Camster II Wind Farm

EIA Report

Volume 2a: Main Report

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME 2A: MAIN REPORT

Prepared for:

E.ON Climate and Renewables

Prepared by

In Association with:

Quality information

Prepared by	Checked by	Approved by
CM Environmental Consultant	VD Principal Environmental Scientist	NT Associate Director - Environment

Chapter Authors

Chapter	Company
1 Introduction	AECOM
2 Approach to Environmental Impact Assessment	AECOM
3 Evolution of Design and Alternatives	AECOM
4 Project Description	AECOM
5 Summary of Consultation	AECOM
6 Planning Policy Context	AECOM
7 Landscape and Visual Impact Assessment	Axis
8 Noise	AECOM
9 Geology, Hydrology and Hydrogeology	AECOM
10 Ecology	Arcus
11 Ornithology	Natural Power
12 Archaeology and Cultural Heritage	AECOM
13 Traffic, Transport and Access	AECOM
14 Infrastructure and Telecommunications	AECOM
15 Shadow Flicker	AECOM
16 Air Safeguarding	Osprey
17 Socio-Economics and Tourism	AECOM
18 Forestry	DGA Forestry
19 Residual Effects and Conclusions	AECOM
20 Summary of Mitigation	AECOM

CONTENTS

GLOSSARY OF TERMS AND ACRONYMS

Term/ Acronym	Definition
'Major Development'	Development with a generating capacity over 20 MW
AADT	Annual Average Daily Traffic
ACC	Area Control Centre
ADR	Air Defence Radar
AIA	Aviation Impact Assessment
AIL	Abnormal Indivisible Load
AM	Amplitude Modulation
ANSP	Air Navigation Service Provider
AOD	Above Ordnance Datum
ATC	Air Traffic Control
ATS	Air Traffic Service
AWI	Ancient Woodland Inventory
BAI	Bat Activity Index
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BGR	British Grid Reference
BGS	British Geological Survey
BNL	Basic Noise Level
BS	British Standard

Term/ Acronym	Definition
CAA	Civil Aviation Authority
CAP	Civil Air Publication
CAR	The Water Environment (Controlled Activities) (Scotland) Regulations 2011
CaSPLan	The Caithness and Sutherland Local Development Plan
CBS	cement bound sand
CDM	Construction (Design and Management
CEH	Centre for Ecology and Hydrology
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIfA	Chartered Institute for Archaeologists
CIRIA	Construction Industry Research and Information Association
CLG	Community Liaison Group
CMLI	Chartered Members of the Landscape Institute
CMS	Construction Method Statement
CRM	Collision Risk Model
CRMP	Construction Resource Management Plan
CRTN	Calculation of Road Traffic Noise
CT	Character Types
CTMP	Construction Traffic Management Plan

Term/ Acronym	Definition
DECC	Department of Energy and Climate Change
DETR	Department of the Environment, Transport and the Regions
DGC	Defence Geographic Centre
DIA	Drainage Impact Assessment
DIO	Defence Infrastructure Organisation
DMRB	Design Manual for Roads and Bridges
DNO	Distribution Network Operator
DP	Decommissioning Plan
DRP	Decommissioning and Restoration Plan
DTM	Digital Terrain Model
EA	Environment Agency
EcIA	Ecological Impact Assessment
ECoW	Environmental/Ecological Clerk of Works
EEC	European Economic Community
EGPS	Electricity Generation Policy Statement
EHS	Environment and Heritage Services
EIA	Environmental Impact Assessment
EIA Regulations	Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017
EIAR	Environmental Impact Assessment Report
ELC	European Landscape Convention

Term/ Acronym	Definition
EMI	Electro Magnetic Interference
EMS	Environmental Management Systems
EPS	European Protected Species
ETSU	Energy Technology Support Unit
EU	European Union
EWC	Existing Water Crossing
FL	Flight Level
FLS	Forestry and Land Scotland (previously Forest Enterprise Scotland (FES))
FRA	Flood Risk Assessment
GAAC	General Aviation Awareness Council
GBR	General Bindings Rules
GCU	Glasgow Caledonian University
GDL	Gardens and Designed Landscapes
GIS	Geographic Information System
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GPG	Good practice Guide
GPP	Guidance for Pollution Prevention
GWDTE	ground water dependent terrestrial ecosystems
Ha	hectares
HBRG	Highland Biological Recording Group
HER	The Highland Council Historic Environment Record

Term/ Acronym	Definition
HES	Historic Environment Scotland
HET	Historic Environment Team
HGV	Heavy Goods Vehicles
HIAL	Highlands and Islands Airports Limited
HMP	Habitat Management Plan
HRES	Highland Renewable Energy Strategy and Planning Guidelines
HwLDP	Highland-wide Local Development Plan
IEA	Institute of Environmental Assessment
IEF	Important Ecological Feature
IEMA	Institute of Environmental Management and Assessment
IFP	Instrument Flight Procedures
IOA	Institute of Acoustics
IPA	Important Plant Area
IUCN	International Union for the Conservation of Nature
JNCC	Joint Nature Conservation Committee
JRC	Joint Radio Company
Km	Kilometres
Km^2	Kilometres squared
LBAP	Local Biodiversity Action Plan
LCA	Landscape Character Area
LCT	Landscape Character Type

Term/ Acronym	Definition
LDP	Local Development Plan
LGV	Light Goods Vehicle
LNR	Local Nature Reserve
LOS	Line of Sight
LUC	Land Use Consultants
LVIA	Landscape and Visual Impact Assessment
m	metre
m^2	metre squared
m^3	metre cubed
MAGIC	Multi-Agency Geographic Information for the Countryside
MBNL	Mobile Broadband Network Limited
MIR	Main Issues Report
MOD	Ministry of Defence
MPA	Marine Protected Area
mph	miles per hour
MSS	Marine Scotland Science
MW	megawatts
NAM	‘Normal’ Amplitude Modulation
NATS	National Air Traffic Services
NBN	National Biodiversity Network
NCAP	National Collection of Aerial Photographs

Term/ Acronym	Definition
NERL	NATS En-route Limited
NFE	National Forest Estate
NGR	National Grid Reference
NIEA	Northern Ireland Environment Agency
NNR	National Nature Reserve
NPF3	National Planning Framework 3
NRFA	National River Flow Archive
NRTF	National Road Traffic Forecasts
NRW	Natural Resources Wales
NSR	Noise Sensitive Receptor
NTS	Non-Technical Summary
NVC	National Vegetation Classification
OAM	'Other' Amplitude Modulation
OAMP	Outline Access Management Plan
OCA	Obstacle Clearance Altitude
OFCOM	The Office of Communication
OHS	Outer Horizontal Surface
OLS	Obstacle Limitation Surfaces
OS	Ordnance Survey
PAC	Pre-Application Consultation
PAN	Planning Advice Note

Term/ Acronym	Definition
PAT	Predicting Aquila Territories
PPG	Pollution Prevention Guidelines
PRF	Potential Roost Feature
PSR	Primary Surveillance Radar
PSRA	Peat Slide Risk Assessment
PWS	Private Water Supply
RAF	Royal Air Force
RCAHMS	the Royal Commission on the Ancient and Historical Monuments of Scotland
RMSE	root-mean-square error
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAF	Species Action Framework
SATCO	Senior Air Traffic Controller
SBL	Scottish Biodiversity List
SCADA	Supervisory control and data acquisition
ScARF	Scottish Archaeological Research Framework
Schedule 2 Development	*installation for the harnessing of wind power for energy production (wind farms)*" of more than two turbines.
SEPA	Scottish Environment Protection Agency
SF	Scottish Forestry (previously Forestry Commission Scotland Conservancy (FCS))
SFCC	Scottish Fisheries Coordination Centre
SHEP	Scottish Historic Environment Policy

Term/ Acronym	Definition
SHETL	Scottish Hydro-Electric Transmission Limited
SLA	Special Landscape Area
SME	Subject Matter Expert
SNH	Scottish Natural Heritage
SNIFFER	Scotland and Norther Ireland Forum for Environmental Research
SPA	Special Protection Area
SPP	Scottish Planning Policy
SSE	Scottish and Southern Energy
SSEPB	Scottish and Southern Energy Power Distribution
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage Systems
SWA	Scottish Wildcat Association
SWT	Scottish Wildlife Trust
TA	Transport Assessment
TAN	Technical Advice Note
tCO2eq	tonnes of carbon dioxide equivalent emissions
TCPA	Town and Country Planning (Scotland) Act 1997
THC	The Highland Council
The Development	The Camster II Wind Farm
The Development Site	The land proposed for the Camster II Wind Farm

Term/ Acronym	Definition
TMP	Traffic Management Plan
TMZ	Transponder Mandatory Zone
TOPA	Technical and Operational Assessment
TRA	Temporary Reserved Area
UK	United Kingdom
UK BAP	United Kingdom Biodiversity Action Plan
UK IAIP	UK Integrated Aeronautical Information Package
UNFCCC	United Nations Framework Convention on Climate Change
UWWTD	Urban Waste Water Treatment Directive
VFR	Visual Flight Rules
VP	Viewpoints
VWT	Vincent Wildlife Trust
WEWS Act	Water Environment and Water Services (Scotland) Act 2003
WFD	The Water Framework Directive
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

1. INTRODUCTION

1.1 Introduction

1.1.1 This chapter has been prepared by AECOM. E.ON (the 'Applicant') is proposing to develop a wind farm southwest of Wick in eastern Caithness, to be known as Camster II Wind Farm (the 'Development'). The Development consists of up to 11 wind turbines, which will have a maximum height to blade tip of up to 126.5 metres (m), and associated infrastructure. The final turbine model will be selected post-consent but based on current or anticipated turbine model options it is currently expected that each wind turbine could have an electrical generating capacity of 3.45 megawatts (MW), giving an overall generating capacity of up to 38 MW. The final MW capacity of the wind farm could be greater or less than 38 MW depending on turbine selection, but would not exceed the maximum physical dimensions used for the EIA, and would not exceed 50 MW. A detailed description of the Development is set out in Chapter 4: Project Description of this Environmental Impact Assessment Report (EIAR).

1.1.2 The design of the Development has been derived through a series of detailed studies considering a range of factors, including: wind resource, environmental and engineering constraints, consultation with key stakeholders, and commercial viability. A detailed description of how the design of the Development has been derived is set out in Chapter 3: Evolution of Design and Alternatives of this EIAR.

1.1.3 As the maximum installed generation capacity will be under 50 MW, the Applicant is seeking permission to construct, operate, and decommission the Development from the local planning authority, The Highland Council, under the Town and Country Planning (Scotland) Act 1997 (as amended).

1.1.4 This EIAR details the results of the Environmental Impact Assessment (EIA) process for the Development and accompanies the planning application. The purpose of the EIA is to identify and assess the likely significant effects resulting from the construction, operation and decommissioning of the Development and ensure that, where possible, appropriate mitigation has been incorporated into the project design, and that additional measures are provided to mitigate any identified significant effects resulting from the Development.

1.2 E.ON Climate and Renewables

1.2.1 E.ON (the 'Applicant') is one of the world's leading energy companies and supplies energy to around 4.6 million customers in the UK. In 2007, E.ON established E.ON Climate and Renewables, a global business concerned with developing new, cleaner ways of generating energy. E.ON currently owns and operates 15 onshore and 5 offshore wind farms in the UK, with a total installed capacity of over 700 MW. E.ON continues to develop further renewable energy projects, both onshore, and offshore, and the company currently has over 200 MW of capacity under construction

1.3 Forestry and Land Scotland and Scottish Forestry

1.3.1 The Forestry Commission was a cross-border public authority and a UK non-ministerial department with a statutory Board of Commissioners. The Commission was made up of a number of parts, including in Scotland:

- Forest Enterprise Scotland (FES), which carried out forestry operations and managed the NFE on Scottish Ministers' behalf; and
- Forestry Commission Scotland (FCS), which was responsible for the other forestry functions in Scotland.

1.3.2 When full devolution of forestry to the Scottish Government was completed on 1 April 2019, FCS and FES became two new agencies of the Scottish Government:

- Scottish Forestry (SF) will be responsible for regulatory, policy and support functions; and
- Forestry and Land Scotland (FLS) will be responsible for the management of the NFE and any other land managed for the purposes of the Forestry and Land Management (Scotland) Act 2018.

1.4 Brief Description of the Development Site and Setting

Development Site

1.4.1 The land proposed for the Development (the 'Development Site') is delimited by the red line boundary in Figure 1.1 (EIAR Volume 2b). The Development Site is located approximately 7 kilometres (km) southwest of Wick, centred on National Grid Reference (NGR) ND 28795 48360. The Development Site covers an area of 8.1 kilometres squared (km^2) (810 hectares (ha)), as shown on Figure 1.2 (EIAR Volume 2b) however not all this area is required for the Development. This is outlined in greater detail within Chapter 4: Project Description.

Setting

1.4.2 The Development is situated within the Achairn Forest, which is forested and managed by Forestry and Land Scotland (FLS) (previously Forest Enterprise Scotland (FES)) for commercial purposes. The Development Site is predominantly covered in coniferous plantation woodland surrounded by open land.

1.4.3 The land within the Development Site boundary is predominantly flat. The highest point is Blingery Hill, located east of the centre of the Development Site, at 110 m Above Ordnance Datum (AOD). The lowest area is around the Achairn Burn at 70 m AOD.

1.4.4 To the west of the Development Site is the Camster Wind Farm, operated by the Applicant. The closest turbine of which is located 600 m west of the closet point of the Development Site boundary. There are also four wind developments adjacent to one another immediately to the north of the Development Site.

These are Bilbster (Flex Hill) (1.5km), Wathegar I (0.5km), Wathegar II (0.3km) and Achairn Wind Farm (1km).

1.4.5 Around the Development Site there are scattered isolated dwellings, the closest of which is Blingery Farm, approximately 1km to the east of the Development Site.

Site Access

1.4.6 The proposed construction access to the Development Site is illustrated on Figure 1.3 (EIAR Volume 2b). Construction traffic is expected to approach the Development via the B870 and A882 if approaching from the north, A882 if approaching from either the south east or east, A9 (T) and B870 if approaching from the south west, via the A9 (T) and A882 if approaching from the north west, via the A99 (T).

1.4.7 Abnormal Indivisible Loads (AILs) will be from Wick along the A882 until the access junction on the A882 approximately 1.8 km west of the settlement of Haster. From this junction, AILs will traverse a network of existing and newly constructed access tracks to their required position within the Development Site.

1.4.8 During operation, day to day 4x4 vehicular access into the Development Site will occur via the existing forestry access south west of Puldagon. Alternatively, access could be made via the Camster Wind Farm from the south west of the site, past Upper Achairn.

The Development

1.4.9 A description of the evolution of the Development design is provided in Chapter 3: Evolution of Design and Alternatives of this EIAR and a full description of the Development is presented in Chapter 4: Project Description.

1.4.10 The Development will comprise of up to 11 turbines, which will have a maximum height to blade tip of up to 126.5 m above ground level. Each turbine will comprise a tapered tubular steel tower and nacelle, containing the generator and associated equipment, which are attached to a hub and rotor assembly, including three turbine blades up to 56.5 m long. Figure 4.2 (EIAR Volume 2b) provides an illustration of the indicative turbine model. Turbines will be finished in a semi-matt grey colour.

1.4.11 In addition to the turbines, there are a number of ancillary structures and infrastructure requirements as illustrated on Figure 4.1 (EIAR Volume 2b), including:

- Access tracks, passing places, and turning areas;
- An indicative potential footpath/bridleway (temporary for the duration of construction, unless agreed otherwise);
- A new multi-use gate at the access to the Core Path from the south east corner of the site;
- Up to four small temporary quarries;
- Crane hard standings;
- One permanent anemometer mast;
- A wind farm infrastructure building; and
- A temporary construction compound.

1.4.12 The proposed wind farm infrastructure building will comprise a control building, substation compound and a battery storage building. The battery storage building is proposed to comprise an “agricultural style” building sympathetic to the surrounding area.

1.4.13 Indicative locations for four small temporary quarries (also known as borrow pits) have been identified adjacent to the main access track (as shown on Figure 4.1, EIAR Volume 2b).

1.4.14 Approximately 14.84 km of access track will be utilised (6.17 km will be new access track, 5.98 km will be upgrades to existing track, with 2.69 km of existing track not requiring upgrades as it is already to wind farm specification). These tracks will provide permanent access to turbine locations, crane pads and other associated infrastructure as required. An additional 3.77 km of existing track within the site will not be upgraded as it is not proposed to be utilised for construction of the wind farm.

1.4.15 A section of new indicative potential footpath/bridleway, which would be at a minimum 1.5km in length, is also proposed to create a recreational loop of approximately 7km. This recreational path is proposed to be temporary for the duration of construction unless agreed with FLS and The Highland Council (THC) for retention during the operational lifetime of the development, and potentially beyond. The presumption will be for the new path to be removed no later than 6 months after the commissioning of the last turbine, unless FLS and THC agree that it should be retained.

1.4.16 The Applicant will work with the FLS and other users of the entrance from the east of the site for an appropriate and more accessible gate to replace the current gate on site.

1.4.17 To allow the EIA to address decommissioning, the operational lifetime of the Development has been assumed to be up to 30 years. A time period of approximately 12 to 18 months will be required for construction and, following the operational period, a similar duration the construction period is expected to be required for decommissioning. Unless it is agreed that FLS and THC obtain planning permission to retain their use post decommissioning of the Development, the decommissioning will (subject to planning conditions and agreement from The Highland Council) involve the removal of the turbines and all above ground infrastructure of the wind farm, with the exception of existing access tracks, cabling and the proposed potential footpath/bridleway as shown in Figure 4.1 (EIAR Volume 2b).

1.4.18 The Development will require a new grid connection. The grid connection does not form part of the Development and is not the subject of the current planning application to which this EIAR relates. The grid connection will be developed by Scottish Hydro-Electric Power Distribution Ltd (SHEPD), and will be subject to consideration under separate EIA Regulations and consenting process. It is anticipated that the connection will be made by 33KV underground cable. The approach to assessing the grid connection is discussed in Chapter 2: Approach to EIA.

1.5 Planning and Legislative Context

1.5.1 The European Union (EU) Renewable Energy Directive came into force in 2009 and was revised in 2018 as part of the Clean Energy for All Europeans package. This package has been designed with the intention that the EU leads the global transition to clean energy, and with this comes a new regulatory framework which is in the process of being implemented (European Commission, 2018a). The revised

Renewable Energy Directive sets out a binding renewable energy target for the EU of at least 32% of final energy consumption by 2030 (European Commission, 2018b). The EU 2030 framework for climate and energy, originally adopted in 2014, was also revised in 2018, increasing the original 2030 renewable energy target of 27% to 32% to bring it in line with the revised Renewable Energy Directive (European Commission, 2019). As part of the EU's new regulatory framework, the UK released a draft integrated National Energy and Climate Plan in January 2019, which is due to be finalised and submitted to the European Commission by the end of 2019. The draft plan sets out the intention that when the UK leaves the EU, cooperation in regards to energy would still be sought; although to what extent this would be is not known (Department for Business, Energy and Industrial Strategy, 2019). Nevertheless, climate change policy is devolved to Scotland and energy policy partly so, with the Scottish Government remaining committed to renewable energy and ambitious plans to reduce greenhouse gas (GHG) emissions.

