

13 ARCHAEOLOGY AND CULTURAL HERITAGE

13.1 INTRODUCTION

This archaeological impact assessment (AIA) was undertaken with regard to a proposal to construct a wind farm, known as Drumnahough Wind Farm in County Donegal. A full description of the proposed development, development lands and all associated project elements is provided in Chapter 2 of this EIAR.

This chapter assesses the impacts on archaeology and wider cultural heritage from elements of the project for which development consent is being sought and all other project components including an alternative grid connection option via a proposed new on-site substation with battery storage facility.

13.1.1 Scope of Assessment

13.1.2 Conventions, Legislation and Guidelines

This report was undertaken with due regard to:

- National Monument Act, 1930, amended 1954, 1987, 1994 and 2004.
- Heritage Act, 1995.
- European Convention on the Protection of the Archaeological Heritage (the ‘Valletta Convention’) ratified by Ireland in 1997.
- Council of Europe Convention on the Protection of the Architectural Heritage of Europe (the ‘Granada Convention’) ratified by Ireland in 1997.
- Framework and Principles for the Protection of the Archaeological Heritage, 1999, Department of Arts, Heritage, Gaeltacht and the Islands.
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999.
- The conservation principles as set out by International Council on Monuments and Sites (ICOMOS) in the Venice and Burra Charters.
- The Architectural and Archaeological Heritage Objectives as detailed in the County Donegal Development Plan 2018-2024, Built Heritage Sections 7.2 and 7.3.
- The publication in 2004 of the Architectural Heritage Protection-Guidelines for Planners by the Department of the Environment Heritage and Local Government (DoEHLG).
- The Advice Series-A Guide to the Care of Older Buildings published by the Architectural Heritage Advisory Unit of the DoEHLG, 2007-2011.
- The Handbook of the National Inventory of Architectural Heritage (NIAH) of March 2013.

The conservation aims as stated in the Burra Charter are for the retention or restoration of historical significance with the minimum of physical intervention and that such intervention work be reversible, maintain the structure’s character and setting and that all conservation works should be undertaken following comprehensive research.

13.1.3 Methodology

The assessment was completed using a combination of (1) desk-based assessment of all available archaeological, historical, cultural and cartographic sources; (2) inspection of the proposed

Drumnahough Wind Farm site in July 2019, and a re-inspection of the site in July 2020 following design revisions; (3) inspection of the proposed Re-planting Lands in July 2020 and (4) desk based assessment of the turbine delivery route.

The desk-based assessment is defined as a programme of study of the historic environment within a specified area or site that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area. This research comprised of a desk-based assessment of all available archaeological, historical, cultural and cartographic sources relating to the development area:

- **Sites and Monuments Records / Record of Monuments and Places**

The Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland of the National Monuments Service (NMS) comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological notification (Refer **Appendix K-1**). The monument records are searchable online from the NMS (www.archaeology.ie).

- **Topographic Files of the National Museum of Ireland**

The National Museum of Ireland (NMI) Topographic Files of artefacts found in Ireland by townland were examined as well as the online searchable browser database of artefacts on the Heritage Maps produced by the Heritage Council, www.heritagemaps.ie.

- **Excavation Bulletin**

The Excavations Bulletin and its online database which contains summaries of all archaeological excavations carried out in Ireland since 1970 and has been edited by Isabel Bennett was also examined (www.excavations.ie).

- **Placename Studies**

Placenames (logainmneacha) are an important aspect of understanding the history and topography of a location particularly when used in association with the Ordnance Survey Name Books (OSNB). The general or baseline placename research source is an online GIS portal which was accessed in January 2020 (www.logainm.ie). However, local published sources and dictionaries were also accessed (Dinneen 1996; Frost 1978).

- **Historic Ordnance Survey mapping.**

Several historic maps were examined including: the 19th / 20th century Ordnance Survey Maps (refer to References **Section 13.7**).

- **Analysis of Aerial Imagery**

Aerial photographic coverage provides initial information on the terrain and its likely archaeological potential and is an important source of information regarding the precise location of sites and their extent. A variety of aerial photography was examined including aerial orthophotos from the National Monuments Service, Ordnance Survey websites.

The desk based cultural assessment of the turbine delivery route was entirely focussed on the 22 Nodes sections where minor upgrading works will be undertaken. Sources examined include: -

- Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) of the National Monuments Service (www.archaeology.ie).
- The Handbook of the National Inventory of Architectural Heritage (NIAH) of March 2013.
- County Donegal Development Plan 2018-2024, Built Heritage Sections 7.2 and 7.3.
- The pre-famine 1st Edition OSI 6" map of 1834.

13.1.4 Assessment Criteria

Determination of the significance of an effect will be made, in accordance with the terminology outlined in EPA *Draft Guidelines on Information to be contained in environmental impact assessment reports (2017)* Existing Environment

13.2 RECEIVING ENVIRONMENT

13.2.1 Description of the receiving lands

13.2.1.1 Proposed Turbines

The proposed 12 No. turbines (T1-T12) will be situated within the townlands of Carrickalangan and Meenadaura at the northern limits of the site and Cark townland to the south. The underlying parent bedrock comprises quartzite and pelite overlain by a soil cover of blanket peat. Nine of the turbines will be situated within existing forestry plantations while T1 will be situated on drained bog, and turbines T9 and T10 will be situated on the uplands of Cronaglack Hill.

13.2.1.2 Proposed Trackways

The proposed internal trackways will extend through the townlands of Cark, Carrickalangan, Meenadaura and Treankeel.

An existing relatively flat track network facilitating access to proposed turbines T1-T5 extends through the southern limits of the proposed windfarm between Ordnance Datum 262 and 265m, with new short spur branches proposed to connect to T1 and T3-T5 through existing forestry and cutover bog.

Proposed new track will be constructed between T5 to T12. A second trackway will be constructed to the proposed 110kV substation.

13.2.1.3 Proposed Underground Cable to the Permitted Lenalea substation

The proposed grid Connection Point at the permitted Lenalea substation is within the townland of Killymasny. Underground cable from the wind farm will be installed along existing forestry tracks and wind farm access tracks east from the site to the public road L-10142. The cable route will continue along the public road L-10142 for a distance of 750m before diverting north along private access tracks to the permitted 110kV Lenalea substation.

13.2.1.4 Proposed Borrow Pits

Two of the proposed Borrow Pits, (BP1, BP2) are situated in Cark townland within a bog planted with young immature trees close to the existing trackway. The third borrow pit (BP3) is located on the

uplands of Cronaglack Mountain in the townland of Meenadaura. The fourth proposed borrow pit (BP4) is located between proposed turbines T11 & T12 within existing forestry.

13.2.1.5 Alternative New Substation

The new substation associated with the alternative grid connection option will be situated in the townland of Treankeel, c.0.70km to the SE of the L-1622 3rd class road between Cloghan and Letterkenny. The land here comprises young and semi-mature forestry planted on bog. Peat cutting was in progress in the vicinity of the proposed substation site but external to the site boundary in the course of the fieldwork on the 4th and 5th of July 2019.

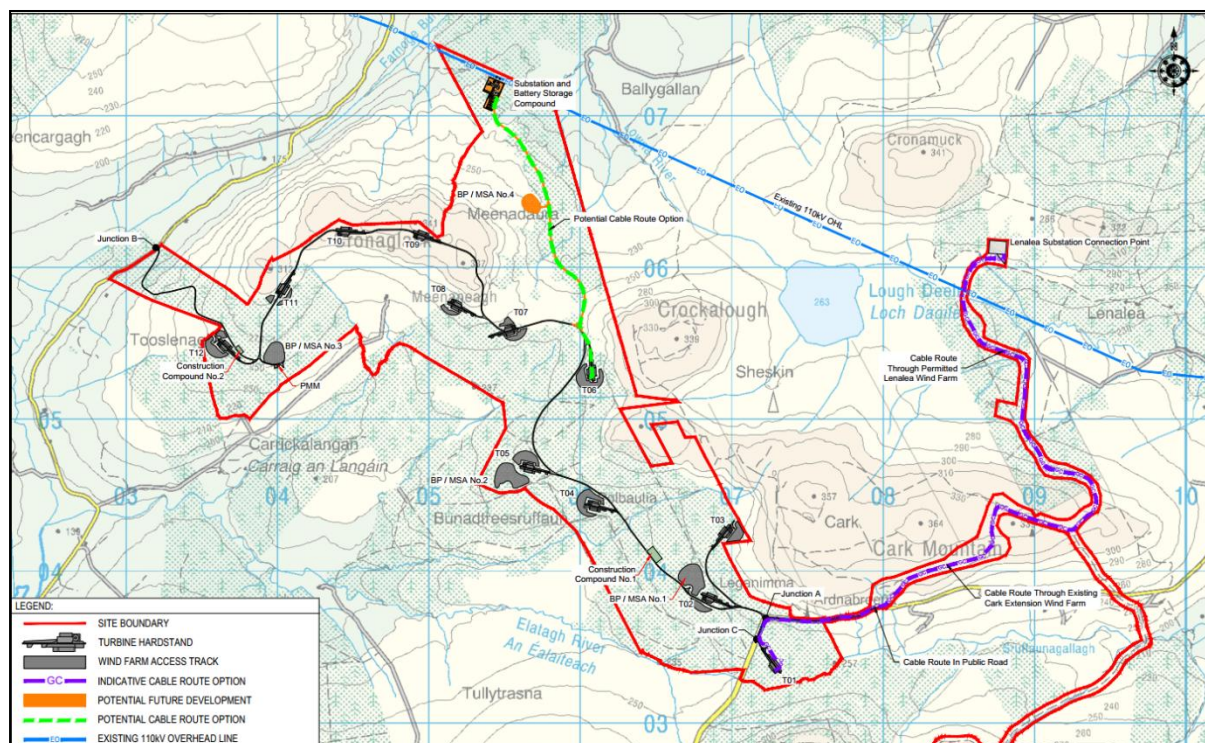


Figure 13-1: Proposed Drumnahough Wind Farm including alternative grid connection option.

13.2.1.6 Proposed Forestry Re-planting Sites

Proposed replanting sites have been identified and physically inspected viz:

- Pollacorrage, Co. Galway
- Craghera, Shessiv, Co. Clare
- Furroor, Kilcolumb, Reanagishagh, Lisroe Co. Clare
- Ballincolly, Co. Limerick
- Rathgoggan North, Co. Cork

The proposed replanting lands in the townland of Pollacorrage, Co. Galway comprises of agricultural grassland.

The proposed replacement lands in the townlands of Craghera and Shessiv, Co. Clare comprises of semi-natural and improved agricultural grassland.

The proposed replacement lands in the townlands of Furroor, Kilcolumb, Reanagishagh, and Lisroe, Co. Clare comprises of improved agricultural grassland.

The proposed replacement lands in the townland of Ballincolly, Co. Limerick consists of agriculture pastures and open grassland.

The proposed replacement lands in the townland of Rathgoggan North in Co. Cork and Co. Limerick consists of agriculture pastures and open grassland.

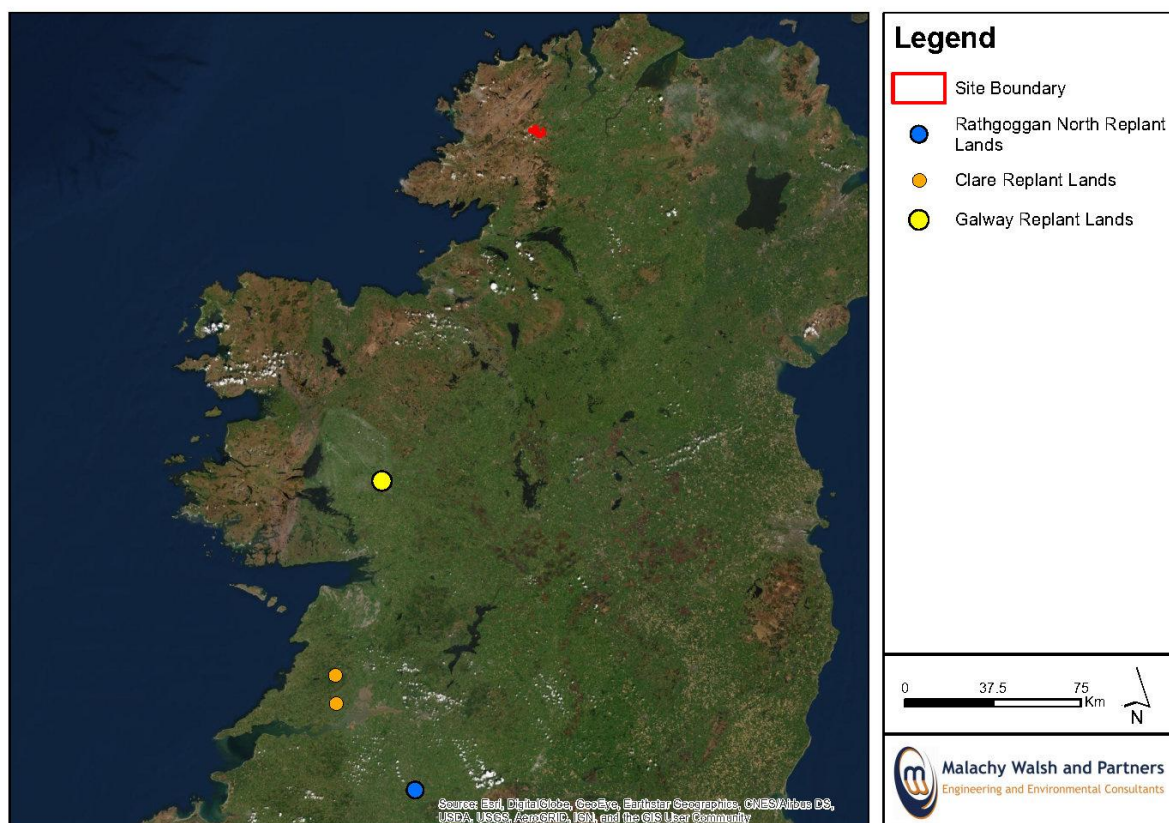


Figure 13-2 Locations of Proposed Replanting Sites

13.2.2 Placenames

Townlands comprise the smallest unit of land division in the Irish landscape and many may preserve early Gaelic territorial boundaries that pre-date the Anglo-Norman conquest. The layout and nomenclature of the Irish townlands were recorded and standardised by the work of the Ordnance Survey in the 19th century. The Irish roots of townland names often refer to natural topographical features, but some name elements may also give an indication of the presence of past human activity within the townland. For instance, placename elements such as *lis*, *dun* and *rath* indicate the presence of a ringfort; while *kill* and *temple* suggest an association with a church site.

In the context of this study, the proposed wind turbines including proposed grid connection options, proposed access tracks and new substation traverses four townlands in Co. Donegal. One townland has two names *viz* Meenadaura is also known as Drumnahough Mountain. This is interesting as the actual townland of Drumnahough is not situated within the limits of the proposed wind farm. Other sub-unit placenames (mountains etc.) are also included where annotated on the historic OSI maps (Table 13-2).

Table 13-1: Placenames within the proposed Drumnahough Wind Farm, Donegal

Townland	Irish Name	Translation
Carrickalangan	<i>Carraig an Langáin</i>	Toponymic: O'Logan's Rock
Treankeel	<i>An Trian Caol</i>	Toponym: <i>Trian</i> -third (land division) <i>Caol</i> -narrow
Cark	<i>An Chearc</i>	<i>Cearc</i> - hen
Meenadaura or Drumnahough Mountain	Mín na dTarbh or Droim na hUamha	Mín- smooth ridge / mountain pasture <i>Tarbh</i> -bull Smooth mountain pasture of the bulls? <i>Droim</i> - ridge <i>Uaimh</i> - cave or souterrain
Cronaglack (sub-unit)	<i>Cró na glac</i>	<i>Cró</i> - valley or enclosure (sheepfold?) <i>Glac</i> – hollow or glen sheepfold of the glen?
Meenaneagh (sub-unit)	<i>Mín an Fhia</i>	<i>Mín</i> - smooth ridge/ mountain pasture <i>Fia</i> - deer Smooth mountain pasture of the deer

The additional disconnected locations of proposed forestry re-planting areas associated with the proposed development traverse, to varying degrees, nine townlands (**Table 13-3**).

Table 13-2: Placenames of the forestry re-planting areas associated with the proposed wind farm

County	Townland	Irish Name	Translation
Site 1: Co. Clare	Shessiv	<i>Seiseamh</i> - possibly a sixth part	Land division: a ploughland c.120 acres
Site 1: Co. Clare	Craghera or possibly Cragreagh	<i>Creachaire</i> or <i>Creagh</i> <i>Ríabhach</i> -	Toponym: brown stony field
Site 2: Co. Clare	Kilcolumb	<i>Coill Columb</i> alternatively <i>Cill Cholaim</i>	<i>Coill</i> -wood <i>Columb</i> dove or pigeon <i>Cill</i> -church <i>Columb</i> personal name-St. Colm?
Site 2: Co. Clare	Reanagishagh	<i>Ré na gCiseach</i>	<i>Ré</i> -withy <i>Ciseach</i> -improvised pathway A wooden causeway / pathway / road made for passing over swampy ground
Site 2: Co. Clare	Lisroe	<i>Lios Rua</i>	<i>Lios</i> - fort (ringfort) <i>Ruadh</i> – red the red fort
Site 2: Co. Clare	Furroor	<i>Fór bharr</i> alternatively <i>Fo úr</i>	Toponym: hill top alternatively <i>Fo</i> -below / buried <i>Úr</i> - heathy / rushy
Site 3: Co. Galway	Poulacorrageune	<i>Poll an Chorraigiúin</i>	Toponym: possibly 'the hole of the noisy waters'
Site 4: Co. Limerick	Ballincolly	<i>Baile an Chollaigh</i>	<i>Baile</i> -town <i>Collach</i> -boar or <i>An Col(l)ach</i> -a surname, the town of the boar or the town of An Collach
Site 5: Co. Cork	Rathgoggan North	<i>Ráth an Ghogánaigh</i> <i>Thuaidh</i>	<i>Ráth</i> -ring-fort

The placenames within the limits of the proposed windfarm (**Table 13-2**) are for the most part upland toponyms with the possible exception of Drumnahough Mountain-the ridge of the cave or souterrain of the mountain. However, it is possible that the elements of the name originate with the townland of Drumnahough itself and not Drumnahough Mountain that is also known as Meenadaura which also shares the same toponymic element *droim* - ridge (**Table 13-2**). Nine placenames are recorded in the proposed replanting areas in counties Clare, Galway, Limerick and Cork (**Table 13-3**). Here toponyms are also prominent however, there are a number of placenames that relate to built cultural heritage features including:

(1) Lisroe- *Lios ruadh*- the red fort (ringfort). This is the only ringfort in the townland and is situated c.0.6km SSE of the nearest area of the proposed re-planting.

