

Appendix 10: Cultural Heritage Report



**Cultural Heritage Assessment
For
The Proposed Atlantic Marine Energy Test Site**

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ARCHAEOLOGY AND CULTURAL HERITAGE

1. INTRODUCTION

The EIA Directive and Regulations require that the Material Assets section of an EIS Document address architectural and archaeological heritage, and the cultural heritage. However, such is the importance of this issue in Ireland, EIA best practice has established that it is important to address this issue separately and not as an adjunct to the Material Assets chapter in the EIS Document.

This chapter has been prepared by Moore Marine Services and assesses the potential significance and likely impact of the proposed development on cultural heritage, archaeological and architectural heritage.

2. METHODOLOGY

This chapter of the EIS document has been prepared with reference to specific criteria set out in the Guidelines on Information to be Contained in an Environmental Impact Statement (EPA 2002) and the Advise Notes on Current Practice (in preparation of Environmental Impact Statements) (EPA 2003).

Abbreviations Used

- DoEHLG – Department of the Environment, Heritage and Local Government
- NIAH – National Inventory of Architectural Heritage
- NMI – National Museum of Ireland
- RMP – Record of Monuments and Places
- RPS – Recorded Protected Structures
- NM – National Monument
- UAU – Underwater Archaeology Unit of Department of the Environment, Heritage and Local Government

Sources of Information

The study is based on an examination of Ordnance Survey Maps, records and publications of the Archaeological Survey of Ireland, documentation and archive material from various institutions including:

- Department of the Environment, Heritage and Local Government, Customs House, Dublin 1
- Map Library, University of Dublin, Trinity College Dublin 2
- National Museum of Ireland, Kildare Street, Dublin 2
- National Library of Ireland, Kildare Street, Dublin 2
- Ordnance Survey of Ireland, Phoenix Park, Dublin 8
- Royal Society of Antiquaries, 63 Merrion Square, Dublin 2

The standard publications that relate to the area under consideration have been consulted.

Aerial Photographs

Aerial photographs are an invaluable resource in archaeology for the recognition of new sites and contributing to the understanding of known sites. Features can be recognised from the air as earthworks in relief or as vegetation marks where a buried feature such as a wall or ditch affects the growth of the surrounding flora. The Geological Survey of Ireland Aerial Photograph Collection, based in Dublin, holds a comprehensive archive of high-level vertical photographs available for consultation by the public and researchers but may not be copied.

Archaeological Potential

Archaeological Potential is a term used to identify parts of the country where it is known that buried archaeology is likely to survive. They are primarily created and used in the planning process to act as triggers that can alert planning officers to possible archaeological disturbance caused by proposed developments. They can be classified into three broad bands:

Low potential:

Sections of the proposed development categorised being of 'low impact' are considered unlikely to impact on the cultural heritage (known and unknown) of the area.

Medium potential:

In these areas archaeological and architectural features are recorded in the vicinity of the proposed development and there is potential for the chance discovery of previously unknown features or artefacts. There is also a potential for damage or destruction to the archaeological and architectural features.

High potential

In these areas the proposed development is in close proximity to a known archaeological monument or architectural feature. There is a significant potential for damage or destruction of the site or feature and the loss of previously undiscovered material.

Archaeology

Archaeology is defined as the study of the past through the examination and analysis of material cultural remains. These include buildings, structures, features and the landscape itself.

Thus for developments which involve disturbance in areas of known archaeological remains or in areas of high archaeological potential, mitigation of impacts and of possible impacts must be considered.

All archaeological sites and monuments are protected under the National Monuments Act 1930 and subsequent Amendment Acts, 1954, 1987, 1994, 2004 the Heritage Act, 1995 and '*The Valetta Convention*'.

The European Convention on the Protection of Archaeological Heritage (revised), European Treaty Series No. 143, dated 16/01/1992, (commonly referred to as '*The Valetta Convention*', entered into force for Ireland on 19/09/1997.

Cartographic Sources

Cartographic sources consulted include Bald's map of County Mayo, (1817), the first edition map of the Ordnance Survey (O.S) six-inch series published in 1838; the twenty-five inch 1900 O.S map and the 1906 O.S six-inch revision were also consulted. All maps were sourced in the Map Library of Trinity College Dublin, Mayo County Library in Castlebar and the National Maritime Museum in Greenwich, London.

Impact

The degree of change in an environment resulting from a development.. Impacts should address direct, indirect, secondary, cumulative, short, medium and long term, permanent, temporary, positive and negative impacts as well as impact interactions. These terms are further defined in section 5

Irish Excavations Database

'Excavations' is an annual bulletin, now funded by the Department of the Environment, Heritage and Local Government, which contains summary accounts of all excavations carried out in Ireland – North and South. The bulletins can now be accessed on the Internet at www.excavations.ie. Compiled from the published excavation bulletins, the database contains summary accounts of all excavations carried out from 1970. Both the bulletins and database were consulted to establish whether excavations have been previously carried out in the vicinity of the proposed development.

Lewis Topographical Dictionary

Lewis Topographical Dictionary gives a unique insight into early nineteenth century life within Irish counties and towns. Samuel Lewis first published his two volumes of The Topographical Dictionary of Ireland in 1837. His main aim, along with his previous topographical dictionaries and maps of the United Kingdom, was to give in 'a condensed form', a reliable and unbiased description of each place. The dictionary provides a comprehensive description of all Irish localities as they existed at the time of publication. Every parish, town and village in Ireland, including numbers of inhabitants, the economy, history, topography, religion and parish structures, administration and courts, schools are described. Lewis gives the names of the principal inhabitants (generally landlords, merchants and professionals). The dictionary is the first detailed study of its kind for Ireland, and since it was published just prior to the Irish Potato Famine (1845-49) it is a valuable resource used widely by historians and genealogists alike.

Mayo County Development Plan (2008-2014)

The Mayo County Development Plan (2008-2014) was consulted. It contains the Record of Protected Structures (RPS) for County Mayo as well as Landscape appraisals.

Mayo County Library

The Local Studies section of Mayo County Library is housed in County Library in Castlebar. A number of local histories, general historical/archaeological texts and historic maps were consulted (see bibliography for details).

The National Shipwreck Inventory

The Shipwreck Inventory is based on archival studies of all documentary sources around the coast including Lloyd's List, House of Commons Sessions Papers, Local Newspapers, Cartographic Sources and all other relevant documentary sources. The Inventory is currently available for consultation at the Department of the Environment, Heritage and Local Government. This inventory is being published in four volumes: Vol. I – Louth to Wicklow, Vol. II – Wexford & Waterford, Vol. III – Cork and Vol. IV - Kerry to Donegal.

The Ports and Harbours Archive

The Ports and Harbours Archive of the Department of the Environment, Heritage and Local Government contains details of all alterations and refurbishment works including OPW works carried out on ports and harbours, it contains dates and inquests in to the state of Irish fisheries since the 19th Century. The Ports and Harbours Archive has not been published but is available to view at the Department of the Environment, Heritage and Local Government.

The National Inventory of Architectural Heritage

The NIAH is a section within the Department of the Environment, Heritage and Local Government. The work of the NIAH involves identifying and recording the architectural heritage of Ireland, from 1700 to the present day, in a systematic and consistent manner.

The Record of Monuments and Places

The Archaeological Constraints Map, in conjunction with the County Record of Monuments and Places, provide the initial database for Planning Authorities, State Agencies and other bodies involved in environmental change.

The Record of Monuments and Places (RMP) comprise the following elements: (i) Letter or Letters indicating County (MA = Mayo); (ii) A three digit number indicating the relevant Ordnance Survey Sheet Number (e.g. 009 or 016); (iii) A three, four or five digit number indicating the dedicated number of the individual site or monument.

The proximity of the development area to known and identifiable archaeological monuments has also been considered.

The Topographical Files

The discovery of artefacts can be an important indicator of past levels of activity in an area and therefore a useful guide to the archaeological potential of a site. Collectively known as the Topographical Files, the files

held in the National Museum of Ireland provide information on artefacts, their find spots, any field monuments which have been notified to the National Museum and where applicable, reports of excavations undertaken by NMI archaeologists in the early twentieth century.

3. THE EXISTING RECEIVING ENVIRONMENT

5.1 Introduction

In describing the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the proposed development will fit is assessed. This takes account of any other proposed developments that are likely to proceed.

Planning Context in Relation to Archaeology and Cultural Heritage

The Mayo County Development Plan 2008-2014 addresses issues relating to Cultural Heritage and sets out a wide range of policies under a number of sub headings. This assessment takes account of all the stated policies and related objectives.

Appendix VIII of Section 2 of the County Development Plan also contains a list of Major Sites of Archaeological Importance in the County in State Ownership or Guardianship and National Monuments in Mayo subject of Preservation Orders. Section 7 contains the List of Structures on the Record of Protected Structures for County Mayo.

Archaeology

For archaeological sites and material the Mayo County Development Plan 2008 - 2014 includes the following policies:

- a) Protect the archaeological heritage identified in the Record of Monuments and Places, National Monuments in the ownership or guardianship of the State, and National Monuments that are the subject of Preservation Orders, and to safeguard the integrity of the archaeological sites in their setting
- b) Facilitate appropriate guidance in relation to the protection of the archaeological heritage in the County
- c) Promote public awareness and appreciation of the archaeological heritage of the County
- d) Facilitate public access to National Monuments in State care, in private ownership or in the ownership of the State identified in Appendix VIII
- e) Ensure the preservation of National Monuments that are the subject of Preservation Orders listed in Appendix VIII and features of archaeological interest in areas that are identified as Zones of Archaeological Potential in the Record of Monuments and Places
- f) Promote and support the concept of Archaeological Landscapes in landscapes which contain several Recorded Monuments or very important sites, in co-operation with the Department of the Environment, Heritage and Local Government
- g) Protect, enhance and promote awareness of the industrial heritage of the County

- h) Protect historic burial grounds within the County and encourage their maintenance in accordance with conservation principles
- i) That traditional walking routes to archaeological sites be designated as public right of ways.
- k) That proposals within or adjacent to a buffer zone of 30m from a Site on the Record of Monuments and Places shall be assessed having regard to the requirements as set out in Section 4.16 Development Management Guidelines.

Architecture

The Planning and Development Act 2000 (Part II, Section 10) places an obligation on all Local Authorities to include in its Development Plan objectives for the protection of structures or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. These buildings and structures are compiled on a register known as the Record of Protected Structures (RPS), and are outlined in Section 7 of the Mayo County Development Plan 2008 - 2014.

The following policies are considered relevant:

- a) Protect buildings and structures identified in the Record of Protected Structures (RPS).
- b) Ensure that proposals for development in close proximity to any structure or building listed in the RPS respect the setting and character of the Protected Structure.
- c) Co-operate with the Department of the Environment, Heritage and Local Government, the Heritage Council and relevant local agencies or associations to ensure that structures included in the RPS are protected and maintained to acceptable conservation standards.
- d) Ensure that any interventions to the structures listed in the RPS are undertaken in accordance with best conservation practice and will not detract from the special character of the structure or its setting.
- e) To operate a general presumption in favour of the preservation of Protected Structures with proposals for demolition considered only in exceptional circumstances.
- f) Support owners of protected structures in finding appropriate alternative uses for structures that are vacant or become vacant.
- g) Actively pursue funding for building conservation and restoration of structures in the Record of Protected Structures, particularly those in public use.
- h) Promote and improve the understanding of the architectural heritage of Mayo by encouraging public access to protected structures where appropriate.

Landscape Character Areas

The Mayo County Development Plan recognises that the county's landscape is not homogenous, and neither are the pressures on it. In section 1.2 of Section 6 of the Mayo County Development Plan 2008 - 2014, *'Landscape and scenery are often important considerations in making planning decisions. It is important, therefore, to provide clear, fair and easily anticipated landscape policies to guide applications and decisions. In this way disappointments can be anticipated and avoided while also ensuring that decisions are more easily*

understood and accepted. To address these, an independent 'Landscape Appraisal for County Mayo' was commissioned. It's purpose was to identify and describe the landscape character of each part of the County. Following this, the capacity of each area to accept change – without disproportionate effects was evaluated and a series of policies to guide developments in each type of landscape was proposed.'

The *Landscape Appraisal for County Mayo* is contained in Section 6 of the Mayo County Development Plan 2008 - 2014. It characterised the north-western extremity of County Mayo, the area around the Belmullet Peninsula and to the south, as North West Coastal Moorland.

Section 2.3.4 of the document states that with regard to coastal vistas, *'The main concern for natural linear features such as coast lines and ridge lines is to avoid penetration by development that will interrupt and reduce the integrity of such elements.'*

Section 3.1 designates the coastline from Killala Bay to Killary Harbour as a vulnerable landscape and recommends that *'These areas represent the principal features which create and sustain the character and distinctiveness of the surrounding landscape, and that particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites.'*

Section 3.2 of the appraisal records that the beaches, sands and dunes to the West of Belmullet Peninsula at the following areas: Cross Point, Carraun Point, South of Tiraun Point; from Annagh Head to Belderra Strand are designated as sensitive landscapes.

It further states that *'These areas have a distinctive, homogenous character, dominated by natural processes. Development in these areas has the potential to create impacts on the appearance and character of an extensive part of the landscape. Applications in these areas may also be required to consider ecological, archaeological, water quality and noise factors in so far as it affects the preservation of the amenities of the area.'*

Record of Protected Structures

The NIAH has not yet been completed for County Mayo. In lieu of this, the County Mayo Development Plan (2008) was consulted. The RPS for County Mayo is contained within Section 7 of the Mayo County Development Plan. No Protected Structures are located within the bounds of the study area. The nearest RPS site is Carn House (RPS no. 0193). It is located to the west of Belmullet town and will not be impacted by the proposed development.

5.2 Historical and Cartographic Context

Nomenclature

Placename evidence is a useful tool in the analysis of historical and archaeological background and context to specific sites.

The name 'Annagh' appears to derive from the Irish '*Eanach*' meaning a marsh or wet meadow. This is an obvious reference to the geographic location of the area, on the western tip of the peninsula, the site where all inclement weather would first hit landfall.

The name Ardowen appears to derive from the Irish '*Ard Abhainn*'; meaning river located on high ground. This is a geographical reference.

Binghamstown is an anglicised name for the area, referencing the Bingham family who were the owners of much of the land in the area..

Emlybeg (North & South) means small hollow or marsh, again a geographic and climactic reference.

No reference was noted for Macecrump.

Termoncarragh means the termon or church of St. Carragh.

The name Tonamace means back side of the thick hill, obviously a reference to the high sand dunes which protect the area from the sea.

Belderra comes from the Irish '*Beal an Doire*' meaning the mouth of the wood or oak wood.

Ballymacsherron comes from the Irish '*Baile Mhic Seathruin*' meaning townland of the son of Geoffrey.

Cross derives from the '*Cros*' meaning cross. This would appear to be a reference to the nearby church, graveyard and abbey.

Historical Background

Mesolithic Period

The Mesolithic (middle stone age) people were the first inhabitants of Ireland, arriving about 9000 years ago. They were a mobile society relying on wild resources for food, which was hunted and gathered using stone tools as well as boats, nets and traps. Settlement was in temporary and semi permanent groups of huts constructed of wood slung with hide, which may have operated as seasonal or hunting camps.

There is little evidence for the Mesolithic activity in west Mayo although the single discovery of a Bann Flake from Burrishoole suggests there may have been some occupation of the area at this time (Corlett 2001).

Neolithic Period

Farming was first adopted in the Middle East but spread gradually across Europe in succeeding centuries, arriving in Ireland about 4000 BC. Tending of crops and animals required a more sedentary lifestyle and larger permanent settlements were built. The megalithic (from the Greek 'mega' – large and 'lithos' – stone) monuments of the Neolithic people built as communal tombs or for ceremonial purposes, are relatively common in the landscape. New methods were adopted for shaping stone tools and the first long distance trade networks were established.

Neolithic activity is far more apparent in the archaeological record due to the presence of numerous megalithic monuments. These are abundant in Mayo, scattered across the landscape but often concentrated in particular areas, frequently hilltops or false crests commanding extensive views of the landscape. In west Mayo there are five Court tombs (Corlett, 1999). These monuments, amongst the earliest built in Ireland, generally consist of a broad trapeze shaped cairn with a roofless oval shaped courtyard set in front of a covered gallery, the burial vault (Ó Nualláin, 1991). Cremation seems to have been the predominant burial rite, the burials often accompanied by pottery vessels and stone implements. Monument construction on this scale is testament to a well-organised and sophisticated society in the area.

Although the burial monuments of the first Irish farmers are apparent in the landscape the settlement sites around them are elusive. In north Mayo there is an unusually well preserved system of fields dating from this period, the Céide fields. Here an entire landscape was sealed by a growth of blanket bog, preserving a network of stone walls which is suggestive of a well organised agricultural system. A well preserved house was excavated at Ballyglass, also in north Mayo and another was excavated to the north of Belmullet. These houses were generally rectangular and built of timber. They are generally identified only from the outline of surviving post holes and hearths. Similar field systems have been recorded travelling into the underwater zone at nearby Broadhaven Bay. Submarine bog deposits of possible archaeological significance have also been recorded in nearby Blacksod and Broadhaven Bays.

The Bronze Age

As stone tools were replaced by the use of copper, later combined with tin to make bronze, the structure of society also changed over centuries. While some communal megalithic monuments, particularly wedge tombs continued to be used, the Bronze Age is characterised by a movement towards single burial and the production of prestige items and weapons, suggesting that society was increasingly stratified and warlike.

From around 2,500 BC, the stone toolkit was augmented by the use of copper, later combined with tin to make bronze, changing the structure of society. In late Bronze Age Ireland, the use of metal reached a high point, with the production of high quality decorated weapons, ornaments and instruments, of gold as well as bronze. The Bronze Age movement towards single burial can be seen in the area surrounding the subject site where examples of small stone-lined chambers called cists have been found at Binghamstown, Carn, Cross and Tonamace.

Wedge tombs, the latest of the megalithic tombs, are found in west Mayo at Glengad, Largan Beg, Belderg More, Lettera and Castlehill, although burial in hilltop cairns are also common. An unspecified possible megalithic structure is also recorded at Gladree. Some standing stones were erected in the Neolithic period but most are thought to have been Bronze Age features, perhaps put up as markers for some kind of ritual associated with their location or astronomical alignment. Other stone monuments found are standing stones. These are generally thought to be territorial markers but they have also been known to mark burial plots. There is a standing stone located at Binghamstown, Macecrump/Tonnamace stone.