1.5.2 These ambitious plans to reduce GHG emissions are laid out in two key policy documents: The Climate Change (Scotland) Act 2009, which sets a target to reduce emissions by 42% by 2020 and 80% by 2050; and the Climate Change Plan (2018), which sets a further emissions reduction target of 66% by 2032. In regards to the Scottish Government's commitment to renewable energy, the Scottish Energy Strategy (2017) sets a target that the equivalent of 50% of the energy for heat, transport and electricity consumption is to be supplied by renewables by 2030.

1.5.3 Onshore wind energy is expected to remain at the heart of Scotland's low carbon energy future, as per the Onshore Wind Policy Statement (2017). It is recognised as being a key component in meeting Scotland's energy needs, for economic growth and to progress towards the renewable targets. Further investment and growth of onshore wind is therefore recognised as a requirement, through repowering existing sites, investing in energy storage and in new sites.

1.5.4 Further details on planning policy relevant to the Development are included in Chapter 6: Planning Policy Context of this EIAR, and the standalone Planning Statement.

1.6 Environmental Impact Assessment (EIA)

1.6.1 The requirement to undertake an EIA of a wind farm development is set out in the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as the 'EIA Regulations'). The Regulations transpose the amended European Union (EU) Environmental Impact Assessment Directive 2011/92/EU *on the assessment of the effects of certain public and private projects on the environment* as set out in Directive 2014/52/EU.

1.6.2 The Development constitutes 'Schedule 2 development' as defined in Regulation 2(1) of the EIA Regulations. *Installations for the harnessing of wind power for energy production (wind farms)* are listed in column 1 of Schedule 2 under 3(j). The Development exceeds the thresholds set out in column 2 with more than two turbines proposed and a turbine hub height exceeding 15 m. EIA is not mandatory for Schedule 2 development but is required if there is the potential for significant environmental effects.

1.6.3 In view of the nature and size of the Development, an EIA has been undertaken and the results reported in this EIAR in accordance with the EIA Regulations.

1.7 The Environmental Impact Assessment Report (EIAR)

EIAR Structure

1.7.1 The EIAR has been published comprising four main volumes:

- Volume 1. Non-Technical Summary;
- Volume 2a. Main Report;
- Volume 2b. Figures;
- Volume 2c. Visualisations;
  - Volume 2ci Scottish Natural Heritage Visualisations;
  - Volume 2cii The Highland Council Visualisations;
- Volume 3. Appendices; and
- Volume 4. Confidential Appendix.

1.7.2 Volume 1 is the Non-Technical Summary (NTS). The NTS is intended to be readily accessible to the general public and is concise and written in non-technical language providing a description of the Development, a summary of its potential environmental effects, and proposed mitigation measures.

1.7.3 Volume 2a contains the Main Report. This provides a detailed description of the existing environment, an assessment of the likely significant effects of the Development, and identifies the mitigation which is incorporated into the design, construction, operation and decommissioning of the Development, and any additional measures required to mitigate any significant effects identified.

1.7.4 The EIAR Main Report is structured around the following chapter headings:

- Chapter 1 Introduction;
- Chapter 2 Approach to Environmental Impact Assessment;
- Chapter 3 Evolution of Design and Alternatives;
- Chapter 4 Project Description;
- Chapter 5 Summary of Consultation;
- Chapter 6 Planning Policy Context;
- Chapter 7 Landscape and Visual Assessment;
- Chapter 8 Noise;
- Chapter 9 Geology, Hydrology and Hydrogeology;
- Chapter 10 Ecology;
- Chapter 11 Ornithology;
- Chapter 12 Archaeology and Cultural Heritage;
- Chapter 13 Traffic, Transport and Access;
- Chapter 14 Infrastructure and Telecommunications;
- Chapter 15 Shadow Flicker;
- Chapter 16 Air Safeguarding;

- Chapter 17 Socio-Economics and Tourism;
- Chapter 18 Forestry;
- Chapter 19 Residual Effects and Conclusions; and
- Chapter 20 Summary of Mitigation.

1.7.5 The general structure of chapters within the EIAR is as follows; however some chapters may vary from this structure:

- Introduction;
- Methods;
- Existing Conditions;
- Embedded Mitigation;
- Potential Effects;
- Mitigation;
- Residual Effects;
- Cumulative Effects;
- Summary.

1.7.6 EIAR Volume 2b contains the figures relating to the Main Report chapters.

1.7.7 EIAR Volume 2c contains photomontages, supporting Chapter 7: Landscape and Visual Assessment, projecting how the Development will sit within the surrounding landscape.

1.7.8 EIAR Volume 3 contains supporting Appendices to the Main Report. The Appendices include detailed technical information such as survey reports and plans which are cross referenced where relevant within Volume 2 of the EIAR.

1.7.9 EIAR Volume 4 contains the Confidential Appendix. This details the results of specialist surveys of European Protected Species (EPS). Given the sensitive nature of the data contained within this Volume, it will not be made publically available and will be provided to the relevant consultees only.

EIA Project Team

1.7.10 The EIA process has been managed by AECOM on behalf of the Applicant and this EIAR presents the results of the assessment of environmental and socio-economic impacts undertaken by a number of specialist consultants. The consultancies that have contributed to the EIA are listed in Table 1.1 below, along with their respective disciplines and contribution to the EIAR.

Table 1.1: EIA and Design Team

EIA Project Team	Contribution
E.ON	The Applicant
AECOM	EIA coordination; Conceptual design; Authoring of introductory chapters, concluding chapters and glossary;
	Authors of the following technical chapters and associated appendices: • Planning Policy Context; • Noise; • Geology, Hydrology and Hydrogeology; • Archaeology and Cultural Heritage; • Socio-Economics and Tourism; • Traffic, Transport and Access; • Infrastructure and Telecommunications; and • Shadow Flicker. Preparation of the NTS Outline Construction Environmental Management Plan (CEMP) Outline Habitat Management Plan (HMP)
Arcus	Ecological surveys, Ecology chapter and Confidential Annex.
Axis	Landscape and Visual Assessment including Photomontages.
DGA Forestry	Forestry chapter with replanting plan.
Natural Power	Ornithological surveys, Predicting Aquila Territories (PAT) Model, Collision Risk Model (CRM), and authoring of Ornithology chapter.
Osprey Consulting Services	Air Safeguarding chapter
Liberty 1	Pre-Application Consultation Report (PAC) and associated Addendum

1.8 Other Planning Application Documents

1.8.1 Having a generating capacity of greater than 20 MW, the proposed Development is classified as a 'Major Development' under the Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009. Therefore a Pre-Application Consultation Report, Planning Statement and Design Statement will also be submitted to The Highland Council along with the Planning Application and EIAR. Additionally, an Outline Construction Environment Management Plan (CEMP) and Outline Habitat Management Plan (HMP) have been produced to supplement the EIAR and inform the planning application.

1.8.2 An overview of these documents is provided in Table 1.2 below.

Table 1.2: Other Supporting Documents

Document	Description of Contents
Planning Statement	This document provides an explanation of the principles behind (and justification for) the Development and how it fits with the national, regional and local planning policies.
Design Statement	The Design Statement explains the design principles and concepts that have been applied to particular aspects of the proposal; including the amount, layout,

Document	Description of Contents
	scale, landscaping and appearance of the Development.
Pre-Application Consultation Report (PAC)	This document summarises the methods of engagement and the outcomes following the feedback from the pre-application consultation activities that have been undertaken by the Applicant.
Outline Construction Environment Management Plan (CEMP)	The aim of this document is to establish a framework through which the Applicant and its contractors can ensure a robust and effective approach to environmental management and the implementation and monitoring of mitigation measures during the construction of the Development. It sets out relevant good practice and the principles of mitigation to be implemented, however, it is recognised that Development and/or site specific measures will also be required. The Outline CEMP will be finalised and approved by the planning authority post-consent and will include details as may be required by planning conditions and informed by the final detailed design.
Outline Habitat Management Plan (HMP)	This document aims to inform and guide the commencement of practical habitat creation and restoration techniques during construction of the proposed Development and to inform on-going habitat management throughout operation. In accordance with SNH guidance (SNH, 2016), the role of the HMP will be to set out how habitat management measures will mitigate or compensate for the impacts of the proposed Development and to outline how the natural heritage interests of the area will be enhanced. The overall aims of the HMP are to safeguard sensitive habitats, protected species and ornithological interests within the Development Site; to secure appropriate mitigation measures during operation of the proposed Development; and to ensure the long term viability of existing ecological and ornithological receptors, both within the Development Site and in the surrounding environment.

1.9 Availability of the Environmental Statement

1.9.1 This EIAR and the other documents prepared to support the planning application are available for download from the project website https://www.eonenergy.com/About-eon/our-company/generation/planning-for-the-future/wind/onshore/camster-II and from The Highland Council Planning Portal Website: http://wam.highland.gov.uk/wam/.

1.9.2 Hard copies of the EIAR will also be made available for viewing at the following locations:

- The Highland Council Planning Office, Caithness House, Market Place, Wick
- Watten Village Hall, Watten
- The Highland Council Planning Office, Glenurquhart Road, Inverness
- East Caithness Community Centre Library in Wick
- Additional memory sticks containing the EIAR will be available at Watten Post Office, Watten Village Hal and The Highland Council Planning Office, Wick

1.9.3 Any representations to the application should be made by completing the online representation form on The Highland Council Planning Portal website at:

1.9.4 https://www.highland.gov.uk/info/161/planning_and_building_standards

1.9.5 Or by email to: eplanning@highland.gov.uk

1.9.6 Or by post to:

eProcessing Centre,
Headquarters,
Glenurquhart Road,
Inverness, IV3 5NX.

1.9.7 Representations should be dated and should clearly state the name (in block capitals) and full return email or postal address of those making representation. All representations to The Highland Council will be published online along with the name of those making representation.

1.9.8 Electronic copies of all EIAR documents can be made available at a fee of £5 per memory stick copy. A paper copy of the EIAR Non-Technical Summary can be made available at a fee of £5 per copy. Cheques should be made payable to AECOM Ltd, with your name and address on the back.

1.9.9 To request copies of the EIAR documents please contact Victoria Deacon at the following address:

Victoria Deacon
AECOM
1 Tanfield
Edinburgh
EH3 5DA

E-mail: Victoria.Deacon@aecom.com

1.10 References

Directive 2014/52/EU (EIA Directive) amending Directive 2011/92/EU on the Assessment of the Effects of Certain Public and Private Projects. 2014. L124/1.

Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017

Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009.

Town and Country Planning (Scotland) Act 1997 (as amended)

Directive 2009/28/EC Renewable Energy Directive

Directive 2018/2001/EU Renewable Energy Directive (revised)

UK National Energy and Climate Plan (NECP), Department for Business, Energy and Industrial Strategy (January 2019)

The Climate Change (Scotland) Act 2009

Scottish Energy Strategy, Energy and Climate Change Directorate (December 2017)

Offshore Wind Policy Statement, Scottish Government (December 2017)

12. ARCHAEOLOGY AND CULTURAL HERITAGE

12.1 Introduction

12.1.1 This chapter has been prepared by AECOM. It identifies and assesses the potential effects that the Development, as described in Chapter 4: Project Description, may have on the archaeological and cultural heritage resource of the study area and identifies the mitigation and compensation measures that will be implemented to prevent, reduce or offset potential adverse effects or enhance potential beneficial effects, where possible.

12.1.2 Potential effects on archaeology and cultural heritage are interrelated with effects on landscape and visual amenity and the surrounding forest and its users. This chapter should be read in conjunction with Chapter 7: Landscape and Visual Assessment, of this Environmental Impact Assessment Report (EIAR).

12.2 Methods

Scope of Assessment

12.2.1 This assessment examines the previously recorded archaeology and built heritage within the Development Site Boundary and a study area 1km from the Development Site Boundary, in area as well as considering the potential for previously unrecorded archaeological remains. Heritage assets can include:

- Buried archaeological remains;
- Earthwork features;
- Features of cultural significance and importance;
- Built heritage; and
- Designated features such as Scheduled Monuments, listed buildings, entries on the Inventory of Gardens and Designed Landscapes, Registered Battlefields and Conservation Areas.

12.2.2 Although all assets recorded are of significance, the importance of the assets can vary, as can the potential effect on the heritage assets. The assessment has considered direct, indirect and cumulative effects resulting from:

- Physical effects on heritage assets during construction and decommissioning;
- Effects upon the setting of heritage assets during operation; and
- Cumulative effects on heritage assets.

12.2.3 Physical effects upon archaeological assets during construction could be caused by construction activities such as excavation, construction of access tracks, construction of temporary works compounds, and general groundworks.

12.2.4 Direct effects are those where there is a physical connection between the Development and the asset, whereas indirect effects require some additional pathway for the effect to arise.

Spatial Scope

12.2.5 The cultural heritage assessment has utilised a study area of 1 km from the Development Site boundary, or 'red line boundary'. This is in order to identify any previously recorded archaeological and cultural heritage assets both within the land available for development and in the surrounding areas. It also allows the previously recorded archaeological sites to be set within their wider context.

12.2.6 An additional search covering a 10 km study area was also undertaken from the edge of the Development Site Boundary in order to identify assets which may have their setting affected by the Development. This assessment used Zone of Theoretical Visibility[1] data (ZTV) to examine which assets, both designated and undesignated, would have views of the proposed turbines. Assets which fell within the ZTV were reviewed to see if their setting contributed to their significance, and if the setting was sensitive to change. A full setting assessment was undertaken on sites where it was assessed that their setting contributed to their significance.

Temporal scope

12.2.7 The temporal scope of the Development is divided into temporary effects and permanent effects. Temporary effects are those that are caused during construction, such as effects on the setting of heritage assets caused by the presence of construction machinery. Long-term effects, although reversible, include impacts on the setting of heritage assets caused by the presence of the Development in the landscape. Permanent effects could include the complete removal of heritage assets due to the Development, although no previously recorded heritage assets have been identified within areas of works to be carried out as part of the Development.

Assessment Guideline or Guidance and Methods

12.2.8 The assessment has been undertaken following the Chartered Institute for Archaeologists (ClfA) Standards and Guidance for Historic Environment Desk-Based Assessment (2017) and Historic Environment Scotland's guidance on setting (2016c).

Sensitivity

12.2.9 The ClfA guidance on historic environment desk-based assessments requires the assessment of heritage value of affected cultural heritage assets. This should include consideration of the archaeological, historic, architectural and artistic interests pertaining to the heritage asset. These criteria, in conjunction with professional judgement, have been used to assess the sensitivity (heritage value) of heritage assets.

[1] ZTV plans provide information, geographically, as to the number of turbines that will be visible from locations surrounding the Development.

12.2.10 The criteria for assessing the sensitivity of heritage assets are presented in Table 12.1.

Table 12.1: Determining Cultural Heritage Sensitivity

Sensitivity	Examples
Very High	World Heritage Sites; Assets of acknowledged international importance; Other buildings of recognised international importance; or Historic landscapes of international sensitivity, whether designated or not.
High	Scheduled Monuments; Undesignated sites/features of schedulable quality and importance; Category A and B listed buildings; Undesignated structures of clear national importance; or Designated & undesignated historic landscapes of outstanding interest.
Medium	Sites/features that contribute to regional research objectives; Category C(S) listed buildings; Unlisted buildings that can be shown to have exceptional qualities in their fabric or historical association; Conservation Areas; Historic townscape or built-up areas with historic integrity in their buildings, or built settings; or Designated special historic landscapes and undesignated historic landscapes of regional sensitivity.
Low	Undesignated sites/features of local importance; 'Locally Listed' buildings and unlisted buildings of modest quality in their fabric or historical association; or Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations or with specific and substantial importance to local interest groups.
Negligible	Assets with very little or no surviving archaeological interest; Buildings of no architectural or historical note; buildings of an intrusive character and Landscapes with little or no significant historical interest.

12.2.11 Archaeological sites/features where the importance of the asset cannot be ascertained, or buildings with some hidden (i.e. inaccessible) potential for historic significance, will be noted as "unknown".

12.2.12 When professional judgement is considered, some sites may not fit into the specified category in this table. Each heritage asset is assessed on an individual basis and takes into account regional variations and individual qualities of sites. Sites with an unknown value cannot be assessed further.

Magnitude

12.2.13 The magnitude of change resulting from the Development is assessed for each heritage asset independently of its archaeological or heritage significance (value). The magnitude of change categories are presented in Table 12.2.

12.2.14 Change to assets can be either direct or indirect.

Table 12.2: Determining Magnitude of Change

Magnitude	Example Criteria
High	Change to most or all key archaeological/historic building/historic landscape elements or their setting, such that the significance of the resource is totally altered.
Medium	Changes to many key archaeological/historic building/historic landscape elements or their setting, such that the significance of the resource is clearly modified.
Low	Changes to key archaeological/historic building/historic landscape elements or their setting, such that the significance of the asset is slightly altered.
Negligible	A minor change to an asset or its setting that has very little effect on its significance.
No Change	No alteration or change to the asset.

Significance

12.2.15 By combining the sensitivity of the cultural heritage resource with the predicted magnitude of change, the significance of the effect can be determined. This is undertaken following Table 12.3. The significance of effects can be beneficial or adverse. Shaded boxes indicate a significant effect in terms of Environmental Impact Assessment (EIA), subject to assessor's professional judgement.

Table 12.3: Assessment of Significance

Cultural Heritage Sensitivity	Magnitude of Change				
	High	Medium	Low	Negligible	No change
Very high	Major	Major	Moderate	Minor	No Change
High	Major	Moderate	Moderate	Minor	No Change
Medium	Moderate	Moderate	Minor	Negligible	No Change
Low	Moderate	Minor	Negligible	Negligible	No Change
Negligible	Minor	Negligible	Negligible	Negligible	No Change

12.2.16 An assessment of the predicted significance of effect is made both prior to and after the implementation of additional mitigation to identify residual effects. This first highlights where additional mitigation may be appropriate and then demonstrates the effectiveness of mitigation and provides the framework for the assessment of significance which takes mitigation measures into consideration.

12.2.17 When professional judgement is considered, some assets may experience a significance of effect that is different to that arising from the matrix in Table 12.3. In these instances, an explanation will be provided in the impact section.

Approach to the Assessment

12.2.18 The assessment of archaeology and cultural heritage is qualitative.

12.2.19 The desk-based research undertaken as part of the Environmental Impact Assessment included gathering data from the following sources:

- The Highland Council Historic Environment Record (HER);
- The Highlands Council Archives, Inverness;
- The Highlands Council Archives, Wick;
- Local History Library, Inverness;
- Wick Local Library;
- PastMap website and database (www.pastmap.co.uk) for the National Monuments Record, Scheduled Monuments, listed buildings, Inventory of Gardens and Designed Landscapes, and Registered Battlefields;
- The former Royal Commission on the Ancient and Historical Monuments of Scotland archive;
- National Library of Scotland for plans and maps of the study area and its environs;
- Aerial photographs available from the National Collection of Aerial Photographs (NCAP) archive; and
- Available reports and assessments undertaken as part of other assessments in the area.

Summary of Site Surveys

12.2.20 Scoping Reports were submitted as part of these earlier phases of work undertaken in 2014 and 2017, with a full discussion of these earlier work detailed in Section 3.7 of Chapter 3: Evolution of Design and Alternatives. During the original phase of works, subsequent to the 2014 scoping exercise, an assessment of sites for which the Development might result in an impact on the setting of assets was undertaken. This was completed between the 13th to 22nd October 2014.

12.2.21 A revised setting assessment was undertaken, along with an archaeological walkover of the developable area, as part of the current Application on the 19th to 21st March 2019.