(2) Reanagishagh - *Ré na gCiseach* which identifies a particular form of wooden constructed pathway or causeway over swampy ground or bog often referred to as *toghers*. Examination of the historic OSI maps, particularly the 1st Ed. pre-famine 6" map of 1840 denotes a partially completed trackway / roadway which forms the northern boundary of one of the proposed re-planting areas. Today this is a local road which forms the north boundary.

(3) Kilcolumb- two possible translations. Frost (1978) translates it as *Coill Colm*-the wood pigeon's plantation. However, the alternative *Cill Columb*-in this writer's opinion the more likely candidate and relates to a church site- *cill*- church which is a recorded monument encompassing a children's burial ground, CL032-034, situated c.2km to the NE of the proposed re-planting area in the townland.

13.2.3 Archaeology of the wider study area within c.5km radius from centre of Proposed Wind Farm Site

Examination of the National Monuments Service Online Sites & Monuments Records (SMR) database revealed that there are no recorded archaeological monuments within the boundary of the proposed wind farm site at Drumnahough (www.archaeology.ie, accessed in July 2019 and re-accessed in July 2020). The SMR indicates evidence of human activity in a c.5km wider study area of the Drumnahough site dating from the Neolithic to the Early Medieval period representing a total of fourteen monuments (**Figure 13-3** and **EIAR Vol 3 Appendix K-1**).

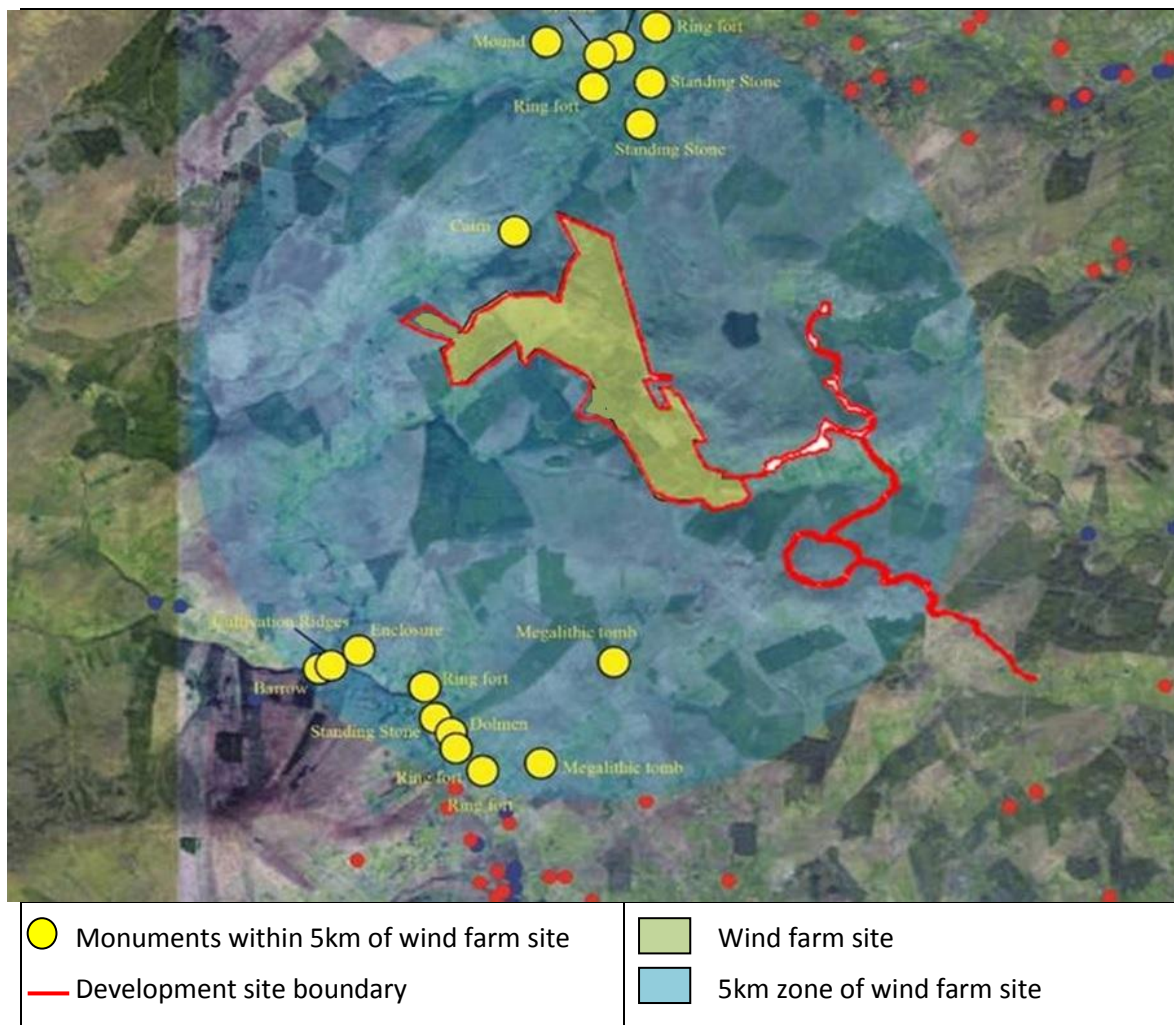


Figure 13-3 Archaeological zone of c.5km radius encompassing proposed Drumnahough Wind Farm (map extracted from SMR, www.archaeology.ie).

13.2.3.1 Neolithic Period

The earliest recorded monument within this 5km study zone is a megalithic court-tomb, DG068-002, that dates to the Early Neolithic period (New Stone Age), c.4000 - 3500 BC. Two other megalithic tombs are also situated further to the south (**Figures 13-3 and 13-4** and **EIAR Vol 3 Appendix K-1**).

The megalithic tomb DG068-002 is classified as a court tomb type and is situated c.2.4km to the S of the Drumnahough site boundary in the townland of Meenbog (**Figure 13-4**). Court tombs date to the Neolithic period and consist of a long cairn sub-rectangular or trapezoidal in shape with an orthostatically defined, unroofed court giving access to a longitudinally placed gallery to one or more chambers (Waddell 1998, 78). The court tomb DG068-002 is not marked on any of historical OSI maps. A description of the site is provided in the online SMR which notes that it ‘... consists of a court at the SSE leading to a ruined gallery. The structure stands in a cairn distinguished in part by its stony surface but in the main by a growth of bright green grass that contrasts with the darker, somewhat coarse grass on the surrounding bog. A line of rushes also helps to define the long sides of the cairn, which at its centre rises no more than 0.5m above the level of the bog. There is no trace of the cairn beyond the modern field bank that crosses the N end of the site. Immediately S of this field bank is a ditch (not on plan), its sides largely collapsed. The cairn is more or less trapezoidal in plan. It measures 20m N-S and narrows from 15.5m wide close to its southern end to 11m at the N. The court stones are incorporated in a low grass-grown spread of stones that seems to be the remains of a

small rectangular feature (pecked on plan), perhaps the base of a hut of relatively modern date. The two entrance jambs at the front of the gallery lie on the court perimeter. A single courtstone survives outside the western jamb, and there are two beside the eastern. Approximately 3.5m S of the outer one of these is an upright stone that may be another courtstone, but, as it is close to the apparent entrance to the hut-like feature, it may have been placed here as a door jamb of that structure. The entrance jambs to the gallery are 0.5m apart. The western one is 0.3m high, and the eastern one is 0.6m high. The courtstone adjoining the western jamb is 0.9m in exposed height and rises 0.4m above it. The courtstone beside the eastern jamb is 1.4m high and rises 0.8m above it. The next courtstone is 0.7m high. The possible courtstone to the S of this is 0.6m high. All but the front of the gallery is considerably concealed by cairn material. It is at least 6.5m long, is 1.5m wide at the front and seems to have narrowed toward the rear. The sides of the front chamber, which is c. 2m long, are represented by single stones. That at the E leans inward, and its outer face is largely hidden. It rises 0.3m clear of the surface of the cairn. The orthostat at the W is 0.2m high. A pair of longitudinally set jambs, 0.6m apart, form the segmentation between the front chamber and the rest of the gallery. That at the E is 0.35m high, and that at the W is 0.4m high. Three orthostats indicate the continuation of the gallery. The first of these, a sidestone, is next to the eastern segmenting jamb. It is exposed to a depth of 0.6m. Beside this to the N, part of the face of an otherwise concealed stone, at least 0.3m long, is exposed in a hole in the cairn. Its status is uncertain. The second orthostat, also a sidestone, is 2.4m N of the western segmenting jamb, and its northern end overlaps the third orthostat, which is set inside it. Both are exposed in a hole in the cairn measuring 2.8m long and 0.8m wide. The second is exposed to a depth of 0.9m, and the third rises 0.3m above it. At the southern end of the hole in which these stones are exposed, what appears to be a transversely set stone is visible at a depth of 0.4m below the top of the cairn. Its status is unclear. Approximately 1.4m N of the two orthostats on this side is a small stone, and 0.3m further N is the outer end of another, transversely set one. Both appear to be firmly set, but further investigation would be required to establish their status. The southern one rises 0.3m clear of the cairn. The northern one is the same height as the last. The design of the gallery beyond the front chamber is unclear. There seems to have been at least two further chambers here, and the possibility that there were four chambers in all cannot be ruled out' (www.archaeology.ie).

13.2.3.2 Bronze Age Period

The Irish Bronze Age (2400–500 BC) is associated with the arrival of metal-working techniques to the island and this technological advance resulted in the introduction of a new artefactual assemblage into the Irish archaeological record. This period was also associated with the construction of several new monument types including standing stones, stone rows, stone circles, cairns and *fulachta fiadh*.

In that context two standing stones, DG060-005 and DG060-015, are situated over 1.5km to the north of the boundary of the Drumnahough site (**Figure 13-4**). Standing stones appear to have served a variety of functions ritual and secular. Some were used as burial markers to designate the location of a cist grave. A cist is a simple slab-lined grave containing cremated remains or sometimes a single flexed articulated burial usually accompanied by grave goods. Other Standing Stones are believed to have served as territorial markers to denote the extent of tribal or familial land boundaries. Standing stones are prehistoric and generally date from the Bronze and Iron Ages (c.2400 BC - AD 500). Some are associated with early medieval ecclesiastical and burial contexts, c.5th-12th centuries, (ibid). There is no surface trace of these two standing stones today. However, their location is denoted on the 1st Edition of the OSI 6-inch map as 'standing stone'.



Figure 13-4: Nearest recorded monuments to the proposed Drumnaough wind farm site.

13.2.3.3 Early Medieval Period

The Early Medieval period is more or less coeval with the arrival of Christianity and continued up to the arrival of the Anglo-Normans in the late 12th century, between c.400–1169 AD. Settlement in this period (often referred to as the Early Christian or Early Historic periods) is best exemplified monumentally in a secular context by ringforts that are one of most numerous archaeological monuments found in Ireland. A single ringfort, DG060-004, is situated 1.3km to the north of the Drumnaough site boundary (Figure 13-4).

Ringforts are subdivided into those of earthen construction known as a *rath* or *lios* or those of dry-stone construction that are referred to as a *caiseal*, *caher*, *cathair*, *dún*. Ringforts are also referred to as *raths* derived from the Old Irish word *ráth*, meaning ‘earthen rampart’ while others are known as *lios* or *liss* which refers to the ringfort’s interior space. The morphology of ringforts generally comprises of an earthen enclosing bank that was constructed by the casting up of material by the excavation of an outer circular or sub-circular ditch otherwise known as a fosse. In more prestigious examples there can be two (bi-vallate) or three (tri-vallate) enclosing banks and ditches. A contiguous wooden palisade was often built on top of the enclosing bank and an entrance preference at the south-east often across a small causeway. Ringforts average between 20m-30m in diameter, however much larger examples are known. Their size indicates that ringforts were most likely occupied by extended and dispersed family units and were probably largely self-sufficient. The interior would have contained features such as domestic dwellings, outhouses, animal pens, food processing structures, craft areas, hearths and souterrains (for storage and refuge). A mixed economy would have been practised which would have involved cereal growing and animal husbandry, in particular, dairying. Evidence of corn grinding, iron working, glass manufacture,

spinning and weaving and food preparation has been recorded in association with domestic and animal timber dwellings and structures. According to Stout (1997, 24), the majority of ringforts were constructed over a three-hundred-year period between the start of the 7th century and end of the 9th century AD.

One of the features frequently found within ringforts are souterrains and as their name suggests, comprise artificial underground or semi-underground chambers with associated creep-ways or crawl-ways. These chambers are generally drystone built like beehive huts or earth dug or a combination of both. The placename Drumnahough is indicative of a souterrain as the second element in the word is possibly derived from the Irish word *Uaimh* which can refer to a cave or souterrain. Souterrains are often denoted as 'Cave' in ringforts on the historic OSI maps.

13.2.3.3.1 Ringfort DG060-004

A ringfort, DG060-004, is situated c.0.7km to the W of the standing stones and c.1.3 km to the N of the Drumnahough site boundary (**Figure 13-4**). The ringfort is denoted on the pre-famine 1st Edition OS 6-inch map as a univallate enclosure. According to the online SMR only '*... a small portion of the W side of the enclosing bank survives to a height of 1.75m internally. The bank is earthen but contains some of stone. It is probably the remains of a destroyed ringfort*' (www.archaeology.ie).

13.2.3.3.2 Cairn DG060-010

The closest recorded monument to the Drumnahough site boundary is an unclassified cairn, DG060-010, situated c.680m N of the northern limits of the site in the townland of Tullyhonour (**Figure 13-4**). There are several differing types of cairn, however, the precise nature of this cairn is unclear and therefore recorded as unclassified. Cairns can date to any period from prehistoric times onward (www.archaeology.ie). The cairn, DG060-010, is denoted on all historical OSI maps as a *Carn* and is known locally as *Leachtas*. The word 'leacht' is derived from the Irish meaning a slab, grave, cairn or sepulchral monument and consequently may date to the Early Medieval period (www.archaeology.ie). Furthermore, *leachts* were also used as altars and several are recorded in Early Christian ecclesiastic sites. In that context the cairn is tentatively assigned in this report to the Early Medieval Period

The description of the cairn in the SMR notes that it '*...consists of one half of a subcircular feature c. 10m in diameter formed by a bank of earth and stone. This runs into the modern earthen bank along the NE-SW road which seems to have destroyed the NW half of this site. The interior is now used as a gravel dump and its original nature is unclear. It is peculiarly situated on the edge of a steep hill of rough pasture falling sharply SE to a stream and was formerly overhung by higher rock outcrop to the NW now much quarried*', (ibid).

13.2.4 Excavations Ireland Database

Examination of the database of licensed archaeological excavations undertaken in Ireland (www.excavations.ie) record that no archaeological excavations took the place within the limits of the Drumnahough site boundary. However, a series of archaeological investigations, monitoring, testing and excavations, were carried out with regard to the existing turbines in the wider study area with negative results. These archaeological works included:

- Licensed monitoring of peat removal and other ground disturbance activity was undertaken at Cark Mountain in June-July 1997 by the author under the licence 97E0267. Nothing of archaeological interest was found (Dunne 1999).

- Archaeological testing under licence 04E0444 was subsequently undertaken across the site of a further twelve turbine windfarm at Cark townland. No evidence of archaeological activity was found (www.excavations.ie)
- An archaeological evaluation was carried out under licence 13E0342 with regard to the construction of three wind turbine bases and transformers at Meenbog, Co. Donegal with negative results (*ibid*).

13.2.5 Aerial Imagery

A suite of aerial imagery was examined including ortho imagery available from OSI (www.osi.ie) which includes B&W imagery from 1995 and colour imagery from 2000 and 2005. Higher resolution aerial imagery from the OSI via the NMS portal (www.archaeology.ie) was also examined. Sequential aerial imagery (taken between 2006 and 2019) of the proposed wind farm was also examined on Google Earth. Nothing of an archaeological nature or significant wider cultural feature was noted.

13.2.6 National Museum of Ireland Finds Dataset

There are no records of finds recorded in any of the townlands in the study areas. This dataset has been collated using data from a number of sources, in particular the Topographical Files of the Irish Antiquities Division, National Museum of Ireland (www.heritagemaps.ie).

13.2.7 Archaeological Landscapes

Examination of the Donegal County Council Development Plan, Built Heritage Sections 7.2 and 7.3, 2018-2024 revealed that the proposed Drumnahough Wind Farm is not situated within a designated archaeological landscape.

13.2.8 19th Century Ordnance Survey Maps

Examination of the extents of the Drumnahough site boundary on the pre-famine 1st Edition OSI 6" map of 1834 revealed no archaeological monuments within the study area. However, examination of the historic 19th century OSI maps did reveal several malt kilns as well as other vernacular structures some of which are related to or associated with the kilns (refer Wider Cultural Heritage **Section 13.2.10** below).

13.2.9 Field Inspection

Archaeological field inspection of all initially proposed turbine sites (T1-T12) as well as the alternative grid connection infrastructure comprising a new substation and battery storage facility, proposed borrow pits and proposed accessways was undertaken in ideal weather conditions in July 2019. Written site notes and a photographic record of all sites was undertaken. Following design layout changes a re-inspection of the precise locations of the turbine pads (T1, T4, T5, T7, T11 and T12) and borrow pits was undertaken in late July 2020. Furthermore, all of the five proposed re-planting lands were also physically inspected in July 2020.

