

13.0 Archaeology and Cultural Heritage

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List of Abbreviations

ASI	Archaeological Survey of Ireland
DAHGI	Department of Arts, Heritage, Gaeltacht and the Islands
DHLGH	Department of Housing, Local Government and Heritage
EPA	Environmental Protection Agency
HEV	Historic Environment Viewer
NIAH	National Inventory of Architectural Heritage
NMI	National Museum of Ireland
OS	Ordnance Survey
OSI	Ordnance Survey of Ireland
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
SMR	Sites and Monuments Record
T	Turbine

13.1 Introduction

This chapter has been prepared by Dermot Nelis and Fiona Maguire of Horizon Archaeology, on behalf of ABO Energy Ireland Ltd. An assessment has been undertaken to evaluate and define the impacts or effects, if any, on the archaeological, architectural and cultural heritage resource of the construction, operation and decommissioning of a proposed 8 no. turbine wind farm and associated infrastructure in Keerglen, Ballinglen and Ballykinlettragh townlands, County Mayo (Ordnance Survey six-inch sheets 013 and 014; Figure 13.1).

The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a programme of field inspection of the study area. The results amalgamate these approaches to identify areas of archaeological/architectural/cultural significance or potential, likely to be impacted either directly or indirectly by the proposed development. An assessment of potential effects, including cumulative and residual effects, is presented, and a number of mitigation measures are recommended where appropriate. It includes mitigation measures designed to avoid, reduce or offset any potential adverse effects.

13.1.1 Objectives of Assessment

The key objectives of this chapter are to assess, as far as is reasonably possible from existing records, any effect the proposed wind farm may have on the archaeological, architectural and cultural heritage resource. The following key issues are addressed:

- Direct and indirect effects of wind farm construction, operation and decommissioning on recorded and unrecorded archaeological, architectural and cultural heritage features;
- Cumulative effects of wind farm construction, operation and decommissioning on recorded and unrecorded archaeological, architectural and cultural heritage features; and
- Residual effects of wind farm construction, operation and decommissioning on recorded and unrecorded archaeological, architectural and cultural heritage features.

13.1.2 Project Description

A full description of the project is presented in Chapter 3. In summary, the project comprises the following main components:

- 8 no. wind turbines and all associated ancillary infrastructure;
- 1 no. 38kV electrical substation building, compound and associated infrastructure works;
- 1 no. temporary welfare site compound and associated works;
- 20kV underground cables facilitating connection of the turbines to the 38kV electrical substation and all associated infrastructure and works;
- Provision of a new temporary roadway connecting the R315 and the L51723 in the townland of Ballinglen to facilitate the delivery of turbine components and other abnormal loads;

- Widening and ancillary works to sections of the L51723 in the townlands of Keerglen and Ballykinlettragh;
- Provision of a new permanent site access off the L51723;
- Upgrading of existing agricultural tracks and drainage infrastructure, and construction of new internal site tracks and all associated works as required;
- Construction of a clear-span bridge crossing the Keerglen River within the development area;
- 1 no. borrow pit;
- Designated peat storage areas alongside internal side roads;
- Site drainage;
- Ancillary forestry felling to facilitate construction and operation of the proposed development; and
- All associated infrastructure and site development works.

This heritage chapter has also assessed temporary minor off-site works along the turbine delivery route, construction of approximately 22.8km of 38kV Underground Electricity Export Connection and associated works along public roads and private lands to include horizontal directional drilling at bridge locations, and construction of a temporary met mast of between 100m-112m in height and all associated infrastructure and works. These works however will form a separate planning application.

13.2 Statement of Competence

This chapter of the EIAR has been prepared by Dermot Nelis and Fiona Maguire of Horizon Archaeology. Dermot graduated from Queen's University Belfast, and after gaining extensive fieldwork experience undertook postgraduate studies at the University of Oxford in archaeological consultancy and project management. He has carried out over 180 Licensed excavations, test trenching and monitoring programmes and acted as Senior Archaeologist on several road schemes for various County Councils. In addition, Dermot has prepared over 250 desk-based reports and Environmental Impact Assessments for wind farms, solar farms, grid connection schemes, *etc.*

Fiona Maguire is a graduate of the National University of Ireland, Galway and a Licensed archaeological Director. She has worked in many roles in archaeology since the early 2000s, and has directed a number of archaeological excavations. Her field experience includes wetland survey and excavation, the preparation of Environmental Impact Assessment Reports, Archaeological Impact Assessments, research and excavation reports, project management, post-excavation management and field survey.

Horizon Archaeology has submitted EIAs for more than 40 wind farms, and in total we have provided consultancy services for 450 turbines. We have monitored the construction of wind farms in Donegal, Mayo, Monaghan, Offaly, Roscommon, Sligo and Tyrone.

13.3 Relevant Legislation and Guidance

The chapter has been prepared in compliance with all relevant EIA legislation and guidance:

13.3.1 Archaeological Resource

The National Monuments Act, 1930 to 2004 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 number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Record of Monuments and Places, the Register of Historic Monuments, the placing of Preservation Orders and Temporary Preservation Orders on endangered sites, and National Monuments in the Ownership or Guardianship of the Minister for Housing, Local Government and Heritage or a Local Authority.

The Minister may acquire National Monuments by agreement or by compulsory order. The State or the 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.

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.

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.

Section 12(1) of the 1994 Act requires the Minister 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.

Section 12(3) of the 1994 Act provides that:-

“where the owner or occupier (other than the Minister for Arts, Heritage and the Gaeltacht) 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 and the Gaeltacht 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” (www.archaeology.ie).”

On 13th October 2023 the President of Ireland signed the Historic and Archaeological Heritage and Miscellaneous Provisions Bill in accordance with Article 25 of the Constitution of Ireland, following its passage by both Houses of the Oireachtas. This means that the Bill has been enacted, and became on that date the *Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023* (“the Act”). While the Act is now law, it is important to note that most of its provisions will not enter into force until the Minister has made one or more of what are known as “Commencement Orders”. As of May 2024, no Commencement Orders have been made and therefore none of the Act relevant to the preparation of this archaeological, architectural and cultural heritage chapter has entered into force.

13.3.2 Architectural and Built Heritage Resource

The main laws protecting the built heritage are the Architectural Heritage (National Inventory) and Historic Properties (Miscellaneous Provisions) Act, 1999 and the Planning and Development Act 2000 (as amended). The Architectural Heritage Act requires the Minister to establish a survey to identify, record and assess the architectural heritage of the country. The National Inventory of Architectural Heritage records built heritage structures within all the counties of the State. As inclusion in the Inventory does not provide statutory protection, the document is used to advise Local Authorities on compilation of a Record of Protected Structures (RPS) as required by the Planning and Development Act 2000.

The Planning and Development Act 2000 (as amended) requires Local Authorities to establish a Record of Protected Structures to be included in their respective County Development Plan. Development Plans include objectives and policies designed to protect the archaeological, architectural and cultural heritage resource during the planning process. Buildings recorded in the RPS can include Recorded Monuments, structures listed in the NIAH, or buildings deemed to be of architectural, archaeological or artistic importance by the Minister. Sites, areas or structures of archaeological, architectural or artistic interest listed in the RPS receive statutory protection from injury or demolition under the 2000 Act. Damage to or demolition of a site registered on the RPS is an offence. The RPS list is not always comprehensive in every county.

A Local Authority has the power to order conservation and restoration works to be undertaken by the owner of a Protected Structure if it considers the building in need of repair. 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 12 weeks of application. Failure to do so may result in prosecution.

13.4 Methodology

There is no professional standard for defining the extent of a study area when assessing the likelihood of effects on archaeological, architectural or cultural heritage remains. A 1km study area has been applied around the proposed 8 no. turbines to assess the presence of statutorily protected archaeological remains (RMP sites). A 100m study area has been applied around the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723 to assess the presence of RMP sites. In addition, a 5km study area has been applied around the proposed 8 no. turbines, the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723 to assess the presence of any World Heritage Sites, sites included in the Tentative List as consideration for nomination to the World Heritage List, National Monuments, sites with Preservation Orders or Temporary Orders, Protected Structures, Conservation Areas, or Proposed Conservation Areas. A 1km study area has been applied around the proposed 8 no. turbines to assess the presence of any features recorded on the National Inventory of Architectural Heritage. A 100m study area has been applied around the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723 to assess the presence of any features recorded on the National Inventory of Architectural Heritage. An assessment has also been made of any historic gardens or designed landscapes as recorded on the National Inventory of Architectural Heritage that may exist within the location of the proposed 8 no. turbines, the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723.

An impact assessment and mitigation strategy has been prepared. The impact assessment is undertaken to outline potential adverse effects the proposed wind farm may have on the archaeological, architectural or cultural heritage resource, while the mitigation strategy is designed to avoid, reduce or offset such adverse effects.

Research has been undertaken in two phases. The first phase consisted of a paper and digital survey of archaeological, historical and cartographic sources. The second phase involved field inspections of the proposed turbine locations and access track.

13.4.1 Data Sources

The following sources were examined and a list of sites and areas of archaeological, architectural and cultural heritage potential was compiled:

- Record of Monuments and Places of County Mayo;
- Topographical Files of the National Museum of Ireland;
- Cartographic and documentary sources relating to the study area;
- Aerial photographs of Ordnance Survey Ireland and Bing aerial photography;
- Mayo County Development Plan (2022-2028); and
- National Inventory of Archaeological Heritage.

Record of Monuments and Places is a list of archaeological sites known to the National Monuments Service. Back-up files of the Sites and Monuments Record provide details of documentary sources and field inspections where these have taken place.

Topographical Files of the National Museum of Ireland is the 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 in the discovery of sites of archaeological significance.

Cartographic sources are important in tracing land-use development within a proposed area of land take, as well as providing important topographical information on sites and areas of archaeological potential. Cartographic analysis of relevant maps has been made to identify any topographical anomalies that may no longer remain within the landscape. **Documentary sources** were consulted to gain background information on the historical and archaeological landscape 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 potential to contain previously unidentified archaeological and architectural remains.

Mayo County Development Plan (2022-2028) contains Objectives and Policies on the preservation and management of archaeological, architectural and cultural heritage features. It was consulted to obtain information on sites within the proposed wind farm, the 1km study area and the wider 5km study area.

National Inventory of Architectural Heritage is a section within the Department of Housing, Local Government and Heritage. The work of NIAH involves identifying, recording and evaluating on a non-statutory basis the architectural heritage of Ireland from 1700 AD to the present day. The NIAH website also contains a non-statutory register of historic gardens and designed landscapes within County Mayo, and it was assessed to look for the presence of any such features within the development area.

13.4.2 Field Survey Methodology

Field inspection is necessary to determine the extent, character and condition of archaeological, architectural and cultural heritage features, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

13.5 Description of the Baseline Environment

13.5.1 General Archaeological and Historical Background

As will be shown in subsequent sections the landscape in the vicinity of the proposed development area has been shaped by, and to a large extent retains the character of, a Post-Medieval/early modern agricultural economy, with a large expanse of blanket bog. Although written almost 200 years ago, a description of the area by the author Samuel Lewis^[1], reflects its nature to this day:

"The system of agriculture is improving: there is no waste land, but in several parts are tracts of bog, which are being rapidly reclaimed and brought into cultivation. Limestone is quarried for agricultural uses and for building, and there are several quarries of slate. Iron ore has been found in the picturesque glen of Cleedagh (Clydagh), which is watered by a small river and commands some fine views of the sea...In Ballynglen (Ballingen), about two miles from the sea, are the remains of a castle of that name; in this glen are found various encrustations of marl...in various parts of the parish are raths, in some of which are several apartments. There are the remains of cromlechs and numerous cairns, in some of which are wells of water, and several human skeletons of extraordinary size have been discovered."

