IAC Archaeology

ARCHAEOLOGICAL ASSESSMENT
AT
BALLYNANELAGH, KNOCKRAHA EAST AND KILLEENA,
BALLYVATTA, COUNTY CORK

LICENCE NO.: 24E0451

ON BEHALF OF: BALLYVATTA SOLAR FARM LTD

ITM: 578042, 578399

LICENCEE: TIM COUGHLAN
AUTHOR: TIM COUGHLAN

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IRISH ARCHAEOLOGICAL CONSULTANCY LTD
ARCHAEOLOGY & CONSERVATION CONSULTANTS

T: (01) 201 8380 **E:** archaeology@iac.ie
Dublin I Belfast IAC.ie

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DATE	DOCUMENT TITLE	REV.	PREPARED BY	REVIEWED BY	APPROVED BY
30.07.24	Archaeological Assessment at Ballynanelagh and Knockraha East, Ballyvatta, County Cork	0	T. Coughlan	M. Tobin	T. Coughlan
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ABSTRACT

IAC Archaeology has prepared this report on behalf of Ballyvatta Solar Farm Ltd to study the impact, if any, on the archaeological and historical resource of proposed 110k substation development, which is located in the townlands of Ballynanelagh, Knockraha East and Killeena, at Ballyvatta, County Cork (ITM 578042, 578399). The assessment was carried out by Tim Coughlan of IAC Archaeology under licence 24E0451 to inform a planning application.

Archaeological testing was carried out over the course of two days from 8 July 2024 using a mechanical excavator fitted with a flat grading bucket. The trenches targeted, geophysical anomalies and open green space in order to fully investigate the archaeological potential of the site. A total of 1,056m of trenches were excavated.

Testing has identified one area of archaeological potential (AA1) within the site. The small localised scatter of potential burnt mound deposits identified at the east end of Trench 17 may be ephemeral to a larger burnt mound deposit/site, although such a site was not definitively located during testing. Given the nature of the changing subsoil at this location and the topography, the location of a burnt mound in the vicinity of Trench 17 must be considered.

The small localised burnt mound deposits identified in AA1, and any larger burnt mound associated burnt mound that may exist in the immediate vicinity will be adversely impacted by groundworks associated with the development based on its current design. While preservation *in situ* is the preferred method of conserving archaeological remains, the ephemeral nature of the remains in AA1 mean that it is not feasible in this case. As such, it is recommended that prior to the commencement of construction that AA1 is subject to preservation by record (through archaeological excavation). This would be carried out by a suitably qualified archaeologist under licence from the National Monuments Service.

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

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1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken in the townlands of Ballynanelagh, Knockraha East and Killeena at Ballyvatta, County Cork, prior to a proposed 110kV Substation development (Figure 1, ITM 578042, 578399). This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the site. It was undertaken by Tim Coughlan of IAC Archaeology (IAC) on behalf of Ballyvatta Solar Farm Ltd, and under licence 24E0451, as issued by the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH) to inform a planning application.

Test trenching commenced at the site on 8th July and continued for two days. This was carried out using a 13-tonne 360-degree tracked excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of 16 trenches were mechanically investigated across the test area which measured 1,056 linear metres in total. One area of archaeological potential (AA1) was identified, consisting of a cluster of small localised deposits of burnt mound material.

The archaeological assessment involved a detailed study of the archaeological and historical background of the proposed development site and the surrounding area. This included information from the Record of Monuments and Places of County Cork, the topographical files within the National Museum and all available cartographic and documentary sources for the area. A field inspection has also been carried out with the aim to identify any previously unrecorded features of archaeological or historical interest.

1.2 THE DEVELOPMENT

The proposed 110 kV substation would be built for the purpose of providing a connection from an associated, but separate, solar array and transporting electricity to the national grid. It will essentially comprise 2 No. separate compounds including an Eirgrid compound with substation and electrical infrastructure and an Independent Power Producer (IPP) or customer owned compound including a switchgear building, a 110kV transformer and other electrical infrastructure (Figure 2).

The proposed development will include a switchgear building, the main control building with generator room, battery room, store, and staff welfare facilities, security gates and fencing, a compound road leading from the access track opening to the main road, connection cabling to the existing substation, and all other associated works above and below ground including landscaping and masts for lighting and security.

2 METHODOLOGY

A study area, defined as 500m from the boundary of the proposed development area, was assessed to inform this report. Research was undertaken in three phases. The first phase comprised a paper survey of all available archaeological, historical and cartographic sources. The second phase involved a field inspection of the site. A programme of test trenching comprised the third phase of investigation to inform this report.

2.1 PAPER SURVEY

- Record of Monuments and Places for County Cork;
- Sites and Monuments Record for County Cork;
- 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;
- Cork County Development Plan 2022–2028;
- Aerial photographs;
- Excavations Bulletin (1970–2024);

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

Sites and Monuments Record (SMR) holds documentary evidence and 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 due to lack of locational information. As a result, these are omitted from the Record of Monuments and Places. SMR sites are also listed on a website maintained by the Department of Housing, Local Government and Heritage (DoHLGH) – www.archaeology.ie.

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

The Minister for the DoHLGH 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 contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

The topographical files of the National Museum of Ireland are the national archive of all known finds recorded by the National Museum. 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 are important in tracing land use development within the development area as well as providing important topographical information on areas of archaeological potential and the development 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.

Documentary sources were consulted to gain background information on the archaeological, architectural and cultural heritage landscape of the proposed development area.

Development Plans contain a catalogue of all the Protected Structures and archaeological sites within the county. The Cork County Development Plan (2022–2028) was consulted to obtain information on cultural heritage sites in and within the immediate vicinity of the proposed development area.

Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including aerial photographs held by the Ordnance Survey and Google Earth.

Excavations Bulletin 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 vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files. This information is also available online (www.excavations.ie) from 1970–2024.

2.2 FIELD INSPECTION

Field inspection is necessary to determine the extent and nature of archaeological and historical remains, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

The archaeological field inspection entailed -

- Walking the proposed development and its immediate environs.
- Noting and recording the terrain type and land usage.
- Noting and recording the presence of features of archaeological or historical significance.
- Verifying the extent and condition of any recorded sites.
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin.

2.3 ARCHAEOLOGICAL TESTING

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 2020a, 4). A programme of archaeological testing was carried out within the proposed development area in July 2024. This was undertaken by Tim Coughlan of IAC under licence 24E0451. Detailed results of the archaeological testing are included in Section 4 of this report.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 BACKGROUND

The proposed development area is located within the townlands of Ballynanelagh, Knockraha East and Killeena, in the Parish of Kilquane and Barony of Barrymore, County Cork. The proposed development area is surrounded by agricultural fields to its north, east and west and the existing Knockraha substation to the south. The townland boundary between Ballynanelagh and Knockraha East crosses the main development area to the south, while the townland boundary between Ballynanelagh and Killeena is formed by the roadway to the south.

There are no recorded monuments within the development area, although two are known within 500m. These comprise an enclosure (CO064-074) located c. 188m southwest and a ringfort-rath (CO064-075) located c. 419m south; as illustrated on the 1845 Ordnance Survey map.

Prehistoric Period

Mesolithic Period (c. 7000–4000BC)

Recent discoveries may suggest the possibility of a human presence in the southwest of Ireland as early as the Upper Palaeolithic (Dowd and Carden 2016), however; the Mesolithic period is the earliest time for which there is clear evidence for prehistoric human colonisation of the island of Ireland. During this period people hunted, foraged and gathered food and appear to have led a primarily mobile lifestyle. The presence of Mesolithic communities is most commonly evidenced by scatters of worked flint material, a by-product of the production of flint implements. There is no archaeological evidence of Mesolithic activity within the immediate environs of the proposed development area.