13.2.9.1 Turbine 1

T1 is situated within very wet uneven bogland surrounded by forest (**Plate 13-1**). Nothing of archaeological interest was noted at T1.



Plate 13-1: T1 location (from SW).

13.2.9.2 Turbine 2

T2 is situated in young coniferous forestry within uneven, rough boggy ground (**Plate 13-2**). Nothing of archaeological interest was noted at T2.



Plate 13-2: T2 location (from NW).

13.2.9.3 Turbine T3

T3 is situated at the edge of mature forestry on bogland. The site comprises of very rough, uneven mountain pasture abutting the forest. Nothing of archaeological interest was noted at T3.

13.2.9.4 Turbine T4

T4 is situated within coniferous forest with fell down trees. Nothing of archaeological interest was noted at T4.

13.2.9.5 Turbine 5

T5 is situated within very wet bogland with some fell down trees (**Plate 13-3**). Nothing of archaeological interest was noted at T5.



Plate 13-3: T5 location (from SW).

13.2.9.6 Turbine T6

T6 is situated within thinned area of mature trees comprising of high grass covered clearings (**Plate 13-4**). The site for T6 comprises very rough bogland. Nothing of archaeological interest was noted at T6.



Plate 13-4: T6 location (from S).

13.2.9.7 Turbine T7

T7 is situated within immature coniferous forest. The surrounding landscape consists of uneven rocky bogland terrain overgrown with high grass (**Plate 13-5**). Nothing of archaeological interest was noted at T7.



Plate 13-5: T7 location (from NE).

13.2.9.8 Turbine T8

T8 is situated at the edge of a mature forest. The surrounding landscape consists of uneven rocky bogland terrain overgrown with high grass (**Plate 13-6**). Nothing of archaeological interest was noted at T8.



Plate 13-6: Location of T8 (from NW).

13.2.9.9 Turbine T9

T9 is situated on the summit of Cronaglack Hill. The turbine site comprises uneven rocky bogland with a panoramic view encompassing all the surrounding landscape (**Plate 13-7**). Nothing of archaeological interest was noted at T9. In a wider cultural visual context, the remains of a Malt Kiln settlement at Meenaneagh are clearly visible from there (**Plate 13-8**).



Plate 13-7: Location of T9 (from SE).



Plate 13-8: View from N on location of T9 on summit of Cronaglack Hill. T9 overlooks the Malt Kiln settlement at Meenaneagh to centre of image.

13.2.9.10 Turbine T10

T10 is situated on the lower slope of Cronaglack Hill in the Meenadaura / Drumnahough Mountains. The site at T10 comprises of open, very rough bogland covered with high tufty grass. No archaeological monuments or features were noted at T10.

13.2.9.11 Turbine 11

T11 is situated within immature coniferous forest on uneven bogland (**Plate 13-9**). Nothing of archaeological interest was noted at T11.



Plate 13-9: T11 location (from NW).

13.2.9.12 Turbine 12

T12 is situated within coniferous forestry on wet and uneven bogland. Nothing of archaeological interest was noted at T12.



Plate 13-10: View of the forestry where T12 will be located (from NE).

13.2.9.13 Proposed underground cabling to permitted Lenalea substation

Medium voltage underground cabling from the wind farm will be installed along existing forestry tracks and new wind farm access tracks east from the site to the public road L-10142. The cable route will continue along the public road L-10142 for a distance of 750m before diverting north along existing and consented private access tracks to the permitted 110kV Lenalea substation.

According to the National Monuments Record (NMR) Sites and Monuments Record, there are no recorded monuments or structures located within the boundary of proposed underground cable route. No National Inventory of Architectural Heritage (NIAH) structures are located within the boundary of the underground cable route. Archaeological assessments along the route of the access roads, in which it proposed to install the underground medium voltage cables from the wind, have previously been carried out as part of the permitted Cark wind farm and Lenalea wind farm developments. Nothing of archaeological interest was noted.

13.2.9.14 Substation and Battery storage facility

The alternative grid connection option which comprises a proposed new substation and battery storage facility is situated on the northern slope of Meenadaura or Drumnahough Mountain, c.400m to the W of River Swilly (**Figure 13-1** and **Plate 13-11**). The site comprises of thinned young and semi-mature trees with some clearance gaps and linear tree cutting along existing overhead electric cables. The ground there consists of rough, uneven bog land overgrown with high grass and heather here and there. Nothing of archaeological interest was noted at the location of the proposed substation and battery storage area.



Plate 13-11: Proposed location of new substation (from NE).

13.2.9.15 Proposed Borrow Pits

Three proposed borrow pits (BP1, BP2 and BP4) were archaeologically inspected in July 2020. Borrow Pits, (BP1, BP2) are situated within a bog planted with young immature trees close to the existing trackway (**Plate 13-12**). Borrow pit 4 (BP4) is located between proposed turbines T11 & T12 at the edge of mature forestry to the north. Nothing of archaeological interest was noted during site inspection of the three sites. Site of proposed Borrow Pit 3 (BP 3) is located on the uplands of

Cronaglack Mountain was not visited due to inaccessibility but given the findings of the field inspection of three other sites and desk-top assessment results this is not seen as a concern.



Plate 13-12: General location of Borrow Pit 1 (from SE).

13.2.9.16 Proposed Trackways

The majority of the proposed trackways are within the townland of Carrickalangan servicing turbines T12-T7. From T7 the trackway extends eastwards and crosses the townland boundary with Meenadaura (aka Drumnahough Mountain) where it then connects at a T-junction. At the T-junction the trackway extends north to service the proposed substation while the southern section connects to T6-T1. The trackway crosses the townland boundary into Cark immediately south of T6.

The southern trackway network connecting T6-T1 extends mostly along an existing windfarm track with proposed new spur branches to the each of the six turbines.

The vast majority of proposed trackways were archaeologically inspected. However, a small section of the northernmost section of the trackway near the proposed substation was not fully examined due to presence of dense forestry at this location although given the findings of the field inspection elsewhere and desk-top assessment results this is not seen as a concern.

Field inspection of the trackway revealed nothing of archaeological interest.

The northern track network connecting T12-T7 extends along the uplands, summit and on the southern slope of Meenadaura or Drumnahough Mountain. Field inspection revealed no previously unrecorded archaeology here. However, in a wider cultural context the remains of the Malt Kiln settlement at Meenaneagh are manifest above ground level. The proposed accessway extends in a general E-W direction c.170m to the N of the relict remains of the 19th century industrial production settlement (**Figure 13-5**).

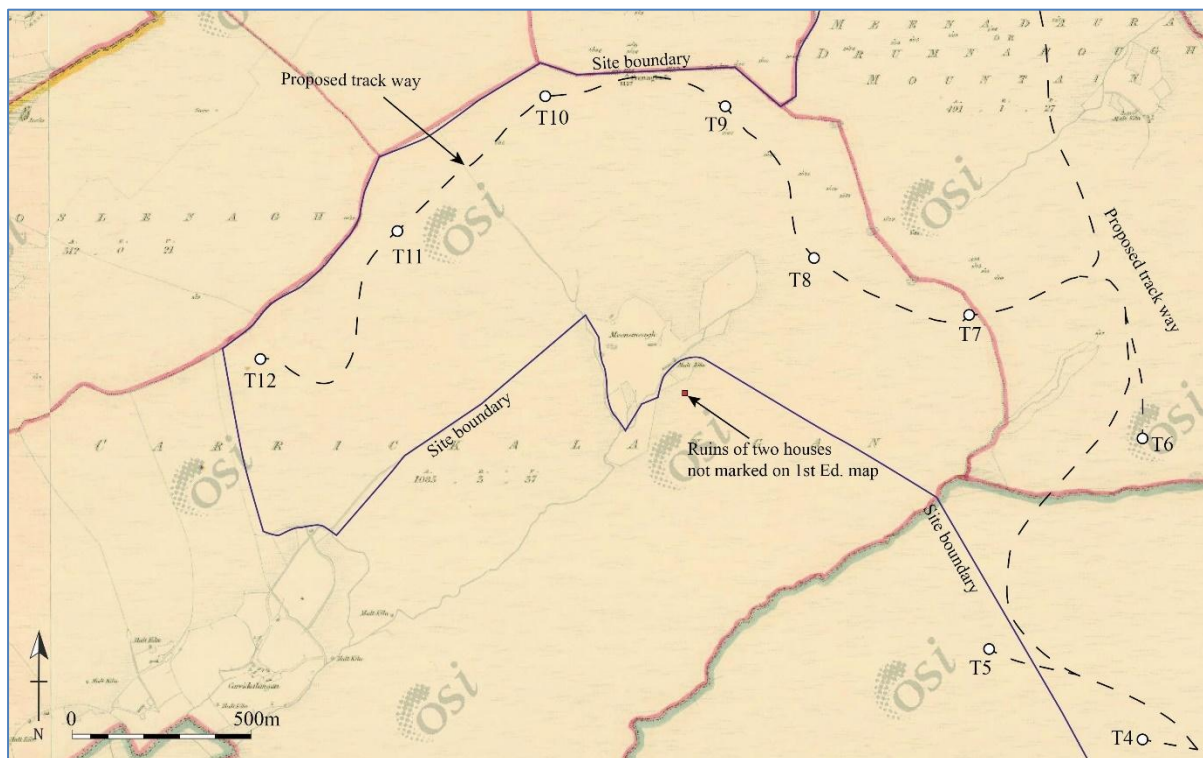


Figure 13-5: Extract from 1st Ed. OSI 6'' map with proposed accessways overlain.

13.2.10 Wider Cultural Heritage

In the wider cultural context several vernacular built-heritage structures are denoted on the historic OSI maps. Many of these structures are denoted as Malt Kilns and appear to be associated with upland settlement plots.

Three areas, designated for the purposes of this report as three distinct zones of cultural interest and further designated as Malt Settlement A, B and C (**Figures 13-6 to 13-8**), were noted on the 1st Ed. OSI maps. The areas reflect rural upland dispersed settlements that were clearly associated with production of malt. These zones of cultural interest were assigned a 20m buffer mapped from their outermost limits thus creating polygonal shape zones (**Figure 13-6**).

The malt settlements comprise a myriad number of upland dispersed rural farm settlements with a distinct focus on the production of malt to such an extent that collectively it should be viewed as an industrial level.

Field inspection of the Drumnahough site revealed that upstanding relict remains of several of these upland settlement structures survive today (**Plates 13-14 to 13-16**). According to the SMR a malting kiln is described as *'a structure with a pyramid roof and capped vent in which barley is dried. Found in association with a malt house. These date from the 17th century AD onwards'* (www.archaeology.ie).

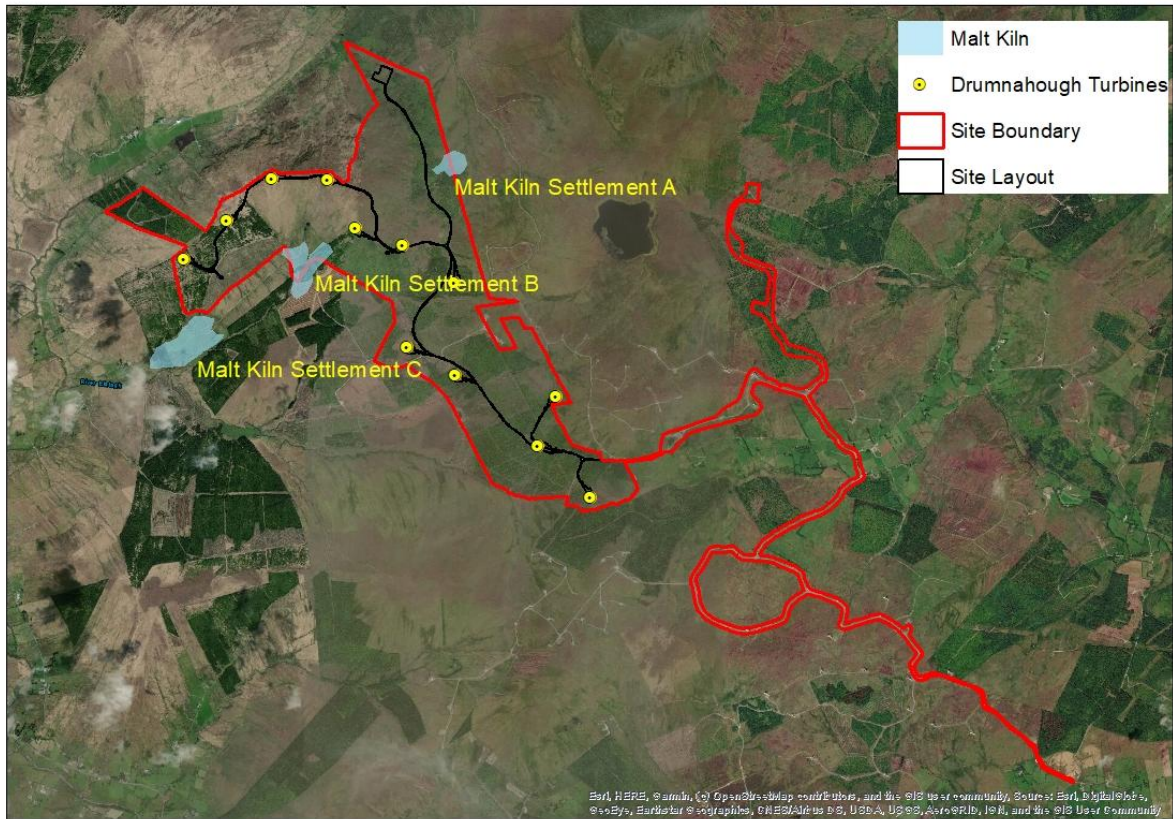


Figure 13-6: Proposed Drumnahough Wind Farm with Malt Settlement Sites A, B and C highlighted in blue.

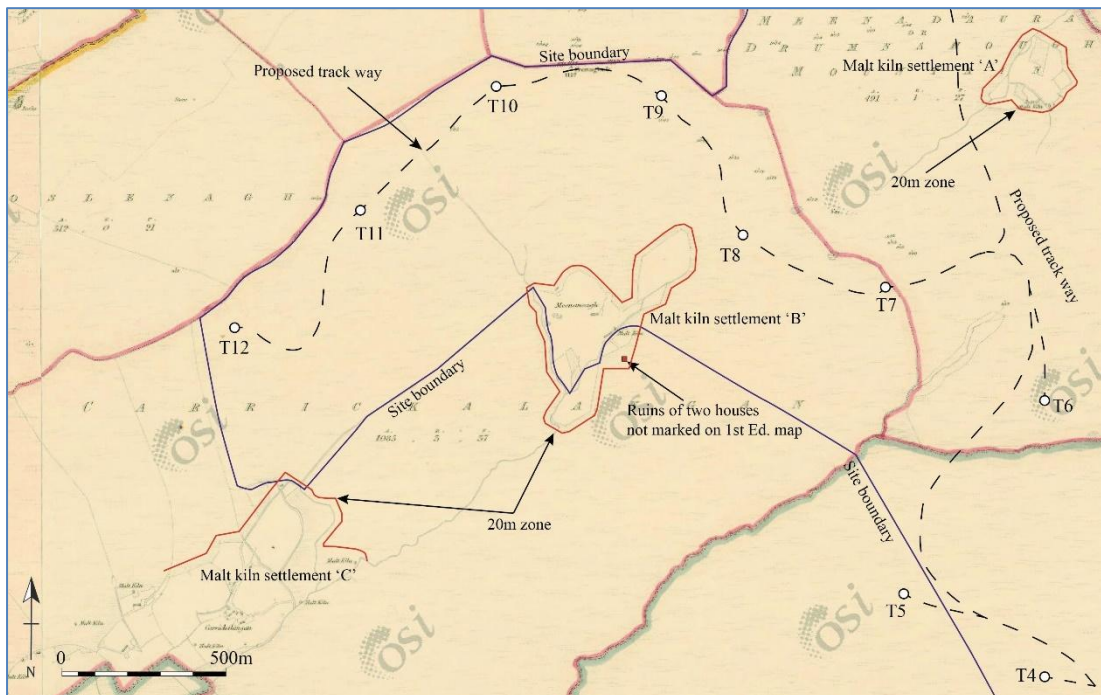


Figure 13-7: Extract from the 1st Ed. pre-famine OSI map of c.1834.

13.2.10.1 Malt

Malt is artificially germinated grain, usually barley, and is one of the main ingredients in the production of beer and whiskey. The process of its manufacture requires a partial germination of barley grains which in turn activates enzymes in the grain to convert some of the starch into sugar (Rynne 2006, 236). This germination process was closely monitored in order to conserve the amount

of saccharine in the sprouting barley. The germination process was arrested at the critical point by kilning. The sugar was then fermented at the brewery or distillery to create alcohol. Malt also was, and still is used in the food industry including the production of biscuits, breakfast cereals, vinegar and bread while dark malt was also used for food colouring. Traditionally the malting was done in four processes viz: - steeping, couching, flooring and kiln-drying (ibid).

For at least the last 500 years malt has been produced in purpose built maltings with kilns often attached to cure the green malt. These buildings are known as 'maltings' or 'floor maltings' as the germinating barley was spread out on the floor to grow. Maltings were generally purpose built with long elevations. Several of the structures denoted on the 1st Edition OSI map are particularly linear and may reflect these maltings.

13.2.10.2 Taxation on malt

From 1644 until 1880 a tax was imposed on malt as it was a high revenue earner. Between 1827 and 1880 revenue officers rigorously enforced the tax. By the 1820's the government had so many taxes that there were only 20 licensed distilleries in Ireland. As a corollary to this there were many illicit stills in operation, particularly in Donegal which was prolific in producing poitín. Donegal Poitín was renowned for its quality and the remoteness of much of the county allowed its production with little fear of being caught or of confiscation.

