13. ARCHAEOLOGY AND CULTURAL HERITAGE

13.1 Introduction

This archaeological and cultural heritage chapter was prepared by Tobar Archaeological Services. It presents the results of an archaeological and cultural heritage impact assessment for a proposed renewable energy development near Miltown Malbay, County Clare. The development area predominantly comprises sections of commercial forestry, farmed pasture land and upland blanket peat. The site, within the EIAR boundary encompasses an area measuring 793 hectares.

The purpose of this chapter is to assess the potential direct, indirect and cumulative effects of the Proposed Development on the surrounding archaeological, architectural and cultural heritage landscape. The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a comprehensive programme of field walking of the study area. The report amalgamates desk-based research and the results of field walking to identify areas of archaeological/architectural/cultural significance or potential, likely to be impacted by the Proposed Development. An assessment of potential effects, including cumulative effects, is presented, and a number of mitigation measures are recommended where appropriate. The visual effect of the Proposed Development on any newly discovered monuments/sites of significance as well as known recorded monuments is also assessed. The baseline environment, potential direct, indirect and cumulative impacts of replanting lands on cultural heritage has been assessed in the Section 9 of Appendix 4-3 Assessment of Forestry Replacement Lands.

13.1.1 Proposed Development

The Proposed Development will consist of 8 No. wind turbines with an overall ground-to-blade tip height in the range of 175 metres maximum to 173 metres minimum; blade length in the range of 75 metres maximum and 66.5 metres minimum; hub height in the range of 108.5 metres maximum to 100 metres minimum and all associated foundations and hardstanding areas, access roads including upgrade of existing site roads and provision of new roads, excavation of 2 No. borrow pits, underground cabling connecting the turbines to the existing Slievecallan 110kV substation, 2 no. temporary construction compounds, 1 No. metrological mast, site drainage and all associated works. An assessment of the proposed delivery route was also undertaken, in particular areas which will be subject to minor ground works to accommodate the delivery of turbines to the site. The planning application includes for the construction of underground electricity cabling from the turbines to the existing Slievecallan 110kV substation and also includes for an extension to the existing Slievecallan 110kV substation. The underground cable route measures approximately 7.1 km in total and is mainly located on existing or proposed tracks/roads and within the public road corridor. A full description of all elements of the Proposed Development is presented in Chapter 4.

13.1.2 Statement of Authority

This section of the EIAR has been prepared by Miriam Carroll and Annette Quinn of Tobar Archaeological Services. Miriam and Annette both graduated from University College Cork in 1998 with a Masters degree in Methods and Techniques in Irish Archaeology. Both directors are licensed by the Department of Culture, Heritage and the Gaeltacht to carry out excavations and are members of the Institute of Archaeologists of Ireland. Annette Quinn and Miriam Carroll have been working in the field of archaeology since 1994 and have undertaken numerous projects for both the private and public sectors including excavations, site assessments (EIAR) and surveys. Miriam Carroll and Annette Quinn are directors of Tobar Archaeological Services which has been in operation for 17 years. Tobar Archaeological Services have undertaken numerous EIARs for similar wind farm projects nationwide.

13.1.3 Legislation and Guidelines

This chapter has been prepared in compliance with all relevant EIA legislation and guidance (see Chapter 1: Introduction for relevant guidance and legislation).

13.1.3.1 Current Legislation

Archaeological monuments are safeguarded through national and international policy, which is designed to secure the protection of the cultural heritage resource. This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention). This was ratified by Ireland in 1997.

Both the National Monuments Acts 1930 to 2004 and relevant provisions of the Cultural Institutions Act 1997 are the primary means of ensuring protection of archaeological monuments, the latter of which includes all man-made structures of whatever form or date. There are a number of provisions under the National Monuments Acts which ensure protection of the archaeological resource. These include the Register of Historic Monuments (1997 Act) which means that any interference to a monument is illegal under that Act. All registered monuments are included on the Record of Monuments and Places (RMP).

The Record of Monuments and Places (RMP) was established under Section 12 (1) of the National Monuments (Amendment) Act 1994 and consists of a list of known archaeological monuments and accompanying maps. The Record of Monuments and Places affords some protection to the monuments entered therein. Section 12 (3) of the 1994 Amendment Act states that any person proposing to carry out work at or in relation to a recorded monument must give notice in writing to the Minister (Environment, Heritage and Local Government) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

Under the Heritage Act (1995) architectural heritage is defined to include ‘all structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents...’. A heritage building is also defined to include ‘any building, or part thereof, which is of significance because of its intrinsic architectural or artistic quality or its setting or because of its association with the commercial, cultural, economic, industrial, military, political, social or religious history of the place where it is situated or of the country or generally‘.

13.1.3.1.1 *Granada Convention*

The Council of Europe, in Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), states that 'for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member State will undertake to maintain inventories of that architectural heritage’. The Granada Convention emphasises the importance of inventories in underpinning conservation policies.

The NIAH was established in 1990 to fulfill Ireland's obligations under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architectural heritage of Ireland. Article 1 of the Granada Convention establishes the parameters of this work by defining 'architectural heritage' under three broad categories of Monument, Groups of Buildings, and Sites:

- Monument: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;

- Group of buildings: homogeneous groups of urban or rural buildings conspicuous for their historical, archaeological, artistic, scientific, social or technical interest, which are sufficiently coherent to form topographically definable units;
- Sites: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable, and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest.

The Council of Europe's definition of architectural heritage allows for the inclusion of structures, groups of structures and sites which are considered to be of significance in their own right, or which are of significance in their local context and environment. The NIAH believes it is important to consider the architectural heritage as encompassing a wide variety of structures and sites as diverse as post boxes, grand country houses, mill complexes and vernacular farmhouses.

13.1.3.2 Clare County Development Plan 2017-2023

13.1.3.2.1 *Architectural Heritage*

CDP15.1 Development Plan Objective: Architectural Heritage

It is an objective of Clare County Council: (a) To ensure the protection of the architectural heritage of County Clare through the identification of Protected Structures, the designation of Architectural Conservation Areas, the safeguarding of historic gardens, and the recognition of structures and elements that contribute positively to the vernacular and industrial heritage of the County; (b) To ensure that the architectural heritage of the County is not damaged either through direct destruction or by unsympathetic developments nearby.

CDP15.2 Development Plan Objective: Protected Structures

It is an objective of Clare County Council: (a) To protect, as set out in the Record of Protected Structures, all structures and their settings, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest; (b) To review the Record of Protected Structures periodically and add structures of special interest as appropriate, including significant elements of industrial, maritime or vernacular heritage and any twentieth century structures of merit.

CDP15.3 Development Plan Objective: Industrial Heritage

It is an objective of the Development Plan: To protect and preserve buildings and features of industrial heritage such as mills, bridges, lighthouses, harbours, etc. Proposals for refurbishment works to, or redevelopment/ conversion of, these sites will be subject to a full architectural and archaeological assessment.

CDP15.4 Development Plan Objective: Vernacular Heritage

It is an objective of the Development Plan: (a) To seek the retention, appreciation and appropriate revitalisation of the vernacular heritage of County Clare, in both towns and rural areas, by deterring the replacement of good quality vernacular buildings with modern structures and by protecting (through the use of ACAs and the RPS and in the normal course of Development Management) vernacular buildings where they contribute to the character of an area or town and/or where they are rare examples of a structure type; (b) To support proposals to refurbish vernacular structures that are in a run-down or derelict condition, provided that: • Appropriate traditional building materials and methods are used to carry out repairs to the historic fabric; • Proposals for extensions to vernacular structures are reflective and proportionate to the existing building and do not erode the setting and design qualities of the original structure which make it attractive; While direction for the design should be taken from the historic building stock of the area, it can be expressed in contemporary architectural language.

CDP15.5 Development Plan Objective: Architectural Conservation Areas (ACAs)

It is an objective of the Development Plan: (a) To ensure that new developments within or adjacent to an ACA respect the context of the area and contribute positively to the ACA in terms of design, scale, setting and material finishes; (b) To protect existing buildings, structures, groups of structures, sites, landscapes and features such as street furniture and paving, which are considered to be intrinsic elements of the special character of the ACA, from demolition or removal and non-sympathetic alterations; (c) To ensure that all new signage, lighting, advertising and utilities to buildings within an ACA are designed, constructed and located in a manner that is complementary to the character of the ACA; (d) To ensure that external colour schemes in ACAs enhance the character and amenities of the area and reflect traditional colour schemes.

13.1.3.2.2 Archaeological Heritage

CDP15.8 Development Plan Objective: Sites, Features and Objects of Archaeological Interest

It is an objective of Clare County Council: (a) To safeguard sites, features and objects of archaeological interest generally; (b) To secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, and of sites, features and objects of archaeological and historical interest generally (in securing such preservation, the Council will have regard to the advice and recommendations of the Department of the Arts, Heritage, Regional, Rural and Gaeltacht Affairs); (c) To permit development only where the Planning Authority is satisfied that the proposals will not interfere with: • items of archaeological or historical importance; • the areas in the vicinity of archaeological sites; • the appreciation or the study of such items. (d) To have regard to the government publication 'Framework and Principles for the Protection of the Archaeological Heritage 1999' in relation to protecting sites, features and objects of archaeological interest; (e) To advocate for greater financial assistance for the maintenance and improvement of features of archaeological interests in County Clare.

CDP15.9 Development Plan Objective: Newly Discovered Archaeological Sites

It is an objective of the Development Plan: To protect and preserve archaeological sites discovered since the publication of the Record of Monuments and Places.

CDP15.10 Development Plan Objective: Zones of Archaeological Potential

It is an objective of the Development Plan: To protect the Zones of Archaeological Potential located within both urban and rural areas as identified in the Record of Monuments and Places.

CDP15.11 Development Plan Objective: Archaeology and Infrastructure Schemes

It is an objective of Clare County Council: To have regard to archaeological concerns when considering proposed service schemes (including electricity, sewerage, telecommunications and water supply) and proposed roadworks (both realignments and new roads) located in close proximity to Recorded Monuments and Places and Zones of Archaeological Potential.

CDP15.12 Development Plan Objective: Raising Archaeological Awareness

It is an objective of Clare County Council: (a) To raise awareness of and improve practice in relation to archaeology in County Clare. Guidance material will be produced setting out the requirements for archaeological protection in the County; (b) To promote the care and conservation of historic graveyards throughout the County.

CDP15.17 Development Plan Objective: Oidhreacht Theanga/ Linguistic Heritage

Tá sé mar sprioc ag Comhairle Contae an Chláir: (a) Chun foráil a dhéanamh i dtaobh oidhreacht theanga agus oidhreacht chultúrtha an Chontae trí thacaíocht a thabhairt do na heagraíochtaí atá bainteach le cur chun cinn agus le caomhnú leanúnach na Gaeilge agus an chultúir; (b) Chun obair a dhéanamh i slí dhearfach agus spreagúil chun timpeallacht dátheangach a chruthú agus a chothú sa Chontae, agus chun deiseanna chun Gaeilge labhartha agus scríofa sa Chontae a chur ar fáil.

It is an objective of Clare County Council: (a) To provide for the linguistic and cultural heritage of the County through support for organisations involved in the continued promotion and preservation of the Irish language and culture; (b) To work in a positive and encouraging way to create and maintain a bilingual environment in the County, and to ensure the availability of opportunities for the use of spoken and written Irish.

13.1.4 Location and Topography

The site of the Proposed Development is situated on relatively high ground at elevations ranging between c. 140 and 250 m OD. The site is situated 7km to the west and of Inagh and 5km to the east of Miltown Malbay, County Clare. The site is almost entirely comprised of upland peat with some sections of commercial forestry towards the north, centre and south. Farmed pastureland is located to the east and south within the EIAR boundary. Access to the site was via existing farm tracks.

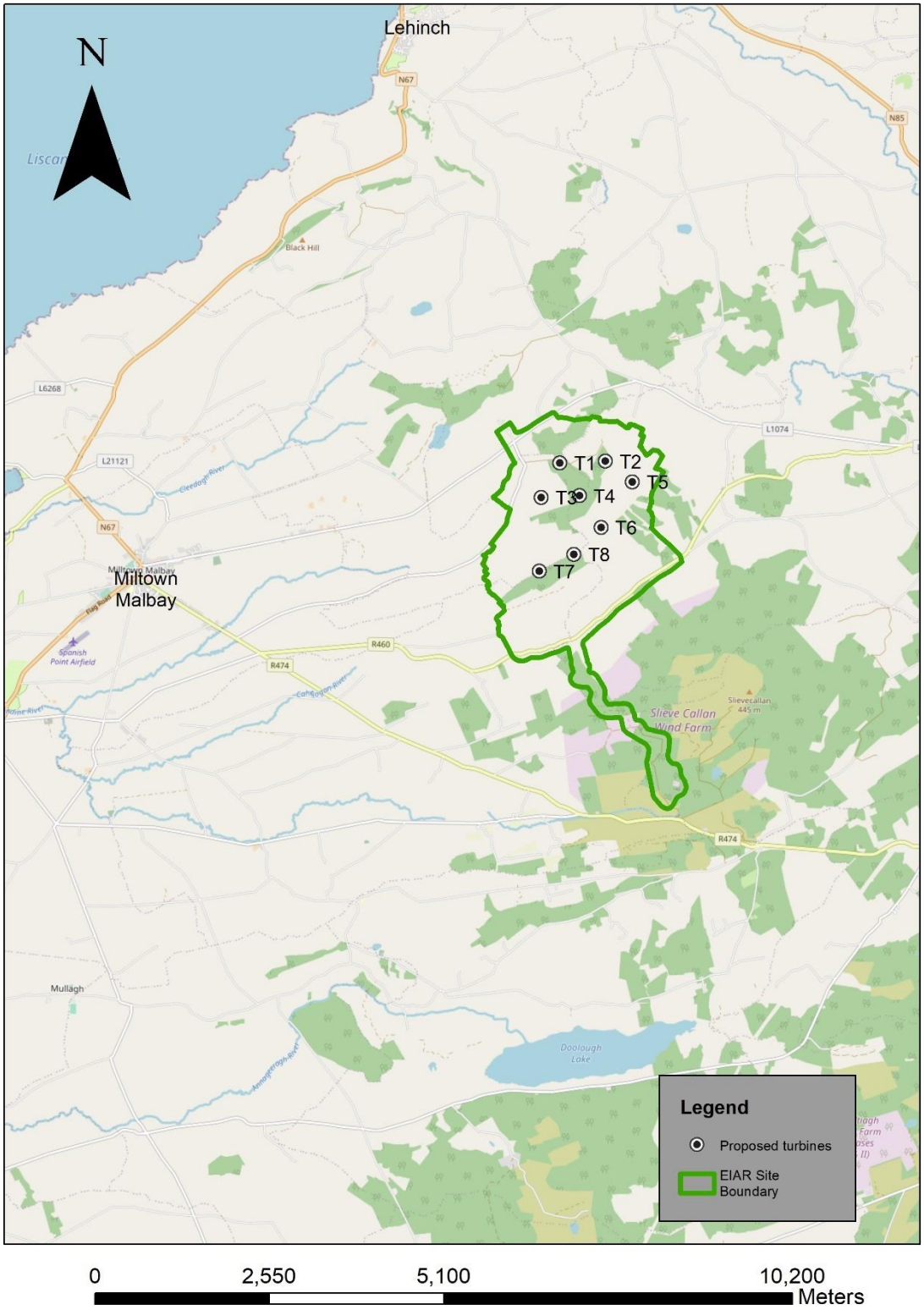

Figure 13-1: Site Location map

13.2 Methodology

The assessment of the archaeology, architecture and cultural heritage of the Proposed Development area included GIS mapping, desk-based research followed by field inspection. A desk-based study of the Proposed Development site was initially undertaken in order to assess the archaeological, architectural and cultural heritage potential of the area and to identify constraints or features of archaeological/cultural heritage significance within or near to the Proposed Development site.

13.2.1 Geographical Information Systems

GIS is a computer database which captures, stores, analyses, manages and presents data that is linked to location. GIS is geographic information systems which includes mapping software and its application with remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography and tools that can be implemented with GIS software. A geographic information system (GIS) was used to manage the datasets relevant to the archaeological and architectural heritage assessment and for the creation of all the maps in this section of the report. This involved the overlaying of the relevant archaeological and architectural datasets on georeferenced aerial photographs and road maps (ESRI), where available. The integration of this spatial information allows for the accurate measurement of distances of a Proposed Development from archaeological and cultural heritage sites and the extraction of information on 'monument types' from the datasets. Areas of archaeological or architectural sensitivity may then be highlighted in order to mitigate the potential negative effects of a development on archaeological, architectural and cultural heritage.

ArcGIS online viewshed analysis was also used to assess effects on setting of archaeological monuments. Viewshed analysis is also utilised to assess what could potentially be seen from, for example, National Monuments or World Heritage sites that are notably sensitive in terms of visual setting. The table below shows the settings for the analysis. The Create Viewshed tool uses a digital elevation model (DEM) from the Esri Elevation Analysis service. The resolution of the DEM used will depend on the location of the analysis and will be recorded in the DEM Resolution field of the result layer.

Table 13-1: Viewshed analysis settings

Setting	Value used	Description
Height of observer locations	Standard setting of 1.75 Meters	The height of the observer locations above the ground. Examples of observer locations include people looking towards an object (e.g. a turbine) from an archaeological site.
Height of other objects on the ground	Eg. Base of turbine (0m), Half hub 50m, Full Hub 108.5m (max),	The height of the objects being viewed by the observer. This height will be added to the height of the terrain to establish visible areas. Examples of objects on the ground include masts, wind turbines, and the ground itself (base of turbine).
Maximum viewing distance	20 Kilometers	The cut-off distance where the computation of the visible areas stop, regardless of terrain, observer height, and object height.

The results (visible areas) show the worst-case scenario since the model does not take trees or vegetation into consideration and the tallest hub height within the proposed range is considered.

13.2.2 Desktop Assessment

A primary cartographic source and base-line data for the assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Clare. All known recorded archaeological monuments are indicated on 6 inch Ordnance Survey (OS) maps and are listed in aforementioned records. The 1st (1840s) and 2nd (1900s) edition OS maps for the area were also consulted.

The following sources were consulted for this assessment report:

- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- National Monuments in State Care in County Clare
- The Topographical Files of the National Museum of Ireland
- First edition Ordnance Survey maps (OSI)
- Second edition Ordnance Survey maps (OSI)
- Third edition Ordnance Survey Map (Record of Monuments and Places)
- Down Survey maps (www.downsurvey.tcd.ie)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI)
- Excavations Database
- Clare County Development Plan 2017-23, Clare County Council
- National Inventory of Architectural Heritage (NIAH)
- Record of Protected Structures (Clare)

13.2.2.1 Record of Monuments and Places

A primary cartographic source and base-line data for the assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Clare. All known recorded archaeological monuments are indicated on 6 inch Ordnance Survey (OS) maps and are listed in these records. The SMR/RMP is not a complete record of all monuments as newly discovered sites may not appear in the list or accompanying maps. In conjunction with the consultation of the SMR and RMP the electronic database of recorded monuments and SMRs which may be accessed at https://www.archaeology.ie/archaeological-survey-ireland/historic-environment-viewer-application was consulted.

13.2.2.2 Cartographic Sources and Aerial Photography

The 1st (1840s) and 2nd (1900s) edition OS maps for the area were consulted, where available, as was OSI aerial photography.

13.2.2.3 Topographical Files - National Museum of Ireland

Details relating to finds of archaeological material and monuments in numerous townlands in the country are contained in the topographical files held in the National Museum of Ireland. In order to establish if any new or previously unrecorded finds had been recovered from the study area these files were consulted for every townland within and adjacent to the same. The database on Heritage Maps was consulted.

13.2.2.4 Archaeological Inventory Series

Further information on archaeological sites may be obtained in the published County Archaeological Inventory series prepared by the Department of Culture, Heritage and the Gaeltacht. The archaeological inventories present summarised information on sites listed in the SMR/RMP and include detail such as the size and location of particular monuments as well as any associated folklore or local information pertaining to each site. The inventories, however, do not account for all sites or items of cultural heritage interest which are as yet undiscovered.

13.2.2.5 Clare County Development Plans

The current County Development Plans were consulted for the schedule of buildings (Record of Protected Structures) and items of cultural, historical or archaeological interest which may be affected by the Proposed Development. The development plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of County Clare. The dataset for County Clare Record of Protected Structures was obtained from the Heritage section of Clare County Council in 2014. The updated record was consulted in HeritageMaps.ie.

13.2.2.6 Excavations Database

The Excavations Database is an annual account of all excavations carried out under license. The database is available on line at www.excavations.ie and includes excavations from 1985 to 2019. This database was consulted as part of the desktop research for this assessment to establish if any archaeological excavations had been carried out within or near to the Proposed Development area.

13.2.2.7 National Inventory of Architectural Heritage (NIAH)

This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county by county basis by the Department of Culture, Heritage and the Gaeltacht. The NIAH database was consulted for all townlands within and adjacent to the study area. The NIAH survey for Clare has been published and was downloaded on to the base mapping for the Proposed Development (www.buildingsofireland.ie). The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Culture, Heritage and the Gaeltacht and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for the Environment, Heritage and Local Government to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland's architectural heritage.

13.2.3 Field Inspection

A programme of field inspection was undertaken over three days (29th June, 2nd July 2020 and 8th September 2020). The inspection consisted of a walk-over examination of the site (within the EIAR study area boundary), an assessment of any recorded monuments, architectural, built or cultural heritage items within the site and the potential direct and indirect impacts on those monuments. Any newly discovered archaeological monuments, items of built heritage or cultural heritage value within the study area were also recorded during the field inspection. A full photographic and descriptive record of the site was made.

13.2.3.1 Limitations Associated with Fieldwork

No limitations were encountered during field work.

13.2.4 Assessment of Likely Significant Effects

Significance of effects is usually understood to mean the importance of the outcome of the effects and the consequences of the change. Significance is determined by a combination of scientific and subjective concerns. Professional judgement has been utilised in determining such significance. According to the EPA Guidelines '*Significance is a concept that can have different meanings for different topics ..*'. The likely effects on the existing archaeological and cultural heritage environment are assessed using the criteria as set out in the EPA guidelines (2017). The following terminology is used when describing the likely effects of the Proposed Development from a Cultural Heritage Perspective.

13.2.4.1 Types of Impact

Direct impacts arise where an archaeological heritage feature or site is physically located within the footprint of the development whereby the removal of part, or all of the feature or site is thus required.

Indirect impacts may arise as a result of subsurface works undertaken outside the footprint of the development, secondary environmental change such as a reduction in water levels and visual impacts.

Cumulative Impacts arise when the addition of many impacts create a larger, more significant impact.

Residual Impacts are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

13.2.4.1.1 *Magnitude of Effects (Significance)*

- Profound: Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological site is completely and irreversibly destroyed.
- Very Significant: An effect which by its character, magnitude, duration or intensity significantly alters most of the sensitive aspect of the environment.
- Significant: An effect which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. An effect like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological site.
- Moderate: A moderate effect arises where a change to an archaeological site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.
- Slight: An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site.
- Not Significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.
- Imperceptible: An effect on an archaeological site capable of measurement but without noticeable consequences.

13.2.5 Methodology for the assessment of impacts on visual setting (indirect effects)

A standardised approach was utilised for the assessment of impacts of visual setting (indirect effects) according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity. The assessment of impacts on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 12 of this EIAR, and also viewshed analysis from specific cultural heritage assets (viewshed analysis is described in Section 13.2.1 above). The viewshed analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 10km and 20km considers the effects of the proposed turbines only. Other lower visibility infrastructure such as roads, grid connection, sub-station etc. are not included in the viewshed analysis. All other infrastructure (proposed roads, grid connection, compounds etc) are assessed without the use of viewshed analysis.

While direct physical impacts to a site or monument can easily be assessed in quantitative terms, the assessment of impacts on setting can be subjective and as such is a matter of qualitative, professional judgement and experience. The distances below used in the assessment of impacts on setting are regarded as appropriate and are based on professional judgement.

Table 13-2: Cultural Heritage Assets considered according to sensitivity

Cultural Heritage Asset	Distance Considered
UNESCO World Heritage Sites (including tentative sites) – **if relevant**	20km
National Monuments (State Ownership and Preservation Order Sites)	10km
Recorded Monuments, RPS	5km
NIAH structures	5km
Undesignated sites, if relevant	500m from Proposed Development

13.3 Existing Environment

13.3.1 Description of the proposed EIAR study area

The Proposed Development will comprise of 8 No. wind turbines with a maximum overall ground-to-blade tip height in the range of 175 metres maximum to 173 metres minimum; blade length in the range of 75 metres maximum and 66.5 metres minimum; hub height in the range of 108.5 metres maximum to 100 metres minimum, meteorological mast with a height of 30 metres, underground cabling (33kV) connecting the proposed turbines to an existing 110kV substation in the townland of Knockalassa, Permanent extension to the 110kV substation at Knockalassa comprising extension to the existing substation compound, provision of a new control building with welfare facilities and all associated electrical plant and equipment for an additional 110kV bay and security fencing, associated electrical plant and equipment and security fencing, upgrade of access junctions, upgrade of existing tracks/ roads and provision of new site access roads and hardstand areas, 2 no. borrow pits, 2 no. construction compounds, site drainage, forestry felling, operational stage site signage and all associated site development works and apparatus. The planning application includes for the construction of

underground electricity cabling from the turbines to the existing Slievecallan 110kV substation. The substation will be extended to the south. The cable route measures approximately 7.1 km in total and is mainly located on existing or proposed tracks/roads and within the public road corridor.

13.3.1.1.1 North-western access road

The access road to the northern portion of the wind farm commences at a local road and extends along an existing farm track in an easterly direction. Low-lying pasture-land is located to the north and south of the track.

Plate 13-1: Proposed access road to wind farm site looking E along existing track to be upgraded.

Plate 13-2: Pastureland to SSE of track.

Plate 13-3: Land to south of track before it enters a private forestry plantation looking south.

13.3.1.1.2 *Turbine 1 and Construction Compound 2*

The turbine and construction compound 1 are located in a private forest to the south of an existing farm track.

Plate 13-4: Proposed turbine (T1) looking ESE.

Plate 13-5: Location of Turbine 1 hardstand looking ESE

Plate 13-6: Continuation in an easterly direction from T1 looking E along small track.

Plate 13-7: Eastern end of existing track before it turns South to T4 and NE to T2.

13.3.1.1.3 Turbine 2

This is located in a dense section of forestry.

Plate 13-8: General environment of T2 turbine looking S.

Plate 13-9: Proposed road into forest from boggy pastureland looking West towards T2.

Plate 13-10: Proposed road through forestry looking West.

Plate 13-11: Proposed road adjacent to forestry at ITM 512746, 680919 looking W and taken from NE of T2.

Plate 13-12: Proposed road across pastureland prior to entering forest in background looking SW.

13.3.1.1.4 Turbine 3

Turbine 3 is proposed to be located in drained bog pastureland.

Plate 13-13: General view of T3 taken 170m to the south looking N.

Plate 13-14: General vicinity of T3 looking SSE.

13.3.1.1.5 Turbine 4

Plate 13-15: Proposed road into T4 looking S.

Plate 13-16 General vicinity of T4 looking south.

13.3.1.1.6 Turbine 5

The road from T2 continues in a northerly direction through low-lying water-logged pastureland and forestry as far as an existing track before reaching T5 to the east.

Plate 13-17: Proposed road from T5 to T2 where it leaves and existing track and traverses through pastureland, looking NW.

Plate 13-18: Existing track to T5 looking S.

Plate 13-19: Continuation of existing road due for upgrade to T5 looking back towards N.

Plate 13-20: Hardstand area of T5 looking S.

Plate 13-21: Proposed road to T5 through pasture looking S

Plate 13-22: Vicinity of Turbine 5 looking N.

13.3.1.1.7 Proposed Borrow Pit 2 (south of T5)

This is located in pastureland which is waterlogged in places.

Plate 13-23: Borrow pit looking WNW.

Plate 13-24: Borrow pit looking WSW (to right of existing track).

13.3.1.1.8 Turbine 6

Plate 13-25: Proposed road leading to hardstand of T6 looking SW.

Plate 13-26: Location of proposed turbine base (T6) looking NE.

Plate 13-27: Continuation of proposed road SW of T6 where existing road terminates. Proposed road traverses pasture fields looking SW.

Plate 13-28: Proposed road looking SW, to the SW of T6.

Plate 13-29: Continuation of proposed road SW of T6 looking SW.

Plate 13-30: Existing road / track to T7 from T8 looking NE.

Plate 13-31: Proposed road from T7 to T8 looking NE (taken south of T7).

13.3.1.1.9 Turbine 7

Plate 13-32: Proposed location of T7 and hardstand looking NE .

13.3.1.1.10 Proposed Construction Compound and Met Mast southwest of T7

Plate 13-33: General view of proposed construction compound 1 and met mast (within forestry) looking S from higher ground

13.3.1.1.11 Proposed Borrow Pit 1 (southwest of T7)

The borrow pit is located in dense mature forestry which is largely inaccessible.