Fulachta fiadh also date from the Bronze Age and several have been found in the vicinity of Belmullet in western Mayo. These enigmatic features are amongst the most common archaeological sites in Ireland. They

are often recognised as horseshoe or oval-shaped mounds which, on excavation are found to consist of burnt material, ash and shattered stone. A wooden trough will sometimes survive in the centre, possibly lined with clay or leather, and one or more hearths may be present.

The Iron Age

“Until recently, the Iron Age was known as a ‘dark age’ in Irish prehistory. Knowledge of Iron Age Ireland was largely restricted to an artefact record which was biased towards the north of the country; a limited burial record; and’ a small but significant, group of specialised monuments: the so-called Royal sites [e.g. Rathcroghan in Co Roscommon]. However, very little is known of the vernacular culture of the Irish Iron Age, particularly, where and how people lived, the types of houses they built and their industrial activities” (Becker et al., 2008).

The Irish Iron Age culture appeared to have favoured circular post-built houses in small, often unenclosed settlements, such as at Lislackagh in east Mayo. The most definitive sites however tend to be promontory forts. The RMP records that there are two of these located at Annagh, immediately to the north of the originally proposed cable landfall site at Annagh. In addition to the two possible promontory forts at the above mentioned site, there are five more of these monuments in the general vicinity and two of these; Annagh Head and Termoncarragh, are large monuments incorporating possible hut sites and a possible gatehouse. The fifth site; Ballymacsherron, has two associated hut sites. The presence of such a concentration of contemporary monuments in the area would appear to indicate that there was an extensive Iron Age population in the area.

Early Christian / Early Medieval Period

The chronological term ‘Early Christian’ is commonly used to refer to the period from about AD 450 to the Anglo-Norman invasion in 1169, though it is being increasingly referred to as the Early Medieval period. Monuments from this period are often the most numerous in the landscape, with tens of thousands in the whole of Ireland. These include ringforts such as raths and cashels, further crannogs and unenclosed settlement sites, ecclesiastical sites and souterrains.

The most plentiful of these are raths; farmsteads enclosed by banks and ditches. Many of the destroyed sites listed as enclosures in the Record of Monuments and Places are probably levelled raths removed by agricultural improvement schemes. Raths are generally circular or oval but vary in size and in the number of enclosing banks and ditches. Excavations of the interiors suggest that the houses were small circular huts, built of stakes with a double skin of wattle and a thatched roof. Cashels are enclosures in rocky upland areas, of similar date and function as raths but with stone-built walls instead of banks and ditches.

From the middle of the sixth century onwards hundreds of small monastic settlements were established around the country. Some examples of well-known early monastic sites in Mayo include Aughagower, Inishmaine, Ballintubber, Errew, Kilmore Erris, Balla, Cong, Killala, Turlough, Moyne near Cross, and island settlements off the Mullet peninsula such as Inishkea North, Inishkea South and Duvillaun More. There are two large religious settlements within 5 km of the subject site. These are Termoncarragh and

Macecrump/Tonnamace. Each of the two monuments is recorded as an archaeological complex. Termoncarragh has a church, a graveyard, a front and a cross, whilst Macecrump/Tonnamace appears to be an earlier site reoccupied. The RMP records that it has a church, a graveyard, middens, hut sites, a standing stone, a bullaun stone, cist burials and an inscribed pillar stone. Cross abbey, graveyards, church and burials are all located within a radius of 1 km to the west of Belderra Strand

The presence of such a diverse and varied chronology of monuments on the site appears to indicate either continued use of the area or later reuse of previous sites. Either way, it indicates extensive human exploitation of this area.

Later Historic Period

Ancient Erris was a region divided by tribal groups known as tuatha. In Erris the two tribes were known as the Damnonii, and the tribe of Belgae, referred to in the ancient histories as Gamanradaii. Written records of this period are few and far between, though it is believed that some Scottish clans were thought to be involved in the tribal rivalry. Early annals state that Fiachrian O'Caithnaidh was the chief of the Belgae in the late 1100's and Lord of Erris well into the next century.

The clan of O'Caithnaidh lost power to the O'Dowd clan in the next century, and by the 1380's the Barrett family had seized power over much of the Erris region. Throughout the next two hundred years, the number of native Gaelic leaders fell as the influence of colonisation was felt, especially in the Mullet Peninsula, a desirable farming area.

Mayo came under Anglo Norman control in 1235. The Norman conquest meant the eclipse of many Gaelic lords and chieftains, chiefly the O'Connors of Connacht, but the invaders soon adopted Gaelic customs and began to marry with the native Irish. This process of Gaelicisation is best exemplified in the adoption by various Norman families and branches of families of new surnames based on Gaelic-style patronyms. Examples of Mayo surnames with Norman origins include Barrett, Burke and Bourke, Costello, Culkin, Cusack, Davitt, Fitzmaurice, Gibbons, Jennings, Joyce, McEvelly, Nally, Padden, Staunton and Walsh. The Normans founded numerous towns, developed some existing settlements into towns, as well as organising fairs and markets. They developed roads, bridges and sea ports and also promoted the growth of trade, both domestic and foreign, as well as improving agricultural methods.

Little is known of the inter-tribal struggles until the late 1500's, when the Barony of Invermore, by then in the possession of the Barretts and the Bourkes, is mentioned in records. Sir Edmund Barrett was a renowned landlord, especially after he had been knighted by Queen Elizabeth I for services to the crown. The Barrett's power increased further when they received more lands in Erris from King James I, in appreciation for their loyalty to the monarch.

In the later sixteenth century, a large number of these estates were eventually bought by a lawyer called Dermot Cormack. In 1641 a descendant of Cormack's is recorded to possess a large tract of north eastern Erris. Throughout the mid 1600's much of this land changed hands, often due to the intervention of the new monarch Charles II. However, these changes pale in comparison to the transformation to be brought about by the coming of Oliver Cromwell.

As Cromwell and his forces drove people from the land, especially from the north, their destination often proved to be Connacht, and frequently Erris. The wild and infertile land of Erris was unsuitable for supporting an increasing population, and the people consequently suffered as a result.

Cromwell planned to allot a limited amount of land to selected Catholics, often in proportion to their involvement in the wars of preceding years. Local landowners met in 1635 to survey the estates of land in each barony. These landowners produced detailed information regarding family settlements, mortgages, sales, and purchases. This survey therefore inadvertently produced a comprehensive record, including a series of maps, which was unheard of before this time. They had intended to assign certain lands and baronies to 'transplanters' from outside Connacht, or even from outside the country. The final records in Cromwell's time of influence indicate the primary owner of Erris to be the royalist, the Earl of Ormond, although the land had officially been appropriated from him at an earlier time.

The restoration of the monarchy with Charles II ensured the future uncertainty of all previous land arrangements. He restored to Catholics much of the land which had been seized by the Cromwellians. The parish of Kilmore-Erris was given to Sir Robert Viner, a goldsmith from London to whom Charles owed money. Viner quickly sold the land on to Sir James Shaen, Surveyor General of Ireland, and whose family had links with Erris dating back to Queen Elizabeth I. Sir James paid little attention to his new property and when he died in 1695 he left it to his son, Sir Arthur Shaen. Sir Arthur was to show greater interest in his new acquisition and seemed determined to turn Erris into an English colony. He brought over a vicar for the parish, and then gave most of the good land to more Englishmen at a nominal rent. With very few exceptions, he appeared to lease the majority of the properties to non-locals, and in fact, many native inhabitants were evicted to make way for the incomers. Many of the local inhabitants were provoked into rebellion, although this died out after several years.

In 1715 Sir Arthur Shaen began building a small town on a wet and marshy area near 'The Mullet' peninsula in the extreme north west of the barony of Erris. To drain this marshy area and create a passage from Blacksod bay into Broadhaven Bay Shaen had a canal excavated which would allow small boats to pass from one bay to the other. A sluice was erected at the Blacksod Bay side to allow traffic to and from the Mullet peninsula to pass along the shore. At a later date a bridge was erected to span the canal. Development of the town proved to be a slow process and by the mid 1700's the canal was in a state of disrepair.

Sir Arthur eventually became High Sheriff of Mayo and was to live in Shanaghy on the Mullet Peninsula until his death in 1725. He had no son as an heir and left his estate to his two daughters, Frances and Susannach. In 1738 Frances married John Bingham from Newport while Susannach wed Henry Boyle Carter from County Kildare in 1750. The Bingham family moved to the Mullet in the late 1790's, and were to build a castle at Binghamstown in the early part of the nineteenth century.

The names of Bingham and Carter were to dominate land ownership in the Erris region, and indeed much of Mayo, over the following two hundred years. The land was to slowly return to the native population and in 1955 the people of Belmullet finally bought the town back from a Mr. Carter, a resident of London.

By the early 1800's Belmullet consisted of just a few thatched buildings and it was not until the 1820's that any degree of development took place. In 1820 the first post office in the Erris region was opened, while in 1822 the Coastguard was established in the town. This was also the time when the real architect of Belmullet's growth, William Henry Carter became involved, inheriting much of Shaen's land in Erris.

Of major importance was the new road between Belmullet and Castlebar, which was completed in 1824. This enabled horse drawn carriages to visit the area for the first time, although there were no hotels or inns for visitors. Tradesmen from all over Mayo were brought in to begin work on developing the infrastructure of Belmullet. Progress over the next few years was more rapid, utilising granite and sandstone from Blacksod to build a number of buildings including the impressive 'Erris Hotel' in the town centre.

In 1826 a quay large enough to accommodate vessels of 100 tons was also built at Belmullet. This helped to accelerate the importation of goods, especially from Britain, which now included tea, sugar, beer, wine, coal and grain.

Belmullet's development was further strengthened by the introduction of a dispensary and a doctor in 1830. By this time the population of the town had grown to over 500. A Catholic Church was built by subscription in 1832 to serve the growing congregation. Another important development in 1832 was the introduction of a regular postal service to Ballina. Post would be collected daily from the post office and this service also ensured the availability of daily newspapers in Belmullet for the first time. A by-product of this growth was the need for a courthouse, which was built in 1833 to hold the weekly court sessions.

By the late 1830's two important new roads were being constructed, one to Newport, the other to Ballycastle. Also at this time the export of meal to England began and a Protestant church was built in 1843.

In October 1845 the Government sanctioned a grant of £5,000 to match the total of £4,000 raised locally to facilitate the building of a canal which would unite the Broadhaven and Blacksod Bays. Work on the canal began in 1845 but it was not completed until 1851 due to the intervention of the famine. The famine had a particularly devastating effect on the Erris region. A report produced in 1851 states that the canal was being used extensively, and also mentions the use of a swivel bridge.

Another development in the 1840's was the introduction of a fishing station in a bid to exploit the coast's natural resources. This was opened in 1847 to wash and cure fish and boat building was also carried out here. The station was forced to close due to the fishermen being imprisoned for the theft of flour from a passing ship. This was another by-product of the famine, which was wreaking havoc on the town. Many people starved to death while soldiers guarded tons of meal, some of which was to be sold to the people, some of which was to be exported.

The news of Belmullet's plight spread far, and as a consequence visitors to the town dried up. A workhouse and fever hospital was urgently needed, and one was quickly erected on the site of the present hospital. The

head of the Treasury, Charles Trevelyan, notoriously decreed that relief was to only be given to workhouse people. This had the effect of severely overcrowding the workhouses, with up to 3,000 people being recorded at one time in Belmullet. Throughout the late 1840's the numbers in the workhouse dropped considerably and by the early 1850's, when the potato crop became re-established, the population of the workhouse had decreased to several hundred.

Lewis' Topographical Dictionary

Samuel Lewis recorded that Belmullet was a largely improving town with improvement having been made in agriculture and communications. A new road was recorded as having been built connecting the area to Ballycastle and then Westport. The full text is contained in appendix 5.

Cartographic Analysis

Introduction

An analysis was carried out of various maps of the study area including John Speeds map of 1620, William Petty's, Barony of Erris Map (c. 1683), Balds Map of County Galway (1809-1817) The First Edition of the 6" Ordnance Survey Map, the Second Edition of the map and Admiralty Chart No. 2703. The Speeds map, Petty's map and Bald's maps and the first and second Edition Ordnance Survey maps only cover the terrestrial area above the low water mark. They do not cover the submarine area of the development. Consequently the data contained in these figure only relates to the terrestrial component of the development. The only site-specific reliable maritime cartographic evidence comes from the Admiralty data.

John Speeds Map of Mayo, 1620

Speeds map of County Mayo shows little detail about the subject site. It records the location of a number of offshore islands including Akill (Achill) and Black rock. Immediately to the north of these are a number of islands called Biley, Herk and Tuock. It can only be postulated but it would appear that these represent the islands of the Inishkeas and possibly Duvillaun or Inish Glora. The current nomenclature for all these islands bear no resemblance to the recorded names and so confirmation of their intended names is not possible. Speeds map records the name "*Can lores*" for the area surrounding the subject site. This name appears to simply indicate that this wider area was Erris head. The map does not record the location or nature of any cultural heritage (see figure 1).

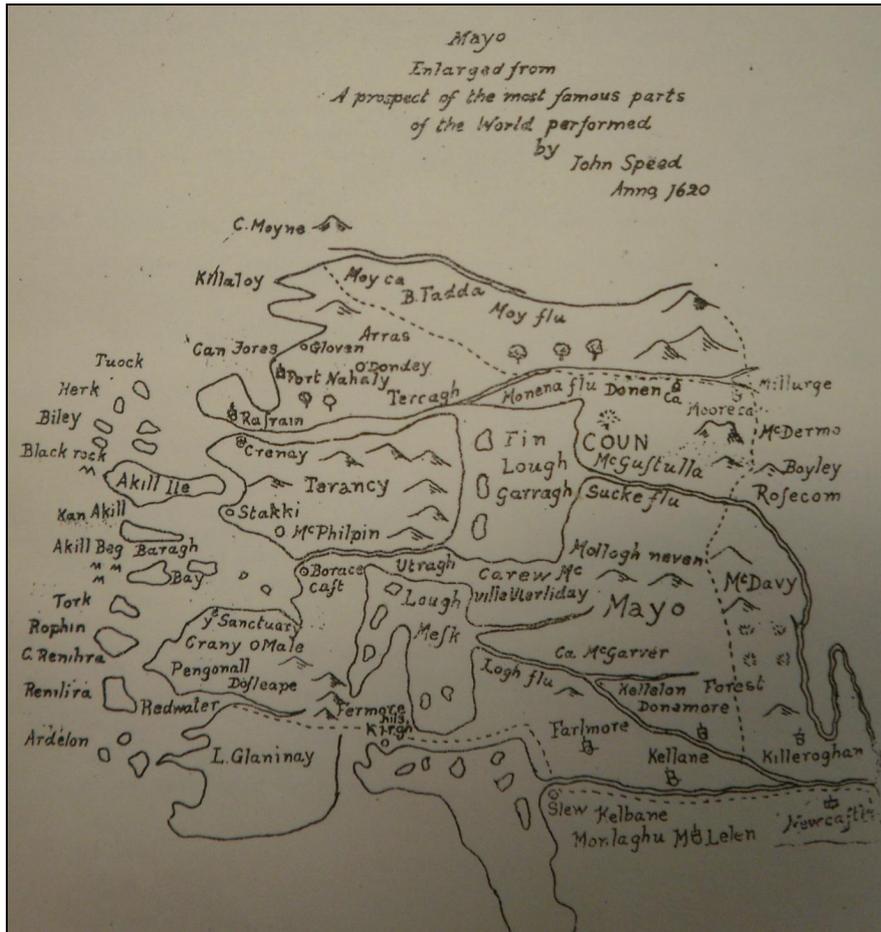


Figure 13.1 Extract from Speeds map of 1620
Larger scale reproduction contained in appendices

William Petty's Barony of Erris Map 1683

William Petty's Map of the Barony of Erris was produced as part of his *Hiberniae Delineatio*, in 1683. The Erris Barony was not included in Petty's earlier Down Survey as this only covered lands confiscated during the Cromwellian conquests. Parts of counties Roscommon, Galway, Clare and Mayo, such as Belmullet were not surveyed as they were not confiscated.

This map provides only a small amount of detail about the subject site. The map is not as detailed as the later Ordnance Survey but it does record important landscape features. The map clearly names the townlands of Emlagh (Emlybeg), Carne (Carn), Crogh (Cross) and the island of Enishglora (Inish Glora), and places them at their current locations. The map does not however record the location of any contemporary sites of cultural heritage significance (see figure 2).

The First Edition Ordnance Survey Map for County Mayo, Sheets MA 09 & 016, Surveyed 1838

This version of the Ordnance survey map is not very descriptive of the landfall site and its adjacent submarine electricity cable route and sub-station. Immediately, it can be discerned that the map does not depict many of the known RMP sites in this area. This absence may be due to the fact that the sites had not yet been discovered, however their absence and the paucity of topographical detail means this map is of limited benefit in identifying possible cultural heritage.

Cross Graveyard (RMP MA:16:06) is recorded as being contained within a rectangular plot of land, a short distance from the coast. Interestingly, whilst a rectangular structure is denoted on this site, the map has no reference to Cross Church. A pencilled insertion on this map has a small circle on the site of RMP MA:016:06, Cross cairn reads “*Righ Muinhain*”. This appears to be a reference to the possible interred remains.

The first edition Ordnance Survey map, represents Belderra Strand as a large evenly rectangular shaped beach. It appears to have a non descript back-beach area and the flanking lands also have no description.

Although a trigonometry point (34) is recorded on Ballymacsherron Promontory, the Fort itself and its two hut sites (RMP MA:016:07) are not represented in this map. Ballymacsherron Promontory is infact encompassed in a larger “*Sand Hills*” complex. This is in contrast to its current status as a greenfield site.

The current beach access road is depicted on the same location on the first edition map but secondary access roads appear to have changed. The access road which travels through west Cross townland previously started further west than its current position. Cartographic evidence would appear to indicate that field boundary extensions and drainage works have now claimed this area, resulting in a distinct northerly diversion in the road route. A second roadway which runs along the boundary between Cross and Ballymacsherron townlands is not depicted in the 1838 map. Obviously this routeway had not been created. A number of structures, which include a rectangular house type structure and smaller out houses are depicted on this map close to the sub- station location (see figure 5). These are absent from all subsequent maps and no trace can be seen on the site.



