have a direct negative impact on the *in-situ* archaeological remains in AA1–6.
- The testing has indicated that the results of the geophysical survey are accurate, i.e. areas indicated as having no archaeology are confirmed as such, and as such we now have a good understanding of the site. There may, however, be an adverse impact on previously unrecorded small-scale archaeological features or deposits that have the potential to survive beneath the current ground level outside of the tested areas. 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.

- It is acknowledged that preservation *in-situ* of archaeological remains is the preferable option wherever possible. Due consideration was given by the Design Team for the preservation *in-situ* of the archaeology in AA1-6. However, this is not possible due to the layout and design requirements of the proposed development. In particular, the preservation of the sites is difficult to accommodate in respect of providing an appropriate density and layout of development on the subject lands, while also providing open space on the lands zoned for open space and recreational uses which form a part of the overall development site, as required by the Planning Authority / An Bord Pleanála.

In addition, the location of AA3 would present difficulties in terms of retaining this feature within an open space area and providing a satisfactory layout of housing in this area of the site. An associated constraint imposed by the archaeological features would be that the area would not be able to be used for attenuation volume. Maximising attenuation volume in the public open

space is critical to ensure requirements of the Local Authorities standards and the Greater Dublin Strategic Drainage Study are met.

Given the difficulties of redesigning the layout of the development, as outlined above, coupled with the truncated nature of the remains on site, it is recommended that that preservation by record of the features in AA1-6 would be an acceptable form of archaeological mitigation. This should be carried out by a licence eligible archaeologist in consultation with the National Monuments Service of the DoCHG.

A buffer of 10m surrounding the remains has been set out on Figure 5 and 6 and these areas should be considered to be the minimum excavation areas. No groundworks or construction works should be carried out within these area without prior consultation with the project archaeologist.

- It is recommended that all topsoil tripping and ground disturbances 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, should that be deemed the appropriate manner in which to proceed.

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.

5 REFERENCES

Bennett, I. (ed.) 1987–2010 *Excavations: Summary Accounts of Archaeological Excavations in Ireland*. Bray. Wordwell.

Bhreathnach, E. 1999 Authority and supremacy in Tara and its hinterland c. 950–1200. *Discovery Programme Reports* 5, 1–23.

Chartered Institute for Archaeologists 2014a *Standards & Guidance for Field Evaluation*.

Chartered Institute for Archaeologists 2014b *Standards & Guidance for Archaeological Excavation*.

Chartered Institution of Field Archaeologists 2014c *Standards & Guidance for an Archaeological Watching Brief (Monitoring)*.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999a *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin. Government Publications Office.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999b *Policy and Guidelines on Archaeological Excavation*. Dublin. Government Publications Office.

Dowd, M. and Carden, R. 2016 First evidence of a Late Upper Palaeolithic human presence in Ireland. *Quaternary Science Reviews* 139, 158–63.

Elder, S. and Ginn, V. 2009a Archaeological excavation report, E3041 Johnstown 1, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Elder, S. and Ginn, V. 2009b Archaeological excavation report, E3052 Johnstown 4, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Elder, S. and Ginn, V. 2009c Archaeological excavation report, E3043 Johnstown 3, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Elder, S. and O'Hara, R. 2009 Archaeological excavation report, E3040 Rath Hill 1, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Environmental Protection Agency. 2015 *Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)*. Dublin. Government Publications Office.

Environmental Protection Agency. 2015 *Draft Guidelines on the Information to be Contained in Environmental Impact Statements*. Dublin. Government Publications Office.

Gwynn, A. and Hadcock R. N. 1970 *Medieval Religious Houses, Ireland*. Harlow. Longmans.

Horner, A. 2007 *Mapping Meath in the early 19th century with an atlas of William Larkin's map of County Meath, 1812*. Dublin. Wordwell.

National Monument Section, Department of Culture, Heritage and the Gaeltacht. *Sites and Monuments Record, County Meath*.

National Museum of Ireland. *Topographical Files, County Meath*.

Nicholls, J. 2018 Geophysical Survey Report – The Willows, Dunshaughlin, Co. Meath (Licence 18E0012). Report prepared by Target Geophysical Surveys for IAC Ltd.

Nicholls, J. 2017 Geophysical Survey Report – The Willows, Dunshaughlin, Co. Meath (Licence 17E0137). Report prepared by Target Geophysical Surveys for IAC Ltd.

O'Sullivan, A., McCormick, F., Kerr, T. R., Harney, L. 2014 *Early Medieval Ireland AD 400-1100 the evidence from archaeological excavations* Dublin: Royal Irish Academy

Schweitzer, H. 2008 Archaeological excavation report, E3049 Drumree 1, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Schweitzer, H. and Ginn, V. 2009a Archaeological excavation report, E3047 Leshamstown 1, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Schweitzer, H. and Ginn, V. 2009b Archaeological excavation report, E3042 Johnstown 2, County Meath. Unpublished report prepared by ACS Ltd for Meath County Council, NRDO, and the NRA.

Stout, G. & Stout, M. 1997 *Early Landscapes: from Prehistory to Plantation*. In F.H.A Aalen, et al (eds), *Atlas of the Irish Rural Landscape*. Cork University Press.

Woodman, P.C., Monaghan, N., McCarthy, M. 1997, 'The Irish Quaternary Fauna Project', *Quaternary Science Reviews*. 16: 129-159.

CARTOGRAPHIC SOURCES

Down Survey Barony Map of 'Rattoth' and Parish Map of 'Dunshaghlin', c. 1655.

William Larkin, Map of the County of Meath, 1812.

Ordnance Survey maps of County Meath, 1836 and 1909.

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970–2017.

www.archaeology.ie – DoCHG website listing all SMR sites with aerial photographs.

www.osiemaps.ie – Ordnance Survey aerial photographs dating to 1995, 2000 & 2005 and 6-inch/25-inch OS maps.

www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage around Ireland and off shore.

www.googleearth.com – Aerial photographs of the proposed development area.

APPENDIX 1 TEST TRENCH RESULTS

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
1	10	2.2	0.37	Northeast–southwest	T1 targeted a geophysical anomaly (GA) of low archaeological potential which was identified as a sub-circular pit, C12 , with charcoal rich fill noted in southwest end of trench. It has been designated as Archaeological Area 6 and described further in Appendix 2.
2	10	2.2	0.38	Northeast–southwest	T2 targeted a geophysical anomaly of low archaeological potential which was identified as a sub-oval pit, C11 , with dark brown fill noted in southwest end of trench. It has been designated as Archaeological Area 5 and described further in Appendix 2.
3	10	2.2	0.38	Northeast–southwest	T3 targeted GA11. No archaeology was identified in this trench.
4	250	2.2	0.4	Northeast–southwest	No archaeology found.
5	250	2.2	0.4	Northeast–southwest	A sub-oval possible pit C10 , filled by a charcoal-rich material, was noted in southwest end of trench. It has been designated as Archaeological Area 4 and described further in Appendix 2.
6	50	2.2	0.4	Northeast–southwest	No archaeology found. North–south orientated agricultural furrow present, 0.35m wide and 0.11m deep, beige yellow fill.
7	10	2.2	0.37	Northeast–southwest	T7 targeted GA10. No archaeology found.
8	10	2.2	0.38	West–northwest–east–southeast	T8 targeted GA10. No archaeology found. The anomaly was identified as decayed stone in irregular hollow.
9	10	2.2	0.45	West–northwest–east–southeast	T9 targeted GA10. No archaeology found. The anomaly was identified as a band of gravel.
10	10	2.2	0.45	Northwest–southeast	T10 targeted a small linear geophysical anomaly. No archaeology found. A northeast–southwest stone-filled field drain was noted in northwest end of trench.
11	20	2.2	0.4	Northeast–southwest	T11 targeted GA12. No archaeology found.
12	230	2.2	0.37	Northeast–southwest	No archaeology found. A north–south agricultural furrow, 0.28m wide, 0.05m deep, beige brown fill, was present in northeast end of trench.
13	50	2.2	0.38	Northeast–southwest	No archaeology found. A dump of plastic and stone was noted in northeast end of trench.
14	10	2.2	0.44	Northeast–southwest	T14 targeted GA9. No archaeology found.
15	20	2.2	0.38	North–south	T15 targeted GA8 which was identified as two concentric circular ditches, C8 and C9 , forming part of a possible ring-barrow. Unburnt disarticulated bone (human and animal) was present in both ditch fills. This