Neolithic Period (c. 4000–2500BC)

During this period communities became less mobile and their economy became based on the rearing of stock and cereal cultivation. The transition to the Neolithic was marked by major social change. Communities had expanded and moved further inland to more permanent settlements. This afforded the development of agriculture which demanded an altering of the physical landscape. Forests were rapidly cleared and field boundaries were constructed. Pottery was also being produced, possibly for the first time. The advent of the Neolithic period also provided the megalithic tomb. There are four types of tomb in Ireland, namely the Court Cairn, Portal, Passage and Wedge; of which the latter style straddles the Neolithic to Bronze Age transition.

While recent years have seen a large increase in the number of identified Neolithic settlement and habitation sites, there is no archaeological evidence to substantiate Neolithic settlement within the immediate environs of the proposed development area.

Bronze Age Period (c. 2500–800BC)

This period is marked by the use of metal for the first time. As with the transition from Mesolithic to Neolithic, the transition into the early Bronze Age was accompanied by changes in society. Megaliths were replaced in favour of individual, subterranean cist or pit burials that were either in isolation or in small cemeteries. These burials contained inhumed or cremated remains and were often, but not always, accompanied by a pottery vessel.

Over 7,000 burnt mounds or *fulacht fia* sites have been recorded in the country and c. 1,500 examples excavated, making them the most common prehistoric monument in Ireland (Waddell 2022, 164). Although burnt mounds of shattered stone occur as a result of various activities that have been practised from the Mesolithic to the present day, the Bronze Age has long been believed to have seen the peak of this activity. Dating evidence from a growing number of burnt mounds, suggests activities resulting in burnt mounds were being carried over a span of 3,500 years in Ireland (Hawkes 2018). They are typically located in areas where there is a readily available water source, often in proximity to a river or stream or in places with a high-water table. In the field burnt mounds may be identified as charcoal-rich mounds or spreads of heat shattered stones, however, in many cases, the sites have been disturbed by later agricultural activity and are no longer visible on the field surface. Nevertheless, even disturbed spreads of burnt mound material often preserve the underlying associated features, such as troughs, pits and gullies, intact. The closest *fulacht fia* (CO064-089001) is found in Killacloyne townland c. 1.9km south of the development area on the banks of a small stream.

Cork County was densely settled during the long line of centuries that make up the Bronze Age. While surface remains from these periods do survive - standing stones, barrows, rock art, cist and pit graves. A standing stone (CO064-066) is found at Ballynanelagh, c. 840m west of the development area within a field locally known as *Ban na gCloch.* According to Power (1994) the *'Ban na gCloch* - field of the pillar-stones...Only a single dallán now survives; this stands about 4 feet by 2 feet'. No visible surface trace remains of this feature.

Standing stones, usually single upright orthostats, are a common feature in the landscape. They are known by various names including *Gallán, dallán, leacht* and long stone (Power 1992, 45). Although it is thought that the standing stones were erected across a wide time span and had multiple functions, they are most often associated with the Bronze Age. They are generally unworked stones and often have packing stones around their base providing additional support. A large number of standing stones are orientated on a northeast–southwest axis corresponding with those of other megalithic architecture, such as stone rows or circles (Ronan et al. 2009, 22). A wide variety of functions have been attributed to these stones, such as burial markers and route or territorial markers. Whereas more recent stones have been erected as scratching posts for cattle.

Iron Age Period (c. 800BC – AD400)

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 Late Iron Age and Roman Ireland (Cahill Wilson 2014). Yet this period is distinguishable from the rather rich remains of the preceding Bronze Age and subsequent early medieval period, by a relative paucity within the current archaeological record. The Iron Age in Ireland is problematic for archaeologists as few artefacts dating exclusively to this period have been found and without extensive excavation it cannot be determined whether several monument types, such as ring-barrows or standing stones, date to the late Bronze Age or Iron Age. It is likely that there was significant continuity in the Iron Age, with earlier monuments re-used in many cases. There are no known monuments in the vicinity of the proposed development area that would suggest an active presence of Iron Age communities in this area.

Early Medieval Period (AD400–1100)

The early medieval period is depicted in the surviving sources as an almost entirely rural based society. Territorial divisions were based on the *túath*, or petty kingdom, with Byrne (1973) estimating that there may have been at least 150 kings in Ireland at any given time. This period, with a new religious culture and evolving technologies, saw significant woodland clearance and the expansion of grassland. A new type of plough and the horizontal mill were two innovations that improved agriculture and allowed for the population to increase. Consequently, from c. AD 500 onwards, the landscape became well settled, as evidenced by the profuse distribution of ringforts, a dispersed distribution of enclosed settlements, normally associated with various grades of well-to-do farming and aristocratic classes in early medieval Ireland (Stout and Stout 1997, 20).

The ringfort or rath is considered to be the most common indicator of settlement during the early medieval period (Stout 1997). One of the most recent studies of early medieval settlement enclosures has suggested that there is potential for at least 60,000 such sites to have existed on the island (O'Sullivan et al. 2014, 49). Ringforts were often constructed to protect rural farmsteads and are usually defined as a broadly circular enclosure delineated by a bank and ditch. Ringforts can be divided into three broad categories – univallate sites, with one bank or ditch; multivallate sites with as many as four levels of enclosing features and platform or raised ringforts, where the interior of the ringfort has been built up. These enclosed sites were intimately connected to the division of land and the status of the occupant.

A number of ringforts are found within the environs of the development area. The closest site (CO064-074) is located c. 188m southwest of the development area shown on the First Edition Ordnance Survey Map (1845) as a circular enclosure (Figure 4). This site has since been levelled and no visible surface trace remains. Further ringforts are found at Killeena (CO064-073; c. 731m southwest), Ballinbrittig (CO064-078; c. 623m southeast), Ballynanelagh (CO064-065; c. 1.3km west) and Knockraha East (CO064-028; c. 606m north).

Medieval Period (AD1100–1600)

The piecemeal conquest by the Anglo-Normans of Ireland, which commenced in AD 1169, had a fundamental impact on the Irish landscape. Their presence was strongest in the East of the Country, and it was mainly in this region that land was carved up and granted to the newly arrived lords who participated. The main success of the Anglo-Norman occupation was the welding of scattered territories into a cohesive unit through the introduction of the English form of shire government. The rural landscape became a network of manorial centres; these units would generally contain a castle (motte and bailey), a manorial house and a number of dwellings, with extensive surrounding acreage. During the 14th to 16th centuries, tower houses were the typical residence of the Irish gentry and were a common feature in the Irish landscape.

The Kingdom of Munster had been divided into two parts, north and south, under an agreement reached at Castletown Kinney by O'Connor of the *Ard-Ri*, or High King of Ireland. The Kings of Thomond (the O'Briens) ruled north Munster, whilst the Kings of Desmond, (the McCarthys) ruled south Munster. Battles and raiding of neighbouring clans to obtain more territories and wealth were common practice in Ireland at this time. Diarmuid MacCarthy (King of Desmond) sought to ally himself with Henry II to strengthen his forces against the O'Briens. Surrendered Desmond lands were subsequently distributed by Henry between two of his knights Robert Fitzstephen and Milo de Cogan. Once the Normans obtained lands by force, the continued lack of organised resistance by the Irish chieftains enabled the Norman lords to consolidate in their newly built strongholds and populate their estates with their followers, firmly establishing themselves.

It is generally accepted that William de Barry of Manorbier Castle, Pembrokeshire, Wales, was the ancestor of the family who settled in Cork and head of what was later to become the Barony of Barrymore. The main success of the Anglo-Norman settlement was the welding of scattered territories into a cohesive unit through the introduction of the English form of shire government. The rural landscape became a network of manorial centres; these units would generally contain a castle, a manorial house and a number of dwellings, with extensive surrounding acreage. During the 14th to 16th centuries, tower houses were the typical residence of the Irish gentry and are a common feature in the Irish landscape, particularly across Munster. The closest castle (CO064-109002) is found at Leamlara c. 3.8km to the northeast of the development area within the demesne of Leamlara House on top of a scarped knoll. It was listed as a 'possible motte' by Glasscock (1975, 105).

