

APPENDIX L.3

ARCHAEOLOGICAL MONITORING REPORT
(JOHN CRONIN & ASSOCIATES)

Barnastooka Windfarm, Kilgarvan, Co. Kerry
Archaeological Test Trenching

Kerry County Council ref. 10/197
Excavation Licence: 10E0201



Prepared by

Tony Cummins
John Cronin & Associates
Unit 3A Westpoint Trade Centre,
Link Road
Ballincollig
Co. Cork

On behalf of

Kerry Wind Power Ltd.,
c/o Jennings O' Donovan & Partners,
Consulting Engineers,
Finiskin Business Park,
Sligo

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PROJECT DETAILS

Project type	Archaeological Impact Assessment
Archaeologist	Tony Cummins
Planning Authority	Kerry County Council
Planning Ref.	10/197
Development Type	Wind Farm
Street Address	n/a
Townlands	Barnastooka, Gortlahard & Coolnagoppoge
Parish	Glanlough
County	Kerry
NGR	107606, 72444
OS Sheets	KE085 & KE094
RMP	N/A
Excavation Licence No.	10E0201

Abstract

This report details the results of archaeological test trenching at the site of a proposed wind farm at Barnastooka, Kilgarvan, Co. Kerry (Fig. 1). The proposed wind farm will comprise fourteen wind turbines, 1.33km of existing tracks, 5.95km of new (5m wide) access tracks, a control building compound and a temporary works compound.

There are no recorded archaeological monuments within the proposed development site. Archaeological test trenches were excavated on the footprint of the turbine base locations, access roads, control building site, hardstands and on all other accessible areas upon which ground works are proposed. The site investigation works were undertaken by the present writer between 14th and 18th June 2010 under excavation licence no 10E0201.

There were no archaeological features or artefacts uncovered in any of the test trenches excavated on the footprint of the areas to be impacted by the proposed wind farm.

Two previously unrecorded circular dry-stone hut sites were noted with the southern end of the overall landholding. These huts will not be impacted by the proposed development but it is recommended that they are clearly cordoned off during construction works to prevent any accidental disturbance.

1. Introduction

John Cronin and Associates were commissioned by Kerry Wind Power Ltd. to carry out a programme of pre-development archaeological test trenching at the lands to be impacted by the proposed construction of Barnastooka Wind Farm, Kilgarvan, Co. Kerry. The overall landholding extends into the townlands of Barnastooka, Coolnagoppoge, and Gortlahard and comprises an area of marginal upland farmland.

The wind farm scheme will comprise the construction of 14 turbines with adjacent hardstands, 5.95km of new access track, a control building compound and a temporary works compound. The turbines and their adjacent hard stand areas will each measure 20m x 40m and the new sections of access track will measure 5m in width.

There are no recorded archaeological monuments located within the proposed development site. A bridge located near the northeast corner of the overall landholding is listed in the RMP for Co. Kerry (Fig. 2; KE085-045). This bridge is outside the site boundary and will not be impacted by the proposed development. There are no other recorded archaeological monuments located within 650m of the overall landholding boundary.

The programme of test trenching at the proposed development site was carried out to satisfy a request for further information issued by Kerry County Council (Planning ref. 10/197). This request states (in full):

You are requested to conduct a pre-development Archaeological Test Excavation on all turbine base locations, access roads, control building site and hardstands and on all areas upon which ground works are proposed. You are requested to submit a report on the excavation to the Planning Authority.

This report provides the results of pre-development archaeological test excavations carried out in the areas to be impacted by the proposed construction of the Barnastooka Wind Farm. A summary of the archaeological, historical and cartographical context of the proposed development site, which was included in the EIS, is provided in Section 2.

2. Context

RECEIVING ENVIRONMENT

The proposed wind farm site is located within the townlands of Barnastooka, Coolnagoppoge and Gortlahard in an upland area within the Derrynasaggart range, with Killgarvan and the R569 to the northwest, the N22 to the northeast, the Roughty River to the north and east, the Slaheny River to the west, a tributary of the Roughty River, the R584 and the Shehy Mountains to the south.

The proposed wind farm site is located within an upland valley above the 300m contour line in a southwest-northeast mountain range. Two summits of 413m OD and 455m OD lie within the site boundary. The underlying geology in this area is composed of Old Red Sandstone and the soil profiles are dominated by peats and peaty gleys. There is no habitation in the upper valley or the surrounding hills and all of the turbines are located above the tree line. Below the tree line there are small nucleated settlements on low ground and along the banks of the River Roughty. The vegetation within the site comprises generally of rough grass, sphagnum moss and rushes with very little heather or gorse present. The area is generally covered with blanket peat: abandoned turf cuttings can be seen in the lower areas while there is shallow peat cover on the upper slopes and the bedrock is occasionally exposed. The land use capability in this area has been classified as 'extremely limited' (Aalen *et al* 1997, 18).