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					site has been designated as Archaeological Area 3 and the features are further described in Appendix 2.
16	20	2.2	0.38	East-northeast–west-southwest	T16 also targeted GA8 and exposed the return of southwest return of ditches C8 and C9 .
17	100	2.2	0.36	Northeast–southwest	T17 targeted a faint linear anomaly, GA14 which was identified as two north–south agricultural furrows. They measured 0.3m wide, 0.05m deep, and contained a beige yellow brown fill. No archaeology found.
18	20	2.2	0.38	Northwest–southeast	No archaeology found. Stone filled field drain, orientated north–south in northwest end of trench.
19	20	2.2	0.38	Northwest–southeast	No archaeology found.
20	250	2.2	0.38	Northeast–southwest	No archaeology found. Three stone filled field drains noted, orientated northwest–southeast and north–south.
21	250	2.2	0.35	Northeast–southwest	No archaeology found. Two stone-filled field drains noted, both orientated northwest–southeast. Trench excavated in two segments to avoid presence of manhole/water services.
22	250	2.2	0.3	Northeast–southwest	No archaeology found. Manhole noted approximately mid-way along trench with gravel deposits extending around it.
23	50	2.2	0.3	Northeast–southwest	No archaeology found. Agricultural furrow, north–south orientation, 0.35m wide, 0.08m deep, beige brown fill.
24	20	2.2	0.33	West-northwest–east-southeast	T24 targeted GA15, a small circular anomaly. No archaeology was found. The geophysical anomaly appears to represent the remains of two north–south agricultural furrows, containing mixed beige/brown fill, 0.25–0.35m wide, <0.1m deep. One of these furrows continues into T23 to the north.
25	10	2.2	0.34	Northeast–southwest	T25 targeted GA16, a small circular anomaly. No archaeology was found. The anomaly may represent an arcing area of root burning.
26	30	2.2	0.4	West-northwest–east-southeast	No archaeology was found. Variation in subsoil noted between orange brown and yellow beige sandy clay.
27	100	2.2	0.36	Northeast–southwest	T27 targeted two faint geophysical linear trends. No archaeology was found. A north–south running agricultural furrow was present measuring 0.3m wide and 0.05m deep, containing a light beige brown soil.
28	10	2.2	0.4	Northwest–southeast	T28 targeted a short linear geophysical trend. No archaeology was found. An east–west aligned stone filled field drain, 0.25m wide, was present.
29	10	2.2	0.42	Northwest–southeast	T29 targeted a linear anomaly GA17. No archaeology was found. The anomaly possibly represents a truncated agricultural furrow.
30	150	2.2	0.3	Northeast–southwest	No archaeology was found. Northwest–southeast aligned stone filled field drain noted in southwest.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
31	50	2.2	0.32	Northeast–southwest	T31 targeted geophysical linear trends. No archaeology was found. Northwest–southeast aligned stone filled field drain noted in southwest as indicated by the survey.
32	176.5	2.2	0.38	Northeast–southwest	No archaeology was found.
33	200	2.2	0.35	Northeast–southwest	No archaeology was found. Area of root burning noted in northeast end of trench.
34	200	2.2	0.38	Northeast–southwest	No archaeology was found.
35	195	2.2	0.37	Northeast–southwest	No archaeology was found.
36	20	2.2	0.38	Northwest–southeast	T36 targeted GA4 which was identified as the remains of a burnt mound deposit, C7 . This feature was designated as Archaeological Area 2 and described further in Appendix 2.
37	200	2.2	0.47	Northeast–southwest	No archaeology was found. Two north–south aligned agricultural furrows, measuring 0.28–0.3m wide and 0.04m deep, containing a light beige brown silty clay were noted..
38	200	2.2	0.42	Northeast–southwest	No archaeology was found. Two north–south aligned agricultural furrows, measuring 0.28–0.35m wide and 0.03–0.05m deep containing a light beige brown silty clay were noted.
39	200	2.2	0.4	Northeast–southwest	T39 targeted a geophysical linear trend. No archaeology was found. Two north–south aligned agricultural furrows, measuring 0.3–0.38m wide and 0.03–0.06m deep, containing light beige brown silty clay were noted.
40	100	2.2	0.42	Northeast–southwest	No archaeology was found. Three agricultural furrows, 0.33–0.4m wide, 0.03–0.1m deep, light beige brown silty clay fill, orientated north–south.
41	20	2.2	0.46	Northwest–southeast	T41 targeted GA6, two small oval anomalies. No archaeology was found at this location.
42	50	2.2	0.46	Northeast–southwest	No archaeology was found. A north–south aligned agricultural furrow, measuring 0.4m wide, containing a light beige brown deposit was present.
43	50	2.2	0.47	Northeast–southwest	No archaeology was found. A former northwest-southeast aligned field boundary, measuring 0.9m wide was noted mid-way along the trench which corresponds with that on the first edition 6-inch OS map. The ditch profile has straight sides and it contains a grey brown clay fill with occasional stone. A north–south aligned agricultural furrow, measuring 0.4m wide, containing light beige brown soil was present.
44	20	2.2	0.45	Northeast–southwest	T44 targeted GA5, a large sub-oval anomaly, which was identified as the remains of a burnt mound deposit C4 and two associated pits, C5 , and C6 . This was designated as Archaeological Area 1 and the features are described further in Appendix 2.
45	50	2.2	0.48	Northeast–southwest	No archaeology was found. Two north–south aligned agricultural furrows, measuring 0.25m wide and

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					0.04m deep, containing beige brown silty clay is present.
46	185	2.2	0.44	Northeast–southwest	No archaeology was found. The former field boundary, described in T43, was noted.
47	189	2.2	0.45	Northeast–southwest	No archaeology was found. The former field boundary, described in T43, was noted.
48	10	2.2	0.38	Northwest–southeast	T48 targeted GA7, two small sub-oval anomalies. No archaeology was found. The anomalies likely relate to material contained within the former field boundary, as described in T43.
49	100	2.2	0.34	West-northwest–east-southeast	Traces of a possible stony surface, C3, were noted in northwest end of trench, which contained some modern material. It was composed of small angular stones set firmly in a light grey beige silt and clay. See Appendix 2 for further description.
50	100	2.2	0.32	West-northwest–east-southeast	No archaeology found. A deposit of small rounded gravel, likely related to the edge of a service trench beyond the end of the trench.
51	100	2.2	0.32	West-northwest–east-southeast	No archaeology found. A stone filled field drain (0.4m wide) was noted 14m northwest of southeast end of trench. Staining from petrochemicals was evident in the subsoil.
52	70	2.2	0.43	West-northwest–east-southeast	The proposed length of this trench was curtailed due to the presence of a haul road and storage area associated with the Phase 1B development. No archaeology found. A northwest–southeast aligned stone filled field drain measuring 0.3m wide was noted.
53	22	2.2	0.4	West-northwest–east-southeast	The proposed length of this trench was curtailed due to the presence of a haul road and storage area associated with the Phase 1B development. No archaeology found.

APPENDIX 2 CONTEXTS

CONTEXT NO.	TRENCH NO.	DESCRIPTION
C1	All	Topsoil
C2	All	Subsoil
C3	T49	Noted in the northwest end of T49, is the remains of a possible stony surface comprising compact small angular stones set in a beige grey silt. This surface extends for 6.5m within the trench and reaches a maximum depth of 0.18m. A piece of clay pipe was noted on the surface of the deposit suggesting a relatively modern date.
C4	T44	A burnt mound spread extending for c. 6m north–south by 4m east–west, with a maximum depth of 0.2m, in AA1 . Dark grey black silty clay of firm compaction with frequent inclusions of small angular burnt stone. Flanked on its west side by two smaller pits/possible troughs, C5 and C6. Disturbed by modern agricultural practices, as evident from agricultural furrow which cuts through it.
C5	T44	Sub-oval cut of a possible pit/trough, 0.2m from west edge of, and filled by, the spread of burnt mound material C4 in AA1 . It measures 1.9m long by 1m wide.
C6	T44	Sub-circular cut of a pit measuring 0.7m by 0.5m, situated to the northwest of, and filled by, burnt mound spread C4 in AA1 .
C7	T36	Spread of burnt mound material in AA2 , irregular shape, measuring 5.7m by 2.3m maximum. It extends for a min. 0.35m in depth, which may indicate the presence of a central trough.
C8	T15, T16	Cut of inner ditch of possible ring-barrow in AA3 . It has a gradual break of slope at top with steeply sloping sides, the base was not exposed. Fragile unburnt skeletal remains were present in the basal fill however these appear to be animal in origin (pers. comm. Maeve Tobin). The ditch is filled with C13.
C9	T15, T16	Cut of outer ditch of possible ring-barrow in AA3 . It has a gradual break of slope at top, gradually sloping sides, the base was not exposed. Fragile remains of animal bone/teeth identified in the basal fill. The ditch is filled with C14.
C10	T5	Cut of possible pit in AA4 . It measures 1.5m long by 1.2m wide, with gradual break of slope at top, and gently sloping sides. Maximum depth of 0.12m. Filled by C15.
C11	T2	Sub-oval pit in AA5 . It measures 1.5m long, by 0.5m wide and 0.22m deep. Sharp break of slope at top, gradually sloping sides and concave base. Filled with C16.
C12	T1	Sub-circular pit in AA6 . It measures 0.9m long by 0.7m wide and 0.2m deep. Gradual break of slope, gradually sloping sides. Filled with C17
C13	T15, T16	Fill of inner ditch C8 of possible ring-barrow in AA3 . Very compact dark grey charcoal flecked silt and clay fill with occasional stone and unburnt animal bone inclusions.
C14	T15, T16	Fill of outer ditch C9 of possible ring-barrow in AA3 . Very compact beige orange brown silt and clay fill with rare stone inclusions and infrequent animal bone/teeth inclusions. Charcoal flecks common also.
C15	T5	Fill of sub-circular pit C10 in AA4 . Black shiny charcoal rich deposit of moderately compacted silty clay.
C16	T2	Fill of sub-oval pit C11 in AA5 . Mid grey brown silty clay, very compact with rare stone inclusions.
C17	T1	Fill of sub-circular pit C12 in AA6 . Brown-black charcoal rich silty clay.

