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## **APPENDIX 12.2**

### **CALIBRATION CERTIFICATES**

## **VOLUME III**

### **APPENDICES TO**

### **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

## APPENDIX 12.2 – CALIBRATION CERTIFICATES



# CERTIFICATE OF CALIBRATION



0653

**Date of Issue: 20 February 2024****Certificate Number: UCRT24/1283**

Calibrated at &amp; Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages

Approved Signatory

K. Mistry

Customer

AWN Consulting Limited  
The Tecpro Building  
IDA Business and Technology Park  
Clonsaugh  
Dublin  
D17 XD90  
Ireland

Order No.

2358

Description

Sound Level Meter / Pre-amp / Microphone / Associated Calibrator

Identification

Manufacturer	Instrument	Type	Serial No. / Version
Rion	Sound Level Meter	NL-52	00998409
Rion	Firmware		2.0
Rion	Pre Amplifier	NH-25	98623
Rion	Microphone	UC-59	15915
Brüel & Kjær	Calibrator	4231	2263026
	Calibrator adaptor type if applicable		UC 0210

Performance Class

1

Test Procedure

TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received

19 February 2024

ANV Job No.

UKAS24/02147

Date Calibrated

20 February 2024

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate

Dated

01 February 2022

Certificate No.

UCRT22/1142

Laboratory

0653

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# CERTIFICATE OF CALIBRATION



0653

**Date of Issue: 20 February 2024**

Calibrated at &amp; Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: [info@noise-and-vibration.co.uk](mailto:info@noise-and-vibration.co.uk)Web: [www.noise-and-vibration.co.uk](http://www.noise-and-vibration.co.uk)

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**Certificate Number: UCRT24/1281**

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Approved Signatory
K. Mistry

Customer	AWN Consulting Limited The Tecpro Building IDA Business and Technology Park Clonsaugh Dublin D17 XD90 Ireland			
Order No.	2358			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00998411
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	98625
	Rion	Microphone	UC-59	17215
	Brüel & Kjær	Calibrator	4231	2263026
		Calibrator adaptor type if applicable		UC 0210
Performance Class	1			
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>			
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>			
Date Received	19 February 2024	ANV Job No.	UKAS24/02147	
Date Calibrated	20 February 2024			

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	01 February 2022	UCRT22/1140	0653

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## CERTIFICATE OF CALIBRATION



0653

**Date of Issue: 20 February 2024****Certificate Number: UCRT24/1279**

Calibrated at &amp; Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: [info@noise-and-vibration.co.uk](mailto:info@noise-and-vibration.co.uk)Web: [www.noise-and-vibration.co.uk](http://www.noise-and-vibration.co.uk)

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

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Customer AWN Consulting Limited  
The Tecpro Building  
IDA Business and Technology Park  
Clonshaugh  
Dublin  
D17 XD90  
Ireland

Order No. 2358

Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00998410
	Rion	Firmware		2.1
	Rion	Pre Amplifier	NH-25	98627
	Rion	Microphone	UC-59	15920
	Brüel & Kjær	Calibrator	4231	2263026
		Calibrator adaptor type if applicable		UC 0210

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

*Procedures from IEC 61672-3:2013 were used to perform the periodic tests.*

Type Approved to IEC 61672-1:2013 Yes

*If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013*

Date Received 19 February 2024

ANV Job No. UKAS24/02147

Date Calibrated 20 February 2024

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	17 March 2022	UCRT22/1389	0653

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## **APPENDIX 12.3**

### **NOISE MODEL PARAMETERS**

## **VOLUME III**

### **APPENDICES TO**

### **ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

## APPENDIX 12.3 – NOISE MODEL PARAMETERS

Prediction calculations for turbine noise have been conducted in accordance with ISO 9613: *Acoustics – Attenuation of sound outdoors, Part 2: General method of calculation*, 1996. Guidance in terms of the calculation settings has been obtained from the *Institute of Acoustics (IOA) Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (2013) (IOA GPG) and its associated supplementary guidance notes. The following are the main aspects that have been considered in terms of the noise predictions presented in this instance.

### Ground Effect:

Ground effect is the result of sound reflected by the ground interfering with the sound propagating directly from source to receiver. The prediction of ground effects is inherently complex and depend on source height receiver height propagation height between the source and receiver and the ground conditions.

The ground conditions are described according to a variable defined as G, which varies between 0.0 for hard ground (including paving, ice concrete) and 1.0 for soft ground (includes ground covered by grass trees or other vegetation).

Noise predictions have been carried out using a source height corresponding to the hub height of the proposed turbines, a receiver height of 4m and a ground effect factor of G=0.5.

### Geometrical Divergence

This term relates to the spherical spreading in the free-field from a point sound source resulting in an attenuation depending on distance according to the following equation:

$$A_{geo} = 10 \log(d) - 11 \text{ dB}$$

where d = distance from the source

A wind turbine may be considered as a point source beyond a distance corresponding to one rotor diameter.

### Atmospheric Adsorption

Sound propagation through the atmosphere is attenuated by the conversion of the sound energy into heat. This attenuation is dependent on the temperature and relative humidity of the air through which the sound is travelling and is frequency dependent with increasing attenuation towards higher frequencies.

In accordance with the guidance set out in the IOA GPG for calculations, a temperature of 10°C and a relative humidity of 70% have been used, which give relatively low levels of atmosphere attenuation and corresponding worst case noise predictions.

### Topographic Screening

In the IOA GPG, section 4.3.11 the following is stated: “*Topographic screening effects of the terrain (ISO 9613-2, Equation 12) should be limited to a reduction of no more than 2 dB, and then only if there is no direct line of sight between the highest point on the turbine rotor and the receiver location.*” The modelling software takes account of these limitations on the degree of screening from terrain. The “valley correction” from section 4.3.9 of the IOA GPG is also applied where relevant.

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## **APPENDIX 12.4**

### **PREDICTED WIND TURBINE NOISE LEVELS**

## **VOLUME III**

### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**APPENDIX 12.4 – PREDICTED WIND TURBINE NOISE LEVELS**

Location	Predicted Noise Level dB L <sub>A90</sub> at Standardised Wind Speed at 10m A.G.L.						
	3	4	5	6	7	8	9
H0001	24.0	27.8	33.3	36.5	36.8	36.8	36.7
H0002	23.8	27.5	33.1	36.2	36.6	36.6	36.5
H0003	23.0	26.8	32.3	35.5	35.8	35.8	35.7
H0004	23.0	26.7	32.3	35.5	35.8	35.8	35.7
H0005	23.6	27.4	32.9	36.1	36.4	36.4	36.3
H0006	21.9	25.7	31.2	34.4	34.7	34.7	34.6
H0007	26.2	29.9	35.5	38.6	39.0	39.0	38.9
H0008	23.9	27.6	33.2	36.3	36.6	36.6	36.5
H0009	21.9	25.6	31.2	34.4	34.7	34.7	34.6
H0010	21.9	25.7	31.2	34.4	34.7	34.7	34.6
H0011	23.9	27.6	33.2	36.4	36.7	36.7	36.6
H0012	23.7	27.4	33.0	36.2	36.5	36.5	36.4
H0013	21.5	25.3	30.8	34.0	34.3	34.4	34.2
H0014	23.9	27.6	33.2	36.3	36.6	36.6	36.6
H0015	23.2	26.9	32.5	35.7	36.0	36.0	35.9
H0016	23.9	27.6	33.1	36.3	36.6	36.6	36.5
H0017	23.2	27.0	32.5	35.7	36.0	36.0	35.9
H0018	23.2	27.0	32.6	35.7	36.0	36.0	35.9
H0019	21.4	25.2	30.8	34.0	34.3	34.3	34.2
H0020	23.9	27.7	33.2	36.4	36.7	36.7	36.6
H0021	22.2	25.9	31.5	34.7	35.0	35.0	34.9
H0022	21.3	25.1	30.6	33.8	34.1	34.2	34.0
H0023	22.0	25.7	31.3	34.4	34.8	34.8	34.6
H0024	23.2	26.9	32.5	35.7	36.0	36.0	35.9
H0025	21.8	25.6	31.1	34.3	34.6	34.6	34.5
H0026	25.5	29.2	34.8	37.9	38.2	38.2	38.2
H0027	23.1	26.9	32.4	35.6	35.9	35.9	35.8
H0028	23.2	27.0	32.5	35.7	36.0	36.0	35.9
H0029	23.2	26.9	32.5	35.6	36.0	36.0	35.9
H0030	23.1	26.8	32.4	35.5	35.9	35.9	35.8
H0031	23.0	26.7	32.3	35.5	35.8	35.8	35.7
H0032	23.0	26.7	32.2	35.4	35.8	35.8	35.6
H0033	23.2	27.0	32.5	35.7	36.0	36.0	35.9
H0034	22.8	26.5	32.0	35.2	35.6	35.6	35.4
H0036	23.4	27.1	32.7	35.9	36.2	36.2	36.1
H0037	23.1	26.8	32.4	35.6	35.9	35.9	35.8
H0041	23.7	27.4	33.0	36.2	36.5	36.5	36.4
H0042	23.0	26.8	32.3	35.5	35.8	35.8	35.7
H0043	22.6	26.4	31.9	35.1	35.4	35.4	35.3
H0044	23.0	26.7	32.3	35.4	35.8	35.8	35.6
H0046	22.6	26.3	31.9	35.1	35.4	35.4	35.3
H0048	24.8	28.5	34.1	37.2	37.6	37.6	37.5
H0050	24.6	28.4	33.9	37.1	37.4	37.4	37.3
H0051	22.8	26.6	32.2	35.3	35.6	35.6	35.5