Summary of Relevant Planning Policy

12.2.22 The assessment was conducted within the context of the legislative and planning framework designed to protect and conserve heritage resources. Legislation, policy and guidance includes:

- Historic Environment Policy for Scotland (HEPS) 2019 (HES 2019);
- Historic Environment Scotland Act 2014;
- Historic Environment (Amendment) (Scotland) Act 2011;
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;
- Ancient Monuments and Archaeological Areas Act 1979;
- Scottish Planning Policy (SPP) Paragraphs 135-151: Valuing the Historic Environment, 2014 (Scottish Government 2014a);
- Historic Environment Scotland Policy Statement, June 2016 (HES 2016b) (replaced by HES Policy for Scotland in April 2019);
- Historic Environment Circular 1. Historic Environment Scotland, 2016 (HES 2016c) (replaced by Historic Environment Scotland Circular: Regulations and Procedures in April 2019);
- Our Place in Time - The Historic Environment Strategy for Scotland, 2014 (Scottish Government 2014b);
- Planning Advice Note (PAN) 2 / 2011 – Planning and Archaeology (Scottish Government 2011);
- Planning Advice Note 71 – Conservation Area Management (Scottish Government 2004); and
- Managing Change in the Historic Environment: Setting guidance note (Historic Environment Scotland (HES) 2016).

12.2.23 Relevant overarching planning policies for this Development are detailed in Chapter 6: Planning Policy Context. The following national, regional and local planning policies are relevant when assessing archaeology and cultural heritage:

- SPP
  - Historic Environment
  - Conservation Areas
  - Landscape and Natural Heritage
  - Renewable Energy
  - Wind Farms
- PAN 2/2011 Planning and Archaeology
- Highland-wide Local Development Plan (HwLDP) (Highlands Council 2012)
  - Policy 57 – Natural, Built and Cultural Heritage; and
  - Policy 67 – Renewable Energy Development.

12.2.24 Historic Environment Scotland (HES) Policy Statement June 2016 (HES 2016b), SPP (Scottish Government 2014a), Historic Environment Circular 1 (HES 2016c) and HES's Managing Change in the Historic Environment guidance note series are the documents to which planning authorities are directed in their consideration of applications for conservation area consent, listed building consent and their consideration of planning applications affecting the historic environment and the setting of individual elements of the historic environment. A recent addition to these documents is HEPS published in 2019, and although not a legally binding document, it must be taken into account whenever a decision will effect the historic environment (HES 2019, 6). The most significant for this appraisal is *Managing Change in the Historic Environment: Setting*. It sets out the principles that apply to developments which affect the setting of a historic asset. It clarifies what is meant by 'setting' (page 6), considers what contributes to setting (pages 6-7), discusses the stages of assessing the impact of change (pages 8-11), and discusses methods of mitigating impacts and enhancing setting (page 12).

12.2.25 Scheduled monuments are of national or international importance and are protected under the Ancient Monuments and Archaeological Areas Act 1979 and the Historic Environment (Amendment) (Scotland) Act 2011.

12.2.26 Listing of a building or structure with special architectural or historic interest is provided through legislation and the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. Historic Environment Scotland (HES) is responsible for listing buildings of particular historical or architectural merit. Buildings are assigned to one of three categories according to their relative importance. All listed

buildings receive equal legal protection, which applies to the interior and exterior of the building, regardless of its category.

- Category A: buildings of national or international importance, either architectural, historical, or fine little-altered examples of a particular period, style, or building type;
- Category B: buildings of regional (or more than local) importance, or major examples of a particular period, style or building type, which may have been altered;
- Category C: buildings of local importance, lesser examples of any period, style or building type, as originally constructed or moderately altered, and simple traditional buildings that group well with others in categories A and B.

12.2.27 The Historic Environment (Amendment) Scotland Act (2011) made it a statutory duty for HES to compile and maintain an Inventory of Gardens and Designed Landscapes in Scotland. Sites on the inventory of Historic Gardens and Designed Landscapes are of national importance and should be taken into account during the planning process.

12.2.28 Conservation Areas are described by the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 "*as areas of special architectural or historic interest, the character of which it is desirable to preserve or enhance*". Local planning authorities are required to determine which parts of their area should be safeguarded due to their architectural or historic interest, to ensure that any new development pays respect to or enhances their character.

12.2.29 HES compiles the Battlefield Inventory which is the first dedicated designation for nationally important battlefields in Scotland. Additional protection of battlefield features is provided through existing legislation for scheduled monuments, listed buildings, gardens and designed landscapes, and Conservation Areas through the Historic Environment Scotland Act 2014. HES works closely with planning authorities and relevant public bodies to ensure that Inventory sites are taken into account in their plans, policies and decision-making processes.

12.2.30 The importance placed on cultural heritage is set out in *Our Place in Time – The Historic Environment Strategy for Scotland, 2014*, which sets out a 10-year strategy for protecting and managing heritage assets, as well as HEPS (2019).

Summary of Consultation

12.2.31 Initial consultation was undertaken with key stakeholders including the Highland Council (THC) Archaeologist and Historic Scotland (now Historic Environment Scotland) when the scheme of the Development was first proposed in 2014.

12.2.32 The scheme was revisited in 2017, when a revised layout was suggested. This included further consultation with the stakeholders and a revised HER data search was also undertaken. Scoping Reports were submitted as part of these earlier phases of work. Details of the earlier phases of work are provided in Section 3.7 of Chapter 3: Evolution of Design.

12.2.33 A more recent round of consultation was undertaken as part of the current Application, during which HES again confirmed the need to assess the impact on the setting of the Grey Cairns of Camster and the Yarrows Archaeological Trail. HES also noted that potential impacts on the setting of the surrounding brochs should be considered, and that the inter-visibility of brochs should be examined. Consultation with THC confirmed that they were happy for HES to take a lead on setting impacts on designated assets, and that they did not have any concerns over setting impacts on undesignated assets. THC also confirmed that a new HER data search would not be required, as the data collected in 2017 was still considered valid.

Limitations and Assumptions

12.2.34 Data was acquired from third parties; it is assumed that all information is accurate and fit for purpose at the time of this submission.

12.2.35 The Historic Environment Records only list known archaeological sites or significant historic landscape features. There is a possibility for the discovery of previously unrecorded archaeological remains.

12.3 Existing Conditions

12.3.1 A review of the Highlands HER and Pastmap revealed a total of 40 heritage assets recorded within the 1 km study area, with a further two assets recorded through a review of aerial photographs. The bracketed numbers after sites within the text refer to the numbers on Figure 12.1 and 12.2 (EIAR Volume 2b), and in Appendix 12.1 (EIAR Volume 3). Three assets from the HER were not plotted as they lacked detailed location information.

12.3.2 There is one prehistoric Scheduled Monument within the immediate 1 km study area of the Development. This site is a possible broch **(1)**.

12.3.3 There are no World Heritage Sites, Listed Buildings, Registered Battlefields, entries on the Inventory of Gardens & Designed Landscapes or Conservation Areas within the 1 km study area.

12.3.4 There are 80 Scheduled Monuments, 189 Listed Buildings and 1 Conservation Area within the wider 10 km study area used to examine potential impacts on setting (Figure 12.3, EIAR Volume 2b). The majority of the listed buildings are located in the settlements that are scattered along the coast to the east of the Development, with a large number concentrated within the town of Wick and their setting is the settlement and does not extend into the Development Site. The site visit confirmed that these assets will experience no change from the Development and they are scoped out of the Environmental Impact Assessment. Other assets that have been scoped out of the setting assessment include sites that fall outside of the ZTV, as well as assets where the built environment or vegetation (such as plantations and hedgerows) provide screening and will remove views of the turbines, or where the setting of the asset does not contribute to its value. This is outlined in the impact assessment in (Section12.5) below.

Location and Geology

12.3.5 The Development is centred on National Grid Reference ND 28317 48553, approximately 8.5 km west-southwest of Wick, and within the managed forestry plantation known as Achairn Forest. The Development Site represents gently rolling moorland that has been taken over by forestry plantation, with the lowest land at the centre of the site along the Achairn Burn at c. 70 m above Ordnance Datum

(aOD). This rises gently to the south, with Tannach Hill and Hill of Oliclett representing the highest ground in the area at 139 m and 141 m respectively.

12.3.6 The solid geology of the Development Site comprises Devonian siltstones, mudstones and sandstones of the Spital Flagstone Formation and the Mey Flagstone Formation, with a drift geology of peat (British Geological Survey (BGS) website 2019; http://mapapps.bgs.ac.uk/geologyofbritain/home.html). The soils map for Scotland record these peat deposits as Dystrophic blanket peats (Scotland soil map website 2019: http://map.environment.gov.scot/Soil_maps).

12.3.7 Historic land-use data, supplied by HES, defines all of the land within the red line boundary of the Development Site as 'Woodland and Forestry', with the exception of the narrow corridor of land around along the Achairn Burn which is recorded as 'Moorland and Rough Grazing' (Figure 12.4, EIAR Volume 2b). Historic land-use immediately outside of the red line boundary is largely defined as 'Woodland and Forestry' to the north, south and southwest, which in turn gives away to 'Moorland and Rough Grazing'. This in turn gives away to the improved land which is defined as 'Agriculture and Settlement', and is focused on the low-laying ground along the A882 and the Wick River.

Prehistoric (*to AD450*)

12.3.8 There are four heritage assets that can be dated to the prehistoric period within the 1 km study area, with a further asset whose exact location is unknown. This includes two brochs (**1** & **33**), hut circles (**25**) and a find spot of a Bronze Age axe (**27**). The earliest activity within the study area is a group of long cists that can be dated to the late Neolithic to early Bronze Age periods (2,500 - 1,500 BC), although the exact location of these cists has not been identified (HER Ref MHG2047 & MHG39871). Further burials have also been recorded outside of the 1 km study area, with the Grey Cairns of Camster approximately 2.5 km to the south west of the Development (SM90056) (Figure 12.2, EIAR Volume 2b).

12.3.9 The earliest period with clear evidence of activity in Scotland is the Mesolithic period (10,000 – 3,500 BC), and a possible flint working site dating to this period has been recorded approximately 1.2 km south of the study area (MHG29867/ND 3036 4534). The assemblage contained 61 narrow blade microliths and a number of microburins and bladelets, and was identified on the Thrumster Estate during forestry ploughing operations (Heald and Barber 2015, 13). Bronze Age barbed and tanged arrowheads were also found in the same area. Further Mesolithic material has also been recorded in the wider landscape. This includes Mesolithic material uncovered below Camster Long Cairn during excavations, although similar remains may survive elsewhere as this is one of the few sites where the pre-cairn landscape has been investigated (Davidson & Henshall 1991, 60).

12.3.10 The Neolithic period (3,500 – 2,000 BC) marks a change in the mobility patterns of humans. Domestication of crops and animals led to people leading increasingly sedentary lives, and with this comes more definitive evidence for settlement and land territories in the form of enclosures. Environmental evidence from Caithness also supports land clearance and improvement, with analysis of pollen suggesting a lightly wooded landscape existing during the Neolithic period (Heald and Barber 2015, 15). However, it is the monuments of the dead that are perhaps the most characteristic archaeological remains surviving from this period. These 'places for the dead' were constructed in the form of long barrows and chambered tombs. Towards the late Neolithic period, burials developed into individual burials in cists, slab-like boxes. Grave gifts such as personal belongings were often interred with the individual (http://www.historic-scotland.gov.uk). In the study area, five long cists were uncovered in the late 19th century by ploughing, although their exact location is not known/recorded on the HER (HER Ref MHG2047 & MHG39871). It is noted that they were all lying due east and west, an alignment that could have been a regional practice for the people of this area (Parker Pearson 1999, 87).

12.3.11 Further remains in the wider area include the well documented Grey Cairns of Camster complex, which includes one long cairn and two round cairns, and is located some 2.5 km south west of the Development (**SM90056**), and a number of sites focused on the Loch of Yarrows (Figure 12.5, EIAR Volume 2b). The assets that form the Grey Cairns of Camster complex include the long cairn that measures 60.5m in length and between 9m and 17m wide and contains two burial chambers. Excavation revealed early Neolithic pottery, worked stone tools and fragments of human bone. The northern round cairn measures around 22m north to south, 19m east to west and 3.7m high. Excavations of the cairn revealed burnt human remains and pottery within the chamber as well as parts of two skeletons within stone blocking in the passage. The second round cairn measures approximately 9m in diameter and 0.4m high. Remains of a cist or central chamber have been exposed due to disturbance.

12.3.12 The Yarrow complex, some 4.1 km to the south of The Development Site includes a number of Neolithic and Bronze Age cairns and standings stones located on high ground around the Loch of Yarrows. The Cairns of Warehoue (**SM436**) forms a key site on the highest pint to the south of the loch, and an archaeological trail now joins most of assets together. A further comparable collection of assets has been recorded approximately 1 km to the southeast of the Yarrows trail where a similar ritual landscape has been mapped near Loch Watenan and Groat's Loch with the Cairn of Get (**SM90048**) at its centre.

12.3.13 There are two recorded sites of Bronze Age date within the study area (**25** & **27**). The earliest of these is probably the find spot of a middle Bronze Age chisel (**27**). This small axe is of the Ulrome type, found across Britain (Close-Brooks 1977, 194).

12.3.14 The remaining asset has been tentatively dated to the late Bronze Age (1,000 – 700 BC) based on its archaeological form and consists of settlement activity. This site was previously recorded as a single circular structure, suggesting a hut circle, recorded through field survey (**25**), although remains of this feature have been removed with the area deep ploughed for forestry. A second cluster of round houses survives in better condition immediately outside of the north-western limit of the study area. This grouping is a Scheduled Monument and contains ten stone walled huts, a probable cairn and a mound (SM3520).

12.3.15 The move into the Iron Age (700 BC – 450 AD) marked a change in the archaeological record of northeast Scotland. Settlement sites are more frequent, with site distribution suggesting activity in Caithness was focused around coastal areas where better soils existed (Armit & Ralston 1997, 188). This increase in the visibility of settlement activity is juxtaposed with an apparent decrease in burial monuments, and it is possible that there was a move towards cremating the dead in the open, with no burial of the remains (http://www.historic-scotland.gov.uk). Environmental data also suggests a further change in climate, with soil conditions deteriorating and the establishment of peat deposits (Armit &

Ralston 1997, 188). Much of the woodland also appears to have been cleared by the Iron Age, suggesting that the landscape that existed largely resembles the landscape that exists today (Armit 2003, 79).

12.3.16 Two sites dating to the Iron Age have been recorded in the study area, and both are brochs. The first example, which is also a Scheduled Monument, is located to the south of the site, although its original form is difficult to confirm due to a later Second World War defensive structure being added (**1**).

12.3.17 The second undesignated example is again difficult to confirm due to a lack of excavation and later disturbance, and now survives as a partial mound, destroyed through stone-robbing and quarrying (**33**). Chance finds at this site include a bone bodkin, a polished bone needle, a stone half disc, a stone lamp, a few spindle whorls and two whetstones, although the style of these items means that they have not been firmly dated.

12.3.18 Brochs are thought to be defendable structures as they were often built with thick, outer stone walls in prominent locations. In addition, it is now thought that they were a status symbol, highlighting the owner's social status, wealth and power, and are unique to north and west of Scotland (Adkins *et al* 2008, 96). It is possible that their origins lie in the Atlantic roundhouse tradition, and excavated examples suggest that most date from the second century BC to the end of the 2nd century AD, with some of the latest examples found in Caithness (Armit & Ralston 1997, 184-187).

12.3.19 A number of examples have been identified in the wider area, including Thrumster broch *c.*3.5 km to the southeast (SM13635), and a well preserved example near the Loch of Yarrows (SM611), some 4 km to the south. Many brochs in Caithness are also clustered in little groupings, unlike the brochs of Orkney and Shetland which are regularly spaced (Heald and Barber 2015, 86), with clustered examples including the grouping on the Burn of Acharole *c.* 4 km to the northwest of the Site.

12.3.20 The Iron Age in Scotland continued for longer than in England, extending from *c.*700 BC to the beginning of the early medieval period *c.*450 AD. This is because Roman activity within Caledonia was limited and mostly concentrated in the south of the country. This is not to say that the northern parts of Scotland did not feel a Roman presence as shown by the Scottish Archaeological Research Framework (ScARF). A recent distribution map of Roman sites within Scotland (ScARF 2012, 3) shows Roman camps as far north as Elgin, which is *c.*78 km to the south of the Development, while Roman pottery and other items of material culture have been recorded at Keiss approximately 12.5km to the northeast of the Development. There is no Roman presence or assets identified within the study area.

Early Medieval (*450 to 1066*)

12.3.21 There are no assets that date to the early medieval period within the study area.

12.3.22 During the early medieval age, eastern and northern Scotland, then known as Pictland, was home to the Celtic Picts. It is thought that they were descendants of the Caledonians.

12.3.23 The area of Caithness was settled by the Norse in the late 9th century. This was influenced by an earlier Norse Earldom of sovereignty over Orkney and Shetland that paved the way for administration and Norse rule in those areas (Hunter 2003, 244). Caithness continued to have a Norse presence through to the 13th century.

12.3.24 Although there are no remains dating to the early medieval period recorded within the study area, it seems likely that the landscape of the study area was exploited and settled during the early medieval period. This is further supported by place-name evidence which suggests that the name Camster derives from the Norse *kambr* meaning crest and *bolstathr* meaning homestead (Young 1998, 56).

Medieval (1066 to 1500)

12.3.25 There are two sites recorded in the study area of medieval date. These are the find spot of medieval pottery (**28**) and a settlement site (**7**). The nearest town, Wick, is *c.*12.5 km from the Development Site boundary. The place-name is thought to be of Viking influence, *vik* meaning 'bay', and therefore interpreted as 'place by the bay' (Mills 2003, 497). Wick castle is thought to be one of the oldest castles in Scotland. Built in the 1100s, it was possibly intended as the chief seat of the Earl of Orkney and Caithness, Harald Maddadson (www.historic-scotland.gov.uk).

12.3.26 Clan wars during the medieval period meant that life was quite turbulent in Scotland. The lands of Caithness during the 12th and early 13th centuries were controlled by the Gunn Clan of Norse ancestry, who effectively acted as a government. The people at that time spoke a mixture of Gaelic and Norn, a form of Norse language that had been regionally adapted. The Gunn Clan was often embroiled in clan wars and power struggles. In the 13th century, the Scottish king looked to consolidate his power in northern Scotland. Several raids and counter raids in Caithness and Orkney began between Scotland and Norway. In 1266, the Norse rule in Caithness came to an end with the Treaty of Perth. The treaty ended the conflict between Norway and Scotland and established the sovereignty of each nation. Scotland took control of mainland northern Scotland, conceding Shetland and the Orkneys to Norway for a time. Northern Scotland was slowly subjected to the feudal charters and land assessments that characterised the rest of the country (Lelong 2003, 8).

12.3.27 The Sinclair Clan, associated closely with the Gunn Clan, rose in influence through the wars of Scottish Independence in the 12th century. In 1455, they received the lands of Caithness through marriage. Through the following centuries, they themselves were subject to clan wars and were engaged in a succession of feuds with the clans of Sutherland, Gunn and Murray. This often led to violent deaths. The battle of Tannach occurred 1.5 km to the east of the Development Site boundary. This battle was fought between the clan of Gunn against the clans of Mackay and Keith.

12.3.28 Many medieval houses were made from turf and wattle, leaving very little in terms of material evidence today. This is often a problem when trying to positively identify medieval buildings. (Macdonald 1996, 1).