Archaeological evidence has shown that Ireland has been inhabited since the Mesolithic period (c. 7000-4000 BC). During that time, people existed as hunters/gatherers, living on the coastline, alongside rivers and lakes. They used flint and other stones to manufacture sharp tools, and locating scatters of discarded stone tools and debris from their manufacture can sometimes identify settlement. The native landscape consisted of woodland with hazel, oak, ash and Scots pine as the primary species. Mesolithic hunting groups made no significant impact on the landscape.

The population became more settled during the Neolithic period (c. 4000-2400 BC) with a subsistence economy based on crop growing and stock-raising. Research on Irish Neolithic sites has uncovered evidence for cereal cultivation (wheat, barley, corn), the domestication of animals (cattle, pig and sheep/goat), and land management (large scale woodland clearance and the construction of drystone boundary/field walls, e.g. as found at the Céide Fields^[2] approximately 8.5km to the north of Keerglen). Evidence for the earliest use of a simple wooden plough (known as an "ard") was found at Céide^[3]. For the first time, pottery appears in the archaeological record.

The Céide Fields comprises a Neolithic (or New Stone Age) landscape consisting of megalithic burial monuments, dwelling houses and enclosures within an integrated system of stone walls defining fields, which are spread over 12 km² of North Mayo. Many of the features are preserved intact beneath blanket peat that is over 4m deep in places. The significance of the site lies in the fact that it is the most extensive Stone Age monument in the world and the oldest enclosed landscape in Europe. The fields were constructed approximately 5,700 years ago by Neolithic farmers and show a countryside that was systematically divided into regular coaxial field systems bounded by dry stone walls. Within the area of the actual fields are five court tombs. Immediately outside the fields are a further six tombs. There are also several dwelling sites associated with the fields. When excavated, an oval shaped stone-walled enclosure in Glenulra (adjacent to the present Visitor Centre) was revealed to have surrounded a round house of wood. At least eleven other similar enclosures throughout the field systems are presumed to have been dwelling areas, indicating a pattern of dispersed settlement. Nearby a small egg-shaped structure attached to a field wall may have been used as an animal pen, and additional excavations have revealed various features and artefacts. There is also a high probability that many other individual structures remain undiscovered beneath the deeper peat.

These changes in the way people lived led to an increase in population, enabling social organisation to construct sophisticated funerary monuments known as megalithic tombs, of which a number of distinct types exist.

Court tombs are elongated structures, with a chambered burial gallery at one end which is reached by an open court delimited by a stone kerb^[4]. Evidence from excavation indicates that these tombs were used repeatedly by a community over a period of time, and generally date to between 4000 and 3500 BC. A significant concentration is recorded from North Mayo. Examples from within the wider area include Ballinglen (MA014-002007) which is located approximately 870m south-east of the temporary roadway connecting the R315 and the L51723, and Annagh More (MA014-053) which is located approximately 1.5km south-east of the temporary roadway. Two further examples (MA014-069 and MA014-070) are located approximately 3km south of the temporary roadway in Creevagh More townland.

Further examples of potential Neolithic monuments comprise two unclassified megalithic structures within the wider area in the townlands of Annagh Beg (MA014-050) and Clydagh (MA014-124). Although no information is available on these structures, both are located approximately 1.8km south of the temporary roadway.

A ring-barrow, located approximately 1.5km south-east of the temporary roadway connecting the R315 and the L51723 in Annagh More (MA014-052), and a cairn (MA014-123) in Keerglen located, located approximately 1.4km north-east of T8, also reflect the burial practices of communities within the wider area during the Bronze Age (2400-500 BC). This period of time is marked by a wealth of gold artefacts and the emergence of new types of monuments, such as standing stones, stone circles, stone rows and *fulachta fiadh*. The latter are usually found in association with sources of water such as streams and rivers and are one of the most commonly-found archaeological monuments in Ireland, although none have been recorded from within the study area.

During the site walkover, a previously unrecorded pair of standing stones (MA013-007) was identified approximately 300m north of the proposed access track and approximately 1.1km north-east of T8. These stones, which are sub-classified as a stone pair, are generally thought to have been aligned on solar and lunar events at certain times of the year. They are often found within wider complexes of ritual monuments, e.g. Killadangan, near Westport (MA087-014003). They can also occur in isolation however such as that recorded in Corrower townland, County Mayo (MA040-104).

Just as the Bronze Age was characterised by the appearance of bronze in the archaeological record, the transition to ironworking brought new technologies to the period between c. 500 BC to 500 AD, a period of time known as the Iron Age. New tools such as rotary querns appear in the archaeological record and new monument types such as linear earthworks and decorated monumental stones, like the Turoe Stone, appear in the landscape. It is thought it was during this time that the foundations of a language, the ancestor of modern Irish, were established. At Corlea Bog, near Kenagh in County Longford, an extensive oak plank trackway was built in 148 BC and used for the passage of wheeled vehicles. Evidence for the first use of chariots may be implied by the small number of bridle-bits or horse-bits, sometimes found in pairs, which are characteristic of the Iron Age. Two block-wheels, fitted with a sleeve for the axle, were found in a bog at

Doogarymore, in County Roscommon, dated to c. 400 BC, are also likely to have come from a vehicle of some kind.

It is difficult to ascribe a definite Iron Age date to any recorded monuments within the study area without the benefit of excavation. However, there is evidence from early Irish literature that the area was known at that time, particularly during the second half of the Iron Age. Some of the surviving placenames may even date to this period. The *Táin Bó Flidhais* is a *réamhscéal* or prequel to the early Irish saga known as the *Táin Bó Cuailnge*, set in and around the 1st century AD. It takes place in the Erris area of County Mayo^[5] and is one of several sagas from Ireland written down during the Medieval period. Although a number of interpretations of the places named in the *Táin Bó Flidhais* exist, it has been suggested that the place called “Glen Cainer” in the story refers to Keerglen. Named after Cainer, daughter of Queen Maeve of Connacht, who was fatally injured in a skirmish described in the story, she is said to be buried in a place called Doondragon^[6], located towards the eastern extent of Keerglen townland, adjacent to the river but outside all land take for the proposed wind farm. Doondragon is mentioned several times in the tale (“Dun-draighin”, “Dún-draigin” and “Dún Droighin”)^[7].

Shown as a small clachan-style settlement on the 1839 edition of the Ordnance Survey six inch sheet, Doondragon (meaning “the fort of or at the blackthorn”) is the location of a number of archaeological monuments comprising a cashel (MA014-042001), souterrain (MA014-042002), enclosure (MA014-122) and a cairn (MA014-123). These monuments are located approximately 140m south, at their nearest point, of the proposed access track and approximately 1.4km north-east of T8. Aldridge noted that the cashel or *dún* called the “Dragon’s Grave” was later used as a “*lisheen*” or children’s burial ground and “*there was reputed to be a Giant’s grave covered with huge flags in it...but these are not to be seen now*”^[8]. In a story recounted in the Schools Folklore Collection in the 1930s, Dún Dragon is said to be the burial place of the warrior Oisín^[9], the son of Finn Mac Cumhaill.

A place called “Skahaghnashee” (MA013-002 redundant record^[10]), is located approximately 240m north of T8, on the northern bank of the Keerglen River. According to Aldridge^[11] it was known locally as “...*Sgeach na h-oinseacha* or the thorn tree of the female fool...”. In keeping with the vernacular tradition of a lone bush marking a burial place, Aldridge^[12] suggests that Cainer may also have been buried there.

The Keerglen River was one of the routes taken by Maeve’s army in the *Táin Bó Flidhais*. They also marched through the townlands of Clydagh or Glenedagh Eighter, following an ancient route westwards to Glenamoy. The Ballinglen River was also mentioned in the saga (named “*Sruth Legain*” and translated as “Lagan” in the story^[13]).

The cashel or *dún* after which Doondragon was named belongs to a wider class of enclosed settlement site, including one of the most recognisable archaeological monuments in the Irish countryside, commonly known as a ringfort. Ringforts are traditionally regarded as farmsteads and were, in the caste system of the Early Medieval period, the home of a free man and his family at the centre of a mixed agricultural economy which was dominated by cattle. Mainly constructed between the early 7th century and the end of the 10th century, they are also known as *rath* (rath) and *cathair* (caher) in the early Irish sources. There is some differentiation in the use of these terms: ringforts/raths were made of earth; cashels and cahers were built of stone.

There are no ringforts within 1km of the 8 no. proposed turbines. MA014-026 is the closest recorded ringfort to the proposed development and is located approximately 110m south of the temporary roadway connecting the R315 and the L51723. There is no information provided on this site on the HEV.

Enclosure sites belong to a classification of monument whose precise nature is unclear. Often, they may represent ringforts, which have either been damaged to a point where they cannot be positively recognised or are smaller or more irregular in plan than the accepted range for a ringfort. An Early Medieval date is in general likely for this site type, though not a certainty.

Souterrains are drystone-walled underground passages, often chambered with a lintelled roof over the passages and a corbelled roof over the chamber(s). Most appear to have been built in the Early Medieval period by ringfort inhabitants as a defensive feature and/or for storage.

A holy well (MA014-027) of indeterminate date is recorded in Ballinglen townland, approximately 370m north of the temporary roadway connecting the R315 and the L51723. Although there is no information on the well on the HEV, the Schools' Collection provides some background. The well is said to be associated with St Brigid^[14] or St Winifred. According to folklore, people performed stations there between the 1st of July and the 8th of September. Water in the well was reputed to have a cure for sore feet. To get the cure, a number of prayers were recited, and five stones had to be moved from one side of the well to the other, while the person looking for the cure blessed themselves with each of the stones. Before departing a token, such as a coin or a ribbon, was left. The well in Ballinglen is not associated with any known ecclesiastical site, indicating that it may be Post-Medieval in date.

A number of structures of Late Medieval or Post-Medieval date are recorded within the wider study area, including a tower house in Ballinglen townland (MA014-022) located approximately 800m north of the temporary roadway connecting the R315 and the L51723. The tower house is latterly associated with the Bourkes^[15]. A small settlement marked "Castletown" is shown on the First Edition Ordnance Survey map to the south-west of the castle, which may originally have been associated with the period of use of Ballinglen Castle.

Tower houses are regarded as late types of castle and were erected from the 14th to early 17th centuries. Their primary function was defensive, with narrow windows and a tower often surrounded by a high stone wall (bawn). An Act of Parliament of 1429 gave a subsidy of £10 to *liege* men to build castles of a minimum size of "20ft in length, 16ft in breadth and 40ft in height" (6m x 5m x 12m). By 1449, so many of these £10 castles had been built that a limit had to be placed on the number of grants being made available. The later tower houses were often smaller, with less bulky walls and no vaulting.

Before the Tudors came to the throne the kings of England were also the kings of western France. Consequently, during the 14th and 15th centuries the various lords who ruled in Ireland were largely left to themselves. The Tudors however took more of an interest in the affairs of Ireland. They wanted to put a stop to the raids of the Gaelic Irish on areas under English rule. To do this, they ruthlessly put down any rebellions and even quashed inter-tribal feuds. English settlers were then brought in to settle their lands. The first of these plantations occurred in the mid-16th century in what is now Laois and Offaly. After the Desmond rising

in Munster in 1585 came another plantation, and parts of south-western Tipperary were planted at that time. From 1593 until 1603 there was a countrywide war between the Gaelic Irish, who were supported by the French, and the Elizabethan English. The Irish were finally defeated and with the Flight of the Earls in 1607, Ulster, which had previously been independent of English rule, was planted. Surviving documents from that time show that lands within the wider landscape were granted to Sir Paul Gore, Earl of Arran (1567-1629), captain of a troop of horse, who arrived in Ireland with his regiment during the reign of Elizabeth I^[16].

A number of children's burial grounds, known as "*cillíní*" or "*lisheens*", are recorded from the townlands of Annagh More and Ballinglen. A children's burial ground at Annagh More (MA014-048001) is located approximately 730m south-east of the temporary roadway connecting the R315 and the L51723, while a children's burial ground at Ballinglen (MA014-021) is located approximately 1km north-west of the temporary roadway connecting the R315 and the L51723.