APPENDIX 3 RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.	ME044-010
RMP STATUS	To be included in next revision of RMP
TOWLAND	Dunshaughlin
PARISH	Dunshaughlin
BARONY	Ratoath
I.T.M.	697557, 751048
CLASSIFICATION	<i>Fulacht Fia</i>
DIST. FROM DEVELOPMENT	c. 95m southeast
DESCRIPTION	Ploughed out. Scatter of burnt stone in ploughed field (dims 12m northeast-southwest, 7m northwest-southeast).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	ME044-033
RMP STATUS	To be included in next revision of RMP
TOWLAND	Dunshaughlin, Grangend, Knocks, Roestown
PARISH	Dunshaughlin
BARONY	Ratoath
I.T.M.	696844, 751869 -
CLASSIFICATION	Settlement Cluster
DIST. FROM DEVELOPMENT	c. 325m northwest
DESCRIPTION	Settlement cluster evolved around the early monastery of St Seachnall or Secundus which became the medieval parish church (ME044-033002). Dunshaughlin is thought to have been incorporated as a town at some point (Lewis 1837, 1, 589), although its history cannot be elucidated (Bradley and King 1985, 60).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	ME044-033001
RMP STATUS	To be included in next revision of RMP
TOWLAND	Dunshaughlin
PARISH	Dunshaughlin
BARONY	Ratoath
I.T.M.	696910, 751898
CLASSIFICATION	Castle –Motte
DIST. FROM DEVELOPMENT	c. 390m west
DESCRIPTION	Situated on a rise in a fairly level landscape. Flat-topped, grass-covered circular mound (diam. of top 26m; diam. of base 34m; H 2.5m-3m). There is no visible fosse or entrance.
REFERENCE	www.archaeology.ie/ SMR file

APPENDIX 4 STRAY FINDS WITHIN THE SURROUNDING AREA

Information on artefact finds from the study area in County Meath 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.

There are no stray finds from the surrounding townlands located within 1km of the proposed development area. In the wider area numerous artefacts were retrieved during excavations at Lagore Crannóg (ME038-027) situated c. 2km to the northeast.

A polished stone axe (NMI 1977:1215) was retrieved from Cooksland townland c. 2.7km to the north. A bronze seal matrix (NMI 1976:609) is recorded from Bonestown 2.4km north-northwest. A bone gaming piece (NMI IA/L/1944) is also recorded from the site of a ringfort (ME044-020) in Rathregan 2.8km to the south.

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.

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.

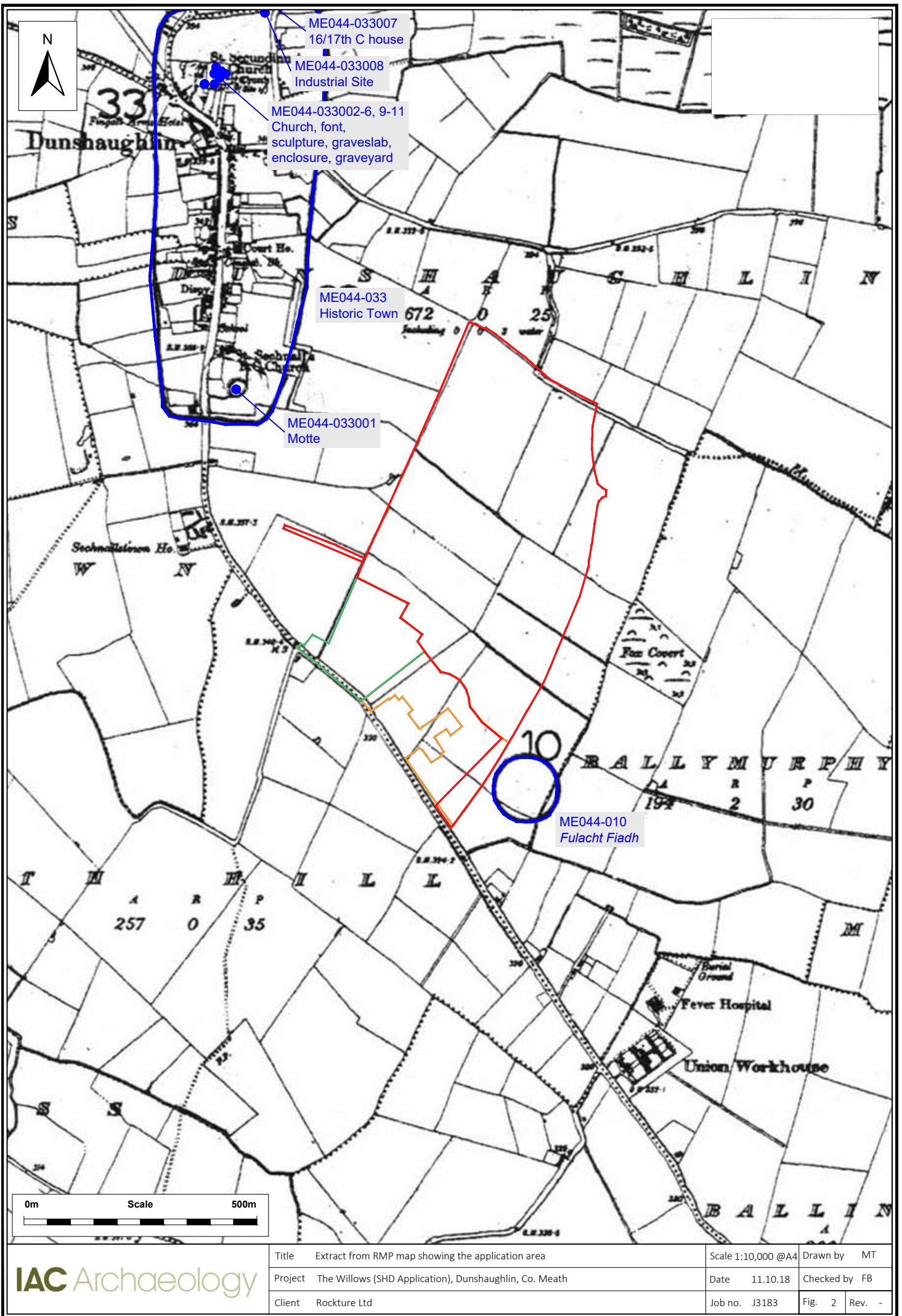
Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence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