Location	Predicted Noise Level dB L <sub>A90</sub> at Standardised Wind Speed at 10m A.G.L.						
	3	4	5	6	7	8	9
H0052	24.9	28.6	34.1	37.3	37.6	37.6	37.5
H0054	24.2	28.0	33.5	36.7	37.0	37.0	36.9
H0056	22.4	26.1	31.7	34.8	35.2	35.2	35.1
H0060	23.8	27.6	33.1	36.3	36.6	36.6	36.5
H0065	23.8	27.6	33.1	36.3	36.6	36.6	36.5
H0068	24.3	28.0	33.6	36.8	37.1	37.1	37.0
H0072	22.3	26.1	31.6	34.8	35.1	35.1	35.0
H0073	23.0	26.7	32.2	35.4	35.7	35.8	35.6
H0075	22.2	25.9	31.5	34.6	35.0	35.0	34.9
H0076	22.5	26.2	31.8	35.0	35.3	35.3	35.2
H0077	22.0	25.8	31.4	34.5	34.8	34.9	34.8
H0078	21.8	25.6	31.1	34.3	34.6	34.6	34.5
H0079	22.7	26.4	32.0	35.2	35.5	35.5	35.4
H0080	21.7	25.4	31.0	34.2	34.5	34.5	34.4
H0081	21.5	25.3	30.8	34.0	34.3	34.4	34.2
H0082	21.3	25.1	30.7	33.8	34.2	34.2	34.0
H0084	22.0	25.8	31.3	34.5	34.8	34.8	34.7
H0085	21.2	24.9	30.5	33.7	34.0	34.0	33.9
H0086	21.0	24.8	30.3	33.5	33.8	33.8	33.7
H0087	21.8	25.5	31.1	34.3	34.6	34.6	34.5
H0089	21.6	25.4	30.9	34.1	34.4	34.4	34.3
H0090	21.8	25.6	31.2	34.3	34.7	34.7	34.6
H0091	20.8	24.6	30.1	33.3	33.6	33.6	33.5
H0092	21.8	25.5	31.1	34.3	34.6	34.6	34.5
H0094	21.4	25.2	30.8	34.0	34.3	34.3	34.2
H0095	21.3	25.1	30.6	33.8	34.1	34.2	34.0
H0096	21.8	25.5	31.1	34.3	34.6	34.6	34.5
H0097	21.7	25.4	31.0	34.2	34.5	34.5	34.4
H0102	21.1	24.9	30.4	33.6	34.0	34.0	33.8
H0111	21.2	25.0	30.6	33.8	34.1	34.1	34.0
H0116	20.6	24.4	30.0	33.1	33.4	33.5	33.3
H0121	20.4	24.2	29.8	32.9	33.2	33.3	33.1
H0142	20.3	24.0	29.6	32.8	33.1	33.1	33.0
H0143	20.4	24.2	29.8	33.0	33.3	33.3	33.2
H0147	20.4	24.1	29.7	32.9	33.2	33.2	33.1
H0150	20.1	23.9	29.5	32.7	33.0	33.0	32.9
H0151	19.2	23.0	28.5	31.7	32.0	32.1	31.9
H0152	19.2	23.0	28.5	31.7	32.0	32.1	31.9
H0164	18.4	22.2	27.8	31.0	31.3	31.3	31.2
H0165	18.3	22.1	27.7	30.9	31.2	31.2	31.1
H0167	18.3	22.1	27.6	30.8	31.1	31.2	31.0
H0168	18.5	22.3	27.8	31.0	31.3	31.4	31.2
H0191	18.9	22.7	28.3	31.4	31.8	31.8	31.7

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# **APPENDIX 12.5**

## **PREDICTED WIND TURBINE NOISE CONTOURS**

### **VOLUME III**

#### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

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### APPENDIX 12.5 – PREDICTED WIND TURBINE NOISE CONTOURS

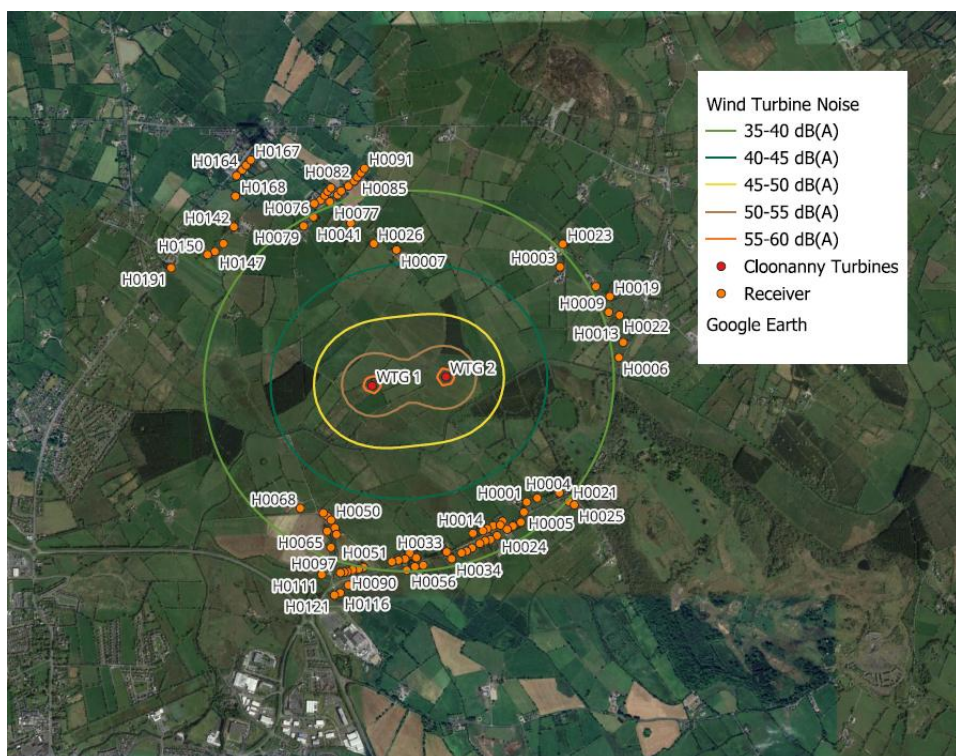


Figure 1 Predicted Noise Contours

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## **APPENDIX 15.1**

### DESCRIPTION OF RMP SITES

## **VOLUME III**

### APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT

## Appendix 15.1 Description of RMP Sites

**Table 15.1.1 Summary Description of RMP Sites**

RMP Ref No.	Site Type	Description
LF 013-014	Ringfort	On a NW-facing slope c. 150m to the S of the Camlin River. Depicted as the E half of a rectangular enclosure with the designation 'Fort' on the 1837 ed. of the OS 6-inch map. A raised circular area (diam. 35.8m) enclosed by a narrow low bank of earth and stone (Wth 2.8m; H 0.4m max.), which has been levelled from ESE-SE-S and from NW-N-NNE. The outline of the latter section is still evident. There is no trace of a fosse.
LF 014-002	Enclosure	On a hillock in pasture. A report in 1975 (SMR file) noted that this raised subcircular area (62.7m N-S; 57.8m E-W) was enclosed by a low bank of earth and stone with an external fosse. In addition, traces of an internal fosse were visible at SE and at S. These features are no longer visible, and the monument is defined by a scarp (H 0.6m). The original entrance is not recognisable.
LF 009-015	Standing Stone	A feature named 'Standing stone' on the OS Fair Plan (surveyed 1836) is represented by a symbol for a bush/tree on the 1837 OS 6-inch map. No visible remains.
LF 008-034	Ringfort	On a rise in otherwise low-lying pasture. Depicted as a circular enclosure on the 1837 ed. of the OS 6-inch map. The monument is occupied by a dwelling-house and garden and is not visible at ground level.
LF 014-003	Ringfort	On a low rise in poor rush pasture. Depicted as a circular enclosure with the designation 'Fort' on the 1837 ed. of the OS 6-inch map. A circular area (diam. 26.7m) enclosed from SE-S-NW by a largely levelled bank of earth and stone (Wth 3.8m; H 0.2m). Elsewhere the bank has been modified and incorporated into a field boundary with an external fosse. The original entrance is not recognisable.
LF 014-004	Ringfort	On a low rise in pasture. A raised circular area (diam. 51.5m) enclosed by a partially levelled low bank of earth and stone (Wth 5m; H 0.3m max.) with a wide, deep, partially waterlogged intervening fosse (Wth 6.3m; D 1.3m) and a very wide, low outer bank (Wth 9.9m; H 1.1m) from ESE-S-NW. Elsewhere this bank has been levelled but its outline is still identifiable. There is also an outer fosse (Wth c. 4.5m) of which only the outline is visible. The original entrance is not recognisable. The rath is densely overgrown with vegetation rendering satisfactory inspection impossible.
LF 014-006	Ringfort	At the highest point of a prominent NW-SE ridge in pasture. A report in 1975 (SMR file) recorded that a slightly raised circular area (diam. 39.4m) was enclosed by a low bank of earth and stone and an external fosse. The bank has since been levelled but a poorly defined scarp (max. H 0.5m) is evident from N-E-W. From W-N only its outline is identifiable. The fosse (Wth 3m; D 0.22m) survives from SE-S-NW.
LF 014-007	Ringfort	At the base of a low SE-facing hill in pasture. Extant remains comprise a raised circular area (diam. 41.1m) defined by a steep scarp (H 0.2-1.9m). A report in 1975 (SMR file) recorded an external fosse and a low outer bank, both of which have since been levelled. The NE quadrant has been destroyed due to roadworks. The original entrance is not recognisable.
LF 014-122	Landscape design	Situated on flat grassland in an area of wet marshy land in parkland on Carrickglass Demesne. Depicted as a sub-rectangular area defined by trees on the 1837 ed. of the OS 6-inch map, it is not depicted on the latest edition. Present remains consist of a circular area (int. diam. 38m NW-SE, 29m SW-NE) enclosed by a low earthen bank (Wth 2m, int. H 0.2m, ext. H 0.4m) and external fosse (Wth 1.4m, ext. D 0.3m) with no entrance feature visible. Its location on parkland in

