

# MONA OFFSHORE WIND PROJECT

## Outline Onshore Written Scheme of Investigation

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**MONA OFFSHORE WIND PROJECT**

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## MONA OFFSHORE WIND PROJECT

### Glossary

Term	Meaning
Applicant	Mona Offshore Wind Limited.
Bronze Age	The time period 2,000 to 700 Before the Common Era.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Environmental Statement	The document presenting the results of the Environmental Impact Assessment (EIA) process for the Mona Offshore Wind Project.
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
Holocene	The current geological epoch commencing approximately 9,700 Before the Common Era.
Intertidal area	The area between MHWS and MLWS.
Iron Age	The time period 700 Before the Common Era to Anno Domini 43.
Landfall	The area in which the offshore export cables make contact with land and the transitional area where the offshore cabling connects to the onshore cabling.
Lower Palaeolithic	The time period 3,300,300 to 300,000 Before Present.
Medieval	The time period Anno Domini 410 to Anno Domini 1540.
Mesolithic	The time period 8,500 to 3,500 Before the Common Era.
Modern	The time period 1901 onwards.
Mona 400kV Grid Connection Cable Corridor	The corridor from the Mona onshore substation to the National Grid substation at Bodelwyddan.
Mona Offshore Wind Project	The Mona Offshore Wind Project is comprised of both the generation assets, offshore and onshore transmission assets, and associated activities.
Mona Onshore Cable Corridor	The corridor between MHWS at the landfall and the Mona onshore substation, in which the onshore export cables will be located.
Mona Onshore Development Area	The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction compounds), and the connection to National Grid substation will be located.
Post-medieval	The time period Anno Domini 1540 to 1901.
Prehistoric	The general term used for the time period before the Roman invasion of Anno Domini 43.
Roman	The time period Anno Domini 43 to Anno Domini 410.

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### Acronyms

Acronym	Description
AD	Anno Domini
BP	Before Present
CAT	Cable Avoidance Tool
CIfA	Chartered Institute for Archaeologists
DCO	Development Consent Order
GNSS	Global Navigation Satellite System
HER	Historic Environment Record
OS	Ordnance Survey
RTK	Real-Time Kinematic
SSWSI	Site Specific Written Scheme of Investigation
WWI	World War One (1914-1918)
WWII	World War Two (1939-1945)

### Units

Unit	Description
km	Kilometres
kV	Kilovolt
m	Metres

# 1 OUTLINE ONSHORE WRITTEN SCHEME OF INVESTIGATION

## 1.1 Introduction

1.1.1.1 This Outline Onshore Written Scheme of Investigation provides provisional information on the programme of post-consent archaeological investigation required with regards to the onshore elements of the Mona Offshore Wind Project.

1.1.1.2 These onshore elements are located in Conwy and Denbighshire, North Wales (Figure 1.1) and comprise:

- Mona Landfall (above Mean High Water Springs)
- Mona Onshore Substation
- Mona Onshore Cable Corridor
- 400kV Grid Connection Cable Corridor.

1.1.1.3 These elements are included in the Mona Onshore Development Area together with the construction compounds, accesses and other land that will be temporarily or permanently occupied during the construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project.

## 1.2 Purpose of the Outline Onshore Written Scheme of Investigation

1.2.1.1 The preparation of an Onshore Written Scheme of Investigation is secured as a requirement of the Draft Development Consent Order (DCO) (Document Reference C1 F05). The Onshore Written Scheme of Investigation must be submitted to, and approved by the relevant planning authority prior to the commencement of onshore works.

1.2.1.2 This is an outline document that is based on the design set out in Volume 1, Chapter 3: Project description of the Environmental Statement.

1.2.1.3 The Outline Onshore Written Scheme of Investigation should be read in conjunction with the Outline Code of Construction Practice (Document Reference J26 F03) and its supporting appendices.

1.2.1.4 Archaeological research and fieldwork undertaken ahead of the submission of the application for a DCO for the Mona Offshore Wind Project is reported in the following documents:

- Volume 7, Annex 5.1: Desk based assessment (APP-143) – this provides a detailed review of the known and potential archaeological resources within the Mona Onshore Development Area and a defined buffer zone around this area (the historic environment study area)
- Volume 7, Annex 5.3: Onshore geophysical survey report (APP-145 and APP-146) – this describes the results of a programme of purposive archaeological geophysical survey undertaken within almost all of the Mona Onshore Development Area
- Volume 7, Annex 5.4: Intertidal survey report (APP-147) – this describes the results of an archaeological walkover and drone-based survey within the intertidal part of the landfall, and includes a technical report which reviews the available geoarchaeological data and presents a deposit model for this intertidal area

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- Volume 7, Annex 5.5: Trial trenching report (APP-148 and APP-149) – this describes the interim results of a programme of archaeological trial trenching undertaken within the Mona Onshore Development Area.
- Detailed trial trenching report containing the full results of a programme of archaeological trial trenching undertaken within the Mona Onshore Development Area – to be submitted into Examination at Deadline 6 (S\_D6\_7)

1.2.1.5 The programme of trial trenching referenced in the final two bullet points above has been agreed with the relevant stakeholders, specifically the Planning Archaeologists at Heneb covering Conwy and Denbighshire, and comprises a total of 284 trenches within the Mona Onshore Development Area. These trenches are located in order to examine anomalies of potential archaeological interest identified by the geophysical survey and agreed with Heneb in the Statement of Common Ground (REP1-035), and also to examine areas that appear to be archaeologically ‘blank’ or which were not subject to geophysical survey.

1.2.1.6 The interim report regarding the programme of trial trenching (Volume 7, Annex 5.5: Trial trenching report (APP-148 and APP-149) ) describes the findings across a total of 75 trenches which were excavated and recorded during the period September-October 2023.

1.2.1.7 The programme of trail trenching resumed in March 2024 and concluded in September 2024, with a total of 261 trial trenches having been excavated. Of the original 284 planned trenches 23 could not be excavated due to being located in inaccessible areas, subsequently falling outside of the revised Order Limits, or being constrained by topographic features. The full results are reported in the detailed trial trenching report (S\_D6\_7).sent with this outline Onshore WSI (J23 F03) and to be submitted at Deadline 6.

1.2.1.8 The examination of geoarchaeological data referenced in the third bullet point above has established that there is a low potential for the presence of deposits of geoarchaeological and/or palaeoenvironmental interest within the intertidal part of the landfall. On this basis, no further archaeological work is proposed within this area.