ARCHAEOLOGICAL AND HISTORICAL CONTEXT

There are no recorded monuments of archaeological significance within the proposed wind farm site boundary. There are two recorded monuments within 1km of the temporary compound in the northeast corner of the site. These are a post-medieval bridge (RMP KE085-045---), which lies *c.* 200m to the north, and a building (KE086-003---) located *c.* 680m to the northeast. There are another two recorded monuments within 3km of the boundary of the proposed wind farm. These are a country house (KE095-006---) *c.* 2km to the east and an anomalous stone groy (KE095-005---) *c.* 2.5km to the southeast.

Archaeological monitoring of ground works associated with the construction of the fifteen-turbine wind farm in Inchee and Lettercannon townlands, located on the opposite (east) slopes of the Roughty River valley from the proposed development site, was undertaken by Miriam Carroll in 2005. The extraction of peat deposits from the site was monitored and did not reveal the presence of any archaeological finds or features.

Two previously unrecorded drystone hut sites have recently been exposed by sheep-grazing in the marginal lands in the southern end of the overall landholding (Fig. 3). These types of structures are a common feature in the upland areas of County Kerry, for instance there are over 500 examples recorded on the Iveragh peninsula to the west, and they may conceivably date from any period from prehistoric to early modern times (O' Sullivan & Sheehan 1996). Neither of these huts will be impacted the proposed development and recommendations are made in Section 4 of this report to ensure their preservation *in situ*. The descriptions and locations of these two hut sites will be forwarded to the Archaeological Survey of Ireland.

North Hut (106185/71569)

The foundations of this sub-circular hut site were identified on a level terrace on the south-facing slope, *c.*30m north of the proposed route between Turbines 9 & 10. The collapsed wall

measured up to 2m in thickness and enclosed an internal area measuring 2.06m north-south by 2.7m east-west (Plate 16).

South Hut (106586/71278)

The foundations of this sub-circular hut site were identified on a level terrace on the south-facing slope *c.*40m south of the proposed route between Turbines 6 & 7. The collapsed wall measured up to 1.5m in thickness and enclosed an internal area measuring 1.6m north-south by 2m east-west. A 1m wide gap in the east wall appeared to form the entrance (Plate 17).

3. Archaeological Test Trenching

The programme of site investigation works at the proposed Barnastooka Wind Farm site was carried out to comply with the requirements of the Planning Authority (Kerry County Council). The works involved the excavation of test trenches turbine base locations, access roads, control building site and hardstands and on all areas upon which ground works are proposed. The only site constraints encountered were an area of steeply sloping hillside in the vicinity of Turbine 14, where the mechanical excavator could not operate safely, and a recent forestry plantation along a 500m section of the entrance route, which had disturbed the soil profiles beneath the surface of the subsoil layer (Fig. 4). These site constraints are described in more detail below. The scheme will incorporate approx. 1.33km of existing hardcore trackways and these will not be impacted by any ground reduction works during construction.

The following is a breakdown of the extent of the test trenching strategy for each component of the wind farm scheme (Fig. 4):

- *Access track*: A 1.5m wide test trench extending along the centre of the proposed new 5m wide access track
- *Turbines*: two parallel 40m long test trenches (at 10m intervals) in the areas to be impacted by the 14 turbine bases and adjacent hard stands
- *Temporary compound*: two parallel 25m long test trenches (at 10m intervals) in the area to be impacted by the temporary compound (25m x 20m)
- *Control building compound*: two parallel 30m long test trenches (at 10m intervals) in area to be impacted by the control building compound

All of the test trenches were excavated down to the surface of the natural glacial till by a mechanical excavator operating with a toothless grading bucket. The results are detailed below but, in summary, test trenching revealed a homogenous peaty topsoil layer overlying the natural glacial till, which contained frequent inclusions of bedrock fragments, throughout the development site. Nothing of archaeological significance was identified in any of the test trenches excavated on the footprint of the proposed Barnastooka Wind Farm.