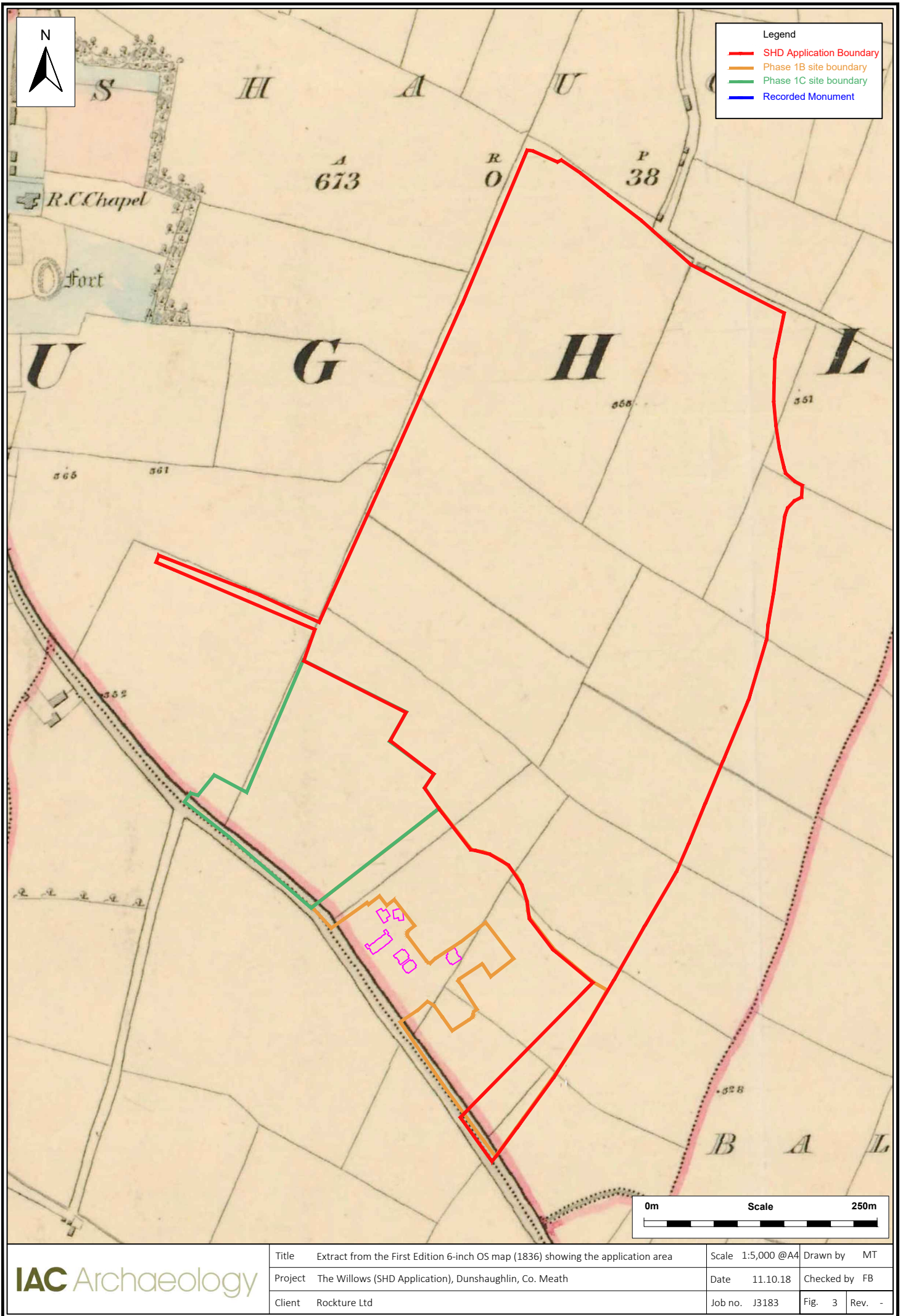
Archaeological Test Trenching can be defined as ‘a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present 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)



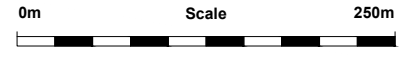
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Project	The Willows (SHD Application), Dunshaughlin, Co. Meath	Date	11.10.18	Checked by	FB
Client	Rockture Ltd	Job no.	J3183	Fig.	1
				Rev.	-



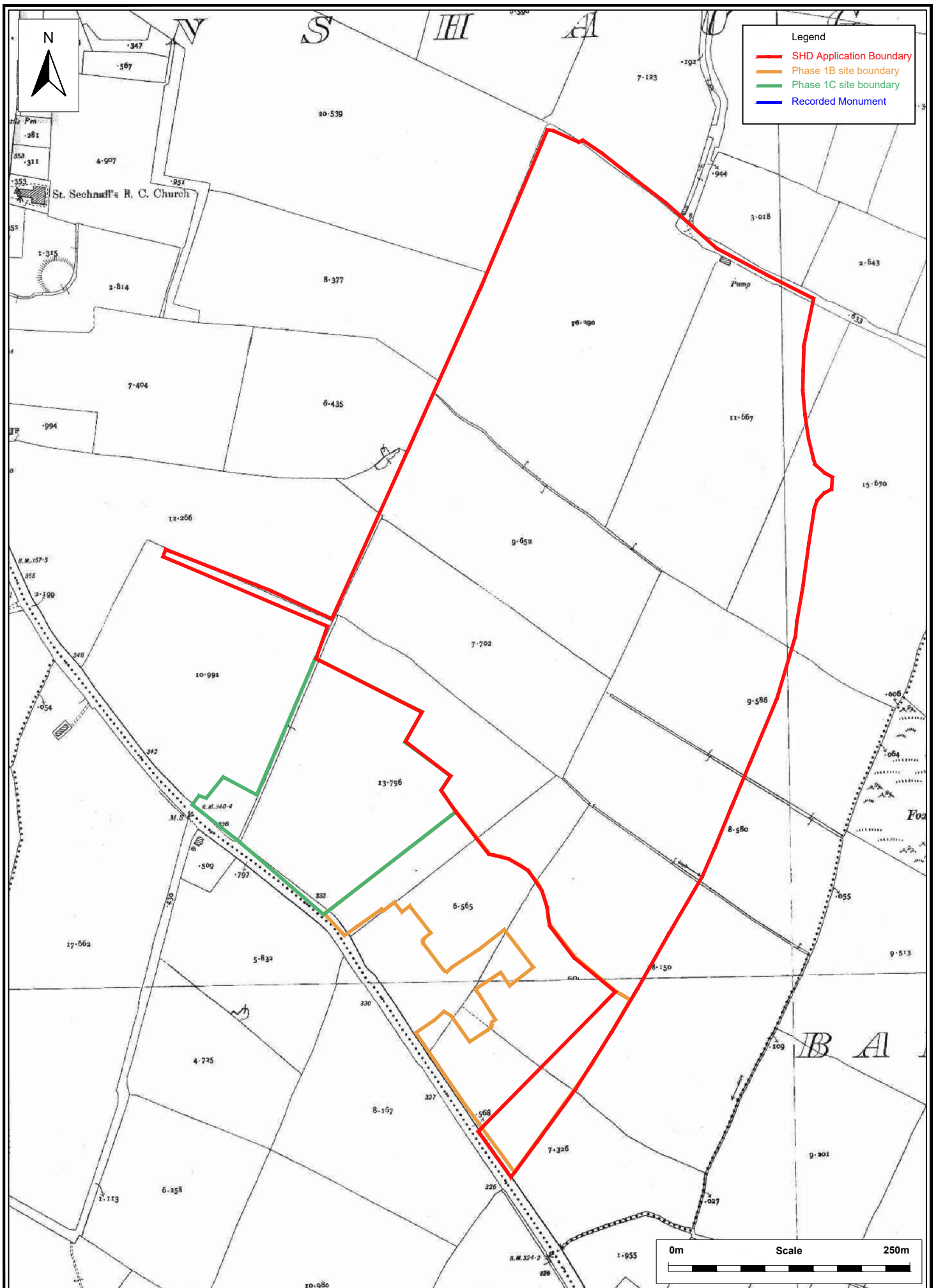


Legend

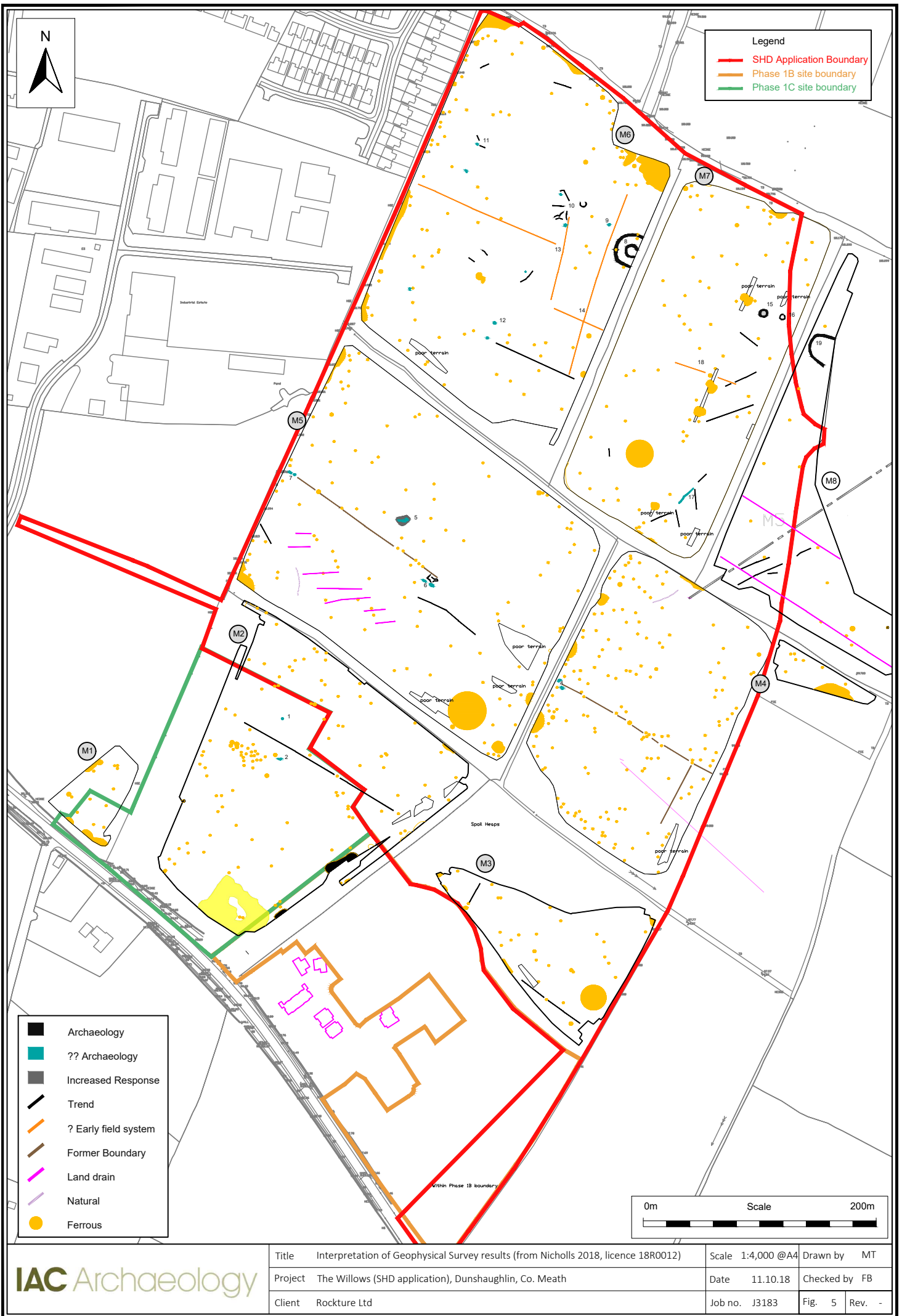
- SHD Application Boundary
- Phase 1B site boundary
- Phase 1C site boundary
- Recorded Monument