Plate 13-34: Proposed borrow pit looking N.

Plate 13-35: Borrow pit looking NE (located within forest to left of photo).

13.3.1.1.12 Turbine 8

Plate 13-36: Proposed road to T8 from T6 looking SW .

Plate 13-37: Proposed turbine base for T8 looking SWin forestry.

13.3.1.1.13 Proposed Slievecallan Substation Extension

It is proposed to extend the existing Slievecallan 110kV substation in a southerly direction to facilitate the Proposed Development. The extension is located within the hardstand area of the existing substation site. Topsoil and peat removal was monitored by the writer in 2015 and no archaeological features were uncovered thus removing any potential direct negative effects.

Plate 13-38: Area of proposed substation extension looking east.

Plate 13-39: Same as above looking towards southern extent of existing substation along proposed underground cable route.

13.3.1.1.14 Proposed Cable Route

This route commences to the east of T6 hardstand and extends along a rough track in an easterly direction prior to extending through forestry to the south/south-east.

Plate 13-40: Route of proposed cable route after it leaves T6 looking east. Cable route traverses forestry in background (red arrow).

Plate 13-41: Route of proposed cable route looking west through forestry.

Plate 13-42: Cable route looking NW before it turns west through forestry (as above) in the direction of T6.

Plate 13-43: Continuation SE of proposed cable route, looking NW through forestry.

Plate 13-44: Continuation of the cable route in a southerly direction, looking NNW

Plate 13-45: Derelict and ruinous stone house, looking East from cable route (See Section 13.3.3.4 below).

Plate 13-46: Continuation south of cable route, looking NNW.

Plate 13-47: Route of cable looking NW.

Plate 13-48: Route of proposed cable looking N.

Plate 13-49: Continuation south of proposed cable, just north of public road, looking N.

Plate 13-50: Route of cable where it turns West, just off public road (R460), looking south-west.

Plate 13-51: Road bridge at ITM E511947, N678196 looking W. This is located 70m to the W of cable route where it enters Slievecallan wind farm (See Section 13.3.3.4 below).

Plate 13-52: Proposed cable route where it enters Slievecallan wind farm looking south.

Plate 13-53: Route of cable in Slievecallan wind farm route looking North towards public road.

Plate 13-54: Cable route in Slievecallan wind fam looking S.

Plate 13-55: Continuation south through Slievecallan wind farm of proposed cable route option.

Plate 13-56: Continuation south through Slievecallan wind farm of proposed cable route option.

Plate 13-57: Southern end of proposed cable route prior to entering the substation site.

Plate 13-58: Continuation of grid route adjacent to the existing substation looking north.

Plate 13-59: As above further north looking north.

Plate 13-60: Northernmost section of proposed grid connection before it turns south towards existing substation.

13.3.1.1.15 Proposed delivery route

Plate 13-61: Proposed delivery route looking west, taken to the west of T1 turbine along existing road.

Plate 13-62: Proposed delivery route along existing track looking East towards T1 (in forestry).

Proposed Junction Accommodation Areas within the EIAR Site Boundary – Junction 1 (North)

Plate 13-63: View looking south-southeast towards the proposed wind farm

Plate 13-64: View looking southwest.

Plate 13-65: View looking north at same junction.

Plate 13-66: View looking east-northeast (same location as above)

Proposed Junction Accommodation Areas within the EIAR Site Boundary – Junction 2 (South at windfarm entrance)

Plate 13-67: View of junction 2 looking north. Side road to the right of photo is the access to T1. Left of photo will be area to be widened.

Plate 13-68: View towards T1 access road from local road.

Plate 13-69: Area proposed to be widened to accommodate delivery of turbine components.

Plate 13-70: View north on local road. Left of photo is local road to T1.

Plate 13-71: Fahanlunaghtamore Bridge along delivery route looking NW. No works proposed at this location.

Plate 13-72: same bridge looking north.

Plate 13-73: Delivery route looking West towards Cloonanaha Bridge. No works proposed in this location.

Plate 13-74: Delivery route crosses Skagh Bridge, taken looking E. No Works proposed at this location.

Plate 13-75: Innagh Bridge looking at triple arches (NIAH Image).

Plate 13-76: Delivery route over Inagh Bridge RPS 208.

13.3.2 Archaeological Heritage

Archaeological heritage includes all recorded archaeological monuments listed in the RMP/SMR maps and also includes newly discovered archaeological sites. These monuments are addressed separately for clarity. National Monuments are those recorded monuments which are in the ownership / guardianship of the Minister for Culture, Heritage and the Gaeltacht (DCHG). They are frequently referred to as being in 'State Care'. Archaeological heritage also includes sites which are subject to a preservation order.

13.3.2.1 National Monuments

A review of all National Monuments in State Care and those subject to a Preservation Order were undertaken as part of the assessment in order to ascertain any potential impacts on their setting as a

result of the Proposed Development. No National Monuments are located within the EIAR site boundary and none are located within close proximity, the nearest National Monument being located in excess of 7km from turbine 1. These are detailed in Table 13-3.

Table 13-3: National Monuments within 10km of nearest proposed turbine

RMP No.	Nat. Mon. No.	NAME	Td.	ITM E	ITM N	WTG ID	DISTANCE (M)
CL008-087001-	1/1972	Doonnagore Castle	Doonnagore	506883	695689	1	15689
CL015-092 and CL015-093	7/1987	Group of two Ringforts	Dough (corcomroe by.)	510426	688394	1	7728
CL025-095002-	11/1971	O'Dea's Castle	Dysert (inchiquin by.)	528265	685042	5	16066
CL025-203002-	182/1947	Ballygriffy Castle	Ballygriffy south	532136	682991	5	19444
CL033-023001-; CL033-023002-	4/1987	Cairn	Ballyneillan (inchiquin by.), bushypark	530109	679529	5	17286
CL041-047—	3/1976	Ringfort	Barloughra	531346	673575	5	19752
CL048-005—	4/1957	Cahermurphy stone fort	Cahermurphy	509120	667732	7	11737
CL016-012001-	7	Kilfenora	Kilcarragh	517815	693940	2	14178
CL016-015001-	9	Kilfenora Abbey	Kilfenora	518214	694053	2	14437
CL016-015002-, CL016-015011-, CL016-015012-, CL016-015013-, CL016-015006-, CL016-015007-, CL016-015008-	8	Kilfenora	Kilfenora	518305	694017	2	14441

RMP No.	Nat. Mon. No.	NAME	Td.	ITM E	ITM N	WTG ID	DISTANCE (M)
CL016-052002-	574	Tau Cross (Cross Inneenboy)	Ballycashen, roughan	525132	692480	5	17149
CL033-033001-, CL033-033003-	204	Drumcliffe	Drumcliffe	532829	680135	5	19982
CL016-032002-	448	Leamaneah Castle	Leamaneah north	523470	693610	5	16863
CL025-091001, CL025-091003-, CL025-091004-	16	Dysert O' Dea	Mollaneen	528127	684800	5	15867

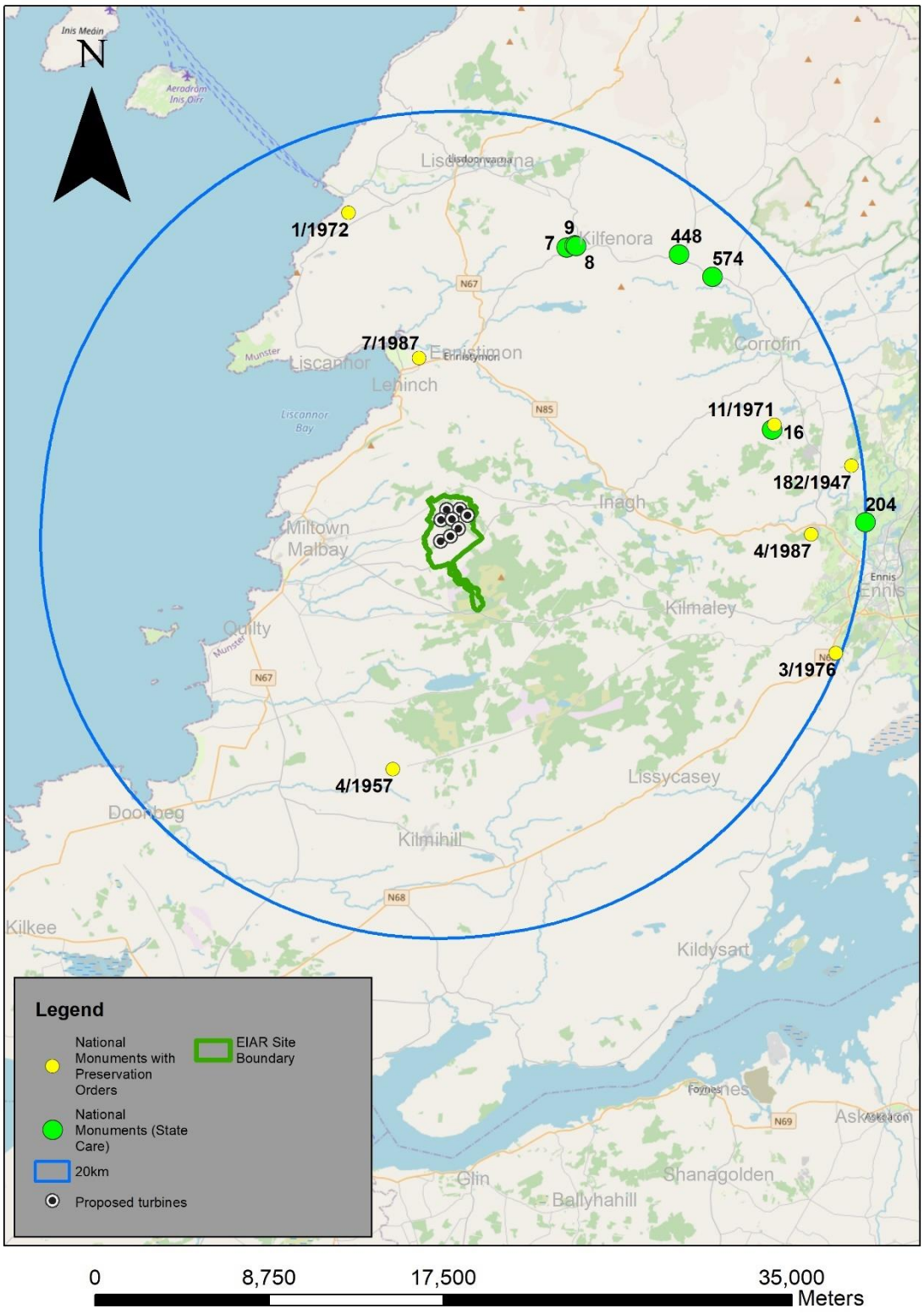

Figure 13-2: National Monuments within 20km of the proposed turbines

The following descriptions are extracts, where available or published, from the National Monuments Service' Historic Environment viewer public files.

13.3.2.1.1 CL008-087001, 1/1972, Doonnagore Castle

Doonagore Castle stands overlooking the Atlantic Ocean c.1 Kilometre south of Fisherstreet, Doolin. It is one of the three round tower-houses in Co. Clare, all in the N.W corner. The others are Newtown, Bally vaughan (also restored) and Faunarooska which is almost demolished. The tower house stands in the centre of the E wall of a small bawn (c. 0.5 of an acre) of which only the lower parts remain of the original wall. About 20m. N.E of the tower parts stands the gable of a contemporary building which may have been part of a banquet hall. This cylindrical towerhouse is very well built of local flagstone in erratic mortared courses. There is a machicoulis on two corbels over the main doorway. The features are of limestone and are well executed such as the fine ogee headed loops on the 2nd and third floors.

The ground floor is entered through a new pointed-arched doorway to the N.E over which is a murder hole. The inter-murals stairs ascends to the S.E. There is no porter's lodge. Although the diameter of the building is 8.9 m, the ground floor has a diameter of only 4m, lea Ug walls almost 2m thick at the base, punctured by a squared and splayed loop embrasure on the S.W. and two large ambreys W. and N.W. These may once have been loop embrasures according to T.I Westropp and altered during restoration work. Under this floor was a small round cellar (diam c.3m) which is now filled and covered over. The room is covered by an oak ceiling on joists set into the walls.

The castle is mentioned in the Ordnance Survey Letters by John O'Donovan and Eugene Curry, 1839 being located in the Parish of Killilagh.....'*In this Parish are three old Castles, one in the Townland of Doonagore which was lately repaired by Counsellor Gore from whose ancestors it is now erroneously supposed to have derived its name. This Castle is mentioned in the List of the Castles of Thomond preserved in Trinity College as belonging to Sir Donnell O'Brien*'. It is also described in the National Inventory of Architectural Heritage as follows: '*A freestanding circular-plan single-bay three-stage tower house, built c. 1500. Ruined in 1916, extensively reconstructed, c. 1970. In use as private residence. Slate conical roof with metal finial. Rubble stone walls with base batter, battlemented roof parapet and machicolation. Gun loop openings. Round-headed door opening. Rubble stone bawn enclosure. Cut-stone piers to front with iron gates*'.

Plate 13-77: Doonagore Castle (courtesy of NMS).

The ZTV (Chapter 12 LVIA) and viewshed analysis show that views from Doonagore Castle are limited to the north, north-west, west and south-west with no visibility in the direction of the proposed turbines. Visual effects will not occur therefore.

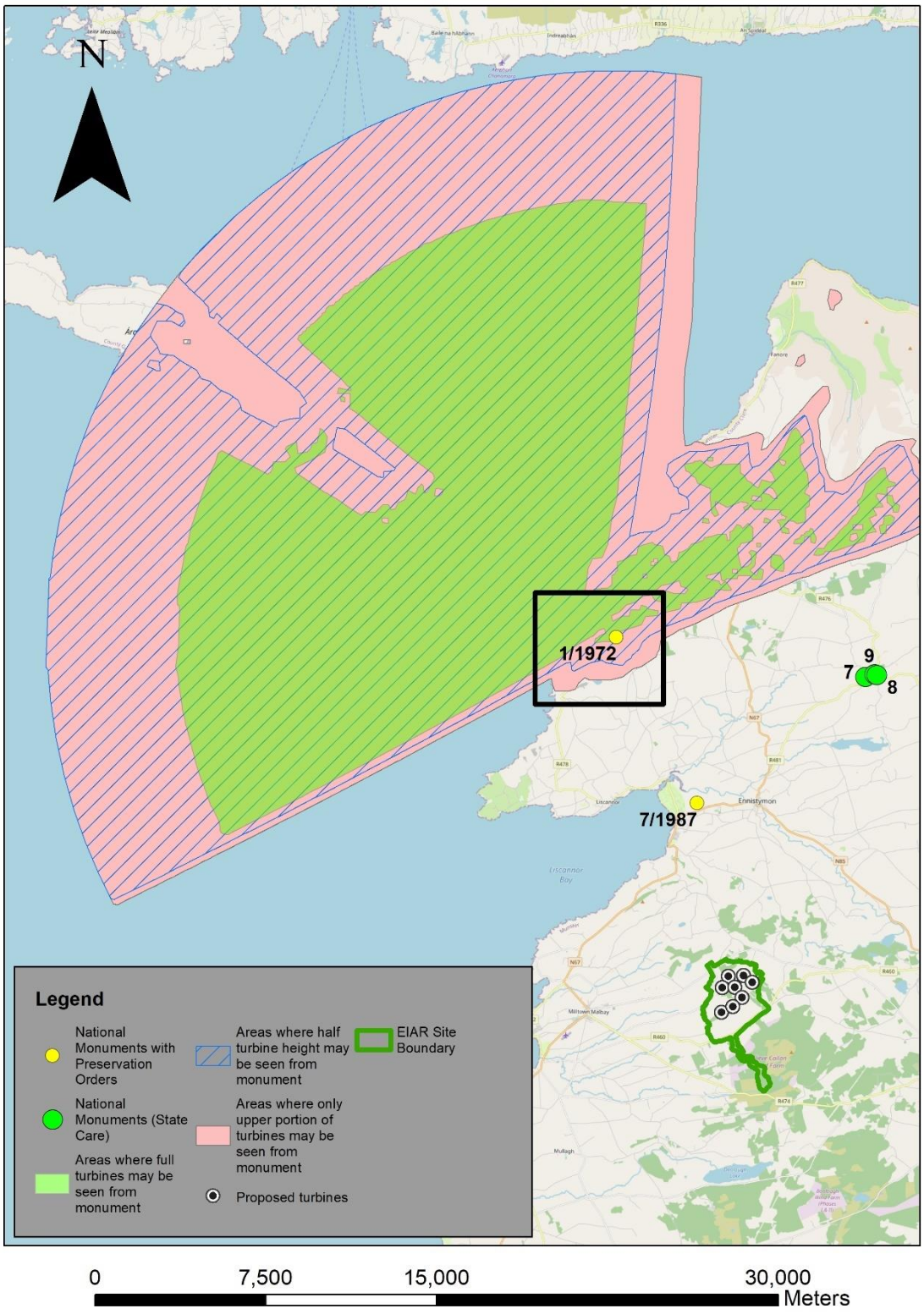

Figure 13-3: Viewshed from Doonagore Castle showing that no turbine would be visible form the monument. Proposed Development does not fall within viewshed area.

13.3.2.1.2 CL015-092 and CL015-093, 7/1987, Group of two Ringforts at Dough

CL015-092 is described as being located on top of a prominent E-W ridge in pasture with a marshy estuary to N and good views in all directions. A subcircular earthen enclosure (int. dims. 28.25m N-S; 28m E-W; overall dims. 58.75m N-S; 53.2m E-W) defined by a bank (av. int. H 0.7m; Wth c. 5m; ext. H up to 2.55m), a steep-sided and flat-bottomed fosse (Wth 2-3m) and an outer bank (Wth 3.9-5.1m; ext.

H 1-1.25m). A causewayed entrance (Wth 4.25-5.5m; H 0.6m above the fosse) is at E. The interior slopes gently to N. The perimeter is densely overgrown. There are numerous cattle gaps in both banks and some poaching on the external bank at SSW. A second rath (CL015-093—) lies c. 45m to the E.

Plate 13-78: CL015-092 from the north (Courtesy of NMS).

CL015-093 is described as follows: *'On the E end of a short ridge in fertile pasture, S of a marshy estuary with good views all around. A subcircular enclosure (diam. 23.25m N-S; 25m E-W) defined by a round-topped earth and gravel bank (Wth 3.2m; int. H 0.2-0.9m; ext. H 0.5-1.35m) from NNE to NNW. At N it has been reduced to a scarp (H 0.4m). There is a possible entrance (Wth 2.9m) at ESE with smaller cattle gaps at S and WSW. A fair amount of cattle poaching is evident along the NW and SW sectors as well as at the ESE entrance. The interior is slightly higher in the centre than at the perimeter and slopes down to the N. A band of rushes around the perimeter at S noted on a field inspection in 1998 is only now evident at SW. A bivallate rath (CL015-092—) lies 45m to the W on the same ridge'.*

The monuments are subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 7/1987).

Plate 13-79: CL015-093 looking West (courtesy of NMS).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

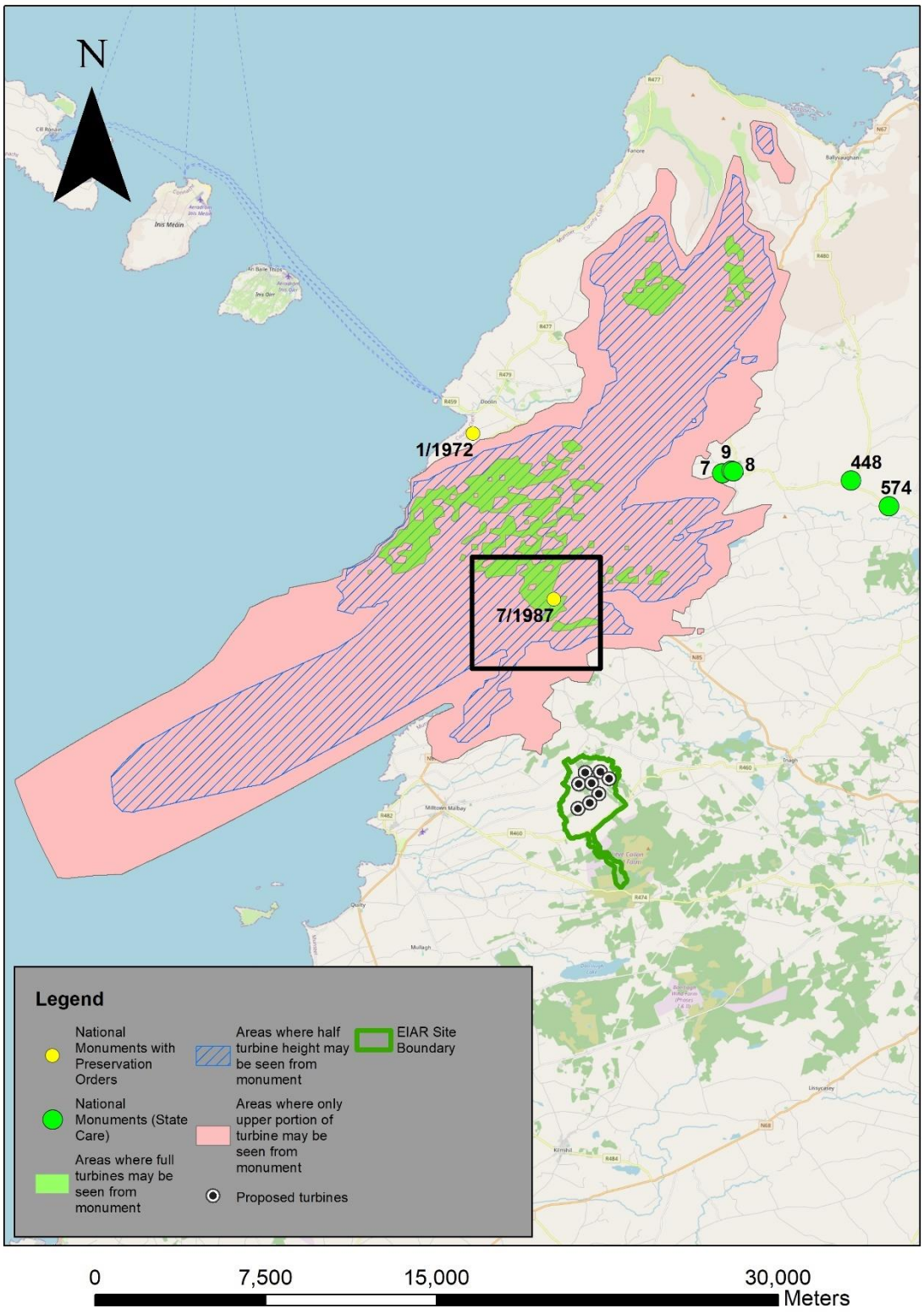

Figure 13-4: Viewshed from Two ringforts showing that no turbine would be visible form the monument

13.3.2.1.3 CL025-095002, 11/1971, O'Dea's Castle at Dysert

The towerhouse of Dysert O'Dea which was restored (1987) by the Dysert O'Dea Development Association and stands on a low outcrop of limestone C.3OOm NNE of Dysert Romanesque Church. The complex contains the remains of a banquet hall (early 16th century), a rectangular late mediaeval building east of the towerhouse and the base of a bawn wall. The towerhouse (12.3m x 8.4m) is built of

irregularly coursed limestone rubble to a height of 25.2m and contains six storeys in the stairwell section vaulted over the ground, first, third and fifth floors. The larger section contains four storeys, vaulted over the ground and second floors. it is likely that the stone was quarried on site leaving a low cliff face to the SW.. The Castle was built in 1480 by Diarmuid O'Dea, Lord of Cineal Fearmaic. The uppermost floors and staircase were badly damaged by the Cromwellians in 1651.

It is mentioned in O Donovan's OS letters as follows: '*O'Dea's Castle of Disert stands a little to the northwest of the Church, twenty two feet three inches long and fifteen feet five inches wide in the clear; walls seven feet thick, containing twenty eight loop holes and small windows, with one large window with stone sashes on the east side high up, and a smaller one in the west side, high up also. Three of its vaulted floors remain perfect, some of them having good fireplaces of cut polished stone; these rooms are large and could be easily filled up for the reception of a family of some pretensions to decency. The door of the Castle is on the north, and the ascent to the top through the northeast angle by a flight of ninety six stone steps, eight inches in thickness each. The north gable of a house stands near it on the northwest, the wall about four feet thick and apparently as old as the castle; the whole built on an elevated rocky crag, which, with the strength of the Castle, must have rendered it a place of great security. The under part of the Castle is at present inhabited by a poor family. It was near this castle that the great De Clare and his son were killed by the O'Deas and their adherents and allies in the year of our Lord 1318, as appears from the Wars of Torlogh, Ordnance Survey Copy, page 611.*

It appears from the aforesaid authority, page 587, that Mortogh, the son of Torlogh O'Brien, carried away a large prey from De Clare's Territory of Bunratty in the above years and that the latter, to be revenged of him and his followers, invited Sir William Oge Burke and some of the disaffected Dalcassian tribes to join him in totally extirpating Mortogh and all his adherents from Thomond. Having assembled all their forces at Quin they marched to the northwest towards O'Dea's country of Hy-Fearmaic, he being the most powerful and warm supporter of Mortogh and his father Torlogh, to plunder his territory and either extirpate or destroy himself and all his tribe and retainers. Having arrived at Ruadhan, within about three miles of Disert O'Dea, they encamped there for the night waiting for the daylight to carry their terrible design into execution'.

Plate 13-80: Dysert Castle (courtesy of NMS)

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

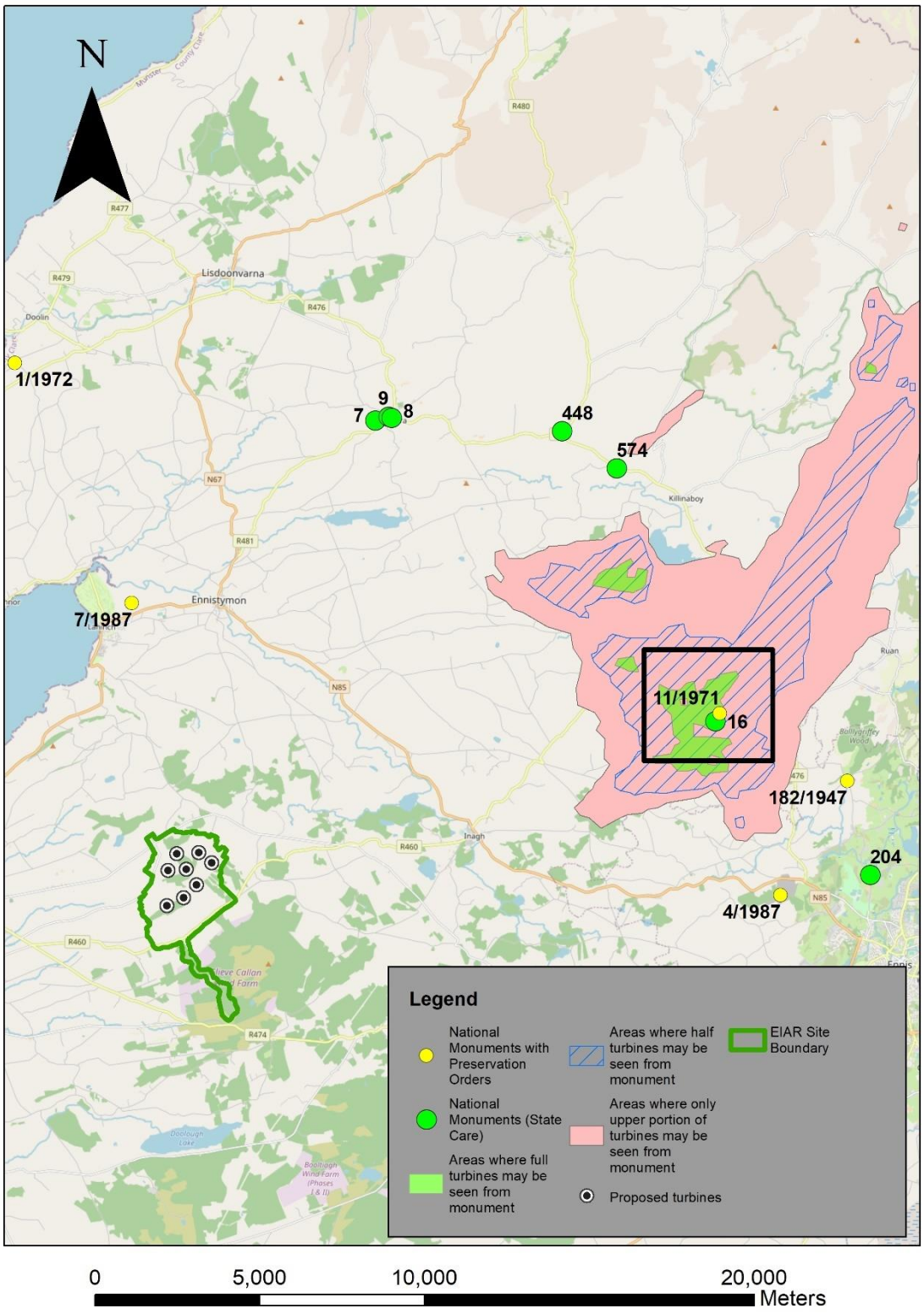

Figure 13-5: Viewshed from O Dea's Castle showing that no turbine would be visible from the monument

13.3.2.1.4 CL025-203002, 182/1947, Ballygriffy Castle

Rectangular Towerhouse (9.2m NS, 7.6m EW) standing 18.7m high on the east bank of the river Fergus. Very well built of coursed squared rubble limestone with very well cut windows and doorways. Bottom half of N wall suffering badly from frost flaking. Slight base batter all round. The ground floor which is reached through a pointed arched doorway is used as a cowshed. There is a narrow murder

hole (.7m x .4m) over the main door. A small vaulted recess (1.6m x 1.0m) west of the main doorway serves as a porter's lodge. The main vault (axis NS) shows a perfect wickerwork ceiling. There are three large squared and splayed embrasures for loops - that on the south wall has a round head. There is an L-shaped ambrey cut into the SE corner. At a height of 2.2 metres above floor level, the south wall extends into the chamber to a depth of 0.6m suspended on a precarious flat arch. This thickening of the exterior wall contains a large rectangular secret room (5.3m x 1.4m) reached through a trapdoor in the 1st floor. The SE corner contains the circular stairs which is almost intact up to wall walk level (69 steps).