		Carrickglass Demesne and its representation on the 1837 ed. of the OS 6-inch map would suggest that this earthwork is a designed landscape feature associated with Carrickglass House.
LF 014-009	Ringfort	On a gentle WNW-facing slope in pasture. Depicted as a circular tree-ring on the 1837 ed. of the OS 6-inch map. A raised circular area (diam. 34.9m) enclosed by a much-denuded, wide, low bank of earth and stone (Wth 8.4m; H 0.4m max.) with a wide shallow external fosse (Wth 4.3m; D 0.3m). A break (Wth 5.4m) in the bank at NE with an accompanying causeway may mark the original entrance.
LF 014-010	Ringfort	On a gentle SW-facing slope in pasture. A raised circular area (diam. 32.9m) enclosed by a substantial bank of earth and stone (Wth 3.8m; H 0.65-1.2m) with a very wide deep intervening fosse (Wth 8m; D 1.2m) and an outer bank (Wth 3.6m; H 0.3m); the latter is only visible from NNE-E-ESE. Elsewhere it has been levelled but its outline is still identifiable. A break (Wth 3.1m) in the banks at ENE with an accompanying causeway may mark the original entrance.
LF 013-015	Ringfort	On a gentle NNE-facing slope in pasture. A raised oval area (54.4m N-S; 42.1m E-W) enclosed by a much-denuded, wide, low bank of earth and stone (Wth 7.5m; H 0.4m) with a wide, shallow, external fosse (Wth 5.2m; D 0.3m). The latter has been infilled from SSW-N-NNE, but its outline is still identifiable. A report in 1975 (SMR file) recorded vague traces of a possible outer bank at SW, which are no longer identifiable. A wide break (Wth 4.7m) in the bank at ENE with traces of an accompanying causeway marks the original entrance.
LF 014-005	Ringfort	In level, low-lying pasture. A report in 1975 (SMR file) recorded a raised oval area (c. 38m NW-SE; c. 28m NE-SW) enclosed by a low bank of earth and stone with a shallow external fosse. The monument is no longer visible at ground level.
LF 013-012001/2	Ringfort/house	Close to the centre of the interior of a rath (LF013-012001-) is a poorly defined, roughly oval-shaped, low mound of earth and stone (7.9m NW-SE; 6.6m NE-SW; H 0.25m), which may be the remains of a house site.
RMP LF008-043	Site of Ford	Site of Ford - Ballykenny Bridge, dating to the 19th century, may have been built on the site of this ford. No visible surface traces survive
RMP LF013-001	Ringfort	Depicted as a circular enclosure with the designation 'Fort' on the 1837 ed. of the OS 6-inch map. This rath has been largely levelled due to bulldozing.
RMP LF013-016001	Church	The medieval church (ext. dims. 13.6m E-W; 7.5m N-S; wall T 0.9m) is densely overgrown with scrub and overgrowth making detailed examination impossible.
RMP LF013-016002	Graveyard	The graveyard is disused and is very densely overgrown with scrub and overgrowth. Associated with adjacent medieval church



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## **APPENDIX 15.2**



### DESCRIPTION OF NIAH SITES

## **VOLUME III**



### APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT



## Appendix 15.2 Summary Description of NIAH Sites

**Table 15.2.1 NIAH Index of Structures**

NIAH Ref	Townland	Site Type	Photo
13401320	Lisnamuck	Ashfield House (disused)	
13400912	Carrickglass Demesne	Bridge	
13400911	Carrickglass Demesne	Workers House	
13400913	Carrickglass Demesne	Walled Garden	
13401416	Carrickglass Demesne	Gate Lodge	
13401417	Carrickglass Demesne	Gates/railings/walls	

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13400415	Carrickglass Demesne	Farmyard Complex	
13401414	Carrickglass Demesne	Carrigglas Manor	
13401413	Carrickglass Demesne	Gates/railings/walls	
13401411	Carrickglass Demesne	Gates/railings/walls	
13401412	Carrickglass Demesne	Gate Lodge	
13400816	Killeen	Bridge - built c. 1860	
13303020	Lismoy	Bridge - built c. 1857	

Not Listed	Gorteenorna	Heavily overgrown vernacular outbuilding pre- c.1838 OS Map	
1330319	Lismoy	Entrance gates serving Lismoy House (13400812), erected c. 1860	

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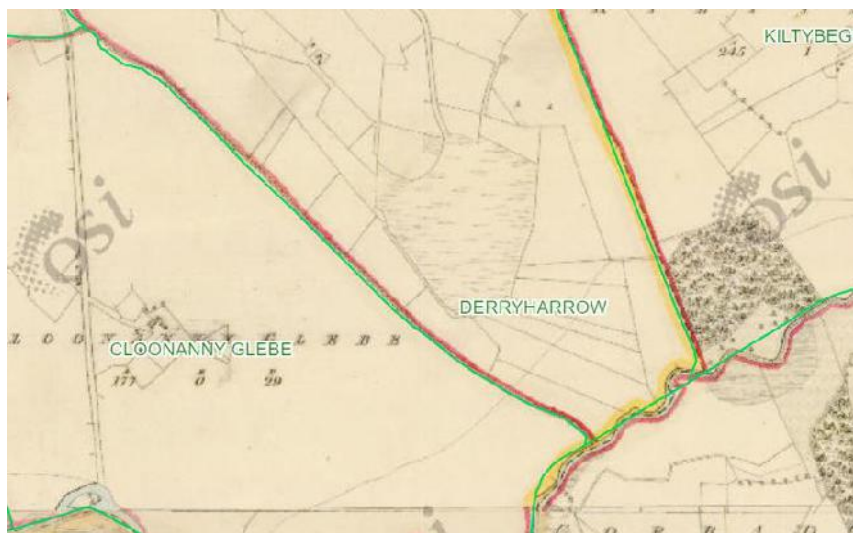
## **APPENDIX 15.3**

### **ARCHAEOLOGICAL TEST EXCAVATION REPORT**

## **VOLUME III**

### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

ARCHAEOLOGICAL TEST EXCAVATION REPORT  
FOR  
WIND TURBINE DEVELOPMENT PROJECT,  
CLOONANNY GLEBE,  
COUNTY LONGFORD.



On Behalf Of

Natural Forces Ltd

Pre-Planning Investigation

Excavation Licence No. 24E0500

September 2024



## Abstract

This archaeological report contains the results of an archaeological test excavation carried out on behalf of Natural Forces Ltd as part of the EIA process. The proposed development will comprise two wind turbines and all associated works in the townland of Cloonanny Glebe, County Longford. This report does not cover the broader impact assessment for the overall development project which is at an advanced stage. During the test excavation, no features or finds of archaeological significance were found.

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## 1. INTRODUCTION

Icon Archaeology Ltd was commissioned by Natural Forces Ltd to complete the archaeological, architectural and cultural heritage EIAR chapter for a wind turbine development project located in the townland of Cloonanny Glebe, County Longford. The proposed development will comprise two wind turbines and all associated works in the townland of Cloonanny Glebe, County Longford (figs. 1 & 2).

The proposed development site is not located within or close to any known cultural assets. The nearest recorded monument in the Record of Monuments and Places is located 610m from the site location. As part of the EIA process, a test excavation was carried out within the main development area to establish if archaeological remains were present. A comprehensive test excavation was undertaken but no features or finds of archaeological significance were found.

### 1.1 Methodology

A primary cartographic source and base-line data for the archaeological assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Longford. All known recorded archaeological monuments are indicated on 6-inch Ordnance Survey (OS) maps and are listed in aforementioned records. The following baseline sources were consulted as part of the desktop assessment for the wind farm development:

- UNESCO World Heritage Sites
- National Monuments in State Care
- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- Excavations Database
- The Topographical Files of the National Museum of Ireland
- Record of Protected Structures (LCDP 2021 – 2027)
- National Inventory of Architectural Heritage (NIAH)
- First and subsequent editions Ordnance Survey maps (OSI)
- Aerial photographs (OSI)
- Placename Evidence