Title	Extract from the First Edition 6-inch OS map (1836) showing the application area	Scale	1:5,000 @A4	Drawn by	MT
Project	The Willows (SHD Application), Dunshaughlin, Co. Meath	Date	11.10.18	Checked by	FB
Client	Rockture Ltd	Job no.	J3183	Fig.	3
				Rev.	-



Title	Extract from the 25-inch OS map (1909) showing the application area	Scale	1:5,000 @A4	Drawn by	MT
Project	The Willows (SHD Application), Dunshaughlin, Co. Meath	Date	11.10.18	Checked by	FB
Client	Rockture Ltd	Job no.	J3183	Fig.	4
				Rev.	-



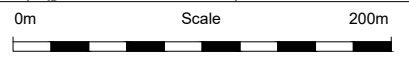
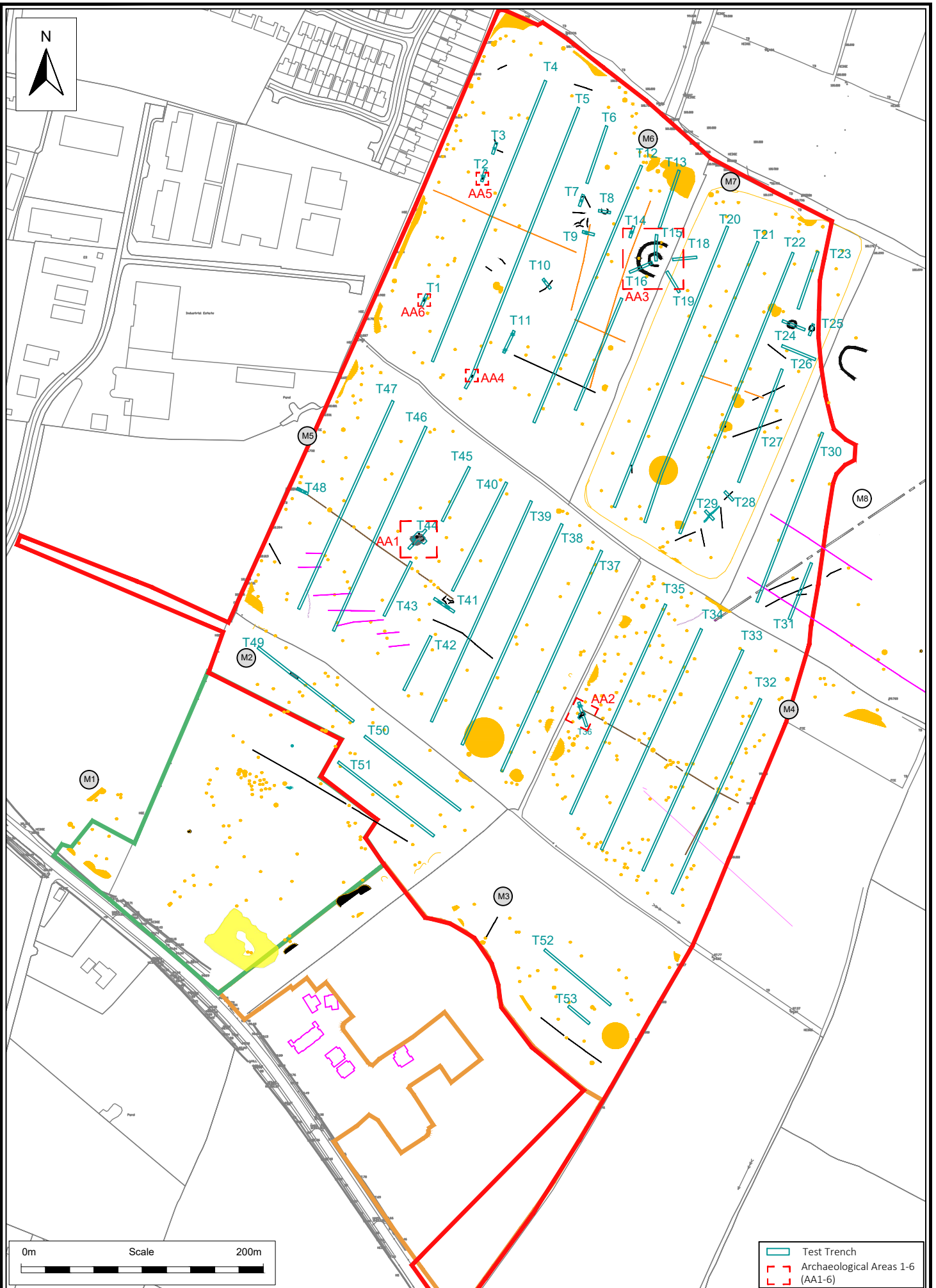
Legend

- SHD Application Boundary
- Phase 1B site boundary
- Phase 1C site boundary

- Archaeology
- ?? Archaeology
- Increased Response
- Trend
- ? Early field system
- Former Boundary
- Land drain
- Natural
- Ferrous

0m Scale 200m

Title	Interpretation of Geophysical Survey results (from Nicholls 2018, licence 18R0012)	Scale	1:4,000 @A4	Drawn by	MT
Project	The Willows (SHD application), Dunshaughlin, Co. Meath	Date	11.10.18	Checked by	FB
Client	Rockture Ltd	Job no.	J3183	Fig.	5
				Rev.	-



- Test Trench
- - - Archaeological Areas 1-6 (AA1-6)

	Title Location of Test Trenches showing Archaeological Areas 1-6		Scale 1:4,000 @A4 Drawn by MT	
	Project The Willows (SHD application), Dunshaughlin, Co. Meath		Date 11.10.18 Checked by FB	
	Client Rockture Ltd		Job no. J3183 Fig. 6 Rev. -	



LEGEND

- SITE BOUNDARY OF PROPOSED DEVELOPMENT
- BOUNDARY OF THE CONTROL OF THE LANDLORD OWNER

ROAD LEGEND

- Arterial Route
- Local Route
- Homezone

	Title	Layout of proposed development overlaid with Archaeological Areas 1-6	Scale	NTS	Drawn by	MT	
	Project	The Willows (SHD application), Dunshaughlin, Co. Meath	Date	11.10.18	Checked by	FB	
	Client	Rocktore Ltd	Job no.	J3183	Fig.	7	Rev.