Access to stairs is gained through a doorway east of the main door but the lower steps are blocked by rubble. Another (possibly later) doorway under a pointed arch gives access to the upper floors from the east, protected by two shot holes cut into the stair risers. The tower above this level contains a large chamber on the 1st floor and another on the floor above once supported on corbels. The third floor is supported by another vault (axis NS). There are five small chambers to the west of the stairwell one of which contains the garderobe, between the lst and 2nd main floors.

In the west wall of the lst floor is a mural passage reached through a lintelled doorway to the south of the west loop embrasure. This could be bolted from the inside. The passage leads south to a square trapdoor (0.6 sq. metres) in the floor giving access to the secret room in the south wall. This room is vaulted (axis EW) at a height of 1.4m with a very fine wicker ceiling. A fireplace was inserted in the 1st or 2nd floor on the west wall some time after the original construction. A chimney was cut through the wall and overhead vault resulting in a large hole appearing in the vault and rendering the 3rd floor dangerous today.

This 3rd floor contains some very fine trefoil headed loops on the N and W walls in squared and splayed embrasures and a pair of double light windows (mullions missing or the S and E walls). These are capped by double trefoil heads and are set in well carved embrasures crowned by semi-circular chamferred arches. There is an ambrey at each end of the S wall and a slop stone on the N wall.

The centre rail of the stairs is extended by a narrow stone screen to the west at this point so that one cannot climb any higher without entering this chamber. This screen is punctured by a narrow loop and one cannot re-enter the stairwell without passing a murder hole overhead. The stairs continues upwards to a small chamber above the murder hole, containing a flat headed loop on the north wall. Above this point the steps are broken but no doubt gave access to a wall walk and battlements (now removed). There are no remains of gables. The tower may have been covered by a hipped roof.

There is no evidence remaining of a bawn but nearby walls and buildings contain much similar stone. Ballygriffy is a very fine towerhouse with many interesting and unusual features but unfortunately it is suffering from time and the elements and badly in need of emergency repairs.

Plate 13-81: CL025-203002 from the NE (image courtesy of the NMS).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

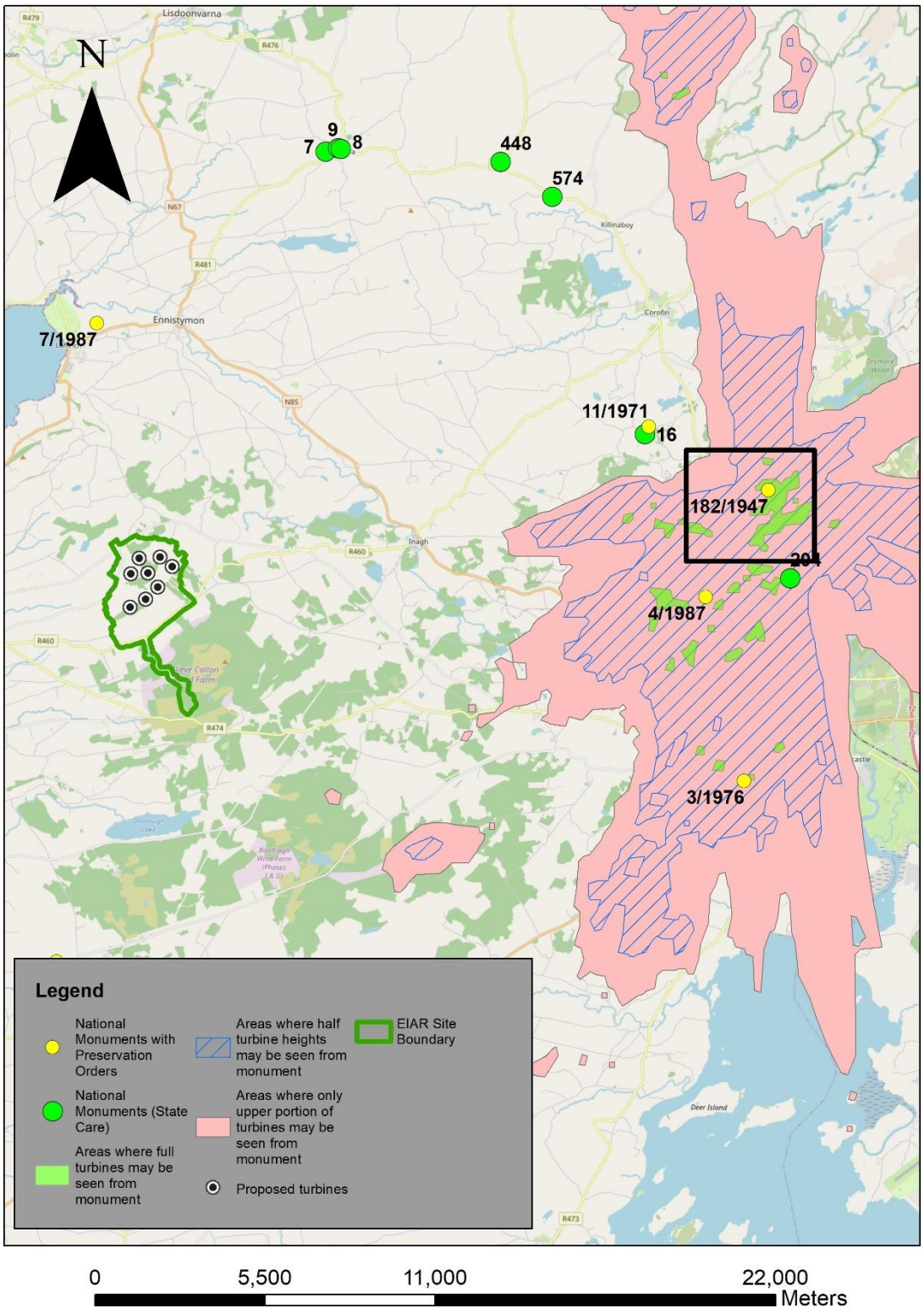

Figure 13-6: Viewshed from Ballygriffy Castle showing that no turbine would be visible from the monument

13.3.2.1.5 CL033-023001 and CL033-023002, 4/1987 Cairn at Ballyneillan

On the boundary between Ballyneillan and Bushypark townlands (also the boundary between the baronies of Bunratty Upper and Islands) at the E end of a W-E ridge with a deep active quarry immediately to the S. A flat-topped stone cairn (diam. of base c. 20m; diam. of top c. 10m; H 1.8-2m) with no kerbstones or other distinguishing features visible. Five hollows are dug into the top of the

cairn. One of the hollows reveals the lintel of a possible chamber. A report (F94/4497/0001, SMR file) in support of placing a preservation order on the site mentions that the cairn was dug into in 1874-5 during the construction of a nearby roadway and a cist grave containing at least two human remains was discovered. Westropp (1917, 5) however, noted the 'conspicuous cairn which gives its name to Carran, or Corran Hill on the bounds of Ballyneillan and Bushy Park' and says that it 'yielded human and other bones, but no cist'. It is within hilltop enclosure (CL033-023002-) (3 February 2020).

Situated at the NE end of an NE-SW ridge. Not listed in the SMR (1992) or the RMP (1996). The ground slopes away to NW and NE and there is a deep active quarry (D 50m) immediately to the S. Only the N half of a circular enclosure (diam. c. 115m NE-SW) remains surrounding a flat-topped stone cairn (CL033-023001-). The enclosure is defined at SW by a stone spread (Wth 1m; H 0.5m), at W by a stony scarp (Wth 3m; H 0.2m) and at N by a stone spread (Wth 3m). It can be traced around to the cliff edge at NE. This enclosure is visible on a Google Earth aerial photograph (2018).

This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 4/1987).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

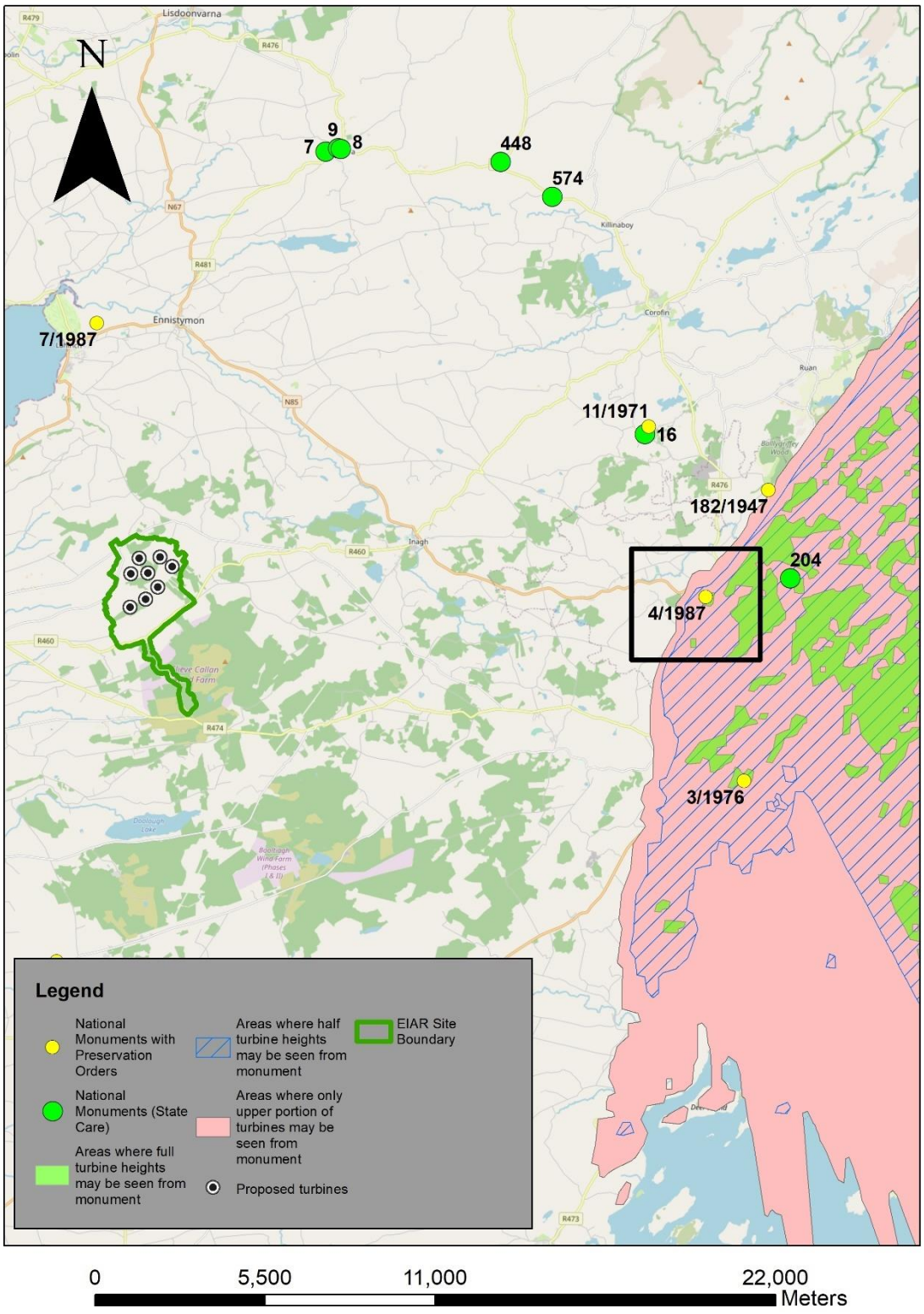

Figure 13-7: Viewshed from 4/1987 Cairn at Ballyneillan showing that no turbine would be visible from the monument

13.3.2.1.6 CL041-047, 3/1976, Ringfort

Situated at the N end of a plateau with land falling away to NE and rising to S. A subcircular ringfort (int. dims. 26.5m ENE-WSW; 22.6m NNW-SSE; max. dim. 44m) defined by an earthen bank and outer flat-bottomed fosse. The monument has been maintained as a lawn and some deciduous trees grow around the bank. The bank is best preserved SSE-WNW (Wth 5.3-5.5m; int. H 0.6-0.8m; ext. H 1.6-

1.7m). It is wider and lower from NW-SE where it is closest to the adjacent house and patio. From NE to SE the fosse has been reduced to a shallow outer lip (H 0.05m) and it has been replaced along its S extent by a laneway running inside the boundary wall. A distinct bank/fosse break at S-W may indicate that this portion of the fosse was drained at some point. The fosse is best preserved S-NNE (Wth at base 1.1m; ext. D 0.4-0.6m). The interior of the ringfort is flat with a slight slope to NNE. The original entrance gap (Wth 1.4m) is at SE but there are other gaps at W and S.

This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 3/1976).

The ZTV and viewshed results show that the upper portions of Turbines 2-6 and T8 may be visible from this monument resulting in a slight visual effect. Turbines T1 and T8 are located in areas where the viewshed shows potentially no visibility from the monument. When existing natural screening is taken into account, visual effects will be negligible at this distance.

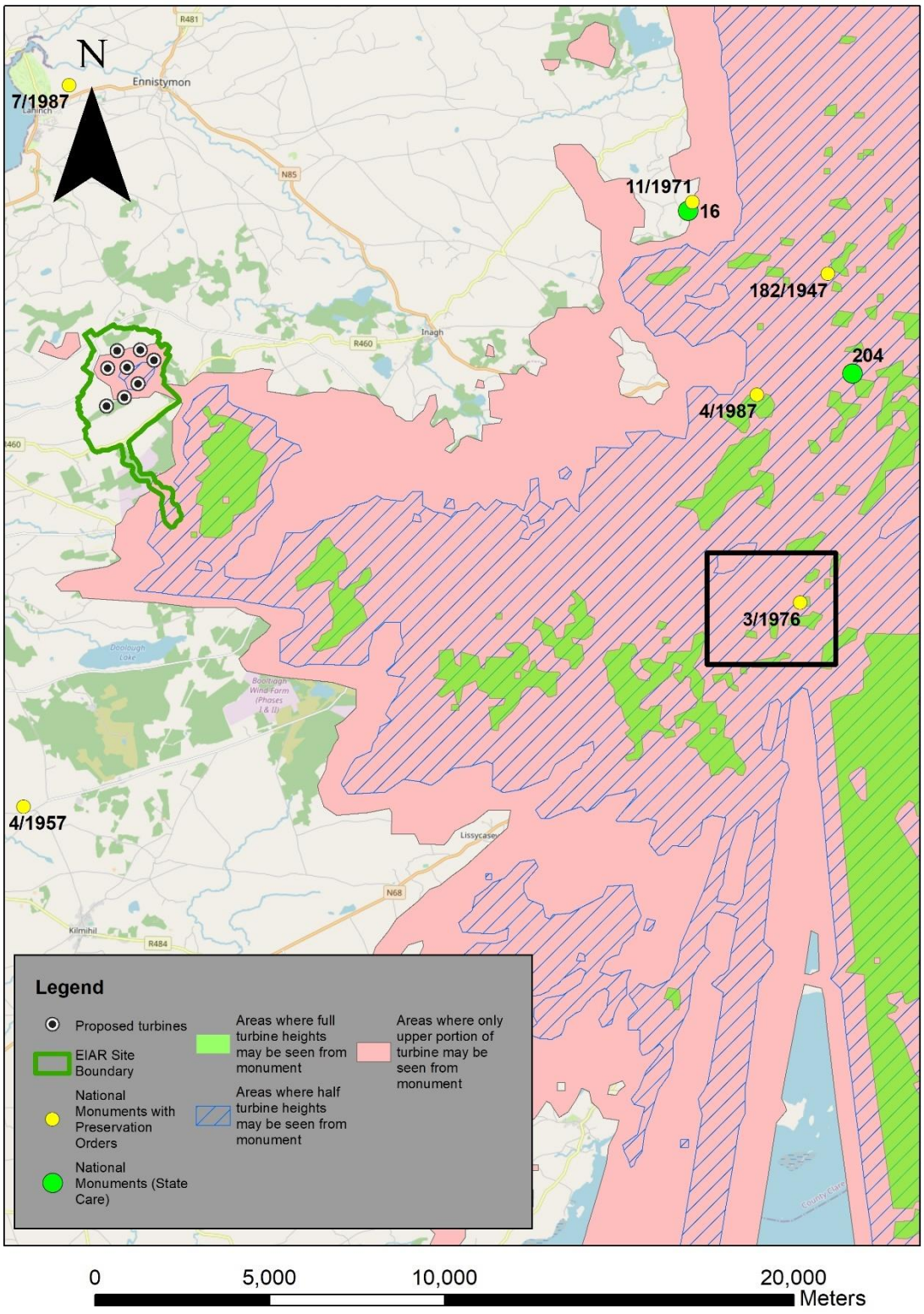

Figure 13-8: Viewshed analysis results from ringfort at Barloughra.

13.3.2.1.7 CL048-005, 4/1957, Cahermurphy stone fort

Situated near the top of an E-W ridge named Cahermurphy Hill and commanding good views especially to the south of the county. An almost circular cashel (39m E-W; 32m N-S) defined by a well built drystone wall of small flags (Wth 4.5-5.8m; ext. H 1.6-2.5m; int. H 1.3-2.2m) with a distinct batter. The original wall-facing is evident, highest (1.7m) from S to WSW. A flat outer terrace is evident SE to

WSW and from WNW to N. An entrance (Wth 5.2m) at NE may be original. It is partially blocked by a later wall. The interior is uneven and slopes to S. A well-defined hut site (CL048-005001-) abuts the interior of the enclosing wall at N. (Westropp 1911, 129-131). This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 4/1957).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. The proposed windfarm does not fall within the visible areas. No visual effects will occur therefore.

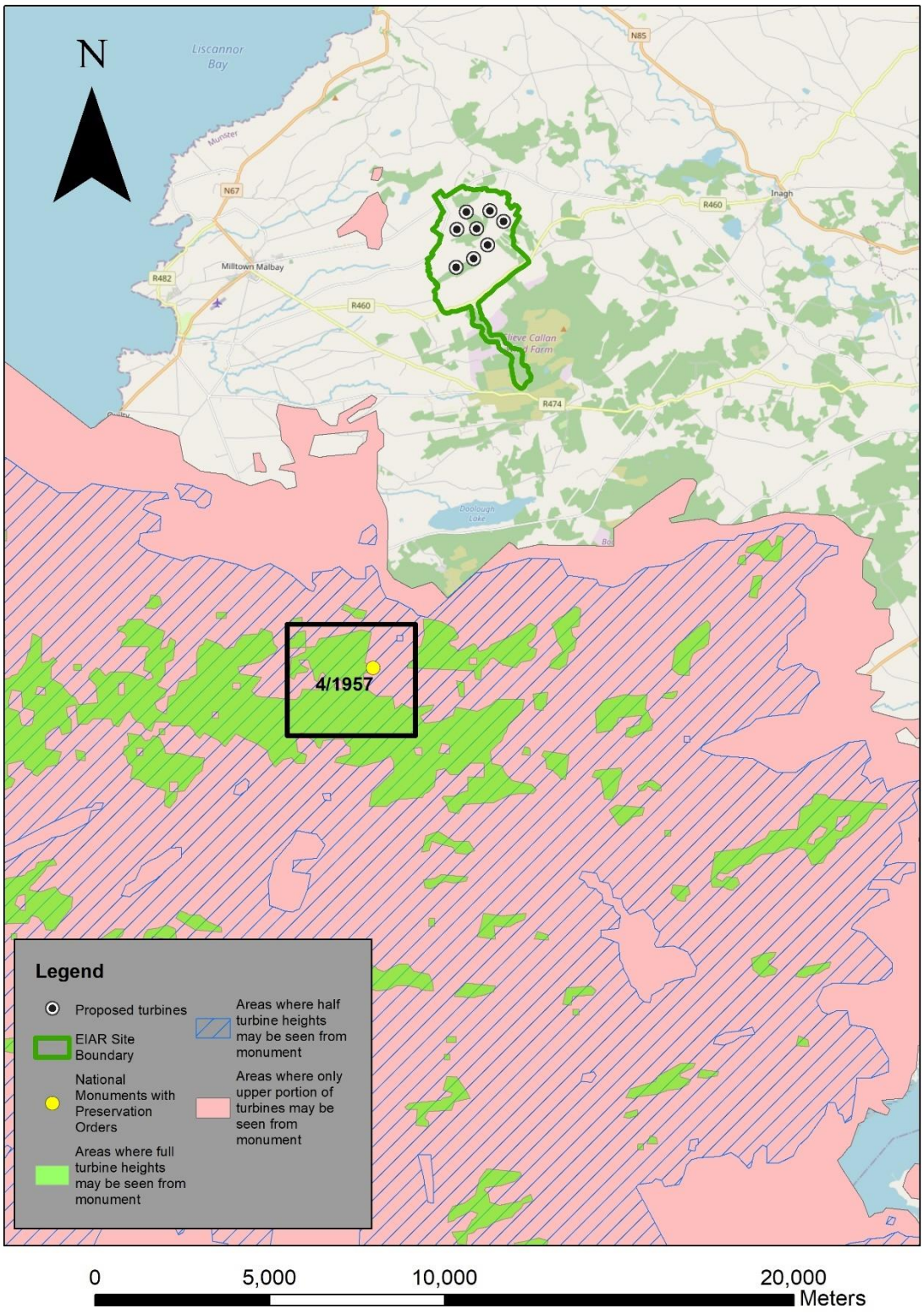

Figure 13-9: Viewshed from 4/1957, Cahermurphy stone fort showing that no turbine would be visible from the monument

13.3.2.1.8 CL016-012001, National Monument No. 7 at Kilfenora

Situated on a low natural rise in undulating limestone outcrop c. 0.5km W of Kilfenora. A small rectangular building (int. dims. 7.9m E-W; 4.3m N-S) largely collapsed. Intermittent remains of the N wall foundations are surmounted by a modern wall. A mound (H 0.25m; Wth 1.1m) of grassed-over rubble is all that remains of the E gable. The S wall (L 5.6m; H 2.25m; T 0.73m) is constructed of

roughly coursed, mortared limestone with no remaining features. A mound with possible internal stone facing marks the W gable and it is also surmounted by a modern wall. A plain recumbent graveslab lies in the interior. Stone foundations outside the SW corner (L 2.25m) suggest that the building may originally have been larger. Undulations in the field immediately to the W suggest further building activity. The church may have been part of a leper hospital (Gwynn and Hadcock 1970, 352). Kilcarragh church is a national monument in State care, no. 7.

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

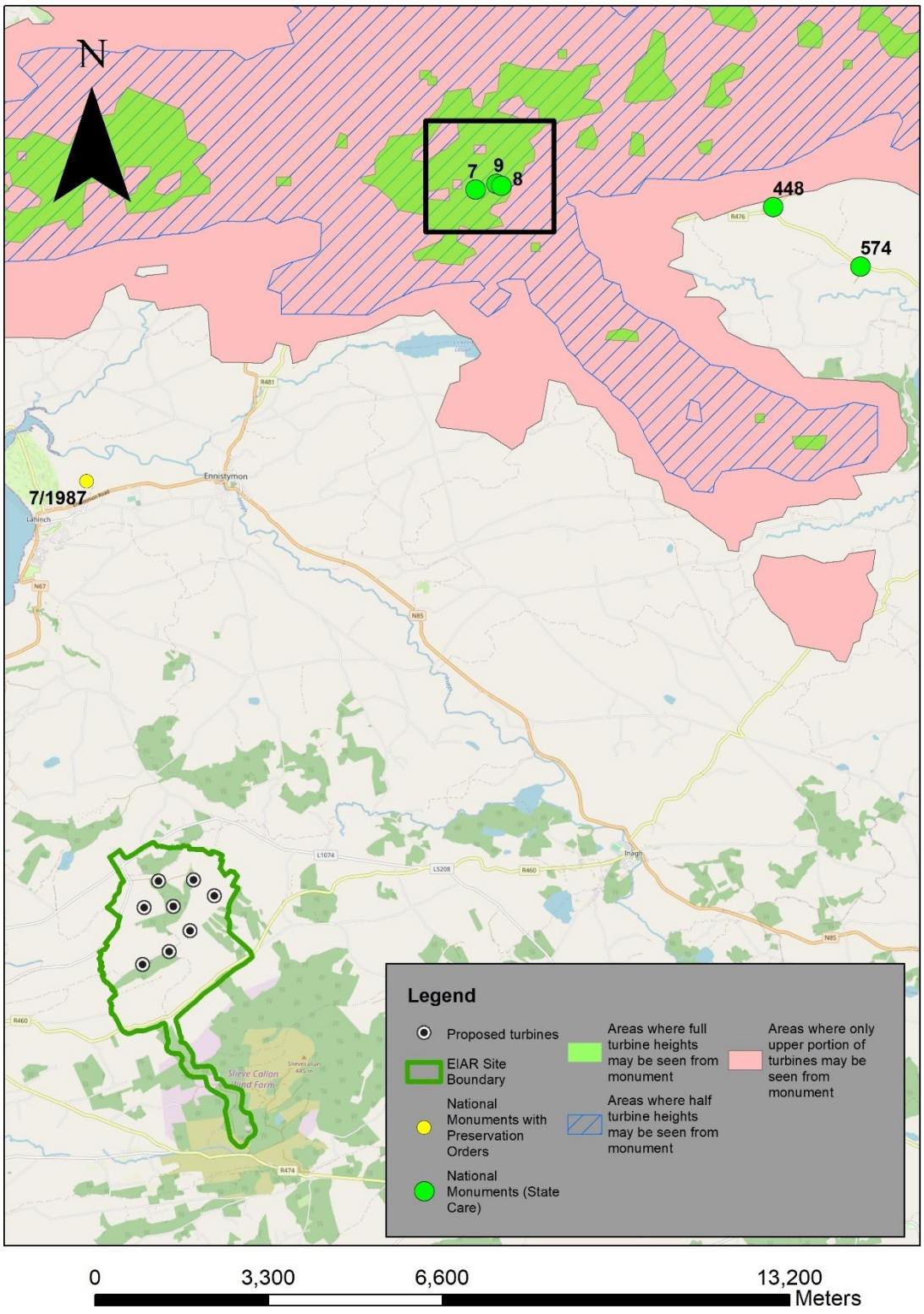

Figure 13-10: Viewshed from CL016-012001, National Monument No. 7 at Kilfenora showing that no turbine would be visible from the monument.