Proposed Temporary Compound

The proposed temporary compound area is located adjacent to the south of an existing trackway on the northeast boundary of the landholding. The compound site, which measures 25m x 20m, consists of a level area of rough pasture with a stream running along its northern boundary. Trenching revealed a shallow layer of brown peaty topsoil averaging 20cm in depth that overlay a stony, greyish brown sandy clay subsoil (Plate 1). No features of an archaeological nature were noted.

Entrance Route:

The entrance route will utilise an existing section of trackway that extends from the compound and climbs a steep east-facing slope for c.900m before terminating in an area of elevated rough pasture (at 107112/73576). A continuous test trench was excavated along a proposed new curvilinear section of trackway that will extend in a broadly northeast-south

west direction before reaching a narrow stream (107043/73487). The trench revealed a layer of peaty topsoil, which varied in depth from 0.4m-0.5m at northeast end of the trench to 0.7m at the southwest, and overlay the undulating, stony, greyish brown, clay-rich subsoil in all areas (Plate 2).

The proposed entrance route will continue broadly southwards for c.500m on the opposite side of the stream through an area of undulating upland with an east-facing aspect and characterised by frequent rock outcrops interspaced with pockets of shallow soil. This area has been recently planted with mixed woodland which has caused considerable soil disturbance over the entire area. The line of the proposed entrance road was walked and the soil profile was inspected where tree planting had exposed (& truncated) the subsoil (Plates 3 & 4). In general a shallow peaty topsoil, measuring 0.2m-0.3m deep, was observed throughout overlying a gravel-rich subsoil and no deposits or features of an archaeological nature were observed. The new section of the entrance route will intersect with an existing section of trackway (at 107288/73012) that extends to the proposed site control compound (107282/72698). This section of track measured 250m in length and was left *in situ* during testing as it will be used as an access route within the proposed development.

Proposed control building: The site of the proposed control building compound (107282/72698) consists of an area of ground close to the foot of the northern slope of a hill. The ground is poorly drained and boggy with dense stands of rushes. Two east-west orientated 30m long test trenches were excavated, at 10m intervals, across the compound site. The trenches revealed a layer of peaty topsoil, varying in depth from 0.4m to 1m, which overlay a greyish brown, boulder clay with inclusions of bedrock fragments (Plate 5). No features or deposits of an archaeological nature were observed.

Proposed route between control building and Turbine 14: This stretch of proposed trackway cuts diagonally across a steep, north-facing slope in a northeast-southwest direction. The steep gradient made it impossible for the mechanical excavator to operate safely in this area (Plate 6). As a result, no test trenches were excavated along this 500m stretch but the line of the proposed route was walked in its entirety (Fig. 4). The steep gradient would not have been conducive to past occupation and the archaeological potential is therefore deemed to be low. No surface evidence for archaeological features was noted.

Turbine 14: This turbine site (106927/72342) is located on a steep north facing slope, just below the summit of the hill. Two 30m long trenches were dug across the proposed turbine site. Both revealed a dark brown peaty topsoil layer, 0.2m deep, overlying a greyish brown clay subsoil with inclusions of bedrock fragments (Plate 7). No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 14 and Turbine 13: This section of the proposed route, measuring c.350m in length, runs in a west-east direction along the north side of the summit of the hill. A trench was excavated along the line of the proposed route with two short breaks left unexcavated where the gradient rendered it unsafe. On the higher parts of the proposed route a peat depth of 0.4m was observed, overlying a greyish brown boulder clay subsoil. In the central portion of the proposed route the line of the trackway extended through an area of peat that measured up to 2m in depth. No features or deposits of an archaeological nature were noted.

Turbine 13: This turbine (107258/72313) is located on a steep, north-facing slope, just north of the summit of the hill. Two 40m long trenches were dug across the site revealing a dark brown peaty layer, 0.6m in depth, overlying the greyish brown boulder clay subsoil (Plate 8). No features or deposits of an archaeological nature were observed.

Proposed route between Turbine 13 and Turbine 12:

This section of the proposed route, measuring c.350m in length, runs in a west-southwest to east-northeast direction on the north side of the summit of the hill. The terrain slopes steeply down towards Turbine 12. A trench was excavated along the line of the proposed route. A dark brown/black peaty topsoil layer, c. 0.5m deep, was exposed overlying the greyish brown boulder clay and no features or deposits of an archaeological nature were observed.