Figure 4. Extract from First Edition Ordnance Survey Map of County Mayo, 1838

Larger scale reproduction contained in appendices

Second Edition Ordnance Survey Map of County Mayo, Sheets MA 09 & 016, Surveyed 1900.

The Second Edition Ordnance Survey maps of this area depicts a number of small changes as having taken place in the vicinity of the subject site. The former access road which travelled from Binghamstown to Belderra Strand and over to Cross Church and Graveyard is depicted in this map as being a broken trackway. The previous edition of this map showed this to be a fixed route way.

This map records the location of a “Cairn” at the site of RMP MA:016:06. The previous First Edition had only a pencil marking depicting the location of the burial. Another variation this map has from the previous edition is that the small land plot and buildings, situated in the townland of Ballymacsherron, immediately to the southeast of Belderra Strand, have all been removed. The 1900 edition of the map has no reference to any building cluster in this area.

Whilst the second edition map has depicted change in the landform and landscape, it does not record the location of any previously un-recorded cultural heritage.

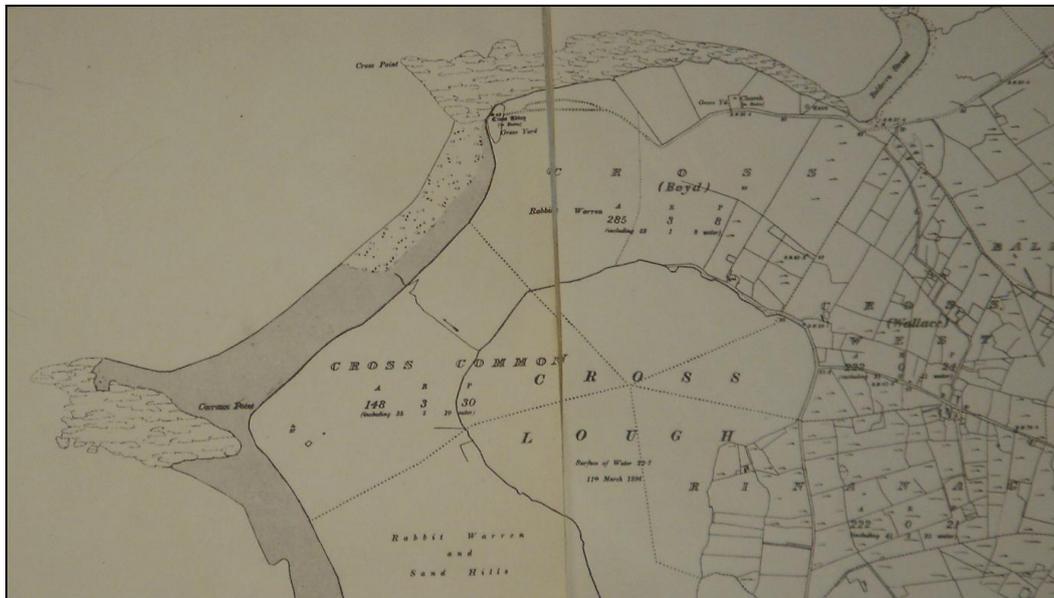


Figure 5. Extract from 2nd Edition Ordnance Survey of Co. Mayo, surveyed 1900

Larger scale reproduction contained in appendices

Admiralty Chart No 2703

The admiralty chart of this area details that the seabed is comprised of rock and sand in the nearshore area with rock, sand and broken shell in the outer section. The maps does not record the presence of any shipwrecks or other features or cultural heritage significance.

5.3 Baseline Data

Aerial Photographic Analysis

A number of aerial photographic sources were consulted in an attempt to identify any previously unrecorded cultural heritage deposits both on land and in the shallow underwater section. These sources included Ordnance Survey Aerial Photographs as well as Photos from the Coastline Survey of Ireland. The images provided comprehensive views of the proposed landfall site, the sub station location and the shallow water section. They did not identify any previously unrecorded cultural heritage deposits or features.

The aerial image, captured in 1999, shows a new road built across the foreshore. The area on the land side of the road is now filled in, possibly by windblown sand and a small carpark has been constructed adjacent to the road on the Belderra Strand side of the road.

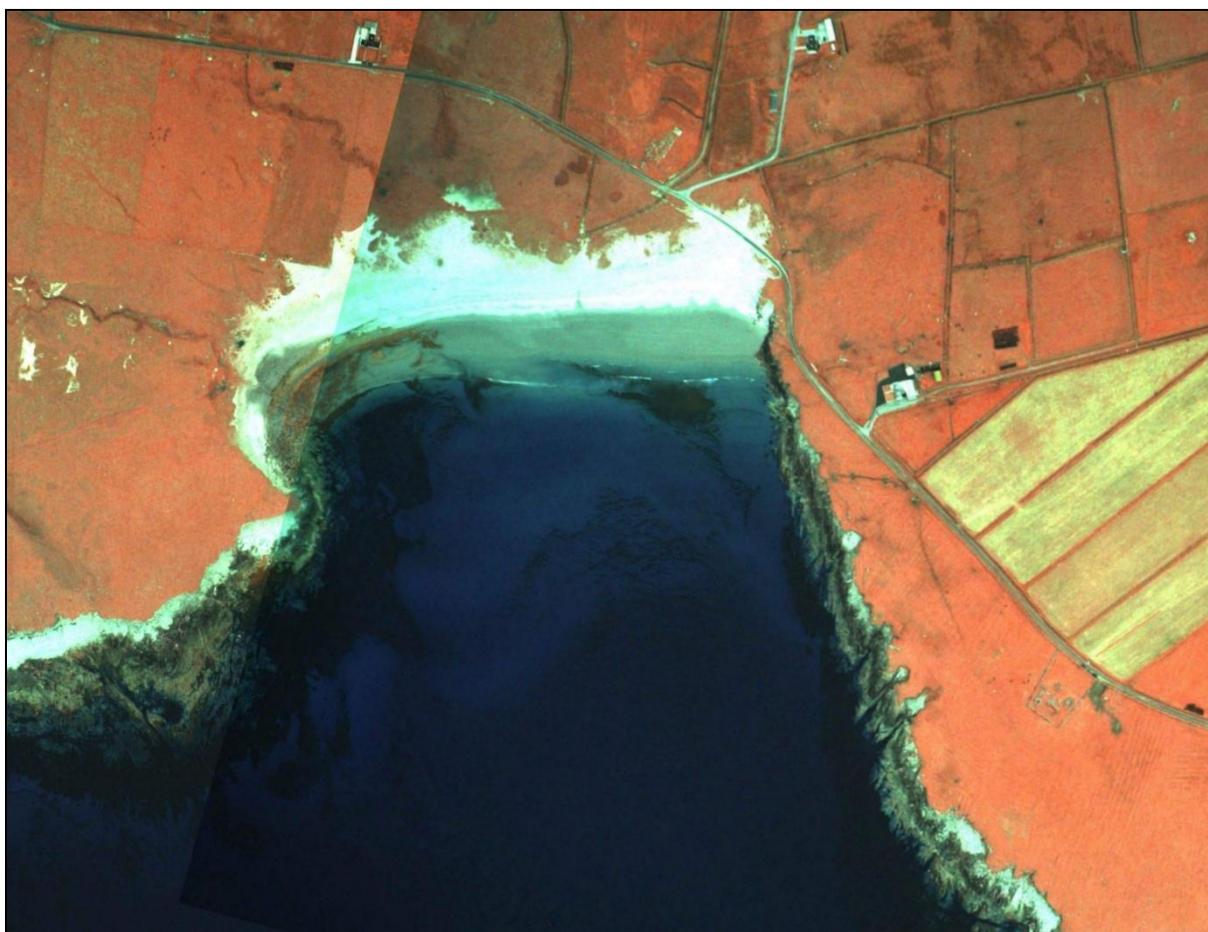


Plate 1. Aerial image of Belderra Strand and adjacent shallow waters

Record of Monuments and Places

The Archaeological Constraints maps in conjunction with the County Record of Monuments and Places, provide an initial database for Planning Authorities, State Agencies and other bodies involved in environmental change.

The Record of Monuments and Places (RMP) comprise the following elements: (i) Letter or Letters indicating County (MA = Mayo); (ii) A three digit number indicating the relevant Ordnance Survey Sheet Number (e.g. 009 or 016); (iii) A three , four or five digit number indicating the dedicated number of the individual site or monument.

There are no Recorded Monuments within the area of the proposed development. There are however a number of monuments in the general area, none of which will be directly impacted upon by the proposed works. These are detailed in the table below. A full list and description of all RMP sites in the vicinity of the project are contained in *Appendix 2. RMP Details*.

RMP No	Closest distance to Landfall	Closest distance to any component	Closest distance to 50m test area	Closest distance to 100m test area
MA:09:05	4.473 Km	2.625 Km	3.697 Km	11.766 Km
MA:09:10	4.298 Km	1.726 Km	2.397 Km	10.843 Km
MA:09:12	3.815 Km	1.939 Km	3.402 Km	11.845 Km
MA:09:13	2.163 Km	1.136 Km	4.188 Km	13.068 Km
MA:09:14	2.328 Km	1.171 Km	4.588 Km	13.392 Km
MA:09:15	2.637 Km	2.173 Km	5.597 Km	14.369 Km
MA:09:16	2.419 Km	2.057 Km	5.803 Km	14.672 Km
MA:09:17	1.67 Km	1.452 Km	5.628 Km	14.608 Km
MA:09:18	1.69 Km	1.632 Km	5.895 Km	14.931 Km
MA:09:20	1.053 Km	1.085 Km	5.776 Km	14.984 Km
MA:16:02	4.054 Km	1.650 Km	1.482 Km	10.653 Km
MA:16:03	3.641 Km	1.835 Km	1.986 Km	11.209 Km
MA:16:04	1.300 Km	1.073 Km	3.837 Km	13.272 Km
MA:16:05	0.471 Km	0.353 Km	4.659 Km	14.043 Km
MA:16:06	0.260 Km	0.343 Km	4.876 Km	14.243 Km
MA:16:07	0.260 Km	0.339 Km	5.143 Km	14.488 Km
MA:16:08	1.056 Km	1.221 Km	5.976 Km	15.257 Km
MA:16:09	1.102 Km	1.312 Km	6.119 Km	15.492 Km

Table 1. Table of RMP Sites and their proximity to the development

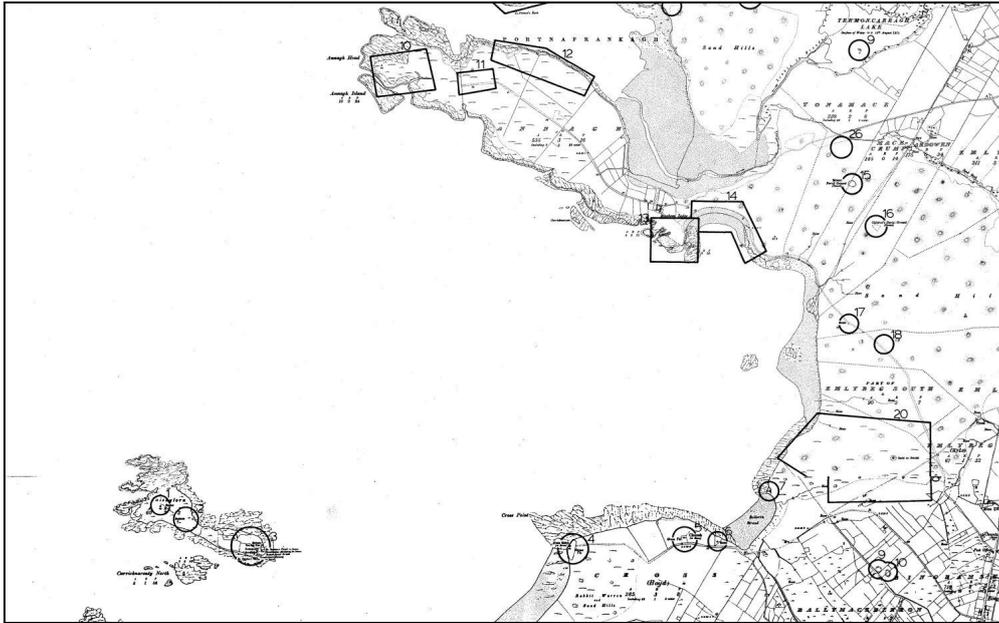


Figure 6. Extract from Co. Mayo RMP Sheets MA09 & MA016

Larger scale reproduction contained in appendices

Topographical Files of the National Museum of Ireland

An examination of the topographical files found that no artefacts were recovered from the subject site. A number of artefacts have been found in the vicinity of the study area. These all relate to the terrestrial component of the development and none refer to the offshore test area locations or offshore cable route:

Reg No: P:1952:23
Monument: Shell Mound
Find: Perforated Object (line Sink)
Townland: Inishglora
Parish: Kilmore
Barony: Erris

Co. Mayo

Purchased from Mr. Patrick Lavelle Annagh, Belmullet Co. Mayo

Townland: Emlybeg South
Parish: Kilmore
Barony: Erris

Co. Mayo

12:5:43

No Record

Reg. No: 1933:744
Monument: Cairn
Finds: Skeletal remains, Human
Townland: Cross
Parish: Kilmore
Barony: Erris
Co. Mayo
Gift from Mr. L.S. Gogan

Reg. No: 1943:143-51
Monument: Midden
Finds:
1 Bronze Buckle (143)
2 Bronze rings (144-45)
3 wire bronze pins (146-47)
3 fragments of iron (148-50)
1 fragment of metal (151)
Townland: Cross
Parish: Kilmore
Barony: Erris
Co. Mayo
Presented by Miss Stacpoole, 50 Fitzwilliam Square, Dublin

Reg. No: 1943:78-83
Monument:
Finds:
1 wire pin, bronze (1943:178)
5 fragments of iron (1943:179-83)
Townland: Near Binghamstown (sandhill site)
Parish: Kilmore
Barony: Erris
Co. Mayo
Presented by Miss Stacpoole, 50 Fitzwilliam Square, Dublin

Reg. No: 1943:136-42
Monument: Midden
Finds:
3 wire pins, bronze (136-8)

2 fragments of Bronze (139-40)

1 fragment of iron (141)

1 fragment of bone (142)

Townland: Termoncarragh

Parish: Kilmore

Barony: Erris

Co. Mayo

Presented by Miss Stacpoole, 50 Fitzwilliam Square, Dublin

Found in Midden south of church in Termoncarragh

Reg. No: 1943:166-77

Monument: Midden

Finds:

1 bronze tool (166)

8 wire pins, bronze (167-74)

3 bronze fragments (175-77)

Townland: Annagh

Parish: Kilmore

Barony: Erris

Co. Mayo

Presented by Miss G. Stacpoole, 50 Fitzwilliam Square, Dublin, Mrs. Rooke and Miss M. Brodigan

Reg. No: 1970:21

Monument:

Finds: Saddle Quern

Townland: Annagh

Parish: Kilmore

Barony: Erris

Co. Mayo

Gift of John Gilboy, Annagh, Belmulet, Co. Mayo.

Large specimen l 42cm, max width 18cm, used for grinding corn, found within 5m of stones which possibly could be a megalithic tomb- Raferty in his correspondence.

Location: Annagh

Year: 1943

Description: 1 bone Tool

8 wire pins-bronze

These artefacts were found at Annagh Beach

Location: Annagh
Description: Wooden Shaft
possible shaft spear
Details: Found by Seamus Forde 1980

Location: Annagh
Description: Wooden Beetle
Details: Found in turf bank by John Kearney1935:429

Location: Annagh
Year: 1935:877
Description: Wooden Vessel
Details: Found by Jon McGuire
1ft 8ins width 3ft and a half ins in depth perfectly preserved

Previous Archaeological Investigation in the Area

The Irish Excavations Database has no record of any previous archaeological fieldwork having taken place in the townlands of Annagh, Ardowen, Ballymacsherron, Binghamstown, Cross, Emlybeg North, Emlybeg South, Macecrump, Termoncarragh or Tonamace.

Historic records do however detail that G. Crompton carried out an antiquarian excavation at Tonnmace/Macetrump for Rev. Caesar Otway. These excavations conducted by Crompton in the beginning of the 19th century, examined tombs situated in that area of the sand dunes and seem to have led to the discovery of standing or sitting skeletons.

Shipwreck Inventory

The National Shipwreck Inventory has the following records of vessels having possibly foundered in and around the area of Annagh Peninsula. The locations of the loss of these vessels are general. The high resolution marine archaeo-geophysical survey of the two test area sites and the associate cable routes did not record the presence of any wreckage along the subject site.

St George

26 Jan 1847

Belmullet

128 ton sailing vessel was on the shore

CSP,1851,Vol. LII,5

Sisters

13 Mar 1899

Between Mayo and Belmullet

The wooden smack of Westport was 36yrs old and weighed 21 tons
master tower was P. Gallagher of Achill Island.

3 crew and cargo of limestone. Stranded in SW force wind.

CSP,1900, Vol. LXXVII,146

Ports and Harbours Archive

The Ports and Harbour Archive of the Department of the Environment, Heritage and Local Government, has no records for the proposed landing location.

5.4 Field Survey

Introduction

A programme of field survey was carried out across the entire development site between September 2010 and August 2011. The field survey was designed to appraise the archaeological potential of the proposed development, its objectives were to define the proximity of the development to known Recorded Monuments and Places, to identify any previously unidentified archaeological features or deposits which may be located within the proposed development and to assess the potential of the project, construction and operational phase to impact known and unknown archaeology.

The field survey was divided into two component parts;

- Part I Terrestrial Survey
- Part II Marine Survey

The field survey was divided into two sections, one – the terrestrial environment and two - the submarine environment. The submarine field survey comprised a diver survey and a high resolution marine geophysical survey. The terrestrial survey consisted of a visual field inspection of the cable route and a programme of archaeological testing at the sub-station site.

The visual field inspection survey, diver survey and high resolution marine geophysical survey was carried out on the site during September and October 2010. A supplementary programme of pre-development archaeological test trenching was carried in August on the site of the proposed sub-station and its approach road. This work was carried out under excavation licence 11E0260 issued by the Department of Arts, Heritage and The Gaeltacht and the National Museum of Ireland.