12.3.29 A number of pieces of medieval pottery (**28**) were found during forestry ploughing in the vicinity of the Bronze Age chisel (**27**). There is no further information about this site. A settlement named Burnside (**7**) is also recorded. Although no further information exists, it could date to the medieval or early post-medieval periods and could be related to the traditional agriculture of the time, although there is no firm dating evidence.

Post-Medieval (1500 to 1900)

12.3.30 There are 34 post-medieval assets identified in the study area. There are a number of agricultural related assets such as sheepfolds (**3**, **14** & **16**), farmsteads (**6**, & **8-11**), enclosures (**23**), shielings (**26** & **29-31**), and boundary mounds (**37**), while other agricultural remains in the wider area include peat cuttings/hags[2]. Other remains in the study area include industrial assets such as a mill lade and settlement remains (**5**).

12.3.31 Although the day to day life of the population revolved around agriculture, the clan system which had developed in the medieval period continued to flourish for the early years of the post-medieval period. This system remained the main form of landownership until the 18th century and the Jacobite Rising. The ultimate defeat of the Jacobite army at Culloden in April 1746 resulted in the forfeiture of Jacobite estates in the Highlands, while symbols of the Jacobites, such as tartan and bagpipes, were outlawed (Lynch 2001, 339). However, as large areas of Caithness were held by the Sinclair's, a family that had supported in the Hanoverian's at Culloden, the area did not suffer many of the impacts of estate forfeiture seen elsewhere.

12.3.32 One of the more positive results of the Jacobite Rebellion was the production of a military survey of Scotland by William Roy. Undertaken between 1747 and 1752, it provides the first detailed survey of the study area, and depicts much of the land as unimproved moorland. Mapping prior to the Roy survey does not show the study area in any great detail, although some of the settlements surrounding the Development can be traced in the modern landscape. The surveys of Blaeu (1654 and 1662) are both limited in detail, but record Bilbster (*Bylbuster*) and Thuster (*Therster*) which lie to the north of the Development Site, as well as Tannach (*Tenoch*) located to the southeast. These surveys also depict the Loch of Yarrows, although it is named as *Rosbuster Loch*.

12.3.33 However, the Roy survey provide a more accurate picture of land-use, with improved farmland and their associated farmsteads or crofts along the corridors of the Wick River to the north and Strath Burn to the west. Although many of the crofts or settlements are unnamed, a number of sites are named and can be traced in the contemporary landscape. These settlements include *Bylpster, Flax, Shorackely, Badlybster, and Kempster* which are located to the west of the Development on the Strath Burn and appear to correspond with modern day Bylbster Moss/Strath, Flex, Scorriclet, Badlipster and Camster. All of these settlements are shown as small clusters of houses/crofters cottages, with what appears to be associated areas of enclosed land for limited arable cultivation. The survey also names *Thursted* and *Achern* which relate to *Thuster* and *Achairn* located to the north and east of the Development respectively. Again, these sites are depicted as a cluster of houses or crofts with associated enclosure, suggesting that the land immediately around the modern plantation was used for arable agriculture, with the land now used for forestry unimproved moor or waste. Further unnamed settlements appear to relate to Wathegar (**6**) and Lower Achairn (**10**), while a further unnamed farm might relate to the remains recorded on the Achairn Burn (**8** and **9**). Very few roads or tracks are shown and those that are illustrated are limited to the coast, with no roads marked within the study area.

12.3.34 The increase in agricultural activity and settlement in the post-medieval period can also be observed in the assets recorded, with a number of settlement/domestic sites identified. The shieling grounds and their associated huts within the study area became increasingly valuable as they formed a key part in the agricultural management of the area. Often used by the women and children, the shielding grounds consisted of areas of pasture, often in the uplands, which were only suitable for grazing during the summer months. This allowed cattle and sheep to graze on the available seasonal pasture, while the valuable lowland areas suitable for arable cultivation were protected from livestock. Not all of the buildings would have been inhabited, with some structures used for other associated activities such as cheese making (Macdonald 1996, 6).

12.3.35 Houses from the 17th century onwards are usually more identifiable in the archaeological record than earlier periods due to changes in construction methods, with many containing elements that survive such as stone bases/foundations (Macdonald 1996, 1). Settlements often developed and expanded with structures added as new buildings were required, and the area around the settlement was usually enclosed by a head dyke constructed of turf and stone (*ibid*. 6). Three of the farmsteads in the study area have a head dyke (**8** & **9**), and this feature is usually dated to the 17th to 18th centuries, before the agricultural reforms of the 19th century (Boyle 2003, 22). There is one farmstead recorded with a corn-drying kiln (**12**) built into the side of a small hill (Macdonald 1996, 5). They are usually situated some distance from the main settlement. There are also examples of peat cuttings immediately outside the study area, with two areas of cuttings in the study area close to a settlement (**5**) and a farmstead (**12**). Each cutting is situated close to a boundary mound (**27**) possibly representing two different land owners.

12.3.36 Field systems of the 17th and 18th centuries included an infield, closest to the settlement which would be cultivated continuously. The outfield was further away and included a fallow year (Macdonald 1996, 6). Rig and furrow is one of the most extensive archaeological assets that survive in the Scottish landscape (Halliday 2003, 69). This is rare in the study area as it is upland, and arable agriculture tended to be undertaken in lower lying areas. There are, however, examples of rig and furrow found immediately outside of the study area with associated farmsteads.

12.3.37 It is clear that efforts were made to improve the land from at least the 18th century with documentary accounts reporting that seaweed was widely used as a fertiliser (Sutherland 1794, 7). However, the late 18th century accounts also note that most of the arable land was limited to the coast, with much of the land occupied by the study area used for pasture and in need of improvement (*ibid* 1794, 14). Cattle is also reported to have been the main form of livestock raised, with attempts at sheep husbandry failing due to disease (*ibid* 1794, 24).

12.3.38 The 19th century is characterised by extensive agricultural reforms which led to land clearances in many parts of the Highlands of Scotland for the construction of sheep farms. An intensive process of evictions through displacement and relocation began to take place as the previously large work force was no longer required (Devine 1994, 55). A number of sheepfolds (**14**, **16** & **17**) and the two enclosures in the study area are evidence of this change in land use. The result of such depopulation left hundreds of shielings and crofting settlements abandoned and in ruins. These changes were slightly different in parts of the study area as the main landowner, Sir Benjamin Dunbar, remodelled farming by cutting out middle men who had been working between him and farmers (*ibid* 1994,147). These changes provided the

[2] Each house would have had its own area from which the family would cut peat from, known as peat hags, with the peat cut used for fuel. They are usually situated slightly away from the settlement they are associated with, on the boggy peat moors (Boyle 2003, 26)

farmers with fixed rents and more security, and subsequent changes included increasing the profitability of the land through drainage, as well as a move away from turf-built house to stone built houses (*ibid*, 148-149).

12.3.39 Through the 18th and 19th centuries, some industrialisation took place within the landscape, with industrial sites within the study area including a mill lade (**23).** The mill lade is related to a woollen mill situated *c*.1.2 km to the north of the red line boundary of the Development Site. This lade would have provided the mill with the water required to operate the water wheel. Other assets linked to industrial activities outside of the study area include four quarries that may have been used to acquire stone for the rebuilding of many of the farmhouses which had previously been constructed of turf. In the 16th and 17th centuries, quarrying had been a widespread, small-scale activity. The rise in demand for stone and slate meant quarrying became more specialised and localised (Whyte 1999, 274).

12.3.40 By the time of the First Edition Ordnance Survey plan of 1890, the study area represents a landscape dominated by pastoral farming, with crofts/farmhouses scattered across the landscape. Most were associated with small enclosures or land that may have been improved, with a number of the sites clustered near the Achairn Burn in the western part of the Development (**8**, **9**, **10** & **15**). This situation would remain relatively unchanged until the large-scale forestry plantation developments of the 20th century.

Modern (1901 to present)

12.3.41 There are three assets within the study area that date to the modern period (**13**, **21** & **32)**, and all are associated with World War II military operations.

12.3.42 Scotland played an important role in World War II. Scapa Flow in Orkney *c*.50 km north of the Development Site served as an important Royal Navy base, while RAF Wick served housed a number of operational squadrons attacking enemy shipping in coastal waters. In the study area, there are several military assets. These include a military camp and installations (**13**), and a well preserved Chain Home radar station (**32**), and associated remote reserve for the radar station (**21**)

12.3.43 Although assets dating to the modern period are limited, the opening years of the 20th century continued to see a population based on agriculture. This continued to form a major part of landscape use in the study area until the second half of the 20th century when large scale forestry was established in the area. As a result of this, the majority of the study area, and almost all of the land available for the Development, is now occupied by forestry plantations. This development reduced the reliance on sheep farming, and provided a new source of employment for the community.

Unknown

12.3.44 There are no undated assets within the study area.

Walkover survey

12.3.45 An archaeological walkover survey of the Development Site was carried out on the 19th March 2019. The Development Site is located within an area that has been used as a managed forestry plantation for over 50 years, and lies approximately 7 km south-west of Wick. The surrounding landscape is moorland to the south and west and agricultural land to the north and east.

12.3.46 An attempt was made to examine all turbine locations, as well as associated infrastructure including new access tracks, quarries, and compounds. However, the presence of mature plantation as well as areas of previous felling and replanting meant the majority of areas within the red line boundary of the Development Site were unsuitable for walkovers (Photos 1-3 within Appendix 12.2, EIAR Volume 3). A possible former course of Achairn Burn which runs through the red line boundary of the Development Site was noted in the areas of possible shielings (**29** & **30**) (Photo 4 within Appendix 12.2, EIAR Volume 3), although variations in the course of the river/burn might be natural rather than man-made, and this area will not be the subject of any development such as turbines, compounds or new access tracks. This small areas represents one of the only sections of the moor that has remained free from planting, and turbines or associated infrastructure are not proposed in this area. No further features were recorded.

Aerial Photographs

12.3.47 A review of aerial photographs covering the Development Site and held by the NCAP archive (formerly the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS)) was undertaken on the 12th December 2012 and photographs consulted are detailed in Table 12.4.

12.3.48 The only new asset recorded as part of the review was a sheepfold that now seems to have been destroyed (**43**), although a number of the farmsteads that had been recorded on the First Edition Ordnance Survey plans of the area were visible. This includes assets on the Achairn Burn (**9** & **15**).

12.3.49 A number of the previously recorded sheepfolds that are now within the forestry plantations are also visible on the aerial photographs (**14**, **16** & **17**). Clear evidence of planting is visible on aerial photographs from the early 1980s onwards, with previous photographs showing a pre-plantation landscape.

Table 12.4: Aerial Photographs

Sortie	Camera Position	Frame (s)	Date
106G_UK_0070	V	3451-3465	09/05/1946
106G_UK_0070	V	4447-4458	09/05/1946
106G_UK_0070	V	6146-6150	09/05/1946
106G_UK_0074	V	6131-6134	09/05/1946
OS_71_404	V	452-456, 502-503	08/08/1971
OS_82_211	V	001-0010	03/10/1982
ASS_637_88	V	39-44	11/10/1988
ASS_630_89	V	85-90	16/07/1989

Archaeological Potential

12.3.50 There are 7 undesignated heritage assets within or immediately adjacent to the red line boundary of the Development Site. These are largely associated with post-medieval agricultural land use in the area, and include sheepfolds (**16** & **17**) and shielings (**26**, **29** & **30**). Possible hints of earlier activity within the Development have also been suggested through the finds of a Bronze Age axe (**27**) and medieval pottery (**28**), although little is known about these sites.

12.3.51 Table 12.5 summarises the current visibility of archaeological sites within the study area and the predicted likelihood of further discovery.

Table 12.5: Predictability of Sites

Period	Visibility of Assets	Presence/Absence	Likelihood of further discovery within Development Site boundary
Prehistoric	Good – Remains surviving as earthwork	Present – Low.	Low
Roman	Poor	Absent	Low
Early Medieval	Poor	Present - Limited	Low
Medieval	Limited	Present - Limited	Low
Post-Medieval	Good – Remains still present and good cartographic coverage.	Present – Frequent.	Low

12.3.52 Although assets from most periods have been recorded within the Development Site and its immediate surroundings, the land within the red line boundary of the Development Site has been the subject of at least two cycles of intensive forestry plantation. This method of plantation can result in major impact on the landscape and buried remains, and as result the likelihood of previously undiscovered remains surviving from any period is considered to be low.

12.4 Embedded Mitigation

12.4.1 Embedded mitigation, comprising measures to avoid impacts to heritage assets, has been a consideration during the development of the design.

12.4.2 The location of turbines and the design of tracks, cable systems and temporary works areas were designed to avoid the location of known heritage assets within the Development Site. The assessment of effect takes into account mitigation measures embedded within the design.

12.5 Potential Effects

12.5.1 The iterative design process has already been taken into account during the assessment process. This has served to reduce or remove physical impacts and setting impacts wherever possible.

12.5.2 After undertaking an initial assessment, which used ZTV data as well as a review of assets to see if their setting contributes to their value, it was identified that one concentration of Scheduled Monuments in the Loch of Yarrows area had the potential to be impacted by the Development.

Construction

12.5.3 There is not thought to be any physical effects on known heritage assets during the construction phase of the Development. There are two assets located on, or immediately adjacent to, the sites of proposed water course crossings within the Development Site, being a sheepfold (**16**) and a possible shieling hut (**26**). Both of these assets have been exposed to cycles of deep ploughing and conifer planting as well as modern forestry track works. No remains were visible during the walkover survey and any below ground remains have likely been destroyed by the previous work in the area, such as the deep ploughing required for forestry planting. As a result a magnitude of change of No Change is predicted.

12.5.4 There is limited potential for previously unrecorded archaeology to be impacted during construction, due to the extensive operations linked to the forestry that covers the red line boundary of the Development Site. This is a result of deep ploughing to prepare the land for planting, as well as tree root action and damage caused by harvesting the timber and replanting. If previously unrecorded remains are encountered during construction mitigation could include recording/excavation, or micro-siting of turbines.

12.5.5 A review of built heritage in the wider 10km study area was undertaken for potential temporary impacts on the setting of assets. The majority of listed buildings are located in the historic core of Wick which is designated as Wick Pulteney Conservation Area. The conservation area is located approximately 4.5km to the northeast of the Development Site Boundary, and the setting of the buildings within the area is limited to the settlement and defined by their contribution to the historic streetscape of the town (Figure 12.3, EIAR Volume 2b). Furthermore, the results of walkover survey confirmed that the built environment in Wick precludes any views of the Development Site and views of construction activities would also not be possible. The setting of the listed buildings within Wick Pulteney Town Conservation Area will not change as a result of the construction of the Development and as a result no impacts are predicted.

12.5.6 Listed buildings outside of Wick were also reviewed, and their setting was found to be limited to their immediate surroundings. The two assets that are nearest the Development consist of Tannach Mains farmhouse (**LB14090**) approximately 1.5km to the southeast of the Development Site boundary, and Stirkoke House (**LB14089**) approximately 2km east of the Development Site Boundary (Figure 12.2, EIAR Volume 2b). As with other listed buildings in the wider landscape, their setting is very much limited to their immediate surroundings. In the case of Stirkoke House this setting includes the tree lined grounds that shield the house on all sides, while with Tannach Mains the building's setting is limited to the road and the farmland in which it is positioned.

12.5.7 Although there would be views of the construction and a potential increase in noise arising from construction traffic, these impacts would be temporary and would not change the principal agricultural setting of the farmhouse and would not affect its value. It is assessed there would be No Change to the setting or value of the asset.

Operation

12.5.8 There would not be any physical effects to heritage assets within the Development Site during the Operation phase of the Development. Any impacts on physical archaeological remains within the Development Site would occur during the construction phase and impact would be mitigated by a proportionate programme of archaeological investigation and recording.

12.5.9 A review of ZTV data, as well as how setting contributes to the heritage value of an asset, was undertaken for designated assets within the 10km study area (Figure 12.3, EIAR Volume 2b). This was also undertaken in with consultation with Historic Environment Scotland and The Highland Council.

12.5.10 There might be views of the turbines from a number of assets in the surrounding landscape, although in most cases the wider setting of the asset, which might include views of the proposed turbines, does not contribute to the asset's significance. Assets considered include a number of brochs, as well as designated settlement sites dating to the prehistoric (**SM3520**) and post-medieval (**SM3666**) periods (Figure 12.5, EIAR Volume 2b). It seems clear, in the case of the brochs, that it was only the immediate setting of the brochs that was important, with most of the brochs in the wider 10 km setting assessment study area focused in small clusters of two, three or four, often near water courses. These clusters included the group to the north on the Burn of Acharole (**SM609**, **SM13632** & **SM13634**), as well as a concentration near the coast between Thrumster and Old Wick to the south (**SM527**, **SM533**, **SM589**, **SM883** & **SM13635**). In all cases, the setting of these brochs would appear to be their immediate surroundings, with the brochs potentially representing distinct territories (Armit 2003, 81). It is possible that the brochs within the clusters may have been intervisible if they were occupied at the same time, although a lack of detailed excavation means that many of the brochs remain largely undated. However, it would appear that any intervisibity would have been within the distinct groupings, assuming they were occupied at the same time, and not out to brochs in the wider landscape, due to the distance between many of the groupings and the topography between many of the broch groupings. As a result, a view of turbines in the distance from these assets would not change the setting of the assets nor result in an impact on the sensitivity of the assets. The magnitude of change is assessed to be No Change and the effect is also assessed to be No Change. In EIA terms this equates to Not Significant.

12.5.11 This is also true of settlements sites. A prehistoric (**SM3520**) and post-medieval settlement (**SM3666**) are located to the northwest of the Development, and both just fall within the ZTV suggesting some views of turbines (Figure 12.5, EIAR Volume 2b). However, both settlements represent small collections of houses and their setting comprises the fields immediately surrounding the settlements which would have been used for agriculture (either arable or pastoral). As a result, limited views of turbines in the wider landscape will result in magnitude of change is assessed to be No Change and the effect is also assessed to be No Change

12.5.12 Consultation with HES did, however, identify two areas or groupings of sites where the setting of an asset directly contributes to the value of an asset, and these were taken forward for full assessment. These assets comprise:

- Grey Cairns of Camster (**SM90056**); and
- Assets that make up the Yarrows Archaeological Trail.

12.5.13 The Grey Cairns of Camster (**SM90056**) complex consists of a grouping of three Neolithic Cairns located approximately 2.9km south-west of the Development Site boundary (Photo 5 within Appendix 12.2, EIAR Volume 3, Figures 12.5.4 & 12.7, EIAR Volume 2b and Photomontage 12.1, EIAR Volume 2c). The scheduled site consists of a chambered long cairn and two chambered round cairns, which survive as substantial stone mounds on the eastern side of the Camster Burn. The long cairn measures 60.5m in length and between 9m and 17m wide and contains two burial chambers, and is in a slightly elevated position. Excavation revealed early Neolithic pottery, worked stone tools and fragments of human bone. The two round cairns are positioned in a slight hollow. The northern round cairn measures around 22m north to south, 19m east to west and 3.7m high. Excavations of the cairn revealed burnt human remains and pottery within the chamber as well as parts of two skeletons within stone blocking in the passage. The second round cairn measures approximately 9m in diameter and 0.4m high. Remains of a cist or central chamber have been exposed due to disturbance. They represent some of the best excavated examples in the area, and while similar remains may survive elsewhere they are rare as they also represent one of the only complexes where the pre-cairn landscape has been investigated (Davidson & Henshall 1991, 60).