Turbine 12: This turbine site (107606/72444) is located in an area of improved pasture on a steep north-north east facing slope. Two 40m long trenches were dug across the proposed turbine site at 10m intervals. Both revealed a black/brown peaty topsoil layer, averaging 0.4m deep, overlying greyish brown boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route to south of Turbine 12: A trench was excavated along the 250m stretch of the proposed route that runs in a north-south direction across an east-facing slope. Where the ground slopes steeply at the northern end of this stretch of the route, a black/brown peaty layer, varying in depth from 0.2m to 1m, was revealed overlying a greyish brown boulder clay subsoil. Otherwise the peat layer was 0.2m to 0.4m in depth. No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 1 and Turbine 2:

A trench was excavated along the line of this section of the proposed route, which measures c.600m in length and runs in an east-west direction along a ridge on the south side of the summit of the hill. A dark brown/black peaty layer, ranging between 0.2m and 1m in depth, was exposed overlying the greyish brown boulder clay and no features or deposits of an archaeological nature were observed (Plate 9).

Turbine 1: This turbine site (107813/72267) is located on an east-facing slope. Two 40m long trenches were dug across the proposed turbine site at 10m intervals. These revealed a black/brown peaty layer, averaging 0.4m deep, overlying a greyish brown boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Turbine 2: This turbine site (107273/72006) is located on a relatively flat terrace on a south-facing slope. Two 40m long trenches were dug across the proposed turbine site at 10m intervals and exposed a black/brown peaty layer, averaging 0.4m deep, overlying a greyish brown boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route extending south to Turbine 3:

A test trench was excavated from the junction between Turbines 1 & 2 and extended for 250m southwards along the proposed route to Turbine 3. This section traverses a gently inclining, east-facing slope and the exposed soil profile consisted of a 0.4m-0.6m deep peaty topsoil layer overlying the greyish brown, sandy, boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 3: Two 40m long trenches were dug across the proposed turbine site (107635/71942) at 10m intervals and exposed a dark brown peaty topsoil layer, averaging 0.5m deep, overlying a light yellowish brown, boulder clay subsoil (Plate 10). No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 3 and Turbine 4:

A continuous trench was excavated along this c.500m long section of the proposed route, which runs in curvilinear direction towards Turbine 4 to the southwest and traverses across a gently inclining southeast-facing slope. The dark brown peaty topsoil layer ranged between 0.2m and 0.6m in depth and overlay the greyish brown, stony boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 4: Two 40m long trenches were dug across the proposed turbine site (107635/71942) at 10m intervals and exposed a dark brown peaty layer, averaging 0.6m deep, overlying a light yellowish brown, boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 4 and Turbine 5:

A continuous trench was excavated along this c.300m long section of the proposed route, which runs in eastward direction towards Turbine 5 and traverses across a gently inclining south-facing slope. The dark brown peaty topsoil layer ranged between 0.4m and 0.6m in depth and overlay the light yellowish brown, boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 5: Two 40m long trenches were dug across the proposed turbine site (107035/71725) at 10m intervals and exposed a dark brown peaty layer, averaging 0.15m deep, overlying a light yellowish brown, boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 5 and Turbine 6:

A continuous trench was excavated along this section of the proposed route, which extends in a southwest direction across a gently inclining south-facing slope before turning northwards to Turbine 6. The shallow dark brown peaty topsoil layer in this area averaged 0.2m in depth and overlay the light yellowish brown, boulder clay subsoil (Plate 11). No features or deposits of an archaeological nature were observed.

Turbine 6: Two 40m long trenches were dug across the proposed turbine site (106720/71542) at 10m intervals and exposed a dark brown peaty layer, averaging 0.3m deep, overlying a light yellowish brown, boulder clay subsoil (Plate 12). No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 6 and Turbine 7:

A continuous trench was excavated along this section of the proposed route, which extends in a southwest direction before turning northwards to Turbine 6. This section of the route crosses a gently inclining south-facing slope that forms the lowest area of the site. The dark brown peaty topsoil layer in this area averaged 0.6m in depth and overlay the light yellowish brown, stony, sandy boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 7: Two 40m long trenches were dug across the proposed turbine site (106414/71223) at 10m intervals and exposed a dark brown peaty layer, averaging 0.6m deep, overlying a light yellowish brown, sandy boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 7 and Turbine 8:

A continuous trench was excavated along this section of the proposed route, which extends in a southwest direction towards Turbine 8. The shallow dark brown peaty topsoil layer in this area averaged 0.4m in depth and overlay the light yellowish brown, stony, sandy boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 8: Two 40m long trenches were dug across the proposed turbine site (105933/71132) at 10m intervals and exposed a dark brown peaty layer, averaging 0.5m deep, overlying a light yellowish brown, sandy boulder clay subsoil (Plate 8). No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 8 and Turbine 9:

