

CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE &
PLANNING

Appendix 13-2

Bridge Survey Report



Carlow County Council, Planning authority, Viewing Purposes Only!



5271/119/SM

14th July 2015

Planning Department,
Carlow County Council,
County Buildings,
Athy Road,
Carlow.

Re: Planning Permission for Construction of Site Access to Proposed Single Wind Turbine Development at Cranemore, Co. Carlow.
Report and Dilapidation Survey of Bridges/Culverts on Proposed Haul Route
Planning Reference PL 15/87

Dear Sirs,

Reference is made to your correspondence of 25th May 2015 requesting response in further clarification of matters submitted in relating to the above noted planning application. This responds specifically to Item 1.

Mr. Sean Martyn of Jennings O'Donovan & Partners Limited carried out a visual inspection on the 25th June 2015 of the bridges and culverts along the proposed haulage route from Bunclody along Road No. L-2026-0 to the proposed site access road.

Mr. Barry Dowling of Carlow County Council was in attendance and indicated the Bridges to Sean Martyn.

The following report contains a dilapidation survey of all the above with reference to the Bridge names on the O.S. maps.

References are made to the design and capacity in BA 16/97 – The Assessment of Highway Bridges and Structures, and CIRA C656-Masonry Arch Bridges: cognisance of conditional remedial treatment was consulted. The numbered references 1 to 7 locations are indicated on the attached Key Plan.

1. Barkers Bridge:

Refer to survey Photographs of Bridge appended to this report.

The Construction of this Bridge predates the 1909 O.S. map and is circa 140 years in existence. There are two arches with a central buttress of 4m in width. One arch is 2.1m wide, the other is 2.3m wide and with overall heights of 1.4m and 1.9m respectively.

The arches appear to have been built at different stages as half the width is built in the classical style compression voussors and the other half is built with brick from a springing buttress.



The arches support approximately 4m of earth fill up to the road. Upon inspection, the arches are true albeit there are some minor distortions at the river bed and spalling of the under arch. The Bridge is founded on bed rock. There are no signs of maintenance work having been carried out. The carriageway surface has no signs of rutting or deformations.

Due to the small spans and the good condition and as it is within the MEXE calculations, accordingly it was concluded that these arches are capable of supporting the maximum axial load applied by movement of Vehicle C (8 no. axial's, carrying 53,000 kgs).

2. **Culvert Crossing Road in Townland of Deerparknew into Clonmullen Townland:**

This is piped with a 450mm diameter concrete pipe across the road with less than 1m cover to finished road level.

There will be no effect on this with the Vehicle C movement as noted in 1 above.

3. **Clashahillagh Bridge:**

Refer to survey Photographs of Bridge appended to this report.

The Construction of this Bridge predates the 1909 O.S. map and is circa 140 years in existence. This is a single span stone arch over a deep gorge. It is 3.1m wide at bed level with an overall height of 3.35m and the minimum compression zone/spandrel fill is 1.8m. Its buttresses on the upstream side have been strengthened with robust mass concrete on each side. The underside of the arches appear to have been repointed, possibly at the time the concrete buttress were constructed. Minor undermining scour has occurred next to the concrete buttresses. The Bridge is founded on outcropping rock.

The outside edges of the arches are gauged limestone (voussoir) and the internal stone/intrados are long random stones formed in the classical arch building method. Some young trees and vegetation have taken root in the wing walls. Upon inspection of the underside of the arch, it is true in shape with no visible signs of distress and no deformation was noted. The outside edges are gauged limestone and the internal stone are long random well pointed.

The carriageway surface has no signs of rutting or deformations. The carriageway has been narrowed with 600mm wide footpaths to a width of 3.4m.

It was concluded that this arch is capable of supporting the maximum axial load applied by movement of Vehicle C (8 no. axial's, carrying 53,000 kgs).