13.2.10.2.1 Aeneas Coffey

Aeneas Coffey was appointed as Acting Inspector General of Excise for all of Ireland who applied himself to his task with vigour and survived many skirmishes with illicit distillers and smugglers particularly in Donegal where it was rife. Coffey referred to distilling in the mountainous parts of Donegal as being where illicit distillation '*has been carried on from time immemorial and been the principal occupation of almost the whole population*'. Aeneas Coffey was a very pragmatic man and being very aware of the shortcomings of the law he proposed many solutions to the issues particularly those that hampered legal distillers. In the early 1820's his proposals to the Parliamentary Commission included the formalising of the spelling of Irish Whiskey and Scotch whisky which was solidly backed by the Irish Distillers. Coffey was certain that it was viable to distil legally and that illicit distilling would ultimately disappear. In 1823 Coffey assisted in the setting up of the Excise Act which sanctioned distilling of whiskey for a licence fee of £10. The following year Coffey resigned and went into the distilling business himself setting up the Aeneas Coffey Whiskey Company in 1830. Coffey also patented his own design modification to the standard column still to produce a better, lighter spirit with a higher alcohol content. His still became widely used and became the basis of every column still used ever since. To many, Aeneas Coffey is to whiskey what Arthur Guinness is to porter. The last legal distillery was established in 1814 by William Leathem at Burt, Speenoge, NE of Letterkenny Co. Donegal, and c.32km NE of the Drumnahough Wind Farm site. To avoid the competition from the illicit distillers he produced high quality grain spirit which he matured for at least a year. By the late 1830's production was at around 200,000 gallons a year and there were 60 people on the payroll. With predominantly home market customers, the distillery foundered due to a strong temperance movement, declining population through emigration following the Great Famine and a switch of drinking tastes towards beer and porter.

13.2.10.3 Beer

As well as whiskey malted barley was also used to make beer. In the early Irish sources, beer (*cuirm*) is referenced many times and was 'clearly a drink of great social importance' (Kelly 1998, 332). Several early texts extol beer as an important expression of hospitality and honour to the host who

provides it. 'In an Old Irish mythological text, the reputation of a king is dismissed in disparaging terms because his guests did not leave his house with the smell of beer on their breath' (ibid).

The malting process of the barley increased its value to that of wheat (ibid, 245). In the law-text *Bretha Nemed Toísech* a bushel of malt was valued at the same price as a bushel of wheat. The law-text also records that a quantity of malt (*mraich* or *braich*) was included in the annual food-rent which a base-client must give his lord (ibid 246). The law-text *Cáin Aicillne*, gives an account of how the malting process takes place and refers to *mraich na trí cóicthiges* – 'malt of three fortnights' (ibid). Kelly advises that it is best to accept the period as fifteen days which requires an interpretation of a *lá* to be a period of 12 hours. The process of malting began by the soaking of the barley for 24 hours then drained for 36 hours (*trí lá*) and then covered, most likely with straw, for four and a half days after which it is exposed for three days. It is then piled into heaps and kept for five days after which it is then raked (*círad*) and left in ridges (*ina imairib*) which completes the fifteen-day process. The grain is then ready for kiln drying (*tírad*) (ibid).

Before the malt is accepted as a food-rent it must be subjected to testing three times most likely by the lord's brewer or *scóaire* who must ensure it has the right smell and consistency. The final test is by making a small cake or tart (*toirtín*) to check its flavour and wholesomeness. If the malt passes all the tests, the maltster is not held responsible if faults occur later in the brewing (ibid 247).

Beer was the staple drink in Ireland prior to the introduction of tea and coffee and remained the staple for many of the poorer class who could not afford the latter. Prior to the 18th century the malting industry and the brewing industry were generally domestic small-scale operations. However, while a household could produce its own beer it was unlikely that they could make malt, unless on a farm. In the 17th & 18th centuries malthouses were often built where the product was needed. This continued well into the 19th century in farms in rural areas and are clearly evident in such numbers in Donegal as to be viewed at almost an industrial level.

During the 18th century the Irish parliament used taxation to encourage brewing at the expense of distilling, reasoning that beer was less harmful than whiskey. In the 1760s about 600,000 barrels of beer were brewed annually in Ireland. In the 1760s the Royal Dublin Society offered prizes to brewers who used the most Irish hops and those that produced the most porter.

By the beginning of the nineteenth century, there were over two hundred breweries in the country, fifty-five of them in Dublin. In the nineteenth century, the number of breweries fell to about fifty, and by 2007 only about twelve remained.

13.2.11 Malt Kiln Settlement Sites

Malt Settlements A and B are the most relevant to this report as both are situated within or straddling the limits of the proposed site boundary while the third, Settlement C, abuts the SW boundary of the proposed development site. In that context Malt Settlement C is not discussed here.

13.2.11.1.1 Malt Kiln Settlement A

Malt Kiln Settlement A is situated straddling the NE boundary of the Drumnahough site on the eastern upland slopes of Cronaglack in the townland of Meenadaura at c.210m OD (**Figure 13-5**). A section of the proposed development's trackway extends in a general N-S direction c.50m to the west of the settlement site. The pre-famine 1st Ed. OSI map of 1834 denotes this site as a cleared upland valley pasture partially enclosed within an otherwise rough mountain environment and watered by two streams that converge in the site. Three small and one large linear structure are

denoted on the map annotated as *Ruin of Malt Kiln*, (**Figure 13-7**). The long linear structure is possibly the malting house.

Today Malt Kiln Settlement A is partially captured within mature forestry along its eastern boundary. However, the relict remains of the Malt Kiln structure is discernible on the high-resolution BING aerial imagery (**Figure 13-8**).

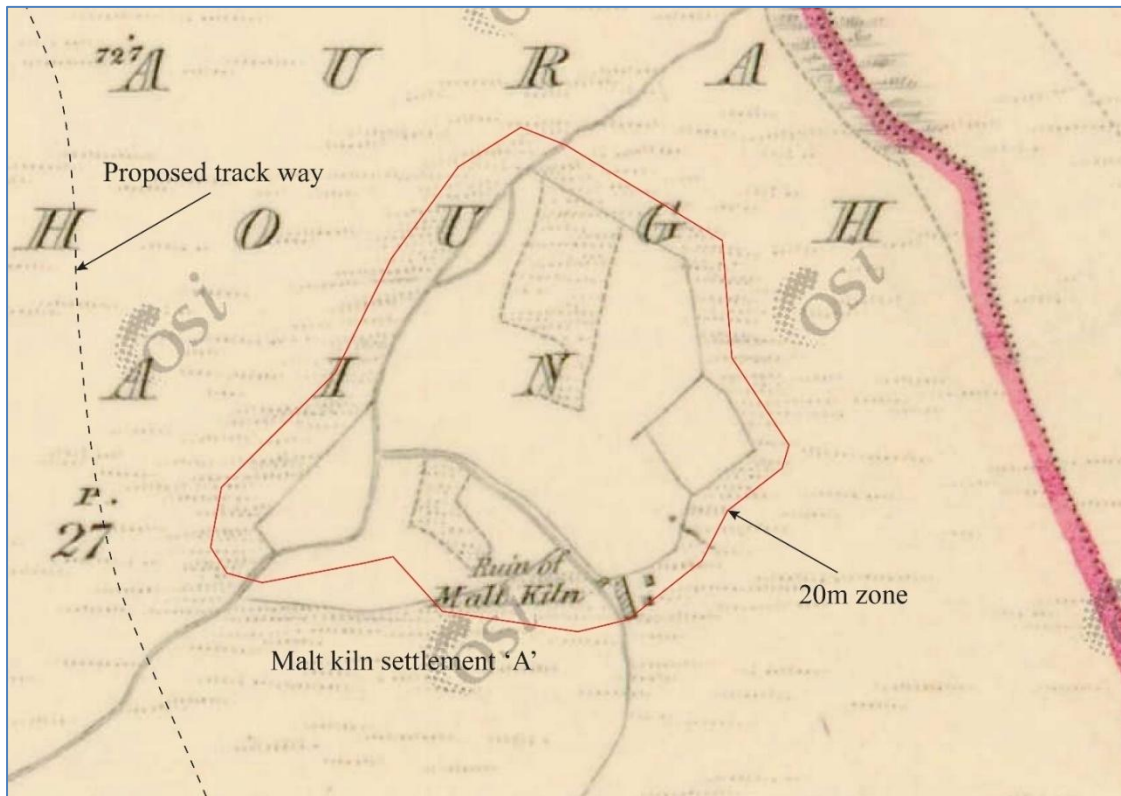


Figure 13-8: Malt Kiln Settlement A in Meenadaura. Note the 20m buffer and location of the Drumnahough Wind Farm trackway to the west.



Figure 13-9: General location of Malt Settlement A encircled with relict structure arrowed, (extracted from BING aerial imagery).

13.2.11.1.2 Malt Kiln Settlement B

Malt Kiln Settlement B is situated in the townland of Carricknalagan and is further identified as a sub-unit of the townland annotated as Meenaneagh – *Mín an Fhia* which can be translated as the ‘smooth upland pasture of the deer’ (Figure 13-10 and see Section 13.2.2 above, Table 13-1). The pre-famine 1st Edition OSI 6” map of 1834 denotes a cleared upland valley settlement at c.270m OD. The site straddles two rivulets whose confluence is located at the S limits of the site (Figure 13-10). In a built heritage context, the settlement includes three rectangular structures and two kilns, one of which is annotated as Malt Kiln on 1st Edition Map. The settlement is partially enclosed. The annotated Malt Kiln is situated beside the longest of the three structures two of which are beside one of the rivulets / streams. It is most likely that this long structure was the malting house. Two late 19th century structures also survive at the site today (Plate 13-16). These structures are not denoted on the 1st Ed OS map.

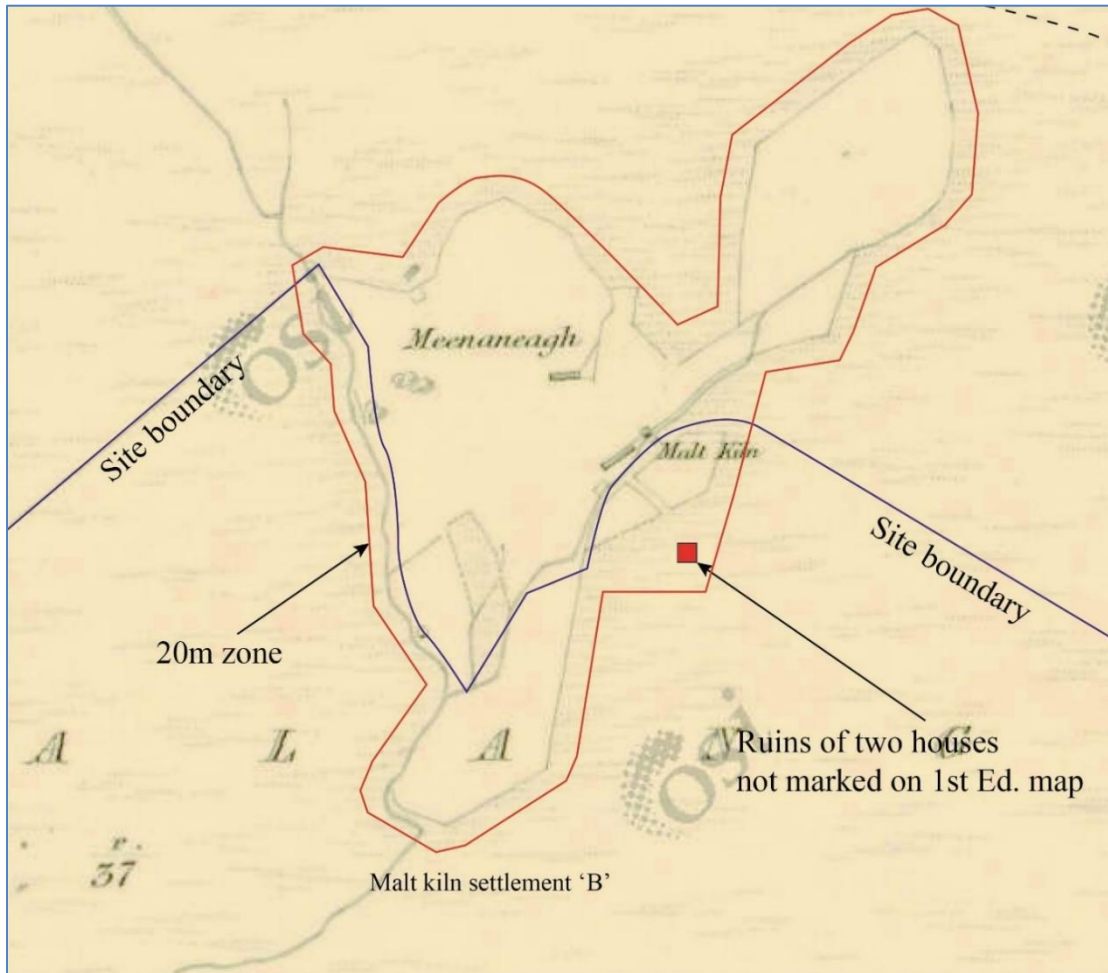


Figure 13-10: Malt Kiln Settlement B at Meenaneagh. Note the 20m buffer zone in red.



Plate 13-13: Relict remains of single structure situated within the northern area of Malt Settlement B from S.



Plate 13-14: Possible relict remains of malt kiln house at Meenaneagh.



Plate 13-15: Relict remains of two late 19th century structures associated with Malt Kiln Settlement B.

13.2.12 Proposed Forestry Re-planting Sites

The lands at each of the proposed five re-planting sites have been granted technical approval by the Forest Service for afforestation. The proposed re-planting sites comprise ten separate plots that extend to varying degrees into nine townlands. A desk-based research study of the locations was also undertaken including a placename study (refer **Section 13.2.2** above and **Table 13-2**).

All plots were examined on a suite of available online aerial imagery including Google Earth, BING and also via the SMR (www.archaeology.ie) and OSI (www.osi.ie).

Examination of the online SMR revealed that there are no monuments or protected structures recorded within the proposed sites (www.archaeology.ie). Similarly, examination of the online National Museum of Ireland artefacts locations portal returned no records of artefacts found within the nine townlands (www.heritagemaps.ie). Examination of the excavations database returned no results from the replanting sites (www.excavations.ie).

Cartographic research of the historic OSI 19th century maps revealed a number of potential impacts by the proposed re-planting work on wider cultural heritage features at Site 1 in Craghera townland in County Clare (refer **Section 13.2.12.1** below).

All of the five proposed Re-planting areas were archaeologically inspected in late July 2020.

13.2.12.1 Site 1: Co. Clare

Proposed Re-planting Site 1 in Co. Clare comprises of several plots of land extending into two townlands: Shessiv and Craghera (**Figures 13-11** and **13-12**). The plots generally comprise sloping rough pastureland, which is bisected by a local road, L2070. A small vernacular structure and a lime kiln within small irregular enclosed fields are denoted on the pre-famine 1st Ed OSI map in the southernmost plot in Craghera. (**Figures 13-11** and **13-13**). Examination of the site on BING aerial imagery shows that the relict remains of these pre-famine structures survive today (**Figure 13-14**). Examination of the subsequent 1:2500 OSi map of c.1896 denotes other built heritage structures including an additional lime kiln, the remains of which may survive sub-surface of plot CE7365 in Craghera townland (**Figure 13-15**).

Proposed re-planting Site 1 in Co. Clare comprises of several separate plots of land extending into two townlands - two in Shessiv and two in Craghera (**Figures 13-18** and **13-12**). The plots generally comprise sloping rough pasture that are bisected by a local road, L2070 (**Plates 13-17** to **13-19**). The southern limits of the southernmost plot in Craghera denotes a small vernacular structure and lime kiln within small irregular enclosed fields on the pre-famine 1st Ed OS map (**Figures 13-10** and **13-12**). Examination of the site on BING aerial imagery shows that the relict remains of these pre-famine structures survive today (**Figure 13-13**). Examination of the subsequent 1:2500 OSI map of c.1896 denotes other built heritage structures including an additional lime kiln the remains of which may survive sub-surface of plot CE7365 in Craghera townland (**Figure 13-14**).

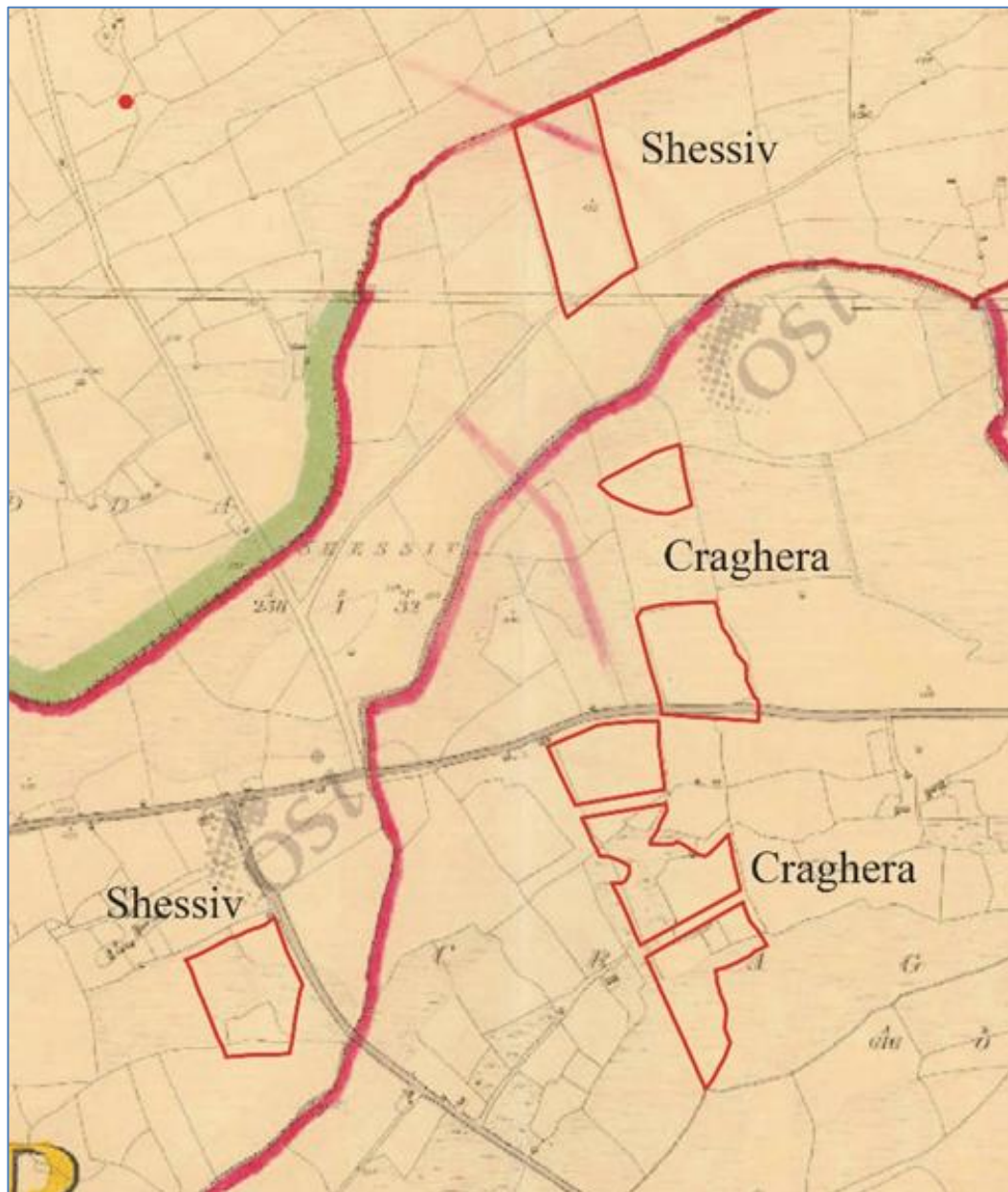


Figure 13-11: Extract from 1st Ed. OSI 6" map c.1840 with proposed re-planting plots highlighted.