A continuous trench was excavated along this section of the proposed route, which extends in a northeast direction towards Turbine 9. The dark brown peaty topsoil layer in this area ranged between 0.4m-1m in depth and overlay the light yellowish brown, stony, sandy boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 9: This turbine (106125/71454) is sited in a level area within a rocky south-facing slope. Two parallel 40m long trenches were excavated at 10m intervals and exposed a dark brown peaty layer, averaging 0.3m deep, overlying a light yellowish brown, sandy boulder clay subsoil. No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 9 and Turbine 10:

A continuous c.500m long trench was excavated along this section of the proposed route, which extends in a northeast direction across steeply sloping, rocky ground towards Turbine 10. The dark brown peaty topsoil layer in this section of the route ranged between 0.15m and 0.65m in depth and overlay the light yellowish brown, stony, sandy boulder clay subsoil. No features or deposits of an archaeological nature were observed.

Turbine 10: Two parallel 40m long trenches were excavated at 10m intervals at this turbine site (106396/71708) located on an area of level ground on a south-facing slope. Trenching exposed a dark brown peaty layer, averaging 0.2m deep, overlying a light yellowish brown, sandy boulder clay subsoil with inclusions of bedrock fragments (Plate 15). No features or deposits of an archaeological nature were noted.

Proposed route between Turbine 10 and Turbine 11:

A continuous c.500m long trench was excavated along this section of the proposed route, which extends in a northeast direction across a gently inclining, south-facing slope towards Turbine 11. The dark brown peaty topsoil layer in this section of the route averaged 0.2m in depth and overlay the light yellowish brown, stony, sandy boulder clay subsoil (Plate 14). No features or deposits of an archaeological nature were observed.

Turbine 11: Two parallel 40m long trenches were excavated at 10m intervals at this turbine site (106692/71924) located on a gently inclining, south-facing slope. Trenching exposed a

dark brown peaty layer, averaging 0.2m deep, overlying a light yellowish brown, sandy boulder clay subsoil and no features or deposits of an archaeological nature were noted.

4. Conclusions & recommendations

This Archaeological Impact Assessment details the results of the excavation of test trenches in the areas to be impacted by the proposed development of Barnastooka Wind Farm. It has been compiled in accordance with the requirements for this development as stipulated by the Planning Authority (Kerry County Council ref. 10/197). The EIS for the proposed scheme provides the results of a desk-top study and an inspection of the areas to be impacted.

There are no recorded archaeological monuments within the proposed development site and no archaeological features, deposits or artefacts were identified in the test trenches excavated on the footprint of the proposed development. Two previously unrecorded, sub-circular, drystone hut sites were noted with the southern end of the overall land-holding. These hut sites are not on the footprint of the proposed development but it is recommended that they are clearly cordoned off during construction works within buffer zones extending for 20m from their walls. This is to prevent any accidental disturbance to the huts by construction traffic.

The c.500m section of the proposed entrance route that has been recently been planted with trees was not available for test trenching. The plantation has extensively truncated the surface of the natural subsoil and nothing of archaeological significance was noted during two separate walkover surveys of this area. It was not possible for the mechanical excavator to operate in the steeply sloping area of hillside in the vicinity of Turbine 14. This area was also inspected on two separate occasions and it is concluded that, given the steeply sloping gradient, it has a low archaeological potential.

Given the absence of any evidence for the presence of archaeological features or artefacts within the test trenches excavated in the areas to be impacted by the proposed development, it is recommended that the construction of the proposed wind farm should proceed with no further archaeological intervention.

It should be noted that these recommendations are subject to the approval of the Planning Authority (Kerry County Council) and the National Monuments Service.

5. References

Aalen, F.H.A et al 1997 *Atlas of the Irish Rural Landscape*. Cork University Press.

Carroll, M. 2005 'Inchee and Lettercannon' www.excavations.ie

O' Sullivan, A. & Sheehan, J. (1996) *The Iveragh Peninsula: An Archaeological Survey of South Kerry*. Cork University Press.