4. **Culvert Crossing Road in Townland of Deerparknew into Kilbrannish South Townland:**

This is a stone culvert 600mm wide by 400mm deep with a 200mm deep stone lintel over. The cover appears to be 350mm to finished road level. At the time of inspection, no road deformations were noted.



As this is a shallow culvert, close inspection should be carried out when Turbine delivery is being made and a report should be noted to the County Council Roads Engineer should any deformations occur.

5. **The Scratoes Bridge:**

Refer to survey Photographs of Bridge appended to this report.

The original construction of this Bridge predates the 1909 O.S. map and is circa 140 years in existence. The Bridge has been widened in the recent past. The newer widening appears to have been carried out within the last 30 years.

The stone arch part is 2.3m at the river bed with an overall height of 2.55m and a minimum compression zone/spandrel fill of 1.3m. Upon inspection the arches are true albeit there are some minor distortions at the river bed where undermining has occurred. The bridge is, for the most part, founded on rock. The south side extension of the bridge has been constructed with reinforced concrete buttress and the spanning deck is 400mm deep precast concrete ribs slab. The overall depth of fill is 1m. There is no parapet wall on the extension. The original bridge parapet wall is covered with ivy.

The carriageway surface has no signs of rutting or deformations.

The stone arch supports the road, due to the small span and generally good condition and as it is within the MEXE calculations, accordingly it was concluded that this arch is capable of supporting the maximum axial load applied by movement of Vehicle C (8 no. axial's, carrying 53,000 kgs).

The recently constructed part we assume, would have been designed to the codes current at that time. As there is no evidence of distress nor movement, there is no concern in relation to supporting the proposed axial loading.

6. **Bridge in Kilbrannish:**

Refer to survey Photographs of Bridge appended to this report.

The single span bridge was constructed within the last 30 years and the parapet appears to have been built in recent years. The span of 2.15m is constructed with 350mm deep reinforced concrete slab bearing on reinforced concrete buttresses. The fill depth is a minimum of 700mm. One parapet is 900mm high and built with a 215 plastered block wall on the southern side. The northern side is a mass concrete wall 800mm high. The parapet walls are in mass concrete on the upstream side and 225 solid blocks on the downstream side with an average height of 800mm.

The carriageway surface has no signs of rutting or deformations.

It was concluded that this stream crossing is capable of supporting the maximum axial load applied by movement of Vehicle C (8 no. axial's, carrying 53,000 kgs).

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7. **Culvert Crossing the Road in Townland of Kilbrannish:**
Refer to survey Photographs of Bridge appended to this report.

This Culvert is constructed with mass concrete in the form of a barrel arch 950mm wide and framed out in reinforced concrete with 250mm deep slab lintel at the entrance and exit. The fill from crown level to finished road level is 1m. There is no sign of distress or cracking.

The carriageway surface has no signs of rutting or deformations.

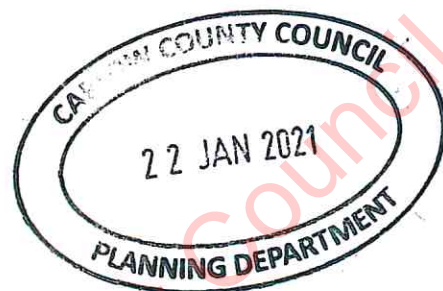
It is concluded that this culvert is capable of supporting the maximum axial load applied by movement of Vehicle C (8 no. axial's, carrying 53,000 kgs).

We trust at this stage this response adequately satisfies your further clarification request noted in point 1 of your correspondence of 25th May 2015. Should you require further clarification, please do not hesitate in contacting this office.