Archaeological research has shown that these monuments usually date to the Post-Medieval period *i.e.* after 1700 AD. They were established as the burial places of those who, because of contemporary religious beliefs, could not be buried in consecrated ground. Although more commonly associated with unbaptised children, recent excavations have shown that older children and adults were also interred in these places *e.g.* Tonybaun, County Mayo^[17]. Separate studies in counties Kerry and Galway have shown that townland boundaries were a favoured location^[18]. The chosen place was not selected randomly but was charged with symbolism. Just as the physical boundary represented a kind of no-man's land between two places, the location of the lisheen or *cillín* reflected the Christian belief in *Limbo Infantus*, a place between two worlds where those who could not be part of the Church went after death. Research has shown that during the early decades of the 19th century there were probably several *cillíní* in each parish^[19].

The graveyard in Keerglen townland (MA014-043), located approximately 820m east of the site access, may also be late or Post-Medieval in date. It is likely to be associated with the abandoned village of Kilkeerglen (*Cill Chaolghleanna*) "a churchyard, burial place of Caolghleann" ^[20] marked on the First Edition of the Ordnance Survey six inch map. No church is recorded from the area.

The Post-Medieval landscape of the area is also reflected in historic mapping (see Section 13.5.5 below) which records the change from a well-populated, organised landscape in the decade just before the Great Famine to a landscape decimated by it in the ensuing half century, where whole villages disappeared. Both the consequences of landlordism and agrarian reform are reflected on the maps, and which, to a great extent, can be seen in the landscape of the development area today.

There are no Recorded Monuments within the wind farm site. There are 2 no. Recorded Monuments (one of which is a Redundant Record) within 1km of the proposed 8 no. turbines, each of which are described below (Figure 13.8).

RMP MA013-002- Redundant record. There is no information provided on this former site on the HEV.

RMP MA013-006- Monumental structure: Monumental structure (MA013-006) in Clydagh townland, approximately 790m south-east of T7. There is no further information provided on this site on the HEV.

Monumental structures are structures erected to commemorate a person or event, and they date from the late Medieval period (c. 1400 to the 16th century) onwards.

There are no Recorded Monuments within 100m of the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723.

13.5.2 Toponymy^[21]

Townland names are an important source in understanding the archaeology, geology, land-use, ownership and cultural heritage of an area. The location of the proposed turbines and access track are in the townlands of Keerglen and Ballykinlettragh, which are in the barony of Tirawley (*Tír Amhlaidh*) and parish of Kilfian (*Cill Aodháin*). The barony name is a transliteration from the Irish for “Amalgaid’s territory” and is named after the 5th century king Amalgaid mac Fhiacrach.

The meaning and background to the subject townlands is outlined in Table 13.1 below:

Table 13.1 Placenames within the proposed development area	
Townland	Derivation/meaning
Ballinglen <i>Baile an Ghleanna</i>	Meaning the “town/townland/homestead in the glen” ^[22] . Named as <i>bailli an ghleanna</i> in the <i>Book of Lecan</i> in the year 1410 AD ^[23] . Manuscripts also refer to a village in the glen or valley in the year 1584 (<i>villa vallis, item toto</i>). Placename evidence also incorporates a number of 16 th century landowners including McRory Óg, McKeadagh McCoenill and Edmond Bourk of “Balliglannae” in 1592. Ballinglen Castle (MA014-022) is referred to in the <i>Calendar of Patent Rolls</i> for the year 1617. The Ballinglen River, named <i>Sruth Laigin</i> (Lagan) in antiquity, flows approximately north-south through the townland.
Ballykinlettragh <i>Bhaile Mhic Con Leitreach</i>	Translated as “the townland/town/homestead at the head/headland of the hill” ^[24] . Frequently referred to in historical documents, it is mentioned in the <i>Book of Lecan</i> (a 15 th century manuscript), in the <i>Calendar of Patent Rolls</i> for the year 1592 and also in deeds relating to the estate of the Earl of Arran in the first decade of the 17 th century. The eastern and a section of the northern boundary of this townland are delimited by the Ballinglen River.
Keerglen <i>Caoilghleann</i>	Translated from the Irish meaning “the narrow glen” ^[25] . The area is named as “ <i>Glen Cainner</i> ” in a version of the early Irish saga <i>Táin Bó Flidaise</i> , which is set in or around the first century AD ^[26] . In 1607 Keerglen is recorded in the estate records of the Earl of Arran as “ <i>Killcaghane als Killcaglana als Killyhannahalige</i> ” and is mentioned numerous times in official state documentation throughout the 17 th century. In the <i>Calendar of Patent Rolls</i> for the year 1617 it is named as “ <i>Killglane, a town and ½ qr of</i> ” (a quarter was an old land measurement), indicating a settled population at that time. Keerglen is marked as <i>Keelglant</i> on the Down Survey map dated to c. 1657 ^[27] . A hedge school was held there ^[28] . A number of placenames are also recorded from within the townland. Skahaghnashee (which translates as “ <i>the fairy tree</i> ”) is located on the northern bank of the Keerglen River. The Fiddaunboy River is located to the west of Doondragon, and the Fiddauncashaneean, another tributary of the Keerglen, is located towards the western boundary of the townland. Fiddaun is derived from the Irish word <i>féadán</i> , meaning a watercourse or stream.

13.5.3 Topographical Files of the National Museum of Ireland

Information on artefact finds and excavations from County Mayo is recorded by the National Museum of Ireland (NMI). Location information relating to such finds is important in establishing prehistoric and historic activity in the study area.

A search of the database was carried out for the townlands of Keerglen, Ballinglen and Ballykinlettragh, along with the surrounding townlands of Altderg, Annagh More, Cluddaun, Clydagh, Creevagh Beg, Creevagh More, Glenedagh Eighter, Glenedagh Oughter, Ratheskin and Ummerantarry. No finds were recorded on the database from any of these townlands.

13.5.4 Summary of Previous Fieldwork in the Study Area

A search of the online database^[29], which contains summaries of excavations carried out in Ireland from 1969 onwards, was undertaken. This confirmed that no fieldwork programmes have been carried out within Keerglen, Ballinglen or Ballykinlettragh townlands or any townlands surrounding the proposed development area.

13.5.5 Cartographic Analysis

A review of a number of available historical maps for the area was undertaken, comprising the Down Survey map^[30]; the first six-inch edition of the Ordnance Survey series published in 1839; the twenty-five inch Ordnance Survey map published in 1899, and the revised six-inch published in 1917.

The Down Survey

Keerglen is marked "Keelgant" on the 17th century Down Survey map for the barony of "Tirrawly" (Figure 13.3). The hilly nature of the ground is shown, but no buildings or structures are recorded. The survey recorded that 162 plantation acres were unprofitable land, 162 were profitable and 162 plantation acres were therefore forfeited^[31]. In 1641, the townland was in the ownership of Martin D'Arcy, a Catholic. By 1670 ownership had been forfeited to Thomas Knight, a Protestant. The surrounding townlands of Clydagh (Cloydagh), Ballykinlettragh (Ballinkinlatragh), Creevagh More (Crewmore) and Glenedagh (Gleneadaugh) are also marked. Ballinglen (Ballenglana) Castle and attendant structures are shown.

The Ordnance Survey maps

The First Edition of the Ordnance Survey six inch map (Sheets 013 and 014), which was surveyed in 1837 and published in 1839, shows the landscape within the study area less than 10 years before the Great Famine (Figures 13.4 and 13.5) The western part of Keerglen townland is shown as a large, empty, open space. The course of the Clydagh, Keerglen, Fiddaunboy and Fiddauncushaneean rivers are recorded, as well as a number of unnamed streams. Skahaghnashee (MA013-002-redundant record) is marked on the northern bank of the Keerglen River.

All of the settlement is located on the eastern side of the townland, close to the present R315 regional road. Two villages, Doondragon and Kilkeerglen, are shown accessible by a network of roads and lanes on both sides of the Keerglen River. Both are *clachan* settlements. Clachans developed where a lease on marginal

land was taken out by a number of people who agreed to farm the land in common^[32]. Doondragon, located east of Skahaghnashee, has roofed buildings of various sizes, some of which had small rectangular garden plots. Deciduous trees are marked on some of the boundaries, and small enclosed fields cluster around the settlement. The land outside the fields, which is laid out in a system of communal-style farming known as “Rundale”, is shown as bog. Two limekilns are also marked at the western and eastern extents of the village respectively. A lane or street is marked on the northern side of Doondragon which leads to a smaller unnamed settlement to the north-east, and a small part of the access track will be located on the line of this lane. An irregularly-shaped enclosure named “Dragon’s Grave” is shown on the opposite bank of the river, with a small feature marked within it.

The village of Kilkeerglen is also named, and appears as a cluster of roofed houses and buildings and small irregularly-shaped enclosures. A graveyard is shown on its north-eastern side, but no church is recorded. Numerous limekilns are marked on the map in this area, and a corn mill is shown on the northern side of the Keerglen River on the boundary with Ballykinlettragh townland.

A cluster of 10 houses with linear plots of land and two limekilns denotes the clachan village of Gurrankill in Ballykinlettragh townland, to the north of Keerglen townland. A north-east/south-west oriented road/track is shown to the south, which is still extant. The proposed access track will extend south off this road.

The location of a monumental structure (marked “Monument”) is shown on the map on the southern side of a tributary of the Clydagh River, in the townland of Clydagh (MA013-006). A trigonometrical station was found at the location in 1996, but no trace of an archaeological monument was identified^[33].

Settlements (Castletown and Parkmore), narrow roads and fields are also recorded within the wider study area in the townland of Ballinglen, south-west of Ballinglen Castle (MA014-022). A large triangular rock outcrop, described by O’Donovan as “a remarkable marl rock a little E of which is a holy well”^[34] (MA014-027) is also shown.

Some of the larger houses within the wider landscape are marked, such as Ballykinlettragh House to the north-east and Ballinglen Cottage to the east. Ballinglen Bridge, which is located approximately 85m west of the temporary roadway connecting the R315 and the L51723, is named. A number of ringforts and megalithic tombs (marked “cromlech”) are also shown within the wider landscape.

To summarise, there are no archaeological, architectural or cultural heritage features recorded on the First Edition six inch map within the land take of the proposed wind farm.

The First Edition map is considered a snapshot of Ireland just before the devastation wrought by the Great Famine of the 1840s, the recurring failure of the crop in subsequent decades, and the land struggle which ensued. The twenty-five inch map, published in 1899, reflects the impact these years had on the landscape and population. It also records the physical changes brought about by modern agricultural practices and land reform, notably in the West of Ireland by the Congested Districts Board^[35]. It should be noted that only that part of the proposed development covered by Mayo Sheet 014 is available for inspection in the twenty-five inch edition.

The twenty-five inch map shows that the lands within the wider study area underwent significant change in the years following publication of the First Edition Ordnance Survey six inch map. The most obvious change is the disappearance of much of the population, no doubt a consequence of famine and eviction. Many of the settlements, such as the village of Doondragon, had disappeared from the landscape, although a lime kiln is still marked in that location. The majority of houses in Kilkeerglen had also been removed from the landscape. Across the wider area, much of the dispersed settlement shown on the 1839 map are recorded as roofless structures, or have disappeared completely. A “ford” and “stepping stones” across Keerglen River are marked, just to the west of the small settlement. Two new structures have been constructed on the southern side of the road further to the east. The most notable change to Keerglen townland is an extensive network of linear field systems enclosing small fields on predominantly poor land.

Ballinglen Bridge is recorded approximately 85m west of the temporary roadway connecting the R315 and the L51723.

In summary, an evaluation of that section of the proposed development area depicted on Sheet 014 of the twenty-five inch map shows that the landscape in the immediate area had changed significantly in the years following the Great Famine.