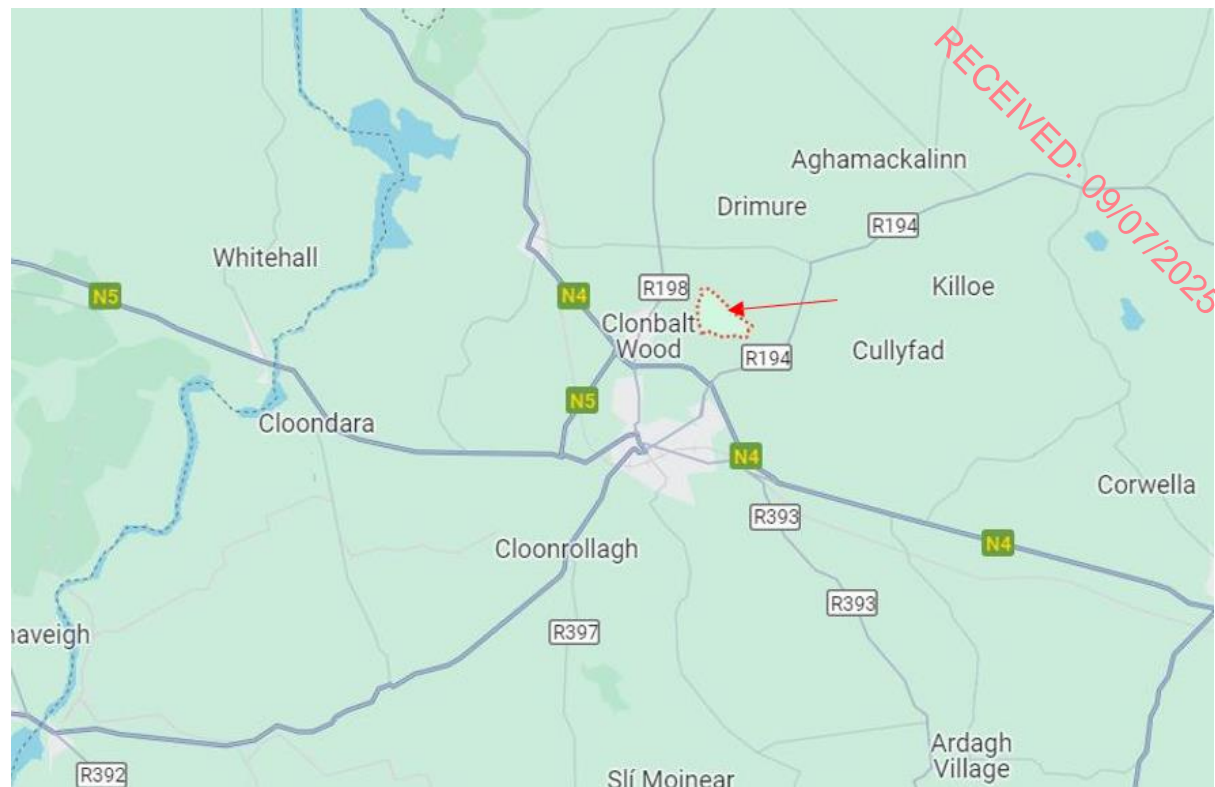


Figure 1 Area Location Map, Cloonanny Glebe, County Longford



Figure 2 Site Location Map, Cloonanny Glebe, County Longford

## 2. SITE LOCATION & PROPOSED DEVELOPMENT

The proposed wind farm development site is located at Cloonanny Glebe which is within an agricultural landscape and is approximately 3.3km from Longford Town, County Longford. The site has an area of approximately 21.66 hectares (ha) and comprises a number of private land parcels (see fig. 3). The gently undulating low lying landscape is a mixture of bogland, pastureland and wetland with higher ground to the north and east. The area is drained by several small streams which flow in a general EW direction to Lough Ree and Shannon further to the west.



Figure 3 General Development Layout, Cloonanny Glebe, County Longford

The key components of the Cloonanny Wind Farm development will include the following.

- 2 No Wind Turbines with a blade tip height of 200m, foundations and crane hardstand areas
- 1 No. Permanent Meteorological Mast (Met Mast) (32m High) and associated works
- 1 No. 20kV Substation Compound with 2 No. Modular Buildings and associated works
- Underground electrical collection and SCADA system linking the Wind Turbines to the Substation Compound
- Temporary widening of the L50462 public road to accommodate delivery of the Wind Turbines
- Construction of a new Site Access Road and Site Entrances
- Temporary Site Access Road to accommodate delivery of turbines
- 1 No. Temporary Construction Compound and associated temporary welfare accommodation and storage
- Construction of excavated soil repository areas
- Construction of temporary and permanent drainage works



### 3. ARCHAEOLOGICAL BACKGROUND

#### 3.1 Record of Monuments and Places

The Record of Monuments & Places (RMP) is a list of all archaeological sites known to the National Monuments Service. The Record of Monuments & Places includes RMP maps based on OS 6" Sheets, which indicate the location of each recorded site. The RMP list is based on The Sites and Monument Record (SMR) files housed in the National Monuments Services offices. The following 28 Recorded Monuments are located within the 2km Area of Study.

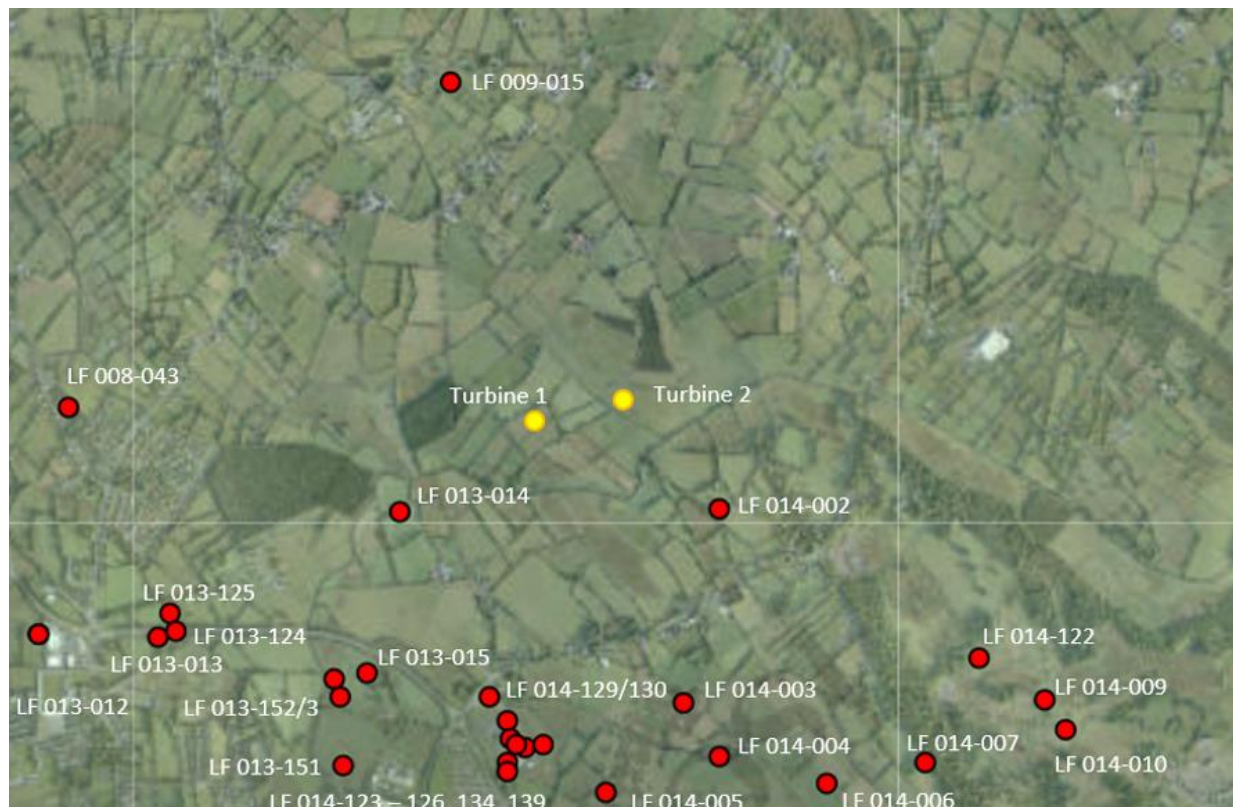


Figure 4 Record of Monuments and Places, Cloonanny Glebe, County Longford

The Table below lists the RMP sites within the Area of Study. Although, TII guidelines dictate that all RMP sites are of 'Medium to High' value due to their protected status, quality and importance (TII Guidelines, 2024), it should be noted that 11 RMPs are the site of previous excavations with no visible trace (assessed as 'low' value) and 2 RMPs are redundant records (assessed as 'negligible' value).



Table 1 RMP Sites within Study Area

RMP Ref No.	Townland	Site Type	Condition	Value
LF013-026	Townparks	Longford Historic Town	Existing town	High
LF 013-014	Clooncoose	Ringfort	Partial remains visible	Medium
LF 014-002	Corradooey	Enclosure	Partial remains visible	Medium
LF 009-015	Derryharrow	Standing Stone	No visible trace	Medium
LF 008-034	Cloonbolt	Ringfort	No visible trace	Medium
LF 014-003	Clooncoose	Ringfort	Partial remains visible	Medium
LF 014-004	Clooncoose	Ringfort	Partial remains visible	Medium
LF 014-006	Ballymacwilliam	Ringfort	Partial remains visible	Medium
LF 014-007	Allenagh	Ringfort	Partial remains visible	Medium
LF 014-122	Carrickglass Demesne	Landscape design	Tree-ring	Medium
LF 014-009	Carrickglass Demesne	Ringfort	Partial remains visible	Medium
LF 014-010	Carrickglass Demesne	Ringfort	Partial remains visible	Medium
LF 013-015	Lisnamuck	Ringfort	Partial remains visible	Medium
LF 013-151	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 013-152	Lisnamuck	Two pits (excavation)	No visible trace	Low
LF 013-153	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 014-123	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 014-124	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 014-125	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 014-126	Lisnamuck	Linear ditch (excavation)	No visible trace	Low
LF 014-129	Lisnamuck	Burnt mound (excavation)	No visible trace	Low
LF 014-130	Lisnamuck	Pits (excavation)	No visible trace	Low
LF 014-134	Lisnamuck	Redundant record	No visible trace	Negligible
LF 014-005	Lisnamuck	Ringfort	No visible trace	Medium
LF 014-124	Aghadegnan	Mound (excavation)	No visible trace	Low
LF 013-013	Aghadegnan	EM settlement (excavation)	No visible trace	low
LF 013-012001/2	Aghadegnan	Ringfort/house	Partial remains visible	Medium
LF 013-125	Aghadegnan	Redundant record	No visible trace	Negligible
LF 014-002	Corradooey	Enclosure	Partial remains visible	High
LF 013-015	Lisnamuck	Ringfort	Partial remains visible	High
LF 013-151	Lisnamuck	Burnt mound (excavation)	No visible trace	High
LF 013-152	Lisnamuck	Two pits (excavation)	No visible trace	High
LF 013-153	Lisnamuck	Burnt mound (excavation)	No visible trace	High
LF 014-123	Lisnamuck	Burnt mound (excavation)	No visible trace	High