12.5.14 Both the long cairn and the northern round cairn have been heavily reconstructed and are accessible to the public. Although they are the most prominent features in the hollow/scoop near the burn on which they are located, their positioning in the low-lying area means they are heavily screened from the east (and the Development), while plantations provide further screening from the north, west and south. Although the cairns are intervisible with one another, they do not appear to have been designed to have been visible or prominent in the wider landscape. As a result, their setting is contained and is defined very much their immediate surroundings. Any remains that might survive would have archaeological and historical value linked to the information the asset could provide about how Neolithic communities treated their dead, as well as potential information about social hierarchy and land use in the area, and as a designated asset it is considered to be of high sensitivity (heritage value).

12.5.15 The construction of the Development will result in a limited view of the turbines from the assets, with the ZTV suggesting that up to five turbines will be visible from the entrances of the restored long cairn and round cairn, although these views will be further limited due to vegetation cover. This is further supported by a photomontage taken from the restored round cairn (Photomontage 12.1, EIAR Volume 2c). The setting of the assets is very much defined by the landscape of the banks of the Camster Burn on which they are located, with the long cairn slightly elevated above the two round cairns. It is clear that they would have been intervisible with each other, but they do not appear to have been designed to have been visible in the wider landscape. Furthermore, they do not appear to have been intervisible with contemporary assets in the wider landscape. As the key contribution of the setting of the assets to their value is linked to their prominence in the hollow in which they are located, the overall effect of the

Development on the setting will be very limited and there will be no change to the assets' heritage value. The magnitude of change is assessed to be No Change, and on an asset of high sensitivity (heritage value) this will result an effect that is categorised as No Change. In EIA terms this equates to Not Significant

12.5.16 The Yarrows Archaeological Trail, located approximately 4.1km south of the Development Site boundary, is focused on the landscape around the Loch of Yarrows which contains a number of scheduled monuments from the Neolithic period through to the Iron Age (Figures 12.5 & 12.8-12.10, EIAR Volume 2b, Photomontage 12.2-12.4, EIAR Volume 2c). The trail encompasses monuments to the southwest of the Loch of Yarrows, towards Warehouse Hill, although other associated assets not included on the trail survive to the east of the loch on Battle Moss and the ground above it. Land-use is mainly semi-improved upland, with most of it used for rough grazing, and the topography is distinctive for this area of Caithness, with quite steep high ground surrounding the loch to the south, before giving way to the more open rolling moors to the north, and the Development.

12.5.17 Although most of the sites have not been the subject of modern archaeological excavation, meaning dating is difficult, the key monuments that make up the complex largely fall into two specific periods, with the best represented period being the Late Neolithic/Early Bronze Age. Assets from this period include a large number of round and chambered cairns (**SM435, SM436, SM467, SM507, SM508, SM8520,** & **SM8521**), as well as standing stones (**SM505**) and a stone row (**SM506**). These earlier monuments, associated with funerary and ritual practices, are juxtaposed with the Late Bronze Age/Early Iron Age assets which are largely linked to settlement and include clusters of hut circles (**SM605, SM610, SM612, SM8516** & **SM8533**) as well as a broch located on the shore of the loch (**SM611**).

12.5.18 Based on current available information regarding the chronology and form of the sites, there is a clear pattern when examining assets in a period versus type assessment, with the Late Neolithic/Early Bronze Age of the Loch of Yarrows being very much a ritual landscape dominated by funerary and ritual monuments including cairns and standing stones. The Late Bronze Age/Early Iron Age landscape, however, becomes one dominated by settlement remains. Furthermore, there is also a clear pattern in the distribution of sites with the assets forming the earlier 'ritual landscape' focused on the higher ground around the loch, while the later 'settlement landscape' is concentrated on the slightly lower ground closer to the loch.

12.5.19 The majority of the Late Neolithic/Early Bronze Age assets are intervisible with contemporary sites as well as later sites, while the use of higher ground for the positioning of these earlier ritual monuments would suggest they were designed to be visible, even prominent, in the Loch of Yarrows landscape. As a result of this, their visual prominence in the landscape forms part of their setting and clearly contributes to their significance. However, the distribution of assets would suggest that the extent of their setting is very much the Loch of Yarrows and the high ground that immediately surrounds the loch. Any remains that might survive would also have archaeological and historical significance linked to the information the asset could provide about how Neolithic and later communities treated their dead, as well as potential information about social hierarchy, settlement and land use in the area from the Neolithic through to the Iron Age. Furthermore, as a collection of designated assets they are considered to be of high significance (heritage value).

12.5.20 Construction of the Development will result in a number of turbines being visible from various assets that form the complex. Due to the varying topography of the landscape the number of turbines visible, based on ZTV data, varies from three or four in the low-lying areas, to all eleven from the higher ground. However, it is clear that the focus of the assets' setting is the Loch of Yarrows, and not the wider landscape. The majority of the 'ritual assets' surround the sheltered valley to the south of the loch, being positioned on the higher ground that flanks it, with a focus on Warehouse Hill to the south which rises to 188m OD (Figure 12.10, EIAR Volume 2b). However, similar assets have not been recorded continuing into the semi-improved moorland landscape to the north of the Loch of Yarrows complex, and towards the Development, or the higher Hill of Yarrows to the west. A comparable collection of assets has been recorded approximately 1 km to the southeast where a similar ritual landscape has been mapped near Loch Watenan and Groat's Loch with the Cairn of Get (**SM90048**) at its centre.

12.5.21 As a result, the key contribution of setting to the value of the assets that form the Loch of Yarrow complex is defined by their position around (and above) the loch. The magnitude of change is considered to be No Change, and on a collection of assets of high sensitivity (heritage value) this will result in an effect that is categorised as No Change. In EIA terms this equates to Not Significant

Decommissioning

12.5.22 There will be no physical impacts to buried cultural heritage assets during decommissioning of the Development as any impact upon archaeological remains will have been mitigated at the construction phase and it is not anticipated that any new earth works or excavation will be required.

12.5.23 No further effects on the setting of heritage assets will take place during the decommissioning of the Development. As discussed above in the Construction Impacts section (12.5.3-12.5.7), a review of the potential temporary impacts on built heritage revealed that the setting of the assets examined was limited to their immediate surroundings and not the wider landscape. As a result, views of turbines or associated machinery such as cranes will not change the principal component of the assets' setting, and no impacts are predicted during decommissioning.

12.6 Additional Mitigation

Construction

12.6.1 The potential for previously unrecorded archaeological remains within the Development Site is assessed to be low. However, there is always a potential for remains to be present. Localised impacts to previously unrecorded archaeological remains may occur as a result of trench excavation for the cable route and track accesses. Similarly, excavation of the crane pads, turbine bases, temporary construction compound, substation and small temporary quarries, may result in previously unrecorded archaeological remains being impacted. Mitigation to reduce potential adverse effects to previously unrecorded heritage assets can be undertaken as a condition of the planning permission for the Development. Furthermore, an Archaeological Clerk of Works (ACoW) will be appointed to oversee all works and manage the day-to-day operations during groundworks, where required.

12.6.2 It is recommended that an archaeological watching brief should be undertaken during specific construction activities, in accordance with a Written Scheme of Investigation that has been approved by the Highland Council Archaeologist. These activities will include removal of topsoil over large areas where there is a greater potential for encountering archaeological remains, specifically compound and small temporary quarry areas.

Operation

12.6.3 No additional mitigation is proposed for the operational phase.

Decommissioning

12.6.4 No additional mitigation is proposed for the decommissioning phase.

12.7 Residual Effects

Construction

12.7.1 As no impacts on previously recorded heritage assets are predicted, there are no residual effects to consider. No new archaeological assets have been identified in the Development Site and there is a Low potential for new assets/finds to be identified during construction. However, there is still a possibility for previously unrecorded archaeological remains to be present; these remains are likely to be of low sensitivity. Construction activities would likely result in total removal of any buried resource, resulting in a high magnitude of change and a moderate adverse significance of effect. The implementation of a successful programme of archaeological mitigation would compensate for the loss of any remains encountered and the residual effect is assessed to be minor adverse. In EIA terms this equates to Not Significant

Operation

12.7.2 As no effects are predicted during the operational phase, no additional mitigation is suggested and no significant residual effects have been identified.

Decommissioning

12.7.3 No residual effects are anticipated during the decommissioning of the Development. The effect is therefore judged to be No Change. In EIA terms this equates to Not Significant.

12.8 Cumulative Effects

Scope of Assessment

12.8.1 A total of eleven windfarms within the wider 10km study area from the Development Site Boundary were considered as part of the assessment of cumulative effects on heritage assets. These windfarms were considered due to their close proximity to the Development. The sites considered are:

- Cogle Moss (Approved);
- Halsary (Approved);
- Osclay Quarry (Approved);
- Rumster Forest (Approved)[3];
- Camster Forest (Scoping Option);
- Cogle Moss repowering and extension (Scoping Option);
- Red Moss (Scoping Option);
- Stemster (Scoping Option);
- Torranreach (Scoping Option);
- West of Flex Hill (Scoping Option); and
- Golticlay (not yet determined)

12.8.2 A cumulative impact will arise where the construction, operation or decommissioning of a development will physically impact the same buried asset as that of the Development. Cumulative impacts during operation can arise where the above ground built elements of the Development, when viewed alongside the turbines associated with the proposed wind farm, will interrupt lines of sight between assets which are related, or will contribute to changes in the view from heritage assets, for example an increase in massing which is clearly visible in views.

12.8.3 As the residual effects from the Development are all anticipated to be No Change, it is not considered that cumulative effects will result from the Development. In EIA terms this equates to Not Significant.

12.9 Summary

12.9.1 This chapter provides an assessment of the effects on heritage assets (archaeological remains, historic buildings and historic landscapes) that are likely to arise from construction, operation, and decommissioning of the Camster II Wind Farm. The assessment of existing baseline conditions identified 40 heritage assets within the study area (being a 1km buffer on the Development Site boundary) on the Highland Historic Environment Record and Pastmap, with a further two assets identified through a review of aerial photography. A further three assets were recorded by the Historic Environment Record but were not plotted as their location was uncertain (location provided as a four figure grid reference). Therefore, the total number of assets recorded within the study area is 45.

12.9.2 Although no surviving previously recorded assets were identified in areas proposed for construction of turbines, access tracks or other associated infrastructure, potential impacts on the setting of a number of designated assets in the wider landscape were identified through a review of assets alongside ZTV data as well as consultation with stakeholders. These included a number of sites that formed the Loch of

[3] It should be noted that if the proposed development at Golticlay successfully gains consent (and is subsequently implemented), then it has been agreed by the respective developers/ landowners that the Rumster Forest scheme will not be built. The is because the two schemes occupy the same Site.

Yarrows archaeological landscape as well as the Grey Cairns of Camster, and a full setting assessment was undertaken for both.

12.9.3 In EIA terms, no significant effects are predicted on known heritage assets as a result of the construction, operation or decommissioning of the Development. The magnitude of change to the assets is judged to be predominantly No Change. In EIA terms this equates to Not Significant..

Table 12.6: Summary of Assessment

Description of Receptor		**Description of Potential Effect**					**Description of Residual Effect**	
Receptor	Value / Sensitivity	Effect	Nature of Effect	Duration	Magnitude	Potential Significance	Summary of Additional Mitigation	Residual Significance
Construction								
Site of former sheepfold (**16**)	Low (now believed to be destroyed)	Potential loss of remains associated with asset, although asset assumed to have been destroyed.	Adverse	Permanent	No change	No change	No mitigation required as asset assumed to have been destroyed. If remains are detected mitigation could include survey and/or archaeological excavation.	Not Significant (No change)
Site of possible shielings (**26**)	Low (now believed to be destroyed)	Potential loss of remains associated with asset, although asset assumed to have been destroyed.	Adverse	Permanent	No change	No change	No mitigation required as asset assumed to have been destroyed. If remains are detected mitigation could include survey and/or archaeological excavation.	Not Significant (No change)
Operation								
The Yarrows Loch complex (**SM435, SM436, SM467, SM505, SM506, SM507, SM508, SM605, SM610, SM611, SM612, SM8516, SM8520, SM8521 & SM8533)**	High	Potential effect on the setting of the asset	Adverse	Temporary	No change	No change	No mitigation required	Not Significant (No change)
The Grey Cairns of Camster (**SM90056**)	High	Potential effect on the setting of the asset	Adverse	Temporary	No change	No change	No mitigation required	Not Significant (No change)
Decommissioning								
Nil	-	-	-	-	-	-	-	-

12.10 References

AOC Archaeology (2007) *A Heritage Report for the Proposed Development of a Windfarm, Burn of Whilk* Unpublished report for npower.

Adkins, R. Adkins, L. & Leitch, V. (2008) *The Handbook of British Archaeology* London: Constable.

Ancient Monuments and Archaeological Areas Act (1979) (as amended). 1979

Armit, I. (2003) *Towers in the North: The Brochs of Scotland,* Stroud: Tempus Publishing Limited.

Armit, I. & Ralston, I. (1997) "The Iron Age" in Edwards, K. & Ralston, I. (eds.) *Scotland After the Ice Age: Environment, Archaeology and History 8000BC – AD1000* New York: John Wiley & Sons.

Ashmore, P. (1996) *Neolithic and Bronze Age Scotland* London; Batsford Ltd.

Baldwin, J. R. (ed.) (1982) *Caithness: A Cultural Crossroads* Edinburgh: Edina Press Limited.

Boyle, S. (2003) "Ben Lawers: An Improvement Period-Landscape on Lochtayside, Perthshire" in Goven, S. (ed.) *Medieval or Later Rural Settlement in Scotland: 10 years on* Edinburgh: Historic Scotland.

Chartered Institute for Archaeologists (2017) *Standards and Guidance for Historic Environment Desk-Based Assessments*

Close-Brooks, J. (1977) "Two Bronzes from Caithness", *Proc Soc Antiq Scot* 106: 194-195.

Cowie, T. G. & Shepherd, I. A. G. (1997) "The Bronze Age" *in* Edwards, K. J. & Ralston, I. B. M. (eds) *Scotland: Environment and Archaeology – 8000BC to AD1000*, Chichester: John Wiley and Sons.

Davidson, J. L. & Henshall,A. S. (1991) *The Chambered Cairns of Caithness: An Inventory of the Structures and Their Contents,* Edinburgh: Edinburgh University Press.

Devine, T. (1994) *Clanship to Crofter's War: The Social Transformations of the Scottish Highlands* Manchester: Manchester University Press.

Dixon, P. (2002) "The Medieval Peasant Building in Scotland" in Klapste, J. (ed.) *The Rural House: From the Migration Period to the Oldest Still Standing Buildings* Belgium: Brepols Publishers

Dixon, P. (2003) "Champagne Country: A Review of Medieval Settlement in Lowland Scotland" in Goven, S. (ed.) *Medieval or Later Rural Settlement in Scotland: 10 years on* Edinburgh: Historic Scotland.

Edwards, K. J. & Ralston, I. B. M. (eds) *Scotland: Environment and Archaeology – 8000BC to AD1000*, Chichester: John Wiley and Sons.

Halliday, S. (2003) "Rig-and-furrow in Scotland" in Goven, S. (ed.) *Medieval or Later Rural Settlement in Scotland: 10 years on* Edinburgh: Historic Scotland.

Heald, A. & Barber, J. (2015) *Caithness Archaeology: Aspects of Prehistory,* Dunbeath: Whittles Publishing.

HES. (2016a). *Historic Environment Scotland Policy Statement June 2016 (replaces the Scottish Historic Environment Policy (SHEP) for operational matters),* Edinburgh: Historic Environment Scotland.

HES (2016b) *Historic Environment Circular 1*. Historic Environment Scotland. 1 June 2016.

HES. (2016c) *Managing Change in the Historic Environment: Setting,* Edinburgh: Historic Environment Scotland.

HES (2019) *Historic Environment Policy for Scotland (HEPS),* Edinburgh: Historic Environment Scotland.

Highlands Council (2012) *Highland-wide Local Development Plan*

Hunter, J, (2003) "The Early Norse Period" in Edwards, K. & Ralston, I. (eds.) *Scotland after the Ice Age: Environment, Archaeology and History 8000BC – AD1000* Edinburgh: Edinburgh University Press.

Lavin, P. (2011) *The Shaping of the Celtic World: and the Resurgence of the Celtic Consciousness in the 19th and 20th Centuries* USA: Universe Books.

Lelong, O. (2003) "Finding Medieval (or later) Settlement in the Highlands and Islands: The Case for Optimism" in Goven, S. (ed.) *Medieval or Later Rural Settlement in Scotland: 10 years on* Edinburgh: Historic Scotland.

Lynch, M. (2001) *Scotland: A New History,* London: Pimlico.

Macdonald, J (1996) "Medieval or later rural settlement" *Renfrewshire Local History Forum* 7: 1-7.

McCullagh, R. (1992) *Lairg: the Archaeology of a Changing Landscape* Midlothian: STAR (Scottish Trust for Archaeological Research).

McCullagh, R. & Tipping, R. (1998) *The Lairg Project 1988-1996: The Evolution of an Archaeological Landscape in Northern Scotland* Midlothian: STAR (Scottish Trust for Archaeological Research).

Mills, A. (2003) *Oxford Dictionary of British Place Names* Oxford: Oxford University Press.

Oosthoek, J. (2013) *Conquering the Highlands: a History of the Afforestation of the Scottish Uplands* Australia: Australian National University.

Parker Pearson, M. (1999) "The Earlier Bronze Age" in Hunter, J. & Raltston, I. (eds.) *The Archaeology of Britain: an Introduction from the Upper Palaeolithic to the Industrial Revolution* Oxon: Routledge.

ScARF, (2012) "Summary Roman Panel Document: Scotland, The Roman Presence" in Hunter. F & Carruthers. M (eds) *Scottish Archaeological Research Framework: Society of Antiquaries of Scotland*.

ScARF, (2012) "Summary Palaeolithic and Mesolithic Panel Document" in Saville, A. & Wickham-Jones, C. (eds) *Scottish Archaeological Research Framework: Society of Antiquaries of Scotland*.

Scottish Government. (2004). Planning Advice Note: PAN 71 Conservation Area Management, December 2004.

Scottish Government. (2011). Planning Advice Note: PAN 2/2011 Planning and Archaeology, July 2011.

Scottish Government. (2014a). Scottish Planning Policy 2014 (SPP). Paragraphs 135-151: Valuing the Historic Environment.

Scottish Government. (2014b). Our Place in Time - The Historic Environment Strategy for Scotland. Scottish Government / APS Group Scotland.

Swanson, C. (1985) *Brochs in Caithness: A Plan for Their Interpretation* unpublished report for Caithness District Council.

The Town and Country Planning (Scotland) Act 1997. 1997 c. 8.

Tolan-Smith, C. (2008) “Mesolithic Britain” in Bailey, G. & Spikins, P. (eds.) *Mesolithic Europe* Cambridge: Cambridge University Press.

Wagner, P. (2012) *Pictish Warrior AD297-841* Oxford: Osprey publishing.

Whyte, I. (1999) “The Historical Geography of Britain from AD 1500: Landscape and Township” in Hunter, J. & Raltston, I. (eds.) *The Archaeology of Britain: an Introduction from the Upper Palaeolithic to the Industrial Revolution* Oxon: Routledge.

Internet Sources

British Geological Survey website (http://mapapps.bgs.ac.uk/geologyofbritain/home.html) accessed 3rd April 2019.

English Heritage Thesaurus (http://thesaurus.english-heritage.org.uk) accessed 5th January 2014.

Historic Environment Scotland website (http://portal.historicenvironment.scot/designation/LB13839) accessed 3rd April 2019.