Part I Terrestrial Survey

The aim of the terrestrial survey was to investigate the terrestrial component of the proposed development for known, previously unknown and potential cultural heritage deposits and features. It achieved this through a series of complimentary surveys which involved non-invasive site inspection and archaeological test excavation.

Visual field inspection survey

The visual field inspection took place on 20th September 2010. It investigated the cable route along the beach and foreshore up to the terminus. It also visited the sites of the nearby RMP's and analysed the impact the development would have on them. The field inspection noted that the beach along the cable route comprised a crescent shaped, largely dissipative, north-westerly facing, finely grained sandy beach which was bounded to the north by a rocky promontory and to the west by Cross headland. The beach itself was flat with a very low gradient rising to the east, where it was bounded by low dunes. Two drainage ditches were noted in the upper beach area. One of these ditches was quite substantial and travelled from a nearby field, across the site access road to the back beach area. Both drains appeared to have been designed to carry water away from the nearby fields to the lower beach. They travelled down the beach in an east west direction and were of modern concrete construction. They were not deemed to be of archaeological significance and no archaeological features, deposits or material could be seen in their exposed section faces.

The previously mentioned low dunes of Belderra Strand were flanked to the east by a low short cut grassland pasture. In the southeast, this grassland appeared to have grown over low sandy dune material, whereas in the northeast, the substrate appeared to comprise more of peat and clay. The dune flanking pastureland was delineated from the nearby roadway by a low stone boundary. The grassland pasture appeared to be relatively flat but it did have a number of undulations. Based on comparisons with nearby Tonamace, it would appear that if archaeological deposits were present in this area, they would be buried beneath the sand dunes.

The field in which the sub-station is to be constructed was bounded to the west by a low drystone wall. The field itself comprised of short cut grassland pasture and was being used for pasture. The field had a large rock outcrop which separated the proposed sub-station from the approach road. It was not of archaeological significance.

RMP MA:016:007 (Ballymacsherron Promontory Fort & 2 Hut sites) is situated on the headland to the north of the beach. At the time of the field inspection, several remains were noted on this site. These comprised:

1. A low semi circular enclosing bank
2. An eroding stone wall noted on the southern side of the promontory
3. A second eroding stone wall on the north-western face of the promontory
4. A series of grass covered undulation at the summit of the promontory.

None of these features will be impacted by the proposed development but their presence in close proximity to the site is indicative of human habitation of the area in prehistoric times.

On the opposite side of the beach were the RMP Complexes, MA016:006 and 007. The Archaeological Survey of County Mayo records these as Cross cairn and burial and as Cross Graveyard and Church. These monuments were visited during the field survey. At Cross Cairn and Burial, the visible remains comprised a low circular

grassy mound with a flat summit. The sites have a clear view of the proposed development site, both offshore and onshore but they will be no direct impact on these monuments by the proposed development. A similar situation was recorded at Cross Church and Graveyard. The site comprised a walled graveyard, in the centre of which were the remains of a stone built Church. Both the church and the graveyard have a clear view of the proposed development site, both offshore and onshore but they will be no direct impact on these monuments by the proposed development.

Despite the fact that there will be no direct impact on these monuments by the proposed works, their close proximity to both the proposed development site and the nearby complexes of Ballymacsherron Promontory fort complex and Binghamstown is indicative that a complex society was previously present in this area. The close proximity of such a significant and multi-period community would appear to indicate that the construction of a cable route through the dune area has the potential to uncover associated material culture.

Archaeological testing

A programme of archaeological testing was carried out on the site of the proposed sub station and approach road on 2nd August 2011, under excavation licence 11E0260. The programme of testing was designed to use invasive test trenching technique to investigate the subject site for the presence of potential archaeological deposits, features or material. The programme of testing excavated four archaeological test trenches, using a mechanical excavator, under archaeological supervision. Test trenches 1-3 were excavated along the footprint of the sub station building, whilst test trench 4 was excavated along the footprint of the proposed approach road. The programme of testing recorded that the subsoil in the vicinity of the subject site was composed mainly of clayey peat. Four stratigraphic horizons were noted in the three test trenches surrounding the sub station site. None on these contained any archaeological material, features or deposits.

Three stratigraphic horizons were noted in the trench excavated along the route of the site approach road. It did not contain any archaeological material, features or deposits.

The results of the programme of archaeological testing, indicates that there are no archaeological features, material or deposits on the site of the proposed sub station and its approach road.

Part II Marine Survey

The aim of the marine survey was to investigate the submarine component of the proposed development for known, previously unknown and potential cultural heritage deposits and features. It achieved this through a combination of diver survey and high resolution marine geophysics.

Diver survey

The diver survey was carried out on 20th and 21st of September 2010 under a dive licence. The survey comprised a diver visual survey and metal detection survey of the nearshore cable route, from Belderra Beach to the inner limits of the high resolution marine geophysical survey. The survey covered a 100m wide corridor centred on the proposed centreline of the pipeline and used overlapping diver transects to ensure complete survey of the area. A previously prepared archaeological desktop assessment of the area concluded that there

were no recorded historic shipwrecks for this area and that if archaeology was uncovered, it would most likely comprise isolated artefacts.

The results of the diver survey confirmed this conclusion. It recorded that the seabed in the area of the proposed nearshore cable route was comprised mainly of rippled sandy shallows. Areas of bedrock outcrop were noted at the outer edges of the survey zone at Ballymacsherron Promontory and Cross. The survey did not record the presence of any visible or detectable archaeological remains along the landfall route.

High Resolution Marine Archaeo-Geophysics

The high resolution marine archaeo-geophysical survey of the submarine aspect of the project involved survey of the 100m water depth offshore test area, the 50m water depth offshore test area and all related cable routes to the outer limit of the diver survey. It was undertaken from 28th September to 3rd October 2010, from the survey vessel M.V. Dulra Na Mara and using a licensed detection device. The survey comprised 121.3 linear km of combined side scan sonar survey and marine magnetometer survey. The side scan sonar survey was carried out at 445 kHz with 75m slant range, whilst the overhauser magnetometer cycled every 1 second. Survey lines were planned at spacing increments of 70m and this arrangement of survey pattern coupled with the side scan sonar slant range ensured 100% overlap between all survey lines.

As per general operational procedures, the height of the side scan sonar towfish off the seafloor was kept to between 10 and 20% of the slant range. In certain situations this had to be modified to prevent snagging of potting gear ropes, however the increase in height did not appear to diminish seabed recognition capabilities. A remote controlled electrical sonar winch placed at the rear of the survey vessel was used to adjust the towfish height and an acoustic USBL (Ultra Short Baseline positioning) system was used to position the towfish in relation to the survey vessel and the on-board geo-referencing station. The average survey speed was 5 knots and lengths of up to 300m of side scan sonar cable were deployed.

The magnetometer survey was carried out in tandem with the side scan sonar. 100m of magnetometer cable was deployed and a fixed layback was applied. This arrangement ensured that the magnetometer was sufficiently submerged to record the location of any significant ferrous objects.

Survey Results - 100m water depth offshore test area

The side scan sonar survey of the 100m water depth offshore test area covered an area which measured 3.5km in length and 1.5 km in width. The results of the survey indicated that the seabed in this area was uniformly flat, comprising mainly of medium to coarse sand. The side scan sonar was the most effective seabed imaging tool in this area, as it successfully recorded the flat fine grained planar surface of the seabed. It recorded four small pockets of differentiated seabed (possible gravel) located both to the north and the south of the test area. Neither of these however was contained within the test area and they were not of archaeological significance. The side scan sonar imaged a number of lobster and crab pots which had been placed in the survey area. These were clearly insonified on the seafloor as too were their interconnecting ropes. The magnetic signature of these features was low and so only a small magnetic variation was noted by the magnetometer.

Two buoys, one cardinal marker and one meteorological buoy were situated at the test area during the survey. The signatures of both these features were noted both by the side scan sonar and the magnetometer. The side scan sonar recorded the location of the anchor chain and pattern, whilst the magnetometer recorded the localised magnetic variation.

The high resolution marine archaeo- geophysical survey of the 100m water depth offshore test area did not record the presence of any potential cultural heritage in the area.

Survey Results - Cable route from 100m water depth offshore test area to 50m water depth offshore test area

The side scan sonar survey of the cable route from 100m water depth offshore test area to 50m water depth offshore test area provided a very good image of the area. The survey area measured almost 9 km in length and 0.7 km at its widest. Close to the 100m test area, the seafloor rises very gradually and appears to be composed mainly of medium to coarse sand. A large almost 20m high rock outcrop is encountered almost 1km east of the 100m test area. After this the seafloor returns to a gradually sloping medium to coarse sandy seafloor. The seafloor continued in this manner, rising gradually for the next 3.2 km. Rock outcrops reappear 4.2 km west of the 50m water depth test area and continue in a random manner up to the test area. Large areas of rippled sandy seafloor and channels are interspersed between these rock outcrops, throughout this area.

Three sets of lobster and crab pots traversed the cable route during the survey. These were all imaged by the side scan sonar. The survey did not record the presence of any cultural heritage in this area.

Survey Results - 50m water depth offshore test area

The survey area of the 50m water depth offshore test area measured 1.2km in length and 750m in width. Similar to the 100m test area, two buoys, one cardinal marker and one meteorological buoy were located at the test area during the survey. The signatures of both these features were noted by the side scan sonar and the magnetometer. The side scan sonar recorded the location of the anchor chain and pattern, whilst the magnetometer recorded the localised magnetic variation.

The results of the archaeo-geophysical survey for this area indicates that areas of rock outcrop are situated towards the northern end of the test area, whilst a flat sand and cobble substrate is recorded on the southern section. The survey did not record the presence of any cultural heritage in this area

Survey Results - Cable route from 50m water depth offshore test area to extent of offshore survey

The survey of the cable route from the 50m water depth offshore test area to extent of offshore survey, measured almost 6.5 km in length and 0.6 km in width. The side scan sonar recorded that much of this route comprises rippled seafloor sandwiched between rock outcrops. A number of rock outcrops were noted on the northern boundary of the survey route. These ranged in height from 5 to 8m and are interspersed throughout the survey route. A large reef was noted 1.2 – 1.4 km from the eastern terminus of the survey. This rose to within 5m of the surface at the time of the survey. A low gradient flat rippled sand seafloor lay in the interior of this reef.

The geophysical survey of the cable route did not reveal the presence of any material which could be indicative of the presence of cultural heritage in this area.

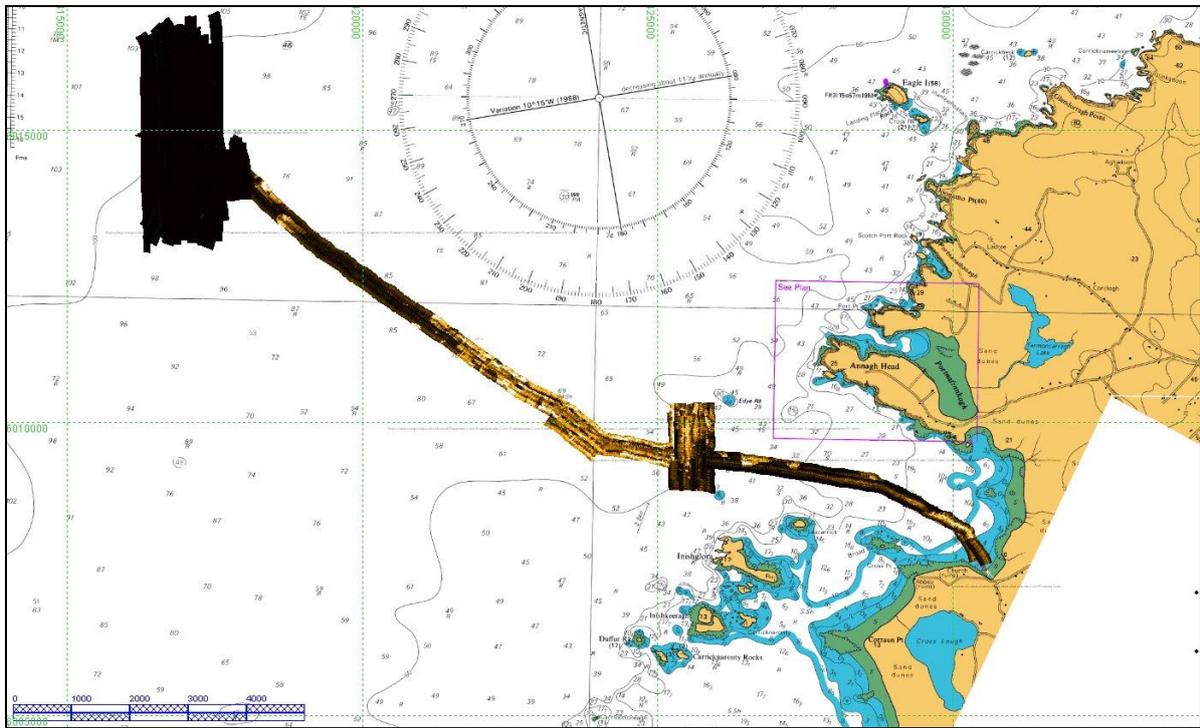


Figure 7. Side scan sonar survey results
Larger scale reproduction contained in appendices

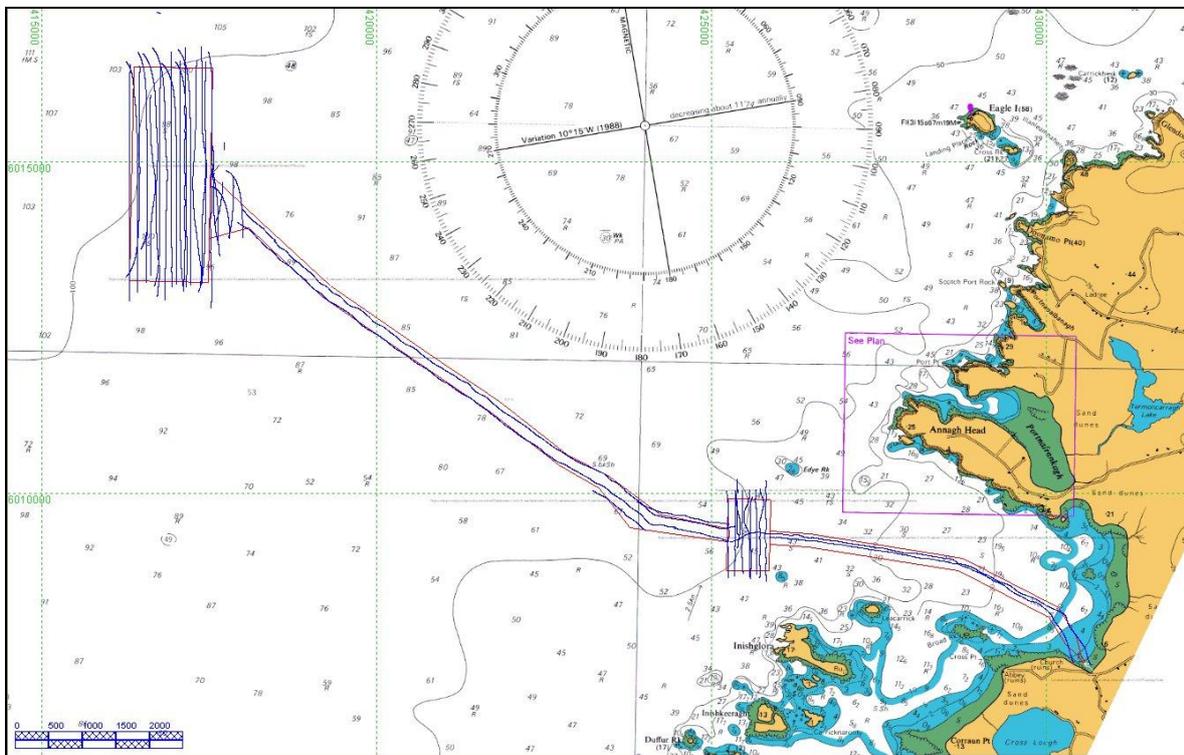


Figure 8. Geophysical Survey track lines

5.5 Summary of the Receiving Environment

The desktop assessment of documentary sources relating to the proposed development relates mainly to the terrestrial aspect. They indicate that the terrestrial environment in the vicinity of the proposed landfall, cable route and sub-station is of considerable archaeological and historical significance, with exploitation of the area recorded as far back as Neolithic times.

The field survey was divided into two sections, one – the submarine environment and two- the terrestrial environment. The submarine field survey comprised a diver survey and a high resolution marine geophysical survey. The terrestrial survey consisted of a visual field inspection of the cable route and a programme of archaeological testing at the sub-station site.

The archaeological and historical background of the area, and researched baseline data indicates that the subject site is one of very high archaeological potential and that although the project will not impact any RMP or RPS sites, the possibility of groundworks, particularly cable trenching, impacting previously unknown subterranean cultural heritage deposits is relatively high.

Consequently, it was decided that a programme of pre-development archaeological test trenching should be carried out on the site of the sub-station in order to determine if there were any archaeological remains in this area that may be negatively impacted by the proposed construction of the facility. It recorded that there were no archaeological finds, materials or features in the area. The visual inspection of the area surrounding the cable route indicated that there are number of RMP sites in the immediate vicinity of the development, as well as recorded topographical finds, none will be directly impacted by the development.

It should be noted however, that the presence of such a large number of successive and often multiperiod sites in close proximity to the cable route is indicative that this area has been the site of continued and successive human occupation and that evidence of this occupation may be uncovered by the trenching operations. Despite the fact that there were no archaeological finds or deposits or features noted during the programme of pre-development testing, there is a high potential that material culture remains of these past communities may be impacted during the construction phase of the proposed development, particularly the cable trenching.

In addition, historic records also detail how a number of previously exposed monuments at Tonamace are now buried under the sands of the nearby beaches. This phenomenon would appear to indicate that there is potential that the passage of any cable through the sands and dunes of Belderra Strand will have the potential to impact previously unrecorded cultural heritage.

In the submarine zone, work carried out by Dr. Seamus Caulfield and his late father Padraig, have unearthed submarine prehistoric peat deposits at various locations around the Belmullet Peninsula, such as Broadhaven and Blacksod. These submarine deposits were noted travelling from the foreshore down past the low water mark and were considered to be prehistoric in date. If similar deposits were found at the subject site, the excavation of a cable trench through the area would have a direct impact of these deposits and it would have the potential to uncover prehistoric archaeological material.