Post-medieval Period (AD1600-1900)

Although English landowners may have been losing their grip on Irish land during the medieval period, during the Elizabethan period, lands were regained and secured. The Elizabethan implementation of the 'Surrender and Regrant' policy allowed the monarch to continue colonising Ireland at a time when the treasury funds were too low to afford a war. The policy was to induce native leaders to put their lands under the protection and ultimate ownership of the crown. The implication was that if they did not it would be taken away from them anyway. The aim was to break up the clan

system and to put the lands and the owners within the control of the crown. The problem however was that the crown could take the land back at any time if they so wished and in practice over the coming years frequently exercised this right. Confiscated lands were granted to 'undertakers', which were suitable English people of the new faith who would undertake to purchase available land at a very low price on the agreement that they would sub-let it only to English Protestants and would otherwise comply with the wishes of the authorities.

The 18th century saw a dramatic rise in the establishment of large residential houses around the country. This was largely due to the fact that after the turbulence of the preceding centuries, the success of the Protestant cause and effective removal of any political opposition, the country was at peace. 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 dispersed nationally. During the latter part of the 18th century, the establishment of a parkland context (or demesnes) for large houses was the fashion. The closest is the demesne of Ballynagaul House (CO064-002) located c. 1.3km to the southwest of the proposed development area. The house was designed by Francis Johnson in the early 19th century. Within the demesne are the ruins of an early 19th century cruciform mill (CO064-070) named 'Glenmore Paper Mill' on the First Edition Ordnance Survey Map (1845).

The village of Knockraha c. 1.2km northwest of the development area was the location of 'E' Company, 4th Battalion, Cork No. 1 Brigade of the I.R.A. during the 1919-21 War of Independence (Shiels 2014). The townland of Ballynanelagh was supposedly the location of a bomb factory, which was originally farmed by the Lynch family. Knockraha's most famous connection with the War of Independence was its use as the prison of Cork No. 1 Brigade and as a place where suspected spies, informers and British military were executed (ibid).

3.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

A review of the Excavations Bulletin (1970–2024) has revealed that several previous archaeological investigations have been carried out within the study area (c. 500m), as summarised below.

A programme of geophysical survey was carried out c. 50m to the west of the proposed development area which did not reveal any archaeology (Dowling 2023; Licence No. 23R0507).

Monitoring of topsoil stripping was carried out c. 70m to the south of the proposed development area under licence 19E0046 (Bennett 2019:389). No archaeological finds, features or deposits were uncovered during the monitoring.

Further away, c. 300m to the west, recent geophysical survey (Nicholls 2023, Licence No. 23R0410) and archaeological testing (Labaj 2024, Licence No. 24E0031) identified eight areas of archaeological interest including a ditched enclosure and associated features, two *fulachta fia*, a large feature containing waterlogged wood, two isolated pits and *ex situ* burnt mound material.

3.3 CARTOGRAPHIC ANALYSIS

Down Survey of County Cork, Barony of Barrimore, Parish of Kilguane, c. 1655

The area of potential development is shown at the western extent of the parish of 'Kilguane' within the townland of 'Ballynelagh'. The site is placed within open land with no structures or features found in proximity.

Charles Smith, A Map of the County of Cork, 1750 (Figure 3)

This map does not provide a great degree of detail; however, it illustrates the relative location of the proposed development area. The site is located within the townland of 'Ballinleagh' to the south of Kilquan, where it depicts an ecclesiastical enclosure (CO064-026001).

Neville Bath, Grand Jury Map of County Cork, 1811 (Figure 3)

This map provides slightly more detail of the landscape containing the proposed development. The area is marked to the southeast of 'Knockrawha' within the open land of 'Ballinanola'. A structure is marked within proximity of the development area, possibly denoting a county house, likely Ashtongrove, built in c. 1810. The site of 'Leamtawra' House (CO064-109002) and demesne is depicted to the east while a paper mill (CO064-070) is depicted to the southwest.

First Edition Ordnance Survey Map, 1845, scale 1:10,560 (Figure 4)

This is the first accurate historic mapping coverage of the area containing the proposed development. The development area is located across a number of irregularly shaped fields with the main development area bisected by a field boundary. The townland boundary between Ballynanelagh and Knockraha East crosses the main development area to the south while the townland boundary between Ballynanelagh and Killeena borders the access route way to the south. The ringfort-rath (CO064-074) and enclosure (CO064-075) are both depicted to the south of the development area. 'Mary Ville' is depicted to the west of the site with a number of structures evident and tree-lined avenues. The wider landscape is characterised by a large number of demesnes the closest comprising 'Ballynagaut House' (CO064-002) and 'Blossingtongrove House' located c. 1.7km and c. 2km to the southwest of the development area.

Ordnance Survey Map, 1903, scale 1:2,500 (Figure 4)

There is little change within the proposed development area by the time of this map, although the ringfort-rath and enclosure are no longer annotated on the map and the townland boundaries are not as clear as earlier mapping. 'Ballynagaut House' (CO064-002) is now known as 'Glenmore House' and 'Blossingtongrove House' is now 'Blossomgrove House'.

Ordnance Survey Map, 1935, scale 1:10,560

This map depicts no changes from earlier mapping.

3.4 DEVELOPMENT PLAN

The Cork County Development Plan 2022–2028 the statutory protection afforded to all Record of Monuments and Places (RMP) sites under the National Monuments Legislation (1930–2014). The development plan lists a number of aims and objectives in relation to archaeological heritage (Appendix 3).

There are two archaeological sites within a c. 500m radius of the proposed development all within the townland of Killeena (Table 1; Figure 1; Appendix 2). There are no national monuments within the study area of the proposed development site.

TABLE 1: Recorded archaeological sites in proximity to the study area

RMP NO.	LOCATION	CLASSIFICATION	DISTANCE *
CO064-074	Killeena	Enclosure	c. 188m southwest
CO064-075	Killeena	Ringfort-Rath	c. 419m south

*Note: distance is to the nearest boundary of the proposed development area

3.5 AERIAL PHOTOGRAPHIC ANALYSIS

Inspection of the aerial photographic coverage of the permitted development area held by the Ordnance Survey (1995-2013), Google Earth (2008-2024), and Bing Maps revealed that the development area has remained an undeveloped green field since the 1990s. The substation south of the main development area has been extant since 1995. No previously unrecorded sites of archaeological potential were noted within the coverage.

3.6 TOPOGRAPHICAL FILES

Information on artefact finds from the study area in County Cork 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. No stray finds are recorded from within the proposed development area or its immediate environs.

4 ARCHAEOLOGICAL TESTING

4.1 GENERAL

Test trenching took place on 8th July 2024, using a 13-tonne 360-degree tracked excavator equipped with a flat, toothless bucket under strict archaeological supervision. Any investigated deposits were preserved by record. This was by means of written, drawn and photographic records.

A total of 16 from a proposed 18 trenches were excavated across the site measuring 1,056 linear metres (Figure 5 and 6, Plates 1–19). The trenches we located across the overall footprint of the development. Trenches 1 and 2 were not excavated as landowner access was not provided at the time of the fieldwork. Trenches 12–18 were shortened slightly on their west side owing to access constraints, although it is noted that these areas will only be required for underground cabling and disturbance during construction phase will be relatively limited.

The site is located in agricultural lands which is currently in pasture. The ground is gently undulating with no dominant aspects within the overall site. The adjacent land to the southwest is the location of the existing Ballyvatta substation which is currently being extended by others, not related to this assessment. The weather was generally overcast and mild although there were periods of heavy mist.