13.3.2.1.9 CL016-015001, National Monument No. 9, Kilfenora Abbey

Situated on a gentle N-facing slope in an area of undulating pasture. Listed as 'Ecclesiastical enclosure' in the SMR (1992) and the RMP (1996). The curving street at SW, the townland boundary to NW and the laneway to NE of Kilfenora Cathedral (CL016-015002-) may represent the outline of an ecclesiastical enclosure. Swan (1991, 110, 112) noted this and also commented that the 'partly natural' rocky platform

NW of the church might represent an inner enclosure. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

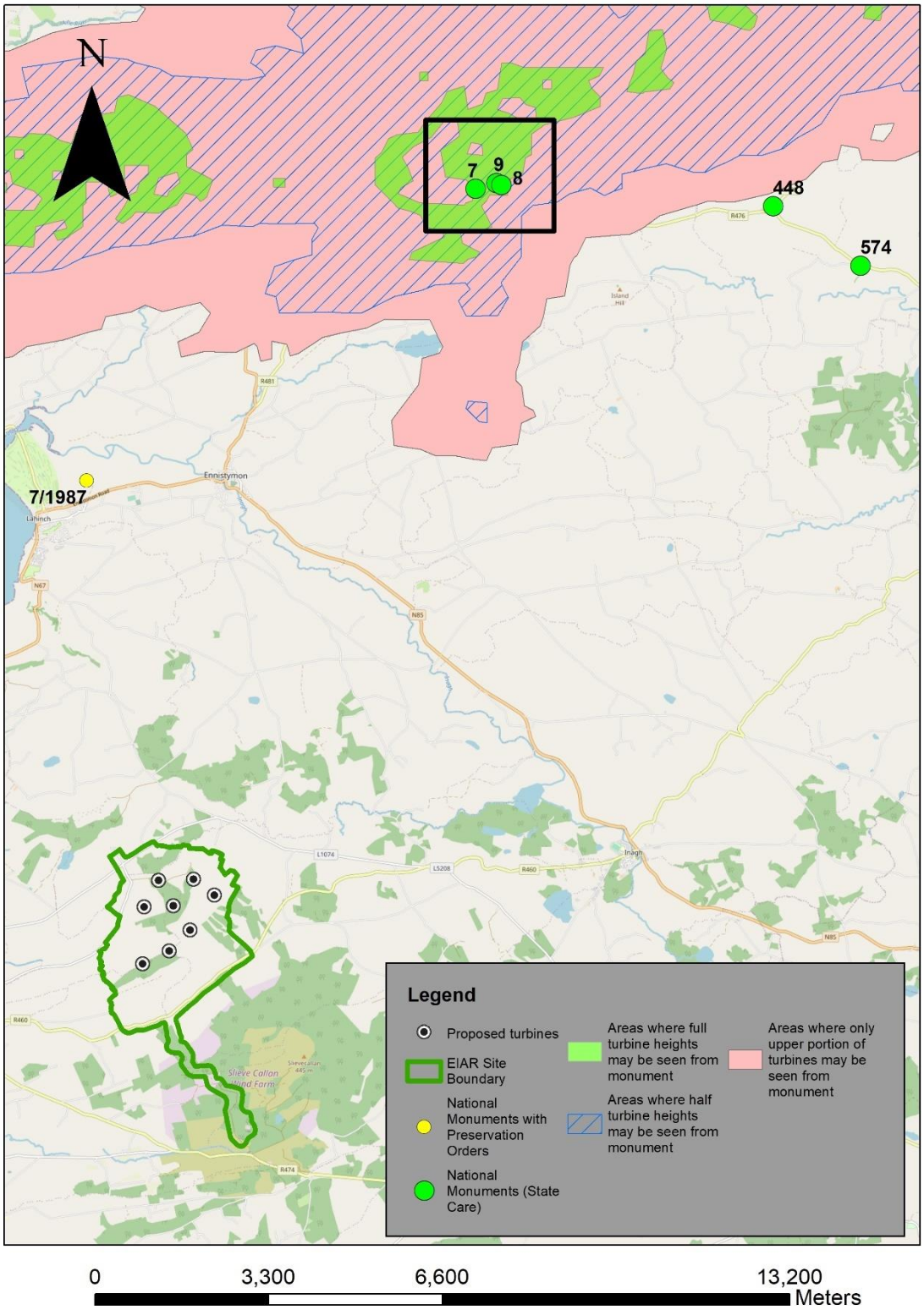

Figure 13-11: Viewshed from CL016-015001, National Monument No. 9, Kilfenora Abbey showing that no turbine would be visible from the monument.

13.3.2.1.10 CL016-015002-, CL016-015011-, CL016-015012-, CL016-015013-, CL016-015006-, CL016-015007-, CL016-015008, National Monument No. 8 at Kilfenora

Situated in Kilfenora Village within a graveyard (CL016-015003-) in an area of gently undulating pasture with the land falling away to the N. Named 'Cathedral (in ruins) on site of Abbey' on 1916 OS 6-inch OS map. Kilfenora (Cell Fhinnabrach) is the cathedral church of a small diocese, granted diocesan status in 1152 at the synod of Kells, affiliated with the diocese of Limerick since 1976 having been previously affiliated to Killaloe (1752-1976), Clonfert (1742-52) and Limerick (1606-7) (O'Neill 2012-13, 199). An early church is said to have been founded here by St. Fachnan in the 6th century (Gwynn and Hadcock 1970, 58). The earliest reference in the annals is in 1055 when Murchad O'Brien was attacked in Corcomroe and the church of Finnabrach was burned (ibid., 83). It is not clear if any of the fabric of that church is incorporated in the present church. A plan by James Pain in the 1830's shows thicker walls at the E end of the nave than the rest of the building which may reflect the incorporation of an older structure (O'Neill 2012-13, 199). According to Ó Carragáin (2010, 133) the lintel of the 11th-century church lies ex situ against the N wall of the chancel with a pair of square sockets for the vertical posts of the door frame carved into its underside. The chancel dates to the beginning of the 13th century with some 15th century windows in the S wall. Kilfenora cathedral is a national monument in State care, no. 8.

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

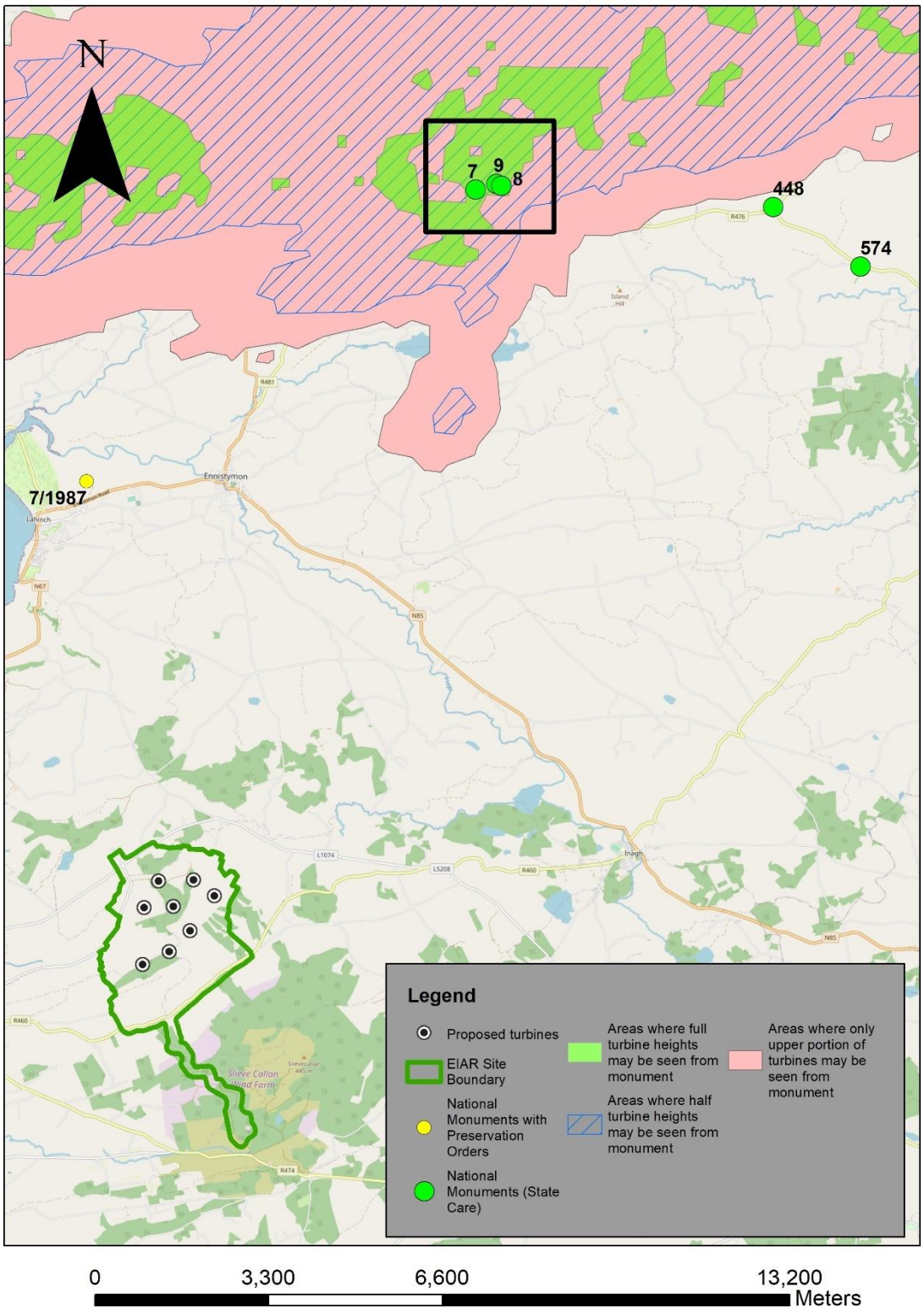

Figure 13-12: Viewshed from National Monument No. 8 at Kilfenora showing that no turbine would be visible from the monument.

13.3.2.1.11 CL016-052002, National Monument No. 574, Tau Cross (Cross Inneenboy)

This record is for the original location of a Tau Cross listed as 'Cross' in the SMR (1992) and the RMP (1996). There is a replica on site. See CL017-116003- for the present location of the cross and details.

The cross is a national monument in State care, No. 574. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

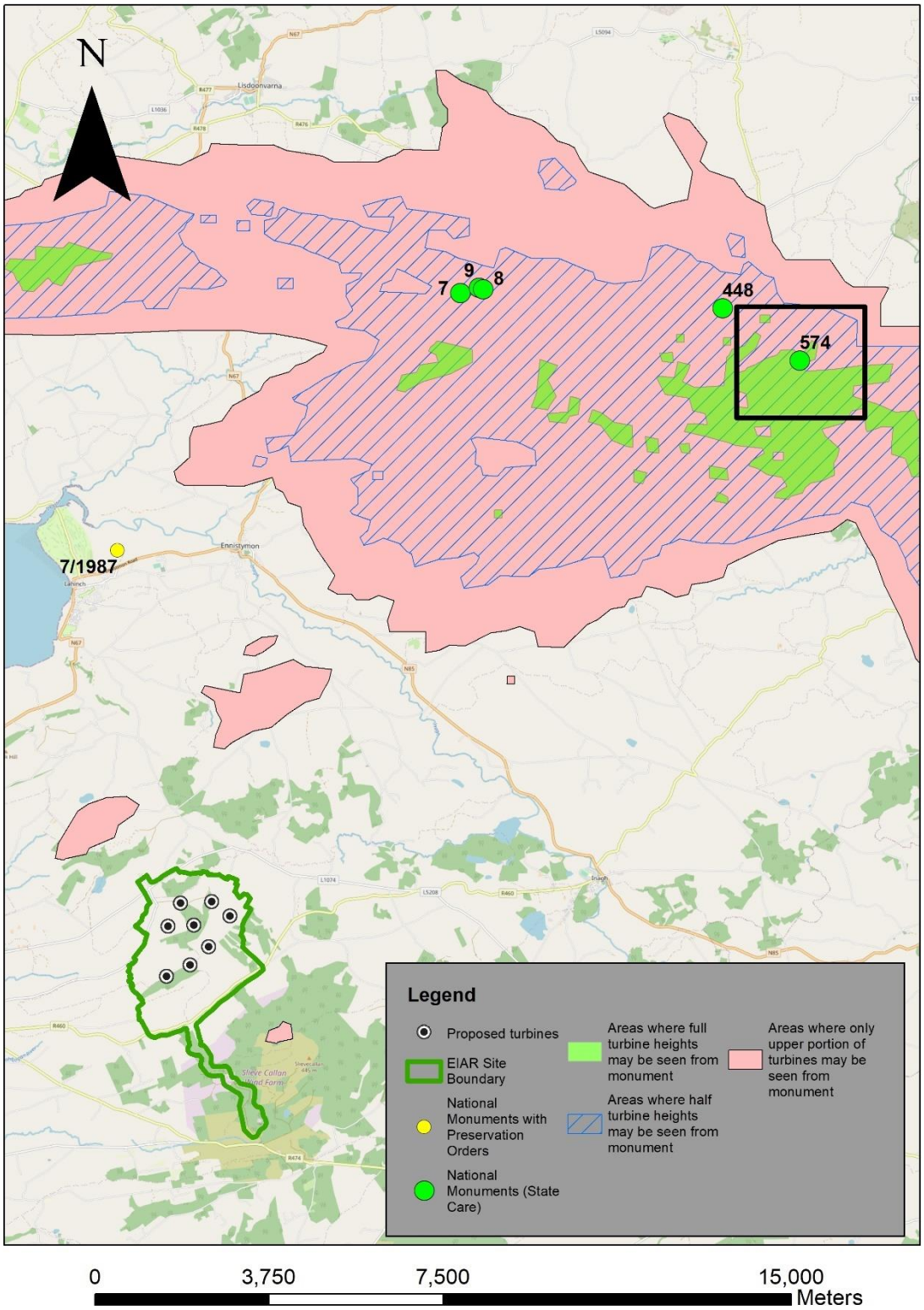

Figure 13-13: Viewshed from National Monument No. 574, Tau Cross showing that no turbine would be visible from the monument.

13.3.2.1.12 CL033-033001 and CL033-033003, National Monument No. 204 at Drumcliffe

Situated about 2 miles NW of Ennis town near the top of a steep E-facing slope within a large graveyard (CL033-033002-). No historical references are known for this ecclesiastical site but its foundation is sometimes attributed to St Conald (or Connal) (Gleeson and Gwynn 1962, 33-4; Swinfen 1992, 22). Westropp (1894, 335) refers to its taxation (Ecclesia de Drumleb) in 1302-6. The present church dates to the fifteenth century but incorporates features of an earlier church. Westropp (1900-02, 143) assigns a date of the 11th century to the S wall and the windows but a 15th-century date to the E gable. This became the medieval parish church of Drumcliff, incorporating both Ennis town and Clonroad. It is known to have been still in use in 1622 when Bishop John Rider of Killaloe states that the Protestant incumbent was 'Thomas Prichard, a grave minister and preacher; a man of good life and conversation, inducted in Anno 1617' (Swinfen 1992, 22).

The conserved remains of a rectangular church (ext. dims. 20.05m E-W; 7.85m N-S; int. dims. 16.3m E-W; 6.3m N-S) with evidence of rebuilding. The walls are of uncoursed limestone rubble. The N wall is featureless and survives to full height except for 3m at the W end which is reduced to foundation level. The E wall has a twin-light mullioned ogee-headed window (H 1.55m) with a square hood-moulding externally. There is an aumbry (Wth 0.73m; H 0.55m; D 0.2m) at the S end of the E wall. A gently pointed doorway (Wth 0.9m; H 2m) in the S wall (5.2m from the W end) has a rounded chamfered rear-arch (Wth 1.25m. H 2.6m) with steps down to the interior and a surviving drawbar- slot. To the W of the door the wall projects inwards for 0.3m. A similar projection on the E side of the door is visible on Westropp's plan (1894, 334) and so the surround of the doorway sat proud of the internal wall line. There are two windows in the S wall both with wide internal splays. The one further E is flat-headed with an external chamfer and rebate although this window was described by Westropp (ibid., 333) as having 'a semicircular head and moulding'. A third window with a wide splay was blocked by the insertion of the E wall and so the church extended further E at some time. The dressed stones of the W splay of this window are still visible. The W wall has a simple, round-headed, single-light window set within a cutstone round-headed splayed embrasure placed high in the gable. It is not centrally placed, being to the N of the apex, indicating that the entire church was rebuilt. There are traces of a corbel table at the top of the N and S walls at the E end. The ruined remains of a round tower (CL033-033003-) lie c. 10m to the N. The church and round tower are national monuments in State care, no. 204. (Westropp 1894, 332-40; 1900-02, 143; Gwynn and Gleeson 1962, 32-5; Swinfen 1992, 21-2; Large 2011).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

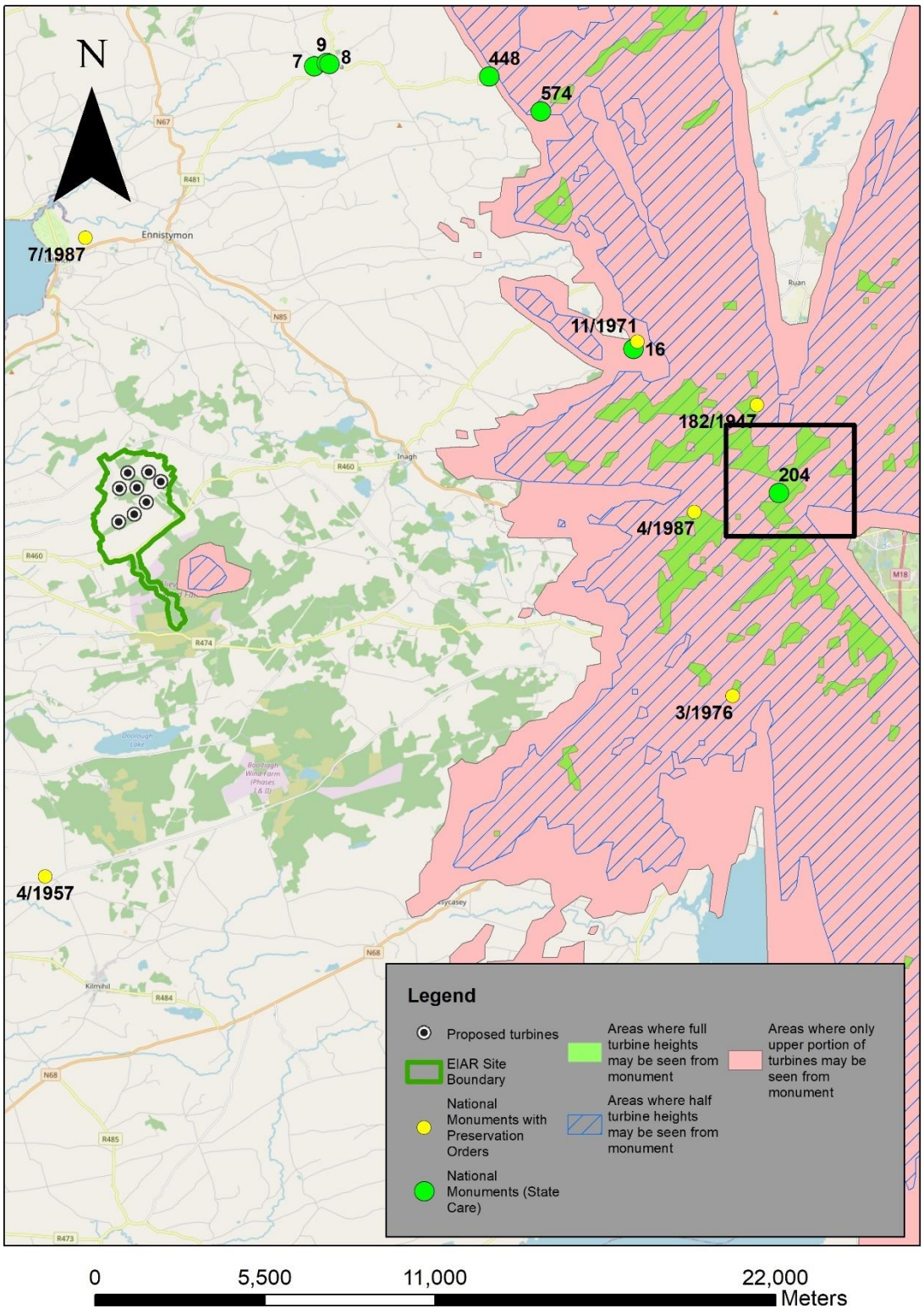

Figure 13-14: Viewshed from National Monument No. 204 at Drumcliffe showing that no turbine would be visible from the monument.

13.3.2.1.13 CL016-032002, National Monument No. 448, Leamaneah Castle

Situated at the junction of the roads from Corofin, Ballyvaughan and Kilfenora with good views to S and SW. A five-storey 15th-century tower house with a 17th century fortified house (CL016-032003-) attached at W and walled gardens (CL016-032001- and CL016-032011-) at E and W. Only the services wing of the tower house remains built of dressed limestone blocks and containing the stairs and small rooms with narrow lights. The original halls were replaced by the fortified house in 1648. The tower had no garderobes and only one fireplace at third-floor level. The doorways to W are not at the correct floor height to permit access to the three floors and attic of the present four-bay house. Both the tower and the house have a base-batter and good quoins except the W wall of the tower indicating that it was rebuilt. The tower house was built c. 1490 by Turlough Donn Ó Briain, King of Thomond. One of the earliest references to the castle is in a will of Murrough O'Brien dated 1551 where he leaves it to his son Donough. Ownership passed through many hands between then and 1639 when Conor O'Brien married Maire Rua and subsequently built the fortified house. Her son Donough lived at Leamaneh until 1684 when he moved to Dromoland. The property then passed to his son Lucius who died in 1717, to his son Sir Edward who owned it in 1728 and to his son Captain Edward who held it in 1764. By 1773 it was held by Charles MacDonnell who was married to Catherine O'Brien. The MacDonnells lived at Newhall and let Leamaneh go to ruin whereupon it passed back to Edward. The castle was most likely lived in until about 1800. (See Ua Cróinín and Breen 1997 (uploaded) for historical details and references).

The ground floor of the tower (ext. dims. 10.1m N-S; 4.85m E-W) has an entrance passage towards the S. The outer door at E (Wth 1.17m; H 2.6m) is pointed and has a long bar-hole in the S jamb. There is also an external recess for a yett and a squint in the S jamb which opens on the stairs. There is a hanging-eye on the N side and a murder-hole overhead (1.4m x 0.4m). The doorway at the W end of the passage is also pointed (Wth 1.16m; H 2.6m) with a bar-hole in the S jamb. The N wall of the passage seems to be a replacement and a lintelled door and a small window connect the passage and a barrel-vaulted chamber to N (3.15m N-S; 2.5m E-W). The chamber is lit by a simple rectangular light in the N wall. A loft is evidenced by two surviving corbels in situ. The doorway to the stairs is pointed and the stairs is lit by a pointed light (H 0.82m; wth 0.08m) with a separate gun-loop or slop-stone below. The stairs have narrow lights and slop-stones at each level. The embrasures of the rooms of the tower are generally rounded.

The first-floor room (5.25m N-S; 2.85m E-W) is entered through a pointed door and is lit by an ogee-headed window at E and N. There is a cupboard in the E wall. This floor is half-way between the ground and first floor of the adjoining house. A pointed doorway (Wth 1.06m; H 1.75m) leads to what would have been the second floor of the original adjoining house. This door arch has a small cross carved in high relief. Also at second floor level there is a room lit by ogee-headed windows at E and N and by a light at the NE angle. On the third floor a pointed door leads through a passage towards the adjoining house (between the second and third floors). A pointed door with a bar-hole on the W jamb and a hanging eye at E leads to a chamber with two lights on the E wall, on either side of a recessed fireplace, and one on the N wall. The fireplace from this floor (dated 1553) was removed in the 19th century to Dromoland and subsequently to the first floor of the tower house (CL033-082007-) in the Old Ground Hotel, Ennis. On the fourth floor a pointed doorway with a bar-hole and hanging-eye leads to the attic level of the adjoining house. Also at this level a pointed doorway leads to a barrel-vaulted chamber with wicker centring and with single lights on the N and E walls. On the fifth floor there is a blocked doorway presumably to the wall-walk of the house. The chamber at this level has a damaged light in the N wall and a double ogee-headed window in the E wall with a cupboard to the N. Five steps S of the door lead to a lookout and the corbels for a machicoulis survive.

A large walled garden (CL016-032001-) extends to the E within which there are a series of fish-ponds (CL016-032010-). A second walled garden (CL016-032011-) lies to the W. Gate piers (CL016-032008-) survive c. 40m to the NW of the 17th-century house at the NW corner of the complex, while another set are 400m to the N (CL016-020032-). Gate piers (CL016-032009-) to SW no longer survive. A large gateway (CL016-032007-) originally stood in front of the house but was moved to Dromoland castle (CL042-063003-) in 1907 where it serves as the entrance to a walled garden. The road S towards Corofin

from Leamaneh is named ‘Sir Donat’s Road’ (CL016-121—*/CL017-023—/CL010-111—*/CL011-017—*) after Donough O'Brien who was created a Baronet in 1686 and became known as ‘Donat’. Leamaneh Castle is a National Monument in State care, no. 448. (Westropp 1900, 403-407; Ua Cróinín and Breen 1987; O'Connell and Gosling 1991, 135-40; Leask 1995 (reprint), 133-4; Ua Cróinín and Breen 1997).

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

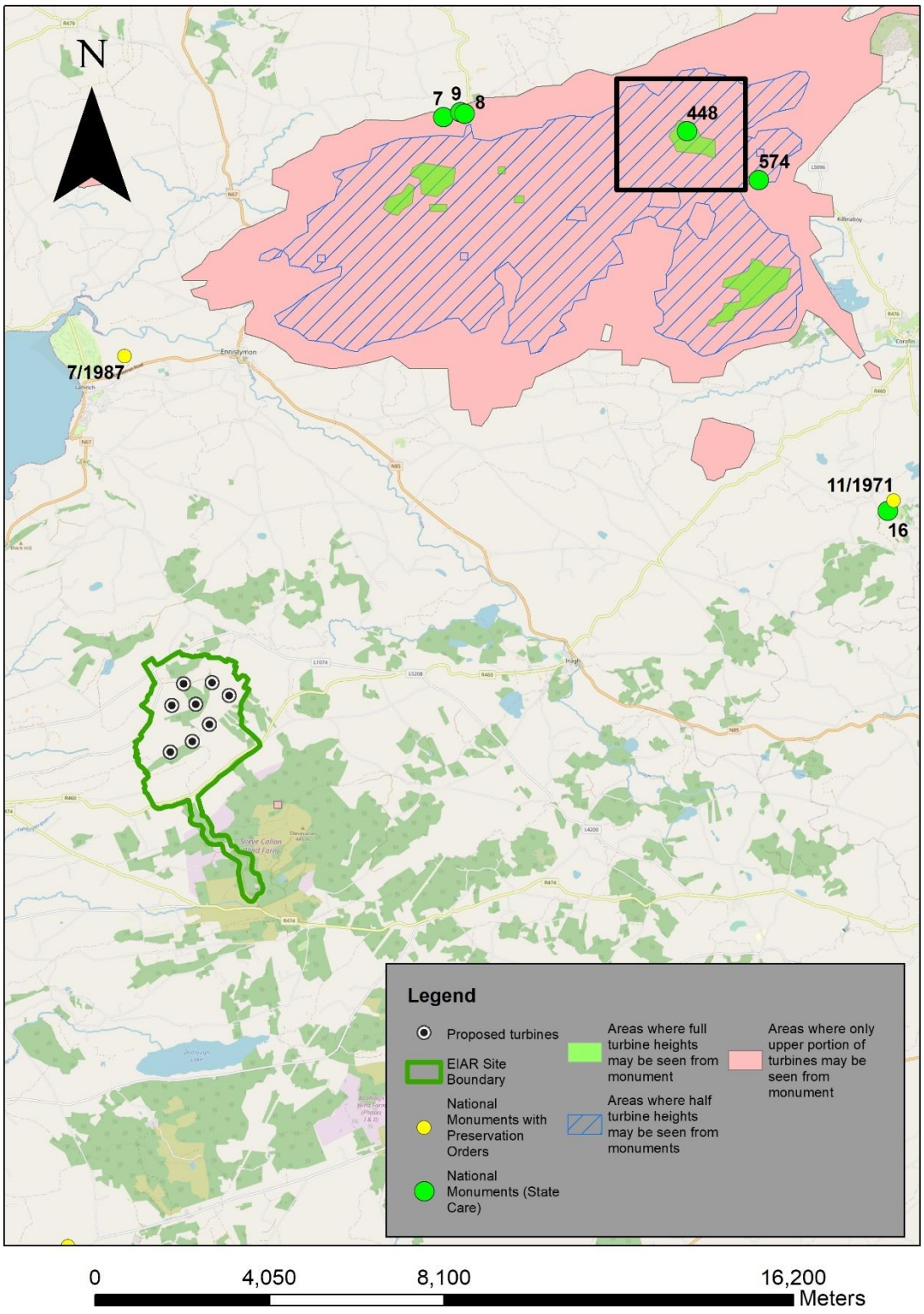

Figure 13-15: Viewshed from National Monument No. 448, Leamaneah Castle showing that no turbine would be visible from the monument.

13.3.2.1.14 CL025-091001, CL025-091003, CL025-091004, National Monument No. 16 Dysert O' Dea

Situated in the N portion of a graveyard (CL025-091002-) on a slight rise in a low-lying area, overlooked by higher ground to the W. St. Tola founded a monastery here around AD 700. According to Harbison

(1970, 41) there was originally 'a 12th century Romanesque nave and chancel church with a plain chancel arch and a wonderfully decorated west doorway above which was an ornamental lancet window. Three narrow lancet windows were inserted in the east gable early in the 13th century. Some considerable time later the church must have fallen into decay. Possibly as late as 1683, when some of the corner stones of the church were used as a base for the re-erection of the high cross in the adjoining field to the east, the church was reconstructed in its present form. The lancet window in the west gable was incorrectly replaced roughly in its original position; the Romanesque doorway, with its beautifully carved geometric motifs, foliage and almost mongoloid human masks, was inserted into the south wall, and the chancel (parts of which may still be original) reconstructed to its 13th century state.'