In addition, it is well known that historic and pre-historic cultures in this area had advanced seafaring technology. St Brendan is recorded as having a close affinity to Inish Glora and visited the island on several occasions. This coupled with the fact that inshore fishing has obviously been taking place in this area for centuries, means that there is potential for cable laying operations to impact buried non ferrous artefacts under overlying sand. Similar material such as log boats, have been found off the Irish coast at Skerries Co. Dublin and Galway Bay.

4. CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

Consideration of the Characteristics of the proposed Development allows for the projection of the 'level of impact' on any particular aspect of the proposed environment that could arise. For this chapter the potential impact on Cultural Heritage is discussed.

A full description of the proposed infrastructural works is provided in Chapter 4 of this EIS document.

5. IMPACT ASSESSMENT

This section provides a description of the types, forms, quality, duration and significance of impacts that the proposed development may have during the construction, operational and decommissioning phases of the infrastructural elements of the proposed project. It also analyses the impact of a 'do nothing' scenario. This is provided with reference to both the Characteristics of the Receiving Baseline Environment and Characteristics of the Proposed Development sections.

The following impact assessment is based on the results of the preceding sections (desktop study and field survey). The impact is divided into three sections, which each are addressed for the construction, operations and decommissioning phases as well as the 'do nothing' phase. These are summarised in point form below:

- Impact on protected sites (National Monuments, RPS, RMP & Historic Wreck)
- Impact on known sites
- Impact on potential/unknown sites

In order to fully address the likely impact that the development will have on the receiving environment, one must consider the proposed development from a number of perspectives. Assessment of the potential impacts was based on the document *Guidelines on information to be contained in Environmental Impact*

Statements produced by the Environmental Protection Agency in 2002 (EPA 2002). It defines a number of terms and recommends that the following is addressed in an assessment of impacts:

Types of Impacts

Direct Impact

Description of the impact if the proposed development was to proceed.

'Do nothing' impact

Description of the impact if the proposed development was not to proceed.

'Worst case' impact

Description of the worst-case scenario impact if the proposed development was to proceed.

Forms of Impact

Direct

Impact that will affect the development area directly

Indirect

Impact that will affect the development area indirectly

No Impact

Impact that will not affect the development area

Quality of impact

Positive Impact

A change which improves the quality of the environment.

Neutral Impact

A change which does not affect the quality of the environment.

Negative Impact

A change which reduces the quality of the environment.

Duration of Impact

Short-term Impact

Impact lasting one to seven years

Medium-term Impact

Impact lasting seven to fifteen years

Long-term Impact

Impact lasting fifteen to sixty years

Permanent

Impact lasting over sixty years

Significance of Impact

Imperceptible Impact

An impact capable of measurement but without noticeable consequence

Slight Impact

An impact which causes noticeable changes in the character of the environment without affecting its sensitivities

Moderate Impact

An impact that alters the character of the environment in the manner that is consistent with existing and emerging trends

Significant Impact

An impact which by its character, magnitude, duration or intensity alters the sensitive aspect of the environment.

Profound

An impact which obliterates sensitive characteristics.

5.6 Construction phase impacts on National Monuments, Recorded Monuments and Places, Recorded Protected Structures and Historic Shipwrecks.

Protected Sites	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
National Monuments	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Monuments and Places,	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Protected Structures	None Predicted	None Predicted	Neutral	Imperceptible
Historic Shipwrecks	None Predicted	None Predicted	Neutral	Imperceptible

Table 2 Table of construction phase impacts on NM, RMP, RPS and Historic Shipwrecks

- The construction phase of the development will not impact directly or indirectly upon any National Monuments in County Mayo.
- The construction phase of the development will not impact directly or indirectly upon any previously recorded sites or monuments listed in the Record of Monuments and Places for County Mayo.
- The construction phase of the development will not impact directly or indirectly upon any previously recorded structures listed in the Recorded Protected Structures for County Mayo.
- The construction phase of the development will not impact directly or indirectly upon any previously recorded Historic Shipwrecks listed in the Shipwreck Inventory of County Mayo.

5.7 Operations phase impacts on National Monuments, Recorded Monuments and Places, Recorded Protected Structures and Historic Shipwrecks.

Protected Sites	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
National Monuments	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Monuments and Places,	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Protected Structures	None Predicted	None Predicted	Neutral	Imperceptible
Historic Shipwrecks	None Predicted	None Predicted	Neutral	Imperceptible

Table 3 Table of operations phase impacts on NM, RMP, RPS and Historic Shipwrecks

- The operations phase of the development will not impact directly or indirectly upon any National Monuments in County Mayo.
- The operations phase of the development will not impact directly or indirectly upon any previously recorded sites or monuments listed in the Record of Monuments and Places for County Mayo.
- The operations phase of the development will not impact directly or indirectly upon any previously recorded structures listed in the Recorded Protected Structures for County Mayo.
- The operations phase of the development will not impact directly or indirectly upon any previously recorded Historic Shipwrecks listed in the Shipwreck Inventory of County Mayo.

5.8 Decommissioning phase impacts on National Monuments, Recorded Monuments and Places, Recorded Protected Structures and Historic Shipwrecks.

Protected Sites	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
National Monuments	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Monuments and Places,	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Protected Structures	None Predicted	None Predicted	Neutral	Imperceptible
Historic Shipwrecks	None Predicted	None Predicted	Neutral	Imperceptible

Table 4 Table of decommissioning phase impacts on NM, RMP, RPs and Historic Shipwrecks

- The decommissioning phase of the development will not impact directly or indirectly upon any National Monuments in County Mayo.

5.9 Do Nothing phase impacts on National Monuments, Recorded Monuments and Places, Recorded Protected Structures and Historic Shipwrecks.

Protected Sites	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
National Monuments	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Monuments and Places,	None Predicted	None Predicted	Neutral	Imperceptible
Recorded Protected Structures	None Predicted	None Predicted	Neutral	Imperceptible
Historic Shipwrecks	None Predicted	None Predicted	Neutral	Imperceptible

Table 5 Table of do nothing phase impacts on NM, RMP, RPs and Historic Shipwrecks

- The do nothing phase of the development will not impact directly or indirectly upon any National Monuments in County Mayo.
- The do nothing phase of the development will not impact directly or indirectly upon any previously recorded sites or monuments listed in the Record of Monuments and Places for County Mayo.
- The do nothing phase of the development will not impact directly or indirectly upon any previously recorded structures listed in the Recorded Protected Structures for County Mayo.
- The do nothing phase of the development will not impact directly or indirectly upon any previously recorded Historic Shipwrecks listed in the Shipwreck Inventory of County Mayo.

5.10 Construction phase impacts on Known (and unprotected) Archaeological or Cultural Heritage Sites.

There are no known and unprotected sites of archaeological or cultural heritage significance on or in the vicinity of the development. Therefore there will be no direct or indirect impact on known (and unprotected) archaeological or cultural heritage sites during the construction phase

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Known and Unprotected Sites	None Predicted	None Predicted	Neutral	Imperceptible

Table 6 Table of construction phase impacts on Known (and unprotected) sites

5.11 Operations phase impacts on Known (and unprotected) Archaeological or Cultural Heritage Sites.

There are no known and unprotected sites of archaeological or cultural heritage significance on or in the vicinity of the development. Therefore there will be no direct or indirect impact on known (and unprotected) archaeological or cultural heritage sites during the operations phase.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Known and Unprotected Sites	None Predicted	None Predicted	Neutral	Imperceptible

Table 7 Table of operations phase impacts on Known (and unprotected) sites

5.12Decommissioning phase impacts on Known (and unprotected) Archaeological or Cultural Heritage Sites.

There are no known and unprotected sites of archaeological or cultural heritage significance on or in the vicinity of the development. Therefore there will be no direct or indirect impact on known (and unprotected) archaeological or cultural heritage sites during the decommissioning phase.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Known and Unprotected Sites	None Predicted	None Predicted	Neutral	Imperceptible

Table 8 Table of decommissioning phase impacts on Known (and unprotected) sites

5.13Do Nothing phase impacts on Known (and unprotected) Archaeological or Cultural Heritage Sites.

There are no known and unprotected sites of archaeological or cultural heritage significance on or in the vicinity of the development. Therefore there will be no direct or indirect impact on known (and unprotected) archaeological or cultural heritage sites during the do nothing phase.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Known and Unprotected Sites	None Predicted	None Predicted	Neutral	Imperceptible

Table 9 Table of do nothing phase impacts on Known (and unprotected) sites

5.14 Construction phase impacts on potential/unknown sites.

The field survey noted that although there were no archaeological deposits on the sub station site, there were considerable historical and archaeological deposits in the vicinity of the development and that the area appears to have been the subject of continued human habitation since earliest times. The marine archaeo-geophysical survey recorded that there was no visible or detectable cultural heritage in the submarine zone. This does not negate the possibility that remnants of prehistoric landscapes, such as those discovered at Blacksod and Broadhaven, could be encountered in the nearshore section. Non ferrous materials such as log boats or timber raft remains could also be uncovered underlying offshore sands. The construction of the

landfall cable route has the potential to uncover archaeological and historical features and materials. Consequently, there is potential for construction phase works to have a negative, direct and long term impact on any cultural heritage deposits it encounters.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Potential and Unknown Sites	Direct	Permanent	Negative	Profound

Table 10 Table of construction phase impacts on potential/unknown sites

5.15 Operations phase impacts on potential/unknown sites.

The field survey noted that although there were no archaeological deposits on the sub station site, there were considerable historical and archaeological deposits in the vicinity of the development and that the area appears to have been the subject of continued human habitation since earliest times. The marine archaeo-geophysical survey recorded that there was no visible or detectable cultural heritage in the submarine zone. This does not negate the possibility that remnants of prehistoric landscapes, such as those discovered at Blacksod and Broadhaven, could be encountered in the nearshore section. Non ferrous materials such as log boats or timber raft remains could also be uncovered underlying offshore sands. There is potential for the operations phase of the development to expose these deposits. This exposure would mainly be achieved through secondary impact such as scour or erosion. However, if this were to happen, their exposure would have a negative, direct and long term impact on those deposits.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Potential and Unknown Sites	Direct	Permanent	Negative	Profound

Table 11 Table of operations phase impacts on potential/unknown sites

5.16 Decommissioning phase impacts on potential/unknown sites.

The field survey noted that although there were no archaeological deposits on the sub station site, there were considerable historical and archaeological deposits in the vicinity of the development and that the area appears to have been the subject of continued human habitation since earliest times. The marine archaeo-geophysical survey recorded that there was no visible or detectable cultural heritage in the submarine zone. This does not negate the possibility that remnants of prehistoric landscapes, such as those discovered at Blacksod and Broadhaven, could be encountered in the nearshore section. Non ferrous materials such as log boats or timber raft remains could also be uncovered underlying offshore sands. If invasive groundworks are

to be carried out as part of the decommissioning works then there is potential for the decommissioning phase of the development to expose deposits of cultural heritage significance. If this were to happen, their exposure would have a negative, direct and long term impact on the deposits.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Potential and Unknown Sites	Direct	Permanent	Negative	Profound

Table 12 Table of decommissioning phase impacts on potential/unknown sites

5.17 Do Nothing phase impacts on potential/unknown sites.

The field survey noted that there were considerable historical and archaeological deposits in the vicinity of the development and that the area appears to have been the subject of continued human habitation since earliest times. Should there be no development then there would be no potential impact on any potential/unknown sites.

Site Type	Form of Impact	Duration of Impact	Quality of Impact	Significance of Impact
Potential and Unknown Sites	None	None	None	None

Table 13 Table of do nothing phase impacts on potential/unknown sites

5.18 Summary of Archaeological Impact Assessment

Summary of Construction Phase Impacts

Site Type	Predicted Impact
National Monuments	None Predicted
Recorded Monuments and Places,	None Predicted
Recorded Protected Structures	None Predicted
Historic Shipwrecks	None Predicted
Known and Unprotected Sites	None Predicted
Potential and Unknown Sites	Direct, Permanent, Negative and Profound

Table 14 Summary Table of Construction Phase Impacts

Summary of Operations Phase Impacts

Site Type	Predicted Impact
National Monuments	None Predicted
Recorded Monuments and Places,	None Predicted
Recorded Protected Structures	None Predicted
Historic Shipwrecks	None Predicted
Known and Unprotected Sites	None Predicted
Potential and Unknown Sites	In-Direct, Permanent, Negative and Profound

Table 15 Summary Table of Operations Phase Impacts

Summary of Decommissioning Phase Impacts

Site Type	Predicted Impact
National Monuments	None Predicted
Recorded Monuments and Places,	None Predicted
Recorded Protected Structures	None Predicted
Historic Shipwrecks	None Predicted
Known and Unprotected Sites	None Predicted
Potential and Unknown Sites	Direct, Permanent, Negative and Profound

Table 16 Summary Table of Decommissioning Phase Impacts

Summary of Do Nothing Phase Impacts

Site Type	Predicted Impact
National Monuments	None Predicted
Recorded Monuments and Places,	None Predicted
Recorded Protected Structures	None Predicted
Historic Shipwrecks	None Predicted
Known and Unprotected Sites	None Predicted
Potential and Unknown Sites	None Predicted

Table 17 Summary Table of Do Nothing Phase Impacts

5.19 Cultural Heritage Visual Impact

There are no guidelines in Ireland published for visual impact on the Cultural Heritage. Guidelines for Visual Impact Assessment and the Consultation Draft of Guidelines for Planning Authorities for Landscape and Visual Impact Assessment were consulted but did not give a coherent framework for this type of study.

In assessing the visual impact on the cultural heritage of the proposed development the following were considered:

- The preservation of the character of the landscape where and to the extent that the proper planning and sustainable development of the area requires it, including the preservation of views and prospects and the amenities of places and features of beauty or interest.
- The protection of structures, or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific or technical interest;
- The preservation of the character of architectural conservation areas, historic urban areas.

The assessment is based on Guidelines for Landscape and Visual Impact Assessment (IEMA, 2002). The Guidelines recommend the following to be included in any assessment:

(a) Context

Areas from which the existing site can be seen are generally noted with particular attention given to views from designated tourism routes and viewpoints, other roads, residences, hotels and amenities, sites and monuments of archaeological, architectural or historical interest. Areas from beyond the site boundary from which the site can be seen should be noted. Principal landscape features and areas of distinctive character should be described and illustrated.

(b) Character

A description of the landscape character uses systematic approaches, which clearly differentiate between subjective assessments and objective description. A description of the character of the site as perceived both within the site and wider landscape is important, as is a description of the intensity and character of land use.

(c) Significance

This examines issues such as visual intrusion upon designated views, designated landscape and designated landscape amenity areas, visibility in terms of cultural heritage, visibility in terms of amenity use.

(d) Sensitivity

The extent to which the existing landscape or views are capable of being changed in such a way as to alter the perceived character and appearance.

The sensitivity of a landscape is the measure of its ability to accommodate change or intervention without suffering unacceptable effects to its character and values (DEHLG, 2000).

Impacts Adverse on Landscape

This includes an assessment of the "do nothing" approach alongside the predicted impacts of changes in character, visibility, and patterns of land use.

The predicted impacts should describe the consequences of change, referring to indirect, secondary and cumulative impacts and takes into account the potential for impact with other impacts and the 'worst case' for the landscape if all mitigation measures were to fail.

Mitigating Impacts on Landscape

- To avoid developments in sensitive or prominent landscapes.
- To reduce the visual intrusiveness of the design.
- To reduce the visibility of the project.

Definition of Visual Impacts

The following terminology has been used in the visual assessment and is defined as follows:-

Visual Intrusion

This occurs where a proposed development impinges on an existing view without obscuring the view.

Visual Obstruction

This occurs where a proposed development obscures an existing view.

Visual Impact

None There will be no change to an existing view.

Imperceptible An impact capable of measurement but without noticeable consequences.

- Low An impact, which does not cause significant or profound changes to the existing environment.
- Moderate An impact, which by its magnitude duration or intensity alters an important aspect of the environment.
- High (Profound) The view would be altered to a significant degree as to affect a dramatic change.

Visual Impacts may be Neutral, Positive or Negative

- Neutral A neutral impact will neither enhance nor detract from the landscape character or viewpoint.
- Positive A positive impact will improve or enhance the landscape character or viewpoint.
- Negative A negative impact will have an adverse effect on the existing landscape character or viewpoint.

Duration of Impacts

- Temporary Impacts lasting one year or less.
- Short-term Impacts lasting one to seven years.
- Medium-term Impacts lasting seven to twenty years.
- Long-term Impacts lasting twenty to fifty years.
- Permanent Impacts lasting over fifty years.

The significance of impacts on the perceived environment will depend partly on the number of people affected but also on value judgments about how much the changes will matter.

5.20 No Action Impact

In order to provide a qualitative and equitable assessment of the proposed development, this section considers the proposed development in the context of the likely impacts on the receiving environment should the proposed development not take place.

In the event that the development does not take place, there will be no impact on the receiving environment.

6. SUMMARY AND CONCLUSION

Desktop and cartographic sources indicate that the area surrounding the subject site is of considerable archaeological and historic significance. Archaeological evidence provides indicative evidence for the continued and uninterrupted occupation of this area since Neolithic times. Although there are a number of recorded archaeological monuments and finds in the vicinity, none will be directly impacted by the proposed development. Historic and cartographic records detail the more recent development and improvement of the area. They record the changing fortunes of the area, changes in ownership as well as general improvement in both living and working conditions.

A considerable quantity of field survey was carried out across the proposed development area. The field survey was divided into two sections; terrestrial and marine survey. The terrestrial survey consisted of a visual field inspection of the proposed terrestrial cable route and its nearby surrounds, as well as a programme of pre-development archaeological testing at the site of the proposed sub-station and approach road. The aim of the visual field inspection was to record the location of any previously unrecorded archaeological features or deposits along the route and to record the location and extent of any topographical anomalies which may be indicative of the presence of previously unrecorded archaeology. The programme of testing at the sub station was designed to investigate this area for the presence of archaeology. It involved the excavation of a number of archaeological test trenches throughout the footprint of the proposed building and approach road. These were excavated by mechanical excavator under archaeological supervision. The programme of testing recorded that there were no archaeological deposits, features or materials at the sub station site or its approach road.