### **1.3 Scope of the Outline Onshore Written Scheme of Investigation**

1.3.1.1 The scope of this Outline Onshore Written Scheme of Investigation applies to the onshore site preparation works of the Mona Offshore Wind Project located landward of MLWS. The document does not apply to activities associated with offshore works (i.e. seaward of MLWS).

1.3.1.2 Onshore site preparation works will be undertaken prior to the commencement of construction as defined in the DCO (C1 F05). These works will be undertaken in line with this Outline Onshore Written Scheme of Investigation.

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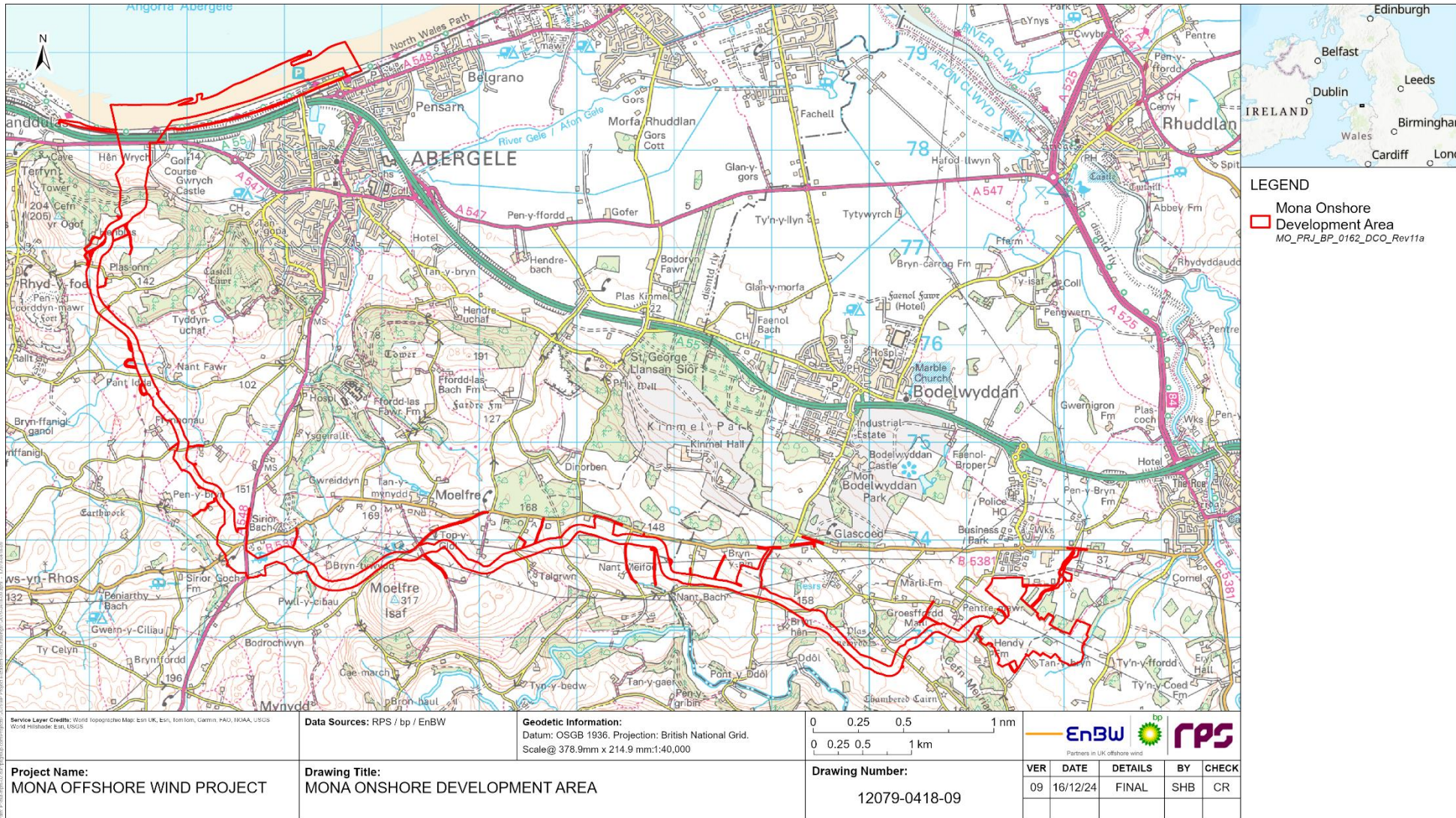


Figure 1.1: Mona Onshore Development Area



## 1.4 Archaeological and historic background

### 1.4.1 Overview

1.4.1.1 The following information is derived from the appropriate elements of the historic environment desk-based assessment (Volume 7, Annex 5.1: Desk-based assessment (APP-143) and the programmes of project-specific fieldwork.

### 1.4.2 Prehistoric

1.4.2.1 The general area of the Vale of Clwyd has a long history of human occupation. Excavation in several of the caves in the Lower Elwy Valley has produced evidence of early prehistoric habitation, in some cases dating as far back as the Lower Palaeolithic period. At Pontnewydd Cave the early Neanderthal material represent the oldest hominin remains in Wales (recently dated to c. 230,000 Before Present (BP)), whilst other important material has been recovered from the Brasgyll, Galltfaenan, Cefn and Cae Gronw caves (*cf.* Aldhouse-Green *et al.* 1996).

1.4.2.2 This very early material has survived within the caves and rock shelters in the higher parts of the limestone uplands. Subsequent advances and retreats of ice sheets have changed the lower-lying parts of the landscape on numerous occasions through to the ending of the most recent glacial episode at about 12,000 BP. As the ice sheet diminished, sea levels in the area started to rise quickly and much of what is currently dry land would have been inundated. Studies in the Liverpool Bay area indicate that the sea level reached a high stand (maximum peak) at about 2,300 BP before beginning to fall back again (Tooley 1978; 1985).

1.4.2.3 This process of sea level rise and fall was not a constant process; there would have been many periods of marine transgression and regression. During more stable times, land surfaces would have developed, only to be inundated and covered (and possibly eroded through subsequent regressive stages). Evidence for these sequences is in the form of Holocene peat deposits that have been found at depths of 10 m and 13 m below current ground level close to the mouth of the River Clwyd.

1.4.2.4 Most of the material found on the foreshore is broadly attributable to the Neolithic and Bronze Age periods. However, an antler mattock from here has been recently dated to c. 4,560 BC and it is increasingly clear that there was a considerable amount of activity in the area during the Mesolithic period (Murphy 2002). The higher ground at Abergele is set on a ridge of Clwyd Limestone and would have remained above the sea level high stands; it probably represents the most seaward habitable land at such times.