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

4.2 TESTING RESULTS

Topsoil across the development site was generally a friable mid-brown soil with few stone inclusions. Subsoil varied across the site. In trenches 3–6 subsoil consisted of a light brown loamy clay with occasional inclusions of gravel/small stones. Subsoil in trenches 7, 13–18 consisted of a mid-brown loamy clay with occasional small-medium sized stones. In trenches 8–12 and in the eastern limit of trenches 13–18 subsoil consisted of a light grey plastic clay with light-mid brown gravel inclusions.

TABLE 1: Test Trench Results

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
1	50	N/A	N/A	East - west	Not excavated due to landowner access issues
2	30	N/A	N/A	North–south	Not excavated due to landowner access issues
3	28	1.80	0.28	North–south	No archaeology found (Plate 1).

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
4	32	1.80	0.29	North–south	No archaeology found (Plate 2).
5	30	1.80	0.25	Northwest - southeast	No archaeology found (Plate 3).
6	30	1.80	0.27	Northwest - southeast	No archaeology found (Plate 4).
7	30	1.80	0.29	Northwest - southeast	No archaeology found (Plate 5).
8	15	1.80	0.28	Northwest - southeast	No archaeology found (Plate 6).
9	30	1.80	0.30	East - west	No archaeology found (Plate 7).
10	55	1.80	0.30	North–south	No archaeology found (Plate 8).
11	55	1.80	0.28	North–south	No archaeology found (Plate 9).
12	55	1.80	0.29	North–south	No archaeology found (Plate 10).
13	120	1.80	0.32	East - west	Relict field boundary consisting of parallel ditches (1.06m and 0.95m wide and c. 3m apart). No archaeology found (Plate 11).
14	118	1.80	0.33	East - west	Relict field boundary consisting of parallel ditches (1.22m and 0.69m wide and c. 3m apart). No archaeology found (Plates 12 and 19).
15	112	1.80	0.31	East - west	Relict field boundary consisting of parallel ditches (1.24m and 0.88m wide and c. 3m apart). No archaeology found (Plate 13).
16	123	1.80	0.31	East - west	Relict field boundary consisting of parallel ditches (0.67m and 0.68m wide and c. 3m apart). No archaeology was found (Plate 14).
17	113	1.80	0.34	East - west	Relict field boundary consisting of parallel ditches (1.22m and 0.69m wide and c. 3m apart). AA1 - At the east end of the trench there were small localised deposits of blackened soil with some heat-shattered stone, similar to material associated with burnt mound/*fulacht fia* type activity (C3), over an area of c. 4m. These small deposits potentially indicate that a larger burnt mound spread is in the immediate vicinity, but was not evident in the test trenches (Plates 15, 17 and 18)
18	110	1.80	0.32	East - west	Relict field boundary consisting of parallel ditches (1.4m and 0.75m wide and c. 3m apart). No archaeology found (Plate 16).

Archaeological Features

Archaeological Area 1 (AA1): At the east end of Trench 17 there were a number of small localised deposits of heat shattered stone in blackened soil, similar to material associated with burnt mound/*fulacht fia* type activity. No definitive mound was identified however, these small deposits may indicate that there is a burnt mound site in the immediate vicinity. This part of the site is lower than much of the immediate surrounding land to the north east and west, as evidenced in the changing subsoil which is indicative of wetter ground. Burnt mounds are often located adjacent a watercourse or in wetter or marginal lands.

The location of a relict field boundary formed by two parallel ditches was identified in Trenches 13–18. This corresponds with the field boundary shown on the historic mapping (Figure 3) which is shown to bisect the main development area.

4.3 CONCLUSIONS

Testing has identified one area of archaeological potential (AA1) within the proposed development site. The small localised scatter of potential burnt mound deposits identified at the east end of Trench 17 may be ephemeral to a larger burnt mound deposit/site, although such a site was not definitively located during testing. Given the nature of the changing subsoil at this location and the topography, the location of a burnt mound in the vicinity of Trench 17 must be considered.

5 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.

5.1 IMPACT ASSESSMENT

- The small, localised burnt mound deposits, designated as AA1, and any associated remains that may exist in their immediate vicinity, will be adversely impacted (direct permanent negative) by groundworks associated with the development based on its current design. This would be caused by ground disturbances such as topsoil stripping and excavation to formation depth.

- It is also possible that there may be an adverse impact on small-scale or isolated archaeological features or deposits that have the potential to survive beneath the current ground level, outside of the footprint of the excavated trenches. This will be caused by ground disturbances associated with the proposed development. The significance of effect may range from significant to profound depending on the nature, extent and significance of the remains that may be present.

5.2 MITIGATION

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

- While preservation *in situ* is the preferred method of conserving archaeological remains, the ephemeral nature of the remains in AA1 mean that it is not feasible in this case. As such, it is recommended that prior to the commencement of construction that AA1 is subject to topsoil stripping and preservation by record (through archaeological excavation) of any identified archaeological features and deposits. This would be carried out by a suitably qualified archaeologist under licence from the National Monuments Service.

- It is recommended that all topsoil stripping associated with the proposed development be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation *in situ* or by record. Any further mitigation will require approval from the National Monuments Service of the DoHLGH.

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 Monuments Service of the Heritage and Planning Division, Department of Housing, Local Government and Heritage.

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www.geohive.ie – Ordnance Survey Ireland National Townland and Historical Map Viewer (including Aerial imagery 1995, 2000, 2005).

www.googleearth.com – Satellite imagery (2005–2024).

www.apple.com/maps/ – Satellite imagery.

APPENDICES

APPENDIX 1 RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.:	CO064-074
RMP STATUS:	Yes
TOWNLAND:	Killeena
PARISH:	Kilquane
BARONY:	Barrymore
I.T.M.:	577713, 577761
CLASSIFICATION:	Enclosure
DIST. TO SITE:	c. 188m southwest
DESCRIPTION:	On SW-facing slope. Shown on 1842 OS 6-inch map as circular enclosure (diam. c. 20m). Levelled; no visible surface trace.
REFERENCE:	www.archaeology.ie/ SMR file

SMR NO.:	CO064-075
RMP STATUS:	Yes
TOWNLAND:	Killeena
PARISH:	Kilquane
BARONY:	Barrymore
I.T.M.:	578252, 577553
CLASSIFICATION:	Ringfort-rath
DIST. TO SITE:	c. 419m south
DESCRIPTION:	In pasture on S-facing slope. Depicted as small hachured square enclosure (c. 20m x c. 20m) on 1842 OS 6-inch map. Levelled; no visible surface trace.
REFERENCE:	www.archaeology.ie/ SMR file

APPENDIX 2 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

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

THE ARCHAEOLOGICAL RESOURCE

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

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

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

REGISTER OF HISTORIC MONUMENTS

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

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

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

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

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Housing, Local Government and Heritage) 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 Housing, Local Government and Heritage) 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 Housing, Local Government and Heritage 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.

Cork County Development Plan 2022-2028

HE 16-2:

Protection of Archaeological Sites and Monuments Secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments and their setting included in the Sites and Monuments Record (SMR) (see www.archaeology.ie) and the Record of Monuments and Places (RMP) and of sites, features and objects of archaeological and historical interest generally. In securing such preservation, the planning authority will have regard to the advice and recommendations of the Development Applications Unit of the Department of Housing, Local Government and Heritage as outlined in the Frameworks and Principles for the Protection of the Archaeological Heritage policy document or any changes to the policy within the lifetime of the Plan.

HE 16-5:

Zones of Archaeological Potential Protect the Zones of Archaeological Potential (ZAPs) located within historic towns, urban areas and around archaeological monuments generally. Any development within the ZAPs will need to take cognisance of the upstanding and potential for subsurface archaeology, through appropriate archaeological assessment.

HE 16-6:

Industrial and Post Medieval Archaeology.

Protect and preserve industrial and post-medieval archaeology and long-term management of heritage features such as mills, limekilns, forges, bridges, piers and harbours, water-related engineering works and buildings, penal chapels, dwellings, walls and boundaries, farm buildings, estate features, military and coastal installations. There is a general presumption for retention of these structures and features. Proposals for appropriate redevelopment including conversion should be subject to an appropriate assessment and record by a suitably qualified specialist/s.