Figure 13-12: Extract from BING aerial image with proposed re-planting plots highlighted.

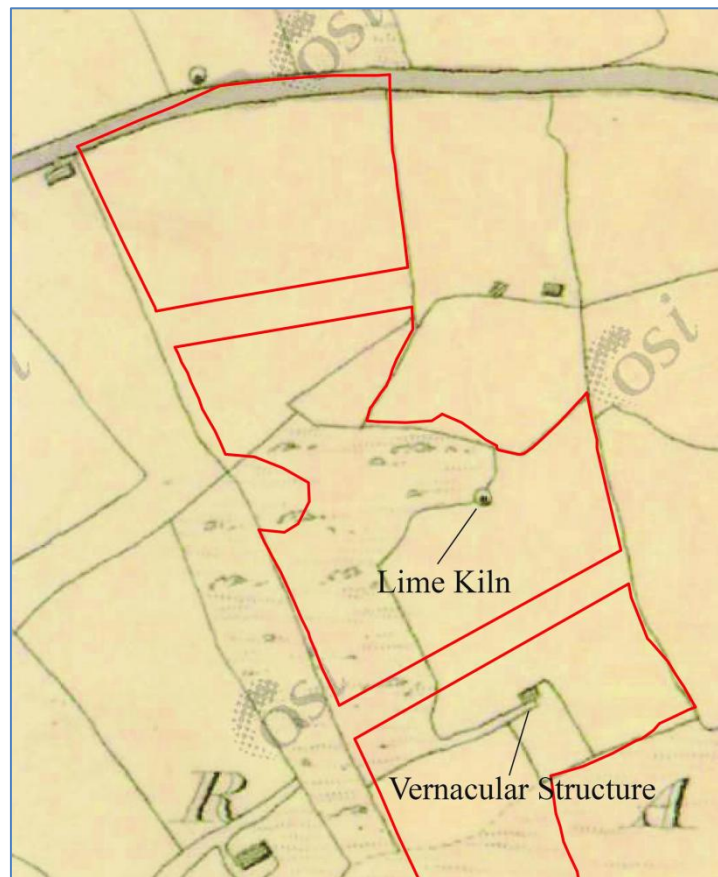


Figure 13-13: Detail extract from pre-famine 1st Ed OS map of southern area of plot CE7465. Vernacular structure and lime kiln identified.



Figure 13-14: Extract from BING aerial imagery with relict remains of possible kiln and vernacular structure with c. 20m exclusion zone in blue.

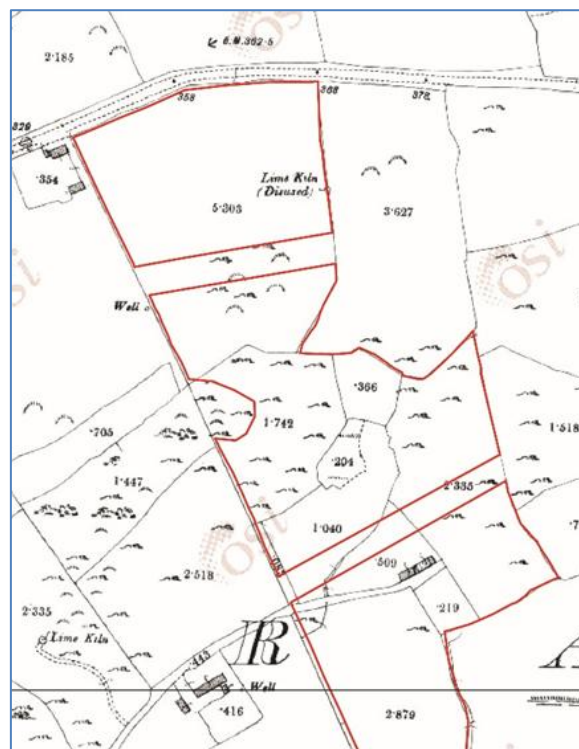


Figure 13-15: Extract from 1:2500 2nd Ed OSI map of c.1896. Note late 19th century lime kiln in NE section of plot and vernacular structure at south.

Field inspection of proposed Re-planting Site 1 was undertaken in late July 2020. Generally, the site is situated on bogland, however there are some differences between the plots. The northernmost plot located in Shessiv townland is situated on improved, gently sloping pasture (**Plate 13-16**) while the majority of the SW plot in the same townland comprises of poor quality uneven bogland (**Plate 13-17**). Nothing of archaeological interest was noted in the plots at Shessiv townland.



Plate 13-16: Northernmost plot of Site 1 at Shessiv townland (from S).



Plate 13-17: Southwestern plot of Site 1 at Shessiv townland.

Variations in the terrain were also noted within the five plots comprising of Site 1 in Craghera townland. The two plots located at the northern part of the townland consist of dry improved

pasture surrounded by waterlogged, marshland (**Plate 13-19**). The southern plots are situated in terrain that varies between well managed pasture, uneven rocky land and low lying flat marshy land at the very south (**Plate 13-20**).



Plate 13-18: The northernmost plot in Craghera townland (from E).



Plate 13-19: Rocky terrain in Craghera townland (from S).

The relict remains of the vernacular structure and the lime kiln denoted on 1st Edition OSI map (see above) were found during the field inspection in rocky bogland in Craghera townland. The vernacular structure comprises of the remains of rectangular single storey house built with local blocky rubble limestone and bonded with poor quality mortar. The structure is highly overgrown with vegetation but clearly upstanding above the ground level (**Plate 13-21**). The remains of the lime kiln were also

found situated c.30m to the north of the house. The lime kiln is located in waterlogged marshy land. The kiln's hemispherical burning chamber and draw-hole were noted during field inspection (**Plate 13-22**). A closer inspection of the kiln structure was not possible due to very wet ground conditions. A 20m replanting exclusion zone (**Figure 13-13**) around the vernacular house and the lime kiln will be established in advance of replanting and no drainage excavations shall be undertaken within the zone to avoid negative impact.



Plate 13-20: Vernacular structure (from E).



Plate 13-21: Relict remains of lime kiln (from S).

13.2.12.2 Site 2: Co. Clare

Proposed Re-planting Site 2 in Co. Clare generally comprises of three separate plots extending into four townlands viz: Kilcolumb, Reanagishagh, Lisroe and Furroor (**Figures 13-16 and 13-17**).

There are no monuments or artefacts recorded within the three plots in Site 2 in Co. Clare (www.archaeology.ie; www.heritagemaps.ie). Similarly, there are no records of any licensed excavations at this location (www.excavations.ie). Furthermore, examination of the 19th century historic OS maps revealed no wider cultural built heritage settlement features apart from field boundaries and roads. However, examination of the placename evidence did indicate cultural potential in three of the names viz:

(1) Lisroe - *Lios Ruadh*- the red fort (ringfort). However, this ringfort CL040-003 which gives its name to the townland is situated 0.6km to the SE of the re-planting plot and will therefore not be impacted.

(2) Reanagishagh – *Ré na gCiseach* – translates as a wooden causeway / pathway / road / togher made for passing over swampy ground. Examination of the 1st Ed. OS map shows a partially constructed roadway bisecting the townland, part of which forms the roadside boundary of the re-planting plot today. It will not be impacted by the re-planting.

(3) the proposed re-planting plot in Kilcolumb - *Cill Columb*- the church of Columb, is situated c.2.0km away to the NE and will not be impacted by the re-planting.

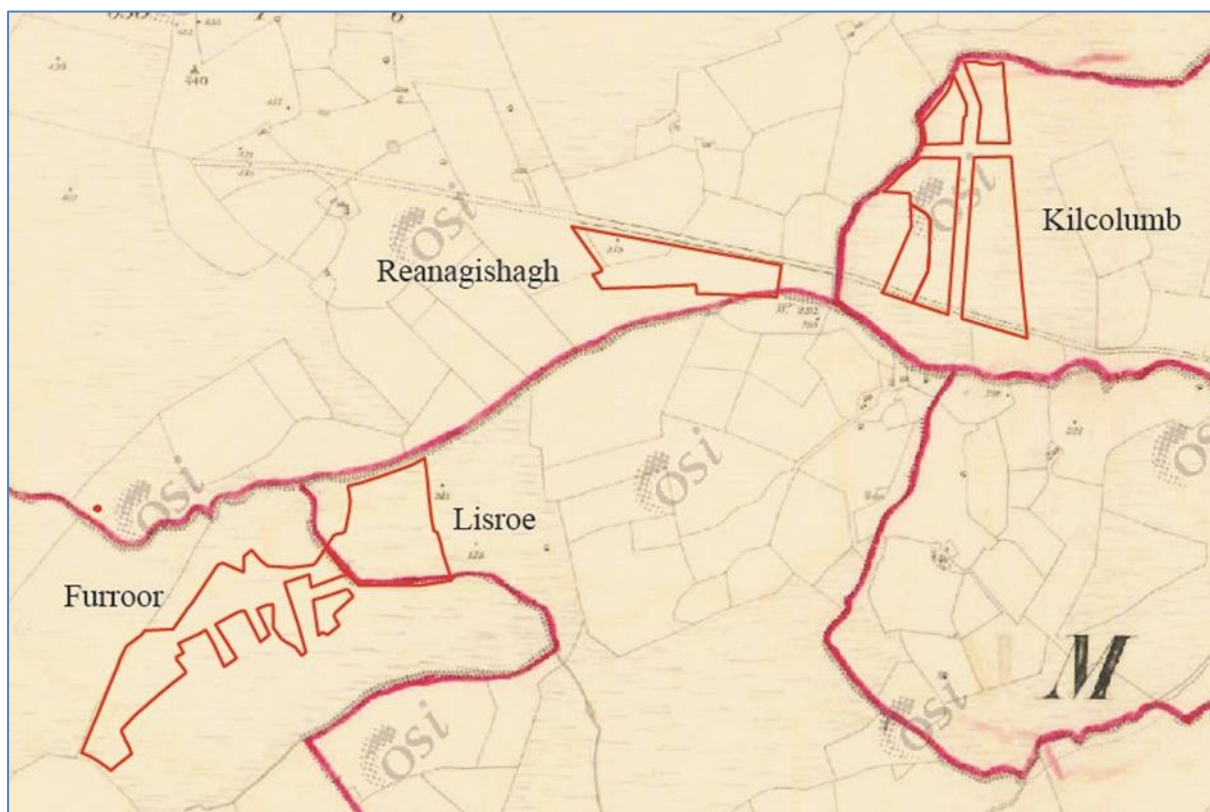


Figure 13-16: Site 2 Co. Clare highlighted in red overlain on 1st Ed OS map of c.1840.



Figure 13-17: Site 2, Co. Clare highlighted in red overlain on BING aerial imagery.

Proposed Re-planting Site 2 was visited on the end of July 2020. The plot at Reanagishagh townland consists of two small fields enclosed by a 3rd class road at the north and forestry to the south (**Plate 13-23**). The ground comprises of an uneven bogland covered with the high grass. Nothing of archaeological interest was noted.



Plate 13-22: Plot of Site 2 at Reanagishagh townland (from NW).

The second plot of Re-planting Site 2 located in Kilcolumb townland comprises of gently sloping south reclaimed bogland (**Plate 13-24**). Nothing of archaeological interest was noted during the field inspection.



Plate 13-23: Plot of Site 2 at Kilcolumb townland (from S).

The third plot of Site 2 comprises of a large irregular area extending through the townlands of Lisroe and Furroor. The entire plot consists of grassy pasture enclosed by mature forest (**Plate 13-25**). Nothing of archaeological interest was noted during the field inspection.



Plate 13-24: Westernmost limits of the plot at Furroor townland (from W).

13.2.12.3 Site 3: Co. Galway

Proposed Re-planting Site 3 at Pollacorrage, Co. Galway comprises of a linear plot (in three parts) of c.6.8ha (**Figure 13-18**). The site comprises low-lying pasture (**Plate 13-26**). There are no recorded monuments within this plot however, there are several in the wider surrounding area on both sides of the River Clare. The nearest of which is a Ringfort, GA029-146, situated c.600 metres to the west (**Figure 13-18**), while the religious Benedictine Nunnery of Kilcreevanty, GA029-096, that was founded c.1200AD by Cathal Crovderg O'Connor is situated at a similar distance across the river to the north. The nunnery is also subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO No. 1/1989, www.archaeology.ie). There are no records of any licensed excavations or artefacts found from the townland of Poulacorrage (www.excavations.ie, www.heritagemaps.ie). Examination of the historic OS maps were also negative.



Figure 13-18: Proposed re-planting site at Poulacorrage, Co. Galway overlain on BING aerial imagery.

Site inspection of proposed Re-planting Site 3 at Pollacorrage was undertaken in late July 2020. The site comprises of green pasture (**Plate 13-26**) which has been recently planted with saplings with associated drainage works also recorded (**Plate 13-27**). Nothing of archaeological interest was noted during field inspection of Site 3.



Plate 13-25: Re-planting Site 3 (from S).



Plate 13-26: Recently planted saplings and associated drainage within re-planting Site 3 (from N).

13.2.12.4 Site 4: Co. Limerick

Proposed Re-planting Site 4 at Ballincolly, Co. Limerick comprises of a single sub-rectangular c.5.7ha plot divided into two green fields by a NW-SE orientated field boundary. This site directly abuts the proposed Re-planting Site 5 in Co. Cork. (Figure 13-19).

There are no recorded monuments within the limits of the site however a recorded Enclosure, L1047-031 is situated abutting the northern limits of the site in the adjoining townland of Ballinagoul. The associated zone of notification (ZON) of the monument extends for c.50% of its 40m radius within the limits of replanting Site 4 (Figures 13-20, 13-21 & 13-23).

The recorded Enclosure is not depicted on the 1st Ed. c.1840 OSI map, however, a distinctive curvature in the field boundary, reflective of the Enclosure, was plainly visible at that time (Figure 13-20, 13-21). On the 2nd Ed. c.1896 OS map a single line of hachures can be noted at the northern limits of the monument forming a coherent (c. 21m diameter) sub-circular shape (Figure 12-21). This curvature is also clearly visible on all Google Earth Images (2006-2019, Figure 13-22). There are five other Enclosures situated between c.500m to c.1,300m from the limits of the re-planting site. Other recorded monuments in the area comprise: a Hearth, a Moated site and a *Fulacht Fiadh* (Figure 13-23).

Further examination of the historic OS historic maps revealed no pre-famine structures within the proposed re-planting site and no distinctive changes of the site through time were noted except for the eastern field which formerly comprised of two smaller fields (Figure 13-19). There are no records of any licensed excavations or artefacts found from the townland of Ballincolly (www.excavations.ie, www.heritagemaps.ie).



Figure 13-19: Proposed Re-planting lands at Ballincolly, Co. Limerick and Rathgoggan North, Co. Cork overlain on Google Earth image (06.2018).