The present remains (ext. L 32.07m) are oriented ENE-WSW. The lower part of the nave walls (ext. L 23.43m; ext. Wth 9.68m at W) have cyclopean masonry but the upper parts are later. The Romanesque doorway (Wth 0.94m; H 2.05m) in the S wall has four orders decorated with 19 heads (human and otherwise) with a pointed arch inside (Wth 1.2m) with a hanging eye on the W side and a latch at E. A projection (Wth 0.48m) at the W end of the S wall seems to be original. There is a fine round-headed Romanesque window in the W wall and a small rectangular window is inserted above and to the S. The Romanesque window has a variety of unrelated carvings on the surrounding facing stones and was reconstructed from several older windows (Swinfen 1992, 23). The chancel arch (Wth 4.3m) is round and plain (H 2.5m to the capitals) with a double belfry over. The rebuilding of the upper parts of the nave and chancel are evidenced by discrepancies in bonding between the nave and chancel walls at the chancel arch. Both the nave and chancel have internal corbel tables to support the roof and there is a string course externally which provides the gutter-holes. The E wall of the chancel (ext. dims. 8.64m E-W; 8m N-S) has three lancet windows, chamfered and recessed and a plain aumbry (Wth 0.4m; H 0.43m; D 0.41m). There is a single round-headed window (Wth 0.1m; H 1.54m) in the S wall. The nave is completely plain apart from a cusped ogee-headed window (Wth 0.22m; H 1.78m) towards the E end of the N wall. A blocked-up doorway is evident high up in the N wall facing the round tower (ibid., 23). A slab from a possible 14th-century effigial tomb (CL025-091006-) was formerly attached to the external wall beside the ornate doorway and a 17th-century wall monument (CL025-091007-) commemorating Joan O'Dea is built into the N wall of the chancel. A round tower (CL025-091003-) stands 2m to the NW and the high cross of St Tola (CL025-094—) lies in the field to the E. This church is a national monument in State care, no. 16. (Westropp 1894, 150-59; Ó Murchadha 1992, 53-7)

The much ruined remains of a round tower surviving on one side to a height of c. 18m and narrowing as it rises. It is 18.5m in circumference at base (diam. c. 5.89m) and its walls (T 1.25m) are composed of roughly coursed limestone blocks. A round-headed doorway with inclined jambs at E (Wth 0.95m) is 2m over external ground level and is well preserved. A single ogee-headed window is close to the top of the wall at NW. There is a rebate over the ground floor. A breach to NW at ground level, supported by a pillar or masonry may represent a late entrance, introduced when the medieval window was installed in the upper wall. The external wall near the breach displays evidence of burning. This is a national monument in State care, no. 16. (Westropp 1894, 155-6; Barrow 1979, 60-61; Ó Murchadha 1993, 36-42; Lalor 1999, 111-12)

The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. No visual effects will occur therefore.

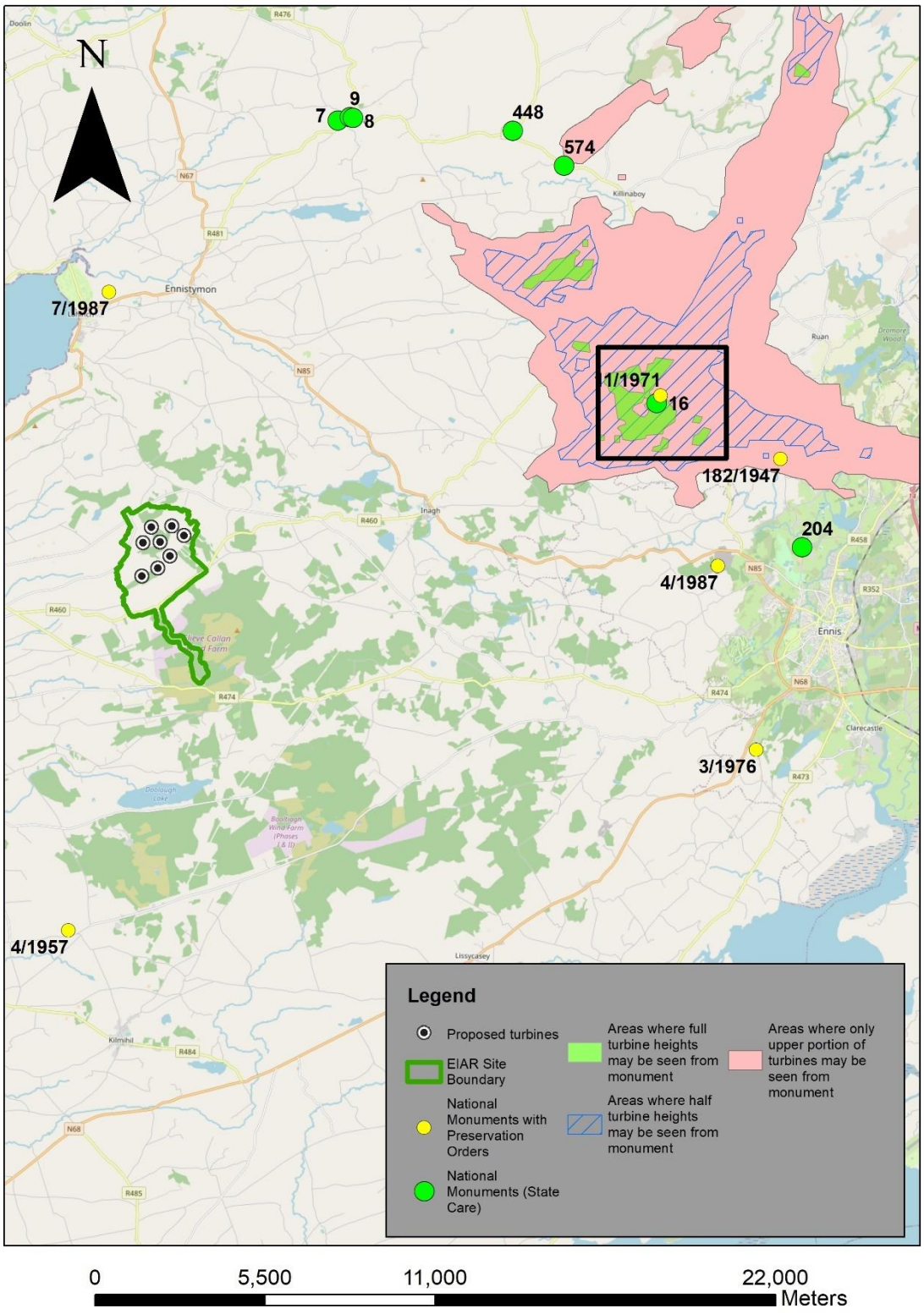

Figure 13-16: Viewshed from National Monument No. 16 Dysert O' Dea showing that no turbine would be visible from the monument.

13.3.2.2 Recorded Monuments within the EIAR site boundary

One monument subject to statutory protection as defined in the Record of Monuments and Places or Sites and Monument Record is located within the EIAR site boundary for the Proposed Development. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland at ITM E512804, N680240 (Figure 13-17 and Figure 13-18:). A description for this monument is not available on the National Monuments Service public web viewer.

It is located in rough pasture to east of narrow farm track with good views to NE and of higher ground in distance to E. Views to SE are obscured by tracts of coniferous forestry. Four stones are extant and arranged in a semi-circle from E-N-W. Three upright stones of thin shale stand from E-N, with western stone almost prostrate. Internal diameter c. 8m E/W. It is not marked on either the 25inch or 6 inch historic OS maps. The monument is located 83m to the east of an existing track in low-lying boggy pasture near to an east facing slope. A borrow pit is proposed to be located on the west side of the existing track and it will measure c. 80m from the stone circle. Turbine 5 is proposed to be located 274m to the north of the monument and Turbine 6 572m to the south-west. The proposed underground cable route is located 293 to the south of the monument. Direct and Indirect Effects are addressed below in Section 13.3.3.4.3.

Plate 13-82: Remains of Stone Circle looking south towards forestry. Slievecallan wind farm in background.

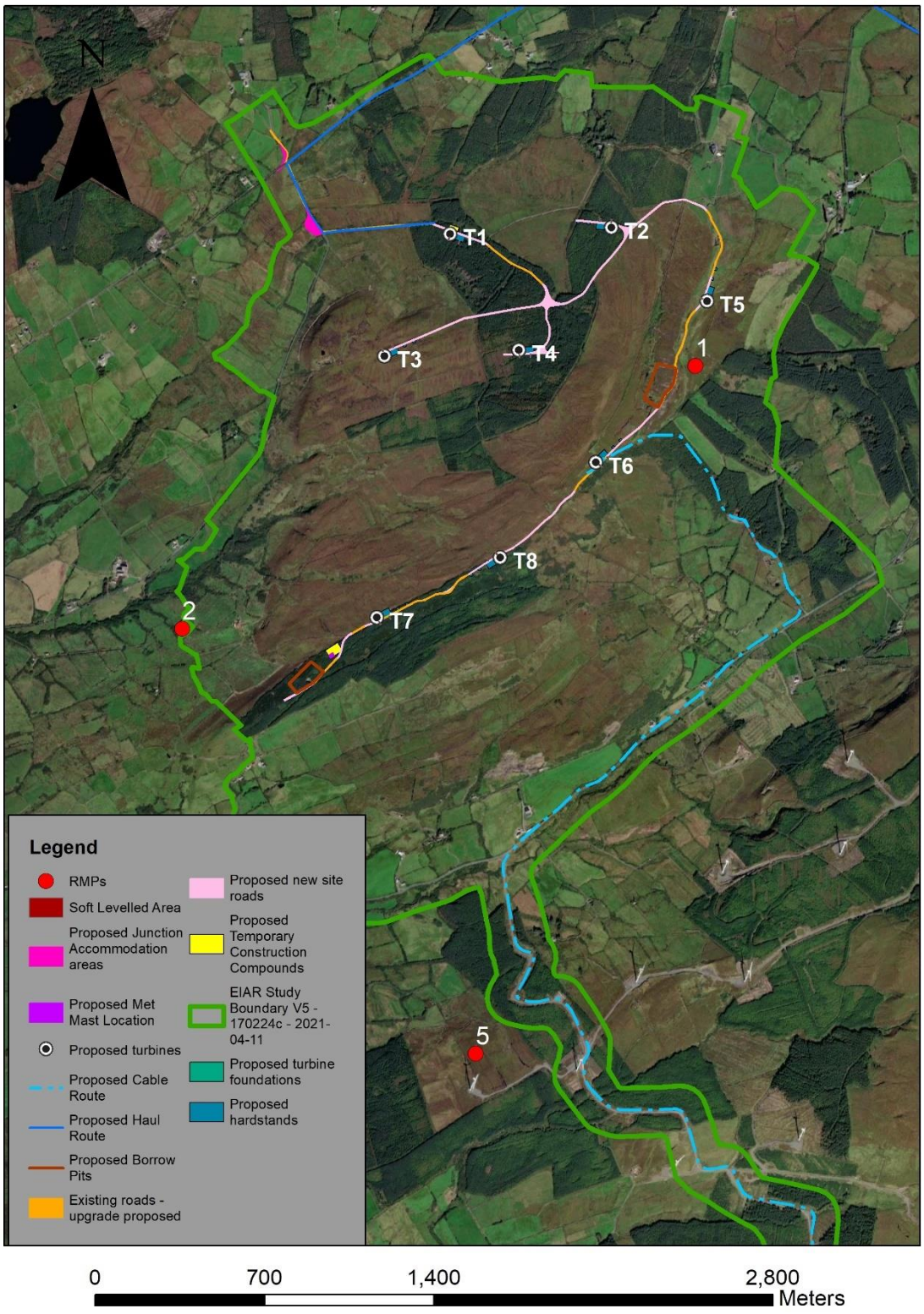

Figure 13-17: Stone circle CL31-052 within the EIAR site boundary.

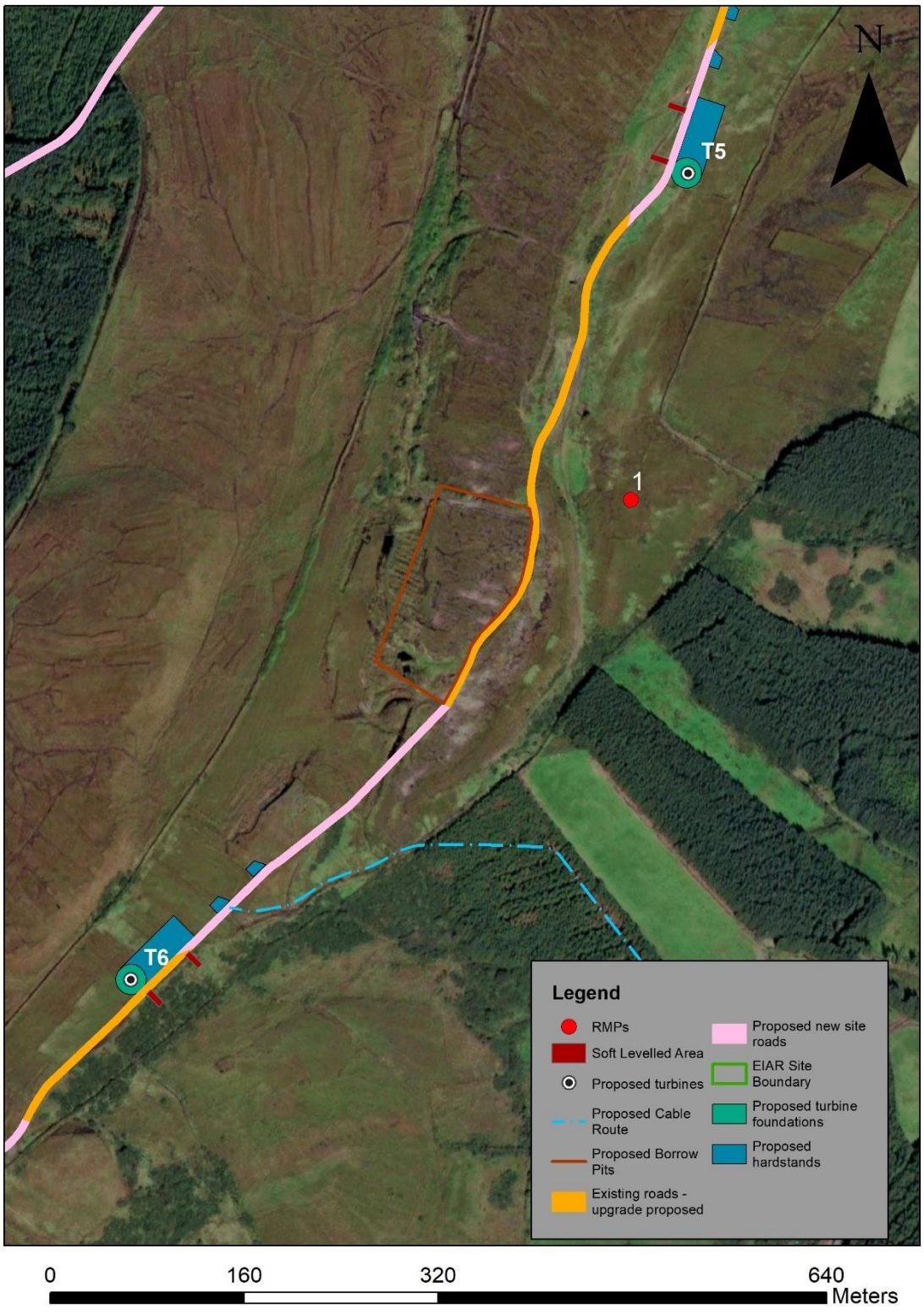

Figure 13-18: Detailed location of the stone circle CL031-052 (Map ID 1).

13.3.2.3 Recorded Monuments within 5km of the proposed Turbines

Eighty-five monuments are located within 5km of the nearest proposed turbine and these are detailed below in Table 13-4. Monuments within 5km of the nearest proposed turbines are included here for purposes of assessing impact on setting in the wider landscape setting, outside the EIAR site boundary (See Section 13.2.5 for methodology). The monuments are labelled from 1 to 85 for ease of reference on Figure 13-19. Only two monuments are located within 1km of the nearest proposed turbines including the example within the EIAR boundary as discussed above. Only three monuments are located between 1 and 2km of the nearest proposed turbine. Four monuments are located between 2 and 3km with 32 monuments located between 3 and 4km. The majority (44) of monuments are located between 4 and 5km. The immediate setting of the recorded monuments will not therefore be negatively impacted. Figure 13-19 demonstrates that the majority of the recorded monuments are located at a remove from the proposed turbines with a notable dearth of monuments within close proximity to the site.

Table 13-4: RMPs within 5km of the nearest proposed turbines

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
1	CL031-052	512804	680240	Stone circle - multiple-stone	Curraghodea	5	274
2	CL031-019	510684	679154	Earthwork	Silverhill	7	743
3	CL031-018	509914	678916	Ringfort - rath	Silverhill	7	1543
4	CL031-037	510120	678049	Fulacht fia	Cloghaun more	7	1765
5	CL031-051	511896	677399	Standing stone	Doonsallagh east	7	1902
6	CL031-050	509157	680472	Redundant record	Slievenalicka	3	2369
7	CL023-061	510934	683524	Concentric enclosure	Clooneyogan south	1	2868
8	CL023-037	514309	683019	House - 16th/17th century	Knockatullaghaun	2	2880
9	CL023-036	514225	683109	Barrow - ring-barrow	Knockatullaghaun	2	2898
10	CL031-009	508587	680987	Ringfort - rath	Leeds	3	3014
11	CL023-034	511291	683845	Earthwork	Clooneyogan north	1	3098
12	CL023-030001-	510133	683512	Ringfort - rath	Clooneyogan south	1	3189

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
13	CL023-030002-	510133	683512	House - indeterminate date	Clooneyogan south	1	3189
14	CL031-017	508270	678536	Ringfort - rath	Knockloskeraun	7	3230
15	CL031-049	508707	677463	Quarry	Caherogan	7	3245
16	CL031-029	509631	676528	Ringfort - rath	Doonsallagh west	7	3251
17	CL031-044-	508308	678179	Ringfort - rath	Knockloskeraun	7	3290
18	CL023-035003-	514128	683663	Ringfort - rath	Mooghna	2	3303
19	CL023-035001-	514129	683663	Burial ground	Mooghna	2	3304
20	CL031-035	514177	676726	Megalithic tomb - unclassified	Knockalassa	8	3341
21	CL023-044	508592	681938	Ringfort - rath	Drumbaun	3	3362
22	CL023-035002-	514218	683695	Ritual site - holy well	Mooghna	2	3377
23	CL031-045	509602	676346	Mound	Doonsallagh west	7	3420
24	CL031-028	509292	676376	Ringfort - cashel	Doonsallagh west	7	3570
25	CL031-033001-	514160	676412	Cairn - unclassified	Knockalassa	8	3583
26	CL031-033002-	514159	676410	Inscribed stone	Knockalassa	8	3584
27	CL031-030	509697	676038	Hut site	Killernan	7	3638
28	CL031-008002-	508112	681593	Graveyard	Kilfarboy	3	3649
29	CL031-024	508124	677669	Ringfort - rath	Carrowduff (ibrickan by.)	7	3653
30	CL031-008001-	508104	681602	Church	Kilfarboy	3	3660

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
31	CL031-008003-	508084	681582	Ritual site - holy well	Kilfarboy	3	3671
32	CL031-031	510493	675681	Ringfort - rath	Killernan	7	3679
33	CL023-026	509418	683652	Ringfort - rath	Aillbrack,toor	1	3719
34	CL023-031	510514	684308	Ringfort - rath	Moy more	1	3745
35	CL023-029	509883	684013	Ringfort - rath	Moy more	1	3747
36	CL023-043	508372	682358	Ringfort - rath	Kilfarboy	1	3762
37	CL031-016002-	507596	679464	Enclosure	Kilcorcoran	7	3832
38	CL031-016001-	507570	679486	Children's burial ground	Kilcorcoran	7	3860
39	CL031-016003-	507570	679486	Shrine	Kilcorcoran	7	3860
40	CL031-015	507553	679412	Ritual site - holy well	Kilcorcoran	7	3873
41	CL023-033	510724	684617	Church	Moy more	1	3976
42	CL031-014	507287	679468	Ringfort - unclassified	Kilcorcoran	7	4141
43	CL031-048	507282	679386	Standing stone	Kilcorcoran	7	4143
44	CL031-007	507582	681602	Ringfort - rath	Kilfarboy	3	4151
45	CL031-032	513751	675493	Megalithic tomb - wedge tomb	Knockalassa	8	4189
46	CL023-027002-	509592	684369	Castle - unclassified	Moy beg	1	4203
47	CL023-027001-	509581	684371	Bawn	Moy beg	1	4210
48	CL023-027003-	509590	684391	Well	Moy beg	1	4222
49	CL031-043	507261	678485	Ringfort - rath	Glendine south	7	4229
50	CL023-032	510677	684873	Ritual site - holy well	Tullygarvan west	1	4235

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
51	CL032-007	516306	678045	Enclosure	Glennageer	5	4244
52	CL031-006	507437	681467	Earthwork	Carrowkeel (ibrickan by.)	3	4249
53	CL023-063	508967	684031	Fulacht fia	Toor	1	4300
54	CL031-013	507145	678753	Ringfort - rath	Poulawillin	7	4305
55	CL031-012	507103	679152	Ringfort - rath	Kilcorcoran	7	4320
56	CL031-005	507212	680780	Megalithic tomb - unclassified	Illaun	3	4335
57	CL031-042	507017	679003	Barrow - ditch barrow	Kilcorcoran	7	4411
58	CL032-009	516753	678435	Redundant record	Glennageer	5	4419
59	CL031-004	507131	680931	Ringfort - cashel	Illaun	3	4435
60	CL031-047	506921	679619	Standing stone	Kilcorcoran	7	4517
61	CL023-028	509799	684844	Ringfort - rath	Moy beg	1	4519
62	CL031-027	509101	675353	Ringfort - rath	Killernan	7	4528
63	CL023-041	507191	681669	Ringfort - rath	Ballyvaskin north	3	4544
64	CL032-008002-	516328	677517	Children's burial ground	Ballynoe	6	4573
65	CL032-008001-	516333	677503	Church	Ballynoe	6	4585
66	CL031-046	506824	679547	Standing stone	Kilcorcoran	7	4608
67	CL031-011002-	506839	678629	Hut site	Poulawillin	7	4624
68	CL031-025	508169	675945	Ringfort - rath	Doonsallagh west	7	4631
69	CL031-011001-	506831	678629	Ringfort - rath	Poulawillin	7	4632
70	CL031-026002-	508953	675269	Ritual site - holy well	Killernan	7	4677

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
71	CL039-012	509042	675210	Ritual site - holy well	Killernan	7	4681
72	CL031-010	506741	679339	Burial ground	Kilcorcoran	7	4682
73	CL031-039	506845	680588	Ringfort - rath	Illaun	3	4683
74	CL031-026001-	508960	675250	Burial ground	Killernan	7	4689
75	CL023-025	509364	684826	Earthwork	Moy beg	1	4712
76	CL023-023	508144	683845	Earthwork	Clooneybreen,toor	1	4759
77	CL031-034	515014	675537	Ringfort - rath	Knockalassa	8	4793
78	CL031-041	506615	679631	Ringfort - rath	Leagard north	7	4823
79	CL031-003001-	506682	680391	Ringfort - rath	Illaun	3	4837
80	CL032-001	517622	679698	Ritual site - holy well	Derryharriv	5	4840
81	CL023-042-	507246	682563	Barrow - ring-barrow	Ballyvaskin north	3	4842
82	CL031-003002-	506676	680399	Hut site	Illaun	3	4843
83	CL039-015	509658	674725	Ringfort - rath	Shanavogh west	7	4848
84	CL024-036	517328	682529	Post row - peatland	Drumcullaun	5	4911
85	CL031-038	506575	680436	Enclosure	Illaun	3	4945

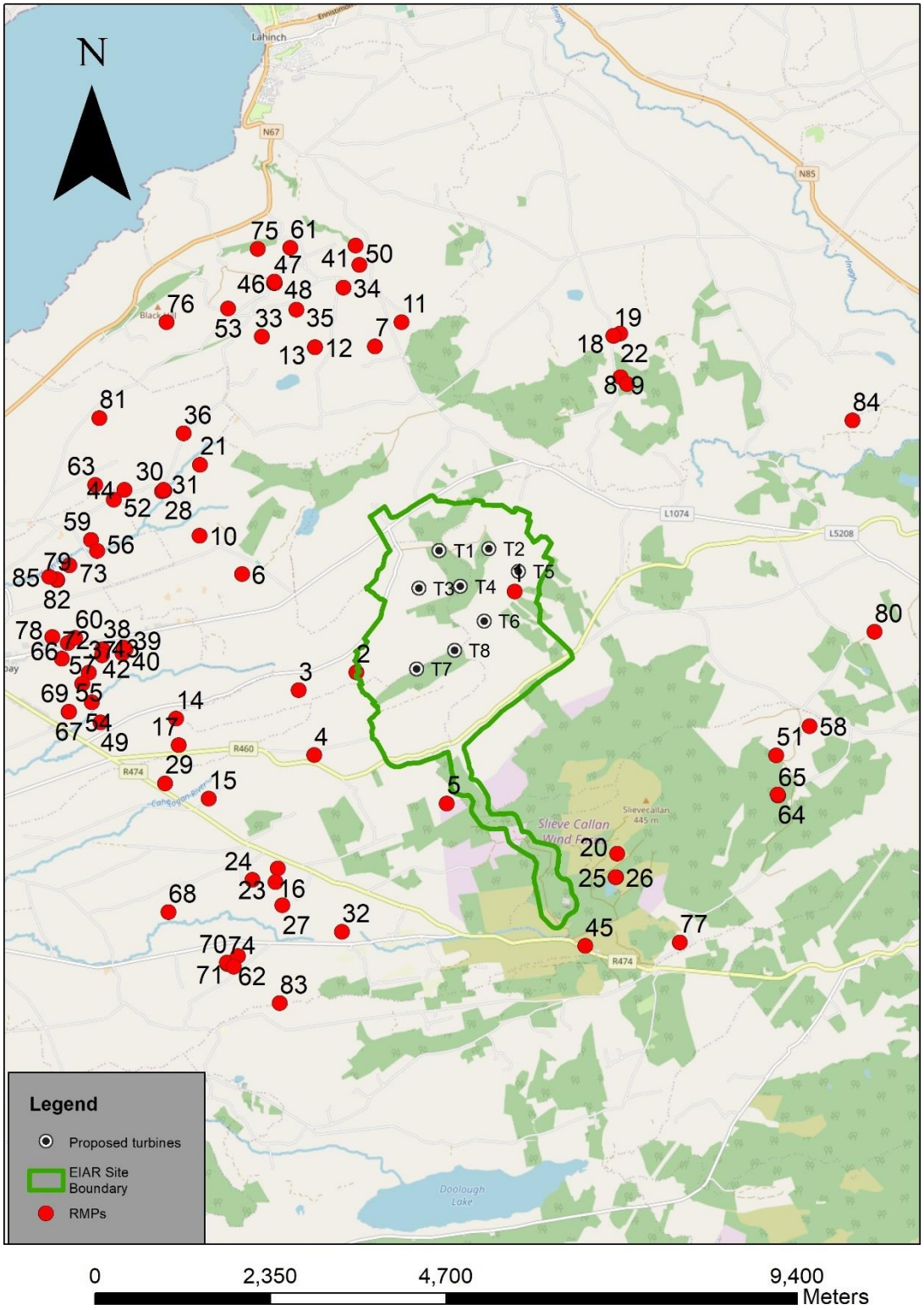

Figure 13-19: RMPs within 5km of the nearest proposed turbine.