The last edition of the six-inch Ordnance Survey map, published in 1917, shows that the landscape had developed further to the east of Keerglen, but the western section remained undeveloped and unenclosed (Figures 13.6 and 13.7). A mill stream and mill race are recorded on the eastern side of Ballinglen Bridge. There is a settlement to the north in Ballykinlettragh townland, which is now within forestry. Skahaghnashee is marked next to a tree, and there are numerous fords on Keerglen River. There is no evidence to show that the present network of access roads across the hillside on the western side of the site was extant at that time, confirming they are of more recent date.

13.5.6 Aerial Photographs

Aerial photographs held by Ordnance Survey Ireland were consulted to look for the presence of archaeological, architectural or cultural heritage remains within the land take of the proposed wind farm and the access track.

The 2000^[36] and 2005^[37] photographs record a similar landscape to that which was noted during the walkover surveys (see Section 13.5.10 below), with the proposed turbines and access track recorded on blanket bog with evidence for turf-cutting, within commercial forestry plantations, and an existing network of roads, rivers and streams.

Bing aerial mapping^[38] (2022 version) was also consulted and reflects the study area as it currently exists.

There was no evidence of any archaeological, architectural or cultural heritage features recorded on aerial photography within the proposed development area.

13.5.7 Mayo County Development Plan 2022 - 2028

It is a Policy (BEP 1) of Mayo County Council^[39] to:

“support and promote the protection, appropriate management and sympathetic enhancement of the county’s archaeological heritage within the Plan area, in particular by implementing the Planning and Development Act 2000 (as amended) and the National Monuments Act 1930 (as amended)”.

It is an Objective (BEO 1) of Mayo County Council^[40] to:

“protect the archaeological heritage and sites identified in the Record of Monuments and Places, National Monuments in the ownership or guardianship of the State in addition to National Monuments that are the subject of Preservation Orders, and to safeguard the integrity of the archaeological sites in their setting”.

It is an Objective (BEO 4) of Mayo County Council^[41] to:

“ensure that development in the vicinity of a Recorded Monument or Zone of Archaeological Potential is sited and designed in a sensitive manner, avoiding adverse effects on landscape setting and context of monument”.

It is an Objective (BEO 5) of Mayo County Council^[42] to:

“protect all sites and features of archaeological interest discovered subsequent to the publication of the Record of Monument and Places, in situ (or at a minimum preservation by record), having regard to the advice and recommendations of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht”.

It is also an Objective (BEO 6) of Mayo County Council^[43] to:

“protect archaeological sites, monuments, underwater archaeology and archaeological objects in their setting, which are listed on the Record of Monuments and Places for Mayo”.

There are no sites of archaeological importance recorded in the Mayo County Development Plan within the proposed development area, the 1km study area or the wider 5km study area.

The proposed development area is located outside the boundary of the Mayo Gaeltacht.

It is a Policy (BEP 4) of Mayo County Council^[44] to:

“protect the architectural heritage of County Mayo which is a unique and special resource”.

It is an Objective (BEO 9) of Mayo County Council^[45] to:

“ensure the protection and sympathetic enhancement of buildings and structures included and proposed for inclusion in the Record of Protected Structures (RPS) that are of special

architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, together with the integrity of their character and setting”.

It is also an Objective (BEO 12) of Mayo County Council^[46] to:

“identify places of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, and to define them as Architectural Conservation Areas and to undertake an assessment to inform the potential ACA designation for the following areas: Castlebar, Ballinrobe, Killala, Pontoon and Doogort or any other special character areas considered by the Planning Authority worthy of such protection in County Mayo”.

Volume 4 of the Mayo County Development Plan contains the *Record of Protected Structures*^[47] from within the county. There are no Protected Structures within the proposed development area or the 1km study area. There is one Protected Structure listed on the RPS within the wider 5km study area:

Heathfield House (RPS No. 0226) is located approximately 3.5km north-east of the temporary roadway connecting the R315 and the L51723 (see Table 13.2 below):

Table 13.2 Structure listed on the RPS within the 5km study area		
RPS No.	Name	Description
0226	Heathfield House	Rectangular single fronted gabled house c.1780 with floating pediment partially obscured by a 19th century entrance tower. ^[48]

The *Mayo County Development Plan* contains a list of *Potential Architectural Conservation Areas* from within the county. There are no Potential Architectural Conservation Areas within the proposed development area, the 1km study area or the wider 5km study area.

13.5.8 National Monuments in State Care

The Department of Housing, Local Government and Heritage maintains a database on a county basis of National Monuments in State Care: Ownership and Guardianship. The term National Monument is defined in Section 2 of the National Monuments Act (1930) 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”. (www.archaeology.ie).

There are no National Monuments in State Care within the proposed development area, the 1km study area or the wider 5km study area ^[49].

There are no sites with Preservation Orders or Temporary Preservation Orders within the proposed development area, the 1km study area or the wider 5km study area.

There are no World Heritage Sites or sites included in the Tentative List as consideration for nomination to the World Heritage List within the proposed development area, the 1km study area or the wider 5km study area.

The Céide Fields and North-West Mayo Boglands, which are located approximately 8.5km north/north-west of the proposed development area, were previously included in the Tentative List as consideration for nomination to the World Heritage list. As of 2022, the Céide Fields and the North West Mayo Boglands are no longer included in the Tentative List as consideration for nomination to the World Heritage list.

13.5.9 National Inventory of Architectural Heritage (NIAH)

The NIAH maintains a non-statutory register of buildings, structures *etc.* recorded on a county basis.

There are no structures recorded on the NIAH within the proposed development area or within 1km of the proposed turbines. There is one structure recorded on the NIAH within 100m of the temporary roadway connecting the R315 and the L51723:

Ballinglen Bridge (Reg. No. 31301403) is located approximately 85m west of the temporary roadway connecting the R315 and the L51723 (see Table 13.3 below):

Table 13.3 Structure listed on the NIAH within 100m of the temporary roadway connecting the R315 and the L51723		
Name/location	Reg. No.	Description provided
Ballinglen Bridge, Ballinglen	31301403	Two-arch road bridge over river, extant 1838[?]. Part creeper- or ivy-covered tuck pointed snecked rock faced limestone walls centred on limestone ashlar triangular cutwater to pier having pyramidal capping with lichen-covered rounded coping to parapets. Pair of segmental arches with drag edged rock faced limestone ashlar voussoirs centred on drag edged rock faced cut-limestone keystones. Sited spanning Ballinglen River with unkempt banks to river. ^[50]

Register of Historic Gardens and Designed Landscapes

The NIAH also maintains a non-statutory register of historic gardens and designed landscapes^[51] recorded on a county basis.

There are no NIAH historic gardens or designed landscapes recorded within the proposed development area.

There are two NIAH historic gardens or designed landscapes located within 100m of the proposed temporary roadway connecting the R315 and the L51723. A landscape associated with the 19th century Glen Villa estate (NIAH Site ID 4694)^[52] is located approximately 100m west, at its nearest point, of the proposed temporary roadway connecting the R315 and the L51723. The landscaped gardens are not recorded on the First Edition Ordnance Survey 1:10,560 map (1839), but it is recorded on later edition cartographic sources. The landscape associated with Ballinglen Cottage (NIAH Site ID 4635) is located immediately south of the proposed temporary roadway connecting the R315 and the L51723. Although the footprint is still visible, much alteration to the original design has taken place and the land has been returned to agricultural use.^[53]

13.5.10 Field Inspection

A programme of field inspections sought to assess the site, its previous and current land use, the topography and any additional environmental information relevant to the report. The inspections took place on February 1st 2022 when weather conditions were extremely wet and windy with low cloud and limited visibility; on February 2nd 2022 when weather conditions were dry and overcast, on February 8th 2022 when weather conditions were dry and overcast, and April 4th 2024 in dry, overcast conditions

The location of each turbine was identified by inputting the given co-ordinates into a hand-held Garmin e-Trex 32x. The relevant areas were walked then systematically assessed to determine if any archaeological architectural or cultural heritage features were present. As the area to the south of the Keerglen River was mainly cutover bog, existing turbary plots and old turf banks were examined in section to look for the presence of archaeological remains where conditions underfoot allowed.

The results of the field inspection are outlined in Table 13.4 below:

Table 13.4 Results of the walkover surveys			
Turbine No.	ITM Co-ordinates	Description	Plate No.
1	505565E, 832360N	The area consists of flattish, wet peatland leading down towards the Keerglen river to the north. No surface evidence for archaeology.	Plate 13.1
2	505470E, 831909N	The area consists of flattish, wet peatland. No surface evidence for archaeology.	Plate 13.2
3	505827E, 831743N	The area consists of gently rising, wet peatland. No surface evidence for archaeology.	Plate 13.3
4	505920E, 832214N	The area consists of flat, wet peatland. No surface evidence for archaeology.	Plate 13.4
5	506383E, 832271N	The area consists of flat, wet peatland. No surface evidence for archaeology.	Plate 13.5
6	506344E, 831817N	The area consists of flat, wet peatland. No surface evidence for archaeology.	Plate 13.6
7	506978E, 831969N	The area consists of flat, wet peatland. No surface evidence for archaeology.	Plate 13.7
8	507325E, 832404N	The area consists of gently undulating, wet peatland. No surface evidence for archaeology.	Plate 13.8
Substation	506347E, 832102N	The area consists of flat, wet peatland. No surface evidence for archaeology.	Plate 13.9
Borrow Pit	505984E, 831796N	The area consists of rising, wet peatland flattening to a wide plateau.	
Temporary roadway connecting the R315 and the L51723, widening	Ballingen, Ballykinlettragh, Keerglen	The temporary roadway connecting the R315 and the L51723 is delimited by mature hedgerow and stone walls enclosing farmland, forestry and bog. It crosses a well-preserved 19 th century stone bridge (Ballingen Bridge; NIAH Reg, 31301403) over Ballingen River. The locations for the widening and ancillary works to sections of the L51723 extend south-westwards from the R315	Plate 13.10

Table 13.4 Results of the walkover surveys			
Turbine No.	ITM Co-ordinates	Description	Plate No.
and ancillary works and access track		regional road along a single track road, with houses and farm buildings on both sides of the road, tapering out to a gravel track at its south-western extent slightly south of a settlement marked "Gurrankill" on the First Edition Ordnance Survey six-inch map. Although the present track extends as far as a stream, where a concrete bridge has been built, the proposed access track will turn south-westwards before the bridge, running downhill and crossing the Keerglen River towards the location of T8. The land here is blanket bog used for rough grazing, and is hummocky and waterlogged.	

13.5.11 Conclusions

Following a programme of desk-based research and fieldwork, the following conclusions can be made in relation to the archaeological, architectural and cultural heritage of the proposed development and study area.

- The given locations of the proposed turbines and associated infrastructure were assessed during the field inspections. No above-ground archaeological features or artefacts were recorded within any areas of proposed land take as a result of carrying out the walkover surveys;
- There are no National Monuments in State Care within the proposed development area, the 1km study area or the wider 5km study area;
- There are no sites with Preservation Orders or Temporary Preservation Orders within the proposed development area, the 1km study area or the wider 5km study area;
- There are no World Heritage Sites or sites included in the Tentative List as consideration for nomination to the World Heritage List within the proposed development area, the 1km study area or the wider 5km study area. The Céide Fields and North-West Mayo Boglands, which are located approximately 8.5km north/north-west of the proposed development area, were previously included in the Tentative List as consideration for nomination to the World Heritage list. As of 2022, the Céide Fields and the North West Mayo Boglands are no longer included in the Tentative List as consideration for nomination to the World Heritage list;
- There was no evidence of any archaeological, architectural or cultural heritage features recorded on aerial photography within the proposed development area;
- No archaeological fieldwork programmes have been carried in any townlands located within the proposed development area;
- There are no entries recorded in the Topographical Files for any townlands located within the proposed development area;

- There are no Protected Structures within the proposed development area or the 1km study area. There is one Protected Structure listed on the RPS within the wider 5km study area. Heathfield House (RPS No. 0226) is located approximately 3.5km north-east of the temporary roadway connecting the R315 and the L51723;
- There are no Potential Architectural Conservation Areas within the proposed development area, the 1km study area or the wider 5km study area;
- There are no structures recorded on the NIAH within the proposed development area or within 1km of the proposed turbines. There is one structure recorded on the NIAH within 100m of the temporary roadway connecting the R315 and the L51723. Ballinglen Bridge (Reg. No. 31301403) is located approximately 85m west of the temporary roadway connecting the R315 and the L51723; and
- There are no NIAH historic gardens or designed landscapes recorded within the proposed development area.