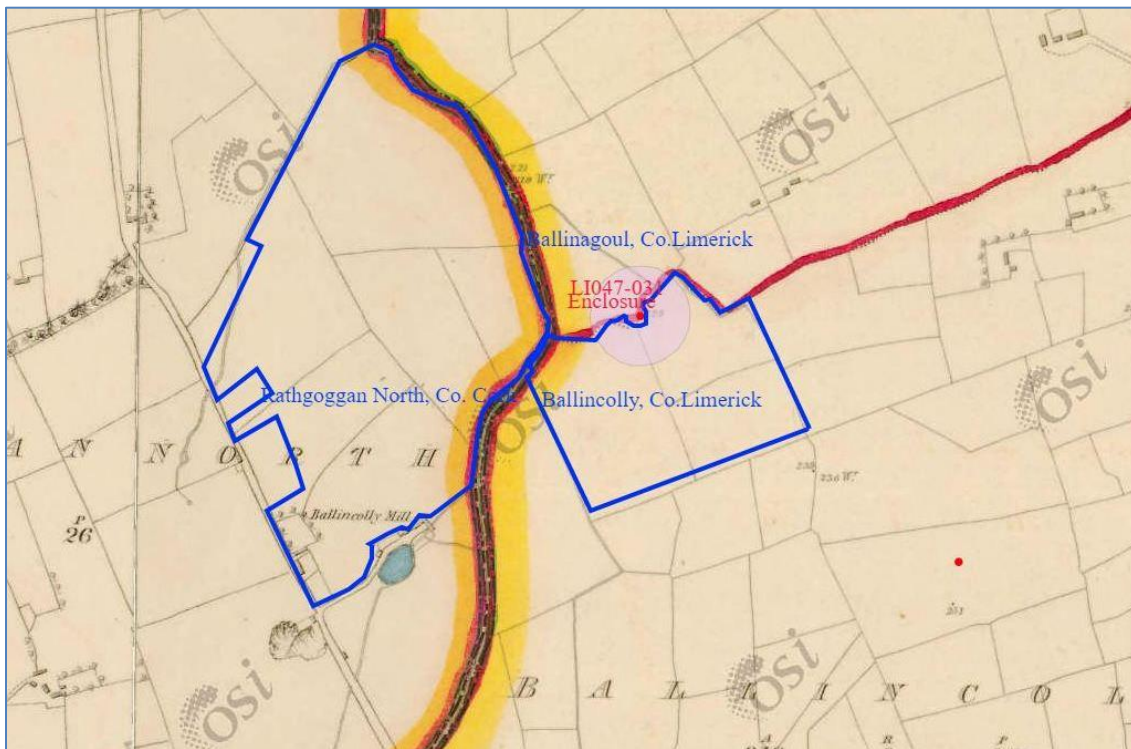


Figure 13-20: : Extract from 1st Ed. OSI 6" map c.1840 with proposed the Re-planting plots highlighted.

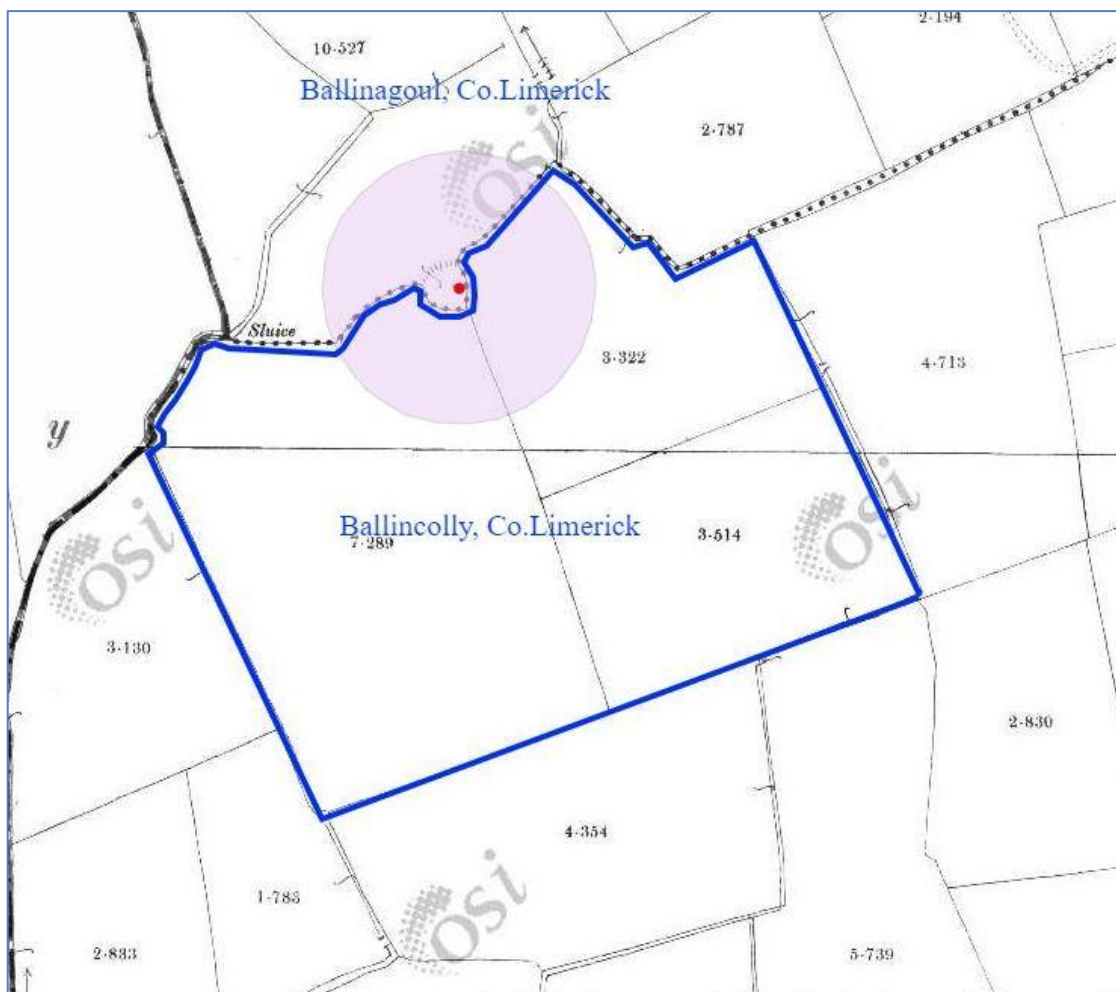


Figure 13-21 : Proposed Re-planting site 4 overlain on the 1:2500 2nd Ed OSI map of c.1896. Note the single row of hachures at the northern limits of the Enclosure.



Figure 13-22: Extract from Google Earth image (09.2019) with northern boundary limits of Re-planting Site 4 in red. Note the clearly visible sub-circular limits of Enclosure L1047-031.

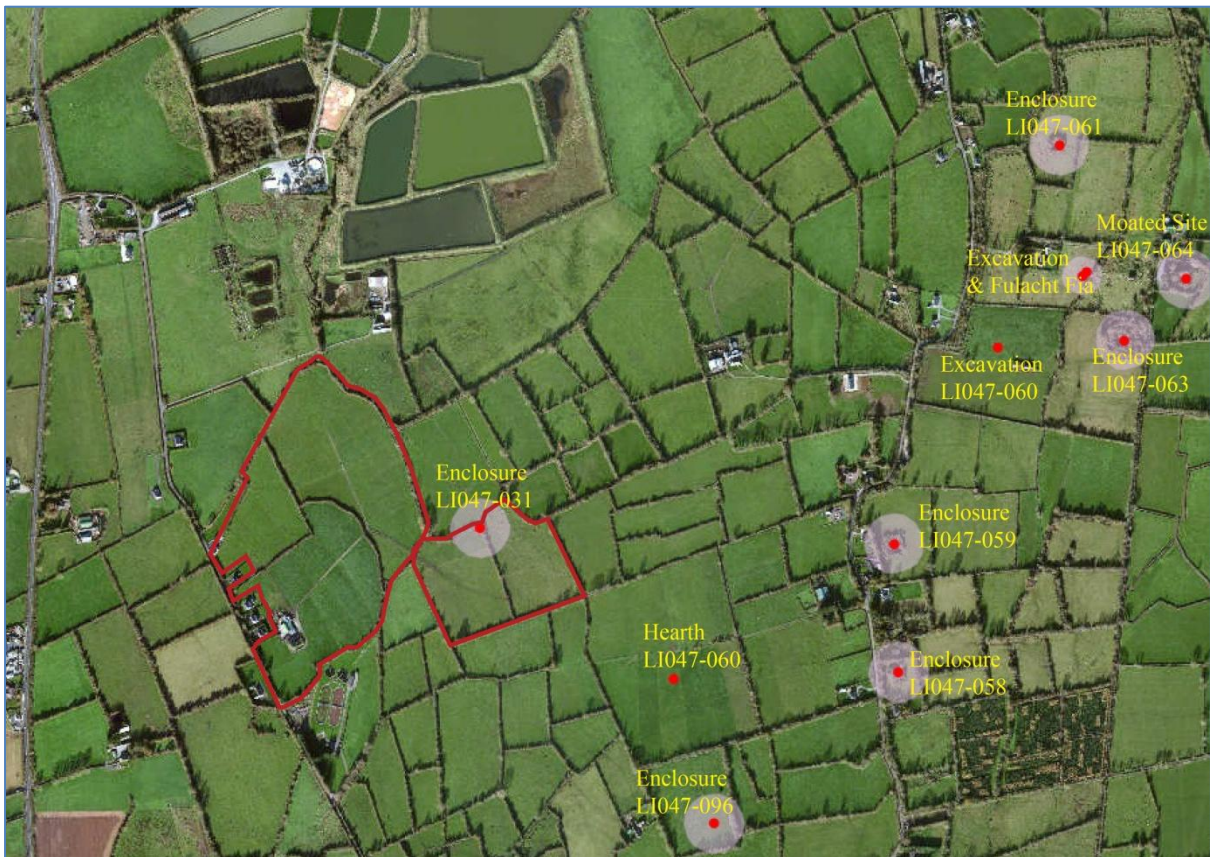


Figure 13-23: Proposed Re-planting Sites 4 & 5 (highlighted in red), overlain on BING aerial imagery with nearby recorded monuments denoted.

A site inspection of Re-planting Site 4 was undertaken in late July 2020. The large site comprises of level, well-managed pasture with internal farm trackways (**Plates 13-28**). UAV imagery of the Enclosure LI047-031 was also undertaken. No new features associated with the monument were noted (**Figure 13-23**). Except the known Enclosure nothing of archaeological interest was recorded during field inspection.



Plate 13-27: Central area of Re-planting Site 4 (from SE). Oblique low flown UAV image by LDA, July 2020.

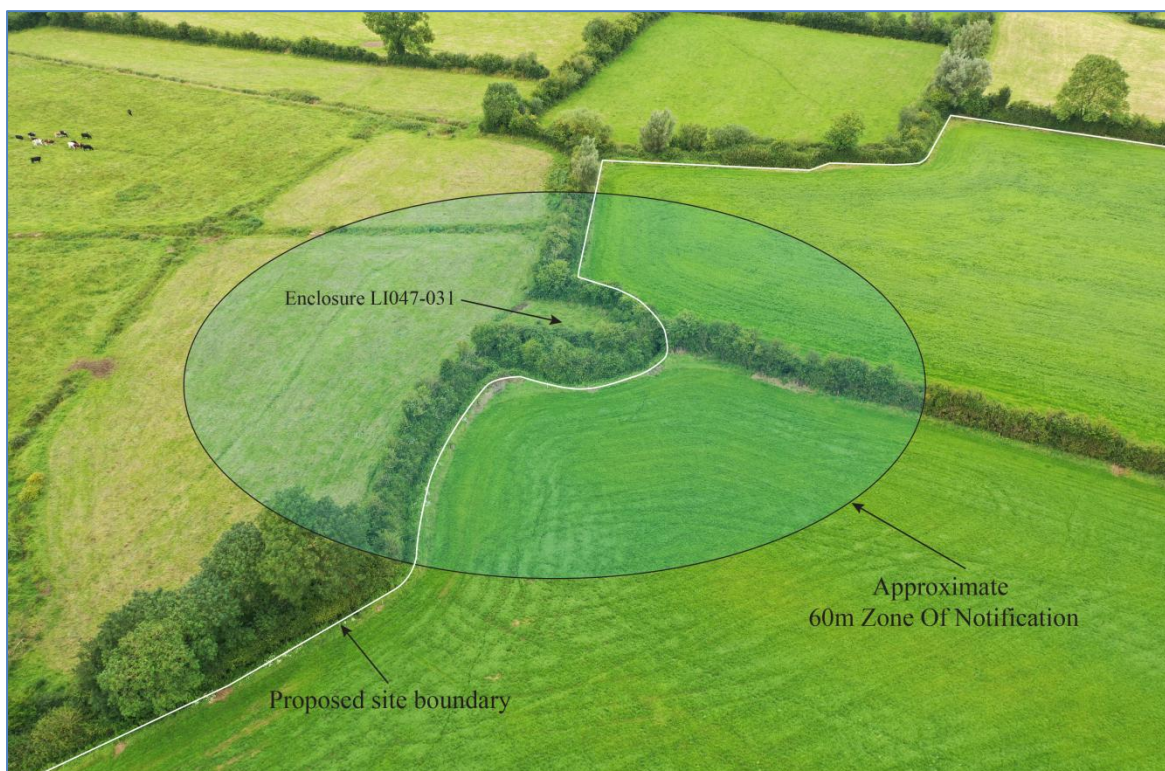


Figure 13-24: Enclosure LI47-031 with the c.60m ZON by the SMR overlain. Oblique low-flown UAV image by LDA (July 2020).

13.2.12.5 Site 5: Co. Cork

Proposed Re-planting Site 5 at Rathgoggan North, Co. Cork comprises of a large irregular plot of c.16.6ha. Site 5 abuts Site 4 at its south-eastern limits where it forms part of the townland boundary with Ballincolly and importantly, part of the county boundary between Cork and Limerick. The Re-planting plot Site 5 comprises of four green fields with an existing working farm within its southern limits. An existing farm road traverses through the site, crossing the county boundary and continuing as far as the second field of the proposed Re-planting Site 4 in Ballincolly.

There are no recorded monuments within the site. The ZON of the nearest recorded monument, Enclosure LI047-031 (**Figure 13-19** above) is situated c.50 metres east of the boundary limits of the site (**Figure 13-23**).

There are no records of any licensed excavations or artefacts found from the townland of Rathgoggan North (www.excavations.ie, www.heritagemaps.ie).

Examination of 1st Ed. OS 6" map denotes a long linear structure captioned as *Ballincolly Mill* immediately within the southernmost limits of the site. Although known as Ballincolly Mill, the site is actually in Rathgoggan North townland, in Co. Cork. Furthermore the 2nd and 3rd Editions of the historic OSI maps denote this general area of Rathgoggan North as a sub-denomination as Ballincolly. Also noted immediately SW of the mill are a lime kiln and a well. There are two vernacular structures with a small tree-lined garden located at the south-western limits of the site beside the roadside (**Figure 13-25**). No evidence of any of these structures on the surface were noted during examination of aerial photos and Google Earth images.



Figure 13-25: Detail extract from pre-famine 1st Ed OS map of southern limits of Site 5 at Rathgoggan North. Note Ballincolly Mill and two vernacular structures.

Examination of the subsequent 25" OSI from the terminal years of the 19th century makes no specific reference to Ballincolly Mill. However, there are two large structures denoted at right angles to one another and the location of a spring. Therefore, it appears, from the cartographic evidence, that Ballincolly Mill went into disuse or was adapted for another farm usage sometime in the latter half of the 19th century. Examination of the 3rd Edition OSI, (Cassini version), from c.1914 indicates that virtually all of this industrial milling complex and the vernacular buildings had been demolished by this time. Site inspection and targeted UAV survey undertaken in July 2020 recorded no evidence of any vernacular structures or the mill itself (**Figure 13-26**). In the recent past a wastewater treatment plant for Charleville was constructed abutting this area and it is possible that sub-surface elements of Ballincolly Mill may have been impacted at the time. Nothing of archaeological interest was noted during the field inspection of the proposed Re-planting Site 5.



Figure 13-26: Low flown oblique UAV image of approximate location site of the pre-famine Ballincolly Mill (LDA, July 2020).

13.2.13 Proposed Turbine Delivery Route

The proposed Turbine Delivery Route (TDR) for Drumnahough Wind Farm commences at Killybegs (Node 1), from where extends eastwards towards Donegal town and then northeast via Ballybofey / Stranorlar eastwards to Lifford / Strabane. From Lifford /Strabane the TDR turns northwest towards Letterkenny. A little east of Letterkenny, the TDR turns directly south connecting with local road L-2774 from which it turns due west (Node 11) to link eventually with Drumnahough WF (**Figure 13-27**). A total of 22 Nodes were identified along the proposed TDR where minor upgrading works will be undertaken to allow the transport of the turbines. Upgrade works within Nodes 1 - 10 will consist of: temporary removal of fences, lighting poles, telecoms poles and other street furniture, crash barriers etc. Works within the countryside along L-2774 (Nodes 11-21) will include: hardening of soft verge with compacted granular material were needed, piping of existing drains, temporary removal of telecom poles, electrical poles and fences, rarely the removal of existing banks by the road or widening of embankment into a field (refer to **Table 13-3**).

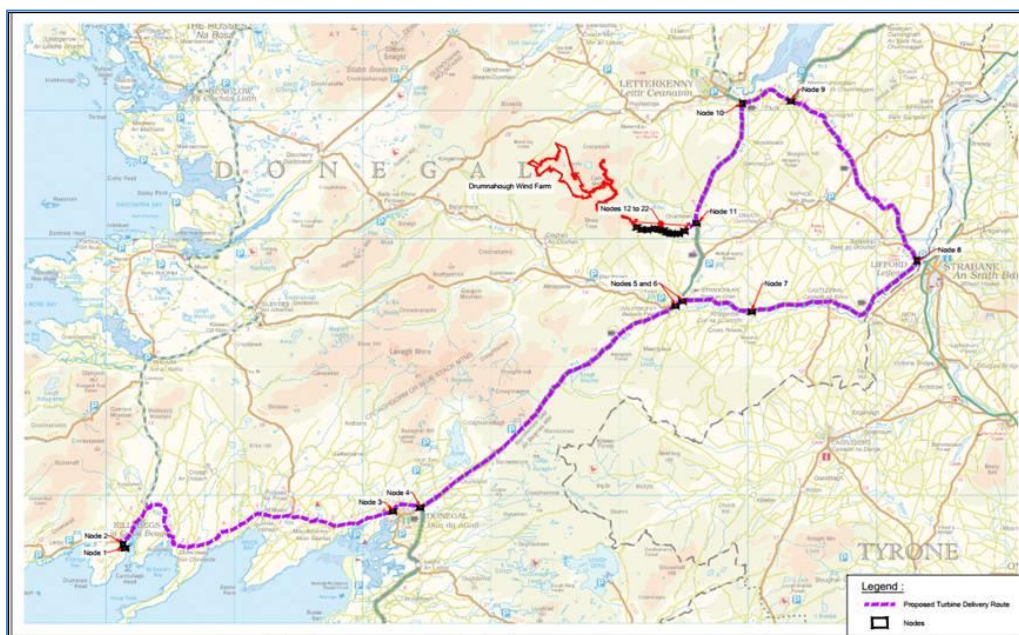


Figure 13-27 Proposed Turbine Delivery Route with Nodes 1 -22 depicted

Node 1

Node 1 is situated at the eastern limits of Killybegs docks where the turbine components will be discharged. Works at this commencement Node 1 will be limited to temporary removal of modern fences, lighting poles, telecoms poles, signs and other street furniture.