Consulted websites:

www.excavations.ie

www.archaeology.ie

www.osi.ie

6. Figures & Plates

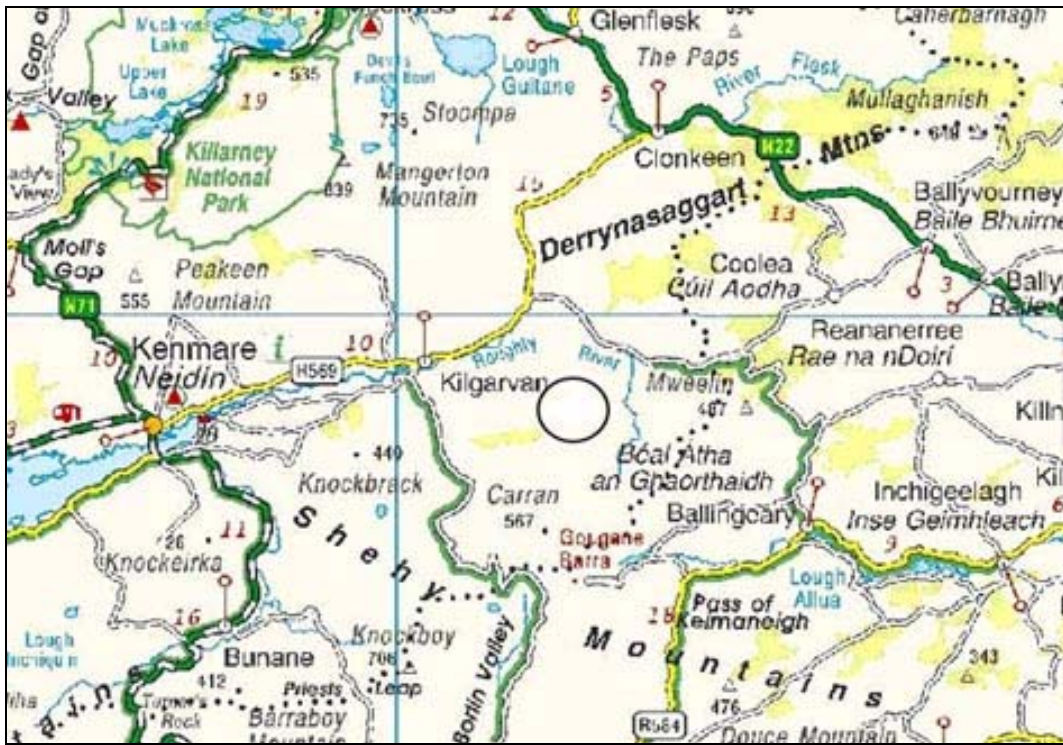


Figure 1: General location map (site location circled)