13.6 Statement of Potential Effects

13.6.1 Construction Stage Effects

Construction of the proposed wind farm and associated infrastructure will involve the mechanical excavation of all topsoil and overburden down to and through geologically deposited strata. As a result of carrying out this Environmental Impact Assessment Report chapter, the following potential archaeological, architectural and cultural heritage effects have been identified.

13.6.2 Construction Stage Effects – Indirect

Indirect effects, in terms of archaeology, architectural and cultural heritage, are considered to be those which happen away from the development area. This includes effects on visual setting of cultural heritage assets in the wider landscape. There will be no significant indirect construction phase effect on the archaeological, architectural or cultural heritage resource.

13.6.3 Construction Stage Effects - Direct

Direct effects refers to a “physical impact” on archaeological, architectural or cultural heritage features. The construction phase of the development will consist largely of earthmoving activities, such as peat removal. The potential effects on the known and potential archaeological, architectural and cultural heritage of the area are outlined below. The effects are described according to each element of the proposed development, *i.e.* proposed turbine locations and access track. Where any potential direct effects will occur, they will be negated through the use of suitable mitigation measures such as Licensed fieldwork, establishment of exclusions zones (buffer zones), *etc.* (see Section 13.8 below).

13.6.3.1 Effect of proposed turbine bases and attendant hardstand areas on World Heritage Sites, Candidate World Heritage Sites, National Monuments, Sites with Preservation Orders or Temporary Preservation Orders, Recorded Monuments, Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH Historic Gardens

There are no World Heritage Sites, sites included in the Tentative List as consideration for nomination to the World Heritage List, National Monuments, sites with Preservation Orders, sites with Temporary Preservation Orders or Recorded Monuments within the footprint of any proposed turbine bases or attendant areas. As such, there will be no direct construction stage effect on any World Heritage Sites, sites included in the Tentative List as consideration for nomination to the World Heritage List, National Monuments, sites with Preservation Orders, sites with Temporary Preservation Orders or Recorded Monuments.

There are no Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the footprint of any proposed turbine bases or attendant areas. As such, there will be no direct construction stage effect on any Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes.

It is assessed there will be no construction stage noise effect on the archaeological, architectural or cultural heritage resource.

13.6.3.2 Effect of proposed turbine bases and attendant hardstand areas on unrecorded sub-surface archaeological features

The proposed development will have a likely permanent imperceptible direct construction stage effect on any previously unrecorded archaeological remains that may exist within the footprint of any proposed turbine bases and attendant areas.

13.6.3.3 Effect of proposed access track on World Heritage Sites, Candidate World Heritage Sites, National Monuments, Sites with Preservation Orders or Temporary Preservation Orders, Recorded Monuments, Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH Historic Gardens

There are no World Heritage Sites, sites included in the Tentative List as consideration for nomination to the World Heritage List, National Monuments, sites with Preservation Orders, sites with Temporary Preservation Orders or Recorded Monuments on the line of the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723. As such, there will be no direct construction stage effect on any World Heritage Sites, sites included in the Tentative List as consideration for nomination to the World Heritage List, National Monuments, sites with Preservation Orders, sites with Temporary Preservation Orders or Recorded Monuments.

There are no Protected Structures, Potential Architectural Conservation Areas or NIAH historic gardens or designed landscapes on the line of the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723. As such, there will be no

direct construction stage effect on any Protected Structures, Potential Architectural Conservation Areas or NIAH historic gardens or designed landscapes.

Ballinglen Bridge (NIAH Reg. Ref. 31301403) is located approximately 85m west of the temporary roadway connecting the R315 and the L51723. Works required to improve the road profile and layering will have a likely temporary slight direct construction stage effect on Ballinglen Bridge.

It is assessed there will be no construction stage noise effect on the archaeological, architectural or cultural heritage resource.

13.6.3.4 Effect of proposed access track on unrecorded sub-surface archaeological features

The proposed development will have a likely permanent imperceptible direct construction stage effect on any previously unrecorded archaeological remains that may exist in the area of land take for the proposed access track, the temporary roadway connecting the R315 and the L51723, and the widening and ancillary works to sections of the L51723.

13.6.3.5 Effect of the proposed development on the cultural heritage resource

It is assessed there will be no construction stage effect on the cultural heritage resource.

13.6.4 Operational Stage Effects

Indirect effects are where a feature or site of archaeological, architectural or cultural heritage value or their setting is located in close proximity to a proposed development. Indirect effects as a result of the operation of wind farms are mainly concerned with effects on setting. While a proposed development may not physically impact on a site, it may alter the setting of a monument or group of monuments or structures.

Potential effects on the visual amenity of a site or area and the significance of same is dependent on a number of factors, such as the sensitivity of the location or "receptor" and the scale or magnitude of the proposed development.

Those elements of the proposed development which are not capable of having a significant effect on the visual setting of monuments and which are in close proximity to the turbines (such as the on-site substation, underground cables and construction compound) are scoped out of this section.

Those elements which are deemed to be more likely to impact on visual setting, such as turbines, are discussed below.

13.6.4.1 Effect of proposed turbines on World Heritage Sites, Candidate World Heritage Sites, National Monuments, Sites with Preservation Orders or Temporary Preservation Orders, Recorded Monuments, Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH Historic Gardens

The Céide Fields and North-West Mayo Boglands, which are located approximately 8.5km north/north-west of the proposed development area, were previously included in the Tentative List as consideration for nomination to the World Heritage list. As of 2022, the Céide Fields and the North West Mayo Boglands are

no longer included in the Tentative List as consideration for nomination to the World Heritage list. It is assessed, given the intervening distance and existing landform, there will be no operational stage visual effect associated with the proposed development on the Céide Fields.

It is assessed there will be a likely long-term, reversible and slight operational stage visual effect on 2 no. Recorded Monuments (one of which is a Redundant Record) located within the wind farm 1km study area. Following decommissioning the slight effect will be reversed.

It is assessed there will be a likely long-term, reversible and not significant operational stage visual effect on the archaeological resource within the wider development area. Following decommissioning the not significant effect will be reversed.

It is assessed there will be no additional operational stage effect on the archaeological resource.

It is assessed there will be a likely long-term, reversible and not significant operational stage visual effect on one Protected Structure (Heathfield House RPS No. 0226) located within the 5km study area. Following decommissioning the not significant effect will be reversed.

It is assessed there will be no additional operational stage effect on the architectural resource.

It is assessed there will be no operational stage noise effect on the archaeological, architectural or cultural heritage resource.

13.6.4.2 Effect of proposed turbines on unrecorded sub-surface archaeological features

It is assessed there will be no operational stage effect on any unrecorded sub-surface archaeological features.

13.6.4.3 Effect of proposed access track on World Heritage Sites, Candidate World Heritage Sites, National Monuments, Sites with Preservation Orders or Temporary Preservation Orders, Recorded Monuments, Protected Structures, Potential Architectural Conservation Areas, NIAH structures or NIAH Historic Gardens

It is assessed there will be no operational stage effect on any recorded archaeological, architectural or cultural heritage features.

13.6.4.4 Effect of proposed access track on unrecorded sub-surface archaeological features

It is assessed there will be no operational stage effect on any unrecorded sub-surface archaeological features.

13.6.4.5 Effect of the proposed development on the cultural heritage resource

It is assessed there will be no operational stage effect on the cultural heritage resource.

13.7 Cumulative Effects

Cumulative effects are defined as:-

"The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects".^[54]

Cumulative effects encompass the combined effects of multiple developments or activities on a range of receptors. In this case, the receptors are archaeological, architectural, cultural or protected heritage sites. Cumulative effects at the construction, operational and decommissioning stages are considered.

It is assessed there is no likelihood of the constituent components of the proposed development to act, in combination with each other, to result in cumulative effects during either the construction, operation or decommissioning stages of development.

There are no existing wind farms within 5km of the project. There is 1 no. proposed wind farm within 5km of the project. Glenora Wind Farm will consist of 22 no. wind turbines with a total blade tip height of 180m and associated infrastructure. It will be located, at its nearest point, approximately 600m north of the proposed development.

Construction stage cumulative effects are largely concerned with direct impacts on any unrecorded sub-surface archaeological features or artefacts which may exist within the area where it is proposed to construct the project. There will be no interaction between any archaeological remains which might survive within the project site and the above-mentioned Glenora Wind Farm. Since likely direct effects on the archaeological, architectural and cultural heritage resource have been assessed and mitigated (in respect of the project), cumulative direct effects will not occur during the construction or decommissioning stages of the proposed development.

In terms of other (non-wind energy) existing, permitted or proposed developments, it is assessed there are no developments which could act in combination with the proposed development to result in direct or indirect construction or decommissioning stage effects.

An assessment of National Monuments within 5km of the proposed development has been undertaken to assess for likely cumulative effects during the operational stage. The likelihood of additional turbines being visible in the wider landscape from National Monuments is such that cumulative effects could occur, as it is not possible to mitigate the effects on setting arising from turbines at the operational stage. Only National Monuments within 5km of the proposed development have been assessed for cumulative effects at the operational stage.

There are no National Monuments within 5km of either the proposed development or Glenora Wind Farm. As such, it is assessed there will be no operational stage cumulative effect on any National Monuments.

The Céide Fields and North-West Mayo Boglands, which are located approximately 8.5km north/north-west of the proposed development, were previously included in the Tentative List as consideration for nomination to the World Heritage list. As of 2022, the Céide Fields and the North West Mayo Boglands are no longer

included in the Tentative List as consideration for nomination to the World Heritage list. It is assessed, given the intervening distance and existing landform, there will be no operational stage visual effect associated with the proposed development on the Céide Fields. In addition, it is assessed that Glenora Wind Farm will have no operational stage visual effect on the Céide Fields. As a result, it is assessed there will be no operational stage cumulative effect on the Céide Fields between the proposed development and Glenora Wind Farm.

It is assessed that the at worst slight operational stage visual effect on the archaeological resource and the not significant operational stage visual effect on the architectural resource will result in combination with Glenora Wind Farm in a slight operational stage cumulative visual effect on the archaeological and architectural resource.

Underground Electricity Export Connection infrastructure necessary to facilitate operation of the wind farm will be applied for as part of a separate planning application. The underground electricity export connection will extend from the Keerglen Wind Farm substation located within the proposed development site, and will consist of underground cabling within the carriageway of public roads to the existing Tawnaghmore ESB Substation or a Large Energy User at Killala Business Park located approximately 22.8km to the south-east. An assessment of the underground electricity export connection infrastructure has been made to assess any effect it may have on the archaeological, architectural or cultural heritage resource. There are no protected archaeological, architectural or cultural heritage features within the footprint of the proposed underground electricity export connection. There are two bridges recorded on the NIAH on the line of the proposed underground electricity export connection. As horizontal directional drilling will be carried out at bridge locations, it is assessed that the underground electricity export connection infrastructure will have no cumulative construction or operational stage effect on the archaeological, architectural or cultural heritage resource.

The turbine delivery route will be applied for as part of a separate planning application. The application is seeking permission for a range of turbine parameters, and as such it is not yet known if the turbine delivery route to the proposed development area will be from Killybegs, County Donegal or from the Port of Galway, Galway City. It is assessed that neither of the turbine delivery routes will have any significant cumulative construction or operational stage effect on the archaeological, architectural or cultural heritage resource.