1.4.2.5 Shell middens have been identified at Prestatyn, where consumption of mussels in the Mesolithic period suggest a rocky coastline and a subsequent change to a largely cockle-based consumption in the Neolithic indicates the development of sandy beaches.

1.4.2.6 Neolithic material in the form of worked flint has also been recorded at Rhuddlan, associated with small pits. Isolated finds of this period have been recorded from a number of locations in the upper Vale of Clwyd (and on the foreshore), mostly implements of stone (including flint) and also some sherds of pottery.

1.4.2.7 Within the study area the earliest evidence for human activity derives from the possible site of a Bronze Age round barrow or burial monument, indicated by both place name evidence and a record of a concentration of stones, located approximately 125 m north of the Mona Onshore Development Area in its mid-section. A possible Bronze Age

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barrow cemetery formed of six mounds is recorded approximately 350 m to the south of the Mona Onshore Development Area.

- 1.4.2.8 Iron Age activity in the general area is demonstrated by the presence of settlements including hillforts on the higher ground such as those at Castell Cawr and Pen-y-Corddyn-Mawr. The regional Historic Environment Record (HER) identifies a possible prehistoric field system on the alignment of the Mona Onshore Development Area, whilst two possible prehistoric enclosures have been recorded approximately 140 m from the Mona Onshore Development Area in separate locations.
- 1.4.2.9 These features could date to the Iron Age period, but without further investigation a later date cannot be precluded.
- 1.4.2.10 The Tan-yr-Ogof Caves are located approximately 350 m to the west of the Mona Onshore Development Area near the coast at Abergele. It is suspected, but yet to be proven, that the caves were utilised during the Prehistoric period.
- 1.4.2.11 The Ffrith y Llwynog prehistoric earthworks are located within 50 m of the mid-section of the Mona Onshore Development Area. Aerial photography identified a complex of earthworks surviving on a less plough-denuded section of the hillside. The earthworks comprise of two probable hut circles and related sections of sinuous field bank, accompanied by other more modern agricultural marks.

### 1.4.3 Roman

- 1.4.3.1 Activity during the Roman period is clearly linked to the military conquest and occupation of the area. The major Roman road leading west from the legionary fortress of *Deva* or *Deva Vetrrix* (Chester) to the forts at *Canovium* (Conway) and *Segontium* (Caernarfon) passes through the historic environment study area primarily along the line of Glascoed Road. A possible Roman fort may be located at St Asaph, approximately 750 m to the northeast of the Mona Onshore Development Area.
- 1.4.3.2 At Gwreiddyn the proposed alignment of the Roman road heading west departs from the modern road alignment, continuing on an east/west alignment crossing the River Gele at Sirior Hir, and departing the historic environment study area in the vicinity of Bryn-ffanigl Uchaf. The postulated route of the Roman road has the potential to cross the Mona Onshore Development Area in up to four different locations. St Asaph may be the site of the documented Roman fort of *Varae* (Silvester 2003).

### 1.4.4 Medieval

- 1.4.4.1 St Asaph appears to have continued to develop as the pre-eminent centre of activity within the historic environment study area. Documentary sources refer to King Offa's victory over the Welsh at Rhuddlan (*Bellum Rudglann*) in Anno Domini (AD) 796, although the actual location of any battle remains conjectural at this stage.
- 1.4.4.2 At St Asaph documentary evidence suggests that a monastery and episcopal see may have been founded here as early as Anno Domini (AD) 560 by the exiled Cyndeyrn (St Kentigern), with St Asaph succeeding Kentigern as bishop following the latter's return to Scotland. In Domesday the settlement here is referred to as *Llanuile* (Llanelwy) and this was changed to St Asaph around the middle of the 12<sup>th</sup> century. Construction of the cathedral had started by 1239 but the building was burned by troops of Edward I in 1282.
- 1.4.4.3 Outside of the main centre at St Asaph, settlement in the area would mainly have been in the form of small hamlets and isolated farms, as shown in the Domesday Survey of 1086.

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- 1.4.4.4 Field name evidence may suggest the former presence of a Medieval stone cross located approximately 250 m south of the Mona Onshore Cable Corridor.
- 1.4.4.5 Analysis of aerial survey data has identified a potential concentration of ridge and furrow earthworks (evidence of agricultural activity during the Medieval and early Post-medieval periods) in the vicinity of Groesffordd Marli, approximately 300 m to the north of the Mona Onshore Development Area. Further ridge and furrow earthworks have been recorded at Hendy Farm, a short distance southwest of the Mona Onshore Substation.
- 1.4.4.6 Archaeological investigations at St Asaph, approximately 1 km northeast of the Mona Onshore Development Area, have recorded several Medieval pits among other later remains.

### 1.4.5 Post-medieval and modern

- 1.4.5.1 During the Post-medieval period the settlement pattern within the Vale of Clwyd continued to evolve, with hamlets growing or coalescing into villages. Some isolated farms disappeared, whilst some hamlets declined to become single farmsteads or occasionally were totally deserted.
- 1.4.5.2 Sites of this period recorded on the Historic Environment Record (HER) include: settlements; farmsteads; existing buildings of interest or the former locations of such buildings including chapels, sheepfolds, and an icehouse; milestones; mines and mine shafts; limekilns; quarries; field systems; enclosures; an orchard; wells; ponds; trackways and coastal wrecks.
- 1.4.5.3 A review of the mid-19<sup>th</sup> century Tithe mapping for the region confirms the presence of two structures within the Mona Onshore Development Area, namely Cerrig Goch and Serrior, that are not present on the later historic mapping and are presumed to have been demolished by the late 19<sup>th</sup> century. The other buildings depicted on the Tithe mapping are represented by structures sited in the same locations as shown on the 1<sup>st</sup> edition Ordnance Survey (OS) 6" (to the mile) mapping, representing a continuity of occupation. Otherwise, the Tithe maps confirms the agricultural character of the land within the Mona Onshore Development Area at this time. This is supported by a review of the 1<sup>st</sup> edition OS 6" (to the mile) mapping, the landscape features of which have been comprehensively logged as HER records (see above).
- 1.4.5.4 The major 20<sup>th</sup> century changes in the area have been the expansion of existing settlements, the establishment of residential development and holiday camps in the land between the North Wales Main Line railway and the sea, and also the construction of new roads cutting across the landscape, which includes the A55 trunk road.
- 1.4.5.5 There is a concentration of features dating to both World War One (WWI) and World War Two (WWII) located in both Kinmel and Bodelwyddan Parks and within 500 m of the Mona Onshore Development Area. A WWII lookout position is recorded approximately 500 m to the west of the Mona Onshore Development Area.
- 1.4.5.6 A number of these Post-medieval and Modern sites lie within the Mona Onshore Development Area, including 21 farmsteads/buildings, one Post-medieval wreck, and one aircraft crash site. A review of the military records held at the National Archives regarding the aircraft crash site does not provide any specific detail relating to the location of the crash, although supporting sources indicate the crash took place near the village of Bodelwyddan, outside of the Mona Onshore Development Area.