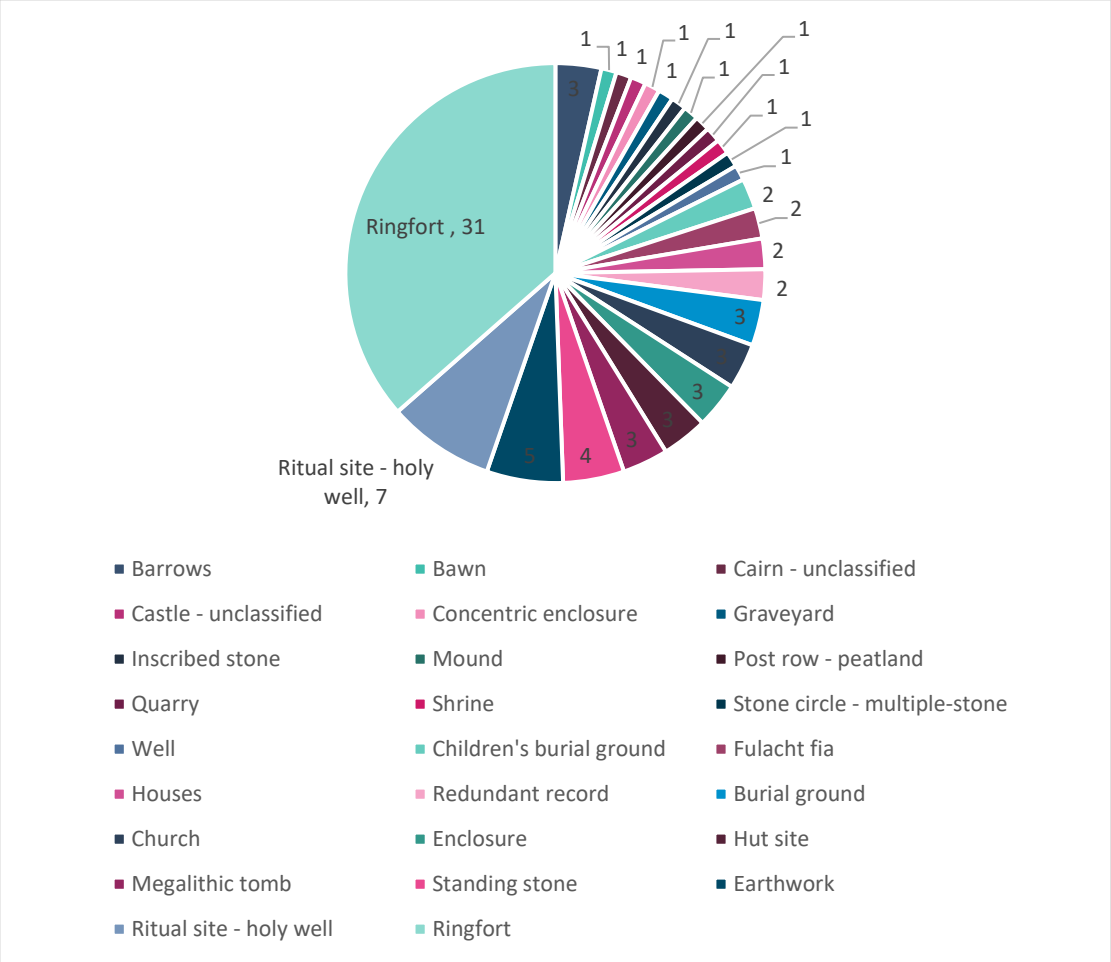

Figure 13-20: Percentages of monuments types within 5km of the nearest proposed turbines

13.3.2.3.1 The Prehistoric Period

The prehistoric period is represented only by 13 monuments (i.e. those that can definitively be attributed to this period). Megalithic tombs are burial chambers, sometimes with an antechamber or small closed end-chamber. They are roofed by slabs laid directly on the side-walls which often have one or more rows of outer- walling. Unclassified examples of megalithic tombs cannot be classified as a court tomb, portal tomb, passage tomb or wedge tomb. These may date from the Neolithic to the Bronze Age (c. 4000 - c. 500 BC).

CL031-005 Megalithic tomb '*lies about 11 miles north-east of Milltown Malbay and is situated in a low valley opening westward to the sea. It stands on a gentle slope at the foot of which flows a small stream some 40 yards distant to the south. The surrounding land is mostly pasture but small areas are tilled. Some low windswept trees grow close to a nearby farmstead. The tomb is very ruined. One stone remains erect and in situ. It is 2.35m long, 0.95m high at the west, 0.30m. high at the east. Its top edge slopes down sharply from rest to east in three "steps" or stages. A partly concealed prostrate slab lies to the north and another at the east. That at the north may be a collapsed sidestone. It is 2.05m long, 0.90 m. in exposed width, and 0.3 m. thick. Its south edge is straight ; its north edge concealed. The second slab may be a roofstone. Its eastern edge is concealed. The monument is very probably a megalithic tomb but the remains are insufficient to permit classification. The sidestone, with its sharp decline from west to east, would suggest that it belonged to the Wedge-shaped Gallery Grave class*' (De Valera and O Nullain 1961, No. 51).

CL031-032 '*is situated on a boggy platform on the lower southern slopes of Slievecallan. The site commands extensive views to the south and south-east across the rolling boglands to the west and to the Atlantic Ocean. The wet boggy land in the vicinity provides some poor pasture. The monument, built of regularly shaped slabs with lightly corrugated surfaces, presents a very neat appearance. The north and south sides of the chamber, each consisting of single slabs, support the roofstone. Two prostrate slabs at the west end of the chamber may originally have closed the entry. The chamber, which is partly filled with water, stands in an oval-shaped hollow measuring 7m. east-west, 5m north- south and 0.5m deep. Shaley clay, exposed in a cutting 1m to 2m deep, within 25 yards of the site, indicates that the tomb may have been built on the under- lying floor of the bog*' (De Valera and O Nullain 1961, No. 26).

Fulachta fia are also present within the 5km study area to the north-west and south-west and consist of low visibility and sometimes non-discernible low mounds. Their form consists of a horseshoe-shaped or kidney-shaped mound consisting of fire-cracked stone and charcoal-enriched soil built up around a sunken trough located near or adjacent to a water supply, such as a stream or spring, or in wet marshy areas. The first recorded use of the Irish term 'fulacht fiadh/fia' (cooking pit of the deer or of the wild) as relating to ancient cooking sites was in the 17th century. These are generally interpreted to have been associated with cooking and date primarily to the Bronze Age (c. 2400-500 BC).

Four standing stones are located within 5km, three lying to the west of the Proposed Development site and one to the south of the proposed turbines and west of the proposed underground cable route. Standing stones consist of a stone which has been deliberately set upright in the ground, usually orientated on a north-east-south-west axis, although other orientations do occur, and varying in height from 0.5m up to 6m. They functioned as prehistoric burial markers, commemorative monuments, indicators of routeways or boundaries and date from the Bronze and Iron Ages (c. 2400 BC - AD 500), with some associated with early medieval ecclesiastical and burial contexts (c. 5th-12th centuries).

Barrows also exist in the 5km study area to the NE, NW and W, albeit in low numbers (3). These monuments are circular or oval raised area (generally up to 1m above the external ground level or level with it) enclosed by fosse(s) and outer bank(s), with or without an entrance. These are part of the Bronze/Iron Age burial tradition (c. 2400 BC - AD 400). They are also low-visibility monuments.

13.3.2.3.2 The Early Medieval Period

The majority of monuments (40%) consist of those which may be definitively attributed to the Early Medieval period and ringforts and enclosures dominate the archaeological landscape within the 5km study area. Ringforts comprise earthen monuments while cashels take a similar form to the latter but are constructed using stone. Enclosures may represent the remains of ringforts or cashels but may not retain enough features to classify them as such or fall outside the acceptable size range for these monuments. Ringforts consist of a circular or roughly circular area enclosed by an earthen bank formed by material thrown up from the digging of a concentric ditch on its outside. Ringforts are usually enclosed by a single bank (univallate) while bivallate or trivallate ringforts i.e. those enclosed by double or triple rings of banks are less common. The number of banks and ditches enclosing these monuments are considered to reflect the status of the site, rather than the strengthening of its defences. Archaeological excavation has shown that the majority of ringforts functioned as enclosed farmsteads, built during the Early Christian period (5th – 9th century A.D.). Excavation within the interior of the monuments has traced the remains of circular and rectangular dwelling houses as well as smaller huts probably used to stall animals. The enclosing earthworks would also have protected domestic livestock from natural predators such as wolves and foxes.

Within the study area a number of ringforts are located at Aillbrack, Toor, Ballyvaskin North, Carrowduff (ibrickan by.), Clooneyogan south, Doonsallagh West, Drumbaun, Glendine South, Glennageer, Illaun, Killernan, Knockalassa, Knockloskeraun, Leagard North, Leeds, Mooghna, Moy Beg, Moy More, Poulawillin, Shanavogh West and Silverhill thus representing a wide geographic area for settlement.

13.3.2.3.3 *Sites with religious or ritual association*

Churches, graveyards, burial grounds and children's burial grounds are all located within the 5km study area. Three churches are located at Kilfarboy, Moy More and Ballynoe townlands to the SE, N and NW. No information is available for these sites on the NMS public viewer. All are located an adequate distance from proposed turbines so as to avoid significant impacts on their visual setting.

13.3.2.4 Archaeological Investigations undertaken within or adjacent to the proposed EIAR site boundary

Each townland within the Proposed Development site and adjacent to same was checked in the database of Irish excavations to ascertain if any archaeological investigations produced positive results. Two townlands produced results although no archaeological features were uncovered during monitoring. The following are extracts from the database of excavations. Each townland within the EIAR site boundary was checked for positive archaeological results within the database as shown in Figure 13-21.

Archaeological monitoring of the Slievecallan windfarm (2017:741) was undertaken between 2015 and 2017 and did not reveal any archaeological features on site. No other licensed archaeological investigations were noted within the database.

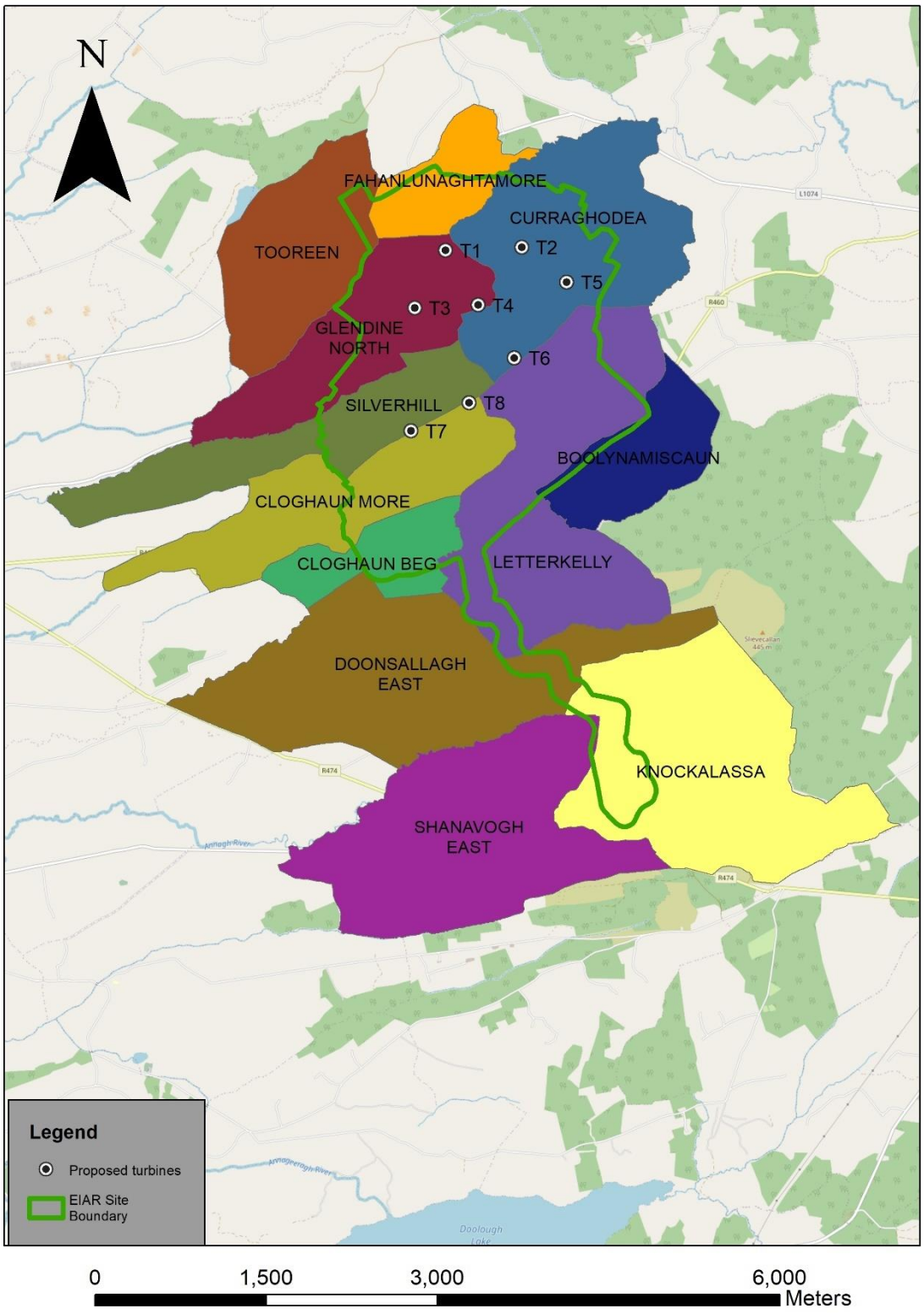

Figure 13-21: Townlands checked for archaeological excavations.

2017:741 - Bollinrudda, Boolynamiscaun, Coor East, Doonsallagh East, Glennageer, Knocknalassa, Letterkelly, Magherabaun & Shanvogh East, Clare
County: Clare Site name: Bollinrudda, Boolynamiscaun, Coor East, Doonsallagh East, Glennageer, Knocknalassa, Letterkelly, Magherabaun & Shanvogh East
Sites and Monuments Record No.: None
Licence number: 16E0010
Site type: No archaeology found
ITM: E 513399m, N 677063m
Archaeological monitoring of the construction phase of a windfarm development was carried out at Boolinrudda, Boolynamiscaun, Coor East, Doonsallagh East, Glennageer, Knockalassa, Letterkelly, Magherabaun and Shanvogh East, Co. Clare between November 2015 and February 2017. The development comprised the construction of 31 wind turbines, substation and 2 associated control buildings, borrow pits, anemometry mast, underground electricity cabling, new and upgraded access roads and all ancillary site works. There are six recorded monuments within the development site boundary; CL031-032 (Wedge tomb), CL031-03301 (Cairn – unclassified), CL031-03302 (Inscribed stone) and CL031-034 (Ringfort – rath), CL031-035 (Megalithic tomb – unclassified) and CL031-051 (Standing stone). The megalithic tomb at Knockalassa (CL031-035) was found during the course of fieldwork for the Environmental Impact Assessment and was classified as a possible boulder burial. There was no direct impact on any of the recorded monuments as all are located in excess of 100m from the nearest windfarm infrastructure. Several examples of vernacular architecture and other cultural heritage sites including gate piers and a milestone were identified in the Environmental Impact Assessment and constrained out of consideration for the siting of windfarm infrastructure. Three additional vernacular architecture structures were identified within the development boundary during the course of the project, but these were not located in the vicinity of any proposed infrastructure. All excavations associated with the development were monitored. No archaeology was found.

13.3.2.5 Townlands and administrative boundaries

Townlands and administrative boundaries may indicate the presence of archaeological features within a development site. Administrative counties are subdivisions of pre-established counties which were formed for administrative purposes in the nineteenth and twentieth centuries. Baronies are administrative units larger than civil parishes and originally established as the primary subdivision of counties by the British administration in Ireland. Irish baronies which were formed at the time of the Norman conquest were usually named either after Irish territories, or from places which had been of importance in pre-Norman times. Irish baronies came into existence at different periods. The division of Ireland into counties and baronies was a process which continued down to the reign of James I. The original baronies in Ireland were the domains of the Norman barons; in the final stage of development they were divisions of counties created merely for greater convenience of administration. The word barony is of feudal origin, and was applied to a tenure of a baron, that is, of one who held his land by military service, either directly from the king, or from a superior feudal lord who exercised royal privileges. The origin of the Irish barony (a division of land corresponding to the English hundred) is to be found in the grants of lands which were made to the barons of Leinster and the barons of Meath (Liam Price, 'Ráith Oinn', Éigse VII, lch. 186-7). Civil parishes are administrative units larger than townlands and based on medieval ecclesiastical parishes. Civil parishes, modern Catholic parishes and Church of Ireland parishes may differ in extent and in nomenclature. Counties are administrative units larger than baronies and originally established by the British administration in Ireland between the twelfth and the seventeenth centuries. Some of these were subsequently subdivided into smaller administrative county units.

Townlands are the smallest land units which were determined and established in the Irish administrative system in the first half of the nineteenth century. Many of the townlands were in existence prior to that. Townland names are a valuable source of information, not only on the topography, land ownership and land use within the landscape, but also on its history, archaeological monuments and folklore.

The following townlands are those which are located within the EIAR site boundary including grid connection. There are some references to forts within some townlands which do not appear to be on the RMP/SMR record.

Fahanlunaghta More: No known translation.

Curraghodea: A hill called Sleivaccurrig or O Dea's Moor

Glendine North: an 1839 reference to the townland details the following: A fort in this townland called Lissakith, a river on the boundary of this townland and Thoreen called Own Glandine, a subn called Curraghavoddera, a subn called Knocknaspooka. No known monuments are located in Glendine.

Silverhill: Cnocán an airgid, 'hillock of the silver' and also there are two ancient forts in this townland...A large hill in this townland...called Ga[..]enashanavoe, a river running through the middle of this hill called Knockanarragid River". The ancient forts may refer to those listed in Table 13-4 and Figure 13-19 above which are listed in the Sites and Monuments Record for this townland. The townland name may therefore have its origins in the Early Medieval period.

Cloghaun More: A high hill in this townland called Knockacloughanmore, another hill called Barnabawncullane.

Letterkelly: Leitir Cheallaigh, 'Kellach's slope or hill side.

Cloghaun Beg: A fort in this townland called Lissclohanebeg, a large tract of bog called Purtaghclohanbeg and also a reference to stepping stones in 1839 'clochán is a row of stepping stones'.

Doonsallagh East: Dún saileach, 'fort of the sallows' (Ordnance Survey Parish Namebooks). No known SMRs or RMPs are known from this townland however.

Knockalassa: Known as Cnoc na leasa (Hill of the fort) or It also contains a lake in its centre called 'Loughboolynagreana'...In this townland a druid's alter [sic] called Labbayermadd augus Grauna.

Shanavogh East: No known translation or meaning.

13.3.2.6 Topographical Museum Files

No finds spots within or immediately adjacent to the Proposed Development site were noted. The nearest finds are detailed on Figure 13-22 and consist of the following:

Table 13-5: Museum find located in the vicinity of the Proposed Development

Museum Find No.	ITM E	ITM N	DESCRIPTION
1960:562	506984	677552	Bronze Sword (flange-hilted)
IA/251/2009	518639	682616	Bronze socketed axehead
1961:162	512300	671786	Hollow-based Arrowhead

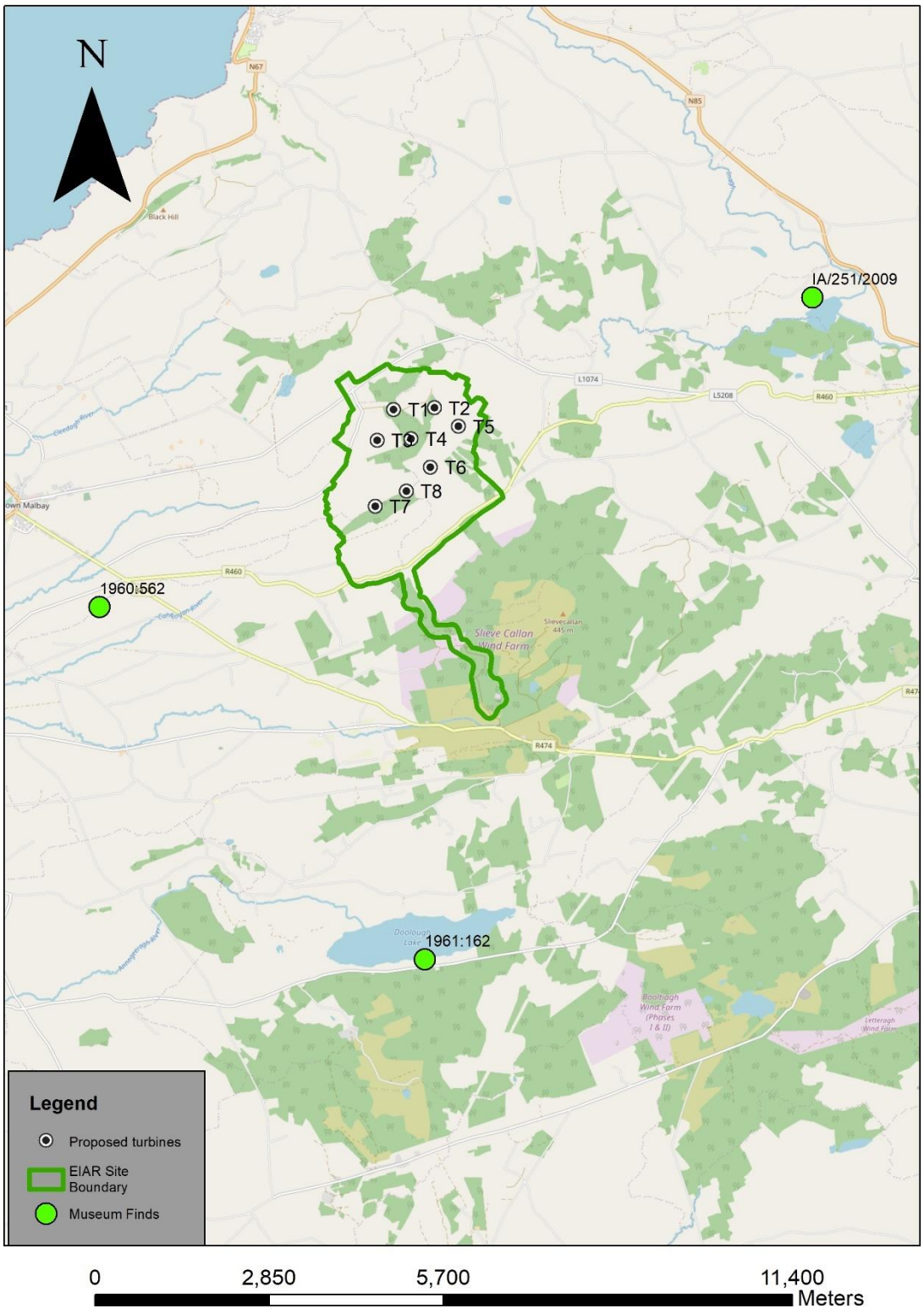

Figure 13-22: Nearest Museum finds to the Proposed Development site.

13.3.2.7 Cartographic Evidence

13.3.2.7.1 *Down Survey maps*

The Down Survey map for the Barony of Ibrickan was destroyed in 1711.

13.3.2.7.2 *1st and 2nd Edition OS maps*

The Ordnance Survey came to Ireland in 1824 in order to carry-out a precise admeasurement of the country's 60,000 or so townlands as a preliminary to the larger task of reforming Ireland's local taxation system. The townland boundaries were demarcated by a Boundary Commission, and the Ordnance Survey had the task of measuring them. In addition to boundaries the maps are truly topographical in content. Drawn at the large scale of six inches-to-one-mile (1:10,560) it was important to mark all buildings, roads, streams, placenames, etc, that were required for valuation purposes. Ultimately the maps were used as a basis for the rateable valuation of land and buildings in what became known as Griffith's Valuation. Working from north to south, the survey began in Antrim and Derry in 1829 and was completed in Kerry in 1842. It was published as thirty-two county maps between 1832 and 1846, the number of sheets per county varied from 153 for County Cork to 28 for Dublin, each of the 1,994 sheets in the series depicting an area 21,000 by 32,000 feet on the ground. Each county was projected on a different central meridian and so the maps of adjacent counties do not fit neatly together at the edges. Map content stops at the county lines.

The First Edition

The early Ordnance Survey maps are an unrivalled source for the period immediately before the Great Irish Famine (1847-50) when the population was at the highest level ever recorded. No additional archaeological features were noted on the maps however.

The Second Edition

When the original survey began it did not include field boundaries and they did not appear on the maps. This policy was reversed in 1838 after a number of northern counties had been published. Therefore when the country was completed in 1846 the counties of Antrim, Armagh, Derry, Donegal, Down, Fermanagh, Monaghan, and Tyrone were resurveyed to add field boundaries. Subsequently this general revision was extended to other counties because of change in the post- Famine landscape. Survey work was curtailed in 1887 when the government agreed to survey the country at the larger scale of 1:2,500.

The 2nd edition 25 inch OS map was consulted to ascertain the presence or otherwise of additional features of potential archaeological value (not documented thus far). No features were noted and the lands appeared to be almost fully enclosed with field boundaries present throughout the EIAR site boundary. Numerous disused quarries, gravel pits, wells, farm buildings and springs are shown on the 25 inch maps. Letterkelly School is also shown which is discussed under Protected Structures below (RPS ID 637).

13.3.2.8 Lewis Topographical Dictionary of Ireland

The townlands within the EIAR site boundary are located in the parish of Kilfarboy in the barony of Ibrickan. The parish of Kilfarboy is detailed in Lewis topographical dictionary of Ireland as follows:

'KILFARBOY, a parish, in the barony of IBRICKANE, county of CLARE, and province of MUNSTER, 5 miles (S. S. W.) from Ennistymon, on the western coast; containing, with the post-town of Miltown-Malbay, 6389 inhabitants. It was anciently called Kilfobrick, from the monastery of that name, founded in 741, of which Cormac, who died in 837, is said to have been bishop, but of which no traces

now remain. In the reign of Elizabeth, part of the Spanish Armada was wrecked on this coast, at a place which has since been called "Spanish Point." The parish comprises 11,637 statute acres, as applotted under the tithe act, a considerable portion of which consists of mountain pasture and bog; sea-weed, which abounds, is in general use for manure, but the state of agriculture is rather backward. Mount Callan, which forms a conspicuous landmark, is chiefly in this parish: in one of its hollows is Loughnamina, noted for its fine trout. Indications of coal and ironstone appear in several places; slate is found at Freagh; and at Bellard, near Miltown, stone of superior quality is quarried for building. At Freagh is a station of the coast-guard, having also a detachment at Liscanor. The gentlemen's seats are Miltown House, the residence of T. H. Morony, Esq.; Merville Lodge, of J. Carroll, Esq.; Seaview, of F. G. Morony, Esq.; Westpark, of J. Morony, Esq.; and Spanish Point, of J. Costello, Esq., M. D.: and there are several neat lodges in the vicinity of Miltown-Malbay (which see) for the accommodation of the numerous visiters who frequent that fashionable watering-place during the summer. The parish is in the diocese of Killaloe: the rectory forms part of the union of Kildysart; and the vicarage was episcopally united, in 1801, to that of Kilmihill or Kilmaichael, together constituting the union of Kilfarboy, in the gift of the Bishop. The tithes amount to £553. 16. 11., of which £315 is payable to the rector and the remainder to the vicar; those of the vicarial union amount to £312.13. 10. The church, at Miltown, is a small plain edifice with a square tower, built in 1802, towards which £500 was granted by the late Board of First Fruits: it is about to be repaired, the Ecclesiastical Commissioners having lately granted £104 for that purpose. The glebe-house was erected in 1813, for which a gift of £337 and a loan of £79 were granted by the late Board: the glebe comprises about eight acres. In the R. C. divisions this parish forms part of the union or district of Miltown, which also comprises the parish of Kilmurry-Ibrickane, and contains two chapels, situated respectively at Miltown and Mullogh: the former is about to be rebuilt on a larger scale. There are two public schools, one of which is partly supported by the parishioners, and the other by the R. C. clergyman, and in which about 140 children are educated; there are also five private schools, in which are about 230 children. On the shores of this parish are several springs of a chalybeate nature, but not much used for medicinal purposes. At Freagh are the ruins of the castle of that name, and there are several ancient raths or forts. At the side of Loughnamina, on Mount Callan, a very large and remarkable sepulchral stone of great antiquity was discovered, about 1784; it bears an inscription, in the ancient Ogham character, having the peculiarity of being read in five different ways, to the memory of the chief Conan, whose death is alluded to in one of the legends of the 8th century (ascribed to Ossian), as having taken place the year before the battle of Gabhra, which was fought in 296. From the hard texture of the stone the inscription, when discovered, was perfectly legible. On the south side of the mountain is a large cromlech, or druidical altar, nearly perfect, supposed to have been dedicated to the sun, and popularly called Darby and Grane's Bed; and near it are two smaller ones, and the remains of a stone rath, in which part of a covered way is still visible' (Lewis, 1837, 90).

13.3.3 Architectural and Cultural Heritage

13.3.3.1 Protected Structures within the EIAR site boundary

One built heritage structure subject to statutory protection by way of inclusion in the Record of Protected Structures is located within the EIAR boundary and consists of a derelict national school (RPS ID 637). It is located on the north side of a trackway which extends East/West to the north of the regional road (R460). It is detailed as follows:

Table 13-6: RPS within the EIAR boundary

RPS ID NO.	ITM E	ITM N	DESCRIPTION	Td.	WTG ID	DISTANCE (M)
637	511872	678459	Detached four-bay single-storey former National School dated 1862 with sash windows and natural slate roof, now derelict.	Cloghaun Beg / Letterkelly	7	902

Although the structure is located within the EIAR boundary, the EIAR boundary is a study area and is not a physical boundary. Furthermore, the structure is located 902m from the nearest proposed turbine (T7) and 272m from the proposed cable route where the latter will be constructed within the confines of the public road R460 to the south. No infrastructure is proposed in the vicinity of the National School. The structure will not be impacted by any of the proposed construction works. Direct and Indirect impacts in relation to the structure are dealt with in Section 13.3.3.4.3 below.

Plate 13-83: RPS 637 (photo from RPS, Clare County Council).