A temporary meteorological mast will be applied for as part of a separate planning application. An assessment of the temporary meteorological mast has been made to assess any effect it may have on the archaeological, architectural or cultural heritage resource. There are no protected archaeological, architectural or cultural heritage features within the footprint of the proposed temporary meteorological mast. It is assessed that the temporary meteorological mast will have no cumulative construction or operational stage effect on the archaeological, architectural or cultural heritage resource.

It is assessed that there are no additional developments which could act in combination with the proposed development to result in cumulative direct or indirect construction or operational stage effects.

13.8 Mitigation and Monitoring Measures

13.8.1 Construction Stage

It is recommended that a programme of post-consent pre-construction archaeological test trenching be carried out within all areas of land take associated with the proposed development. Test trenching will be carried out under Licence to the Department of Housing, Local Government and Heritage, the National Museum of Ireland, and to the satisfaction of the Mayo County Council Archaeologist. Further archaeological mitigation measures may be recommended pending the results of the test trenching programme, and in agreement with the Department of Housing, Local Government and Heritage and the Mayo County Council Archaeologist.

Should any areas of proposed land take not be suitable for test trenching (such as along the line of the access track, locations with deep bog, etc.), it is recommended that archaeological monitoring of construction works be carried out in those areas. Monitoring will be carried out under Licence to the Department of Housing, Local Government and Heritage, the National Museum of Ireland, and to the satisfaction of the Mayo County Council Archaeologist. Further archaeological mitigation measures may be recommended pending the results of the monitoring programme, and in agreement with the Department of Housing, Local Government and Heritage and the Mayo County Council Archaeologist.

Ballinglen Bridge (NIAH Reg. Ref. 31301403) is located approximately 85m west of the temporary roadway connecting the R315 and the L51723. Works required to improve the road profile and layering will have a likely temporary slight direct construction stage effect on Ballinglen Bridge. It is recommended that a post-consent pre-construction Architectural Impact Assessment of Ballinglen Bridge, containing written, drawn and photographic records, be carried out by a recognised historic building consultant/Conservation Architect.

13.8.2 Operational Stage

As it is not possible to mitigate the indirect effect of turbines in the wider landscape setting, there are no mitigation measures available to offset the at worst slight operational stage visual effect on the archaeological resource and the not significant operational stage visual effect on the architectural resource.

13.8.3 Decommissioning Stage

It is assessed that there will be no likely decommissioning stage effects on the archaeological, architectural or cultural heritage resource. The decommissioning stage will involve the removal of wind farm infrastructure and is likely to result in an improvement in the archaeological, architectural and cultural heritage resource as all operational stage visual effects will be entirely removed through decommissioning of the turbines.

Once the wind turbines have been dismantled and removed, the below-ground turbine foundations will be left *in situ* and covered with topsoil. This naturalisation process will revert the landscape of the proposed development to a condition similar to the current landscape baseline.

13.9 Residual Effects

13.9.1 Construction Stage

Following the implementation of the above mitigation measures, it is assessed that there will be no likely significant residual effects during the construction stage of the proposed development.

13.9.2 Operational Stage

It is assessed there will be no residual operational stage visual effect on the Céide Fields.

It is assessed there will be a likely residual long-term, reversible and slight operational stage visual effect on 2 no. Recorded Monuments (one of which is a Redundant Record) located within the wind farm 1km study area. Following decommissioning the slight effect will be reversed.

It is assessed there will be a likely residual long-term, reversible and not significant operational stage visual effect on the archaeological resource within the wider development area. Following decommissioning the not significant effect will be reversed.

It is assessed there will be a likely residual long-term, reversible and not significant operational stage visual effect on one Protected Structure (Heathfield House RPS No. 0226) located within the 5km study area. Following decommissioning the not significant effect will be reversed.

It is assessed that there will be no likely residual effect on the cultural heritage resource.

13.9.3 Decommissioning Stage

It is assessed that there will be no likely significant residual effects during the decommissioning stage of the proposed development.

13.10 Conclusions

The results of this assessment, in relation to construction, operation, decommissioning, cumulative and residual effects, have been set out in the foregoing sections. This assessment has concluded that the effect on the archaeological, architectural and cultural heritage resource of the proposed development will in general be long-term, reversible and will vary from slight to imperceptible.

There will be no likely significant direct or indirect construction stage or decommissioning stage effect on the recorded archaeological, architectural and cultural heritage resource. However, there will be a likely long-term, reversible and slight operational stage visual effect on 2 no. Recorded Monuments (one of which is a Redundant Record) located within the wind farm 1km study area. In addition, there will be a likely long-term, reversible and not significant operational stage visual effect on the archaeological resource within the wider development area and a likely long-term, reversible and not significant operational stage visual effect on one Protected Structure (Heathfield House RPS No. 0226) located within the 5km study area.

Following the implementation of mitigation measures outlined in this chapter, the likely residual effect of the proposed development remains slight to imperceptible. There will be a likely residual long-term, reversible and slight operational stage visual effect on 2 no. Recorded Monuments (one of which is a Redundant Record) located within the wind farm 1km study area. In addition, there will be a likely residual long-term, reversible and not significant operational stage visual effect on the archaeological resource within the wider development area and a likely residual long-term, reversible and not significant operational stage visual effect on one Protected Structure (Heathfield House RPS No. 0226) located within the 5km study area.

This assessment has further concluded that the proposed development will not result in any likely significant cumulative effects with other existing, permitted or proposed developments.

Figures

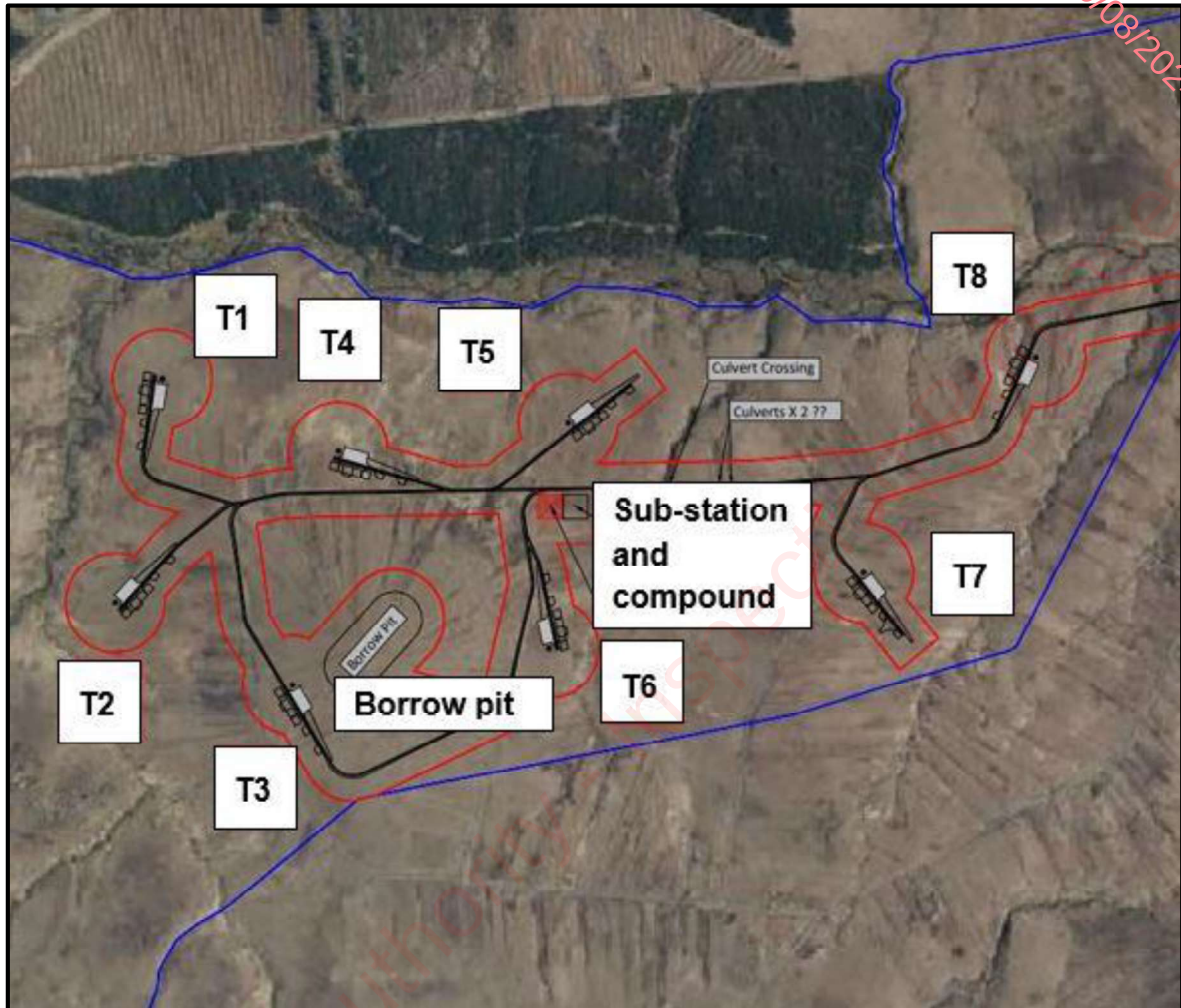


Figure 13.1 Layout of the proposed development showing location of Turbines 1 – 8, substation, compound and borrow pit

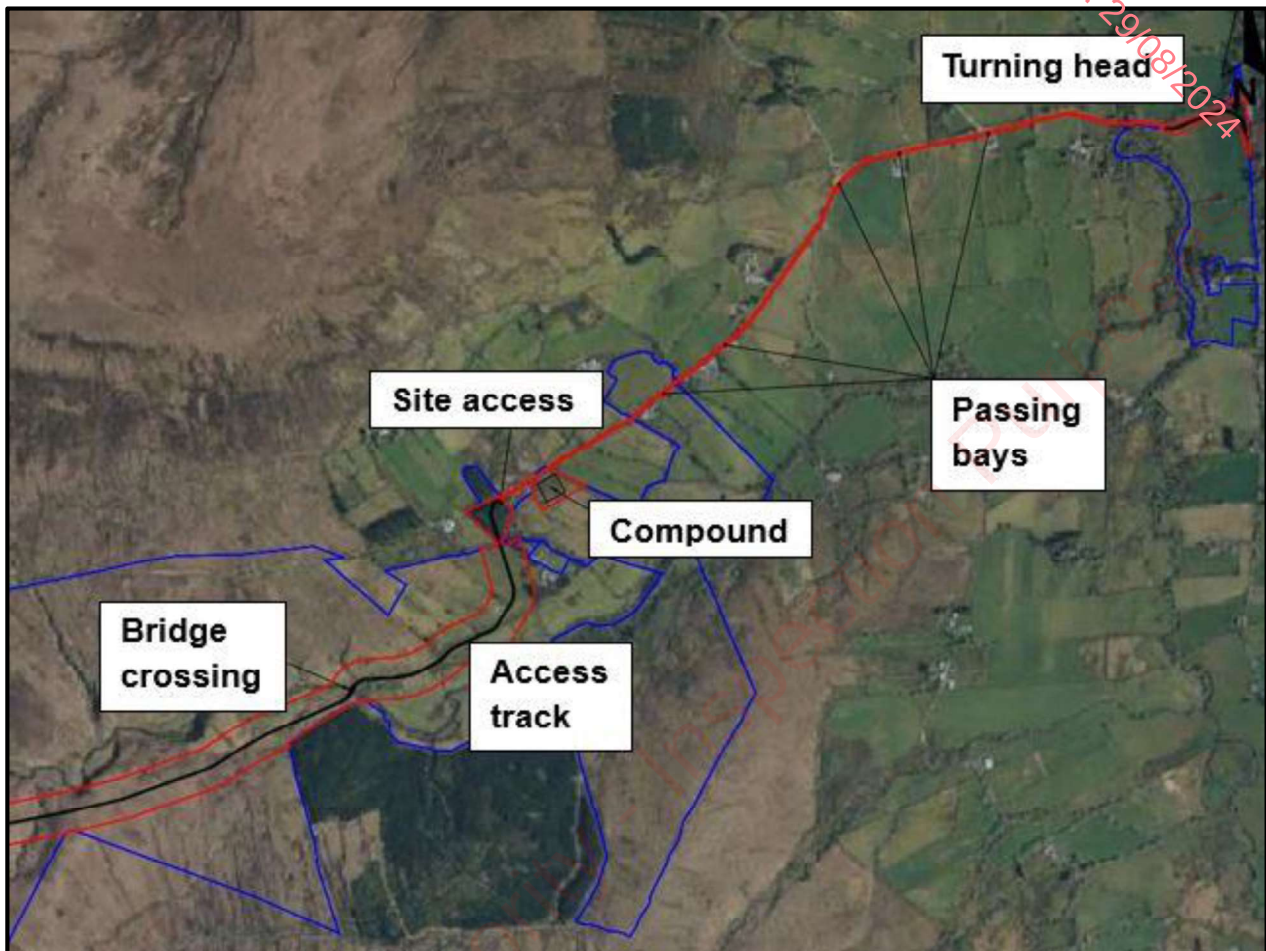


Figure 13.2 Layout of the proposed development showing location of access track, site access, turning head, passing bays, site compound and bridge crossing