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### 1.5 Surveys

#### 1.5.1 Geophysical survey

1.5.1.1 A programme of archaeological geophysical survey has been undertaken within the Mona Onshore Development Area. This comprised magnetometer survey; the methodology and scope of the survey was agreed in advance with the appropriate stakeholders.

1.5.1.2 The archaeological geophysical survey only identified a small number of anomalies of probable archaeological interest in relation to the total area surveyed, potentially relating to field systems or low density occupation activity. A number of undetermined linear and discrete anomalies have also been identified which could relate to isolated boundary ditches, former trackways, or extraction pits. The majority of anomalies identified either related to Post-medieval or Modern farming practices or are considered natural in origin. The results of the geophysical survey are presented in Volume 7, Annex 5.3: Onshore geophysical survey (APP-145 and APP-146).

#### 1.5.2 Trial trenching

1.5.2.1 As described above in paragraphs 1.2.1.5 to 7, the agreed programme of archaeological trial trenching was paused at the end of October 2023 due to poor ground conditions, with 75 trenches completed out of the original total of 284. A further 186 trial trenches were excavated between March and September 2024. Of the 23 unexcavated trenches, 12 trenches either fell outside of the revised Order Limits or could not be excavated due to topographic constraints. The remaining 11 trenches which were inaccessible during the fieldwork programme will be undertaken in advance of construction.

1.5.2.2 The trial trenching recorded multiple concentrations of occupation activity within the Mona Onshore Development Area, the dates of which have yet to be confirmed. Most notable was a concentration recorded within the trial trenches in a location within the northern part of the park at Gwrych Castle close to the landfall. A second concentration was identified at the site of the Mona Onshore Substation, with smaller concentrations of material also recorded within a few other locations. Multiple isolated linear and discrete features were found in trial trenches throughout the Mona Onshore Development Area, some of which were detected as geophysical anomalies and all of which remain undated, while the remaining trial trenches were devoid of archaeological features. The results of the trial trenching completed up to the end of October 2023 are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement, with the full trial trenching results presented in the detailed trial trenching reporting to be submitted at Deadline 6 (S\_D6\_7).

### 1.6 Further archaeological work

#### 1.6.1 Introduction

1.6.1.1 The programme of post-consent archaeological work will comprise the detailed archaeological investigation of land within the Mona Onshore Development Area where the results of the historic environment desk-based assessment, the archaeological geophysical survey and the programme of trial trenching indicate the presence of archaeological sites or features. These investigations will be undertaken ahead of the commencement of construction in the areas where the further

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archaeological work is required. In specific locations there will also be a programme of archaeological monitoring during construction.

- 1.6.1.2 Consultations have been undertaken with the appropriate Planning Archaeologists at Heneb to determine the number and locations of the areas where detailed archaeological investigation is required. As a result of these discussions, the outline areas for archaeological mitigation are shown in Figures 1.2 to 1.6. In relation to the 11 trial trenches which have not yet been completed, these trenches will be excavated in advance of construction and the results communicated to the Planning Archaeologist in order to establish if any additional areas of detailed archaeological investigation are required.
- 1.6.1.3 For each area of detailed archaeological investigation, or groups of areas where appropriate, a Site Specific Written Scheme of Investigation (SSWSI) will be submitted to, and agreed by, the relevant Planning Archaeologist at Heneb. The SSWSI will clearly identify the area(s) to be investigated and will set out the justification in terms of the known and potential archaeology at that location. Site specific aims and objectives will be identified, with appropriate references to the Research Framework for the Archaeology of Wales (Archaeoleg, 2023).
- 1.6.1.4 Three areas of archaeological watching brief (monitoring during construction) are proposed (Figures 1.2 – 1.6, Areas H, N and AA). One or more SSWSIs will be submitted to, and agreed by, the relevant Planning Archaeologist at Heneb. Each SSWSI will clearly identify the area(s) to be archaeologically monitored and will set out the justification in terms of the known and potential archaeology at that location. Site specific aims and objectives will be identified, with appropriate references to the Research Framework for the Archaeology of Wales (Archaeoleg, 2023).
- 1.6.1.5 No overarching archaeological watching brief (monitoring of construction) is proposed, nor any areas where archaeological remains will be preserved *in situ* are proposed. Within each area of detailed archaeological investigation or monitoring, consideration will be given regarding the potential for the *in situ* preservation of significant archaeological remains should any such remains be identified. The outcome of this consideration will depend on the nature of construction activities at that location and also on the physical characteristics of the archaeological remains.