The programme of marine survey comprised a high resolution geophysical survey and a diver survey. The diver survey was confined to the shallow waters surrounding Beldera Strand. It was undertaken by a team of archaeological divers and involved visual and metal detection survey of the area. No archaeological material was noted. The geophysical survey concentrated on the entire section outside this area; namely the test areas locations and the cable routes between. It consisted of a side scan sonar survey accompanied with a magnetometer survey. The survey recorded 121.3 linear km of combined side scan sonar and magnetometer data. It succeeded in recording the location of a number of anomalies on the seafloor. None were seen to be archaeological in nature and most comprised of shellfish pots and their associated ropes.

The combined results of the desktop assessment and the field survey appeared to indicate that although the subject site is one of considerable archaeological and historic significance, there is no evidence for the presence of archaeological material in the proposed development. Notwithstanding this, there is potential that invasive ground works at the subject site may impact previously unrecorded archaeological material. Consequently, it is recommended that the following remedial and design mitigation measures are considered.

Remedial and design mitigation measures

Remedial and mitigation measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential likely and significant environmental impacts. This includes avoidance, reduction and remedy measures to reduce or eliminate any significant adverse impacts identified.

The Cultural Heritage Assessment has identified a number of areas of very significant archaeological and historical interest surrounding the proposed development site. The impact of the proposed development has been considered and the results are summarised in section **5.13**.

Recommended mitigation measures are set out in the section below.

Construction Phase Mitigation

All cable trenching works, terrestrial, intertidal and submarine, should be monitored by a suitably qualified archaeologist. These works should be licensed by the National Monuments Section of the Department of the Environment, Heritage and Local Government and the National Museum of Ireland. The licensee should be suitably qualified with adequate resources to investigate any deposits which may be encountered.

Operations Phase

Post lay surveys of the cable route should be carried out at specified intervals with the complete suite of results being to a suitably qualified archaeologist for interpretation and reporting.

Decommissioning Phase

As with the construction phase recommendations, the removal of any cables which involves invasive groundwork should be monitored by a suitably qualified archaeologist. These works should be licensed by the National Monuments Section of the Department of the Environment, Heritage and Local Government and the National Museum of Ireland. The licensee should be suitably qualified with adequate resources to investigate any deposits which may be encountered.

Impact Assessment	Recorded Monuments	National Monuments	Recorded Protected Structures	Historic Shipwrecks	Previously Known but unprotected sites	Previously Unknown Sites
Construction Phase						
Direct Impact	None	None	None	None	None	Direct, negative and permanent
Indirect Impact	None	None	None	None	None	Direct, negative and permanent
Operations Phase						
Direct Impact	None	None	None	None	None	In-direct, negative and permanent
Indirect Impact	None	None	None	None	None	In-direct, negative and permanent
Decommissioning Phase						
Direct Impact	None	None	None	None	None	direct, negative and permanent
Indirect Impact	None	None	None	None	None	ldirect, negative and permanent

Table 4. Summary of predicted direct and indirect impacts

Visual Impact	Recorded Monuments	National Monuments	Recorded Protected Structures	Historic Shipwrecks	Previously Known but unprotected sites	Previously Unknown Sites
Construction Phase						
Direct Impact						
Indirect Impact						
Operations Phase						
Direct Impact						
Indirect Impact						
Decommissioning Phase						
Direct Impact						
Indirect Impact						

Table 5. Summary of Predicted Visual Impact

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The Ports and Harbour Archive of the Department of the Environment, Heritage and Local Government, Dublin

The Shipwreck Inventory of the Department of the Environment, Heritage and Local Government, Dublin

APPENDIX 2. RMP DETAILS

SMR No.: MA:09:03
Nat Grid Ref.: 6431/33552
Townland: Termoncarragh
Classification: Earthwork and Promontory Fort
Description:
Distance to development: *See Table 1*
Predicted impact: None

SMR No.: MA:09:05
Nat Grid Ref.: 6381/33528
Townland: Termoncarragh
Classification: Promontory Fort (complex of 10 sites)
Description:
Distance to development: *See Table 1*
Predicted impact: None

SMR No.: MA:09:10
Nat Grid Ref.: 6288/33452
Townland: Annagh
Classification: Promontory Fort (complex of 7 sites)
Description: 1838 Bollaun, 1921 Bollaun. Printed Sources Westropp 1914.
Distance to development: *See Table 1*
Predicted impact: None

SMR No.: MA:09:11
Nat Grid Ref.: 6345/33444
Townland: Annagh
Classification: House Site
Description: Date of Visit 14/06/95. "Situated in relatively level peatland on Annagh peninsula.
There is no antiquity known locally at the location indicated."
Distance to development: *See Table 1*
Predicted impact: None

SMR No.: MA:09:12
Nat Grid Ref.: 6393/33456

Townland: Annagh
Classification: Hut Site
Description: Date of Visit 14/06/95. 'Situated on SW slope of a ridge, in peatland. No remains of hut sites were identified at the location indicated. There is no local knowledge of the same. The only structure on the ridge is filled with a low wall of drystone masonry.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:13
Nat Grid Ref.: 6484/33327
Townland: Annagh
Classification: Promontory Fort (2)
Description: None

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:14
Nat Grid Ref.: 6534/33339
Townland: Annagh
Classification: Midden (s)
Description: Date of Visit 09/05/96. 'Cliff face at the location indicated by Westropp has eroded considerably. No remains of midden or any archaeological activity are now visible.'
NMI Finds Register; 1 Bone Tool, 8 Wire Pins, 3 Bronze Fragments.
'Just beyond the neck widens into sandhills in a hollow beside the nearly vanished old track from Annagh to Binghamstown, are 2 unusually large middens over 10ft high, consisting of heaps 4 or 5 ft thick of burned stones, black mould, charcoal and shells oysters, cockles, periwinkles, and broken bones'. Westropp and Johnson 1912-1914 'Promontory Forts and Early Remains Of The Coasts Of Mayo'.
Journal/Source- JRSAl, Vol 42 44pgs 67-83, Pg 69.

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:15
Nat Grid Ref.: 6626/33362
Townland: Macecrump/Tonamace
Classification: Eccleastical remains (church, cist burial, graveyard cairn, hut site etc.)

Description: Printed Sources: O'Donovan 1838 pgs 246-7; Westropp 1912 pgs 214; Westropp 1914 pgs 67-72; Henry 1937 pgs 269-270.

9:151 church site, 9:152 graveyard, 9:153 cists, 9:154 cashel, 9:155 middens, 9:156 hut hollows, 9:157 mounds, 9:158 hut site, 9:159 gateway, 9:1510 pillarstone, 9:1511 cairns, 9:1512 cists possible, 9:1613 cross inscribed pillar

OS Description: Kilmore Burial Ground, Ecclesiastical Remains

Date of Visit 14/06/95

Field Description; 'Largely natural oval shaped platform, dimensions 52.7m WNW ESE, 46.4m NNE-SSW enclosed by the fragmented remains of a wall of drystone masonry. Originally entrance was probably at North. Interior is divided into unequal portions by a curving wall which curves from NE-E-SSW.

1. Projecting NNW out from centre of dividing wall, at highest point of site are the remains of a structure (dims 7.7mNE-SW 5.85m NNW-SSE) defined by a series of stones may possibly represent the site of the original oratory.

2. Projecting NW from the S end of the dividing wall is a low semicircular arc of stones (4.7m NNE-SSW, 4.3m NW-SE) presumably remains of a hut site.

3. Inside the cashel wall at NW is a largely grassed over sub-rectangular cairn of medium and large sized stones dims 4.1m ENE –NSW, 2.9m NNW-SSE, Height 0.55.

4. Also in the large West half of the side is a low sub-rectangular cairn of medium and large sized stones(dims 2.2mEW, 1.8m N_S, H 0.3m) with some evidence of kerbing.

5. Inside the cashel wall at the SE are 2 low circular cairns of stones. Dimensions, diam 2.1m, H 0.3m, the more south diam 1.44m, H 0.25.

6. Inside the cashel wall at E. is a pillar stone (H 0.5m, dims 0.58m x 0.12m) Henry referenced, recorded 'Greek cross in a circle carved on its West side.' The cross and circle are no longer identifiable. The pillar is surrounded by a series of low stones arranged in a circle.

Note 1; I do not believe that the low cairns described above represent pre Christian cist burials unlike Westropp and Henry. The 2 sub rectangular examples are aligned approx EW, the others are circular.

Note 2; We were told locally that the site is very susceptible to storms. In some cases further cairn type structures are revealed. In others some of the features described above are concealed by sand.'

Reference Sheet MA009:15. Author J O'Donovan 1838.

Title 'Letters containing information relative to the antiquities of the county of Mayo collected during the progress of the Ordnance Survey', Journal/Source Bry 1927 reproduced by Rev M. O'Flanagan pgs 246-247, Vol 1.

Description:

'Originally Church lay buried in the sands in the townland of Toin Mhis for years, until it was exposed to view by a great storm, which concealed the great cairn Leacht Air Iorrais. The name is vividly remembered by tradition. No part of fabric of Church remains, but outline of graveyard and many of the graves can be traced in the sand. Name of the Church as it stands now, pronounced by the oldest natives is Cili Mhor Mhathas-the Great Kill or Church of St Mathau or Mathias. Others however assert that there are 2 old Churches in the parish called Kilmore one in the townland of Terrmonhare and the other in Toin a Mhis. My idea is that Kilmore in the townland of Toin Mhis was erected by the Barretts in the 12th or 13th centuries and that they dedicated it to St Mathias.

It has been shown in letters that when the English families re-erected on a larger scale the primitive Irish Churches, they always rejected the original Irish patron saints and dedicated the churches to more distinguished saints of the continent.'

Reference Sheet 09:15

Westropp and Johnson 1912/1914, Title 'Promontory forts and early remains of the coasts of Mayo', Journal/Source JRSAI, Vol 42 and 44:

Description:

'Stone cists of four slabs with one or more covers, barely 5ft long and yielded burned bones and broken rings of steatite which Crompton suggests were handles of small urns.

Reference Sheet 09:15. Westropp and Johnson 1912/1914, Title 'Promontory forts and early remains of the coasts of Mayo', Journal/Source JRSAI, Vol 42 and 44, Pgs 67-83.

09:151 enclosure, 09:152 middens, 09:153 hut hollows, 09:154 mounds, 09:155 hutsite, 09:156 gateway, 09:157 pillarstone, 09:158 cairns, 09:159 cists, 09:1510 cists, 09:1511Graveyard Ardowen 9:16, 09:1512 Cairns 9:17.

Site worked by G. Crompton for Rev. Caesar Otway

O'Donovan refers to great gale of 1811 that uncovered a church, no authority the church was of Christian origin. Lies in the townland of Mace.

1. I think first it was a settlement then a cemetery in early days. The founders cut a semicircular, wide and gently sloped hollow round the north and built a slight ring round the edge.

2. 2 hut mounds one at the 'traverse wall on its western side and round hollow with low mounds.

8. A grave like cairn 12ft from wall lies on the south slope.

'If Newgrange and Lough Gur be the work of giants and gods these seem the work of children and elves.'

F. Henry 1937, 'Early Christian slabs and pillar stones in the West of Ireland', JRSAL, Vol 67 pgs 265-279.

Kilmore Erris: 09:15 Cashel, 09:15 Crosslab, 09:15 Cist, 09:15 Mounds, 09:15 pillar stone, 09:15 middens.

'In the sand dunes on the western shore of the mullet, south of Termoncarragh about four miles west of Belmullet, 500 yards East of the ruins, is a round cashel about 120ft in diam, with stone walls from 8ft to 12ft. Divided into 2 uneven halves by a curved wall running North to South. In the eastern half near the outside wall stands a very rude slab with a nearly obliterated Greek Cross in a circle carved on its west side. There are to the south of it small circular mounds covered with a few inclined stones. Other ones less inclined appear inside the enclosure. Excavations conducted by Crompton in the beginning of the last century in tombs situated in that part of the sand dunes seem to have led to the discovery of standing or sitting skeletons, where entrance seems to have been, at the North end of the cross wall, where entrance seems to have been a very big pillar stone about 8ft long lies half buried in the sand. There are skulls and broken animal bones. Westropp failed to notice a cross gave a detailed but inaccurate plan.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:16

Nat Grid Ref.: 6644/33329

Townland: Ardowen

Classification: Childrens Burial Ground

Description: Children's burial ground, date of visit 14/05/96. 'Situated in sand dunes 300m SE of Kilmore burial ground, poorly defined and irregularly shaped mound of sand and stones, max diam 55.7.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:17

Nat Grid Ref.: 6623/33255

Townland: Carn

Classification: Cist and Enclosure

Description: O' Donovan 1838. 'To the north west of Leacht Air Iorrais about ½ a mile on lands of Emlybeg Nash, another cairn, a large grave nearly square formed by large stones, standing upright, called Trun Na Caillaghe.'

1. Leacht Air Iorrais 9:20
2. Emlybeg Nash Carn 9:18
3. Grave 9:17

Westropp and Johnson 1912/1914;

'Beyond these ½ a mile to the south in Leacht Na Caillghe, there is the grave of the hag, the rest is a double enclosure of stones'.

By P'OD/PC. Date of visit 14/06/95.

'Situated in sand dunes largely grassed over, there is a circular cairn of small and medium sized stones. Diam 1.4m, max H. 0.78m.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:18

Nat Grid Ref.: 6649/33239

Townland: Emlybeg North

Classification: Cairn and Midden

Description: Printed Sources; O' Donovan 1838. 'The NW of Leacht Air Iorrais about ½ a mile on the lands of Emlybeg North, there is another cairn, but not so large'.

Westropp and Johnson 1912/14,

'Further inland in Emlybeg North to north of the old track, we found before reaching the little streamlet, a small cairn, marked on the older maps, but not on the new ones. Regularly built into a small pyramid, 4ft high. Situated in a field of rough pasture adjacent to a large area of sand dunes. No surface remains.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:20

Nat Grid Ref.: 6631/33161

Townland: Binghamstown

Classification: Archaeological Complex

Description: 09:2001 Grave, 09:2002 Enclosure, 09:2003 Cairn, 09:2004 Enclosure, 09:2005 Grave, 09:2006 Pillarstone, 09:2007 Cist, 09:2008 Cist, 09:2009 Enclosure, 09:2010 Cairn-listed site, 09:2011 Midden, 09:2012 Cemetery.

O'Donovan 1838 pgs 209-213; 'Letters containing information relative to the antiquities of the county of Mayo, collected during the progress of the Ordnance Survey', J./Source; Bray 1927, reproduced by Rev. M. O'Flanagan

'Leacht Air Iorrais, monument of the slaughter of Irrus, lies in the townland of Knockanbaun. Very conspicuous object in the middle of a wilderness of sands, 3/4s of a mile NW of Binghamstown.

Of the monuments which have left no trace behind to tell their story, we find beside the doons, several cairns called Laghtas, meaning the sepulchre mound probably where a chieftain had fallen in battle. Such is Laghta Ard or the high monument, which in memory of many now living had been entirely buried in the sands for ages, but still bore the name. One exceedingly stormy night, it blew away many sands to reveal a very large laghta and the adjacent plain showed the exposed bones of thousands scattered promiscuously through the sands on a firm earth, having in many places the mark of ridges"

Erris pgs 108-109.

1. 'Grave formed of large stones standing on edge, 14ft long, but the breadth cannot be exactly ascertained as W. Side destroyed
2. An irregular circle of stones much displaced, measuring 36yards in circumference from the N. Round to the extremity of the grave
3. Large conspicuous cairn, pagan chief who was interred within it, formed of large and small stones piled over each other, 35 yards in circumference at the base, about 15ft in height and original conical shape, lot of stones could have been taken by antiquarian investigators, or storms, but have not investigated the Pagan Chief in the centre who was interred within it.
4. Human bones are scattered about it, Circle formed of gravel and stones which seems to have originally embraced the cairn which however was not anyway near its centre, as will appear from the ground plan.
5. About 250 yards NW of Leacht Air Iorrais, there is a large grave. I measured it with the shin bone of a man and found it to measure 21ft in length and 7 1/2 in breadth.
6. To the NW of Leachta Air Iorrais about 1/2 a mile on the lands of Emlybeg North, another cairn or leachta not so large and still farther on in the same direction, on the lands of Carn, a large grave, nearly square, formed by very large stones standing upright, called by the natives Trunk na Caillighe.'

Westropp and Johnson 1912/1914, 'The promontory forts and early remains of the coasts of county Mayo', JRSAl Vol. 42 &44, Pgs 185-216.

1. Leacht Air Iorrais- Binghamstown
2. Church Tonamce Macecramp

'Sandhill monuments; Pocke in 1752 mentions shell and vertebrae of fish in the sandhills. O'Donovan speaking of Leacht Air Iorrais tells how the same gale laid it bare and uncovered church Cill Mor Mhata's 'and I remember in Inishere a reputed 'haunted sandhill' in 1878, got blown away to reveal early burials. According to Crompton it was a monument of the slaughter of Erris. There is a legend of a battle from an invading army from Munster. Greatest slaughter said to have taken place at a hollow in sandhills.

Solitary skeleton reputed to be King of Munster, part of the fleeing tribes, in the Ree Moni mound. Repelled and vast slaughter at the battle of the cross, archaeologically corroborates, vast stratum of bones found under the sandhills.

Leacht consists of a cairn in the NE segment of an oval platform of hard earth with shallow fosse and slight ring. Ring is only 3ft to 4ft high. Cairn is of large blocks and is steep, shapely and well preserved, 11ft and 6 inches high at the platform 26ft across the base and 6ft across the flat top. There is a kerbing of large blocks round the N round of the fosse, a similar feature, if not the remains of a burial enclosure is on the edge of the upper platform. A large slab is set 10ft to the south of it, a very small cist at 10ft to the N. There are remains of a cist at 63ft. due north, from the cairn, defaced beyond recognition, but 2 rows of blocks remain. There are other vague low circles and enclosures of slabs among the sandhills.'

PO'D/MW 09/05/96

Situated in sand dunes within a modern golf course. Partially grass covered circular cairn composed of large and medium sized stones diam 14.1m max H 3.6m. Part of basal portion of the cairn appears to have been roughly coursed.