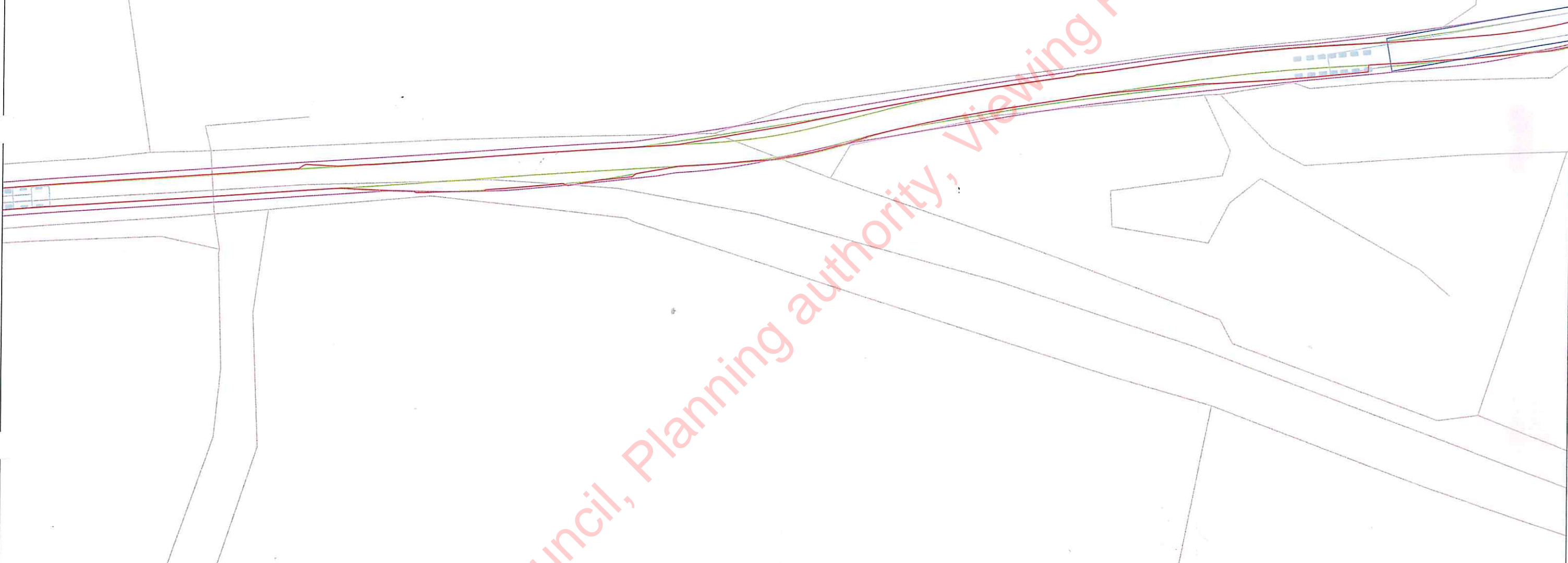
Yours sincerely,

Sean Martyn
For: Jennings O'Donovan & Partners Limited

Encl./



Tower



Available OSI mapping does not identify the road edge. Swept path assessments have been completed however they are only able to identify the requirements for third party land. Topographical surveys should be completed and the swept path assessments repeated.