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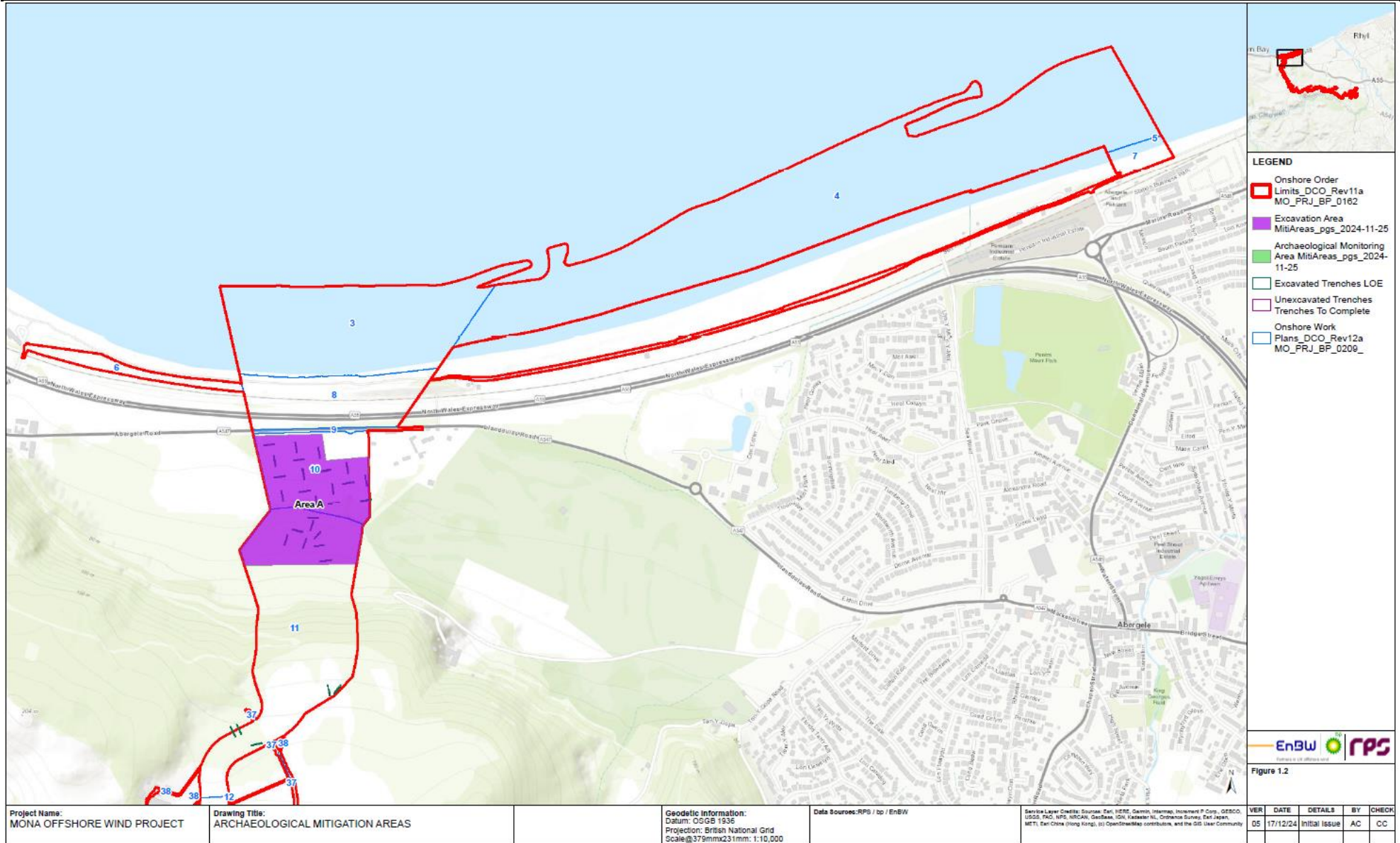


Figure 1.2: Archaeological mitigation areas (sheet 1)

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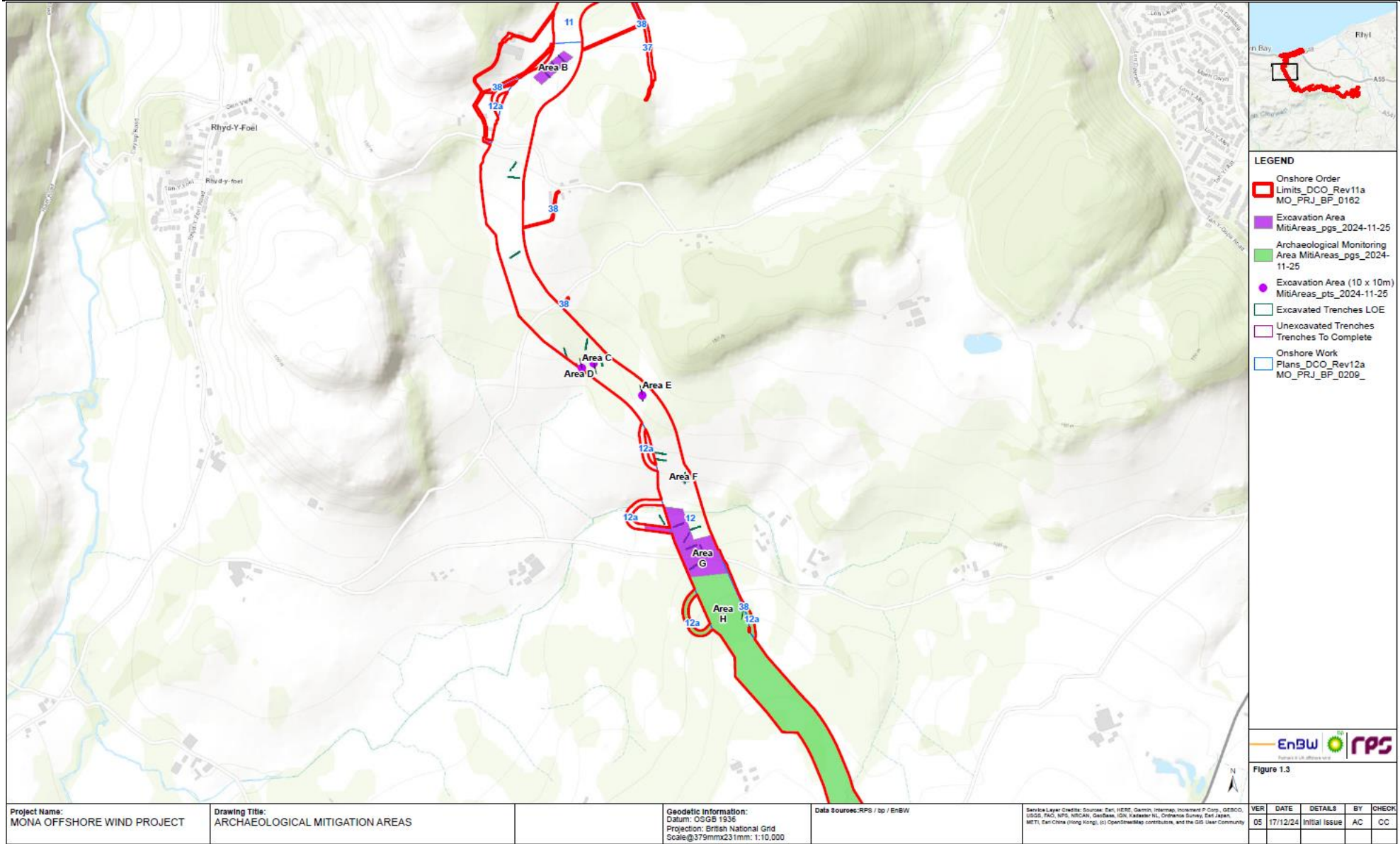
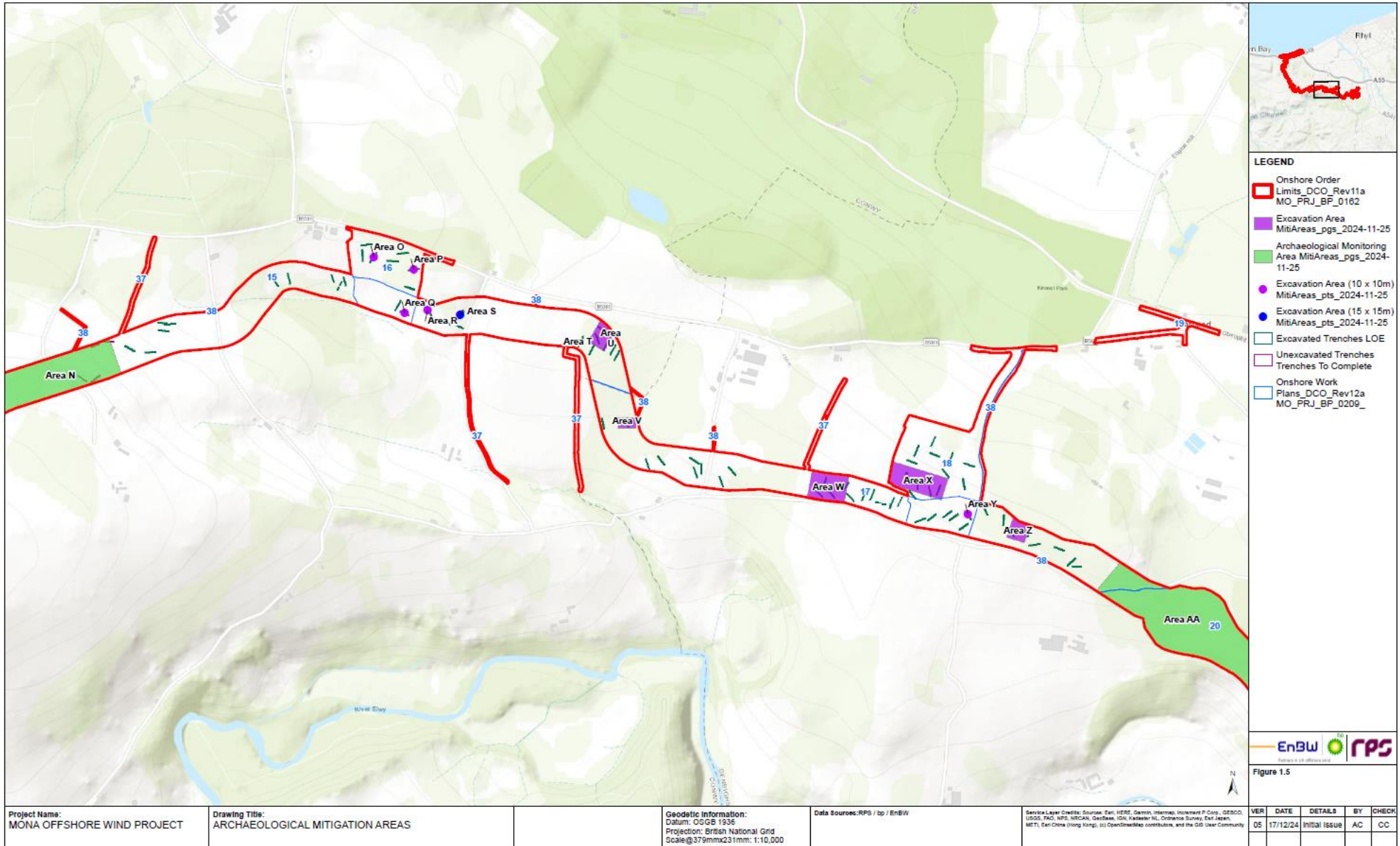