Plate 1 T44 AA1, Burnt mound C4 and pits C5 and C6, facing west



Plate 2 T44 AA1, Pit C5, facing southeast



Plate 3 T44 AA1, Pit C6, facing north



Plate 4 T36 AA2, Burnt material C7, facing northeast



Plate 5 T15 AA3, Inner ditch C8, facing north-northwest



Plate 6 T16 AA3, section through inner ditch C8, facing south



Plate 7 T15 AA3, Outer ditch C9, facing north-northwest



Plate 8 T16 AA3, section through outer ditch C9 section, facing south



Plate 9 T5 AA4, Pit C10, facing northeast



Plate 10 T2 AA5, section through Pit C11, facing east



Plate 11 T1 AA6, Pit C12, facing northeast



Plate 12 T49 Possible stone surface C3, facing northwest



Plate 13 T46, possible field boundary, facing northwest



Plate 14 T20, stone filled field drain, facing west-southwest



Plate 15 T25, modern root burning, facing north



Plate 16 T21, manhole disturbance, facing northeast



Plate 17 T51, facing southeast



Plate 18 T41, facing northwest



Plate 19 T35, facing northeast



Plate 20 T30, facing southwest



Plate 21 T24, facing east-southeast



Plate 22 T18, facing west-southwest



Plate 23 T10, facing northwest

APPENDIX 4.3 RECORDED MONUMENTS WITHIN THE RECEIVING ENVIRONMENT

SMR No.	Classification		Distance to Site	Status
ME044-010	<i>Fulacht fia</i>	Ploughed out. Scatter of burnt stone in ploughed field (dims 12m northeast-southwest, 7m northwest-southeast).	90m east	RMP
ME044-033	Settlement Cluster	Historic town of Dunshaughlin. Settlement cluster evolved around the early monastery of St Seachnall or Secundus which became the medieval parish church. Dunshaughlin is thought to have been incorporated as a town at some point (Lewis 1837, 1, 589), although its history cannot be elucidated (Bradley and King 1985, 60).	325m west	RMP
ME044-033001	Motte	Situated on a rise in a fairly level landscape. Flat-topped, grass-covered circular mound (diam. of top 26m; diam. of base 34m; H 2.5m-3m). There is no visible fosse or entrance. After the Anglo-Norman settlement Dunshaughlin became a seigniorial manor of Hugh de Lacy (Graham 1974, 42) and the earthwork c. 700m to the S of the church could be a motte built by him.	390m west	RMP
ME044-033002	Church	Situated on a broad, low hill with the W edge of the reclaimed Little Lagore Lough, an oval, reclaimed area (dims c. 1.25km E-W; c. 0.5km N-S), c. 500m to the E. The headwaters of an E-W stream that leads into the SE-NW Skane River are c. 400m to the SW. The S-N Main Street of Dunshaughlin village curves from S-W-NE of the church, which suggests that an ecclesiastical enclosure (diam. c. 200m) has become fossilised in the street-pattern. This is an early church site founded by Seachnall or Secundus, who was sent to assist Patrick in AD 439 (Gwynn and Hadcock 1970, 35), and the name 'Dunshauglin' is derived from Domhnach Seachnall – the church of Seachnall. The name Maolseachnail – servant of Seachnall – became a common one amongst the Uí Neill kings of Meath, becoming McLoughlin, and it was sometimes transformed into Malachy. Seachanall was a son of Restitutus, a Lombard, and Lubaid, who is thought to have been a sister of Patrick. He was renowned as a poet and musician who composed a praise poem for Patrick, and when he died in 447 he was reputed to be the first bishop to be buried in the country (Ó Riain 2011, 552-3). The names of abbots are recorded with some certainty in the 9th century beginning with Ruamnus who died in 801, and continuing to Scannal mac Fergil, described as a princeps, who was murdered in 886. Erenachs and coarbs of Seachnall are recorded in AD 952, 1027 and 1040. The monastery at Dunshaughlin was burned in AD 1026, 1142 and	760m northwest	RMP

SMR No.	Classification		Distance to Site	Status
		<p>1143 (Cogan 1862-70, 1, 54-7). This was probably the church of the Síil nÁedo Slaine kings of Lagore crannog (ME028-027), c. 1.7km to the E, but there is little physical evidence of the early church structure, apart from an orans stone found in the graveyard in 1969.</p> <p>Following the establishment of an Anglo Norman settlement the church became parochial. A church at Denclynschael is listed in the ecclesiastical taxation (1302-06) of Pope Nicholas IV (Cal. doc. Ire., 5, 254). Ussher (1622) describes the church and chancel of Donshahlen as ruined (Erlington 1847-64, 1, lxx). According to the Dopping (1682-5) and Royal (1693) visitations the church was in good repair, the roof was slated, the widows glazed and the floor was clay. At that time the graveyard was fenced (Ellison 1971, 38). Isaac Butler, writing in 1749, describes the church and steeple, by which he meant a tower, as in good repair, but the chancel was ruined (1892, 16). The present Church of Ireland church was built in 1813 (Lewis 1837, 1, 589) N of the older structure within a rectangular graveyard.</p> <p>The remains of the parish church, consisting merely of one pointed arch and two piers of an arcade, suggest that its nave had aisles and therefore that it was a large church catering for a large, urban population. Some fragments of multi-cusped window-heads are in the graveyard, suggesting a 15th or 16th century date for the later church.</p>		
ME044-033011	Graveyard	<p>The site of the early church and the remains of the medieval parish church that succeeded it are within a rectangular graveyard (dims c. 60m N-S; c. 60m E-W) defined by masonry walls, with trees inside the perimeter at N and E, and a bank inside the perimeter at N. The headstones date mostly from 1743 to the present.</p>	760m northwest	RMP
ME044-033009	Enclosure	<p>Situated on a broad, low hill with the W edge of the reclaimed Little Lagore Lough, an oval area (dims c. 1.25km E-W; c. 0.5km N-S), c. 500m to the E. The headwaters of an E-W stream that leads into the SE-NW Skane River are c. 400m to the SW. The S-N Main Street of Dunshaughlin village curves from S-W-NE of the church, which suggests that an ecclesiastical enclosure (diam. c. 200m) has become fossilised in the street-pattern.</p> <p>Archaeological testing (91E0099) outside the N perimeter of the graveyard identified nine ditches curving E-W in two bands roughly centred on the church (Meehan 1992). A substantial ditch (Wth 3-4m; D 1.7m plus) occurring in all trenches c. 60m N</p>	760m northwest	RMP

SMR No.	Classification		Distance to Site	Status
		of the graveyard and centred on it, can be interpreted as the fosse of an ecclesiastical enclosure (diam. c. 160m). Medieval pottery and a spindle whorl were recovered, and the area roughly inside the ditch is maintained as a green area. (Meehan and Cassidy 1991)		
ME044-033003	Architectural fragment	In the graveyard attached to the early church of St Seachnall or Secundus and its medieval successor are some fragments of multi-cusped window-heads, suggesting a 15th or 16th century date for the later church.	760m northwest	RMP
ME044-033004	Font	An octagonal limestone font (ext. dim. 0.64m; H 0.42m), still functioning in the present church, has a circular basin (diam. 0.49m; D 0.24m) and chamfered under-panels. The basin rests on an octagonal shaft (H 0.24m) which rests on a rectangular base with chamfered upper edges (total H 0.77m). Five of the upper panels on the basin are decorated, one with a man's head in relief, the others, consisting of a plain shield and animals, are in false relief (Roe 1968, 57-9).	760m northwest	RMP
ME044-033005	Stone sculpture	An orans stone (H 0.57m; Wth 0.25m; T 7cm) was found in the graveyard of St Seachnall's church (ME044-033002-) in 1969, and it is now in the present church. This depicts a figure praying with raised arms, which Roe (1970, 212, 220) would date to the 6th to the 8th centuries.	760m northwest	RMP
ME044-033006	Graveslab	The headstones date mostly from 1743 to the present, but a graveslab (dims 1.05m x 0.97m) commemorating Noah Webb dated 1696 is at the SW angle of the graveyard (McClenaghan 1910), although it had been in the chancel of the medieval church c. 1749 (Butler 1892, 16).	760m northwest	RMP
ME044-033010	Stone Sculpture	A Crucifixion scene (Wth 0.34m; H 0.32m) is carved in false relief over the lintel (dims 1.5m x 0.5-0.7m; T 0.15m) of a doorway (Wth 0.74m). This stone is a thin slab that would have been set upright over the outer face of the W doorway of a 10th or 11th century, pre-Romanesque church. It is not mentioned by Butler (1892, 16) writing c. 1749, and the circumstances of its discovery are not known. It is now kept in the present church for safe-keeping.	760m northwest	RMP
ME044-033008	Industrial site	No details available.	840m northwest	SMR
ME044-033007	House – 16th/17th century	No details available.	850m northwest	RMP

APPENDIX 4.4 STRAY FINDS WITHIN THE RECEIVING ENVIRONMENT

Information on artefact finds from the study area in County Meath 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.

There are no stray finds from the surrounding townlands located within 1km of the proposed development area. In the wider area numerous artefacts were retrieved during excavations at Lagore Crannóg (ME038-027) situated c. 1.2km to the northeast.

A polished stone axe (NMI 1977:1215) was retrieved from Cooksland townland c. 2.7km to the north. A bronze seal matrix (NMI 1976:609) is recorded from Bonestown 2.4km north-northwest. A bone gaming piece (NMI IA/L/1944) is also recorded from the site of a ringfort (ME044-020) in Rathregan 2.8km to the south.

APPENDIX 4.5 PROTECTED STRUCTURES & NIAH STRUCTURES WITHIN THE RECEIVING ENVIRONMENT

Please note that 'rating' and 'categories of special interest' sections are designated within NIAH descriptions (where present).