Historic Scotland Website a (http://www.historic-scotland.gov.uk/prehistoric-burials.pdf.a) accessed 3rd December 2013.

Historic Scotland Website a (http://www.historic-scotland.gov.uk/index/places/propertyresults/propertydetail.htm?PropID=PL_059) Date accessed 5th December 2013

National Library of Scotland Maps (https://maps.nls.uk) accessed 3rd April 2019

PastMap (www.pastmap.org.uk) accessed 3rd April 2019

Soil Map Scotland (http://map.environment.gov.scot/Soil_maps) accessed 3rd April 2019

Highlands Archive Service, Wick

P770/1 and P770/2 – Royal Commission (Highlands and Islands, 1892). Notes added relating to land suitable for crofts.

P770/3 – Caithness Shire attested by Benjamin Dunbar or Hempriggs, B. Williamson of Marlefield, J. C. Sutherland of Forse, James Smith of Olrig, J. Innes of Thurster, John Macleay of Keiss. Land surveyor Peter Manson. Published by John Thomson & Co. Edinburgh, 1822

National Library Scotland Maps

1654 – John Blaeu Atlas of Scotland, Cathenesia

1662 – John Blaeu Atlas of Scotland, Cathenesia

1747-55 – William Roy survey of Scotland

1890 – First Edition Ordnance Survey plan

1905 – Second Edition Ordnance Survey plan

Environmental Topic Area	Stage of Development	Embedded Mitigation into the project design	Additional Mitigation
	Decommissioning	Embedded mitigation of decommissioning activities will follow guidance current at the time, and is likely to be similar to that proposed during construction, including pre-decommissioning surveys and ecological supervision of activities.	Mitigation of decommissioning activities should follow that proposed for the embedded mitigation of construction activities, including pre-decommissioning surveys and ecological supervision of activities (e.g. by an ECoW).
Chapter 12: Archaeology and Cultural Heritage	Design Stage	Embedded mitigation, comprising measures to avoid impacts to heritage assets, has been a consideration during the development of the design. The location of turbines and the design of tracks, cable systems and temporary works areas were designed to avoid the location of known heritage assets within the Development Site.	No additional mitigation is considered necessary at the design stage.
	Construction	An initial phase of site survey will be undertaken during felling operations to assess all worksite locations for previously unrecorded surface remains. This could be followed by a detailed survey of the area using LiDAR data to examine the landscape followed by excavation and/or survey if potential direct impacts are identified. An Archaeological Clerk of Works (ACoW) will supervise construction activities to ensure minimal disruption to the project, where necessary.	Mitigation to reduce potential adverse effects to previously unrecorded heritage assets can be undertaken as a condition of the planning permission. Furthermore, an Archaeological Clerk of Works will be appointed to oversee all works and manage the day-to-day operations during groundworks, where required. It is recommended that an archaeological watching brief should be undertaken during specific construction activities, in accordance with a Written Scheme of Investigation that has been approved by the Highland Council Archaeologist. These activities will include removal of topsoil over large areas where there is a greater potential for encountering archaeological remains, specifically compound and borrow pit areas.
	Operation	No embedded mitigation is considered necessary for the operational phase.	No additional mitigation is considered necessary for the operational phase
	Decommissioning	No embedded mitigation is considered necessary for the decommissioning phase.	No additional mitigation is considered necessary for the operational phase
Chapter 13: Traffic, Transport and Access	Construction	Temporary effects relating to an increase in general construction traffic will be minimised through the implementation of an appropriate, locally focused, Construction Traffic Management Plan (CTMP) which will seek to promote the safe and efficient transportation of components and materials in order to minimise congestion and disruption. This will be produced post-consent and approved in consultation with Police Scotland, THC, and Transport Scotland. The CTMP will apply to all sections of the public road network but enhanced with locally specific measures as appropriate. It will include but not be limited to: • The proposed route for construction traffic including AILs; • The necessary agreements and timing restrictions for construction traffic. This may include the restriction of the number of daily HGV vehicle movements, if deemed necessary by THC; • Details of proposed Condition Survey(s) on access route(s); • Proposals for maintenance of these routes during (and attributable to) construction of the Development; • Proposals for monitoring and agreeing (abnormal maintenance) costs attributable to construction of the Development; • Escort arrangements for AILs;	The CTMP that is embedded into the planning and design of the Development is expected to cover all necessary mitigation measures during the construction phase. No additional mitigation is considered necessary.

APPENDIX 12.1: ARCHAEOLOGICAL ASSETS

Previously recorded archaeological assets recorded within the 1km study area. Asset ID numbers relate to numbers used throughout the Archaeology and Cultural Heritage Chapter (Chapter 12, EIAR Volume 2a), and are illustrated on Figure 12.1, EIAR Volume 2b.

Reference	Grid Reference	Period	Description	Asset ID
MHG1931, 8975, SM 586, DHG4492?	ND 3236 4748	Iron Age and Modern	Possible broch, Tannach Mains. Landowners believe the site to be the remains of a military installation of some kind. Very little evidence to support either theory was uncovered during a watching brief. **Scheduled Monument**.	1
MHG53416	ND 28330 50131	Post-Medieval	Circular sheepfold, Wathegar. It lies in an area of rough ground just outside the enclosed fields to the south east of Upper Wathegar. It is clearly visible on vertical aerial photographs from 1946 and, according to modern aerial photography, now lies on the edge of a forest ride.	2
MHG1918, 8664	ND 271 472	Post-Medieval (possible)	Site of sheepfold, Upper Achairn. Group of four circular enclosures and a rectangular building, with five similar circular enclosures widely scattered to the north east. The area has been deep-ploughed and planted with conifers and there is little or no recoverable detail of the enclosures. However, the previous description indicates that they were probably old sheepfolds.	3
MHG53414	ND 2734 5100	Post-Medieval	Possible sheepfold and enclosure, Wathegar. The first, a possible circular feature, is suggested to be an early sheepfold. The second feature is described as a small square enclosure with a building possibly attached to its south side and is interpreted as a possible small farmstead.	4
MHG13689	ND 27600 45600	Post-Medieval (possible)	Oult-Ruag settlement. No more information.	5
MHG53410	ND 28173 50636	Post-Medieval	Farmstead, Upper Wathegar. A farmstead comprising three buildings, which is depicted on the 1st edition Ordnance Survey map *c.*1872. Also possibly marked on the early Roy Survey.	6
MHG13743	ND 32200 48900	Medieval/ post-medieval	Burnside. No more information.	7
MHG20251, MHG44433, MHG44435, 97739	ND 29400 49800	Post-Medieval (possible)	Farmstead, Achairn Burn. A farmstead comprising one unroofed long building and a length of what may be a head-dyke is depicted on the 1st edition of the OS 6-inch map.	8
MHG20252, 97739	ND 28900 49500	Post-Medieval (possible)	Farmstead, Achairn Burn. A farmstead comprising one unroofed building of two compartments and a length of what may be a head-dyke is depicted on the 1st edition of the OS 6-inch map.	9
MHG20253, 97741	ND 29800 49800	Post-Medieval	Farmstead, Achairn Cottage. A farmstead comprising three roofed and inhabited/in use buildings surrounded by a wire fence.	10
MHG20255, 97743	ND 32400 48800	Post-Medieval	Puldagon. A farmstead comprising three roofed long buildings, one of which is L-shaped, one partially roofed building, and an enclosure is depicted on the 1st edition of the OS 6-inch map.	11
MHG20274, 97722	ND 27601 45942	Post-Medieval	Farmstead, Achairn Burn. Farmstead and corn-drying kiln comprising of one unroofed long building and an unroofed structure is depicted on the 1st edition of the OS 6-inch map.	12
MHG29804, MHG34272, 139010	ND 32252 47107 ND 32019 46843	Modern	WW2 military camp, radar station, and installations, Tannach. Some large military installations are visible on high ground on the west of the road, and an accommodation camp lies just west of the road. One small building lies to the east of the road, opposite the entrance to a roadway leading up to the installations on the hill. Chain Home radar station, Tannach. The Chain Home radar station is situated on the west side of the road between Gansclet and Haster. The radar station consists of several buildings, including the transmitter (Tx) and receiver (Rx) blocks with the power house (set-house) and several smaller buildings survive to the W of the road.	13
MHG32228	ND 27127 47271	Post-Medieval	Sheepfold. Circular sheepfold marked at this location on 1st edition of the OS 6-inch map.	14

Reference	Grid Reference	Period	Description	Asset ID
MHG32229	ND 27551 47524	Post-Medieval	Upper Achairn Farmstead. Upper Achairn Two large roofed buildings with a smaller circular one to east on 1st edition of the OS 6-inch map. Building is in ruins.	15
MHG32230	ND 27836 48253	Post-Medieval	Sheepfold, Upper Achairn. Circular sheepfold marked in this area on 1st edition of the OS6-inch map. Field survey, associated with wind farm development at Camster, found that the location has since been deep ploughed and planted with conifers and no traces of the site survive.	16
MHG32231	ND 28268 48020	Post-Medieval	Sheepfold, Upper Achairn. Circular sheepfold marked at this location on 1st edition of the OS 6-inch map.	17
MHG32235, MHG47980, 270684	ND 26609 45860	Post-Medieval	Sheepfold, Bullbrest. This circular sheepfold is situated in poorly drained moorland north of the remains of Bullbrest farmstead (17). The fold measures 9.5m in diameter within a dry-stone wall 0.6m in thickness and 0.5m in height, and has an entrance on the south. It is first depicted on the 1st edition of the OS 6-inch map	18
MHG32238	ND 32730 48841	Post-Medieval	Sheepfold, Puldagan. Irregular rectangular enclosure marked as sheepfold on 1st edition of the OS 6-inch map.	19
MHG32239	ND 30134 49283	Post-Medieval	Sheepfold, Blingerry Hill. Circular sheepfold marked on 1st edition of the OS 6-inch map.	20
MHG36137, 167149	ND 32650 47950	Modern	The remote reserve for Tannach radar station.	21
MHG36778, 183556, MHG42763	ND 32340 47850	Post-Medieval (possible)	Tannach school and schoolhouse. Undated school.	22
MHG39869	ND 27200 47190	Post-Medieval (possible)	Site of Building, Upper Achairn. A group of four circular enclosures and one rectangular building. The purpose of these enclosures is uncertain. They are most likely to be fairly recent stock enclosures, possibly contemporary with the shielings which occur at intervals along Achairn Burn. They are not hut circles.	23
MHG40094	ND 32370 49670	Post-Medieval	Newlands. Former mill lade feeding mill.	24
MHG169, 8676	ND 2690 4709	Bronze Age (possible)	Hut circle, Upper Achairn. Heavily peat-covered circular structure on flat moorland, probably a hut circle	25
MHG1594, 8671	ND 2820 4850	Post-Medieval (possible)	Probable shieling hut, Upper Achairn. Two grassy patches with indeterminate footings of buildings, probably shielings and a square ditched enclosure with an entrance causeway which is probably a garden or cultivation plot abandoned in the 18th or 19th century. The area has been deep ploughed and planted with conifers as well as being disturbed by drainage and forestry track works.	26
MHG1920	ND 2999 4923	Bronze Age	Find spot, Blingery Hill. Bronze Age chisel/ axe	27
MHG1921	ND 2999 4924	Medieval	Find spot, Blingery Hill. Medieval pottery	28
MHG1923, 8669	ND 2811 4870	Post-Medieval (possible)	Shieling, Achairn Burn. Turf covered shieling mound.	29
MHG1924, 8670	ND 2815 4865	Post-Medieval (possible)	Shieling hut, Achairn Burn. Turf covered foundations of shieling hut. Evidence of others in vicinity	30
MHG1925, 8672	ND 2739 4703	Post-Medieval (possible)	Shieling huts, Upper Achairn. Grass covered mound, number of stones around	31
MHG32232	ND 28192 45885	Post-Medieval	Peatstack, W of Hill of Olliclett	32
MHG1930, 8974	ND 3275 4928	Iron Age	Cairn Hill. Old Stirkoke, a broch, has been robbed over the years. Artefacts such as a bone bodkin, a polished bone needle, half a disc of mica schist, a stone lamp, a few spindle whorls, and two whetstones have been found here.	33
MHG47982, 270686	ND 27566 45802	Post-Medieval (possible)	Burnt mound, Achairn Burn. This grass-grown burnt mound is situated in a loop of the Achairn Burn. Oval on plan, it measures about 5.4m from north west to south east by 3.1m transversely and 0.3m in height. Removal of a turf from the top of the mound revealed a core of small angular fragments of burnt stone and small pieces of charcoal within a matrix of loose, brown earth.	34

Reference	Grid Reference	Period	Description	Asset ID
MHG47983, 270687	ND 27612 45755	Post-Medieval (possible)	Possible shieling hut, Achairn Burn. What may be the remains of a shieling-hut are situated on the west bank of the Achairn Burn. They comprise a grass-grown mound measuring about 7m in diameter and 0.5m in height, from which at least three vertical slabs up to 0.5m high protrude through the turf.	35
MHG47984, 270688	ND 2755 4559	Post-Medieval (possible)	Shieling huts, Achairn Burn. A dispersed group of four subrectangular shieling-huts is situated on the left bank of the Achairn Burn.	36
MHG47987, 270691	ND 28152 45882	Post-Medieval (possible)	Hill Of Oliclett. Nothing is now visible of a `pile of sods' depicted at the foot of the gentle, west face of the Hill of Oliclett on the 1st edition of the OS 6-inch map	37
MHG53411	ND 27698 50428	Post-Medieval	Circular sheepfold, Wathegar. It measures approximately 12m in diameter and stands in places to 0.6m high, although the walls are generally very spread. The lintel from the collapsed entrance is visible on the east side of the fold.	38
MHG53412	ND 27644 50689	Post-Medieval	Circular sheepfold, Wathegar. This sheepfold is described in the Cultural Heritage chapter of an Environmental Statement for a proposed wind farm. It is by far the largest of the three sheepfolds recorded during the survey and is the only one in the vicinity of Wathegar which is shown on the 1st edition Ordnance Survey map	39
MHG53413	ND 27285 50700	Post-Medieval	Circular sheepfold, Wathegar. This sheepfold is described in the Cultural Heritage chapter of an Environmental Statement for a proposed new wind farm. It measures approximately 12m in diameter and is well-preserved, standing to 1.2m high excluding the remnants of the turf capping.	40
Aerial Photographs	ND 30080 49157	Post-Medieval	Possible sheepfold identified on aerial photographs. Now in area of plantation.	41
Aerial Photographs	ND 29465 49390	Post-Medieval	Possible sheepfold recorded on aerial photographs. Now appears to have been destroyed.	42
MHG50691	ND 37 56	Modern	Classified as Bristol Beaufort I: date of loss cited as 30 September 1940). L9942: this aircraft of 42 Sqdn [RAF] ditched in Sinclair [Sinclair's] Bay during torpedo drop practice.	--
MHG2047	ND 32 49	Prehistoric	Site of late C19 discovery of a number of long cists containing human burials. Exact locations unknown.	--
MHG39871	ND 32 49	Prehistoric	Site of late C19 discovery of a number of long cists containing human burials. Exact location unknown.	--

APPENDIX 12.2: PHOTOGRAPHS

Photograph 1: Evidence of clear-felling in the area of the former sheep fold (16).

Photograph 2: Mature plantations in the northern section of the proposed site.

Photograph 3: Evidence of clear feeling and new planting in the area of Turbine 7.

Photograph 4: Shieling site (29 & 30) near the Achairn Burn, taken from a possible earlier alignment of the Achairn Burn.

Photograph 5: The long cairn which forms the northern most limit of the Grey Cairns of Camster complex.

Photograph 6: View from two cairns on the eastern side of the Loch of Yarrows (SM8521) looking southwest towards cairns on Warehouse Hill. The Burn of Whilk windfarm can be seen in the distance.

N

KEY:

- Development Site
- Development Site - 1km Buffer
- Scheduled Monument - Point
- Known Archaeology - Point
- Scheduled Monument - Polygon
- Known Archaeology - Polygon
- Proposed Turbine Location
- Proposed Permanent Met Mast Location
- Proposed New Watercourse Crossing
- Existing Watercourse Crossing
- Proposed New Access Track
- Existing Access Track
- Potential footpath/bridleway
- Proposed Crane Pad and Laydown Area
- Proposed Construction Compound
- Proposed Wind Farm Infrastructure Building
- Proposed Small Temporary Quarry

0 1 km

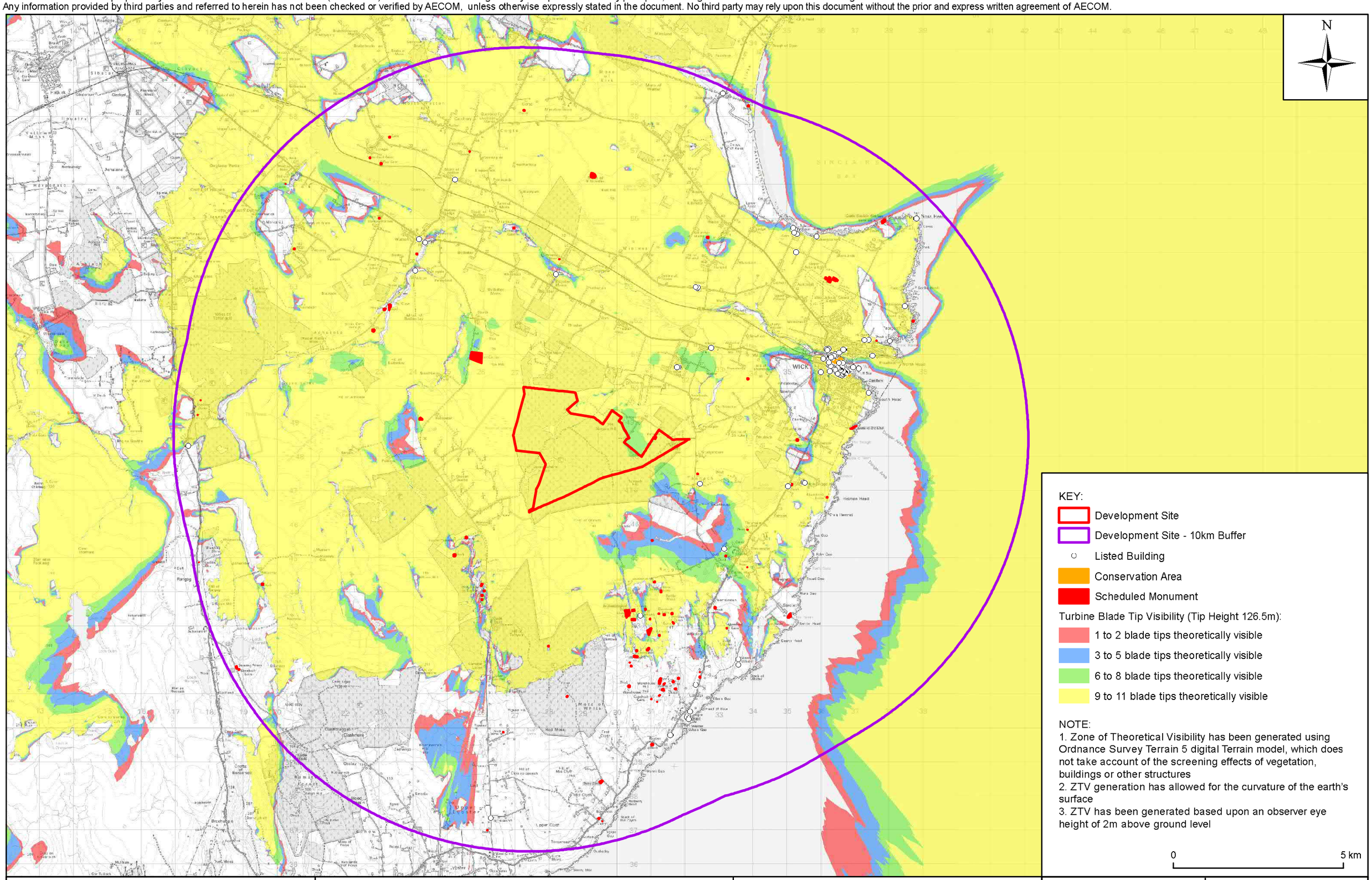
Client: e·on	Title: FIGURE 12.1 KNOWN ARCHAEOLOGY	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD / Approved: NT
			Date: APRIL 2019 / Scale at A3: 1:25,000
			Drawing Number: C_190408_ES12.1_v1 / A3