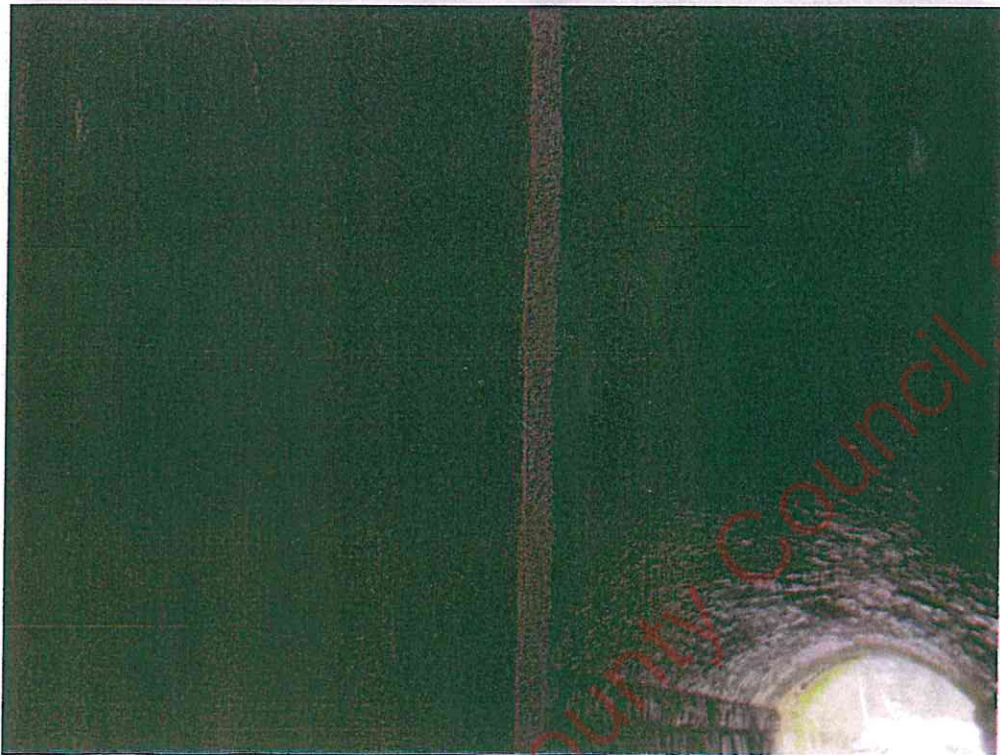
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfe@pellfrischmann.com www.pellfrischmann.com	Project	Croaghaun Wind Farm		Drawn	JS	29/09/2020	Scale	Custom @ A3
	Client	Coillte		Designed	GB	28/09/2020	File No.	V136 Croaghaun SPA v1.dwg
Key Wheel SPA (Red line) Body SPA (Green line) Load SPA (Purple line) Indicative (Grey line) Over-run (Red hatched) Over-sail (Blue hatched)	Drawing Title	Vestas V136 & Nordex N149 Top Tower		Checked	GB	29/09/2020	Drawing Status	Draft
	SPA Location	L2026 Site Entrance		Point of Interest	49		Drawing No.	SK15A
Notes:								Revision
1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.								1