Figure 1.3: Archaeological mitigation areas (sheet 2)





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**Figure 1.5: Archaeological mitigation areas (sheet 4)**



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### 1.6.2 General

- 1.6.2.1 The detailed archaeological investigations will be undertaken by one or more specialist archaeological contractors who will be Registered Organisations with the Chartered Institute for Archaeologists (CIfA). Procurement of the archaeological contractor(s) will be in accordance with the relevant CIfA standard and guidance (CIfA 2020a).
- 1.6.2.2 The fieldwork, post-excavation, reporting and archiving will be managed by Members or Associated members of CIfA, and the CIfA Code of Conduct (CIfA 2022) will be adhered to at all times.
- 1.6.2.3 The appropriate Planning Archaeologists at Heneb will be given reasonable prior notice of any archaeological work within the Mona Onshore Development Area. A programme of monitoring of the archaeological investigations in the field shall be agreed in advance between the archaeological contractor(s), the Applicant's appointed representative(s) and the appropriate Planning Archaeologists at Heneb. The timing and frequency of each monitoring visit will be agreed in advance with all parties.
- 1.6.2.4 As part of the works, opportunities will be taken, where feasible, to engage in outreach activities through which the results of the archaeological investigations can be made available to a wider audience. This may include the provision of information for web-based updates and communications.

### 1.6.3 Fieldwork

- 1.6.3.1 The fieldwork will be undertaken in accordance with the relevant CIfA standard and guidance documents (CIfA 2020b; CIfA 2023a; CIfA 2023b; CIfA 2023c; CIfA 2023d).
- 1.6.3.2 The areas of detailed archaeological investigation will be set out using a real-time kinematic (RTK) global navigation satellite system (GNSS), accurate to 0.02 m, based upon the agreed area plan. The area will then be scanned using an appropriate proprietary Cable Avoidance Tool (CAT), operated by a suitably qualified and experienced person. The position of any potential services will be marked out and demarcated, with the areas of potential services being avoided. Once the area has been deemed clear, mechanical excavation will commence.
- 1.6.3.3 In relation to both the detailed archaeological investigations and areas of archaeological monitoring, the modern topsoil and subsoil will be removed by mechanical excavator using a toothless ditching bucket, under direct supervision of a suitably qualified and experienced archaeologist, in stratigraphic order to natural geology, stopping at the first significant archaeological remains. Machine excavation will proceed in level spits of approximately 50–200 mm until either the archaeological horizon or the natural geology is reached. The excavated material will be banded in a designated location. In relation to the detailed archaeological investigations plant movements will be restricted to running on the topsoil until signed off (to be confirmed by email by the appropriate Planning Archaeologist at Heneb); there is to be no running of plant or vehicles on the stripped surface until this sign-off has occurred.
- 1.6.3.4 Once the mechanical excavation of the area has been completed, the archaeologists will inspect and survey the stripped surface, cleaning where necessary, to map all the visible potentially significant archaeological remains. Any remains will be assessed for cleaning and hand excavation. The mapping of the archaeological remains will be undertaken by RTK GNSS tied into the OS grid and Ordnance Datum.
- 1.6.3.5 Within the areas of detailed archaeological investigation, where remains of archaeological significance are identified in close proximity to the archaeological limit of excavation, discussions with the appropriate Planning Archaeologists at Heneb will

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be undertaken to establish if the agreed area of detailed archaeological investigation requires extending, and the potential scope of any such extensions that might be required.