Figure 13.3 The Down Survey map showing land divisions in the mid-17th century in the general landscape of the proposed development area

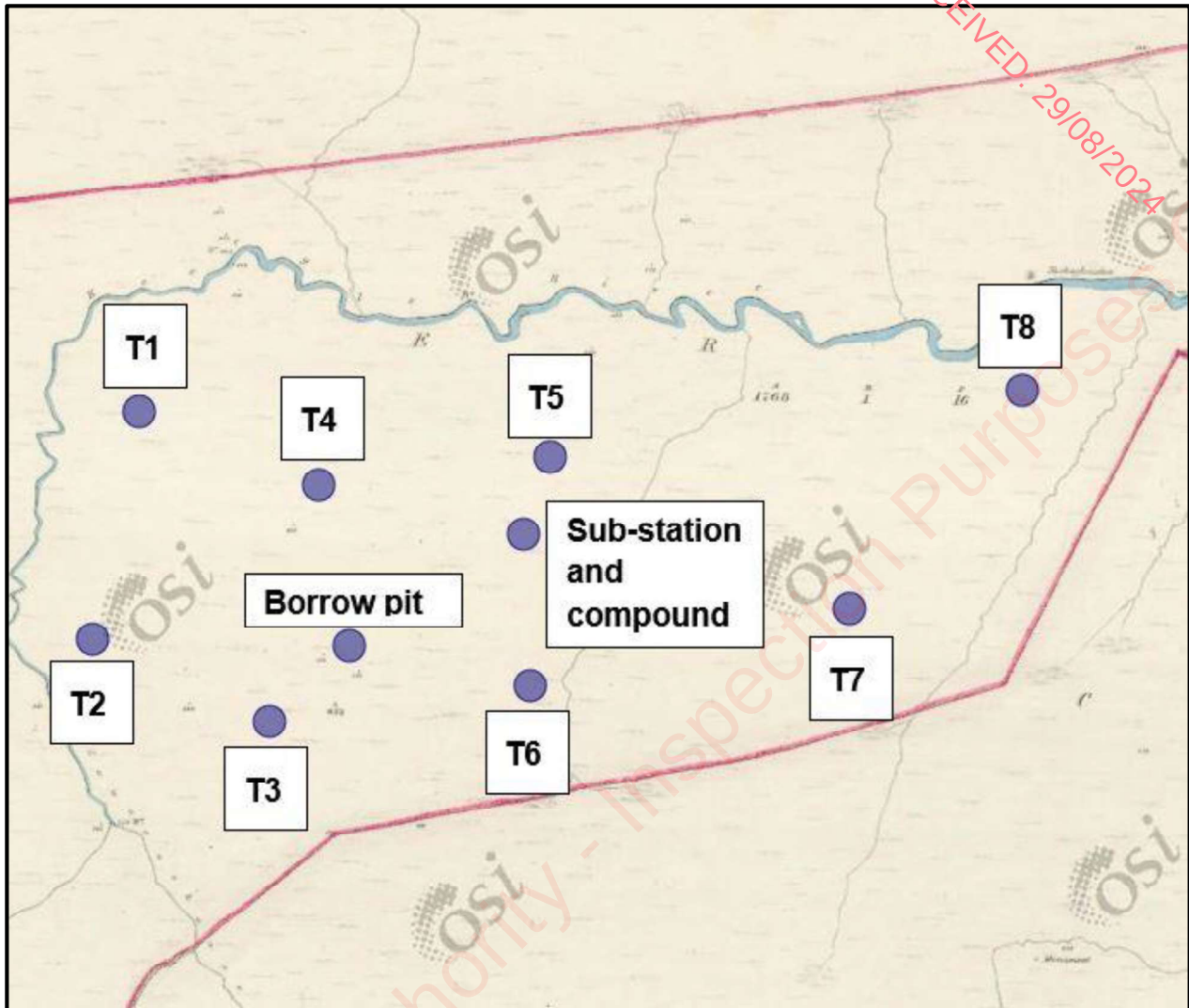


Figure 13.4 Extract from First Edition Ordnance Survey map 1:10,560 (1839) showing location of Turbines 1 – 8, substation, compound and borrow pit

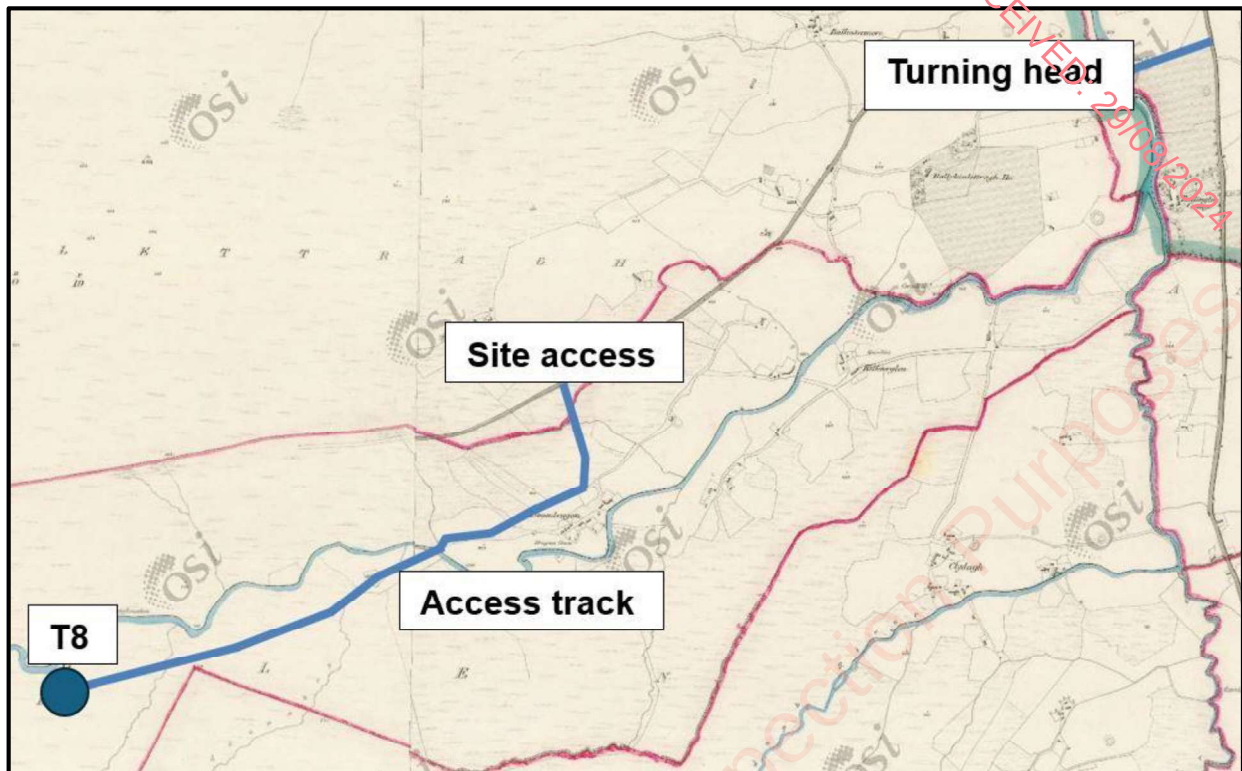


Figure 13.5 Extract from First Edition Ordnance Survey map 1:10,560 (1839) showing location of Turbine 8, turning head, site access and access track

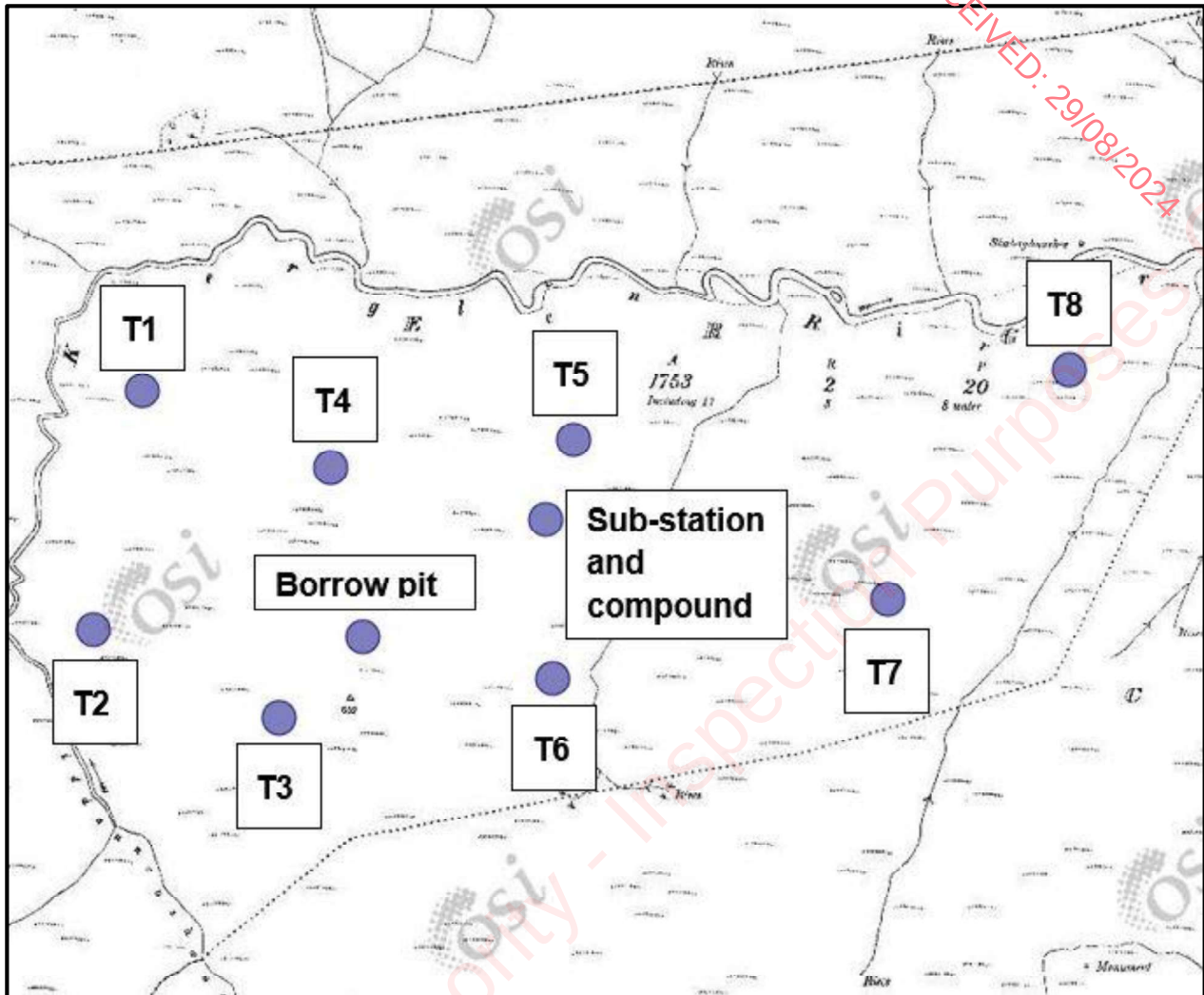


Figure 13.6 Extract from Third Edition Ordnance Survey map 1:10,560 (1917) showing location of Turbines 1 – 8, substation, compound and borrow pit