1. Barkers Bridge

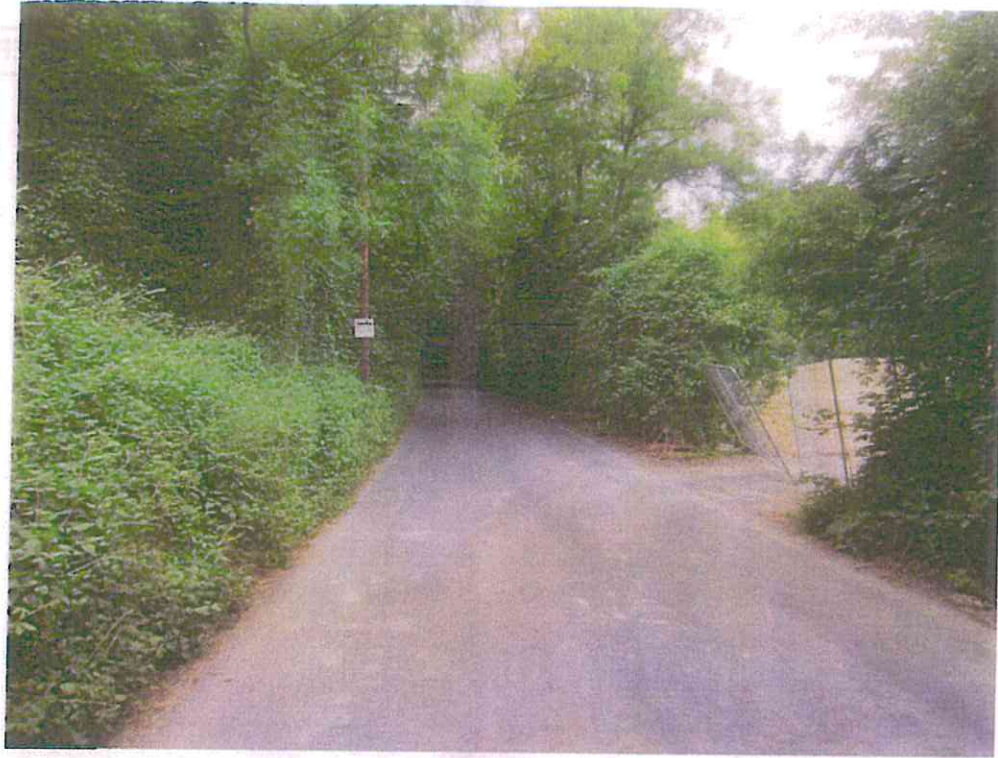


Upstream View of Arches



Stone Arch for half breadth, brick arch on other half

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Road Surface at Barkers Bridge



Some Loose Bricks



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Brick/Stone Transision



Brick Arch spanning onto equiangular stone abutment



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Large Arch Downstream Side



Small Arch Downstream Side



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2. Culvert Deerpark/Cloomullen



Culvert road crossing at Car on next photo



Road Surface at Culvert beside car

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3. Clashahilligh Bridge



Concrete Wing Walls and Road Surface



Upstream Mass Concrete Buttressing



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Downstream Arch



Stone Buttressing



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Scouring next Concrete Buttress



Concrete Buttresses Upstream Side



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Concrete buttress



Underside of Arch



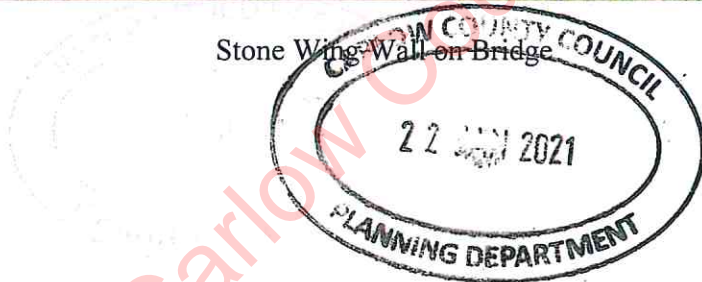
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Calcide on Underside of Arch



Stone Wing Wall on Bridge



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Parapet Walls Road Width 3.4m



Upstream Stone Parapet Wall



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4. Culvert Crossing Deerpark/Kilbrannish South



Culvert, 250mm deep arch stone with 350 to finished load level 600mm span



Road Surface at Slieve Stone Culvert



5. Scratoes Bridge



Downstream View – Outside rib and concrete Buttress



Pre Cast Concrete Ribs on downstream span



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Minor Scouring of Abutment on Upstream Side



Precast Ribs and Concrete abutment downstream, Stone Arch Upstream half





Road Surface



Upstream View of Stone Arch

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Parapet Wall Overgrown with Ivy-Upstream Side