- 1.6.3.6 If archaeological remains are identified within the areas of archaeological monitoring, all work will cease at this location and the remains will be fenced off. The appropriate Planning Archaeologist at Heneb will be contacted and a suitable level of archaeological excavation and recording will be agreed. Time will be made available by the Principal Contractor for the archaeological excavation and recording to take place. Once the archaeological recording has been completed to the satisfaction of the appropriate Planning Archaeologist at Heneb, the area will be handed back to the Principal Contractor.
- 1.6.3.7 The appropriate levels of sampling of archaeological features will be agreed with the appropriate Planning Archaeologist at Heneb and set out in the SSWSI for each area. The proposed general approach is:
- Intersections of potentially significant ditches and gullies will have all relationships defined, investigated and recorded though 100% excavation (all terminals will be excavated). Some 10% by length of linear features will be excavated to determine their character over the exposed course, achieved via a sequence of slots and excavation of terminals and junctions to aid understanding/dating
  - A minimum of 50%, by volume, of all discrete features, post-holes and pits, will be excavated
  - 20% excavation of ring gullies, including slots at each terminus and at strategic locations around the feature
  - All funerary contexts will be fully excavated and all relationships recorded
  - For other types of features, further investigation will be a matter of on-site judgement in discussion with the senior planning archaeologist at CPAT
  - Sufficient artefact assemblages will be recovered (where possible) to assist in the dating of the stratigraphic sequence and for comparison with other sites.
- 1.6.3.8 The presumption is that all excavation works detailed above will be undertaken by hand. However, in limited circumstances excavation plant may be used to assist the excavation methodology, in particular where:
- Deep archaeological strata can only be safely investigated by stepping or battering a localised sondage; or
  - A large number of slots are proposed to meet percentage requirements across extensive features, particularly where the aim is to recover dating evidence beyond feature characterisation; or
  - Sterile/natural layers are encountered that mask archaeologically significant strata.
- 1.6.3.9 The use of excavation plant within the area of investigation after the initial stripping phase will be confirmed and agreed with the appropriate Planning Archaeologist at Heneb prior to any such use.
- 1.6.3.10 A context-based recording system acceptable to the appropriate Planning Archaeologists at Heneb will be used to record all archaeological deposits, features etc. Pro-forma sheets will be used to record all relevant information.
- 1.6.3.11 A digital photographic record of the archaeological works will be compiled in accordance with the relevant guidance document (Historic England, 2015).

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Photographs will illustrate both the detail and context of the principal archaeological features discovered. A selection of representative feature group/area shots will also be taken, if appropriate. All photographic records will include information detailing: site name and number/code, date, context, scale and orientation. All photographs will be cross-referenced onto the context records.

- 1.6.3.12 In the event of the discovery of human remains, these will be left *in situ* and not further examined. The Applicant's appointed representative(s) will be informed immediately, as well as the appropriate Planning Archaeologist at Heneb. An appropriately qualified and experienced human osteoarchaeologist employed by the archaeological contractor should visit the site to provide further advice including confirming whether the human remains were interred less than 100 years ago. The Draft DCO (Document Reference C1) sets out the process that will be followed in relation to human remains interred less than 100 years ago.
- 1.6.3.13 If removal of human remains is necessary, an exhumation licence will be obtained from the appropriate authorities (currently the Ministry of Justice) by the archaeological contractor in accordance with the Burials Act 1857 (amended 1981). All conditions attached to that licence will be complied with. All excavation and post-excavation work regarding human remains will be undertaken in line with the standards set out in IfA Technical Paper No. 13 (McKinley and Roberts, 1993).
- 1.6.3.14 Environmental sampling will be targeted upon potentially significant archaeological deposits or features and will predominantly examine sealed and well-dated contexts. Sample size will take into account the frequency with which material appropriate for sampling will occur, but bulk samples will normally be a minimum of 30 litres. Sampling strategies (on- and off-site) will principally derive from the appropriate guidance document (English Heritage, 2011).
- 1.6.3.15 If archaeological deposits are found to have significant potential for the presence of palaeoenvironmental material, advice will also be taken from the appropriate Planning Archaeologists at Heneb on the need to extract, process and further examine environmental samples.
- 1.6.3.16 Bulk sampling may also be used to collect charcoal for radiocarbon dating where appropriate.
- 1.6.3.17 All artefacts and animal bones will be recorded, collected and labelled according to their individual stratigraphical context. Artefacts of clearly modern date will be recorded but not retained for off-site assessment. Finds from each archaeological context will be allocated an individual finds tray/bag and waterproof labels will be used for each tray/bag to identify unique individual contexts.
- 1.6.3.18 On-site conservation advice may be necessary prior to lifting of and initial treatment of fragile objects. All finds and samples will be exposed, lifted, cleaned, conserved, marked, bagged and boxed according to guidelines produced by the United Kingdom Institute for Conservation and other bodies (IFA, 1992; UKIC 1983; Watkinson and Neal, 2001). Iron finds may require X-rays prior to conservation and similarly residues on pottery may require study ahead of any conservation, which may be appropriate.
- 1.6.3.19 In the event of the discovery of waterlogged wood and other organic material, this material will be dealt with in accordance with the relevant guidance documents (English Heritage, 2010; Historic England 2018).
- 1.6.3.20 Where there is evidence for industrial activity, macroscopic technical residues (or a sample of them) will be collected by hand. Separate samples (c. 10ml) will be collected for micro-slugs (hammerscale and spherical droplets). Collection and treatment will be in accordance with the relevant guidance document (Historic England, 2015b). X-

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radiography of a sample of industrial debris will be carried out during the post-fieldwork stage of the work.

- 1.6.3.21 In the event of the discovery of an artefact that may fall within the remit of the Treasure Act 1996 and the Treasure (Designation) (Amendment) Order 2006, the Applicant's appointed representative(s), the Coroner and appropriate Planning Archaeologist at Heneb will be informed within 14 days. All finds of potential treasure will be removed to a safe place. The definition of treasure is provided in the 2003 Code of Practice of the above act and primarily refers to items of gold or silver.

### 1.6.4 Reporting

- 1.6.4.1 A draft interim report will be produced within six weeks of the completion of the archaeological work at each area of investigation. Following agreement of the draft interim report with the Applicant, a digital copy (either in pdf or .doc format) will be supplied to the appropriate Planning Archaeologists at Heneb for verification and review. When the report has been agreed a digital final copy will be provided to the appropriate Planning Archaeologists at Heneb. A digital copy in PDF format will be provided to the regional HER on the understanding that it will become a public document after an appropriate period of time (generally not exceeding six months).