RPS No	MH044-212, MH044-213
NIAH No	14335025, 14335022
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	House, outbuildings, stables, gates and railings
ITM	696810, 751550
Dist. from site	160m west
Description	Detached three-bay two-storey house, built c.1860. Hipped slate roof with rendered chimneystacks. Roughcast rendered walls with render quoins, eaves course and plinth. Timber sash windows with stone sills. Glazed porch to central bay. Wrought-iron gates and railings to the site. The regular form of this house is enhanced by the render details. The building retains many interesting features and materials, such as the timber sash windows and slate roof. The gates, railings and outbuildings to the site contribute to the setting of the house. Detached two-bay two-storey stable, built c.1870. Pitched slate roof. Stone walls with red brick dressings. Battened timber doors. Detached four-bay two-storey outbuilding and five-bay single-storey outbuilding, built c.1870, to site. Pitched slate roof with rendered chimneystacks. Roughcast rendered walls. This outbuilding contributes to the setting of the main house. The colourful use of rubble stone and red brick makes it a notable contributor to the setting of the house
Rating	Regional

RPS No	MH044-211
NIAH No	14335019
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	House and gates
ITM	696805, 751810
Dist. from site	280m northwest
Description	Detached three-bay two-storey house, built c.1920. Hipped slate roof and rendered chimneystacks with projecting eaves. Yellow brick walls with red brick quoins and string courses. Stone sills and red brick surrounds to window openings. Red brick door surround with round-headed opening flanked by brick pilasters with cornice above. Replacement door, with original stained glass toplights above. Wrought-iron gates to entrance. The regular form of this house is enlivened by the colourful brick details. The red brick quoins, string courses and imposing door surround articulate the house, and contrast with the yellow brick walls. The original stained glass toplights and the wrought-iron gates are interesting features of the site.
Rating	Regional

RPS No	MH044-210
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NIAH No	n/a
Statutory protection	Protected Structure and Recorded Monument (ME044-033001)
Townland	Dunshaughlin
Classification	Motte
ITM	696910, 751900
Dist. from site	390m west
Description	A Norman motte in the corner of the RC graveyard. Flat topped circular mound.
Rating	Regional

RPS No	MH044-209
NIAH No	14335018
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Dunshaughlin Library (former church)
ITM	696890, 751940
Dist. from site	440m west
Description	Detached T-plan gable-fronted former church, built c.1810, and remodelled c.1880, now in use as a public library. Comprising of four-bay side elevations to the nave, with single-bay transepts and chancel to the east. Pitched slate roof with ridge cresting, cast-iron finials and having ashlar bellcote to west gable. Rock-faced limestone to entrance gable with ashlar quoins and dressings and having projecting entrance porch flanked by buttresses. Pointed arch window openings with ashlar limestone dressings. Roughcast rendered walls to north, south and east elevations. Graveyard to south. The modest form of this early nineteenth-century church is enlivened by the addition of the imposing entrance gable, which was added c.1880, and was executed in well finished dressed limestone. The ashlar limestone dressings contrast with the rock-faced limestone, which adds textural interest to the site. The building retains many interesting features and materials, such as the cast-iron finials, slate roofs, and stained glass windows. Famine cauldron in the church grounds from soup kitchen (1847-1849). The church was given a Victorian Gothic remodelling between 1878 and 1882 with the addition of a new rock-faced limestone front and belfry. Renovated c.1940 by Ralph Byrne. Disused in 1986.
Rating	Regional

RPS No	MH044-208
NIAH No	14335017
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Water pump
ITM	696845, 752020
Dist. from site	440m northwest
Description	Cast-iron water pump, c.1870, with banded shaft, fluted neck, cap, finial and spout, and curved pumping handle. Concrete base and drain to site. The decorative detailing, such as the banding and fluting, provide artistic detailing to this functional water pump. Water

	pumps played an important social and functional role from the mid nineteenth century onward, providing a communal water source in the village.
Rating	Regional

RPS No	MH044-207
NIAH No	14335015
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Church hall (former school)
ITM	696830, 752040
Dist. from site	460m northwest
Description	Detached four-bay single-storey former national school, built in 1887, with gabled porch, now in use as a parish hall. Pitched slate roofs with carved timber bargeboards. Rendered walls with rock-faced quoins and limestone date plaque. Segmental-arched window openings with brick dressings and stone sills. Round-arched door opening with brick dressings. Extension to west gable. The modest form and scale of this former school is enhanced by interesting architectural details, such as the gabled breakfront and segmental-arched openings. The rock-faced quoins and brick dressings articulate the form of the building. The building retains many interesting features and materials, such as the carved timber bargeboards and slate roofs. Plaque above door reads: 'Dunshaughlin National School 1887'.
Rating	Regional

NIAH No	n/a
Statutory protection	Protected Structure and Recorded Monument (ME044-033001)
Townland	Dunshaughlin
Classification	Motte
ITM	696910, 751900
Dist. from site	390m west
Description	A Norman motte in the corner of the RC graveyard. Flat topped circular mound.
Rating	Regional

RPS No	MH044-209
NIAH No	14335018
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Dunshaughlin Library (former church)
ITM	696890, 751940
Dist. from site	440m west
Description	Detached T-plan gable-fronted former church, built c.1810, and remodelled c.1880, now in use as a public library. Comprising of four-bay side elevations to the nave, with single-bay transepts and chancel to the east. Pitched slate roof with ridge cresting, cast-iron finials and having ashlar bellcote to west gable. Rock-faced limestone to entrance gable with ashlar quoins and dressings and having projecting entrance porch flanked by buttresses. Pointed arch window openings with ashlar limestone dressings. Roughcast rendered walls to north, south and east elevations. Graveyard to south. The modest form of this early nineteenth-century church is enlivened by the addition of the imposing entrance gable, which was added c.1880, and was executed in well finished dressed limestone. The ashlar limestone dressings contrast with the rock-faced limestone, which adds textural interest to the site. The building retains many interesting features and materials, such as the cast-iron finials, slate roofs, and stained glass windows. Famine cauldron in the church grounds from soup kitchen (1847-1849). The church was given a Victorian Gothic remodelling between 1878 and 1882 with the addition of a new rock-faced limestone front and belfry. Renovated c.1940 by Ralph Byrne. Disused in 1986.
Rating	Regional

RPS No	MH044-208
NIAH No	14335017
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Water pump
ITM	696845, 752020
Dist. from site	440m northwest
Description	Cast-iron water pump, c.1870, with banded shaft, fluted neck, cap, finial and spout, and curved pumping handle. Concrete base and drain to site. The decorative detailing, such as the banding and fluting, provide artistic detailing to this functional water pump. Water

	pumps played an important social and functional role from the mid nineteenth century onward, providing a communal water source in the village.
Rating	Regional

RPS No	MH044-207
NIAH No	14335015
Statutory protection	Protected Structure
Townland	Dunshaughlin
Classification	Church hall (former school)
ITM	696830, 752040
Dist. from site	460m northwest
Description	Detached four-bay single-storey former national school, built in 1887, with gabled porch, now in use as a parish hall. Pitched slate roofs with carved timber bargeboards. Rendered walls with rock-faced quoins and limestone date plaque. Segmental-arched window openings with brick dressings and stone sills. Round-arched door opening with brick dressings. Extension to west gable. The modest form and scale of this former school is enhanced by interesting architectural details, such as the gabled breakfront and segmental-arched openings. The rock-faced quoins and brick dressings articulate the form of the building. The building retains many interesting features and materials, such as the carved timber bargeboards and slate roofs. Plaque above door reads: 'Dunshaughlin National School 1887'.
Rating	Regional

APPENDIX 4.6 LEGISLATIVE FRAMEWORK 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 1999a, 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 National Monuments (Amendment) Act 1987 provides that the Commissioners of Public Works are required 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 National Monuments Act 1930. 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 National Monuments (Amendment) Act 1994 requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for the Environment, Heritage and Local Government) 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 National Monuments (Amendment) Act 1994 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 the case of urgent necessity and with the consent of the Minister, commence the work until two months after the 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 projects 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 ACTS 2000-2018

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 Acts 2000-2018 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permission.

MEATH COUNTY DEVELOPMENT PLAN (2013-2019)

It is the strategic policy of Meath County Council:

CH POL 6: To promote awareness of, and access to, the archaeological inheritance of County Meath.

CH POL 7: To ensure that development in the immediate vicinity of a recorded monument is sensitively sited and designed so that it does not significantly detract from the monument. Where upstanding remains exist, a visual impact assessment may be required.

CH POL 9: To inform and seek guidance from the National Museum of Ireland if an unrecorded archaeological object is discovered, or from the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht in the case of the discovery of an unrecorded archaeological site, in accordance with National Monuments legislation.

It is an objective of Meath County Council:

CH OBJ 7: To protect archaeological sites and monuments, underwater archaeology, and archaeological objects, which are listed in the Record of Monuments and Places, and to seek their preservation in situ (or at a minimum, preservation by record) through the planning process.

CH OBJ 8: To seek to protect important archaeological landscapes from inappropriate development.