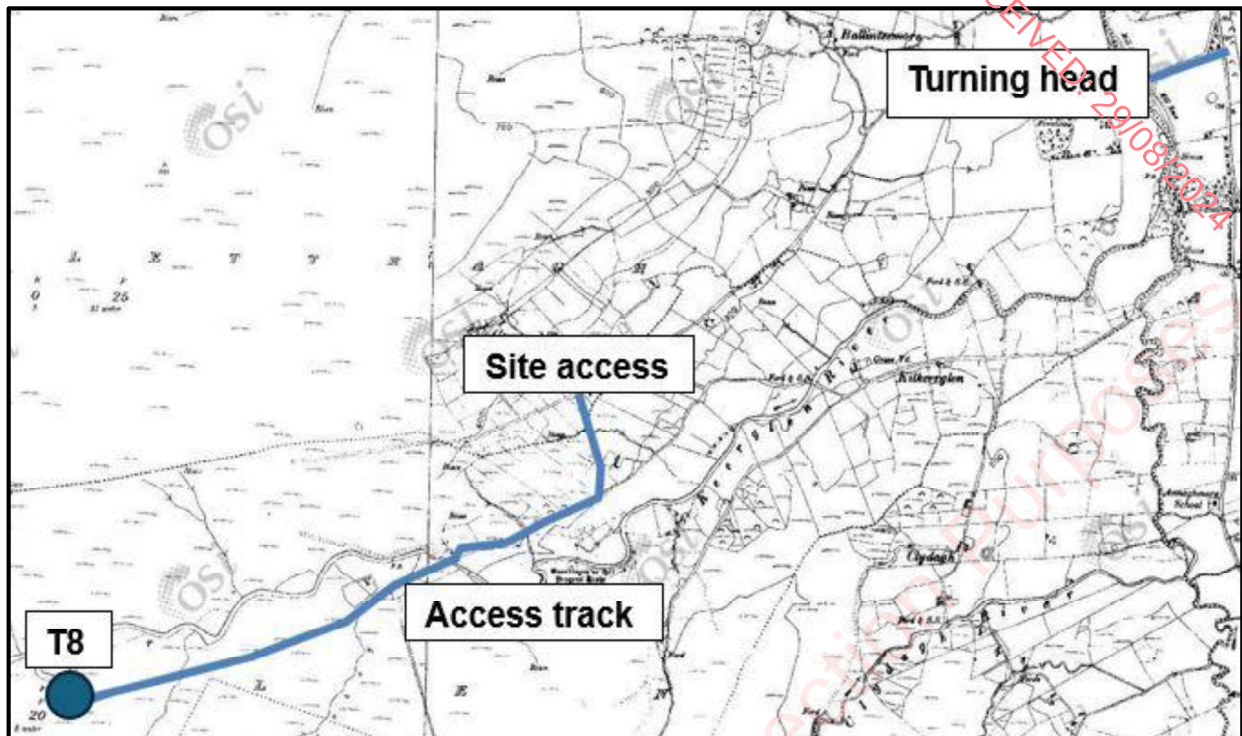


Figure 13.7 Extract from Third Edition Ordnance Survey map 1:10,560 (1917) showing location of Turbine 8, turning head, site access and access track

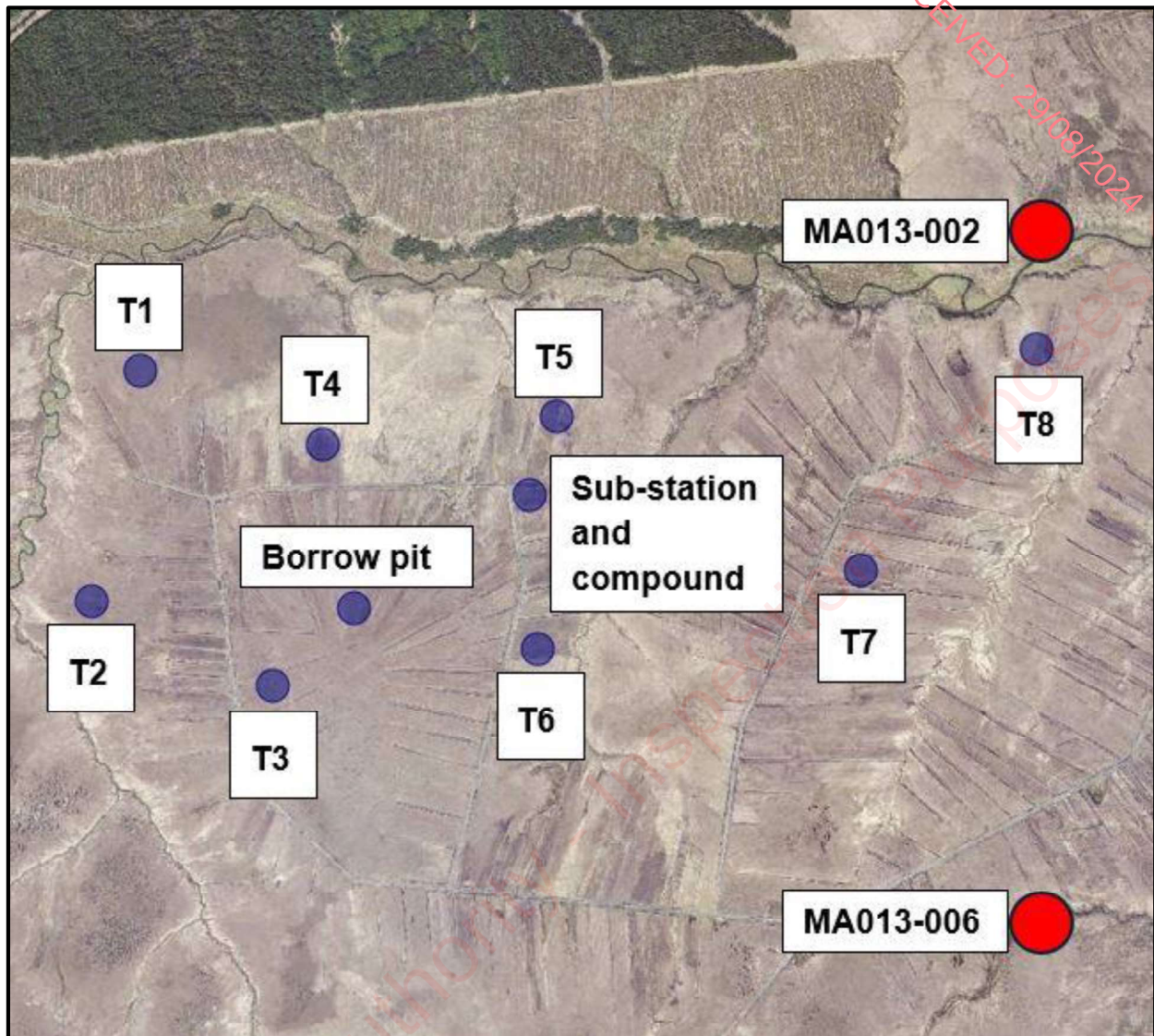


Figure 13.8 Aerial photograph showing location of Turbines 1 – 8, substation, compound and borrow pit and 2 no. RMP sites within the 1km study area

Plates



Plate 13.1 Location of Turbine 1, looking north-east



Plate 13.2 Location of Turbine 2, looking west



Plate 13.3 Location of Turbine 3, looking east



Plate 13.4 Location of Turbine 4, looking north-west



Plate 13.5 General location of Turbine 5, looking north



Plate 13.6 Location of Turbine 6, looking west



Plate 13.7 Location of Turbine 7, looking south



Plate 13.8 General location of Turbine 8, looking north-west



Plate 13.9 Location of Substation, looking south-east

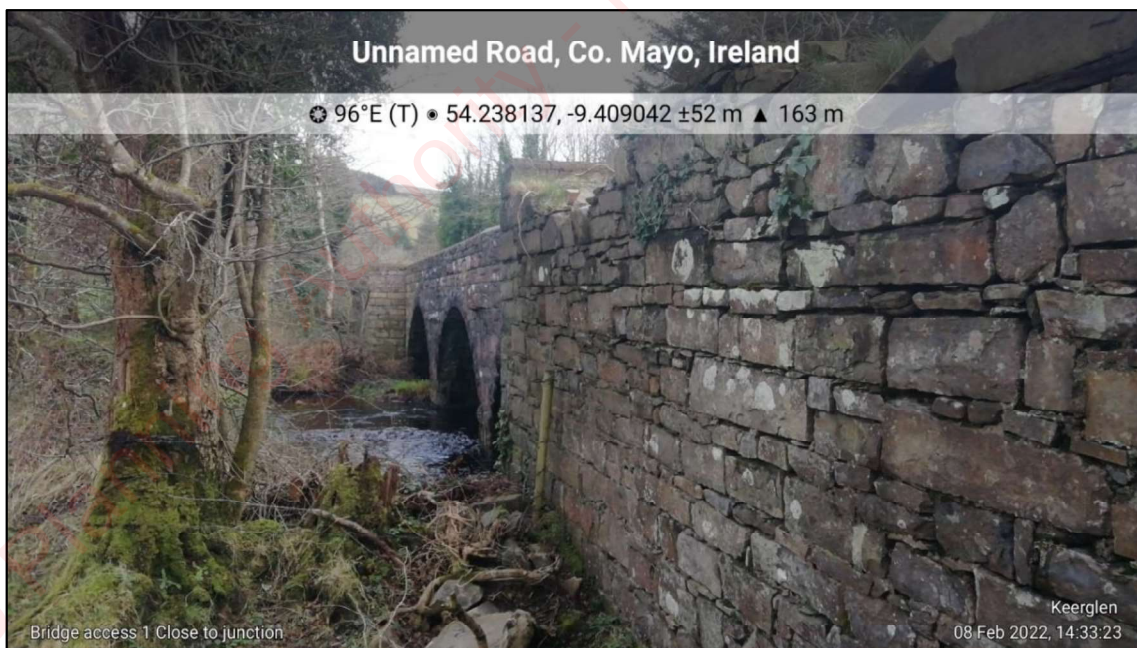


Plate 13.10 Ballinglen Bridge located approximately 85m west of the temporary roadway connecting the R315 and the L51723. This bridge is listed on the National Inventory for Architectural Heritage (Reg. No. 31301403)

13.11 References

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- ⁹ <https://www.duchas.ie/en/cbes/4428035/4370591/4476242?ChapterID=4428035>
- ¹⁰ According to the scope notes on the ASI database accessed at www.archaeology.ie. “Records classed as ‘Redundant record’ are those that fulfil one or more of the following criteria: (1) a record identifying a location where, according to documentary sources (e.g., published reference, cartographic sources) or personal communication, a monument might have existed, but which, on inspection, was found not to be an archaeological monument (e.g. a natural feature)...”. MA013-002 is listed on the statutory Record of Monuments and Places for County Mayo issued by the National Monuments and Historic Properties Service in 1996.
- ¹¹ Aldridge, R.B. 1961. The Routes Described in the Story Called *Táin Bó Flidhais*. *Journal of the Royal Society of Antiquaries of Ireland*, 91(1), 121-2. Accessed at <http://www.jstor.org/stable/25509420>
- ¹² *Ibid.*, 126.
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- ⁴⁰ Mayo County Council. *Mayo County Development Plan 2022 – 2028*. 2022. Mayo County Council.
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