- 1.6.4.2 Following completion of the full programme of archaeological work within the Mona Onshore Development Area, the archaeological contractor(s) will produce an assessment report outlining the results of the archaeological investigations. This assessment report will describe the programme of work undertaken including any sampling that was carried out. Samples will be quantified and a selection of samples will be assessed in order to provide information on their potential for further detailed analysis. The assessment report will include recommendations for further analysis and for any scientific dating that may be appropriate.

- 1.6.4.3 The report will include, as a minimum:

- A front sheet (setting out the project/site name, National Grid References to minimum eight figures, description of task(s) undertaken, date and duration of the fieldwork, site code/number)
- A non-technical summary of the work including the results
- Identity of the organisation(s) and individuals who carried out the work
- A general introduction to the project including site description
- Aims and objectives
- Methodologies employed to undertake the works
- Descriptive text presenting the results of the work including finds and environmental data where appropriate
- Quantifications of the finds recovered and environmental samples taken
- Interpretation and discussion of the results
- Assessment of the significance of any archaeological remains
- Assessment of the potential of any data for further analysis
- Proposals for publication of the further analysis in an appropriate format, subject to further discussion with the appropriate Planning Archaeologists at Heneb regarding the appropriate publication vehicle and the nature/extent of the report

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- An updated Project Design
- A synopsis of the envisaged final report for publication
- Details of the scale, nature and location of the archive and the intended place of deposition
- Report bibliography
- Sufficient illustrations to support the text including figures to show the location of the scheme in a regional and local context, locations of all works undertaken, detailed plans and sections as appropriate.

1.6.4.4 The draft assessment report will be produced within four months of the completion of the final fieldwork element. Following agreement of the draft report with the Applicant, a copy will be provided to the appropriate Planning Archaeologists at Heneb for comment.

1.6.4.5 Following agreement of the assessment report, a final report will be prepared for publication in an appropriate format as described within the assessment report. The timetable for the production of the final report will be described within the assessment report.

1.6.4.6 The involvement of the Applicant and the appropriate Planning Archaeologists at Heneb will be acknowledged in any report or publication generated by the programme of archaeological work.

1.6.4.7 Copyright of all reports prepared by the archaeological contractor(s) will be retained by the archaeological contractor(s) under the terms of the Copyright, Designs and Patents Act (1988) with all rights reserved, excepting that the archaeological contractor(s) provides an exclusive licence to the Applicant for the use of the reports in all matters relating to the project and to the local planning authorities with regard to the provision of planning advice and public awareness of the historic environment.

### 1.6.5 Archive

1.6.5.1 The project archive consists of the records relating to the programme of archaeological work, including written records, photographs, drawings and artefacts. The archaeological contractor(s) will ensure that the archive is fully catalogued, indexed, cross-referenced and checked for consistency.

1.6.5.2 The archive will be prepared in accordance with procedures outlined in relevant standards and guidance documents (*cf.* ClfA 2020c; MGC 1992; NPAAW 2017; RCAHMW 2015; SMA 1995; UKIC 1984; WAT 2022) and any procedures adopted by the recipient museum and the National Monuments Record of Wales. The archaeological contractor(s) will ensure that the archive is deposited with the recipient museum and that a storage grant is provided in line with the requirements of the recipient museum.

1.6.5.3 The retained artefacts remain the property of the landowner with the exception of human remains and any artefacts that fall within the remit of the Treasure Act 1996 and the Treasure (Designation) (Amendment) Order 2006. Subject to obtaining written consent from the landowner, the artefacts will be deposited along with the rest of the archive. Arrangements for the finds to be viewed by the landowner will be made on request.

1.6.5.4 No recovered finds will be discarded without the written consent of the recipient body. Selection and retention policy will be guided by the relevant standards and guidance documents (*cf.* ClfA 2020c, SMA 1993).

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### 1.6.6 Digital data

1.6.6.1 A Digital Data Management Plan will be prepared by the archaeological contractor(s). This will set out the process for the collection, storage and dissemination of digital data and will be in accordance with the relevant guidance documents (cf. RCAHMW, 2015; WAT, 2022). The Digital Data Management Plan will be submitted to, and agreed by, the appropriate Planning Archaeologists at Heneb.

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## Appendix A: Archaeological Mitigation Area Schedule

Area	Description of Archaeological Resource	Density of Archaeology	Approx Size
A	Undated pits, ditches, postholes & ring gullies (probably prehistoric)	Moderate to high	320m by 280m
B	Undated trackway	Low	80m by 30m
C	Undated ditch & posthole	Low	10m by 10m
D	Undated posthole	Low	10m by 10m
E	Undated pits and postholes	Low	10m by 10m
F	Undated ditch	Low	20m by 20m
G	Undated ditches, pits, postholes and cremation (probably prehistoric/early Medieval)	Moderate to high	150m by 100m
H	General Watching Brief on Construction Groundworks		
I	Undated pits	Low	10m by 10m
J	Undated ditches	Low	10m by 10m
K	Undated ditches	Low	10m by 10m
L	Undated ditches	Low	80m by 30m
M	Undated ditches	Low	10m by 10m
N	General Watching Brief on Construction Groundworks		

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Area	Description of Archaeological Resource	Density of Archaeology	Approx Size
O	Undated ditches	Low	10m by 10m
P	Undated ditches	Low	10m by 10m
Q	Undated ditches	Low	10m by 10m
R	Undated ditches	Low	10m by 10m
S	Undated ditches	Low	15m by 15m
T	Undated ditches and pit	Low	20m by 20m
U	Undated ditches and pit	Low	60m by 50m
V	Undated ditches	Low	50m by 30m
W	Undated ditches and pits (probably prehistoric)	Low to moderate	100m by 70m
X	Undated ditches and pits (probably prehistoric)	Low to moderate	150m by 60m
Y	Undated ditches and pits (probably prehistoric)	Low to moderate	10m by 10m
Z	Undated ditches and pits (probably prehistoric)	Low to moderate	50m by 50m
AA	General Watching Brief on Construction Groundworks		
BB	Undated ditch	Low	10m by 10m
CC	Undated ditch	Low	10m by 10m
DD	Undated pit	Low	10m by 10m

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Area	Description of Archaeological Resource	Density of Archaeology	Approx Size
EE	Undated ditches, pits and postholes (probably prehistoric)	Moderate to high	250m by 80m
FF	Undated ditches and pits (probably prehistoric)	Moderate	200m by 160m
GG	Undated ditch	Low	10m x 10m
HH	Undated ditches and pits (probably prehistoric)	High	50m by 50m