HE 16-9:

Archaeology and Infrastructure Schemes.

All large scale planning applications (i.e. development of lands on 0.5 ha or more in area or 1km or more in length) and Infrastructure schemes and proposed roadworks are subjected to an archaeological assessment as part of the planning application process which should comply with the Department of Arts, Heritage and the Gaeltacht's codes of practice. It is recommended that the assessment is carried out following pre planning consultation with the County Archaeologist, by an appropriately experienced archaeologist to guide the design and layout of the proposed scheme/development, safeguarding the archaeological heritage in line with Development Management Guidelines.

HE 16-10:
Management of Monuments within Development Sites.
Where archaeological sites are accommodated within a development it shall be appropriately conservation/ protection with provision for a suitable buffer zone and long-term management plan put in place all to be agreed in advance with the County Archaeologist.

HE 16-11:
Archaeological Landscapes.
To protect archaeological landscapes and their setting where the number and extent of archaeological monuments are significant and as a collective are considered an important archaeological landscape of heritage value.

HE 16-13:
Undiscovered Archaeological Sites.
To protect and preserve previously unrecorded archaeological sites within County Cork as part of any development proposals. The Council will require preservation in situ to protect archaeological monuments discovered. Preservation by record will only be considered in exceptional circumstances.

APPENDIX 3 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 4 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

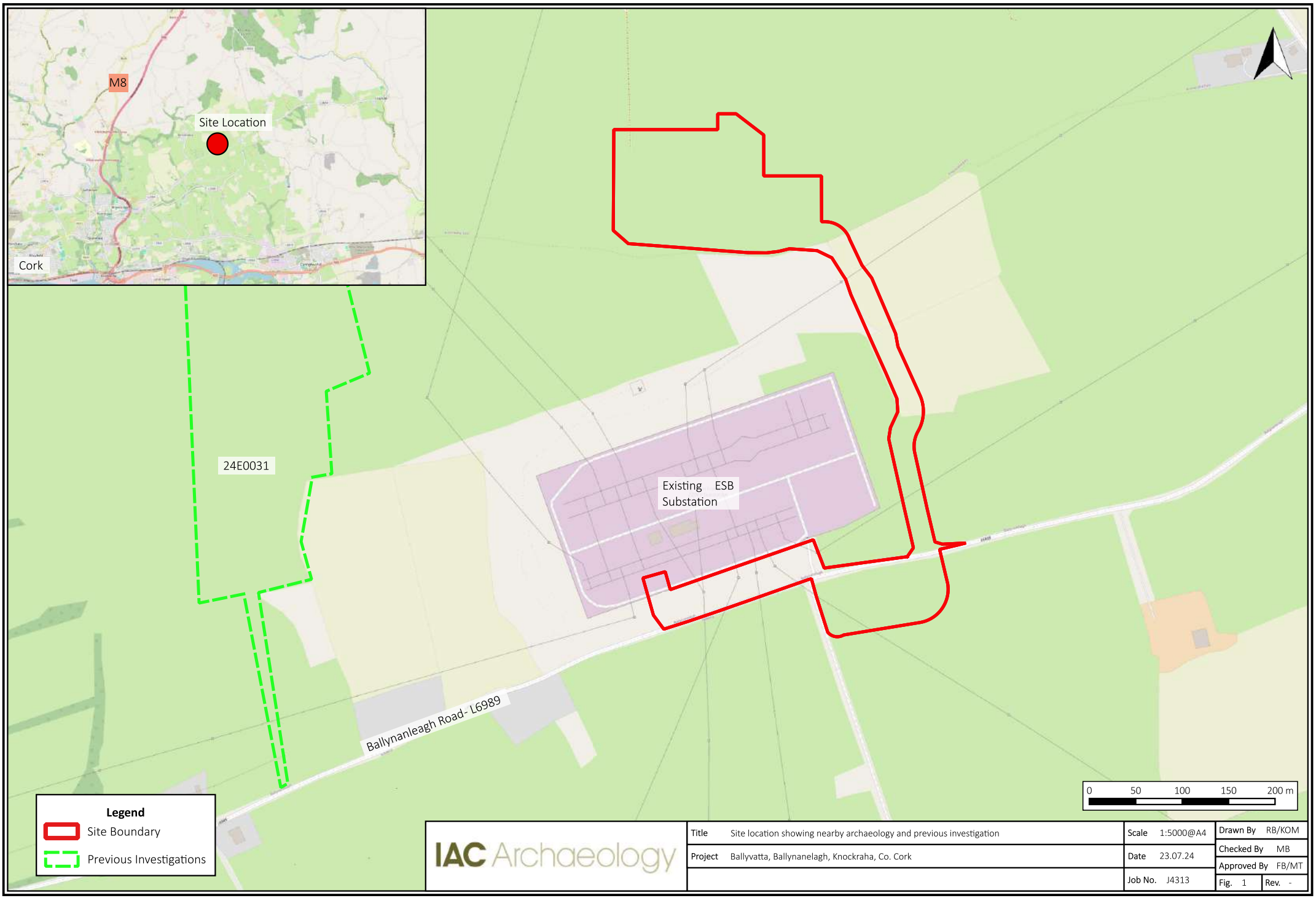
ARCHAEOLOGICAL RESOURCE

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)

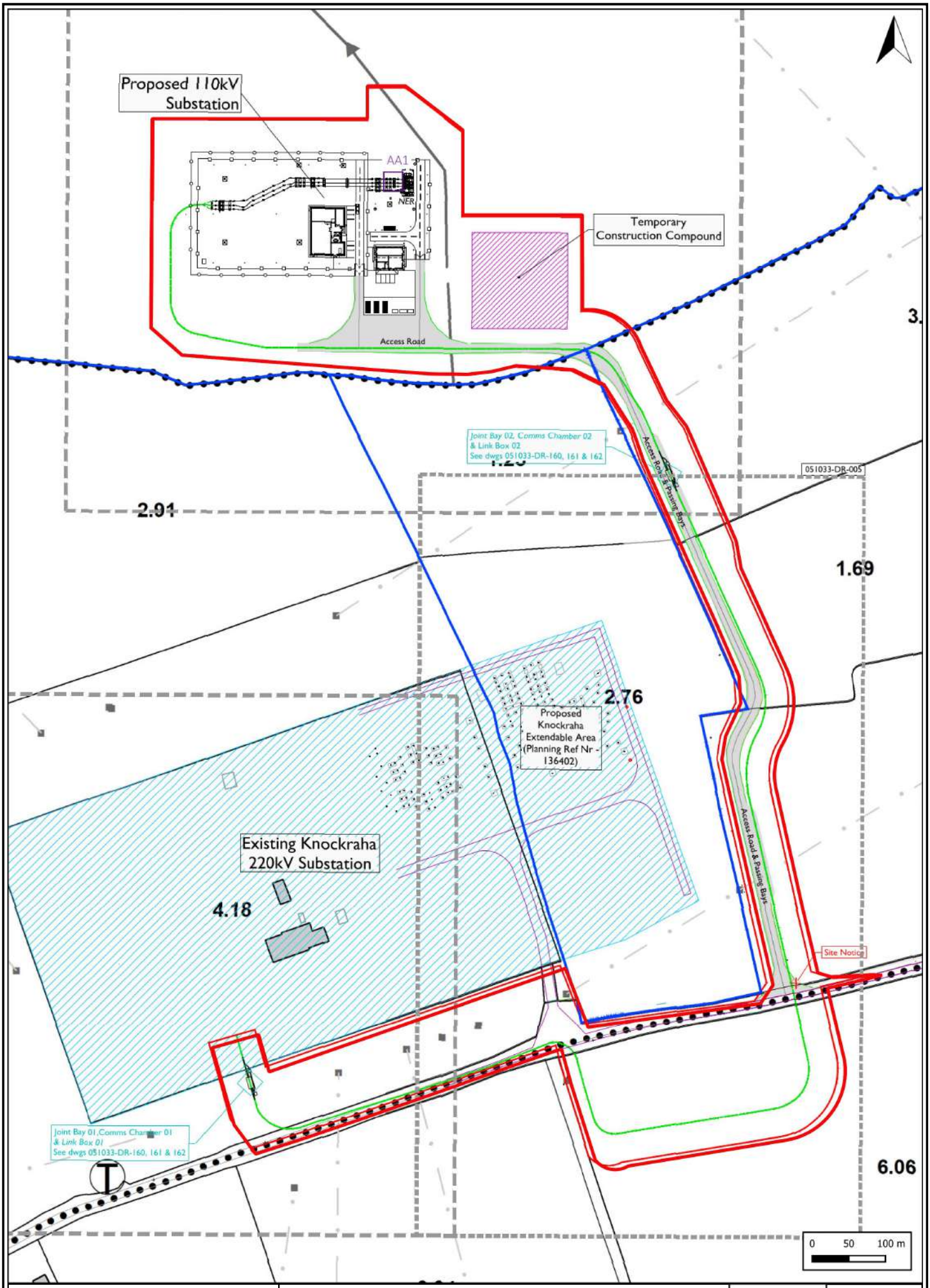
Archaeological Monitoring can be defined as a 'formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be disturbed or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