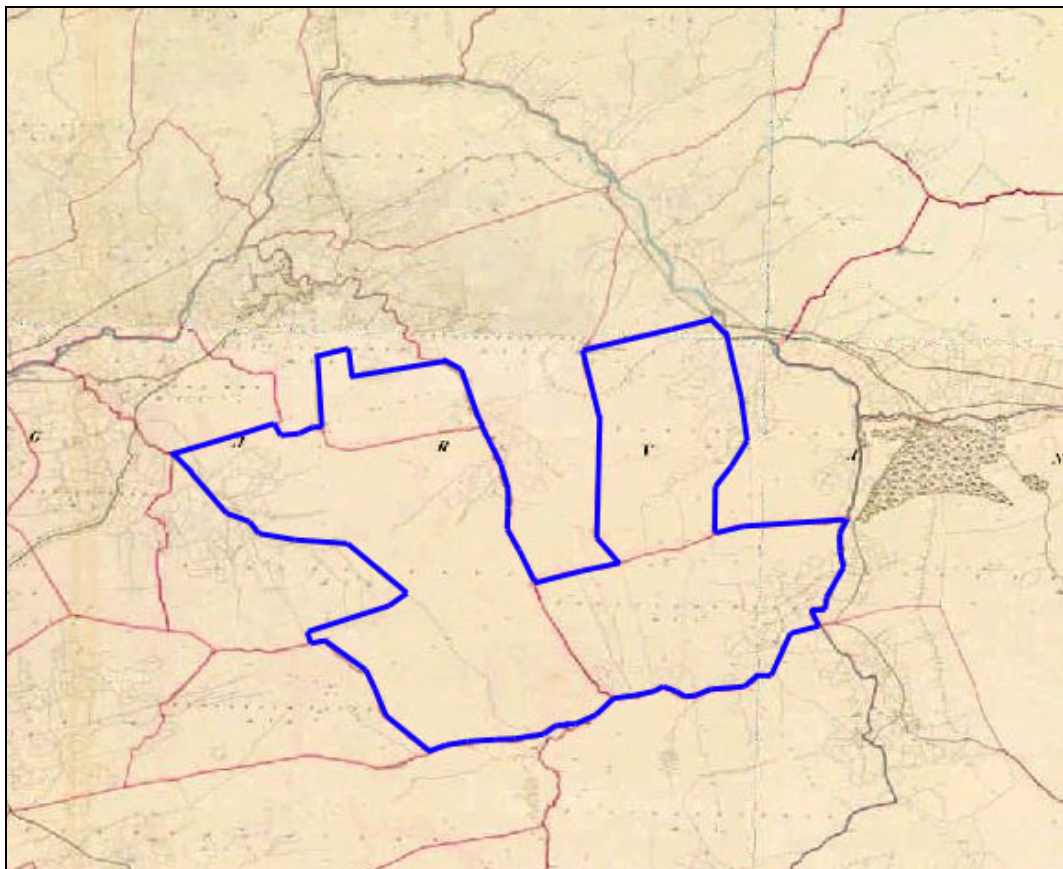


Figure 2: Extract from 1st edition OS map 1834-1846 (overall landholding indicated in blue)

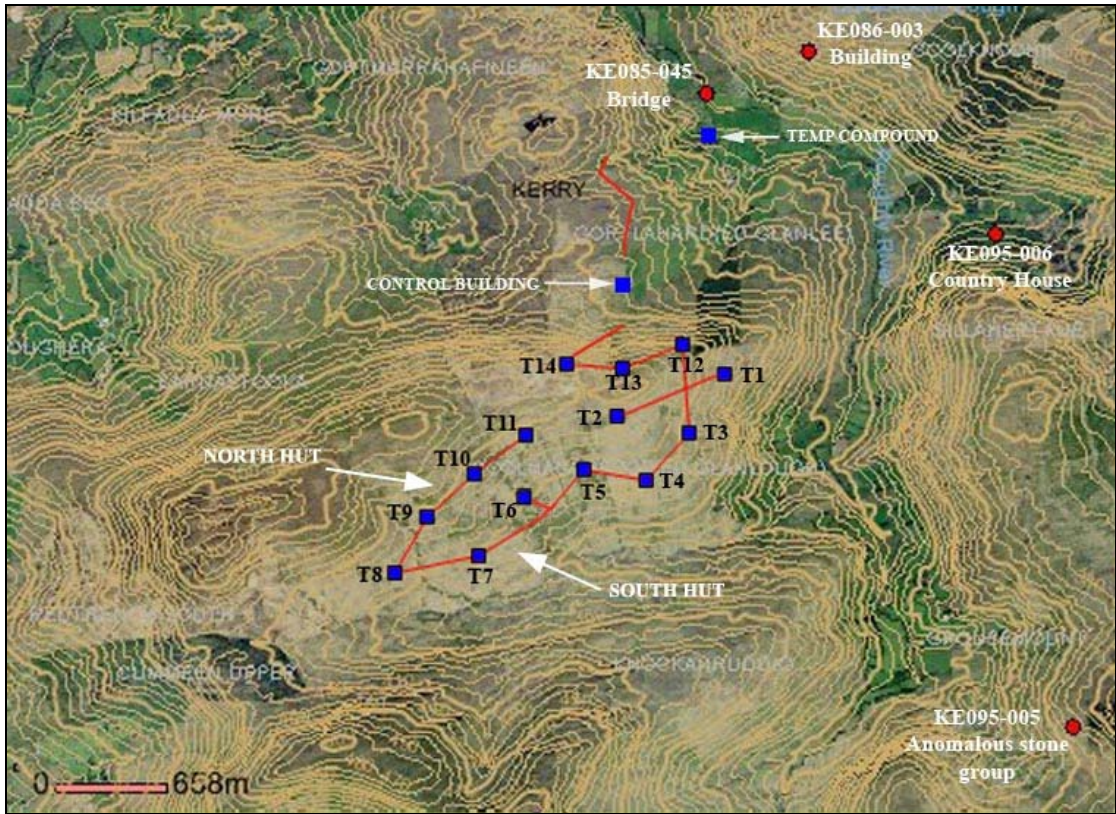


Figure 3: Extract from National Monuments Service mapping (www.archaeology.ie) showing recorded monuments in vicinity of wind farm (proposed access tracks in red)