3m NW of the cairn is a low poorly defined rise from which a number of stones project, which may represent remains of a burial mound. Cairn and possible burial mound are encircled by a low grass-covered bank of sand and stone from SW-W-NNW.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:09:26 (01 & 02)

Nat Grid Ref.: 6119/33389

Townland: Tonamace

Classification: Quernstone/Bullaun stone Description:

Description: 'Isolated find saddle quern on one side bullaun, feels it maybe prehistorical as opposed to early Christian. Date of Visit 14/06/95 by P'OD/PC
According to landowner these have been removed from his garden within the past few months, taken into care by Erris Tourism.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:016:04 (01 - 07)

Nat Grid Ref.: 6411/33088

Townland: Cross

Classification: Ecclesiastical remains

Description: 'Includes Abbey, Graveyard, Inscribed stone, Ogham Stone, Quern Stone, Cross, and Midden'.

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:016:05 (01 & 02)

Nat Grid Ref.: 6495/33093

Townland: Cross

Classification: Ecclesiastical remains

Description: 'Includes Church and Graveyard.'

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:016:06 (01 & 02)

Nat Grid Ref.: 6520/33091

Townland: Cross

Classification: Cairn and Burial

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:016:07 (01-03)

Nat Grid Ref.: 6560/33128

Townland: Ballymacsherron

Classification: Promontory Fort & 2 Hut sites

Distance to development: *See Table 1*

Predicted impact: None

SMR No.: MA:016:08

Nat Grid Ref.: 6644/33130

Townland: Binghamstown

Classification: Archaeological Complex. Same complex as MA:09:020.

Distance to development: *See Table 1*

Predicted impact: None

APPENDIX 3. SITE SPECIFIC HISTORICAL BACKGROUND

Site Specific Background: Belmullet and the Erris Peninsula

The subject site is located in the Barony of Erris and the Parish of Kilmore. The Ordnance Survey Papers of John O Donovan provide a considerable amount of detail about the archaeology and history of these areas. It details that the general belief of the literati was that the name Iorrais or Erris, was a corruption of Iar-Ros meaning 'The Western Ros'. This was believed to be a name retained from the time of O Flaherty, and of which the name Iorrais Duin Domhnaill, the present appellation was a peasant corruption. O Donovan notes that another famous tribe of the Belgae, the Gamanradii, is referred to in the ancient Irish histories as being located in Iarras. Probably the most famous member of this tribe was Ferdia, who was immortalised in the Tain Bo Cuailgne, after a savage single handed fight with his close friend Cu Cullinn at Ardee.

Erris is also recorded in the Leabhar Breac as being the place of birth of Eochy, the Royal Poet. O Donovan in his description of the area goes on to note that whilst the area is still famed for poets, it can boast no heroes except those who plunder wrecked vessels.

Ptolemy in his map of Ireland (AD 180) has no record of any tribes in the Erris region. The annals record that in the 5th century, the Scottish Monarch, Tuathal Teachtmair, expelled or enslaved the tribes of Erris. They do not however record what Scottish families were established in the area, however it is likely that the Scottish conquest of the area had little impact on the local tribes and people as they are said to have lived principally by fishing and robbing their neighbours.

The famous monastic chronicler Adamnan, records that by the 7th century, Erris was called Erros-Domon. This appears to indicate that the Damnonaii tribe had wrestled control of the area from the previously mentioned Scots. The Irish Annals provide further detail of the history of Erris. It records that from 1180 to 1300, Erris was under the control of the O'Caithniadh. In 1180, "*Hugh O' Caithniadh, Lord of Erris was treacherously slain by O Callaghan at Kilcolman (Kilcommon).*" Later in 1206, "*Caithniadh O' Caithniadh, Lord of Erris died*" In 1243, the Annals record that "*Brain Derg, son of Donogh O'Dowd, Lord of Tirawley and Erris was killed on the road on his pilgrimage to the Abbey of Boyle.*" Later still in 1273, "*Donnell Irruis, the son of Manus, who was the son of Murtagh Muimhneach (O'Conor), was expelled from Umalia and Erris.*"

After 1274, the O'Caithniadh's disappeared from history and there was no evidence to indicate who succeeded them. The Annals of Tireragh and Tirawley do indicate that Sen Bhrian and his son Donnell assumed control of Erris until the arrival of the English in 1380's.

The 1380's saw the arrival of the Lynots, Barretts and Burkes to the area and soon the Barretts became masters over the entire Erris Barony. They located their main stronghold at Dun Domhnainn and soon adopted this as a surname. "*Robert of Dun Domhnainn, who was slain in Tirawley fighting against the Irish in 1386*".

Erris remained in the control of the Barretts until the end of the reign of Queen Elizabeth. Although we do not know when, it is recorded that the land was forfeited. Dermot Cormick, a Munster lawyer, is recorded as having purchased a considerable portion of the territory of Erris during the reign of James I. They appear to

have forfeited a large portion of the land by the reign of Charles II. This is inferred by a grant made by Charles II, on 8th April 1676, for the entire of the half Barony of Erris..... to Sir James Shaen.

Shaen appears to have taken little part in the improvement of Erris but preferred to leave this to his son Sir Arthur. He introduced a protestant colony to the Mullet and fixed their lands and allotments, ascribed them a priest who also acted as magistrate. The new settlers appear to have had considerable trouble with the locals, having had 75 cattle stolen in the space of 9 months and destroyed many of their crops and vegetables.

In 1715 Sir Arthur Shaen began building a small town on a wet and marshy area near 'The Mullet' peninsula in the extreme north west of the barony of Erris. To drain this marshy area and create a passage from Blacksod Bay into Broadhaven Bay, Shaen had a canal excavated which would allow small boats to pass from one bay to the other. A sluice was erected at the Blacksod Bay side to allow traffic to and from the Mullet peninsula to pass along the shore. At a later date a bridge was erected to span the canal. The development of this town, now named Belmullet, proved to be a slow process and by the mid 1700's the canal was in a state of disrepair. By the early 1800's Belmullet consisted of just a few thatched buildings and it was not until the 1820's that any degree of development took place. In 1820 the first post office in the Erris region was opened, while in 1822 the Coastguard was established in the town.

When Sir Arthur Shaen died, he left no male heir. He had two daughters; the eldest married John Bingham and the youngest married Henry Boyle Carter of Castlemartin, Co. Kildare. Sir Arthurs land was left in equal share to his two daughters. This was also the time when the real architect of Belmullet's growth, William Henry Carter became involved.

The Ordnance Survey letters record little about the works of William Henry Carter, but they record a lot of negative material about Major Bingham, the grandson of Sir Arthur Shaen on the other side. He built a Castle and fixed his residence at Elly Bay. It records that he spent several years "*leading the life of a balor*" plundering wrecks and oppressing his tenants. When the priest, Dr. Lyons went to Kilmore Parish, he found it in a deplorable state, being the retreat for runaways and smugglers. He recorded that there were only seven in the parish who could recite prayers and fewer who could read.

Despite this, the development of Belmullet continued, largely under the stewardship of Carter. Of major importance was the new road between Belmullet and Castlebar, which was completed in 1824. This enabled horse drawn carriages to visit the area for the first time, although there were no hotels or inns for visitors. Tradesmen from all over Mayo were brought in to begin work on developing the infrastructure of Belmullet. Progress over the next few years was more rapid, utilising granite and sandstone from Blacksod to build a number of buildings including the impressive 'Erris Hotel' in the town centre.

In 1826 a quay large enough to accommodate vessels of 100 tons was also built at Belmullet. This helped to accelerate the importation of goods, especially from Britain, which now included tea, sugar, beer, wine, coal and grain.

Belmullet's development was further strengthened by the introduction of a dispensary and a doctor in 1830. By this time the population of the town had grown to over 500. A Catholic Church was built by subscription in 1832 to serve the growing congregation. Another important development in 1832 was the introduction of a regular postal service to Ballina. Post would be collected daily from the post office and this service also

ensured the availability of daily newspapers in Belmullet for the first time. A by product of this growth was the need for a courthouse, which was built in 1833 to hold the weekly court sessions.

By the late 1830's two important new roads were being constructed, one to Newport, the other to Ballycastle. Also at this time the export of meal to England began and a Protestant church was built in 1843.

In October 1845 the Government sanctioned a grant of £5,000 to match the total of £4,000 raised locally to facilitate the building of a canal which would unite the Broadhaven and Blacksod Bays. Work on the canal began in 1845 but was not completed until 1851 due to the intervention of the famine. The famine had a particularly devastating effect on the Erris region. A report produced in 1851 states that the canal was being used extensively, and also mentions the use of a swivel bridge.

Another development in the 1840's was the introduction of a fishing station in a bid to exploit the coast's natural resources. This was opened in 1847 to wash and cure fish and boat building was also carried out here. The station was forced to close due to the fishermen being imprisoned for the theft of flour from a passing ship. This was another by-product of the famine, which was wreaking havoc on the town. Many people starved to death while soldiers guarded tons of meal, some of which was to be sold to the people, some of which was to be exported.

The news of Belmullet's plight spread far, and as a consequence visitors to the town dried up. A workhouse and fever hospital was urgently needed, and one was quickly erected on the site of the present hospital. The head of the Treasury, Charles Trevelyan, notoriously decreed that relief was to only be given to workhouse people. This had the effect of severely overcrowding the workhouses, with up to 3,000 people being recorded at one time in Belmullet. Throughout the late 1840's the numbers in the workhouse dropped considerably and by the early 1850's, when the potato crop became re-established, the population of the workhouse had decreased to several hundred.

Throughout the 1850's the mail service developed rapidly between Belmullet and Ballina, and more importantly, between Ballina and Dublin. This increased both the availability of newspapers, and the wider use of the postal service.

In 1865 the Government passed the Sewerage Utilization Act. In the following years several plans to introduce a new water system to Belmullet were discussed and proposed but none came to fruition. In 1882 the town received its first water supply from the springs at Carne.

Throughout the second half of the 19th century many proposals were made regarding the development of a railway line in to Belmullet and the Erris region. Three routes were surveyed and discussed:

1. Route One: Ballina - Ballycastle - Belmullet
2. Route Two: Newport - Mulrany - Belmullet
3. Route Three: Ballina - Crossmolina - Belmullet

Many people along these routes lobbied for the railway lines to pass through their district. However the merchants of Belmullet were more sceptical, and feared that the introduction of a railway line would adversely affect their trading position as it would put Ballina within easy reach of the population. Plans for a railway to Blacksod which would have served trans-Atlantic shipping were therefore postponed.

Many still pressed the authorities for a rail line and this movement gained momentum during the latter days of the First World War when it was proposed that a line would improve lines of communication between London and North America. However when the war ended in 1918 the hopes for a railway service to Blacksod ended with it.

One of the first notable events in the twentieth century to occur in Belmullet was the installation of carbide gas powered street lamps. These were poorly positioned and gave off very little light.

This state of affairs did not affect the lively social life however which Belmullet enjoyed at the time. There was a lively local dancing scene, a mountain climbing club, a billiard hall, a football club, and a cycling club. Another notable event was the celebration of midnight mass for the first time to usher in the new century.

The famous writer John Millington Synge, author of *The Playboy of The Western World*, visited Belmullet in 1904 and reported: 'Belmullet in the evening is noisy and squalid, lonely and crowded at the same time and without appeal to the imagination. So at least one stays for a moment. When one has passed six times up and down hearing a gramophone in one house, a fiddle in the next, then an accordion and a fragment of a traditional lullaby, with many crying babies, pigs and donkeys and noisy girls and young men jostling in the darkness, the effect is not indistinct. All the light comes from doors or windows of shops. Last night was St. John's Eve and bonfires were lighted all over the country, the largest of all being placed at the Town Square at Belmullet. Today, again, there was a large market in the square, where a number of country people, with their horses and donkeys, stood about bargaining for young pigs, heather brooms, homespun flannels, second hand clothing, blackening brushes, tinker's goods and many other articles.'

In 1910 a motor mail service was introduced between Belmullet and Ballina. These vehicles also carried passengers but the service was discontinued after a year due to the poor state of the roads. Another development in transport was the boat service to convey goods between Belmullet and Ballina which began in 1913.

APPENDIX 4. ORDNANCE SURVEY LETTERS - PARISH OF KILMORE

John O Donovan, in his Ordnance Survey Letters records a lot of information about the parish of Kilmore. This is the parish of the subject site. He records that the original church from which this parish has received its name lay buried in the sands (in the townland of Toin Na Mhais) for years until it was exposed by the great storm (January 1839) which swept away the heaps of sand which concealed the site and the nearby Leacht Air lorais. Once exposed, the site revealed that little of the original church fabric remained, although the outlines of many graves were clearly discernible. The name of the church was believed to have been Cill Mhor Mhathas, meaning Kill or Church of St. Mathas or Mathias. Despite searching various historical text and consulting other historians, O Donovan found no reference to a Saint Mahas. His conclusion was that the church was erected by the Barretts in the 12th or 13th Century and was dedicated to Saint Mathias. O Donovan also notes other evidence from Meath and other parts of the Pale where English families re-erecting Irish churches and re-named them after continental saints.

O Donovan describes the townland of Cross in detail. He records that "*Cross was a peninsula in the half barony of Erris, on the point to the south of Balludurish strand, and opposite Ennisglory Island*". This Beldurish Strand appears to be a reference to Belderra strand as Balds map of 1809, records the area to the east of the strand as "*Belduragh*". O Donovan, records that the Monastery or Religious House of the Cross or the Holy Cross was dedicated to the Virgin Mary. The Monastery belonged to the Abbey of Ballintober and the Prior of Ballintober always appointed a brother of his Abbey to be sub-prior in the House of the Cross. He recorded that a considerable part of this church was still standing within a very extensive grave yard. He noted that the building was built after the establishment of the Abbey of Ballintober by Charles, the Redhanded, O'Connor in 1219. The final feature of significance in this area was the ancient Bailte Poirt or Chiefs' residences of the Familia Fiachrorum. This Doon or fort was described as being situated at Elly within the Mullet. O Donovan remarks that there is no evidence for the existence of this fortification and that the only structure of significance in the area is "*the treeless mansion of..Major Bingham*". He later indicates that he believes, like Kilmore Church, that this monument has been buried by sands.

APPENDIX 5. LEWIS TOPOGRAPHICAL DICTIONARY

"Belmullet, a small sea-port, in the parish of Kilcommon, barony of Erris, county of Mayo, and province of Connaught, 32 1/4miles (W. by N.) from Bal-lina: the population is returned with the parish. This place is beautifully and advantageously situated on an isthmus to which it gives name, on the western coast, and which separates the bay of Blacksod from that of Broadhaven. It is a rapidly improving town: the surrounding district, about 20 years since, was scarcely accessible; but since that period, by the construction of several lines of road by Messrs. Nimmo, Knight, and Bald, the engineers, and more especially those from the county town of Castlebar and Ballina, the whole barony has been thrown open, and a great improvement has taken place in the agriculture of the district and the commerce of the port. In 1822 the land in the barony produced only about 80 tons of oats and barley; but in 1834 and 1835, the annual produce was 1800 tons. This great improvement has resulted from the reclaiming of the adjacent lands, and from Belmullet having become a very considerable mart, where the neighbouring farmers can readily find immediate purchasers for all their produce. The town owes its origin to the establishment of the head-quarters of the commander of the coast-guard here, in 1822. It is uniformly built, and contains 117 houses; it has a penny post to Ballina, and its general appearance, as seen from Blacksod bay, is pleasing and prepossessing. A few line of road has been constructed along the coast, from Ballycastle to Belmullet and thence to Westport, a distance of 57 miles, forming a most interesting drive. The trade consists chiefly in the export of grain, especially of oats and barley; and several spacious warehouses have been built for the deposit, of corn. A commodious quay was constructed in 1826, at an expense of £700, of which sum, £300 was given by the late Fishery Board, and £300 by Mr. Carter. The harbour is capable of very great improvement, and by cutting through the narrow part of the isthmus, a canal might be made, at an estimated expense of £2000, which would enable vessels of 150 tons' burden to pass from Broadhaven into Blacksod bay, and in all winds at full tide into the Atlantic ocean, without being detained for months, as is now frequently the case. Fairs are held on the 15th of every month,

except when it falls on Sunday, in which case the fair is held on the following Monday. Here is a chief constabulary police station; and the coast-guard district comprises the stations of Belmullet, Dugurth, Duhooma, Ballycovy, Blacksod, Ballyglass, and Renown Tower, and is under the superintendence of Capt. Nugent, resident inspecting commander, and a county magistrate. Petty sessions are held every Saturday: the court-house was built in 1833, at an expense of £200, by Mr. Ivers. There is also a dispensary. In the vicinity are several gentlemen's seats, noticed in Kilcomrnon and Kilmore-Erris."