There is a cluster of recorded archaeological monuments in the vicinity of Node 1 (**Figure 13-28**). The monuments comprise of: DG097-015001 classified as House-medieval, DG097-015006 and -015007 recorded respectively as Bawn and Castle and DG097-016 classified as Enclosure. Furthermore, immediately east and more or less abutting the commencement of Node 1 at Rough Point is the location of where various pre-development archaeological excavations took place between 2000 and 2001. These excavated sites will not be included in the next revision of the RMP (www.archaeology.ie). **None of the recorded monuments in the vicinity of Node 1 will be impacted by the proposed works associated with the TDR.**

The nearest structure recorded in the National Inventory of Architectural Heritage (NIAH) is Killybegs Tourism College (Reg. No. 40845022) situated c. 50m west of Node 1. The building is a former industrial school, built between 1894 – 98, and later used as a barracks by the Irish Army during World War II. From 1950 it served various functions before becoming a Tourism college (www.buildingsofireland.ie). **There will be no negative impact on the structure by the proposed works.**

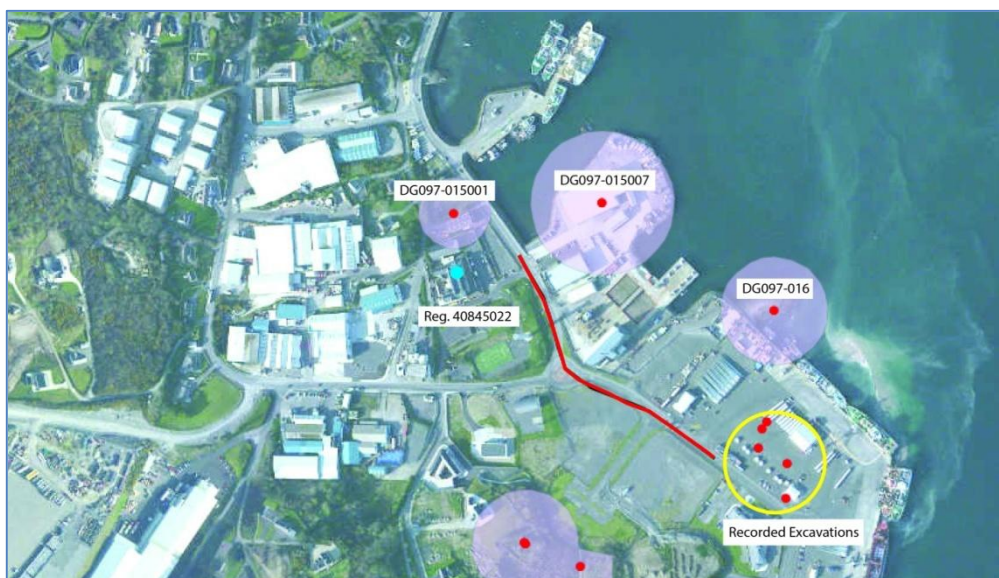


Figure 13-28 : Node 1 location (in red).

Node 2

Node 2 is situated a little north of Node 1 and is essentially a continuation of Node 1. The proposed works within Zone 2 it will be the same as Node 1. This section of the proposed TDR traverses through the Zone of Notification (ZON) of the site of a recorded monument, DG097-015001 referred to in Node 1 above as a House-medieval (**Figures 13-28 and 13-29**). There are no relict remains of this monument above ground which comprises of a walled garden site (**Plate 13-28**). Furthermore, there is confusion about the veracity of the actual site in the SMR who note that there is a possibility that it may be at Cat Castle (DG097-015004) c. 500m to the south. As all the works will be confined to the existing modern Shore Road there will be no negative impact on the dubious site of the monument.



Figure 13-29: Location of Node 2 (in red).



Plate 13-28: View of walled-in site of recorded monument DG097-015001 (Google Street accessed 10-09-2020).

Node 3

Node 3 extends through the townlands of Doonan / Mullans through the N56 roundabout on western approach to Donegal town. There are no recorded monuments within this section of the proposed TDR. The nearest recorded monument is Burnt Mound, DG093-021 situated c.12m south of the N56 between the road and Drumcliff GAA pitch and will not be impacted (**Figure 13-30**). In a wider cultural context, the closest recorded NIAH structure is a detached single-storey house, known as Westpoint Villa (Reg. No. 40843002) built c.1850 (www.buildingsofireland.ie). It is located c.50m east of Node 3.

The proposed works associated with the TDR will have no impact on the recorded structure.

Nothing of archaeological or wider cultural interest was noted on the 1st Edition OS map.

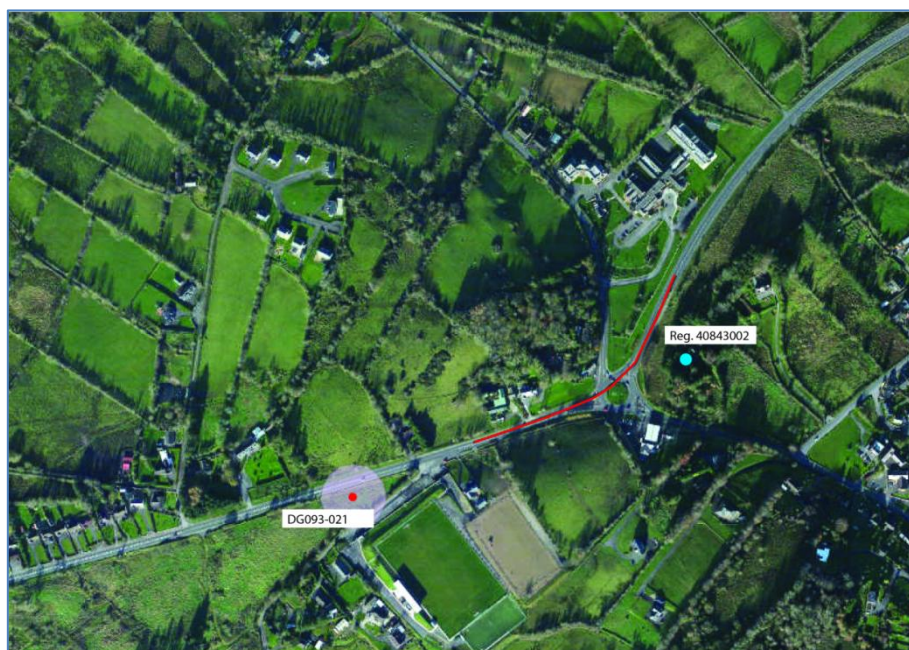


Figure 13-30: Node 3 location (in red).

Node 4

Node 4 is situated at N56 Roundabout on eastern side of Donegal town at Drumlonagher townland. There are no recorded monuments or recorded NIAH structures in proximity. Analysis of 1st Edition OS also revealed nothing of archaeological or cultural interest.

Node 5

Node 5 is located on the N15 on the border between Ballybofey and Stranorlar. The proposed works within Node 5 will include temporary removal of lighting poles, telecoms poles, signs and other street furniture. There are no recorded archaeological monuments in proximity to Node 5.

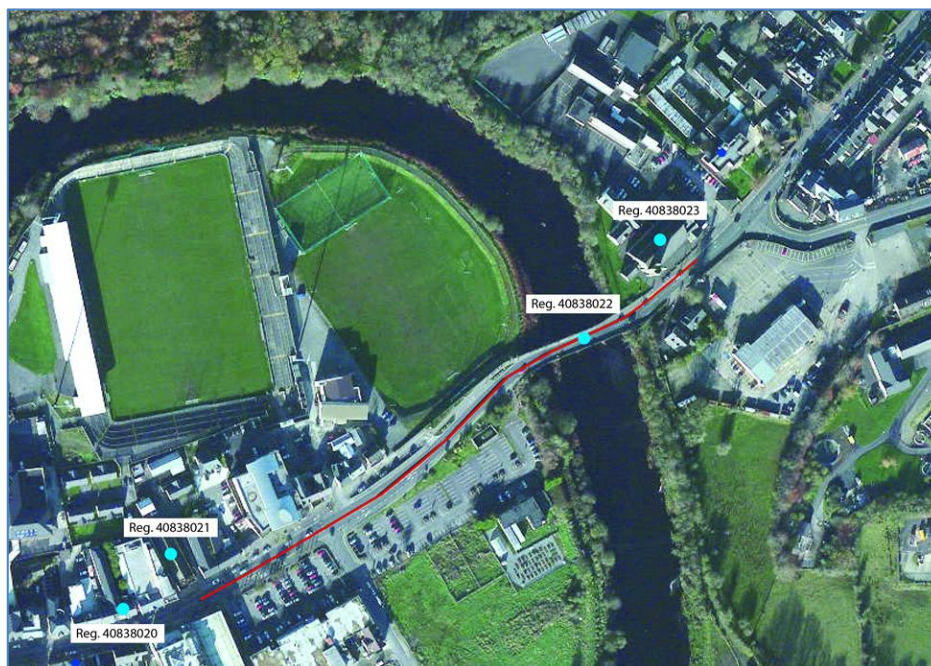


Figure 13-31: Location of Node 5 (in red).

However, in a wider cultural context, Node 5 traverses across Ballybofey Bridge which is recorded in NIAH bridge, (Reg. No 40838022, **Figure 13-31**). The bridge is also a Recorded Protected Structure (RPS) by Donegal County Council. This structure is a five-arch masonry roadbridge spans the River Finn connecting Ballybofey and Stranorlar. It was built c.1780 and further extended c.1860 (www.buildingsofireland.ie). Substantial repairs and widening of the bridge were undertaken in 2018 (**Plates 13-29 and 13-30**). There are perceived impacts by the proposed TDR works on Ballybofey Bridge.

There are three other recorded NIAH structures in proximity of Node 5. These are:

- Church of Mary Immaculate (Plates 2-3; Reg. No. 40838023) built 1857-62 which is also a Recorded Protected Structure (www.buildingsofireland.ie).
- Balor Theatre (Reg. No. 40838021), former cinema, built 1945-6.
- A street house (Reg. No. 40838020) built c.1910.

None of these structures will be affected by proposed works within Node 5.



Plate 13-29: View of eastern limits of Ballybofey Bridge and Mary Immaculate Church in 2009, both of which are protected structures (Google Street 2009).



Plate 13-30: Reduction of parapet and widening of Ballybofey Bridge underway in 2018. Church of Mary Immaculate (Reg. No. 40838023) beyond (image from Google Street June 2018).

Node 6

Node 6 is a curvilinear section situated on the N15 on Main Street, Stranorlar slightly east of Node 5. The proposed works will consist of temporary removal of lighting poles, telecoms poles, signs and other street furniture. There are no recorded archaeological monuments in proximity of Node 6.

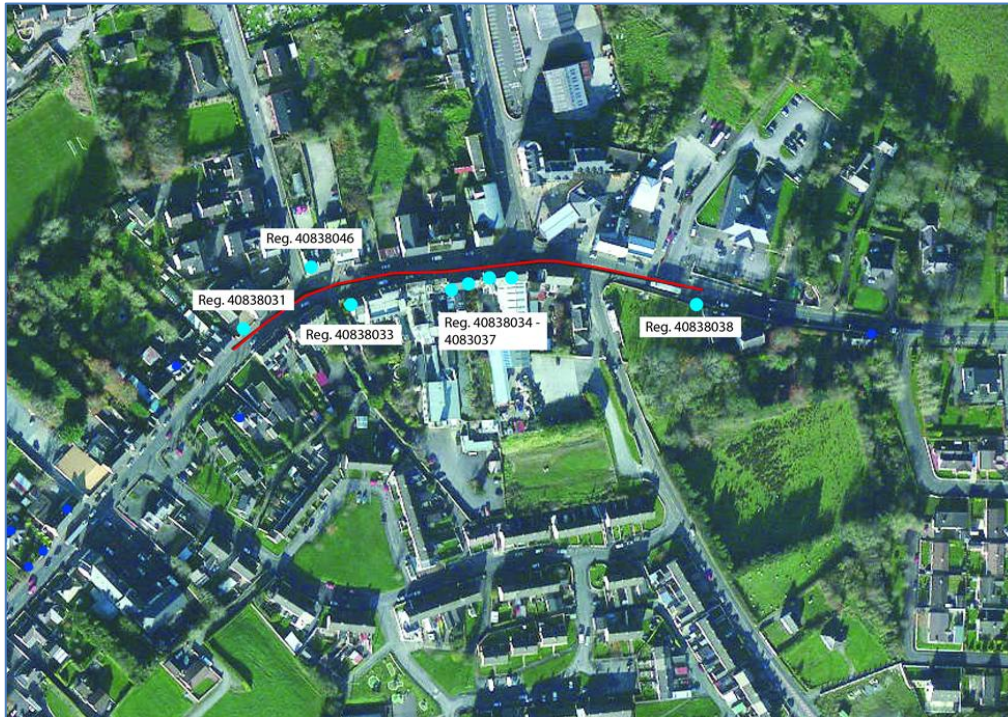


Figure 13-32: Node 6 location (in red).

Main Street, Stranolar is a narrow busy town centre with eight recorded NIAH structures in proximity of Node 6 (Figure 13-32). These include:

- Reformed Presbyterian church (Reg. 40838031), dated 1877 with the simple boundary walls with metal railings and gateway (Plate 13-31).



Plate 13-31: Reformed Presbyterian church, Reg. 40838031 from S (image after www.buildingsofireland.ie).

- Semi-detached two-bay two-storey house (Reg. 40838033) built c.1910. **No impact.**
- Detached corner-sited three-bay two-storey house (Reg. 40838046) built c.1880, having flower shop at the ground floor. **No impact.**

- Terraced three-bay three-storey house (Reg. 40838034) with public house to ground floor level, built or modified c.1880. Now in use as public house with offices over at first and second floor level. **No impact.**
- End-of-terrace attached three-bay two-storey house (Reg. 40838035) built c.1840 with former retail outlet at ground floor level. **No impact.**
- End-of-terrace attached five-bay three-storey house (Reg. 40838036), built c.1790. Formerly with retail outlet at ground floor level (W.H. Raitt & Son), now in use a private house. It is also Recorded Protected Structure. **No impact.**
- Terraced three-bay two-storey house (Reg. 4083037) built, c.1880, with shop to ground floor (**Plate 13-32**). It is also Recorded Protected Structure. **No impact.**



Plate 13-32: Recorded house, Reg. 4083037 from N (image after www.buildingsofireland.ie).

- Freestanding cast-iron water hydrant (Reg. 40838038), erected c.1910, with lion's head motif to spout (www.buildingsofireland.ie). Examination of recent Google street imagery shows that this hydrant has been removed (**Plates 13-33 to 13-35**).



Plate 13-33: Context view of recorded hydrant, Reg. 40838038 (from www.buildingsofireland.ie).



Plate 13-34: Close up of water hydrant, Reg. 40838038 (from www.buildingsofireland.ie).



Plate 13-35: Same view as Plate 13-34 above from Google Street 2009 shows that the recorded hydrant has been removed.

Node 7

Node 7 is located at N15 in Killygordon. The proposed works within the node will comprise of temporary removal of lighting poles, telecoms poles, signs and other street furniture.

There are no recorded archaeological monuments within proximity of Node 7. However, in a wider cultural context, there are seven recorded NIAH structures primarily on the southern side of the street in Killygordon (**Figure 13-33**).

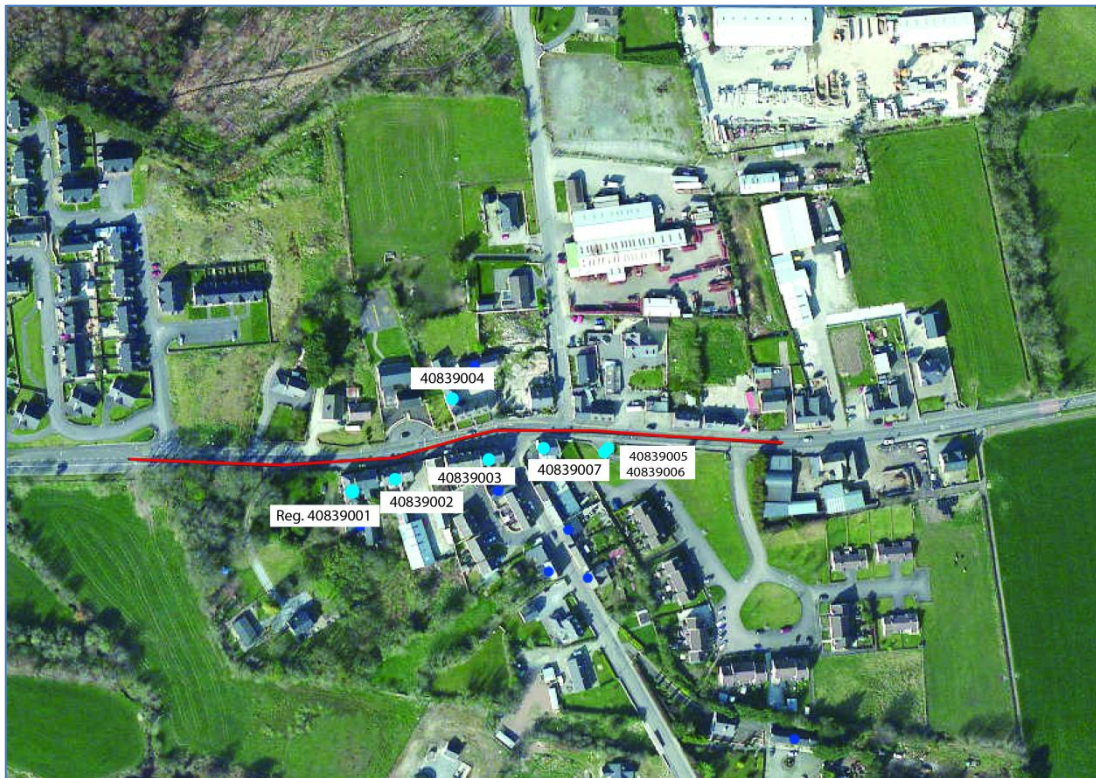


Figure 13-33: Location of Node 7 (in red).