LF 014-124	Lisnamuck	Burnt mound (excavation)	No visible trace	High
LF 014-125	Lisnamuck	Burnt mound (excavation)	No visible trace	High
LF 014-126	Lisnamuck	Linear ditch (excavation)	No visible trace	High
LF 014-129	Lisnamuck	Burnt mound (excavation)	No visible trace	High
LF 014-130	Lisnamuck	Pits (excavation)	No visible trace	High
LF 014-134	Lisnamuck	Redundant record	No visible trace	High
LF 014-005	Lisnamuck	Ringfort	No visible trace	High
LF 014-124	Aghadegnan	Burnt mound (excavation)	No visible trace	High
LF 013-013	Aghadegnan	EM settlement (excavation)	No visible trace	High
LF 013-012001/2	Aghadegnan	Ringfort/house	Partial remains visible	High
LF 013-125	Aghadegnan	Redundant record	No visible trace	High

### RMP LF013-026: Longford Historic Town

The proposed Wind Farm site located at Cloonanny Glebe is approximately 3.3km from Longford Town (see. fig.5). Longford takes its name from the Irish 'longphort', meaning 'fortress'. The earliest settlement dates from the late-medieval period. There is no evidence of any Anglo-Norman settlement, so Longford belongs to a small sample of urban centres whose genesis occurred under native Irish development.



Figure 5 Historic Core Longford Town

A Dominican priory (LF013-026001) was established, on the N side of the river, under the patronage of the O'Farrell's in 1400. By the late 15<sup>th</sup> century, a native Irish market had developed attracting merchants from the E coast and the censure of the Irish parliament, which forbade English merchants to have any contact with it or the Irish markets at Granard and Cavan, which were harming the English markets of Meath. It is unclear how permanent this market was, it may have been linked to the castle (LF013-062003), also on the N side of the river, to which there are references from 1571. Longford remained in O Fearghail hands until the reign of Elizabeth I and the importance of this settlement is indicated by the fact the county was called Longford when Anghaile was shired in 1571.

During the 17th century settlement appears to have expanded on the S side of the river and this area became known as 'Newtown-Longford'. A large house (LF013-026015-) surrounded by a number of smaller houses is depicted on the Down Survey (1655-6) maps of Ardagh barony and Ballymacormac parish on this side of the river. The first royal grant for a market and fair was issued in 1605 to Richard Nugent, baron of Delvin.

It appears that the Nugent family did not take up this licence and a town does not appear to have been successfully established, for in 1613 Longford was unable to send any burgesses to the Irish Parliament because there was in the county 'no town fit for it'. A new grant for the establishment of the manor and town of Longford was issued in 1620 to Francis Aungier, baron of Longford. Under the conditions of this grant, Aungier was entitled to hold a market and two fairs. In 1666 the town was attacked by Irish forces under the command of Cornet Nangle. In 1668 it was incorporated and made a borough by King Charles II.

The town was described by Nicholas Dowdall in 1682 as a 'Large Countrey Village having but few good houses in it'. There is an Old Abbey (LF013-026001) of the Dominican Order in it which was formerly governed by a prior and a stone bridge (LF008-026004). The town is now concentrated on the S side of the river. The street plan is linear based on Main St., running NNW-SSE, and Bridge St., its continuation to the N of the river. This street ran from the castle (LF013-026003) to the S to where the road divides into three.

The area around Bridge St. and Church St. is probably the oldest part of the town and may represent the late-16th-century settlement. The houses fronting onto Main St. have long burgage plots and probably represent the 17th-century town (ibid.). A market-house (LF013-026008), a prison or gaol (LF013-026009), a market cross (LF013-026011) and two 17th-century houses (LF013-026014 & LF013-026015) are associated with the town.

### 3.2 Excavations Database

The database of previous excavations was reviewed. The following 10 excavations are recorded within the Area of Study (see fig.6).



Figure 6 Location of Previous Excavations Within Area of Study, Cloonanny, County Longford

Table 2 Previous Excavations Index

Licence No	Townland	Summary Description
05E0003	Carrickglass Demesne	Testing was carried out at Carrickglass Demesne in advance of its redevelopment. Nothing of archaeological significance was found.
08E0808	Lisnamuck	Monitoring of works on the Longford central regional drainage scheme. Isolated pit features.
93E0041	Aghadegnan	Site of Fulacht Fiadh.
07E0868	Longford	Test excavation found nothing of archaeological significance.
01E0873	Aghadegnan	Test excavation found nothing of archaeological significance.
04E0954	Aghadegnan	Test excavation found nothing of archaeological significance.
03E1421	Lisnamuck	Site of Fulacht Fiadh.
03E1422	Lisnamuck	Site of Fulacht Fiadh.
03E1194; 03E1369	Lisnamuck	Site of three Fulacht Fiadh and isolated pits.

### 3.3 Topographical Files - National Museum of Ireland

The topographical files of the National Museum of Ireland were reviewed. There are no recorded finds within the Area of Study.

### 3.4 Placename Evidence

The proposed development is located in the townland of Cloonanny Glebe which derives from the Irish 'Cluain Eanaigh', meaning meadow or pasture. Glebe refers to an area of land within an ecclesiastical parish used to support a particular parish.



### 3.5 Aerial/Satellite Imagery

Aerial photography taken between 1996-2000 shows little change other than the further subdivision of fields into smaller enclosed holdings. No additional features of archaeological or historical interest are recorded (see fig.7).

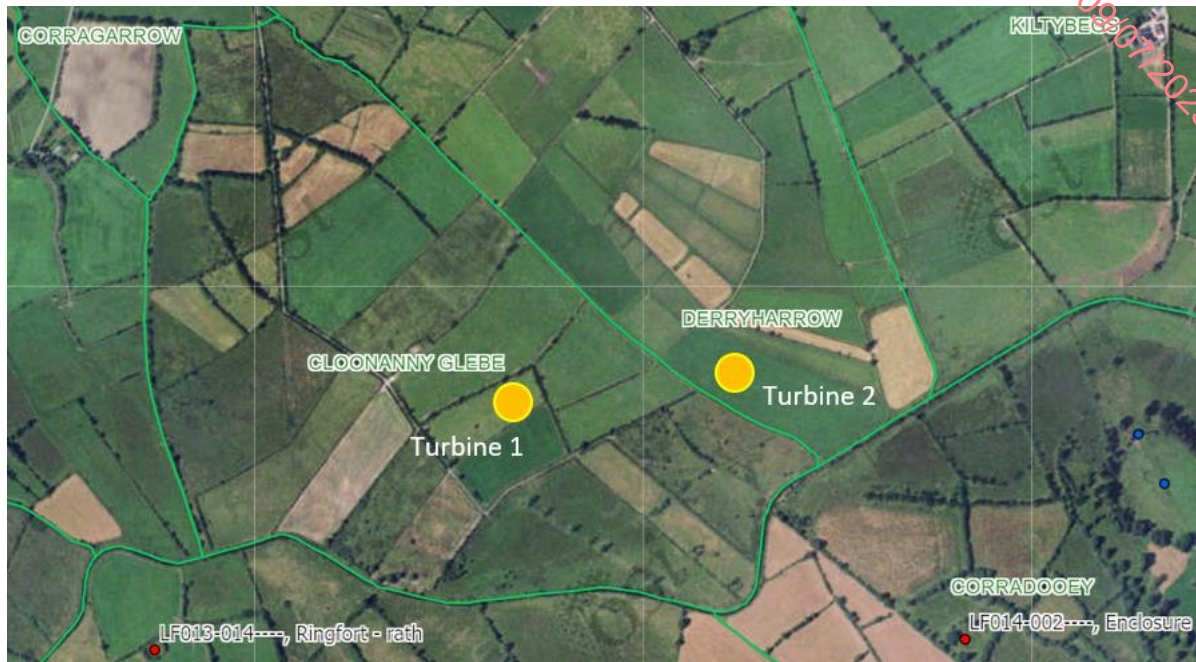


Figure 7 Aerial Photograph, Cloonanny Glebe, County Longford

### 3.6 Cartographic Sources – Ordnance Survey Editions

This edition of the OS was published c.1838. The townland of Cloonanny Glebe comprises 177 acres of low-lying land with an access road and farm complex located in the centre. Carrickglass Demesne is to the east. No other features of archaeological or historical interest are recorded. The townland was subsequently divided into small, enclosed fields with access lanes which are still present today (see figs. 8 & 9).