SM3520
LB14089
LB14090
MHG29867
SM13635
SM90056
SM611
SM436
SM90048

KEY:
- Development Site
- Development Site - 1km Buffer
- Known Archaeology
- Listed Building
- Scheduled Monument

0 2 km

Client: e·on	Title: FIGURE 12.2 ASSETS OUTSIDE 1KM STUDY AREA	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: JS / Verified: VD / Approved: NT / Date: MAY 2019 / Scale at A3: 1:50,000 / Drawing Number: C_190514_ES12.2_v1 / A3
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			



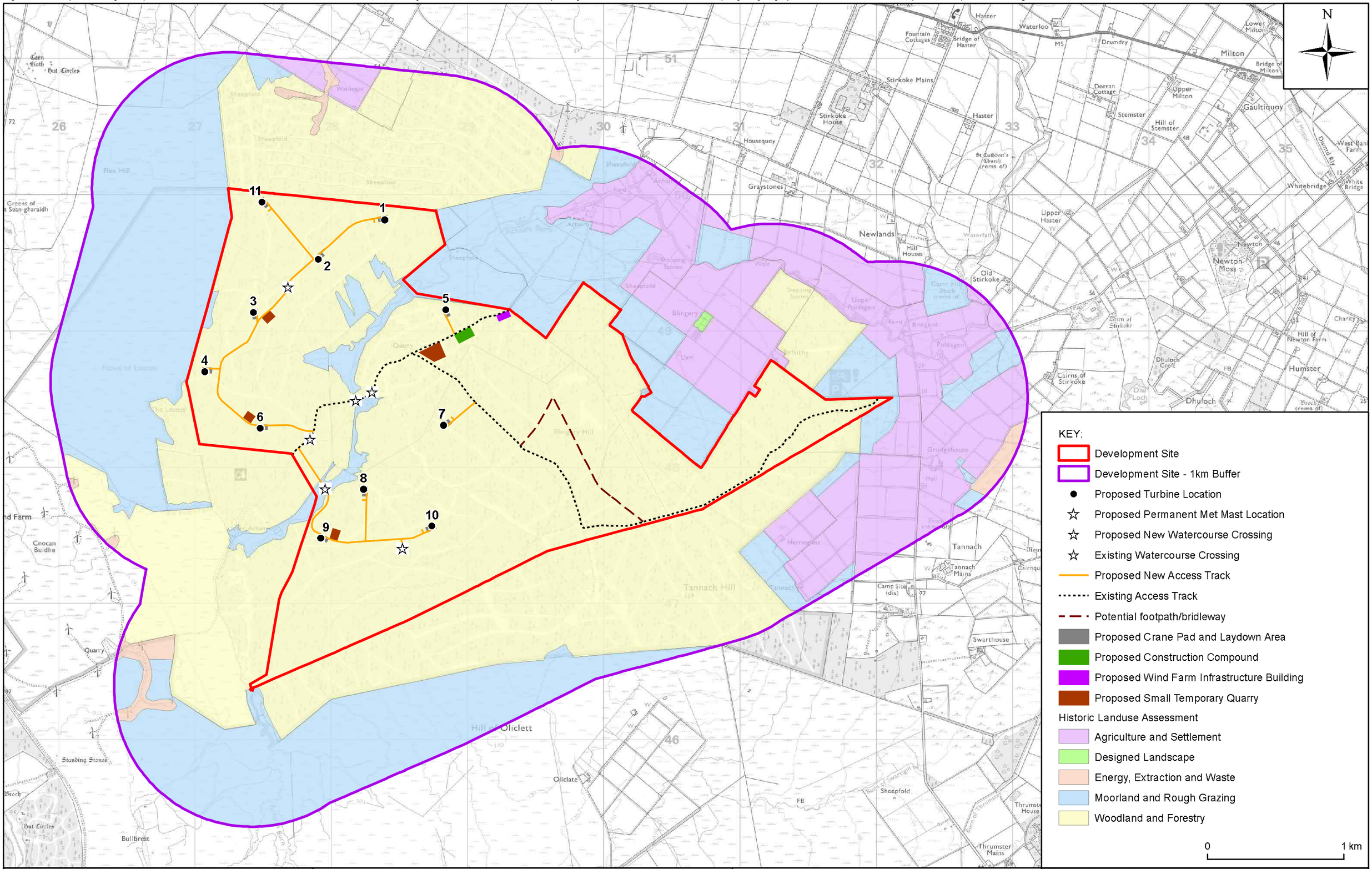
Client: e·on

Project: CAMSTER II WIND FARM
ENVIRONMENTAL IMPACT ASSESSMENT

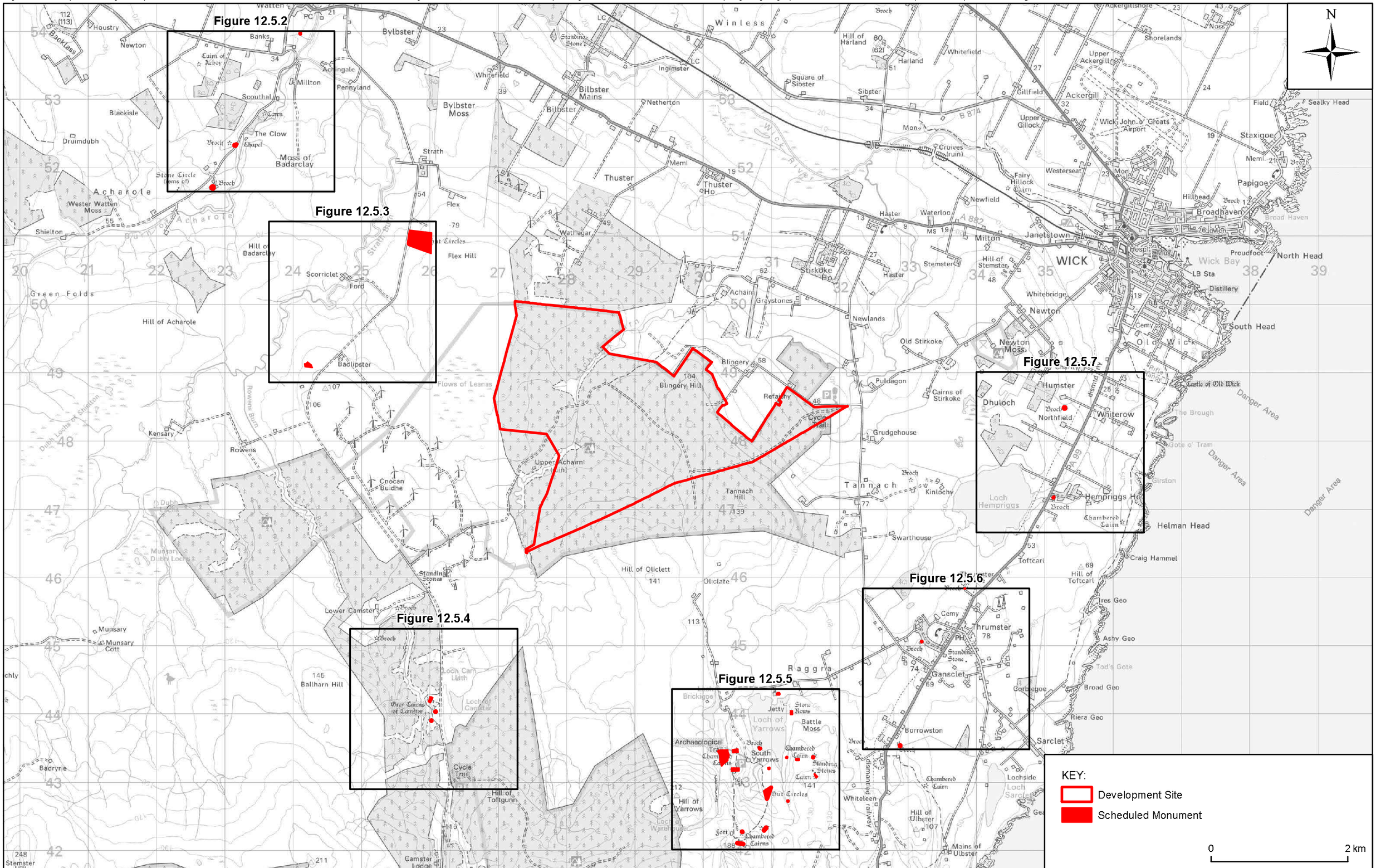
Title: FIGURE 12.3
DESIGNATED ASSETS WITHIN 10KM

AECOM
One Trinity Gardens
Quayside
Newcastle, NE1 2HF
Tel +44 (0) 191 224 6500
Fax +44 (0) 191 224 6599
www.aecom.com

Drawn:	LC	Checked:	JS
Verified:	VD	Approved:	NT
Date:	APRIL 2019	Scale at A3:	1:100,000
Drawing Number:	C_190410_ES12.3_v1		A3



Client: e·on	Title: FIGURE 12.4 HISTORIC LANDUSE ASSESSMENT	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC Checked: JS Verified: VD Approved: NT Date: MAY 2019 Scale at A3: 1:25,000 Drawing Number: C_190523_ES12.4_v2 A3
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			



Client: e·on	Title: FIGURE 12.5.1 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD / Approved: NT
			Date: MAY 2019 / Scale at A3: 1:50,000
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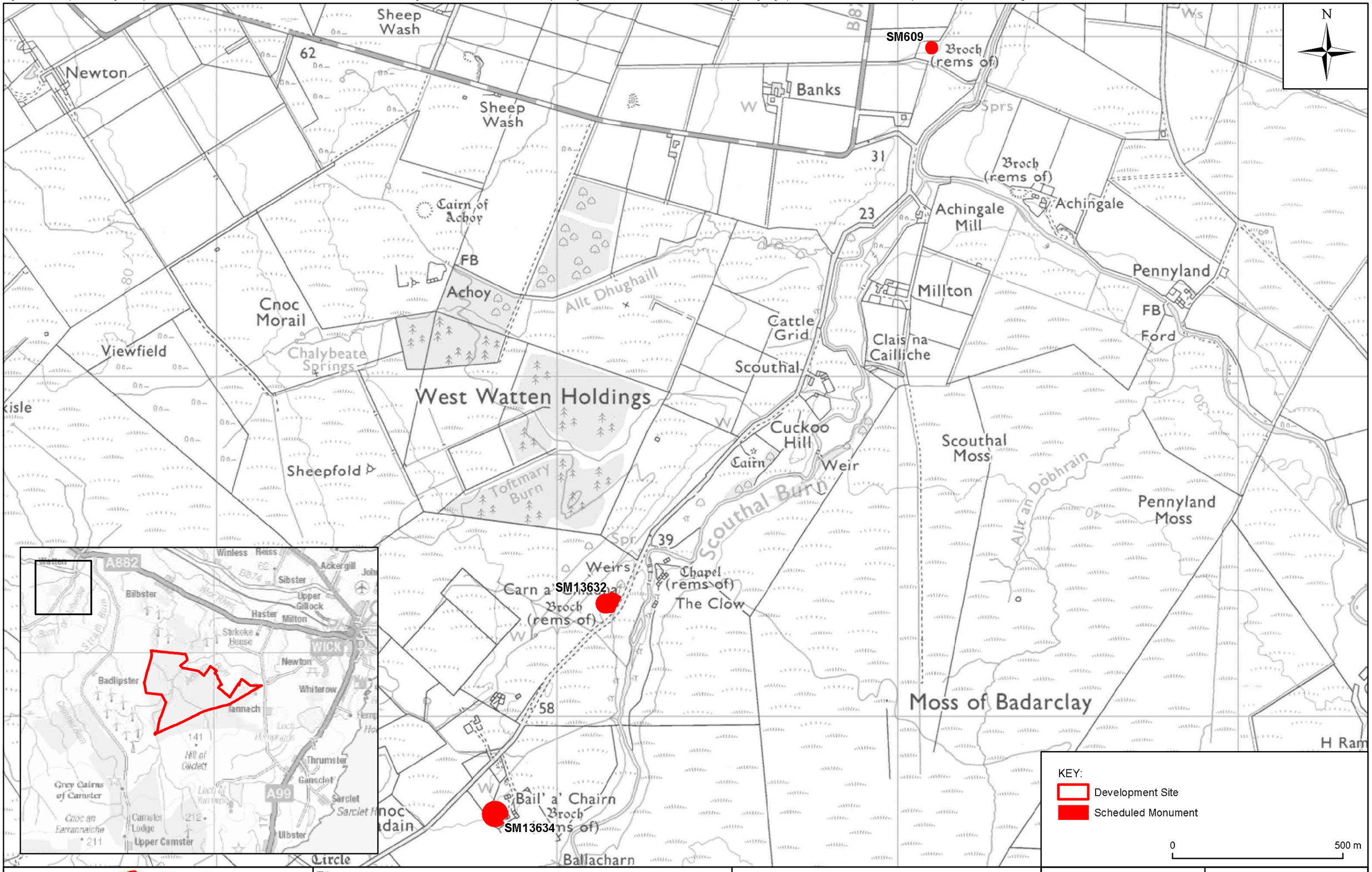
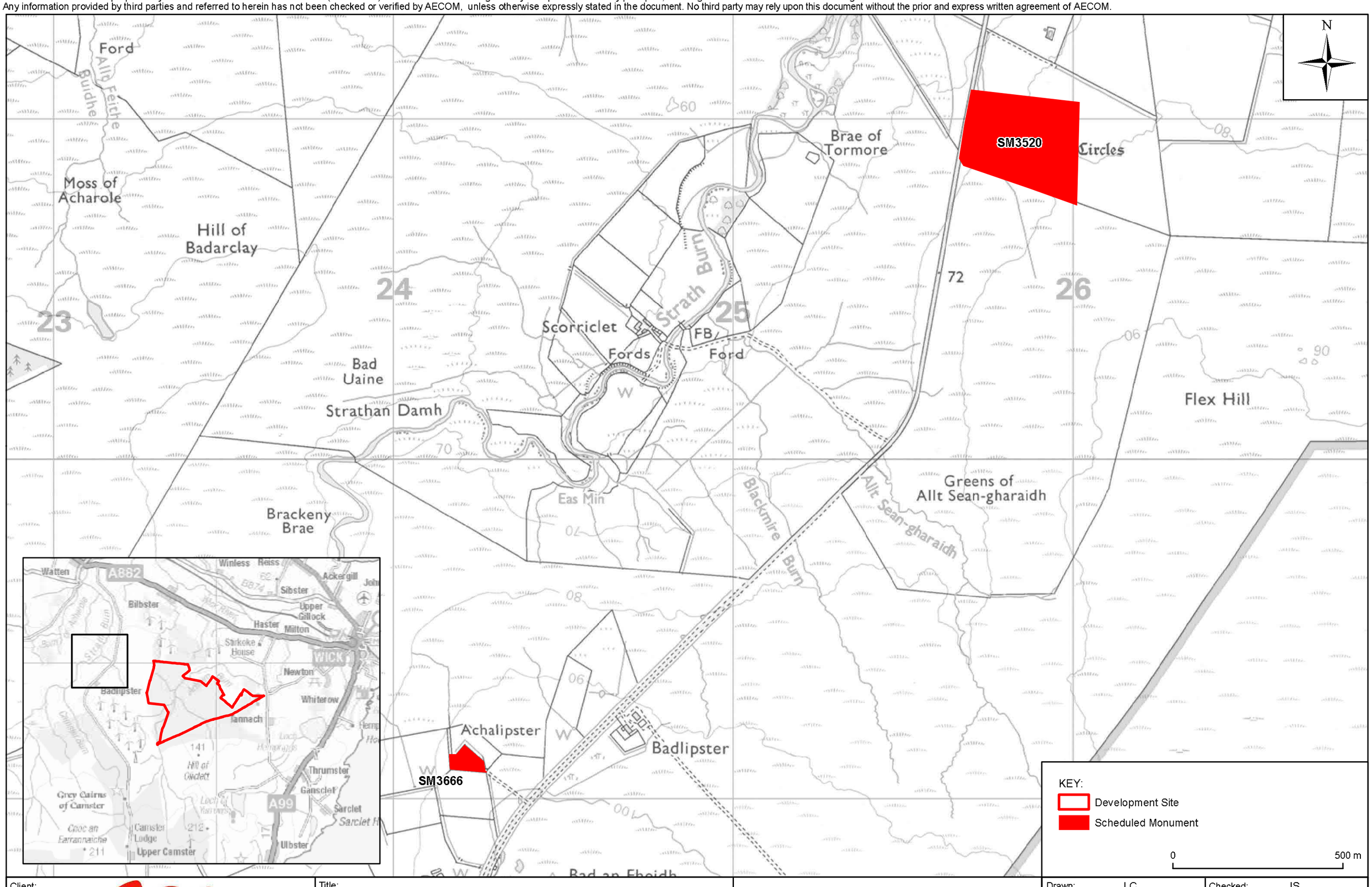
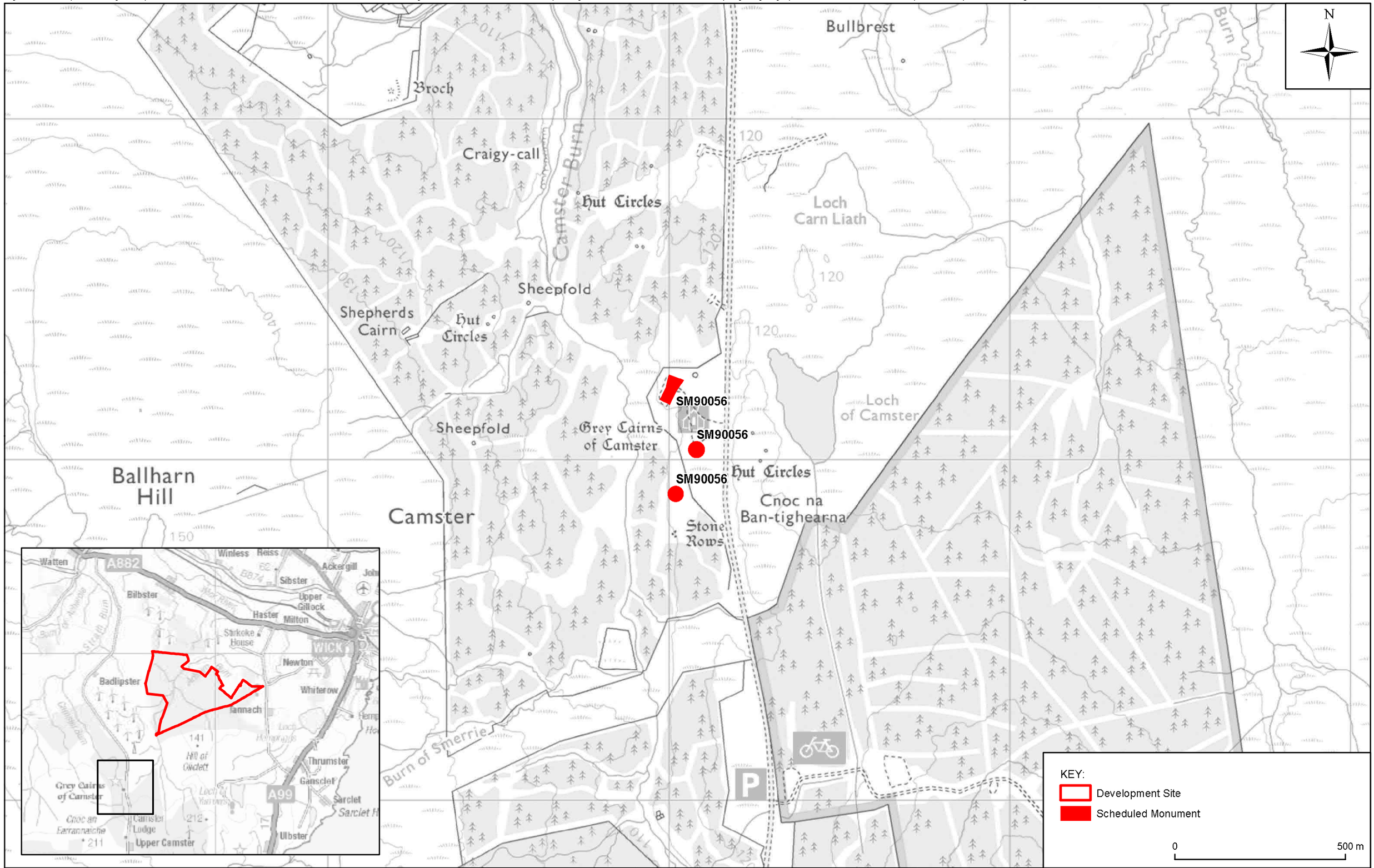