These recorded structures comprises (from west to east):

- Tara House is a detached three-bay two storey house (Reg. 40839001), built c.1870. It is bounded from the roadside (north) by rendered rubble stone plinth wall with chamfered coping and iron railings over with decorative cast-iron finials. However, since at least 2009, much of the railing along the footpath has been removed (**Plate 13-36**). **No impact**.



Plate 13-36: Tara House image (Google Street, 209-2011). Note majority of railings removed.

- Detached four-bay two-storey house (Reg. 40839002), built c.1820. Formerly in use as a commercial outlet, not in use at present. **No impact**.
- Attached corner-sited five-bay two-storey house (Reg. 40839003), built c.1830 and altered c.1880. **No impact**.
- Detached five-bay single-storey house (Reg. 40839004) built c.1830. Bounded on street side (south) by rendered boundary wall with wrought-iron railings and gateway comprising a pair of gate piers and wrought-iron gate (**Plate 13-37**). **No impact**.



Plate 13-37: Recorded street house Killygordon, Reg. 40839004 (image Google Street, September 2009).

- Detached three-bay single-storey house (Reg. 40839007) built or altered c.1910. It is road-fronted adjacent to crossroads. **No impact.**
- Freestanding cast-iron water pump (Reg. 40839006), erected c.1885. It is located in rubble stone walled enclosure, open to street-frontage to the north and to the west (**Plate 13-38**). **No impact.**
- Freestanding cast-iron water hydrant (Reg. 40839005) erected c.1910. Located just next to Reg. 40839006 (**Plate 13-38**). **No impact.**



Plate 13-38: Location of Reg. 40839006 & Reg. 40839005 (image after www.buildingsofireland.ie).

Node 8

Node 8 is located at the N14 -N15 roundabout at SW outskirts of Lifford. Proposed works will include the temporary removal of lighting poles, telecoms poles, signs and other street furniture. The northern section of the node is slightly clipping the zone of notification (ZON) of the western limits of Historic Town of Lifford (DG071- 008; **Figure 13-34**). The site of a second recorded archaeological monument, classified as Standing Stone, DG071-009 is situated c.120m SW of Node 8 (**Figure 13-34**). There is no trace of the Standing Stone today (www.archaeology.ie). Although Node 8 technically clips the westernmost limits of the ZON of historic Lifford on plan as the road section here is bounded on both sides by high mass-concrete walls (**Plate 13-39**).

There will be no impact by the proposed works to any of the recorded archaeological monuments in proximity to Node 8.



Figure 13-34: Location of Node 8 (in red).



Plate 13-39: View of NW limits of Node 8. Note high mass-concrete walls on both sides (image from Google Street July, 2011).

In a wider cultural context, there are four recorded NIAH structures in proximity to Node 8 comprising of:

- A three-bay two-storey Victorian hospital (Reg. 40835021), built c.1870 and \ or built or extended c. 1886. Still in use as Lifford Community Hospital.
- Lifford Army Barracks (Reg. 40835022) - detached former secondary school building on 'U-shaped' plan, built 1879-80 later in use as an army barracks. The barracks were closed in January 2009 and the building has been unused since.
- Combermore, a detached three-bay two-storey house (Reg. 40835017), built c.1845.
- Complex of single- and two-storey outbuildings (Reg. 40835018) arranged around to the rear (west) of Combermore (40835017), built c.1845 (www.buildingsofireland.ie).

No perceived cultural impacts at Node 8

Node 9

Node 9 is situated at the N14-N13 junction roundabout at Raymoghly townland. The proposed works will include temporary removal of crash barriers, lighting poles, telecoms poles, signs and other street furniture and removal of trees in centre of the roundabout. There are no recorded archaeological monuments or recorded NIAH structures in vicinity of Node 9. Also, no pre-famine structures were noted at 1st Edition OS map. **No perceived cultural impacts at Node 9.**

Node 10

Node 10 is situated at the N13-N14 roundabout east of Letterkenny at Bunnagee and Drumany townlands. Proposed works will consist of temporary removal of lighting poles, telecoms poles, signs and other street furniture. There are no recorded archaeological monuments or recorded NIAH structures in vicinity of Node 10. Nothing of cultural or archaeological interest was noted on pre-famine 1st Ed. OS map. **No perceived cultural impacts at Node 10.**

Node 11

Node 11 is situated at the junction of N13 and local road L-2744 at Callan townland. Proposed works will include temporary removal of fence, hardening of soft verge with compacted granular material, piping of existing drains to be piped and temporary removal of telecoms poles. There are no recorded archaeological monuments or recorded NIAH structures in proximity to Node 11. Nothing of cultural or archaeological interest was noted on pre-famine 1st Ed. OS map. **No perceived cultural impacts at Node 11.**

Nodes 12 to 22

Nodes 12 to 22 (starting from east to west) are situated very close to each other along the local road L-2744. In that context, the potential cultural impact assessment of these nodes is summarised in tabulated format hereunder (**Table 13-3**).

Table 13-3: Summary of impact assessment on Nodes 12 -21.

Node Ref. No.	Works involved	Townland	Archaeology	Architectural Heritage	1 st Ed. OS map
12	Minor works to harden narrow areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped.	Cloghroe	No	No	No
13	Minor works to harden narrow areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Telecoms poles to be removed temporarily.	Cloghroe	No	No	No
14	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Cloghroe	No	No	Lime Kiln to the N
15	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Cloghroe	No	No	Two Lime Kilns to the S
16	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Cloghroe	DG069-018 Megalithic tomb - portal tomb (See Below)	No	No
17	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Cloghroe	DG069-018 Megalithic tomb - portal tomb (See Below)	No	No
18	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Magheravall Midcut	No	No	No
19	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily.	Magheravall Midcut	No	No	No

Node Ref. No.	Works involved	Townland	Archaeology	Architectural Heritage	1 st Ed. OS map
20	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Fence to be removed temporarily on north side of road. Some trees to be removed.	Magheravall Midcut	No	No	No
21	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Fence to be removed temporarily on north side of road.	Magheravall Midcut / Meenalaban	No	No	Lime Kiln to the N
22	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Some trees to be removed to the south of the road. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily. Overhead electrical cable may need to be removed.	Meenalaban	No	No	No

The only recorded archaeological monument within Nodes 12-21 is Megalithic tomb, DG069-018, classified as a Portal Tomb in Cloghroe townland. The Zone of Notification (ZON) of the monument extends entirely across the roadway of Node 16 and is bisected by Node 17 (**Figure 13-35**).



Figure 13-35: Node 17 bisecting ZON of DG069-018.

The monument itself is situated extremely close to the road at its southern side, ITM co-ordinates E613393, N900679 (**Plates 13-40 and 13-41**) and **could be negatively impacted by the proposed widening of embankment to the south of the road into a field** if the works will take place in their current proposed schedule.

Impact potential by road widening works at Cloghroe beside Portal Tomb DG069-018 is classified as high.

In a wider cultural context, several lime kilns were recorded in proximity to Nodes 14, 15 & 21 on 1st and 2nd Editions of the OS maps, (see **Table 13-3**). None of which are recorded structures or indeed recorded archaeological sites in Co. Donegal. Examination of OSi aerial imagery including BING indicates that the majority have been impacted / destroyed in the past. However, it is not possible to fully determine by desk-based research alone, if any relict remains of these lime kilns survive above ground.



Plate 13-40: Recorded Portal Tomb DG069-018 at Cloghroe (Nodes 16-17).



Plate 13-41: Close up of DG069-018 (after Survey of the Megalithic Tombs of Ireland. Volume VI, County Donegal, Plate 42).

13.2.14 Overview of Results

- There are no recorded archaeological monuments or artefacts recorded within the boundary limits of the proposed Drumnahough Wind Farm site boundary.
- No previously unrecorded archaeological sites or features were noted or recorded in the course of the field walking or in the course of the desk-based research within the boundary limits of the proposed Drumnahough Wind Farm.
- Examination of the wider study area encompassing the development site demonstrates that the wider study area has been occupied from at least the Neolithic period reflecting both sacral and secular monuments. However, it was not densely settled, being represented by fourteen recorded sites within a 5km radius from the centre of the Drumnahough site. The upland region of the wider study area encompassing the proposed wind farm is generally spare of archaeological monuments.
- In a wider cultural context, three 19th century upland Malt Kiln Settlement Sites A, B & C, comprising a coherent aspect of the industrial built heritage of upland Donegal were recorded within and abutting the boundary limits of the proposed Drumnahough Wind Farm. However, there will be no impact by the proposed wind farm on any of these sites.
- There are no recorded monuments, or recorded artefacts within any of the five proposed forestry Re-planting sites in Co. Clare, Co. Galway, Co. Limerick and Co. Cork.
- The Zone of Notification (ZON) of a recorded Enclosure LI047-031 is situated within the northern limits of re-planting Site 4 at Ballincolly, Co. Limerick.
- No previously unrecorded archaeological sites or features were noted or recorded in the course of the field walking or in the course of the desk-based research within the five proposed Re-planting sites.
- In a wider cultural context, examination of the historic OSI mapping, further supported by BING aerial imagery and site inspection indicates that the proposed Re-planting in the southern plot at Craghera could impact on to the relict remains of a lime kiln and a vernacular structure.
- In wider cultural context, there is low possibility that that Re-planting in the southern limits of Site 5 at Rathgoggan North, Co. Cork may impact on the potential subsurface remains of two vernacular structures, and pre-famine industrial milling complex, recorded as Ballincolly Mill. No physical evidence of these structures was recorded during field inspection or from targeted UAV imagery undertaken in July 2020.
- The highest potential of archaeological impact occurs at Cloghroe (Nodes 16-17) whereby proposed road widening here could impact on a Portal Tomb, DG069-018 (**Plate 14**). Here the current local road is very narrow, and the Portal Tomb abuts its southern site while the ZON of the monument extends across the entirety of the road (**Figure 13-35**).

13.3 LIKELY SIGNIFICANT EFFECTS

13.3.1 Likely Impacts on Known Recorded Archaeology, Unknown Archaeology and Wider Cultural Heritage

13.3.1.1 Construction Phase

- There are no recorded archaeological monuments or artefacts known or recorded within the boundary limits of the proposed Drumnahough Wind Farm. The upland region of the wider study area encompassing the proposed wind farm is generally spare of archaeological monuments. In that context, given (1) the general spartan record of archaeological artefacts,

features and known sites in the wider study area; (2) the negative archaeological results of this study, the impact is classified as low.

- Given the scale of the proposed construction works there is a low possibility that construction of the: (a) twelve turbine pad foundations; (b) borrow pits; (c) substation and battery storage area; (d) internal trackways and associated drains and turning areas; (e) subsurface cable trenching; will impact on potential unknown subsurface archaeological features, deposits or artefacts that may have survived within the underlying bogland / upland within the Drumnahough site. This impact is assessed as low based on (1) the negative results from nearby previously monitored wind farm projects; (2) the absence of any recorded monuments within the proposed wind farm site; (3) the low number of recorded sites in the wider study area; (4) the lack of any known recorded artefacts from the study area.
- In the wider cultural built heritage context the relict remains of three upland Malt Settlement Sites, A, B & C were recorded on the historic 19th century OS maps while the relict remains of two 19th century structures associated with Malt Kiln Settlement B was found during field inspection while the relict remains of Settlement A was further identified on BING aerial imagery. Malt Settlement Site B is situated within the proposed wind farm site while A straddles its NE limits and C abuts the site at the SW. None of the proposed construction works will impact on these Malt Settlement Sites. However, there is a possibility that construction works could accidentally impact on these three identified sites. This impact is classified as low give the scale of the proposed works and the scale of the three malt sites.
- In the wider cultural context, the proposed Re-planting at Craghera, Co. Clare, in its current format, will impact on the relict remains of a vernacular structure and a lime kiln. The impact is classified as high.
- In terms of potential impacts along the turbine delivery route, the proposed works culturally can be classified as light touch and for the most part do not include ground disturbance activity. The highest potential of archaeological impact occurs at Cloghroe (Nodes 16-17) whereby proposed road widening here could impact on a Portal Tomb, DG069-018 (**Plate 13-40**). Here the current local road is very narrow, and the Portal Tomb abuts its southern site while the ZON of the monument extends across the entirety of the road (**Figure 13-35**). Any proposed levelling or road widening at Cloghroe should only be undertaken on the northern side of the road after licensed archaeological testing has taken place. An effective robust temporary high visibility fence should be erected around the roadside limits of the Portal Tomb in advance of the turbine components delivery to mitigate any potential accidental impact during the delivery. Apart from Cloghroe Portal Tomb, DG069-018, no other recorded archaeological monument will be impacted by the proposed works in Nodes 1-22 of the proposed turbine components delivery route.

13.3.1.2 Operational Phase

There are no archaeological impacts envisaged during the operational phase of Drumnahough Wind Farm and grid connection.

13.3.2 Do-Nothing Scenario

The wider archaeological and cultural heritage landscape will remain intact and uninterrupted if the project goes ahead or not.

13.3.3 Decommissioning Phase

There are no archaeological impacts anticipated in the course of the de-commissioning of the proposed turbines. Potential subsurface archaeological issues will have been adequately resolved by the mitigation measures in advance of construction.

13.3.4 Cumulative Effects

No cumulative impact upon the archaeological heritage resource has been identified as a result of the proposed development going ahead.

13.4 MITIGATION

- Licensed archaeological test excavations should be undertaken in advance of construction at targeted areas of all primary ground impacts associated with the proposed development including: (a) turbine pad foundations; (b) potential borrow pits; (c) substation; (d) proposed internal trackways across greenfield areas and their associated drains and turning areas; (e) greenfield subsurface cable trenching. Based on the results of the above, further mitigation measures, possibly including archaeological monitoring of construction works may be required.
- Potential directional drilling, geo-technical test-pits and other pre-construction groundworks will also be archaeologically monitored.
- The three upland Malt Settlement Sites will be (1) archaeologically recorded and surveyed including plans and elevations; (2) a 20m buffer zone (post & wire fence) will be physically established around them under supervision by the project archaeologist in advance of construction to avoid any accidental damage during construction; (3) a report on the results will be submitted to the planning department of Donegal County Council and the National Monuments Service on completion.
- The Zone of Notification (60m) of the recorded Enclosure LI047-031 at Ballincolly, Co. Limerick will be physically established on the ground (post & wire fence) under supervision by the project archaeologist in advance of the proposed re-planting works.
- In a wider cultural context, the relict remains of the vernacular settlements at Craghera, Co. Clare will be (1) archaeologically surveyed, including plans and elevations; (2) mitigation by avoidance *viz* a 20m zone of planting exclusion (post & wire fence) will be established around the relict structure and lime kiln sites in advance of re-planting works under archaeological supervision. If this planting exclusion zone is physically established around the two 19th century structures, there will be no impact by the proposed Re-planting works.
- The following mitigation will be undertaken on Turbine Delivery Route at Nodes 16 and 17:
 - No road widening works will be undertaken to the southern (Portal Tomb) side of the road.
 - An effective temporary high visibility fence should be put in place around the roadside area of Portal Tomb to offset any accidental impacts by the proposed turbine components delivery vehicles.
 - Widening of the northern side of the road, if required, should be archaeologically tested in advance under licence issued by the National Monuments Service.
- Archaeological monitoring of construction works in proximity to Nodes 14, 15 & 21 will be undertaken to ensure impacts by the road widening works do not occur on the lime kilns denoted on the 1st and 2nd Editions of the historic OSi maps in the Cloghroe area.

13.5 RESIDUAL IMPACTS

No cultural heritage residual impacts are anticipated.

13.6 CONCLUSIONS

- There will be no physical impact by the proposed Drumnahough Wind Farm, including: - proposed turbine sites; substation, trackways, borrow sites, cable trenching, on the known recorded archaeology within the boundary limits of the proposed Drumnahough Wind Farm as there are no recorded monuments there.
- There is a possibility that there will be a low impact on the unknown potential subsurface archaeology within the boundary limits of the proposed Drumnahough Wind Farm during the construction phase. The potential that sub-surface archaeological features and artefacts may be present is based on the general anoxic / anaerobic environment of peatland to preserve organic materials. However, the proposed mitigation strategy of pre-construction licensed archaeological testing and monitoring will offset any significant impacts.
- In a wider cultural context, there is a possibility of accidental impacts by the proposed construction works on the three upland Malt Settlement Sites. This impact is classified as low. However, the proposed mitigation measures will adequately offset this impact.
- There is a possibility that there will be a low impact on the unknown potential subsurface archaeology within the proposed Re-planting sites in Counties Clare, Galway, Limerick and Cork. However, the proposed mitigation measures will adequately offset this impact.
- There is a possibility that there will be a low impact on potential subsurface archaeology at Ballincolly associated with Enclosure LI047-031. However, the physical establishing of an effective re-planting zone around the ZON of the monument will effectively mitigate this impact.
- There is a possibility that there could be a significant impact on the relict pre-famine vernacular structure and lime kiln at the proposed Re-planting site at Craghera, Co. Clare. However, the proposed mitigation measures comprising of the physical establishment of a 20m planting exclusion zone (post & wire fence) around the structures will adequately mitigate this impact to low.
- The highest potential of archaeological impact along the turbine delivery route occurs at Cloghroe (Nodes 16-17) whereby proposed road widening here could impact on a Portal Tomb, DG069-018. However the proposed mitigation comprising restricting any proposed levelling or road widening on the northern side the establishing of a temporary high visibility fence around the roadside limits of the Portal Tomb in advance of the turbine components delivery will effectively mitigate any potential accidental impact during the delivery.

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