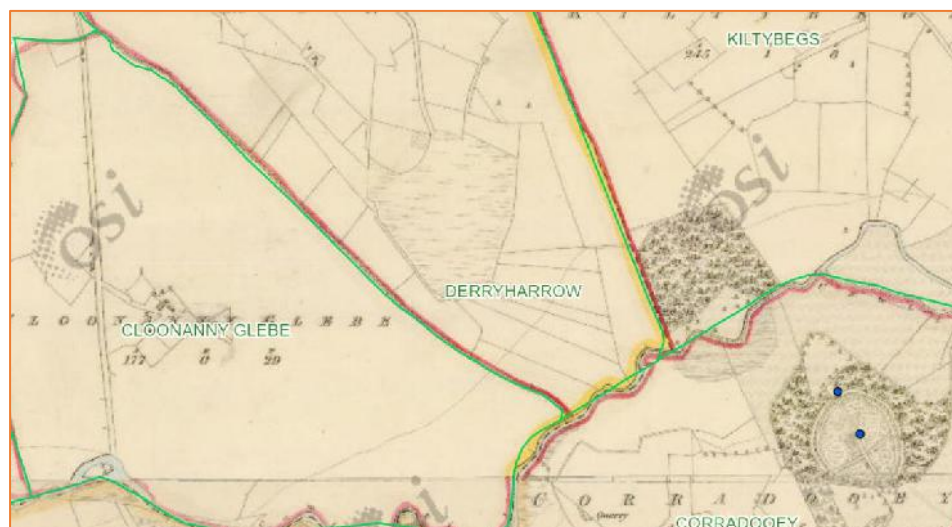


Figure 8 1st Edition OS Map, Cloonanny Glebe, County Longford (source OSI)

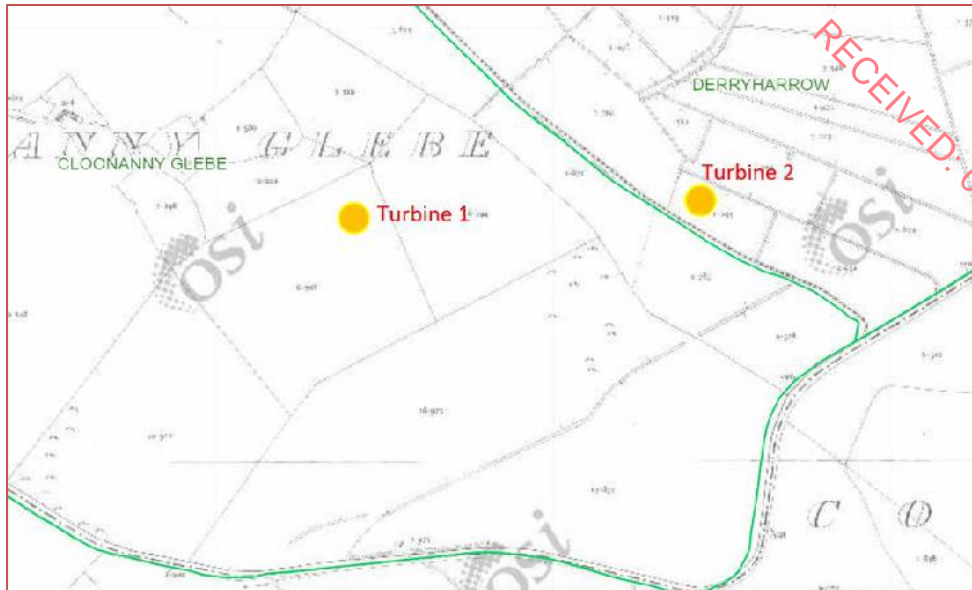


Figure 9 25" Edition OS Map, Cloonanny Glebe, County Longford (source OSi)

### 3.7 Record of Protected Structures

The Record of Protected Structures - Longford CDP 2021-2027 was reviewed. There are 15 protected structures of 'High' value within the Area of Study. The structures are all associated with Carrickglass Demesne (see fig.10).

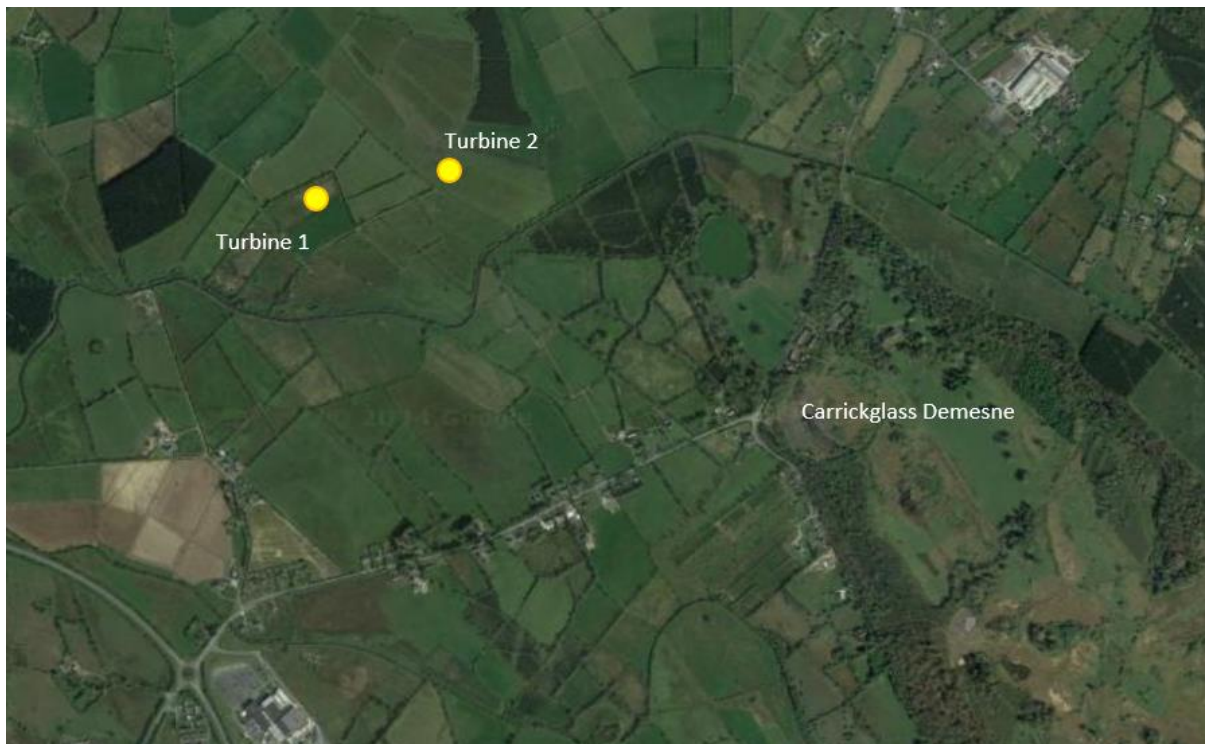


Figure 10 Turbine Locations & Protected Structures, Cloonanny, County Longford



Table 3 Record of Protected Structures Index

RPS Ref No.	Townland	Site Type	Value
4	Carrickglass Demesne	Demesne walls	High
5	Carrickglass Demesne	Country house	High
6	Carrickglass Demesne	Worker's house	High
7	Carrickglass Demesne	Walled garden	High
8	Carrickglass Demesne	Gates/railing/walls	High
9	Carrickglass Demesne	Summerhouse	High
10	Carrickglass Demesne	Gates/railing/walls	High
11	Carrickglass Demesne	Gate lodge	High
12	Carrickglass Demesne	Gate Lodge	High
13	Carrickglass Demesne	Gate Lodge	High
14	Carrickglass Demesne	Postal box	High
15	Carrickglass Demesne	Stables	High
16	Carrickglass Demesne	Gate Lodge	High
17	Carrickglass Demesne	Gates/railing/walls	High
18	Carrickglass Demesne	Postal box	High

### Protected Structure: Carrickglass Demesne

Carrickglass Demesne is a walled estate of land approximately 4km to the northeast of Longford Town and c.1.5km to the east of the Wind Farm Development. Carrickglass is an early 19th century Tudor revival house designed by Daniel Robertson. The stable and farmyards pre-date the house by about 40 years. Designed by James Gandon, these, along with the triumphal arch gate to the south of the estate, are generally considered more architecturally significant than the house itself. A design for the house was also drawn up by Gandon at this stage but was never built.



Plate 1 Carrickglass Manor House

The demesne area covers about 263ha (650 acres), with the manor house located to the north of the estate, adjacent to the farm and stable yard complexes. The estate was originally a manor of the Anglican Bishops of Ardagh. In the 17th century the estate was leased to the Newcomen family and later bought by, Thomas Lefroy in 1833. The Lefroy family remained at Carrickglass Manor until about 2005, when they sold the estate and grounds.



*Plate 2 Carrickglass Manor Entrance Gates*

Since 2005 the estate has passed through the ownership of several property development companies but remains in a poor state of repair. According to An Taisce, there has been major residential developments proposed on the site in the past decade, however, it has largely stalled with only the first phase of housing having been constructed on the grounds.



*Plate 3 Abandoned Housing Projects, Carrickglass Demesne From 2022*

### 3.8 National Inventory of Architectural Heritage (NIAH)

The NIAH was reviewed and there are 11 listed structures within the Area of Study. 10 are associated with Carrickglass Demesne and 1, Ashfield House, is a disused building built in the early 19<sup>th</sup> century to the SW (see fig.11).