Client: e·on	Title: FIGURE 12.5.2 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF	Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			

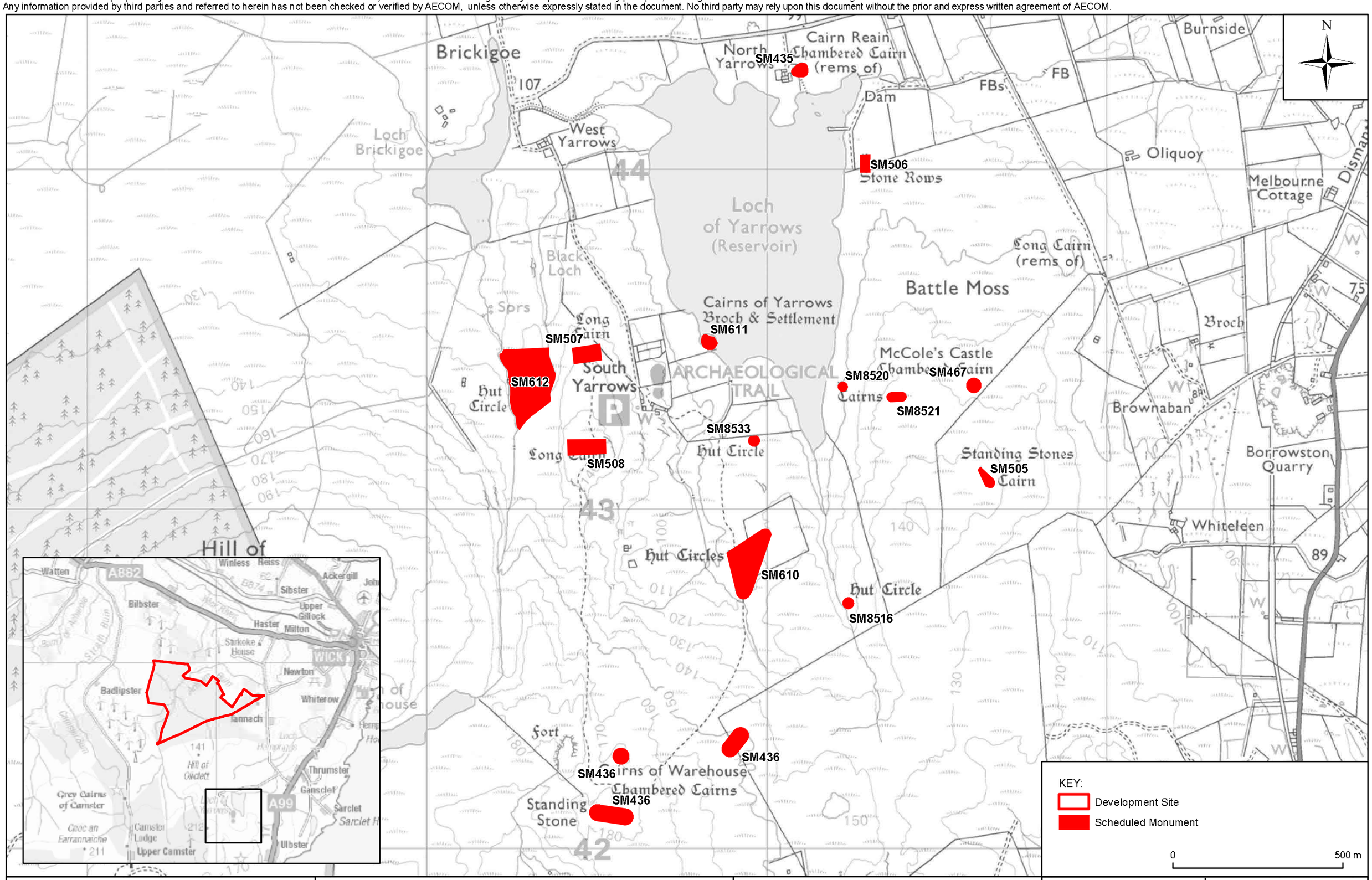
Drawn:	LC	Checked:	JS
Verified:	VD	Approved:	NT
Date:	MAY 2019	Scale at A3:	1:10,000
Drawing Number:	C_190510_ES12.5.2_v2		A3



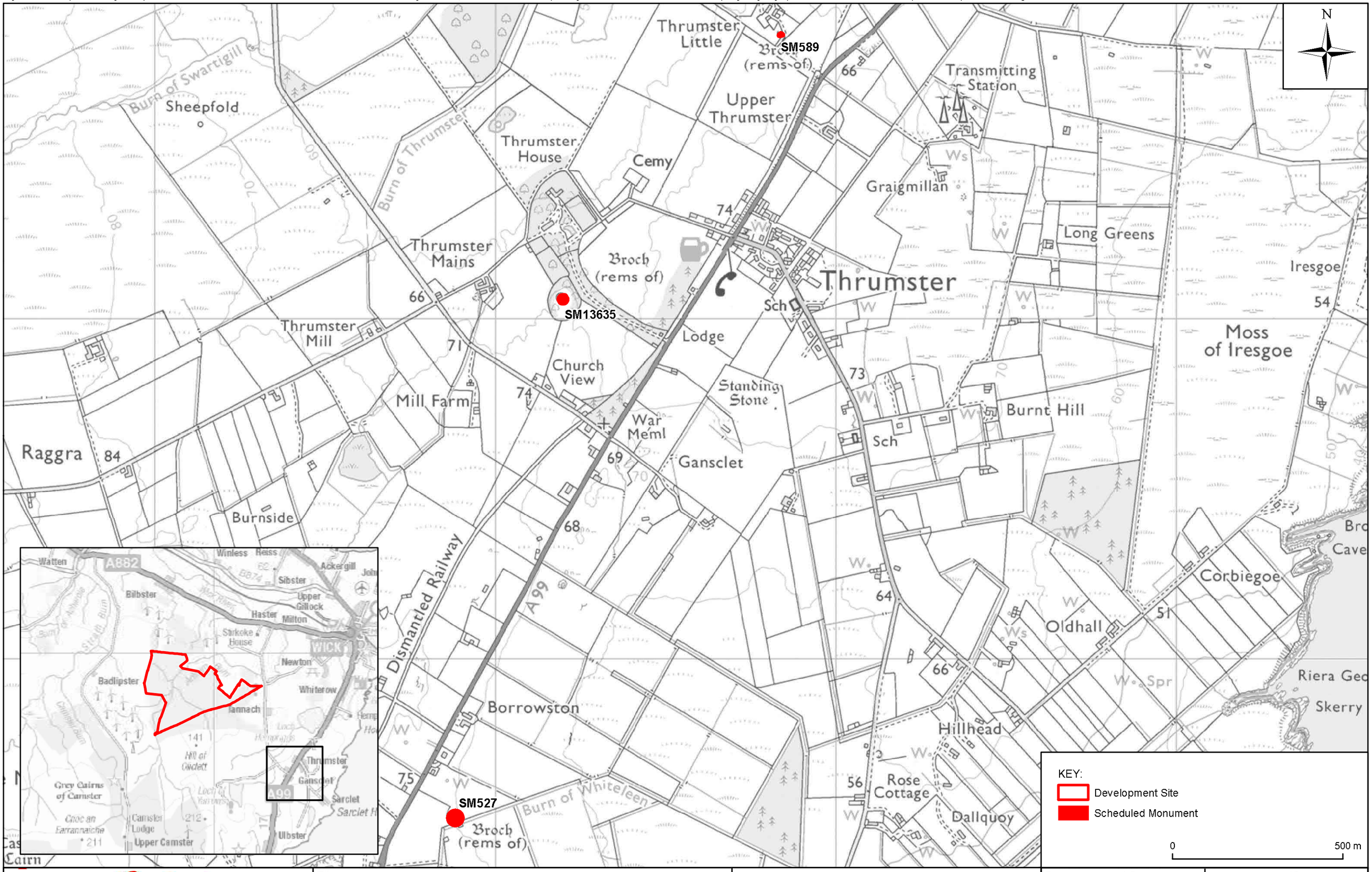
Client: e·on	Title: FIGURE 12.5.3 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD / Approved: NT
			Date: MAY 2019 / Scale at A3: 1:10,000
			Drawing Number: C_190510_ES12.5.3_v2 / A3



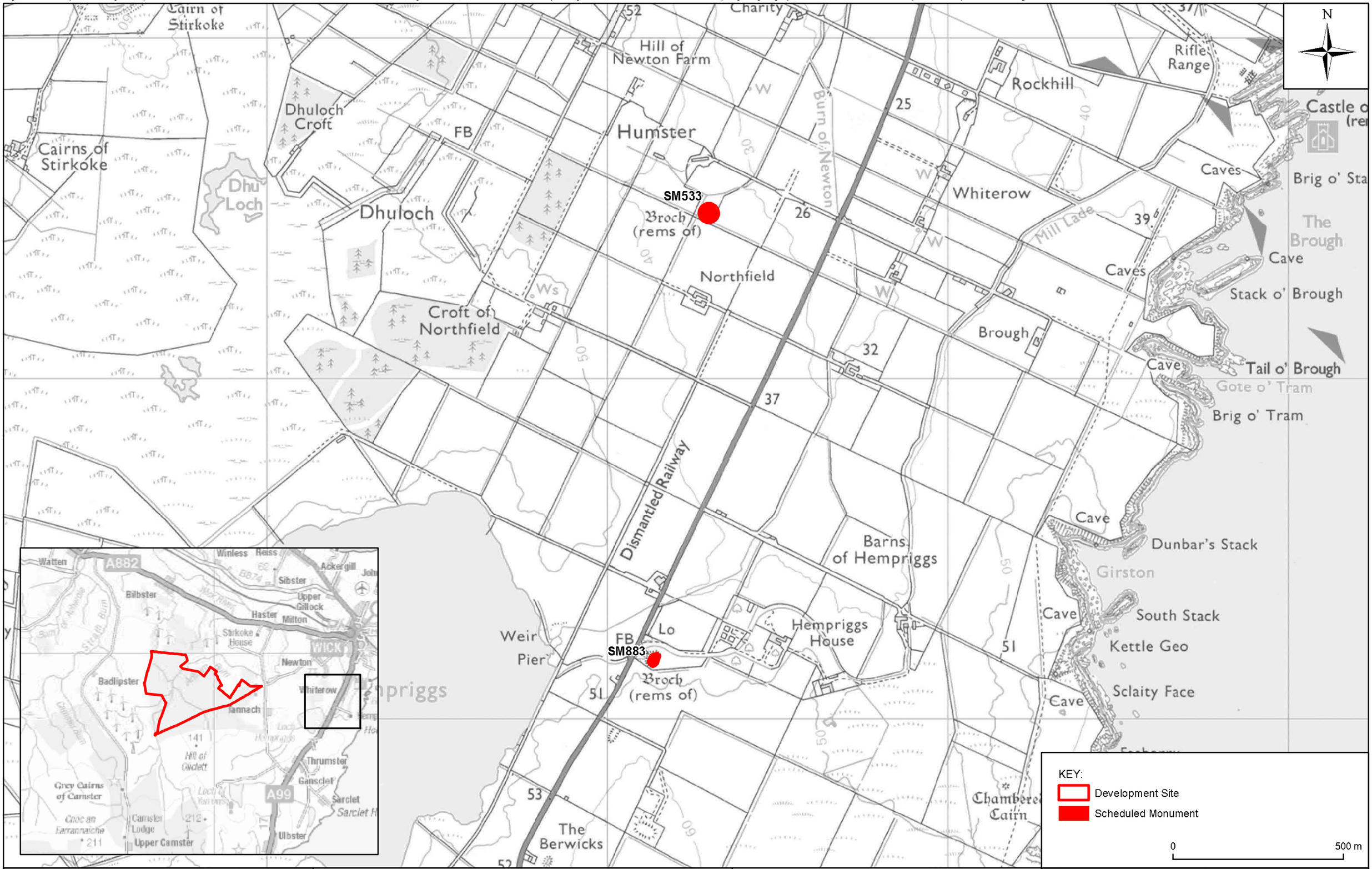
Client: e·on	Title: FIGURE 12.5.4 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD Approved: NT
			Date: MAY 2019 Scale at A3: 1:10,000
			Drawing Number: C_190510_ES12.5.4_v2 A3



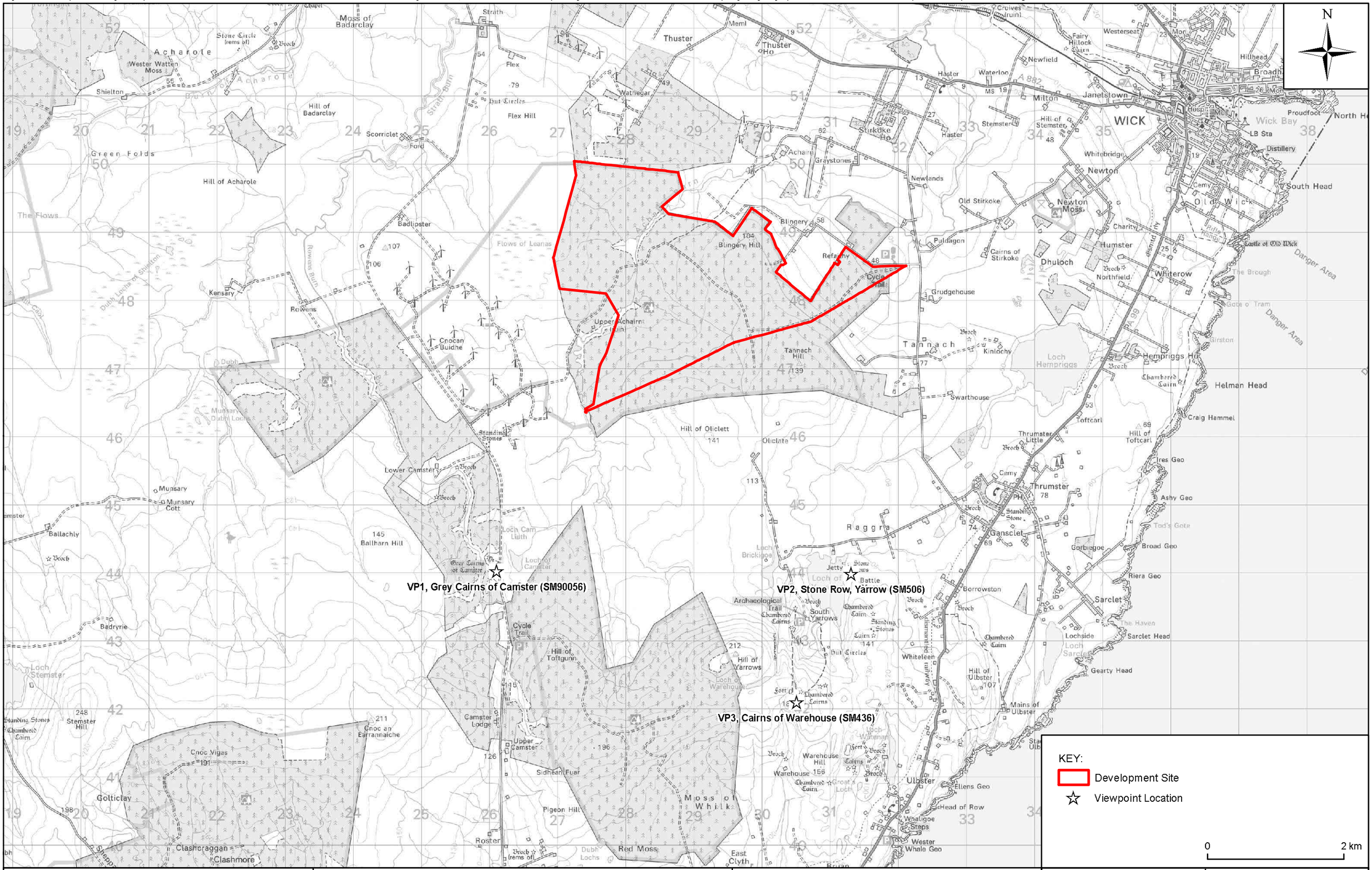
Client: e·on	Title: FIGURE 12.5.5 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC; Checked: JS; Verified: VD; Approved: NT; Date: MAY 2019; Scale at A3: 1:10,000; Drawing Number: C_190510_ES12.5.5_v2; A3
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			



Client: e·on	Title: FIGURE 12.5.6 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD / Approved: NT
			Date: MAY 2019 / Scale at A3: 1:10,000
			Drawing Number: C_190510_ES12.5.6_v2 / A3



Client: e·on	Title: FIGURE 12.5.7 SETTING SITES	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC Checked: JS
Project: CAMSTER II WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: VD Approved: NT
			Date: MAY 2019 Scale at A3: 1:10,000
			Drawing Number: C_190510_ES12.5.7_v2 A3



Client: e·on

Project: CAMSTER II WIND FARM
ENVIRONMENTAL IMPACT ASSESSMENT

Title: FIGURE 12.6
WIREFRAME VIEWPOINT LOCATIONS

AECOM
One Trinity Gardens
Quayside
Newcastle, NE1 2HF
Tel +44 (0) 191 224 6500
Fax +44 (0) 191 224 6599
www.aecom.com

Drawn:	LC	Checked:	JS
Verified:	VD	Approved:	NT
Date:	MAY 2019	Scale at A3:	1:50,000
Drawing Number:	C_190514_ES12.6_v1		A3

E.ON Climate and Renewables UK Developments Ltd
Registered office: Westwood Way Westwood Business Park Coventry CV4 8LG
Registered in England and Wales No. 3758404