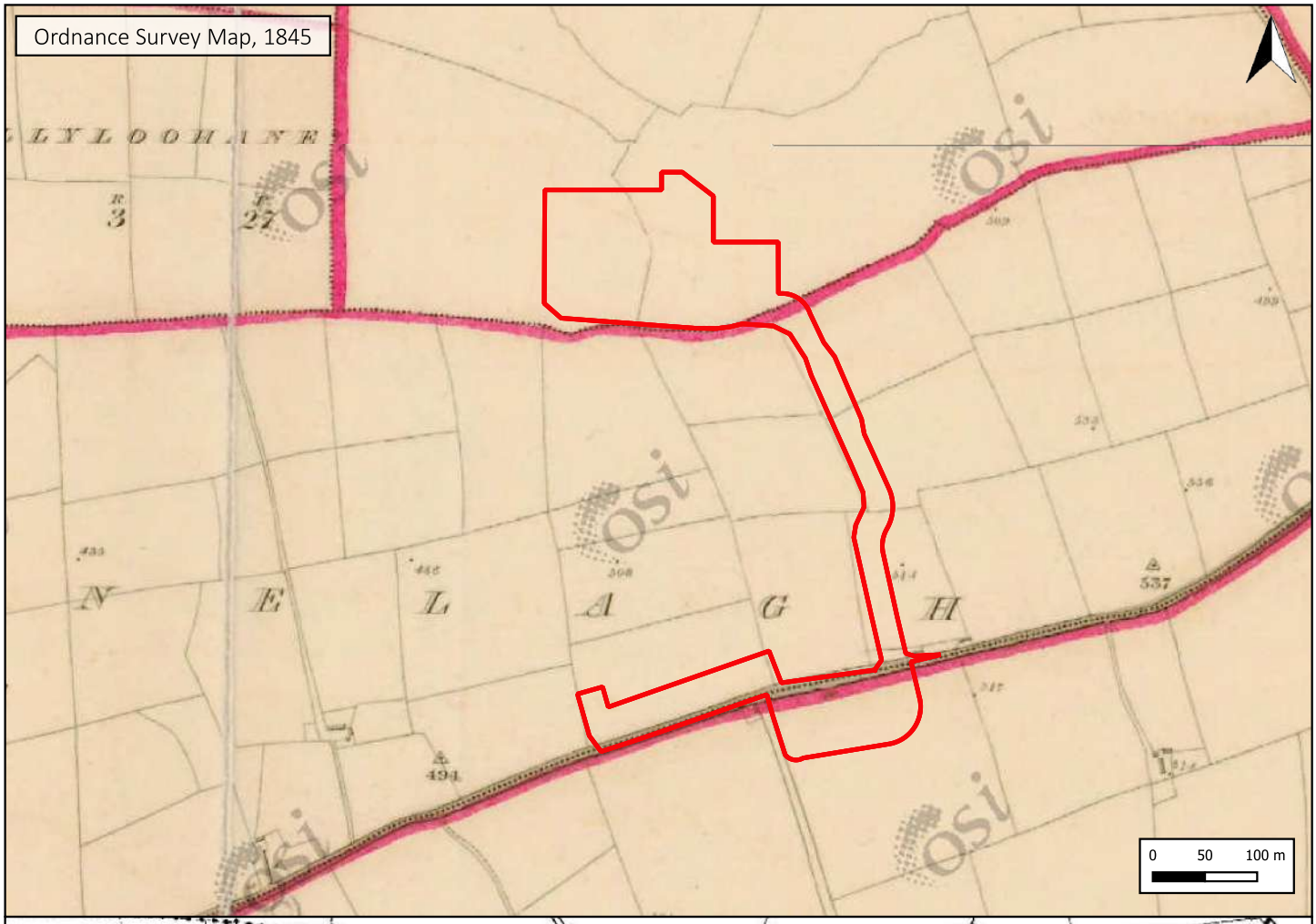
IAC Archaeology

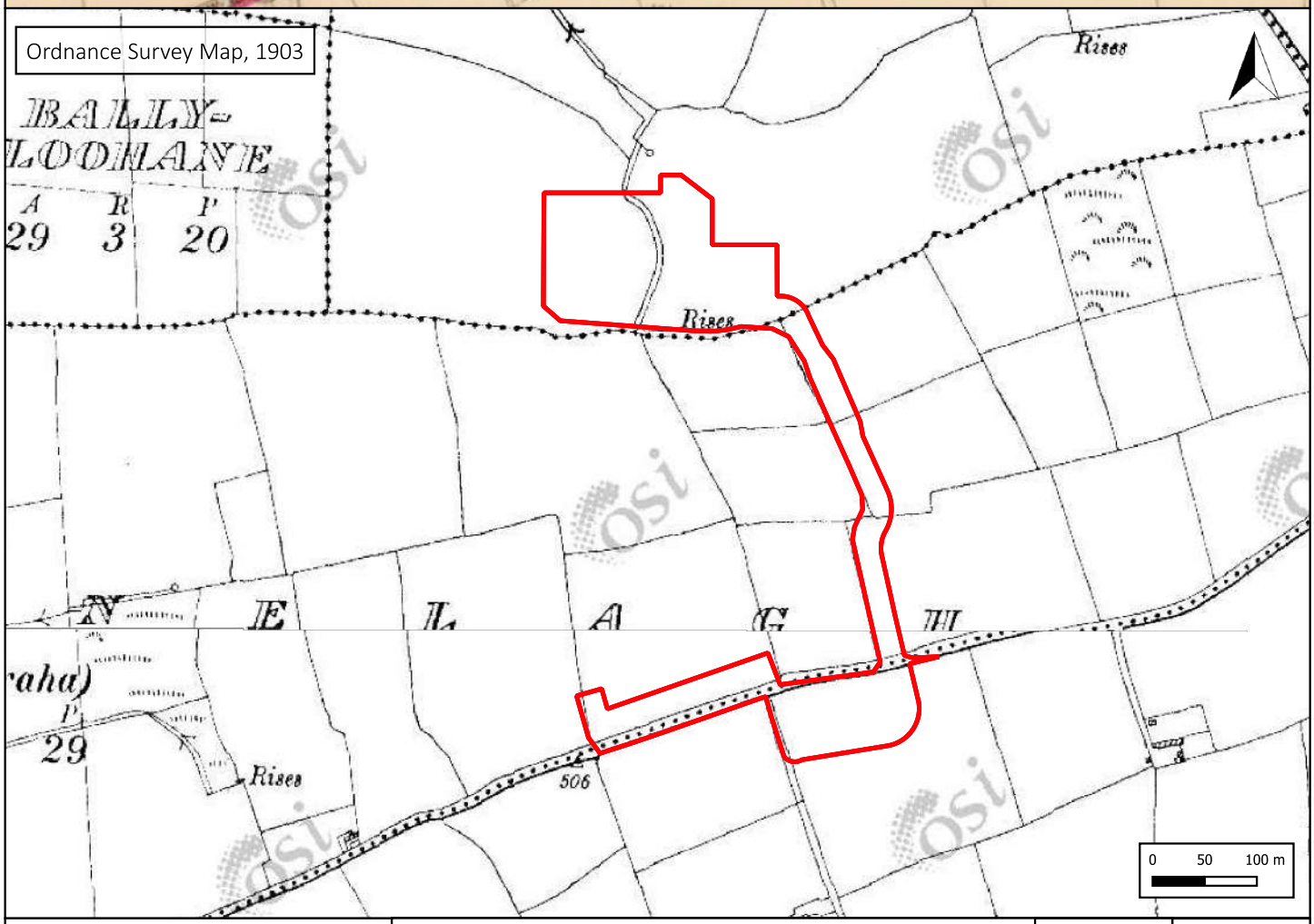
Title	Site location showing nearby archaeology and previous investigation	Scale	1:5000@A4
Project	Ballyvatta, Ballynanelagh, Knockraha, Co. Cork	Date	23.07.24
		Job No.	J4313