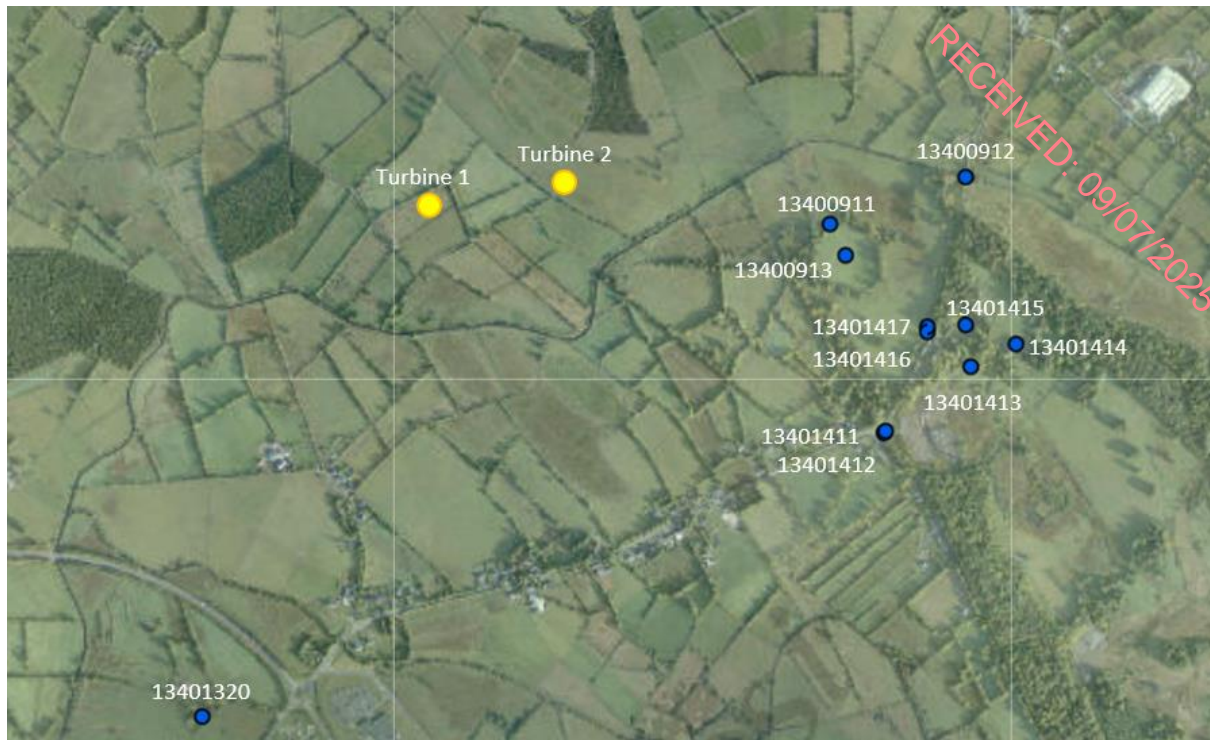


Figure 11 NIAH Structures, Cloonanny, County Longford

Table 4 NIAH Index of Structures

NIAH Ref No.	Townland	Site Type	Value
13401320	Lisnamuck	Ashfield House (disused)	Medium
13400912	Carrickglass Demesne	Bridge	High
13400911	Carrickglass Demesne	Worker's House	High
13400913	Carrickglass Demesne	Walled Garden	High
13401411	Carrickglass Demesne	Gates/railings/walls	High
13401412	Carrickglass Demesne	Gate Lodge	High
13401413	Carrickglass Demesne	Gates/railings/walls	High
13401414	Carrickglass Demesne	Carrickglass Manor	High
13401415	Carrickglass Demesne	Worker's House	High
13401416	Carrickglass Demesne	Gate Lodge	High
13401417	Carrickglass Demesne	Gates/railings/walls	High

### 3.9 Architectural Conservation Areas

There is one designated Architectural Conservation Area (ACA) associated with Longford Town located along Battery Road (see fig.12). The ACA is located 2.35km to the southwest of the proposed development. Battery Road is located along the northern section of Longford Town and derives its name from the military installations that once stretched from the existing barracks on Church Street to the Battery, which is now occupied by Pearse Park GAA grounds and Pearse View housing estate. Battery Road is a major existing approach route into the town from the north.





*Figure 12 Battery Road ACA, Longford Town*

Battery Road ACA was largely developed in the 19th century. However, origins can be traced back to the 15th century. The character of the ACA is not rooted in any one architectural dimension. This contributes to its unique quality and character. There are a variety of architecturally distinct building types including a regency terrace, mid-19<sup>th</sup> century villa, Arts and Crafts homes, interwar and later 20 century dwellings.

#### 4. TEST EXCAVATION RESULTS

A total of 19 test trenches (see fig.13) were excavated at each of the key locations within the Wind Farm Development Site. An excavator fitted with a 1.8m wide flat grading bucket was used to excavate the trenches across the development area. The excavation of the trenches continued until natural and/or archaeological deposits were reached. Each trench was backfilled to protect any archaeological deposits and for safety reasons.

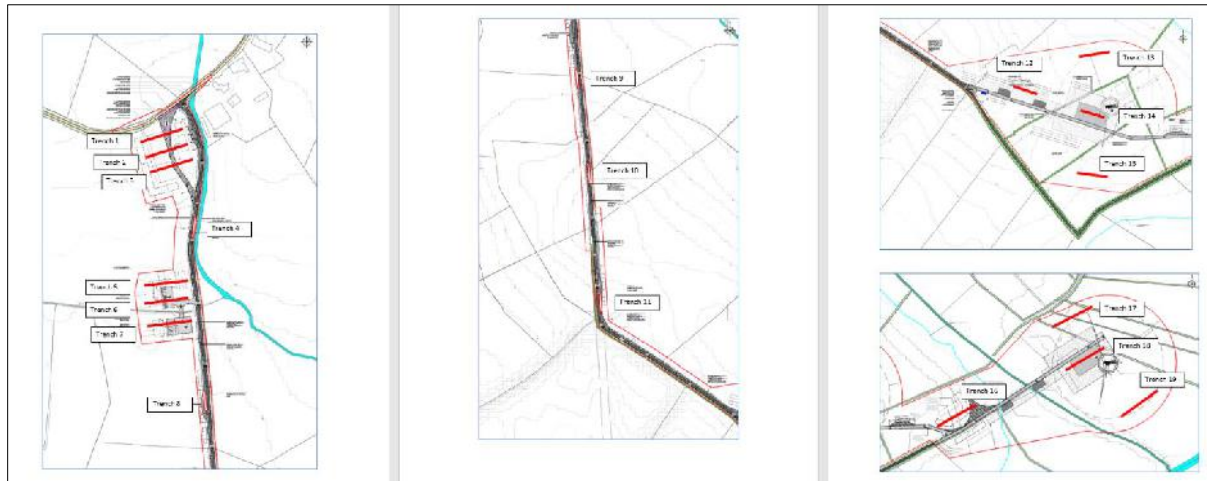




Figure 13 Location of Excavated Test Trenches, Cloonanny Glebe, County Longford


Table 5 Summary of Excavated Test Trenches


Trench No.	Location	Size	Results
Trench 1	Compound area	aligned NE/SW, 30m, 1.8m	No features found
Trench 2	Compound area	aligned NE/SW, 30m, 1.8m	No features found
Trench 3	Compound area	aligned NE/SW, 30m, 1.8m	No features found
Trench 4	Access road	aligned N/S, 20m, 1.8m	No features found
Trench 5	Substation	aligned NE/SW, 30m, 1.8m	No features found
Trench 6	Substation	aligned NE/SW, 30m, 1.8m	No features found
Trench 7	Substation	aligned NE/SW, 30m, 1.8m	No features found
Trench 8	Access road	aligned N/S, 20m, 1.8m	No features found
Trench 9	Access road	aligned N/S, 20m, 1.8m	No features found
Trench 10	Access road	aligned N/S, 20m, 1.8m	No features found
Trench 11	Access road	aligned N/S, 20m, 1.8m	No features found
Trench 12	Temporary assembly area	aligned NW/SE, 30m, 1.8m	No features found
Trench 13	Turning area	aligned NW/SE, 30m, 1.8m	No features found
Trench 14	Turbine 1 hardstand	aligned NW/SE, 30m, 1.8m	No features found
Trench 15	Turning area	aligned NW/SE, 30m, 1.8m	No features found
Trench 16	Spoil area	aligned E/W, 30m, 1.8m	No features found
Trench 17	Turning area	aligned E/W, 30m, 1.8m	No features found
Trench 18	Turbine 2 hardstand	aligned E/W, 30m, 1.8m	No features found
Trench 19	Turning area	aligned E/W, 30m, 1.8m	No features found


Trench 1	Description
L: 30m, W:1.8m	<p>Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 2	Description
L: 30m, W:1.8m	<p>Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 




Trench 3	Description
L: 30m, W:1.8m	<p>Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 4	Description
L: 20m, W:1.8m	<p>Aligned N/S. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 5	Description
L: 30m, W:1.8m	<p data-bbox="432 241 1382 365">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 6	Description
L: 30m, W:1.8m	<p data-bbox="432 1187 1382 1310">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 




Trench 7	Description
L: 30m, W:1.8m	<p data-bbox="432 241 1382 365">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 8	Description
L: 20m, W:1.8m	<p data-bbox="432 1113 1382 1236">Aligned N/S. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 9	Description
L: 20m, W:1.8m	<p>Aligned N/S. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 10	Description
L: 20m, W:1.8m	<p>Aligned N/S. This trench was excavated to a depth of 200mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 




Trench 11	Description
L: 20m, W:1.8m	<p data-bbox="432 239 1383 365">Aligned N/S. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 12	Description
L: 30m, W:1.8m	<p data-bbox="432 1155 1383 1281">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 13	Description
L: 30m, W:1.8m	<p data-bbox="432 241 1382 365">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 


Trench 14	Description
L: 30m, W:1.8m	<p data-bbox="432 1137 1382 1261">Aligned NW/SE. This trench was excavated to a depth of 200mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 




Trench 15	Description
L: 30m, W:1.8m	<p data-bbox="432 241 1382 365">Aligned NW/SE. This trench was excavated to a depth of 250mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 16	Description
L: 30m, W:1.8m	<p data-bbox="432 1196 1382 1319">Aligned E/W. This trench was excavated to a depth of 350mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 17	Description
L: 30m, W:1.8m	<p>Aligned E/W. This trench was excavated to a depth of 350mm to expose compact glacial clays and scattered stones. No features or finds of archaeological significance were found.</p> 

Trench 18	Description
L: 30m, W:1.8m	<p>Aligned E/W. This trench was excavated to a depth of 750mm through organic peat material to expose grey marl. No features or finds of archaeological significance were found.</p> 

Trench 19	Description
L: 30m, W:1.8m	<p data-bbox="432 241 1383 365">Aligned E/W. This trench was excavated to a depth of 750mm through organic peat material to expose grey marl. No features or finds of archaeological significance were found.</p> 

## 5. CONCLUSIONS & RECOMMENDATIONS

This archaeological test excavation was carried out to determine if sub-surface archaeological remains were present within the general footprint of the proposed development. The test program assessed each key area of the development including compound areas, access roads, substation, hard stand areas, turning areas and spoil storage areas. The results of the test excavation found no archaeological remains or features of archaeological potential.