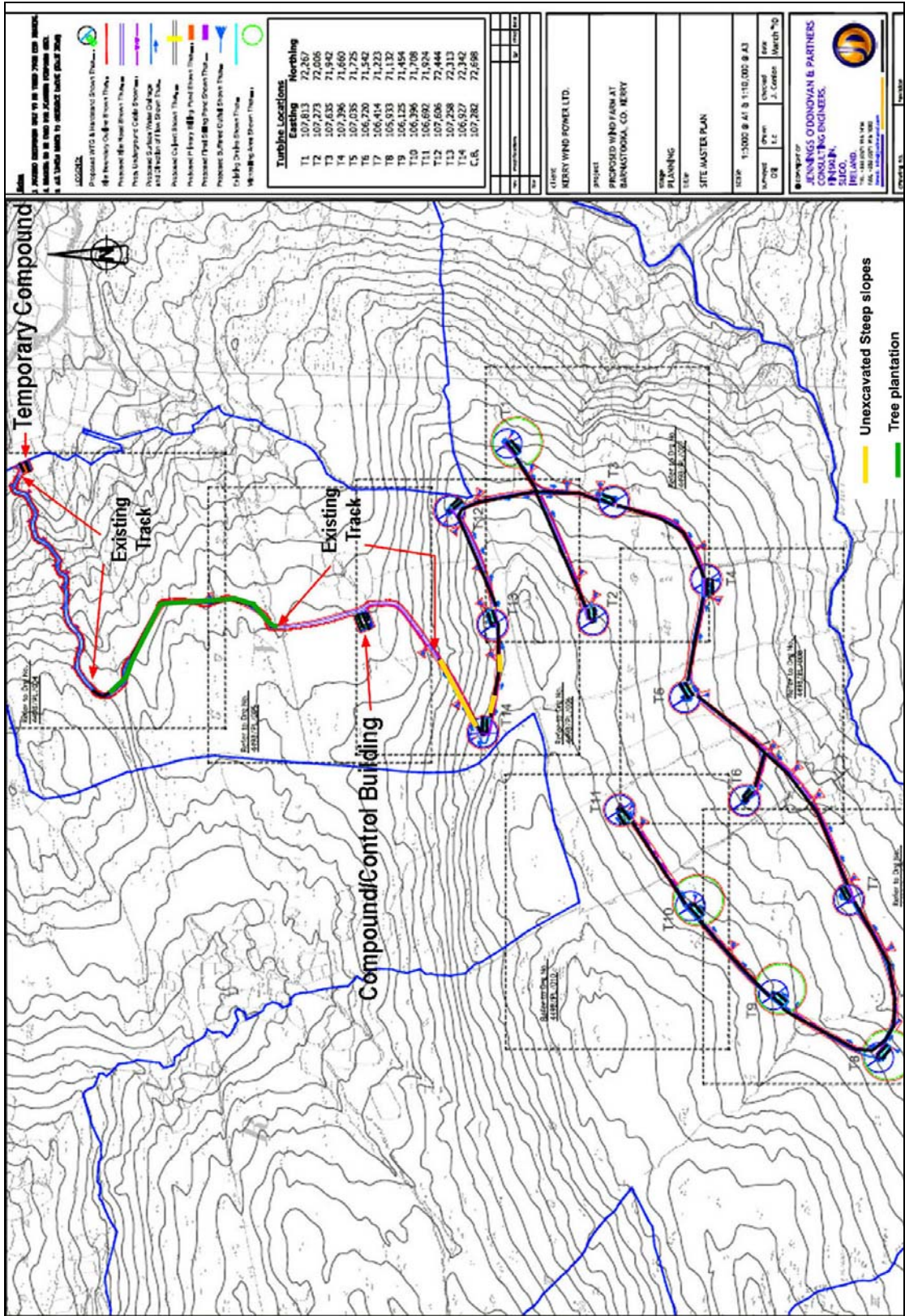


Figure 4: Layout of test trenches (black lines) in relation to proposed development



Plate 1: Trench in proposed temporary compound, view to north



Plate 2: Proposed entrance route between 107112/73576 and 107043/73487 (view from northeast)



Plate 3: View of proposed entrance route showing recent tree planting



Plate 4: Detail of disturbed soil profile in tree plantation



Plate 5: Proposed compound site: Southern test trench, view to east



Plate 6: View of steep slopes in vicinity of Turbine 14



Plate 7: Test trenching at Turbine 14



Plate 8: Test trenching at Turbine 13, view looking westwards



Plate 9: Test trench extending between Turbines 1 & 2



Plate 10: Test trenching at Turbine 3



Plate 11: Test trench extending between Turbines 5 & 6



Plate 12: Test trenching at Turbine 6



Plate 13: Test trenching at Turbine 8



Plate 14: Test trench extending to Turbines 10 & 11



Plate 15: Test trenching at Turbine 10



Plate 16: View of North Hut from northeast



Plate 17: View of interior of South Hut from west