Drawn By	RB/KOM
Checked By	MB
Approved By	FB/MT
Fig. 1	Rev. -



IAC Archaeology	Title: Site develpoment plan	Scale: As shown	Drawn By: RB/KOM
	Project: Ballyvata, Ballynanelagh, Knockraha, Co. Cork	Date: 23.07.24	Checked By: MB
		Job No.: J4313	Approved By: FB/MT
			Fig. 2 Rev. -

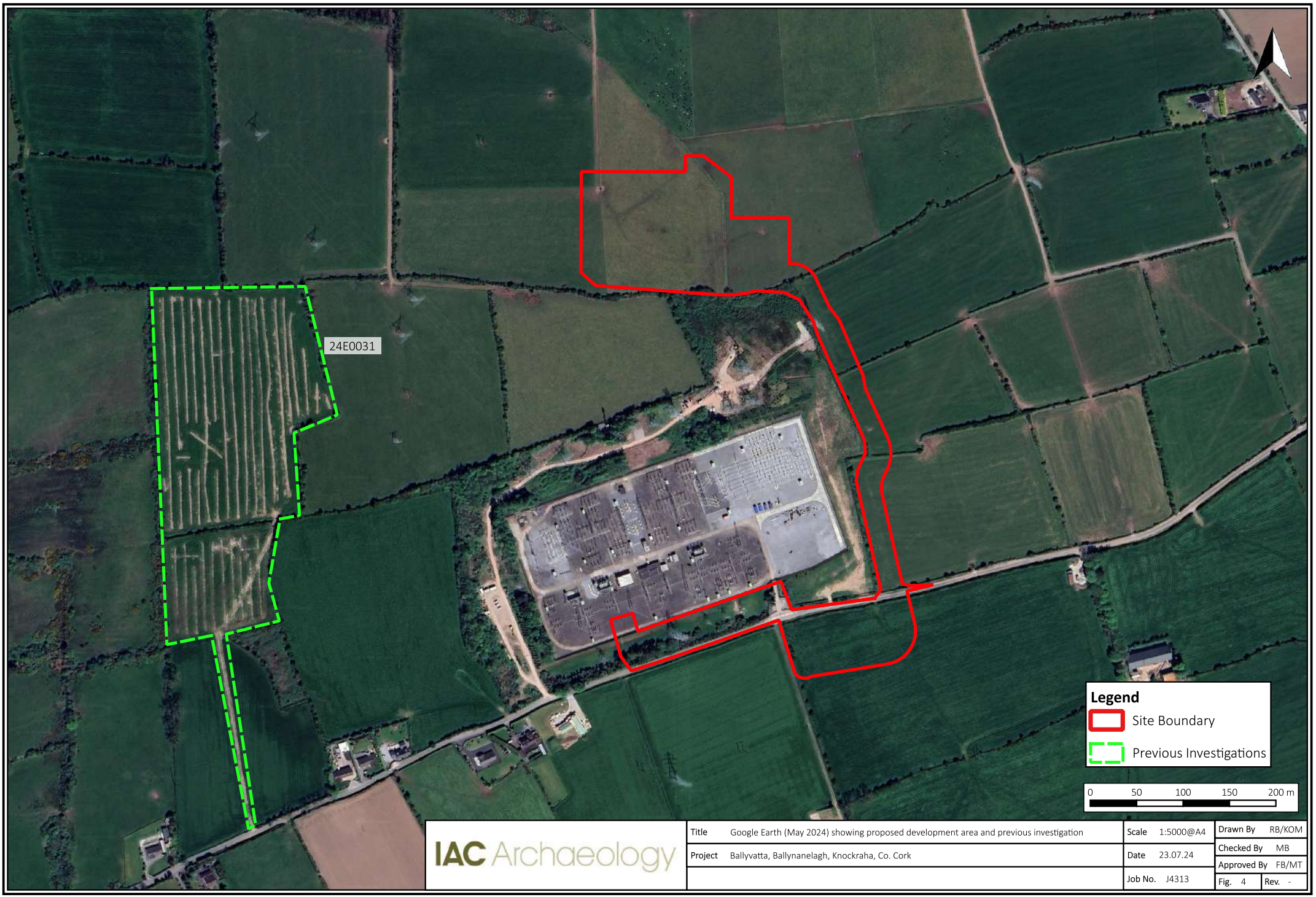




IAC Archaeology

Title	Extracts from ordnance survey maps (1845 and 1903) showing proposed development area	Scale	As shown
Project	Ballyvatta, Ballynanelagh, Knockraha, Co. Cork	Date	23.07.24
		Job No.	J4313