This test excavation forms part of a broader EIA which is currently at an advanced stage. The results of this excavation will be incorporated into the overall EIAR which is assessing the impact of the proposed development on the broader cultural heritage landscape.

- Based on the results of this test excavation, the proposed development will not have a direct impact on sub-surface archaeological remains within the general footprint of the proposed development.
- The EIAR will outline the direct and indirect impacts of the proposed development on the broader cultural heritage landscape, including mitigation measures and recommendations.

*The recommendations contained within this report are subject to the approval of the National Monuments Service and Local Authority who may issue additional or alternative recommendations.*



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John Kavanagh MA MSc  
Project Archaeologist  
Icon Archaeology Ltd



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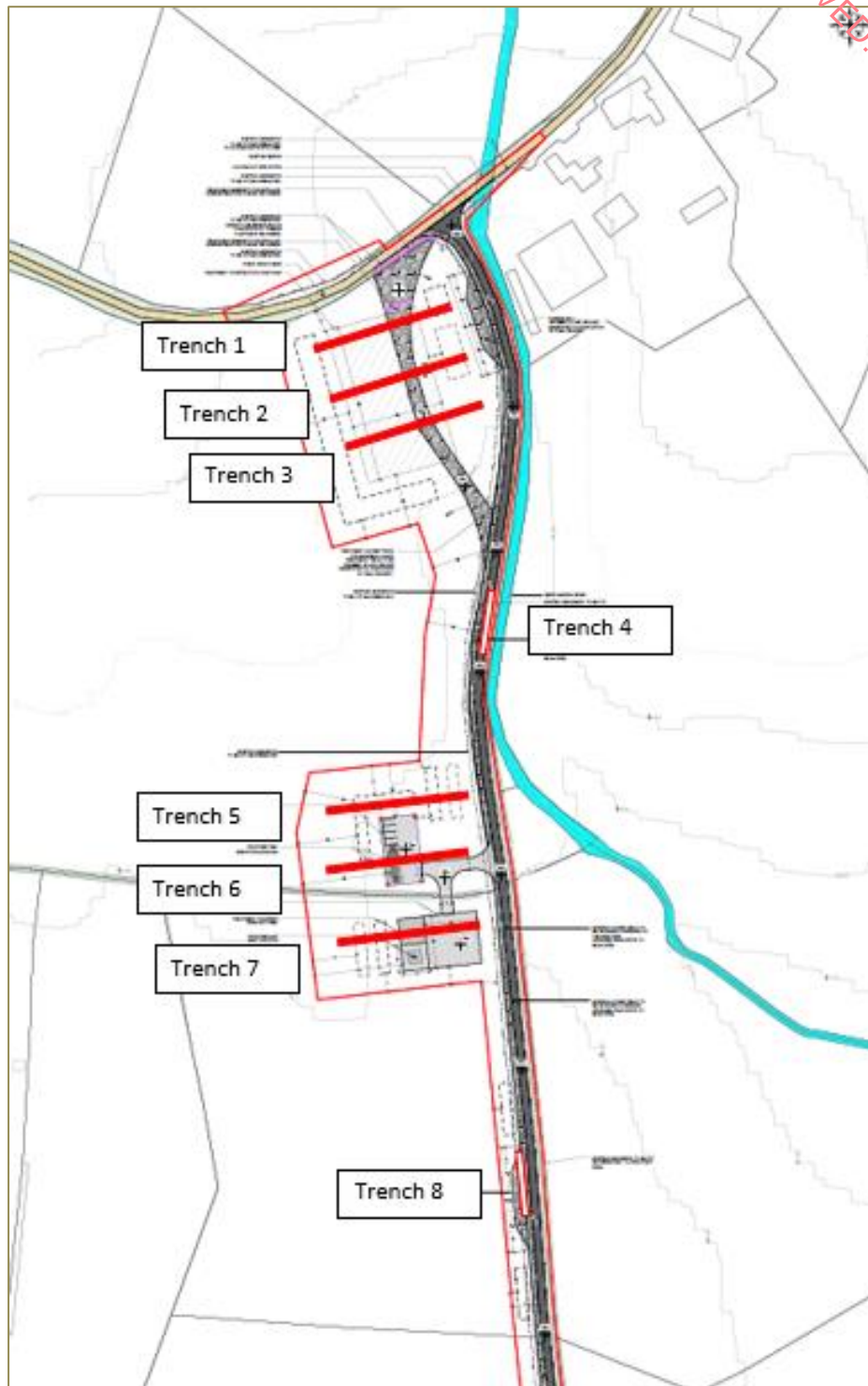
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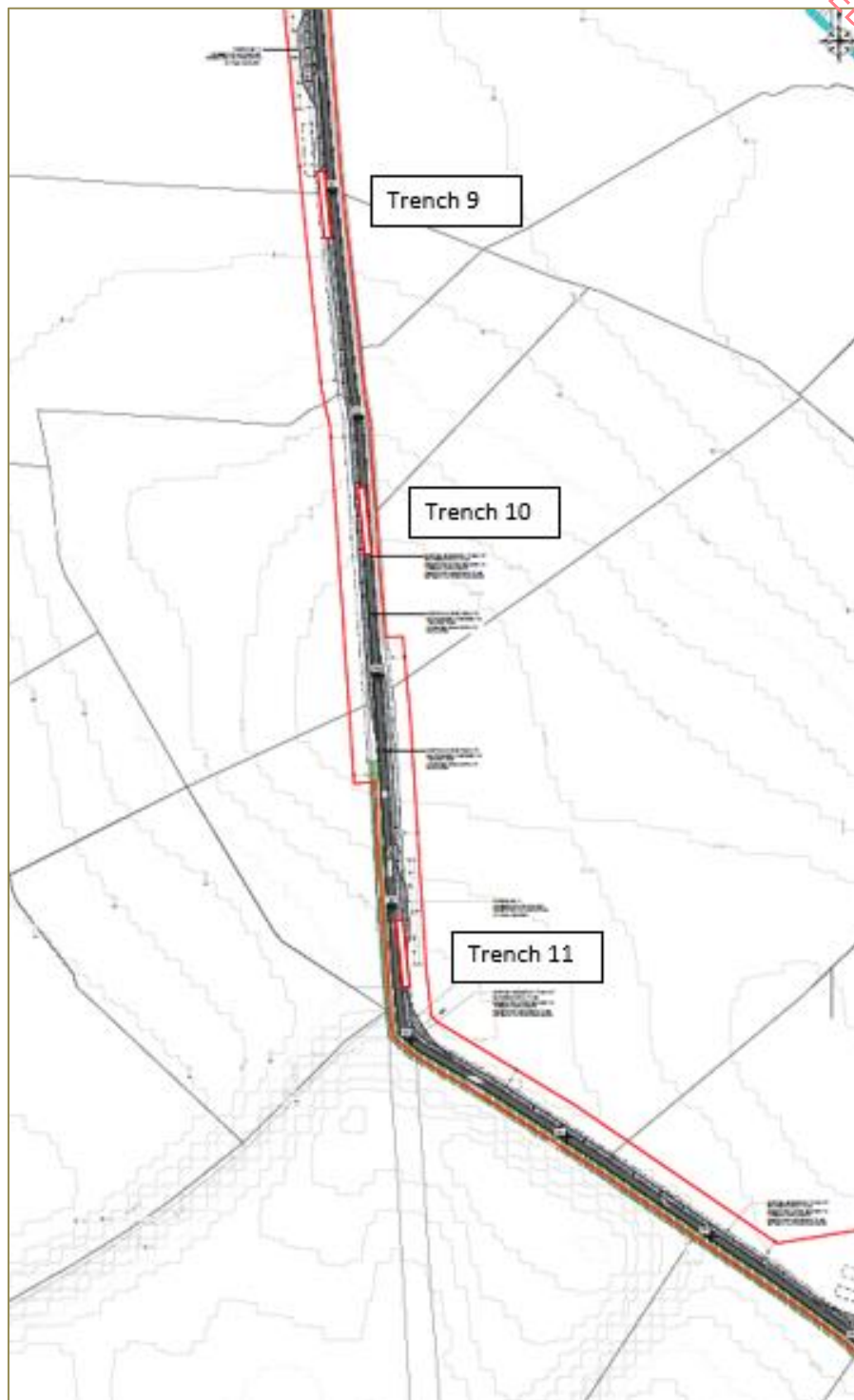
## 7. APPENDIX (Detailed Trench Location Plan)

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