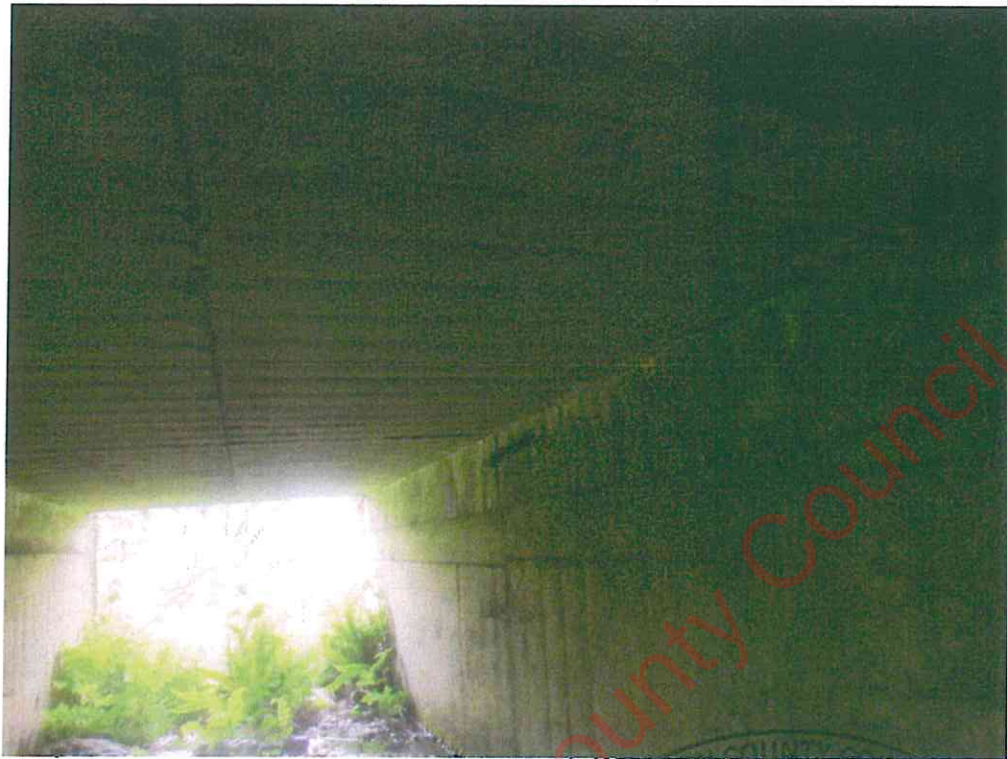


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6. Kilbranish Bridge



Road Surface and Parapet Wall with 215 wide block



Insitu reinforced concrete abutment and slab span



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Downstream View



Concrete abutment downstream side



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Loose stone wing wall upstream side



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7. Kilbranish Culvert



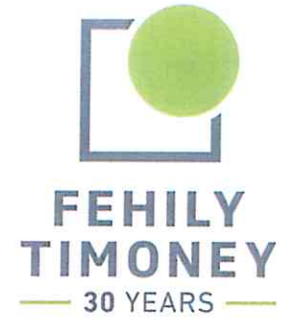
Upstream View of dry Culvert



Parapet wall downstream side



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Appendix 13-3

Consultation Responses



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Distribution

22 AUG 2019

Job No:

Correspondence No:

Comment:



Mr. Trevor Byrne
Fehily Timoney & Company
Core House
Pouladuff Road
Co. Cork
T12 D773

Dáta Date	Ár dTag Our Ref.	Bhur dTag Your Ref.
21 August 2019	TII19-106822	P1913/TB/TS/MG

● EIAR Scoping in relation to the proposed Croaghaun Wind Farm Co. Carlow

Dear Mr. Byrne,

Transport Infrastructure Ireland (TII) acknowledges receipt of your correspondence of 13 August 2019 in relation to the above proposed development.

TII wishes to advise that we are not in a position to engage directly with planning applicants in respect of proposed developments. TII will endeavour to consider and respond to planning applications referred to it, given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012). Regard should also be had to other relevant guidance available at www.tii.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of a valid planning application referred.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.

The developer/scheme promoter should have regard, *inter alia*, to the following:

- Consultations should be had with the relevant local authority/national road design office with regard to locations of existing and future national road schemes.
- TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development.
- The developer should assess visual impacts from existing national roads.
- The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts.
- The developer, in conducting Environmental Impact Assessment, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

- The developer, in conducting Environmental Impact Assessment, should have regard to TII's Environmental Assessment and Construction Guidelines, including the *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006).
- The EIAR should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)).
- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. TII's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the NRA/TII TTA Guidelines which addresses requirements for sub-threshold TTA.
- The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required.
- In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.
- In relation to haul route identification, the applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route, including where temporary modification to the road network may be required. Consultation with relevant PPP Companies and MMarC Contractors may also be required. All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.
- In relation to cabling and potential connection routing, the scheme promoter should note locations of existing and future national road schemes and develop proposals to safeguard proposed road schemes. In the context of existing national roads, alternatives to the provision of cabling along the national road network, such as alternative routing or the laying of cabling in private lands adjoining the national road, should be considered in the interests of safeguarding the investment in and the potential for future upgrade works to the national road network. The cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII. Any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network and motorway network.