13.3.3.2 Protected Structures within 5km of the nearest proposed turbines

RPS structures within 5km of the nearest proposed turbines are presented here with their distances to the nearest proposed turbines. These structures in the wider landscape (i.e. outside the EIAR boundary) are considered here in terms of potential effects on setting and will not be directly affected by the construction works. Five structures are located within 5km of a proposed turbine and outside the EIAR site boundary. The distance of the proposed turbines from the structures is such that no direct impacts will occur as all are located outside the EIAR boundary. The ZTV suggests that all turbines may theoretically be visible from the areas where the structures are located but this is based on a bare landscape model with no vegetation or tree cover. Impacts on setting are considered to be 'slight' as discussed in detail in section 13.4.3 below.

Table 13-7: NIAH within 5km of the nearest proposed turbines

RPS ID	ITM E	ITM N	Description		WTG ID	Distance to Turbine
564	514120	682770	Fahy's Cottage	Four-bay single-storey 19th century house with Moher slate roof. Original condition throughout	2	2568

RPS ID	ITM E	ITM N	Description		WTG ID	Distance to Turbine
202	509342	676807	Doonsallagh Bridge	Single arch coursed stone-built road bridge over river, c.1820, with cut-stone voussoirs and inscribed benchmark; repaired c. 1990.	7	3202
635	508089	681580	Kilfarboy Church, Graveyard and Holy Well	Ruined church largely dating from the 15th century, though large stones on the lower masonry courses suggests that it incorporates parts of an older structure. Repairs carried out by Clare County Council 2008 and 2010. Recorded Monument CL031-008001.	3	3666
162	509886	684704	St. Flannan's Church	Detached single-bay double-height gable-fronted single-cell Catholic Church, c.1870, with bellcote over gable and five-bay side elevations having stepped buttresses; extended to rear, c.1910, comprising two-bay single-storey sacristy; renovated, c.1960, with single-bay single-storey flat-roofed projecting porch added to front.	1	4355
207	507089	678194	Honan's Bridge	Single arch rubble stone-built road bridge over river, dated 1872, with inscribed cut-stone plaque. Extensively over-grown.	7	4457

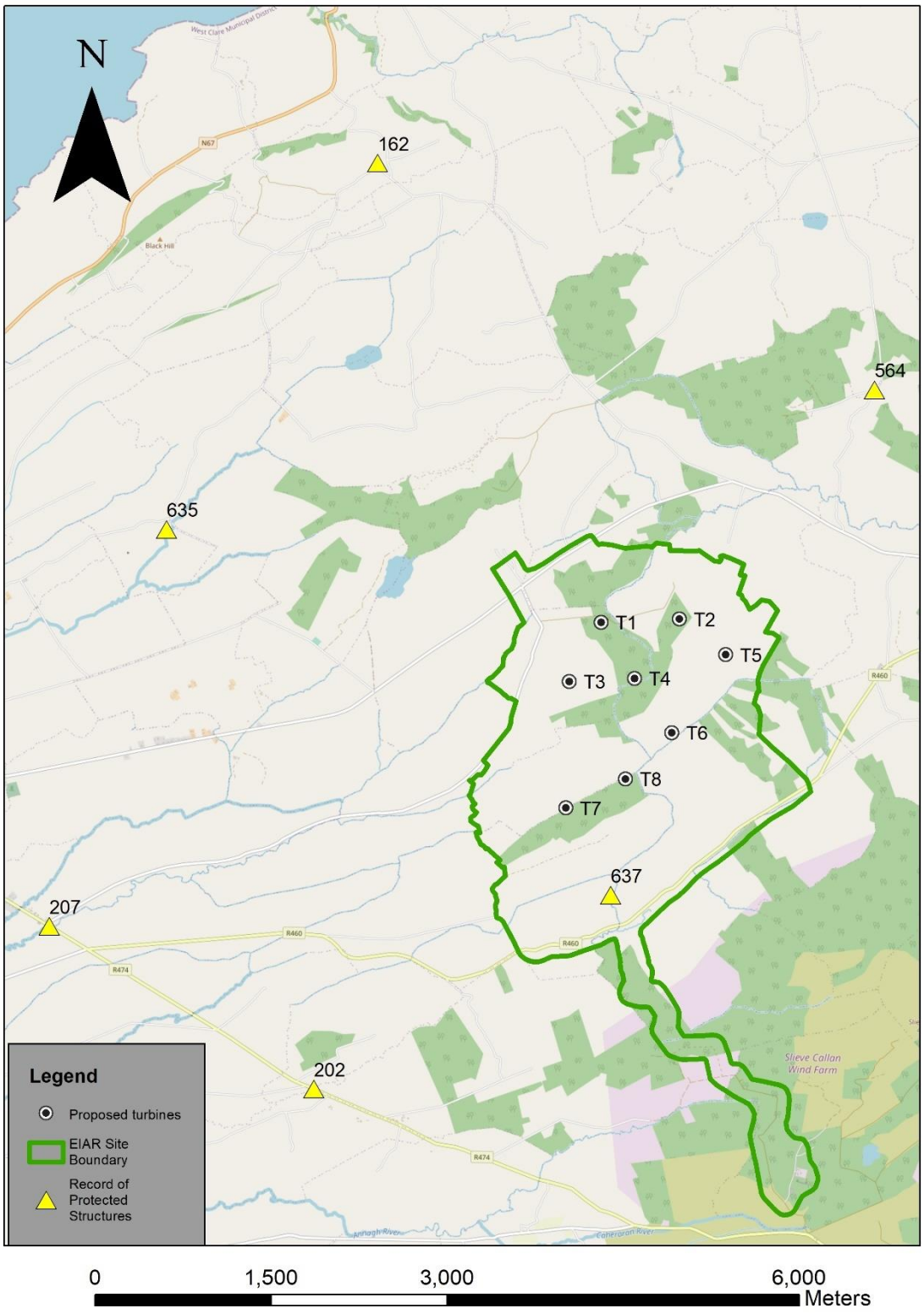

Figure 13-23: Built Heritage (RPS) within 5km of the nearest proposed turbine and within the EIAR site boundary

13.3.3.3 NIAH within 5km of the nearest proposed turbines

Table 13-8: NIAH within 5km of the nearest proposed turbine

RPS ID	ITM E	ITM N	Description	WTG ID	Distance to Turbine
20402308	Saint Mary's Roman Catholic Church	Moy Beg	Church / chapel	1	4355.78
20403106	Doonsallagh Bridge	Doonsallagh West	Bridge	7	3205.823
20403108	Honan's Bridge	Glendine South	Bridge	7	4477.089

Three NIAH structures are located within 5km of the proposed turbines. All three examples have already been discussed above owing to their inclusion in the RPS also. St Marys Roman Catholic Church is also known as St Flannan's Church.

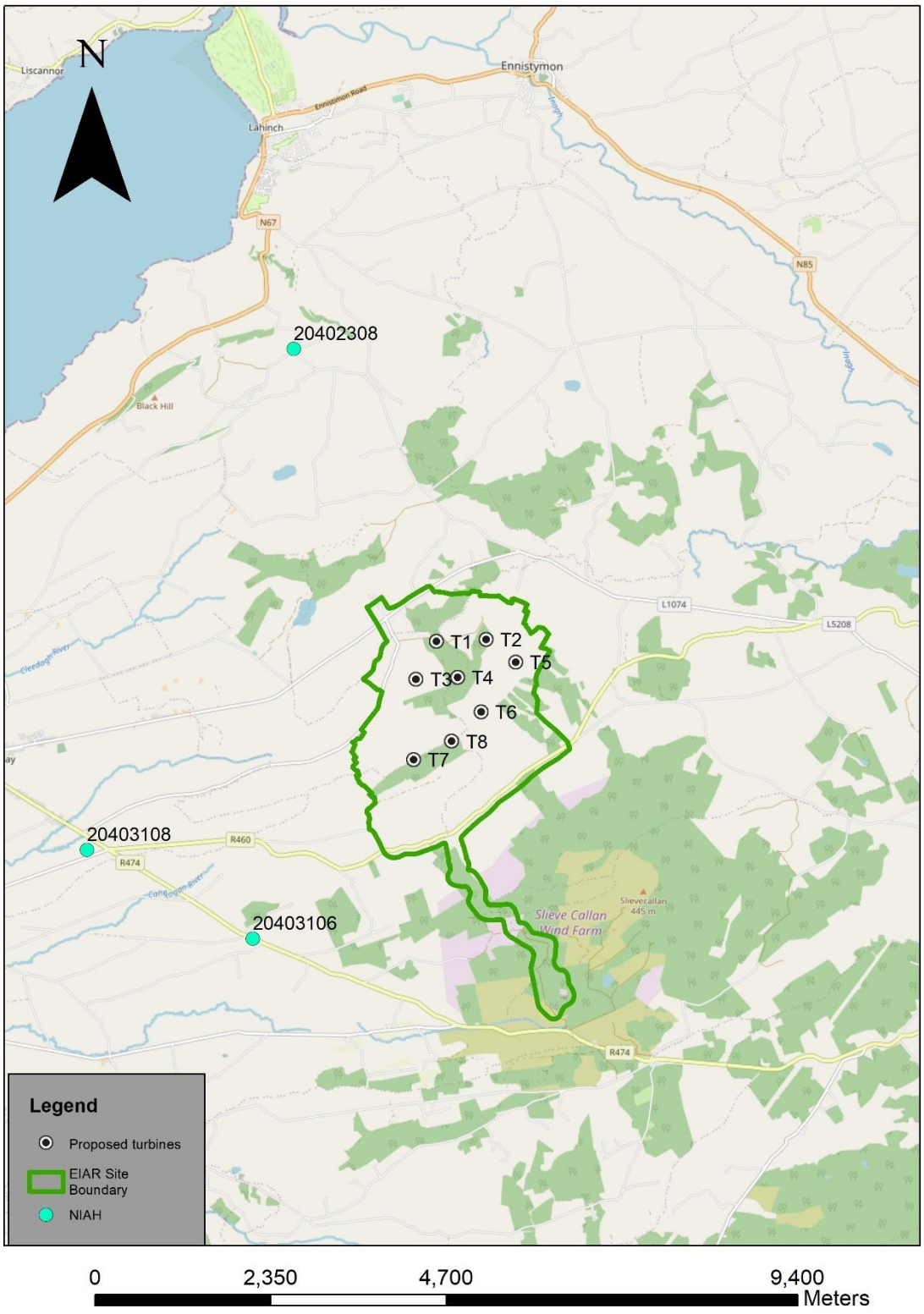

Figure 13-24: NIAH within 5km of the nearest proposed turbines.

13.3.3.4 Local Cultural Heritage

13.3.3.4.1 *Bridge at Letterkelly – Cloghaun Beg*

One structure of local cultural heritage merit was noted within the EIAR boundary and consists of a road bridge along the regional road R460 on the Letterkelly - Cloghaun Beg townland boundary. This is example of a single arched road bridge with cut limestone voussoirs of 19th century appearance. It is not marked or named on either the 6inch historic or 25 inch OS map. The bridge was clearly visible from the entrance to Slievecallan windfarm looking north towards the public road. The structure is located 58m to the west of the proposed underground cable route. Potential direct impacts on the structure are addressed in Section 13.4.2 below.

Plate 13-84: Single arched road bridge at Letterkelly / Cloghaun Beg townland.

13.3.3.4.2 *Derelict Stone House at Letterkelly*

A derelict stone house was recorded during the field survey along cable route option at ITM E512924, N679668 in the townland of Letterkelly. The structure is located within forestry although a small area around the structure remains unplanted. The structure is poorly preserved, roofless and overgrown both within and surrounding the structure. A number of buildings are marked on the 6inch Historic OS map as well as the 25 inch OS map in this location and one of the buildings is likely to represent the surviving structure. The structure is located 12m to the east of the cable route. The building is likely to date the mid-late 19th Century. It is not subject to statutory protection. It does represent an item of local cultural heritage merit however. Impacts are addresses in Section 13.4.2 below.

13.3.3.4.3 *Historical Associations*

A search of placenames in the vicinity of the proposed development led to the discovery of information relating to the burial places of British Soldiers during the War of Independence. The bogs near Connolly are thought to be the burial place of a Private Robertson who is said to have been buried in the property of Colonel Frederick St Ledger Tottenham, a local Unionist landlord. Tottenham's bog was chosen as the site for Robertson's burial since it was felt that his lands were unlikely to be searched by the British forces.

The British Army never found any trace of Private Robertson, except for his bloodstained uniform cap. Three years after Private Robertson's disappearance, during the Civil War, the Duke of Devonshire began correspondence with Richard Mulcahy, commander in chief of the Free State Army, in an effort to locate the remains of Private Robertson and the other British soldiers who had been killed and secretly buried in Clare. Because so many members of the IRA from Connolly, Miltown Malbay and Lahinch had taken the Republican side during the Civil War, the Free State Army was unable to glean much information about the location of these soldiers' remains. The Free State Army was able to confirm that Private Robertson and a second British soldier, Private George Chalmers, had been executed in West Clare and could give the approximate date and location of each execution to the duke. However, they were unable to locate the grave of either soldier and were forced to admit defeat after concluding "there are a good many bogs in that district, the information is not very definite" (History Ireland).

There are Tottenhams recorded in both the 1901 and the 1911 Census residing at Ballynoe, Fermoyle (National Archives: Census of Ireland 1911). Ballynoe is 3.6km to the south-east of the proposed development site.

The potential for the discovery of human remains relating to the War of Independence can be mitigated by the presence of an archaeologist on site during construction works. Should human remains be uncovered, the archaeologist will follow all necessary procedures regarding the discovery of human remains.

13.3.4 Archaeological and Architectural Heritage along the Proposed Delivery Route

The delivery route originates east of the site at the M18 east of Ennis and travels in a westerly direction south of Ennis and onto the N85 National route until it reaches Innagh village where it leaves the N85 and travels along the Regional road R460. The delivery route then leaves the R460 and follows the L1074 at Bauntlieve townland. The route then turns in a south-westerly direction towards Fahanlunaghtamore townland where it enters the proposed wind farm site. The transportation of turbine components to the proposed windfarm will mainly utilise motorway, national and regional roads where no groundworks or any alterations are required to the existing road network. The route along the local road was also examined and a number of named historic bridges were noted although no works are being proposed at these locations. The local road L1074 will require some junction accommodation works at bends. These are the only locations where groundworks are proposed outside the curtilage of the road corridor. These were included in the assessment therefore.

13.3.4.1 Named Bridges along the Delivery Route

Fahanlunaghtamore Bridge is located at ITM E513213, N681894 to the north of the proposed windfarm site and along the delivery route. The bridge is marked and named on both the 1st Edition 6 inch map and the 25 inch Historic OS map as 'Fahanlunaghtamore bridge'. It is not on the statutory list of the Record of Protected Structures (RPS) and is not listed in the National Inventory of Architectural Heritage. No works are being proposed at this location.

Cloonanaha Bridge is located further east along the L1074 local road. It is also shown on both the 1st Edition 6 inch map and the 25 inch Historic OS map as Cloonanaha Bridge. This structure is not on the statutory list of the Record of Protected Structures (RPS) and is not listed in the National Inventory of Architectural Heritage. No works are being proposed at this location.

Skagh bridge is located further east along the same local road L1074 at ITM E518512, N680964. It is only shown on the 25 inch Historic OS map as Skagh Bridge.

The delivery route traverses Inagh Bridge at the eastern end of the delivery route along the Regional road R460. Inagh Bridge is listed in the Record of Protected Structures (RPS Ref. 208) and also in the NIAH (Reg. No. 20403203). It consists of a triple-arch rubble stone road bridge over river Inagh, built c. 1790, with cut-stone V-cutwaters and voussoirs. No works are being proposed in this location.

13.3.4.2 Junction Accommodation Areas

Two junction accommodation areas will be required to facilitate the delivery of turbine components to the site. A photographic record of these areas is presented in Section 13.3.1.1.15 above. No known archaeological or architectural heritage features are located within the proposed junction accommodation areas (See Figure 13-17, Figure 13-23 and Figure 13-24 above).

In the event that sub-surface archaeological features are exposed during ground works associated with the junction accommodation areas, the appointed archaeologist will be in a position to appropriately deal with the potential archaeological findings in close consultation with the National Monuments Services.

13.4 Likely Significant Effects and Associated Mitigation Measures

13.4.1 Construction Phase Potential Impacts (Indirect)

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from 'the site'. This includes impacts on visual setting of any cultural heritage asset in the wider landscape. Since these effects are only possible once the proposed turbines are constructed, they are considered operational effects and are therefore discussed in Section 13.4.3 below. No indirect effects were identified which would occur at the construction stage.

13.4.2 Construction Phase Potential Impacts (Direct)

Direct Impact refers to a 'physical impact' on a monument or site. The construction phase of the development consists largely of earthmoving activities such as peat and topsoil removal. The potential impacts on the known and potential archaeological, architectural and cultural heritage of the area are outlined below with the suggested mitigation measures. The impacts are described according to each element of the Proposed Development. Where any potential direct impacts do occur they are negated through the use of suitable mitigation measures such as exclusions zones (buffer zones), testing, monitoring, etc.

13.4.2.1 National Monuments

Pre-Mitigation Impact

No National Monuments in State Ownership/Guardianship are located within the EIAR site boundary or the footprint of any proposed infrastructure and therefore no direct impacts on these aspects of the

archaeological resource are identified. All National Monuments in State Care / Guardianship are located outside the EIAR site boundary and are considered below in terms of indirect (operational) effects (see section 13.4.3 below).

Proposed Mitigation Measures

Since no direct effects to National Monuments in State Care / Guardianship were identified mitigation measures are not required.

Residual Impact

No residual impacts will occur.

Significance of Effects

Since the construction of the proposed wind turbines and other associated infrastructure will have no direct effects on National Monuments the significance of effects is therefore imperceptible.

13.4.2.2 Recorded Monuments within the EIAR Boundary

Pre-Mitigation Impact

One monument subject to statutory protection as defined in the Record of Monuments and is located within the EIAR site boundary for the proposed wind farm. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland at ITM E512804, N680240 (Figure 13-17 and Figure 13-18: above). Groundworks associated with the proposed turbines, roads and borrow pit and the movement of machinery in the general vicinity may have a direct negative and permanent impact on the monument. In order to avoid such a scenario occurring mitigation measures are required.

Proposed Mitigation Measures

A 30m exclusion zone should be established by the contractor under the supervision of the appointed archaeologist prior to construction. The exclusion zone should be marked with permanent fence posts and durable high-visibility fencing with 'Keep Out' signage.

Residual Impact

No residual impacts will occur if the mitigation measures are implemented prior to construction.

Significance of Effects

The significance of direct effects will be imperceptible and based on the assessment above there will be no significant effects.

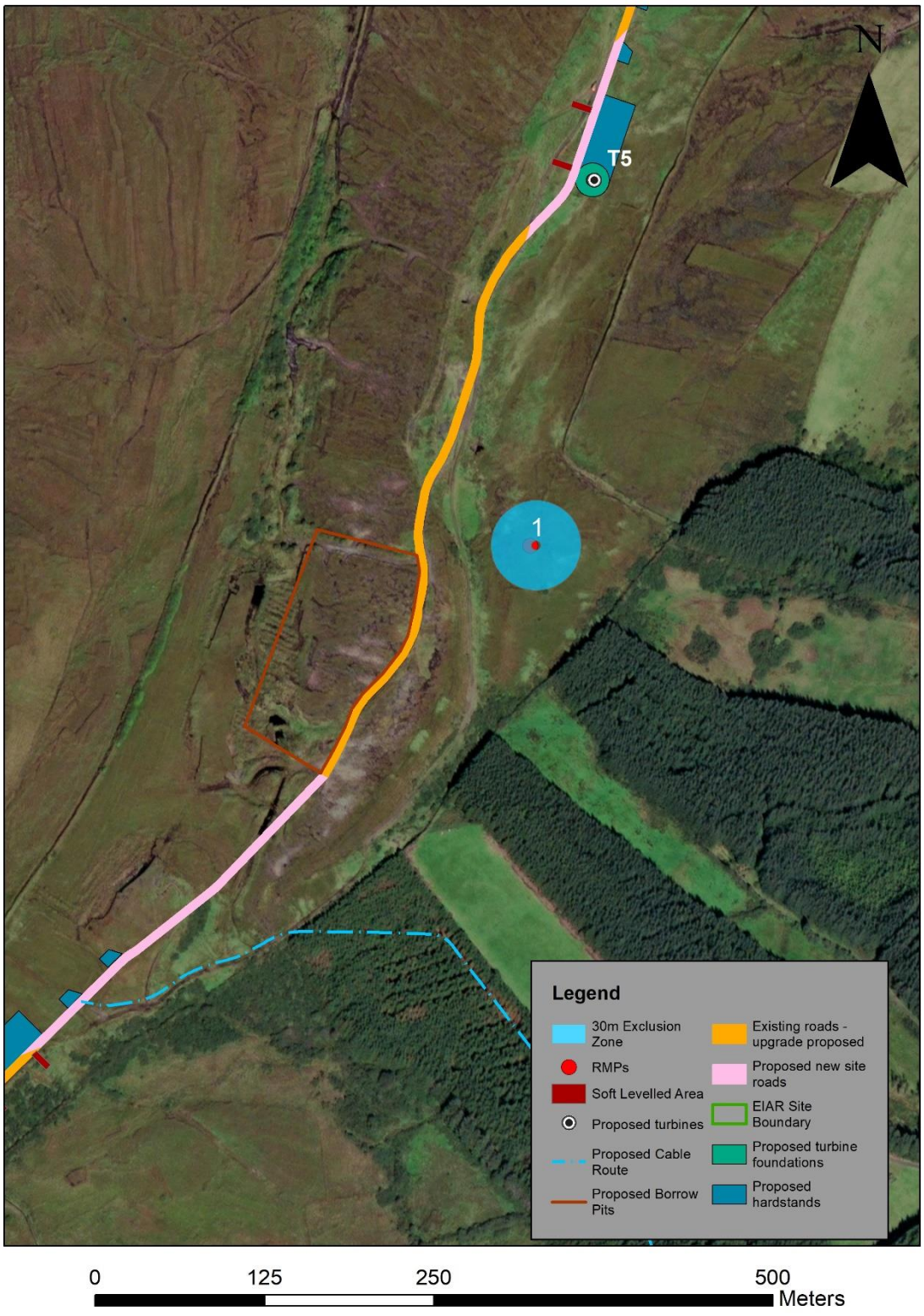

Figure 13-25: Detail of 30m Exclusion Zone around stone circle.

13.4.2.3 Sub-surface archaeology

The potential exists for the development area to contain as yet unrecorded sub-surface sites and artefacts. It is possible that such sites may be uncovered either within the peat/topsoil and/or at the level of the underlying natural subsoil. The excavation of topsoil /peat for the turbine bases, hardstands and associated other infrastructures (roads, cable route, borrow pits etc.) may impact on any new sites, if

present. Other groundworks associated with the junction accommodation areas along the delivery route may also impact on sub-surface archaeological features if present.

Pre Mitigation Impact

Should new sites or features be present within the site (currently not visible on the surface) the impact is likely to be significant negative and permanent (i.e. the excavation by machinery would permanently remove the sites resulting in a significant negative impact).

Proposed Mitigation Measures

- The following areas should be subject to pre-construction stage licensed archaeological testing:
  - Proposed new roads in non-forested areas
  - Turbine bases and hardstands for T3, T5, T6 and T7
  - Proposed Borrow pit south of T5
  - Sections of proposed cable route that traverse green field sections
  - A report on the results of the testing should be undertaken prior to the commencement of development and submitted to the relevant authorities
- Archaeological monitoring of all ground works during construction. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

The sites/features, if detected, during testing and/or monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential impact after the mitigation measures is likely to be slight. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

Significance of Effects

The construction stage groundworks has the potential to impact on subsurface archaeological features if present. The overall significance of effects will be slight-imperceptible and based on the assessment above no significant effects will occur.

13.4.2.4 Protected Structures within the EIAR Site Boundary

Pre-Mitigation Impact

The National School (RPS 637) is located within the EIAR study area boundary. Although the structure is located within the EIAR boundary, it is not located within the footprint of any proposed infrastructure and is located 902m from the nearest proposed turbine (T7) and 272m from the proposed underground cable route where the latter will be constructed within the confines of the public road R460 to the south. The structure will not be directly impacted by any of the proposed construction works.

Proposed Mitigation Measures

The structure and its location should be highlighted in the Construction and Environmental Management Plan (CEMP) as an environmental constraint so that the area can be avoided during construction works.

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.

Significance of Effects

The significance of direct effects will be imperceptible and based on the assessment above no significant effects will occur.

13.4.2.5 Local Cultural / Built Heritage

13.4.2.5.1 *Bridge at Letterkelly – Cloghaun Beg*

Pre-Mitigation Impact

One structure of local cultural / built heritage merit was noted within the EIAR boundary and consists of a road bridge along the regional road R460 on the Letterkelly - Cloghaun Beg townland boundary. This is example of a single arched road bridge with cut limestone voussoirs of 19th century appearance. It is not marked or named on either the 6inch historic or 25 inch OS map. The bridge is fairly conspicuous from the road and was only visible from the entrance to Slievecallan windfarm. The structure is located 58m to the west of the proposed underground cable route.

Proposed Mitigation Measures

The structure and its location should be highlighted in the Construction and Environmental Management Plan (CEMP) as an environmental constraint so that the area can be avoided during construction works.

Residual Impact

No residual impacts will occur.

Significance of Effects

The significance of direct effects will be imperceptible and based on the assessment above no significant effects will occur.

13.4.2.5.2 *Derelict Stone House at Letterkelly*

Pre-Mitigation Impact

A derelict stone house was recorded during the field survey along the underground cable route at ITM E512924, N679668 in the townland of Letterkelly. The structure is located 12m to the east of the proposed underground cable route. The structure may be impacted by machinery given the proximity of the proposed underground cable route to the structure. Mitigation measures are required in order to avoid such effects.

Proposed Mitigation Measures

- The structure and its location should be highlighted in the Construction and Environmental Management Plan (CEMP) as an environmental constraint so that the area can be avoided during construction works.

- A buffer zone of 10m from the house should be established by the contractor and directed by the appointed archaeologist prior to construction. The buffer zone should be marked with fencing and Keep Out signage.

Residual Impact

No residual impacts will occur if the proposed mitigation measures are implemented.

Significance of Effects

The significance of direct effects will be slight-not significant and based on the assessment above no significant effects will occur.

Figure 13-26: 10m buffer zone to be established around derelict stone house at Letterkelly.

13.4.3 Operational Phase Potential Impacts (Indirect)

Indirect impacts are where a feature or site of archaeological, architectural heritage merit or their setting is located in close proximity to a Proposed Development. Indirect impacts here are mainly concerned with impacts on setting. Impacts on settings of sites may arise when a development is proposed immediately adjacent to a recorded monument or cluster of monuments or any cultural heritage asset. While the Proposed Development may not physically impact on a site, it may alter the setting of a monument or group of monuments. There is no standardised industry-wide approach for assessing the degree of impact to the setting of a monument. Professional judgement and experience are utilised in the assessment of impacts on setting as well as Viewshed Analysis in ArcGIS online.

Potential operational impacts are discussed below according to each element of the Proposed Development. Those elements of the Proposed Development which are not capable of impacting on the visual setting of monuments include proposed roads, underground cables etc are scoped out of the assessment. Those elements which are deemed to be more likely to impact on visual setting which include turbines and substation buildings are considered below.

13.4.3.1 Impact on National Monuments in State Care / Guardianship

A review of all National Monuments in State Care and those subject to a Preservation Order were undertaken as part of the assessment in order to ascertain any potential impacts on their setting as a result of the Proposed Development. No National Monuments are located within the EIAR site boundary and none are located within close proximity, the nearest National Monument being located in excess of 7km from turbine 1. These are detailed in Table 13-3 above.

13.4.3.1.1 *Pre-Mitigation Impacts*

One structure of local cultural / built heritage merit was noted within the EIAR boundary and consists of a road bridge along the regional road R460 on the Letterkelly - Cloghaun Beg townland boundary. This is example of a single arched road bridge with cut limestone voussoirs of 19th century appearance. It is not marked or named on either the 6inch historic or 25 inch OS map. The bridge is fairly conspicuous from the road and was only visible from the entrance to Slievecallan windfarm. The structure is located 58m to the west of the proposed underground cable route.

CL008-087001, 1/1972, Doonnagore Castle

Doonagore Castle stands over looking the Atlantic Ocean c.1 Kilometre south of Fisherstreet, Doolin. The ZTV (Chapter 12 LVIA) and viewshed analysis undertaken show that views from Doonagore Castle are limited to the north, north-west, west and south-west with no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL015-092 and CL015-093, 7/1987, Group of two Ringforts at Dough

CL015-092 is described as being located on top of a prominent E-W ridge in pasture with a marshy estuary to N and good views in all directions. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL025-095002, 11/1971, O'Dea's Castle at Dysert

The towerhouse of Dysert O'Dea which was restored (1987) by the Dysert O'Dea Development Association and stands on a low outcrop of limestone C.3OOm NNE of Dysert Romanesque Church. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL025-203002, 182/1947, Ballygriffy Castle

This rectangular towerhouse (9.2m NS, 7.6m EW) stands 18.7m high on the east bank of the river Fergus. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL033-023001 and CL033-023002, 4/1987 Cairn at Ballyneillan

On the boundary between Ballyneillan and Bushypark townlands (also the boundary between the baronies of Bunratty Upper and Islands) at the E end of a W-E ridge with a deep active quarry immediately to the S. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL041-047, 3/1976, Ringfort

Situated at the N end of a plateau with land falling away to NE and rising to S. The ZTV and viewshed results show that the upper portions of Turbines 2-6 may be visible from this monuments location resulting in a slight visual effect. When existing natural screening is taken into account, visual effects will be 'Not significant' at this distance.