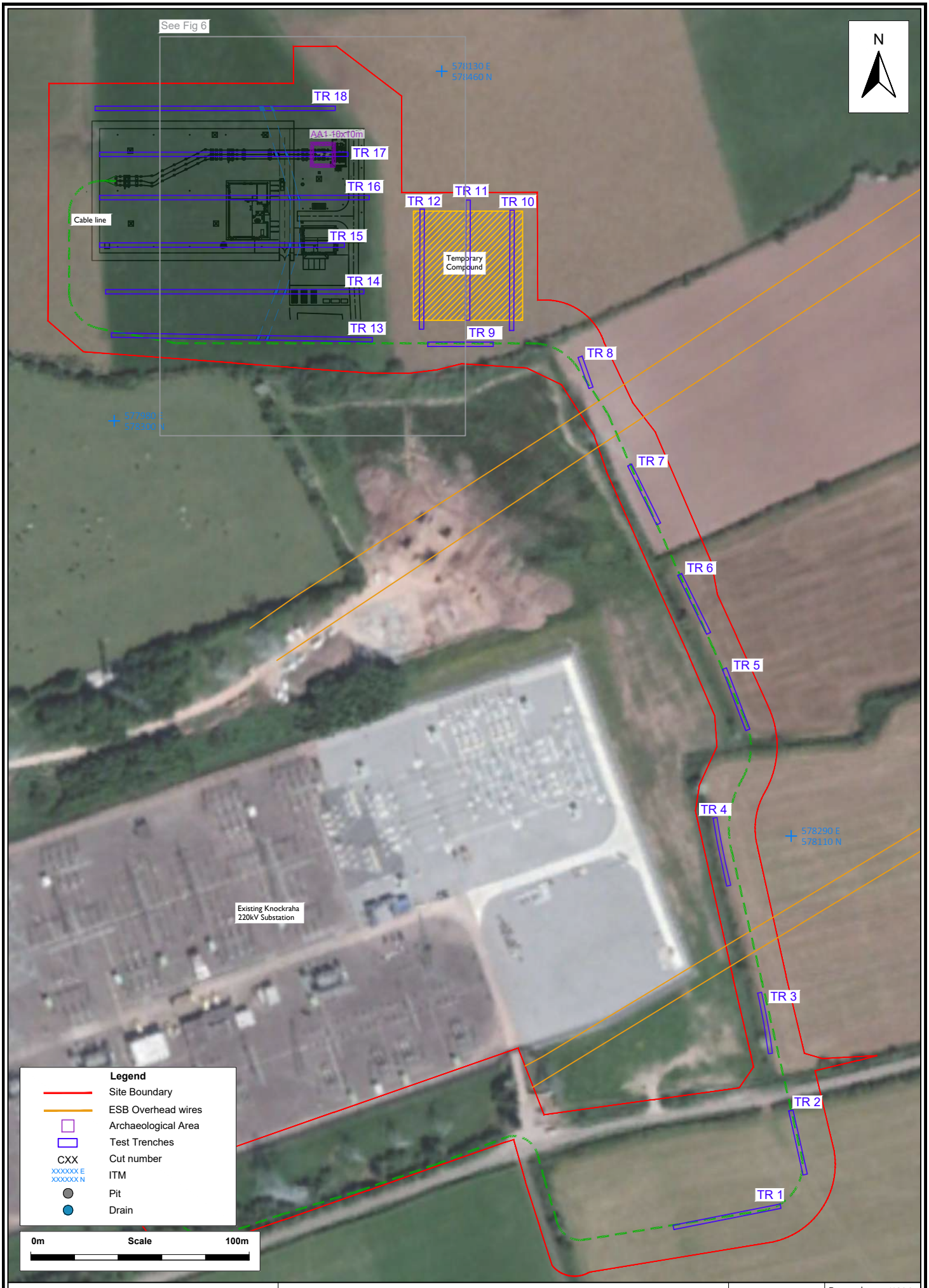
Drawn By	RB/KOM
Checked By	MB
Approved By	FB/MT
Fig. 3	Rev. -



IAC Archaeology

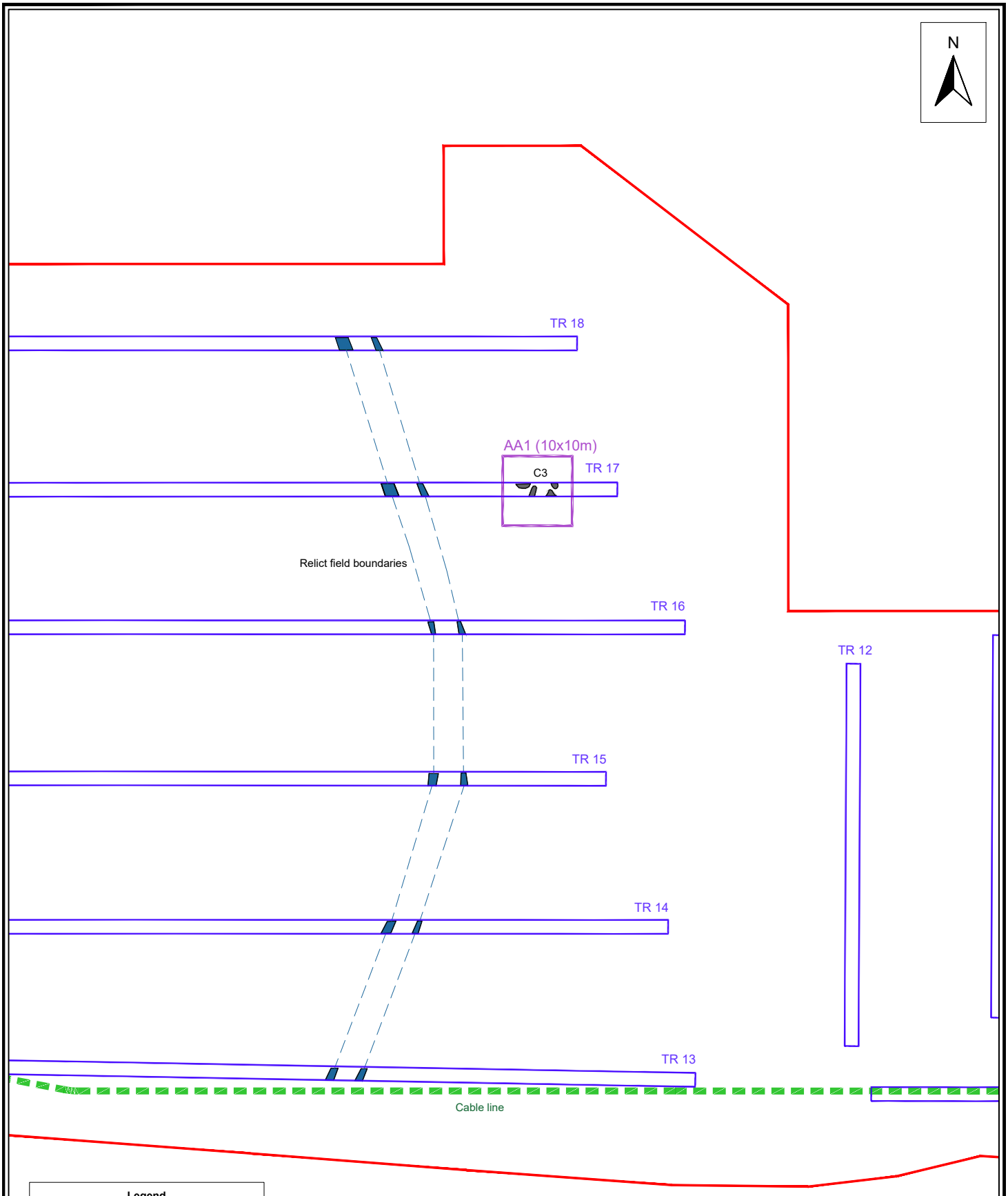
Title	Google Earth (May 2024) showing proposed development area and previous investigation	Scale	1:5000@A4
Project	Ballyvatta, Ballynanelagh, Knockraha, Co. Cork	Date	23.07.24
		Job No.	J4313

Drawn By	RB/KOM
Checked By	MB
Approved By	FB/MT
Fig. 4	Rev. -



IAC Archaeology

Title	Plan of excavated test trenches	Scale 1:2200@A4	Drawn by KOM
Project	Ballyvatta, Ballynanelagh, Knockraha, Co. Cork	Date 22.07.24	Checked by DM
		Job no. J4313	Approved by MT
			Fig. 5 Rev. -



IAC Archaeology

Title	Detail of trenches in north of test area showing identified features	Scale 1:750@A4	Drawn by KOM
Project	Ballyvatta, Ballynanelagh, Knockraha, Co. Cork	Date 22.07.24	Checked by DM
		Job no. J4313	Approved by MT
			Fig. 6 Rev. -

Plate 1: Trench 3, facing north

Plate 2: Trench 4, facing south

Plate 3: Trench 5, facing southeast

Plate 4: Trench 6, facing northwest

Plate 5: Trench 7, facing southeast

Plate 6: Trench 8, facing southeast

Plate 7: Trench 9, facing east

Plate 8: Trench 10, facing north

Plate 9: Trench 11, facing south

Plate 10: Trench 12, facing north

Plate 11: Trench 13, facing east

Plate 12: Trench 14, facing west

Plate 13: Trench 15, facing east

Plate 14: Trench 16, facing east

Plate 15: Trench 17, facing west

Plate 16: Trench 18, facing east

Plate 17: C3 Possible small burnt mound spreads, Trench 17, facing west

Plate 18: Relict Field Boundary Trench 17, facing south

Plate 19: Relict Field Boundary Trench 14, facing south