APPENDIX 6 PLATES



Plate 2. View of RMP MA:016:07 Ballymacsheron Promontory from the northwest



Plate 3. View of collapsing stone wall at RMP MA:016:07 Ballymacsheron Promontory



Plate 4. View of topographic undulations at RMP MA:016:07 Ballymacsheron Promontory



Plate 5. View of Belderra Beach from Cross Cairn (RMP MA:016:06)



Plate 6. View of Cross Cairn (RMP MA:016:06) from the south



Plate 7. View of Cross Church and Graveyard from Cross Cairn (RMP MA:016:06)



Plate 8. View of drain bisecting Belderra strand back beach area



Plate 9. View of Belderra Strand from the east



Plate 10. View of pre-development test trench 1



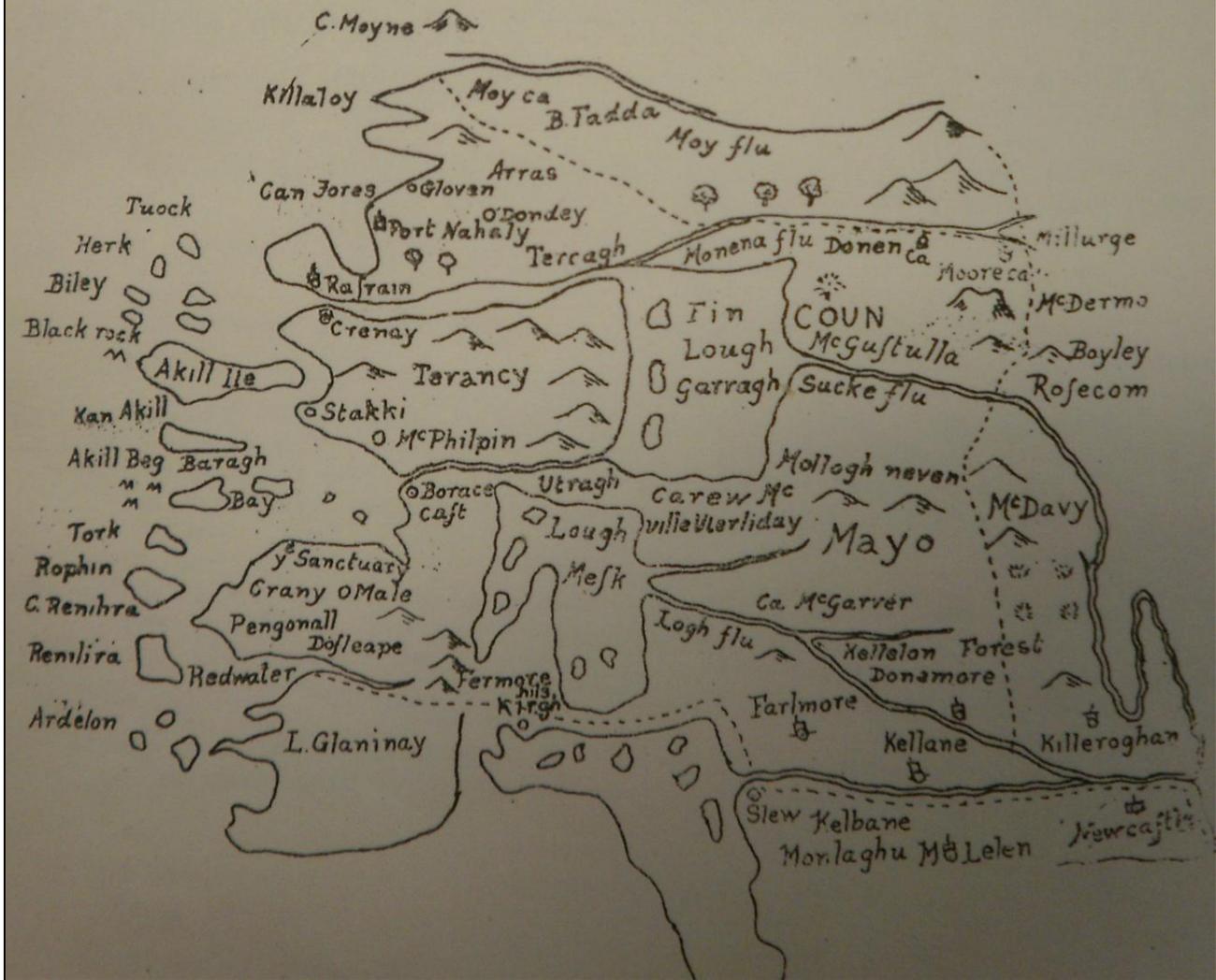
Plate 11. View of soil horizons noted in pre-development test trenches 1-3



Plate 12 View of pre-development test trench excavated through approach road

APPENDIX 6

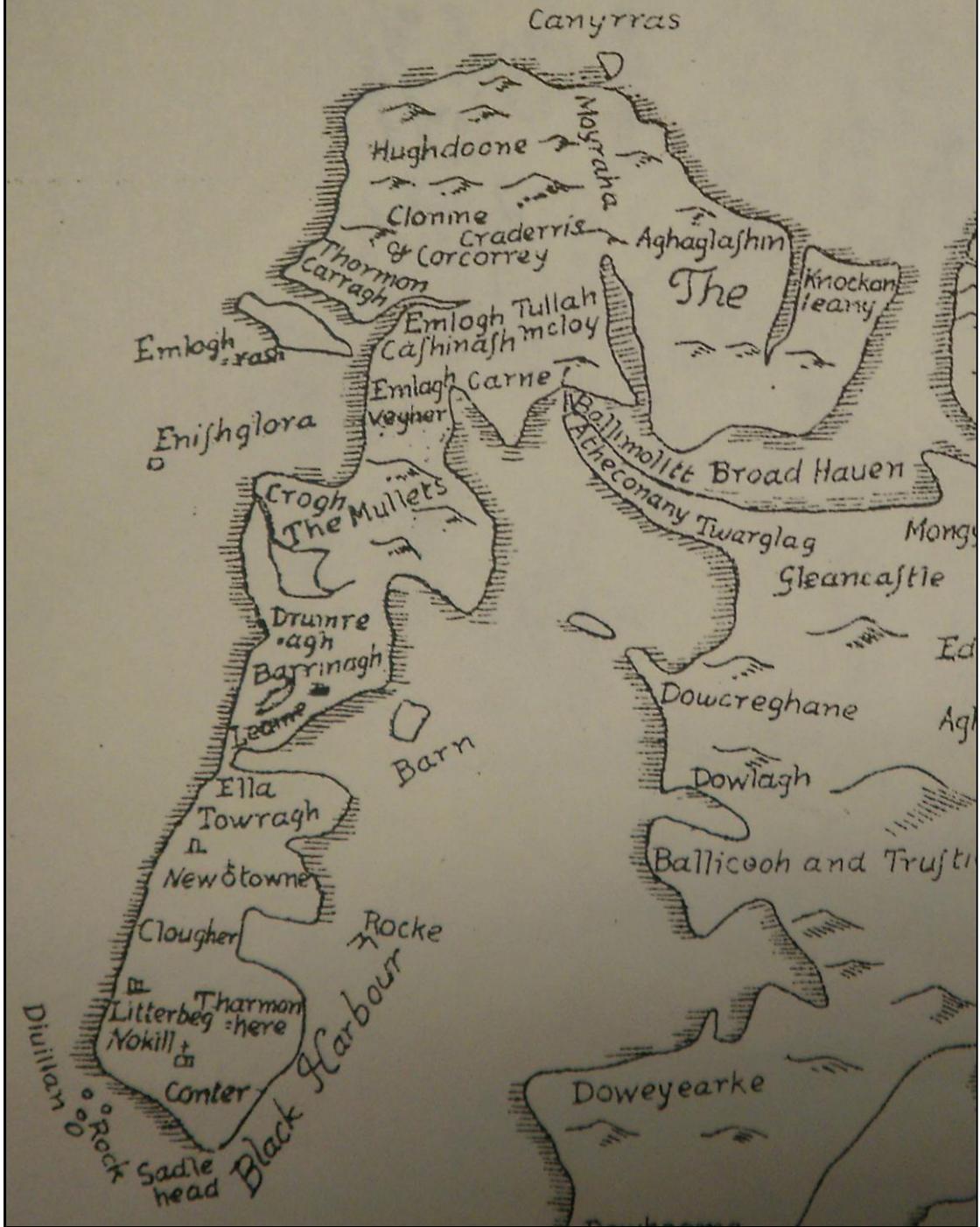
Mayo
 Enlarged from
 A prospect of the most famous parts
 of the World performed
 by John Speed
 Anno 1620



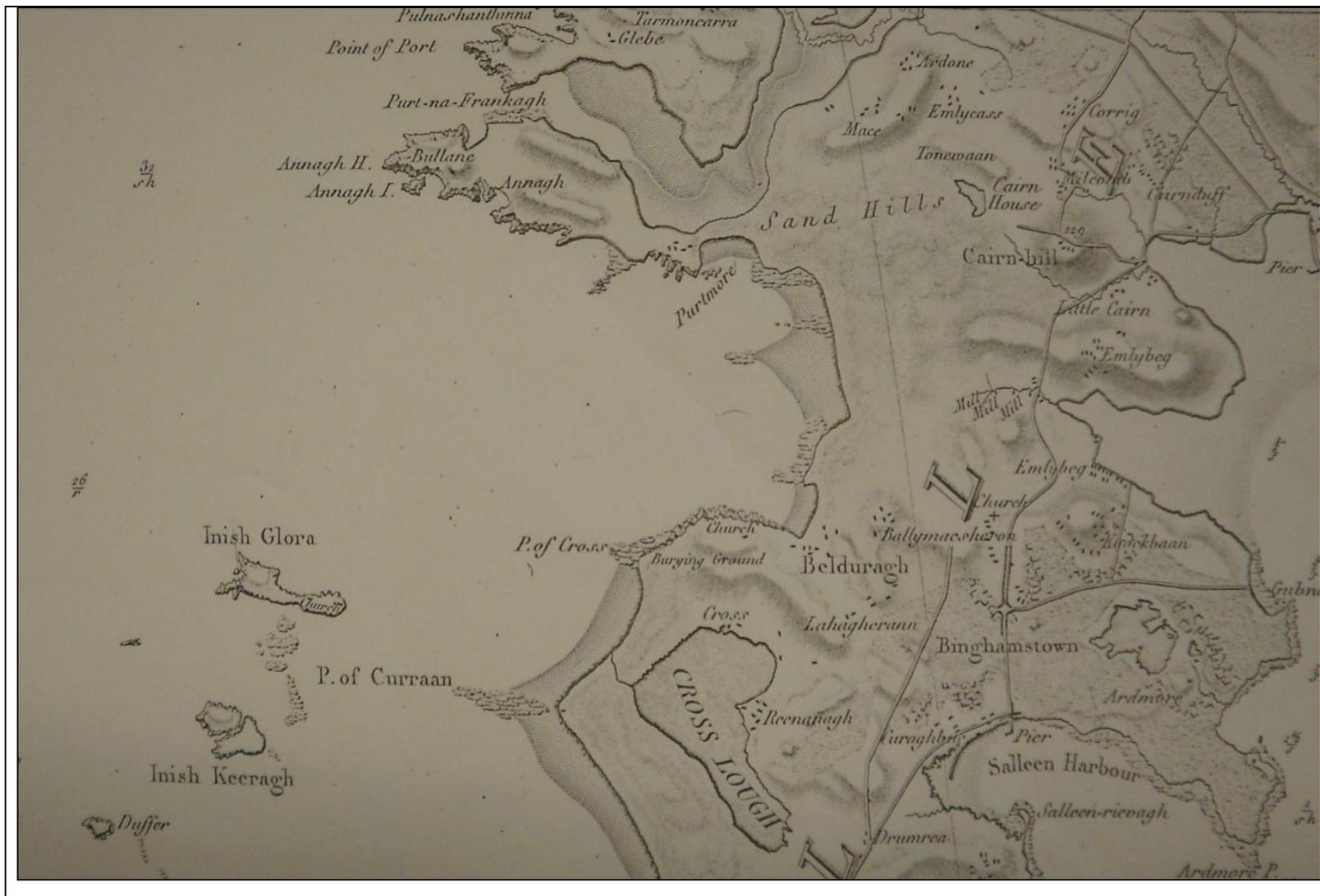
Extract from Speed's Map of County Mayo (1620)

Barony of Erris from Petty's Map of the
County of Mayo 1683

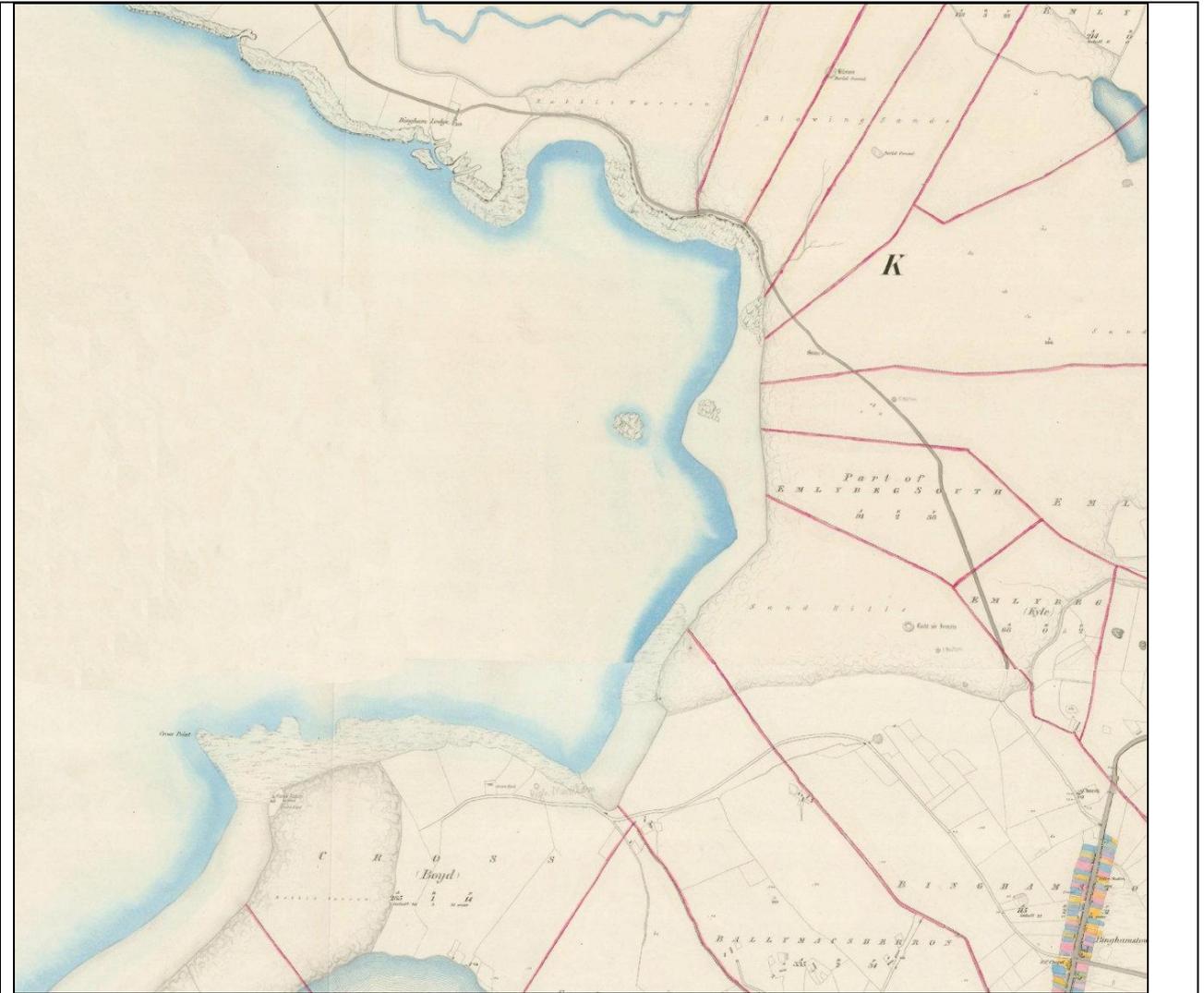
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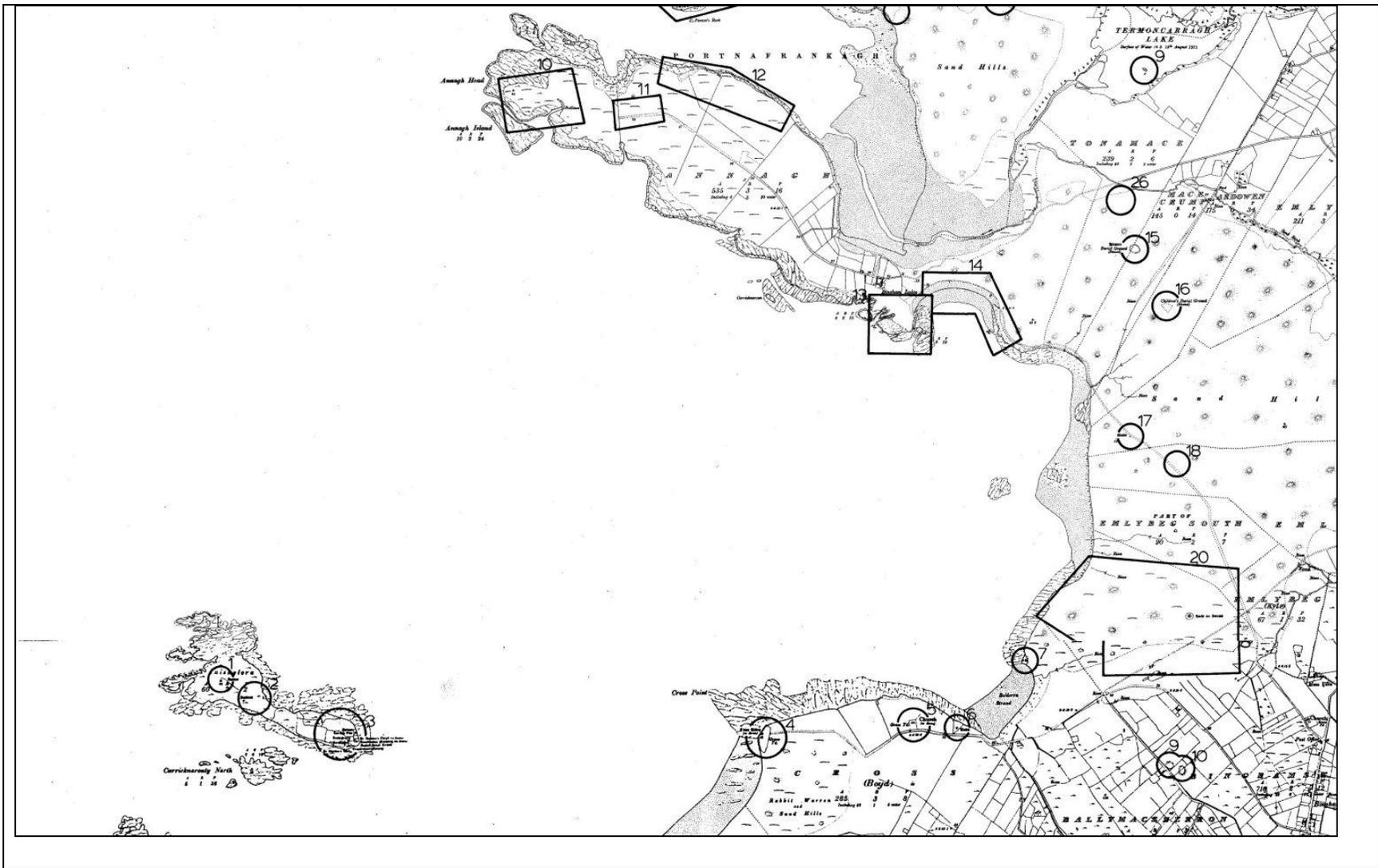
Extract from William Petty's Map of the Barony of Erris (1683)



Extract from Bald's Map of County Mayo 1817



Extract from the first edition Ordnance Survey map of County Mayo (1838)



Extract from the Co. Mayo RMP, sheets MA09 & MA016