APPENDIX 4.7 LEGISLATIVE FRAMEWORK PROTECTING THE ARCHITECTURAL RESOURCE

The main laws protecting the built heritage are the Architectural Heritage (National Inventory) and National Monuments (Miscellaneous Provisions) Act 1999 and the Local Government (Planning and Development) Acts 1963-1998, which has now been superseded by the Planning and Development Acts 2000-2018. The Architectural Heritage Act requires the Minister to establish a survey to identify, record and assess the architectural heritage of the country. The background to this legislation derives from Article 2 of the 1985 Convention for the Protection of Architectural Heritage (Granada Convention). This states that: For the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member state will undertake to maintain inventories of that architectural heritage.

The National Inventory of Architectural Heritage (NIAH) was established in 1990 to fulfil Ireland's obligation under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architecture of Ireland (NIAH Handbook 2005:2). As inclusion in the inventory does not provide statutory protection, the survey information is used in conjunction with the Architectural Heritage Protection Guidelines for Planning Authorities to advise local authorities on compilation of a Record of Protected Structures as required by the Planning and Development Acts 2000-2018.

RECORD OF PROTECTED STRUCTURES AND COUNTY DEVELOPMENT PLAN

Structures of architectural, cultural, social, scientific, historical, technical or archaeological interest can be protected under the Planning and Development Acts 2000-2018, where the conditions relating to the protection of the architectural heritage are set out in Part IV of the act. This act superseded the Local Government (Planning and Development) Act, 1999, and came into force on 1st January 2000.

The act provides for the inclusion of Protected Structures into the planning authorities' development plans and sets out statutory regulations regarding works affecting such structures. Under new legislation, no distinction is made between buildings formerly classified under development plans as List 1 and List 2. Such buildings are now all regarded as 'Protected Structures' and enjoy equal statutory protection. Under the act the entire structure is protected, including a structure's interior, exterior, attendant grounds and also any structures within the attendant grounds.

The act defines a Protected Structure as (a) a structure, or (b) a specified part of a structure which is included in a Record of Protected Structures (RPS), and, where that record so indicates, includes any specified feature which is in the attendant grounds of the structure and which would not otherwise be included in this definition. Protection of the structure, or part thereof, includes conservation, preservation, and improvement compatible with maintaining its character and interest. Part IV of the act deals with architectural heritage, and Section 57 deals specifically with works affecting the character of Protected Structures or proposed Protected Structures and states that no works should materially affect the character of the structure or any element of the structure that contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. The act does not provide specific criteria for assigning a special interest to a structure. However, the National Inventory of Architectural Heritage (NIAH) offers guidelines to its field workers as to how to designate a building with a special interest, which are not mutually exclusive. This offers guidance by example rather than by definition:

ARCHAEOLOGICAL

It is to be noted that the NIAH is biased towards post-1700 structures. Structures that have archaeological features may be recorded, providing the archaeological features are incorporated within post-1700 elements. Industrial fabric is considered to have technical significance, and should only be attributed archaeological significance if the structure has pre-1700 features.

Architectural

A structure may be considered of special architectural interest under the following criteria:

- Good quality or well executed architectural design
- The work of a known and distinguished architect, engineer, designer, craftsman
- A structure that makes a positive contribution to a setting, such as a streetscape or rural setting
- Modest or vernacular structures may be considered to be of architectural interest, as they are part of the history of the built heritage of Ireland
- Well-designed decorative features, externally and/or internally

HISTORICAL

A structure may be considered of special historical interest under the following criteria:

- A significant historical event associated with the structure
- An association with a significant historical figure
- Has a known interesting and/or unusual change of use, e.g. a former workhouse now in use as a hotel
- A memorial to a historical event

TECHNICAL

A structure may be considered of special technical interest under the following criteria:

- Incorporates building materials of particular interest, i.e. the materials or the technology used for construction
- It is the work of a known or distinguished engineer
- Incorporates innovative engineering design, e.g. bridges, canals or mill weirs
- A structure which has an architectural interest may also merit a technical interest due to the structural techniques used in its construction, e.g. a curvilinear glasshouse, early use of concrete, cast-iron prefabrication
- Mechanical fixtures relating to a structure may be considered of technical significance

CULTURAL

A structure may be considered of special cultural interest under the following criteria:

- An association with a known fictitious character or event, e.g. Sandycove Martello Tower, which featured in Ulysses
- Other structures that illustrate the development of society, such as early schoolhouses, swimming baths or printworks

SCIENTIFIC

A structure may be considered of special scientific interest under the following criteria:

- A structure or place which is considered to be an extraordinary or pioneering scientific or technical achievement in the Irish context, e.g. Mizen Head Bridge, Birr Telescope

SOCIAL

A structure may be considered of special social interest under the following criteria:

- A focal point of spiritual, political, national or other cultural sentiment to a group of people, e.g. a place of worship, a meeting point, assembly rooms
- Developed or constructed by a community or organisation, e.g. the construction of the railways or the building of a church through the patronage of the local community
- Illustrates a particular lifestyle, philosophy, or social condition of the past, e.g. the hierarchical accommodation in a country house, philanthropic housing, vernacular structures

ARTISTIC

A structure may be considered of special artistic interest under the following criteria:

- Work of a skilled craftsman or artist, e.g. plasterwork, wrought-iron work, carved elements or details, stained glass, stations of the cross
- Well-designed mass produced structures or elements may also be considered of artistic interest

(From the NIAH Handbook 2003 & 2005 pages 15-20)

The Local Authority has the power to order conservation and restoration works to be undertaken by the owner of the protected structure if it considers the building to be in need of repair. Similarly, an owner or developer must make a written request to the Local Authority to carry out any works on a protected structure and its environs, which will be reviewed within three months of application. Failure to do so may result in prosecution.

MEATH COUNTY DEVELOPMENT PLAN (2013-2019)

It is the strategic policy of Meath County Council:

CH POL 10 To conserve and protect the architectural heritage of Meath.

CH POL 11 To require that all planning applications relating to Protected Structures contain the appropriate accompanying documentation in accordance with the Architectural Heritage Protection Guidelines for Planning Authorities (2011) or any variation thereof, to enable the proper assessment of the proposed works.

CH POL 12 To encourage the retention, sympathetic reuse and rehabilitation of Protected Structures. In certain cases, land use zoning restrictions may be relaxed in order to secure the conservation of the protected structure.

It is an objective of Meath County Council:

CH OBJ 13 To protect all structures (or, where appropriate, parts of structures) within the county which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and which are included in the Record of Protected Structures.

CH POL 20 a) To encourage the retention, sympathetic maintenance, and appropriate re-use of the vernacular heritage of Meath, in both the towns and rural areas of the County, including the retention of the original fabric, such as windows, renders, shop fronts, gates, yards, boundary walls and other significant features where possible; b) To discourage the replacement of good quality vernacular buildings or features with modern structures or features; c) To ensure that new build adjoining, and extensions to, vernacular buildings are of an appropriate design and do not detract from the building's character or that of its setting.

APPENDIX 4.8 IMPACT ASSESSMENT AND 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 landtake 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 4.9 MITIGATION MEASURES AND 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 can be defined as ‘a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design’ (CIFA 2014a).

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, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate’ (CIFA 2014b).

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

Underwater Archaeological Assessment consists of a programme of works carried out by a specialist underwater archaeologist, which can involve wade surveys, metal detection surveys and the excavation of test pits within the sea or riverbed. These assessments are able to access and assess the potential of an underwater environment to a much higher degree than terrestrial based assessments.

ARCHITECTURAL RESOURCE

The architectural resource is generally subject to a greater degree of change than archaeological sites, as structures may survive for many years but their usage may change continually. This can be reflected in the fabric of the building, with the addition and removal of doors, windows and extensions. Due to their often more visible presence within the landscape than archaeological sites, the removal of such structures can sometimes leave a discernible ‘gap’ with the cultural identity of a population. However, a number of mitigation measures are available

to ensure a record is made of any structure that is deemed to be of special interest, which may be removed or altered as part of a proposed development.

Conservation Assessment consists of a detailed study of the history of a building and can include the surveying of elevations to define the exact condition of the structure. These assessments are carried out by Conservation Architects/ Engineers, and would commonly be carried out in association with proposed alterations or renovations on a Recorded Structure.

Building Survey may involve making an accurate record of elevations (internal and external), internal floor plans and external sections. This is carried out using a EDM (Electronic Distance Measurer) and GPS technology to create scaled drawings that provide a full record of the appearance of a building at the time of the survey.

Historic Building Assessment is generally specific to one building, which may have historic significance, but is not a Protected Structure or listed within the NIAH. A full historical background for the structure is researched and the site is visited to assess the standing remains and make a record of any architectural features of special interest. These assessments can also be carried out in conjunction with a building survey.

Written and Photographic record provides a basic record of features such as stone walls, which may have a small amount of cultural heritage importance and are recorded for prosperity. Dimensions of the feature are recorded with a written description and photographs as well as some cartographic reference, which may help to date a feature.