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise.

I trust that the above comments are of use in your EIAR preparation.

Yours sincerely,


Michael McCormack
Senior Land Use Planner



Carlow County Council Planning authority, Viewing Purposes Only!

13 JAN 2020



Mr. Trevor Byrne
Fehily Timoney & Company
Core House
Pouladuff Road
Co. Cork
T12 D773

Dáta Date	Ár dTag Our Ref.	Bhur dTag Your Ref.
9 January 2020	TII19-108417	P1913/Lett/TB/MG

RE: EIA Scoping Request: Proposed Croaghaun Windfarm (7 no. turbines with atip height of up to 185m) at Croaghaun, Myshall, Co. Carlow with grid connection on behalf of Coillte.

Dear Mr. Byrne,

Transport Infrastructure Ireland (TII) acknowledges receipt of your EIA Scoping request in respect of the above proposed project, received 20 December 2019. TII notes previous correspondence issued on 18 August 2019 to your office in relation to the windfarm aspect of this project; TII ref. TII19-106822.

National Strategic Outcome 2 of the National Planning Framework includes the objective to maintain the strategic capacity and safety of the national roads network. It is also an investment priority of the National Development Plan, 2018 – 2027, to ensure that the extensive transport networks which have been greatly enhanced over the last two decades, are maintained to a high level to ensure quality levels of service, accessibility and connectivity to transport users.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid application referred.

The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidance as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (2012). Regard should also be had to other relevant guidance available at www.tii.ie.

TII notes that the consultation documentation identifies a windfarm Study Area at this time and proposed grid connection route that, in part, indicates following and crossing the N80, a national secondary route at Kilnock Cross. With respect to EIA Scoping issues, the recommendations indicated below provide only general guidance for the preparation of EIA, which may affect the national road network. The developer should have regard, *inter alia*, to the following;



1. As outlined in the Spatial Planning and National Roads Guidelines, it is in the public interest that, in so far as is reasonably practicable, that the national road network continues to serve its intended strategic purpose. The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network.
2. In relation to the proposed development site, cabling and potential connection routing, the scheme promoter should note locations of existing and future national road schemes and develop proposals to safeguard proposed road schemes. Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes.
3. Proposals should be developed to safeguard proposed road schemes as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc.

In the context of existing national roads, alternatives to the provision of cabling along the national road network, such as alternative routing or the laying of cabling in private lands adjoining the national road, should be considered in the interests of safeguarding the investment in and the potential for future upgrade works to the national road network. The cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII, any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network.

4. Clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route. Consultation with relevant PPP Companies and MMaRC Contractors may also be required. All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.
5. Where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volume attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the TII TTA Guidelines which addresses requirements for sub-threshold TTA.
6. TII Standards should be consulted to determine the requirement for Road Safety Audit (RSA) and Road Safety Impact Assessment (RSIA).
7. Assessments and design and construction and maintenance standards and guidance are available at TII Publications that replaced the NRA Design Manual for Roads and Bridges (DMRB) and the NRA Manual of Contract Documents for Road Works (MCDRW).
8. The developer, in conducting Environmental Impact Assessment, should have regard to TII Environment Guidelines that deal with assessment and mitigation measures for varied environmental factors and occurrences. In particular;

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- a. TII's Environmental Assessment and Construction Guidelines, including the *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006),
- b. The EIAR should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)).

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice.

I trust that the above comments are of use in your EIAR preparation.

Yours sincerely,



Michael McCormack
Senior Land Use Planner



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