CL048-005, 4/1957, Cahermurphy stone fort

Situated near the top of an E-W ridge named Cahermurphy Hill and commanding good views especially to the south of the county. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL016-012001, National Monument No. 7 at Kilfenora

Situated on a low natural rise in undulating limestone outcrop c. 0.5km W of Kilfenora. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL016-015001, National Monument No. 9, Kilfenora Abbey

Situated on a gentle N-facing slope in an area of undulating pasture. Listed as 'Ecclesiastical enclosure' in the SMR (1992) and the RMP (1996). The curving street at SW, the townland boundary to NW and the laneway to NE of Kilfenora Cathedral (CL016-015002-) may represent the outline of an ecclesiastical enclosure. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL016-015002-, CL016-015011-, CL016-015012-, CL016-015013-, CL016-015006-, CL016-015007-, CL016-015008, National Monument No. 8 at Kilfenora

Situated in Kilfenora Village within a graveyard (CL016-015003-) in an area of gently undulating pasture with the land falling away to the N. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL016-052002, National Monument No. 574, Tau Cross (Cross Inneenboy)

This record is for the original location of a Tau Cross listed as 'Cross' in the SMR (1992) and the RMP (1996). There is a replica on site. See CL017-116003- for the present location of the cross and details. The cross is a national monument in State care, No. 574. The ZTV and viewshed results show that

there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL033-033001 and CL033-033003, National Monument No. 204 at Drumcliffe

Situated about 2 miles NW of Ennis town near the top of a steep E-facing slope within a large graveyard (CL033-033002-). No historical references are known for this ecclesiastical site but its foundation is sometimes attributed to St Conald (or Connal) (Gleeson and Gwynn 1962, 33-4; Swinfen 1992, 22). The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL016-032002, National Monument No. 448, Leamaneah Castle

Situated at the junction of the roads from Corofin, Ballyvaughan and Kilfenora with good views to S and SW. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

CL025-091001, CL025-091003, CL025-091004, National Monument No. 16 Dysert O' Dea

Situated in the N portion of a graveyard (CL025-091002-) on a slight rise in a low-lying area, overlooked by higher ground to the W. The ZTV and viewshed results show that there is no visibility in the direction of the proposed turbines. Visual effects will not occur and therefore there will be no impacts.

13.4.3.1.2 *Proposed Mitigation Measures*

It is not possible to mitigate the potential indirect effects of turbines on National Monuments.

13.4.3.1.3 *Residual Impact*

There will be no residual impacts for the majority of monuments with 'Not Significant' being the residual impact for CL041-047, 3/1976, Ringfort which has some potential and partial visibility in the direction of the proposed turbines. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

13.4.3.1.4 *Significance of Effects*

The significance of impacts does not change from the pre-mitigation impacts since it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting. Based on the assessment above, there will be no impacts on the majority of monuments with only one monument having a 'Not-Significant' impact.

13.4.3.2 Impact on Recorded Monument within the EIAR boundary

13.4.3.2.1 *Pre-Mitigation Impact*

One monument subject to statutory protection as defined in the Record of Monuments is located within the EIAR site boundary for the proposed wind farm. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland at ITM E512804, N680240 (Figure 13-17 and Figure 13-18: above). Potential indirect impacts on setting may occur given the proximity of the monument to the proposed turbines. A viewshed analysis from the monument was carried out in order to establish the various degrees of visibility from the stone circle and therefore the degree of impacts. In general the viewshed results show that the best views from the monument from ground level to approximately 100m+ are towards the NE, E and SE. The Viewshed analysis shows that there are no instances where proposed

turbines are visible in full (i.e. from ground level up). The results also show that Turbines 2, 5 and 6 would theoretically be visible from approximately mid shaft upwards and that only the upper portions of Turbines 1, 3, 4 and 8 would be visible. Turbine 7 may not be visible from the monument.

In summary, 3 of the 8 turbines will therefore be visible from mid shaft to blade tip with only the upper portion of 4 visible. One turbine may not be visible at all. No instances will occur whereby the full lengths of turbines will be visible from the monument.

This will result in a moderate impact, a moderate effect arising where a change to an archaeological site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible. No significant effects will occur which would be regarded as an effect which would result in a permanent impact upon a site, leading to a loss of character, integrity and data about an archaeological site.

13.4.3.2.2 Proposed Mitigation Measures

It is not possible to mitigate the potential indirect effects of turbines on this monument.

13.4.3.2.3 Residual Impact

The residual impact will be the same as the pre-mitigation impacts which are moderate. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

13.4.3.2.4 Significance of Effects

The significance of indirect effects will be moderate.

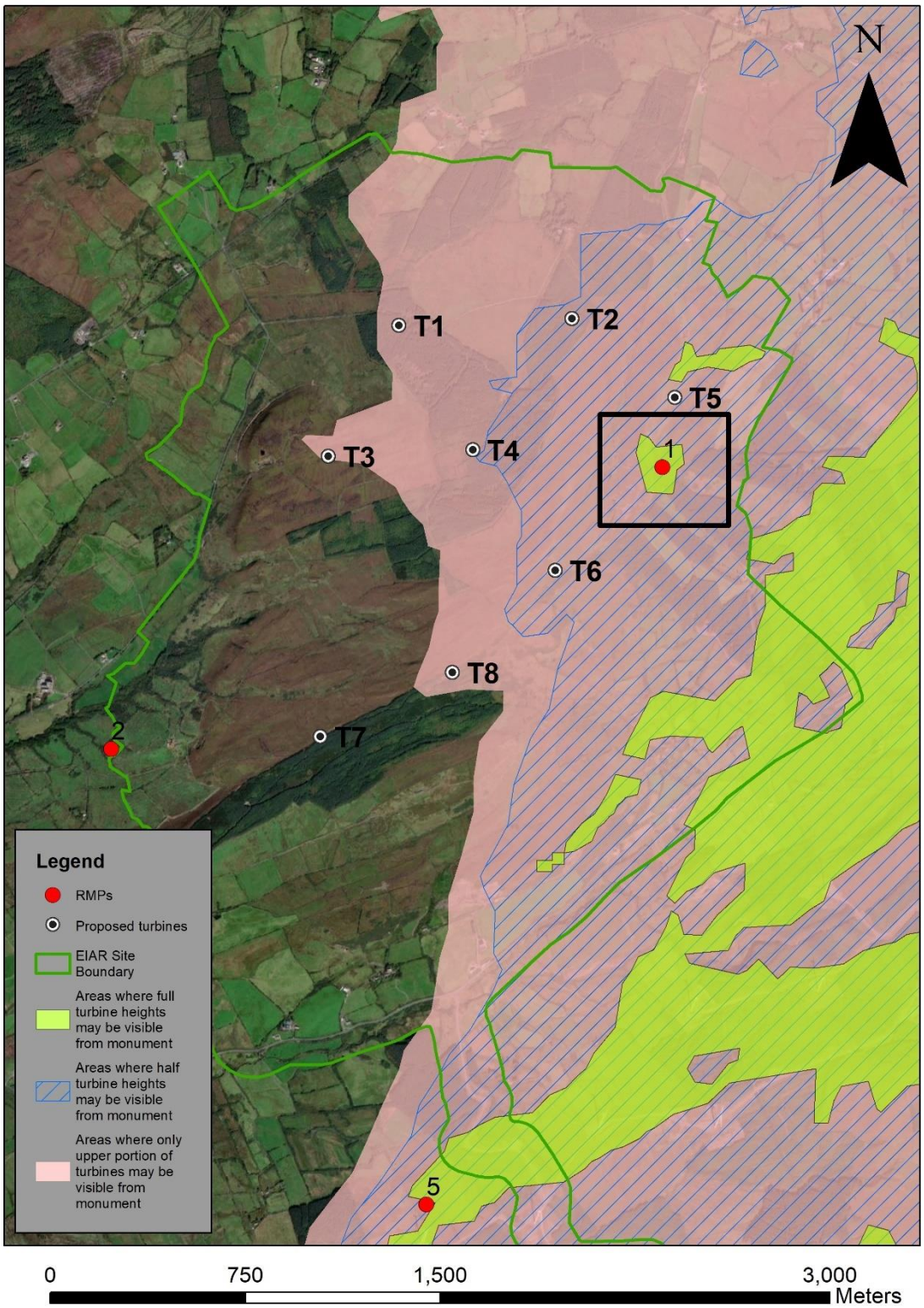

Figure 13-27: Viewshed analysis visible areas from Stone Circle within EIAR site boundary.

13.4.3.3 Impact on Recorded Monuments within 5km

Pre Mitigation Impacts

Eighty-five monuments are located within 5km of the nearest proposed turbine and these are detailed above in Table 13-4. Only two monuments are located within 1km of the nearest proposed turbines

including the example within the EIAR boundary as discussed above. Only three monuments are located between 1 and 2km of the nearest proposed turbine. Four monuments are located between 2 and 3km with 32 monuments located between 3 and 4km. The majority (44) of monuments are located between 4 and 5km. The immediate setting of the recorded monuments will not therefore be negatively impacted. Figure 13-19 demonstrates that the majority of the recorded monuments are located at a remove from the proposed turbines with a notable dearth of monuments within close proximity to the site.

Potential impact on visual setting of the RMPs within 5km of the Proposed Development is considered to be slight (An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site). The ZTV (used in the LVIA Chapter 12) shows that some turbine visibility will be possible from the majority of areas where RMP sites are located, perhaps with the exception of the area to the SE. The results of the ZTV are based on a bare landscape model and does not account for natural screening in the form of field boundaries, forestry, trees and buildings which will minimise visual effects in reality.

Proposed Mitigation Measures

It is not possible to mitigate the potential indirect effects of turbines on recorded monuments within 5km outside the EIAR site boundary.

Residual Impacts

The residual impact is considered to be 'Slight'. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

Significance of Effects

The significance of impacts does not change from the pre-mitigation impacts since it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting. The significance of remains Slight.

13.4.3.4 Impact on RPS structures within the EIAR boundary

Pre-Mitigation Impact

The National School (RPS 637) is located within the EIAR study area boundary. Although the structure is located within the EIAR boundary, it is not located within the footprint of any proposed infrastructure and is located 902m from the nearest proposed turbine (T7). The structure will not be directly impacted by any of the proposed construction works. Some effects on setting may occur however but given the separation distance to the nearest turbine this impact will be 'Slight'. The ZTV suggests that many of the turbines may be visible from this location and this will result an effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect a cultural heritage feature.

Proposed Mitigation Measures

It is not possible to mitigate the potential indirect effects of turbines on a cultural heritage feature.

Residual Impact

The residual impact remains Slight. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

Significance of Effects

The significance of direct effects will be slight.

13.4.3.5 Impact on NIAH/RPS structures within 5km of the nearest proposed turbine

Pre Mitigation Impact

Five structures on the NIAH/RPS are located within 5km of the nearest proposed turbine outside the EIAR site boundary. The distance of the proposed turbines from the structures is such that no direct impacts will occur. The ZTV suggests that all turbines may theoretically be visible from the locations where the structures are located but at a distance. The ZTV is based on a bare landscape model with no vegetation or tree cover. Impacts are therefore considered to be 'Slight'.

Proposed Mitigation Measures

It is not possible to mitigate the potential indirect effects of turbines on RPS/NIAH structures within 5km.

Residual Impacts

The residual impact is considered to be 'Slight'. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

Significance of Effects

The significance of impacts does not change from the pre-mitigation impacts since it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting. The significance of effects remains 'Slight'.

13.4.4 Operational Phase Potential Impacts (Direct)

In terms of archaeology, architecture and cultural heritage, since peat removal and groundworks would be complete, no direct effects will occur at the operational stage.

13.5 Cumulative Impacts

Cumulative impact is defined as 'The addition of many small impacts to create one larger, more significant, impact' (EPA 2002, 33). It is also defined as 'impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project' (EC 1999). Cumulative impacts encompass the combined effects of multiple developments or activities on a range of receptors. In this case the receptors are the archaeological monuments and architectural/cultural heritage sites in the immediate vicinity of the Proposed Development. Cumulative Impacts at the Construction and Operational Stages are considered.

13.5.1 Cumulative Impacts (Direct Impacts)

The addition of other projects to the Proposed Development was considered in order to assess Cumulative Impacts. These included all other windfarms in the vicinity, mainly within 10km of the proposed windfarm as well as other projects such as one off rural housing, general land use and forest activity.

Any potential direct physical impacts that were identified as part of the Proposed Development have been dealt with by way of mitigation measures such as avoidance, buffer zones, monitoring and testing programmes. Should the Proposed Development receive a favourable response from the planning authority, all mitigation measures will be implemented through planning conditions thereby avoiding direct impacts. In this regard when the Proposed Development is added to other surrounding projects there should be no increase in direct impacts and therefore no cumulative effects (direct).

Other nearby developments which have gone through planning applications would also be dealt with by way of suitable planning conditions if the said developments were on or within close proximity to a cultural heritage asset. All forestry activities are governed by a Code of Practice agreed between the forest service and the Department of Culture, heritage and the Gaeltacht thereby avoiding impacting on archaeological sites located therein. Similarly, other windfarm projects would also have gone through the same assessment and planning process and therefore the implementation of mitigation measures during construction thereby avoiding direct impacts. The nearest existing wind farm (Slievecallan) for example was subject to full time archaeological monitoring during construction for both the main wind farm and the substation. No archaeological features were recorded and therefore no impacts occurred (see section 13.3.2.4).

13.5.2 Cumulative Impacts (Indirect Impact on Setting)

Cumulative impacts on setting are more likely to occur at the operational stage of the development (i.e. post-construction). In this regard in order to assess overall cumulative effects on archaeology and cultural heritage the proposed project is considered in the context of other developments, in particular other permitted and proposed wind farms as shown in Figure 13-28: . This map shows the location of existing, permitted and proposed turbines within 20km of the Proposed Development. It also shows that the current potential inter-visibility between monuments will not be impacted by the addition of the Proposed Development to other existing, proposed and permitted turbines.

13.5.2.1 National Monuments

The Viewshed model and ZTVs are based on bare landscape without vegetation, tree cover, boundaries which in reality provide screening in the landscape. Cumulative impacts are based on theoretical models and site visits and are therefore a worst case scenario.

13.5.2.1.1 *CL008-087001, 1/1972, Doonnagore Castle*

Viewshed analysis show that views from Doonagore Castle are limited to the north, north-west, west and south-west with no visibility in the direction of either the proposed turbines or other wind farm projects within 10km. No cumulative effects on setting will occur therefore.

13.5.2.1.2 *CL015-092 and CL015-093, 7/1987, Group of two Ringforts at Dough*

Viewshed results show that there is no visibility in the direction of either the Proposed Development or any other proposed, permitted or operational turbines. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.3 *CL025-095002, 11/1971, O'Dea's Castle at Dysert*

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.4 CL025-203002, 182/1947, Ballygriffy Castle

Viewshed results show that there is no visibility in the direction of the Proposed Development from this castle. Three Letteragh turbines and two Boolynagleragh turbines (under construction) fall within the viewshed visible areas from the monument. Since no Slieveacurry turbine are visible from this location cumulative effects will not occur.

13.5.2.1.5 CL033-023001 and CL033-023002, 4/1987 Cairn at Ballyneillan

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.6 CL041-047, 3/1976, Ringfort

Viewshed results show that the upper portions of the Proposed Development Turbines 2-6 may be visible from the monument resulting in a slight visual effect in its own right. When existing natural screening is taken into account, visual effects will be minimised in reality. Viewshed analysis also shows that all of the Boolynagleragh turbines (under construction), 5 of the 6 Letteragh turbines, two of the operational Glenmore Turbines, 24 of the 29 Slievecallan turbines and one of the Booltiagh extension turbines may also be visible from the monument. The ability to view more turbines from a specific location will result in cumulative visual effects albeit not significant at the current separation distances.

13.5.2.1.7 CL048-005, 4/1957, Cahermurphy stone fort

Viewshed results show that there is no visibility in the direction of the Proposed Development. No visual effects will occur as a result of the Proposed Development when considered on its own.

The Viewshed shows that 72 additional turbines may potentially be visible from this monument including Cahermurphy, Cahermurphy Two, Crossmore, Letteragh, Boolynagleragh, Boolynagleragh extension, Glenmore, Booltiagh and Booltiagh Extension and Kiltumper. This may result in visual effects as a result of these wind farms in their own right. The addition of the Proposed Development will not add to the already existing scenario since there is no visibility of the Proposed Development from the monument. In this regard no cumulative effects will occur.

13.5.2.1.8 CL016-012001, National Monument No. 7 at Kilfenora

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.9 CL016-015001, National Monument No. 9, Kilfenora Abbey

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.10 CL016-015002-, CL016-015011-, CL016-015012-, CL016-015013-, CL016-015006-, CL016-015007-, CL016-015008, National Monument No. 8 at Kilfenora

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.11 CL016-052002, National Monument No. 574, Tau Cross (Cross Inneenboy)

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.12 CL033-033001 and CL033-033003, National Monument No. 204 at Drumcliffe

Viewshed results show that there is no visibility in the direction of the Proposed Development. The viewshed also shows that 15 of the 16 Boolynagleragh including the extension may be visible from this monument. Since the Slieveacurry turbines do not fall within the visible areas, no cumulative effects will occur.

13.5.2.1.13 CL016-032002, National Monument No. 448, Leamaneah Castle

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

13.5.2.1.14 CL025-091001, CL025-091003, CL025-091004, National Monument No. 16 Dysert O' Dea

Viewshed results show that there is no visibility in the direction of the Proposed Development. Furthermore, no other permitted, proposed or operational turbines fall within the viewshed visible areas from this monument. No cumulative effects on setting will occur from this monument therefore.

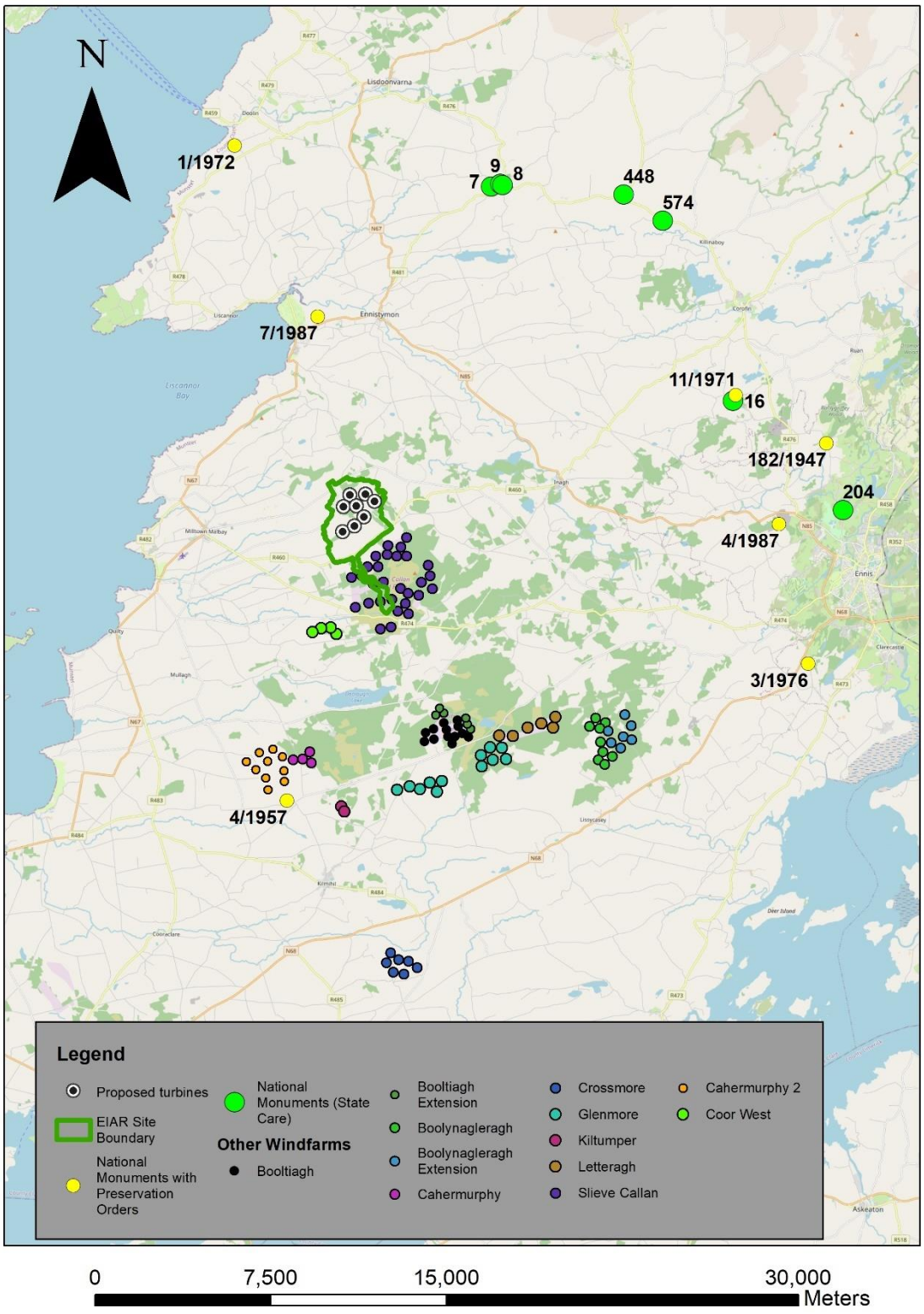

Figure 13-28: Additional projects considered when assessing cumulative effects on setting

13.5.3 Cultural Heritage Assets within 5km of the proposed Slieveacurry turbines

The indirect effects on setting of RMPs and other cultural heritage sites within 5km of the Proposed Development has been addressed in this chapter of the EIAR. Potential impact on visual setting of the RMPs within 5km of the Proposed Development is considered to be slight (An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site). The ZTV (used in the LVIA Chapter 12) shows that some turbine visibility will be possible from the majority of areas where RMP sites are located, perhaps with the exception of the area to the SE.

When the proposed Slieveacurry turbines are added to the other permitted, proposed and existing developments, in particular turbines, more turbines will be visible from various monuments within 5km of the windfarm, in particular the existing Slievecallan turbines since they fall within the 5km study area. The ability to see an increased number of turbines will result in a cumulative impact on setting in the wider landscape. No significant cumulative impacts will occur however.

13.6 Decommissioning Phase

There will be no significant potential impacts on the archaeological, architectural and cultural heritage environment during the decommissioning of the development. Any potential direct impacts will already have been resolved through mitigation measures and the established access tracks will be used for the removal of the built features of the Proposed Development.

13.7 Conclusion

This chapter comprises an Environmental Impact Assessment Report (EIAR) of the potential impact of the Proposed Development on the Cultural Heritage resource. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on GIS based mapping, ZTV and Viewshed analysis to assist with the assessment of impacts on setting followed by a desktop analysis of all baseline data and a comprehensive programme of field inspection of the EIAR site boundary.

Direct Effects

No National Monuments in State Care or those subject to preservation orders are located within or within close proximity to the Proposed Development and no direct effects will occur in this regard. One recorded monument (Stone circle RMP CL031-052) located at Curraghodea townland at ITM E512804, N680240 (Figure 13-17 and Figure 13-18: above) is located within the EIAR boundary. Groundworks associated with the proposed turbines, roads and borrow pit and the movement of machinery in the general vicinity may have a direct negative and permanent impact on the monument. This potential impact will be negated through the implementation of mitigation measures including a 30m exclusion zone. One RPS structure is located within the EIAR boundary but at a remove from the proposed turbines and associated infrastructure. It is subject to statutory protection by way of inclusion in the Record of Protected Structures and consists of a derelict national school (RPS ID 637). It is located on the north side of a trackway which extends East/West to the north of the regional road (R460). It is located 902m from the nearest proposed turbine (T7) and 272m from the proposed cable route where the latter will be constructed within the confines of the public road R460 to the south. The structure and its location will be highlighted in the Construction and Environmental Management Plan (CEMP) as an environmental constraint so that the area can be avoided during construction works. No NIAH structures are located within the EIAR boundary. Two structures of local cultural heritage merit were noted within the EIAR boundary including a bridge and a derelict stone house, both adjacent to the underground cable route alignment. No direct impacts to any of the aforementioned sites will occur

and exclusion zones will be established prior to construction around the house structure. The bridge will be highlighted in the CEMP so that the area can be avoided during construction.

Potential impacts on sub-surface archaeological finds, features and deposits are dealt with through testing and monitoring thus avoiding any significant effects. All groundworks will be monitored during construction.

A search of placenames in the vicinity of the proposed development led to the discovery of information relating to the burial places of British Soldiers during the War of Independence. The bogs near Connolly are thought to be the burial place of a Private Robertson who is said to have been buried in the property of Colonel Frederick St Ledger Tottenham, a local Unionist landlord. Tottenham's bog was chosen as the site for Robertson's burial since it was felt that his lands were unlikely to be searched by the British forces. There are Tottenhams recorded in both the 1901 and the 1911 Census residing at Ballynoe, Fermoyle (National Archives: Census of Ireland 1911). Ballynoe is 3.6km to the south-east of the proposed development site. The potential for the discovery of human remains relating to the War of Independence can be mitigated by the presence of an archaeologist on site during construction works. Should human remains be uncovered, the archaeologist will follow all necessary procedures regarding the discovery of human remains.

Fahanlunaghtamore Bridge, Cloonanaha Bridge, Skagh bridge and Inagh Bridge (RPS Ref. 208) and NIAH (Reg. No. 20403203) are located along the delivery route. Since no works are proposed in these locations no impacts will occur.

Indirect Effects on visual setting

Indirect effects on the setting of National Monuments within 10km, RMPs within 5km and RPS/NIAH within 5km were included in order to assess impacts on setting in the wider landscape. Viewshed analysis, a review of the ZTV was undertaken to establish the nature and degree of impacts on the setting of such monuments.

Impacts on visual setting of National Monuments in State Care will not occur from 13 of the 14 monuments with the impact being 'Not Significant' from one monument where some turbines may theoretically be visible.

One monument subject to statutory protection as defined in the Record of Monuments is located within the EIAR site boundary for the Proposed Development. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland. In summary, 4 of the 6 turbines will be visible from mid shaft to blade tip with 2 turbines not visible at all. No instances will occur whereby the full lengths of turbines will be visible from the monument. This will result in a moderate impact, a moderate effect arising where a change to an archaeological site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible. No significant effects will occur which would be regarded as an effect which would result in a permanent impact upon a site, leading to a loss of character, integrity and data about an archaeological site.

Impacts to setting of RMPs was undertaken and this included 85 monuments within 5km, the majority occurring at a remove from the nearest proposed turbine. Potential impact on visual setting of the RMPs within 5km of the Proposed Development is considered to be slight (An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site).

The National School (RPS 637) is located within the EIAR study area boundary. Although the structure is located within the EIAR boundary, it is not located within the footprint of any proposed infrastructure and is located 902m from the nearest proposed turbine (T7). The structure will not be

directly impacted by any of the proposed construction works. Some effects on setting may occur however but given the separation distance to the nearest turbine this impact will be 'Slight'.

Five structures on the NIAH/RPS are located within 5km of the nearest proposed turbine outside the EIAR site boundary. The distance of the proposed turbines from the structures is such that no direct impacts will occur. The ZTV suggests that all turbines may theoretically be visible from the locations where the structures are located but at a distance. The ZTV is based on a bare landscape model with no vegetation or tree cover. Impacts are therefore considered to be 'Slight'

Cumulative Direct Effects

Any potential direct physical impacts that were identified as part of the Proposed Development have been dealt with by way of mitigation measures such as avoidance, buffer zones, monitoring and testing programmes. Should the Proposed Development receive a favourable response from the planning authority, all mitigation measures will be implemented through planning conditions thereby avoiding direct impacts. In this regard when the Proposed Development is added to other surrounding projects there will be no increase in direct impacts and therefore no cumulative effects (direct).

Cumulative Indirect Effects

Of the 14 National Monuments in State Care considered in terms of impacts on their visual setting, one example has some visibility of both the Proposed Development turbines and other turbines and in this regard cumulative effects on the visual setting will occur (based on theoretical visibility). No cumulative effects will occur on the remaining 13 since there are no other instances where both the Proposed Development turbine and other turbines can both be seen from the various monuments.

In terms of RMPs, RPS and NIAHs considered within 5km of the Proposed Development turbines, when the Proposed Development turbines are added to the other permitted, proposed and existing windfarms more turbines will be visible from various monuments within 5km of the windfarm, in particular the existing Slievecallan turbines since they fall within the 5km study area. The ability to see an increased number of turbines will result in a cumulative impact on setting in the wider landscape. No significant cumulative impacts will occur however.