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 8. Final levels may vary depending on local ground conditions.
 9. Exact location of grid connection cable/joint bay in the road cuttings to be subject to ESB specifications and agreement with Leitrim County Council.

- Drawing Legend**
- Planning Application Boundary (Leitrim County Council)
 - Proposed Road
 - Existing Local Road - Upgrade Proposed
 - Underground Grid Connection Cabling Route
 - River/Stream
 - River/Stream 50m Buffer
 - Cut
 - Fill

Site Layout Sheet 13 of 19

PROJECT TITLE: Croagh Wind Farm, Co. Leitrim/ Co. Sligo

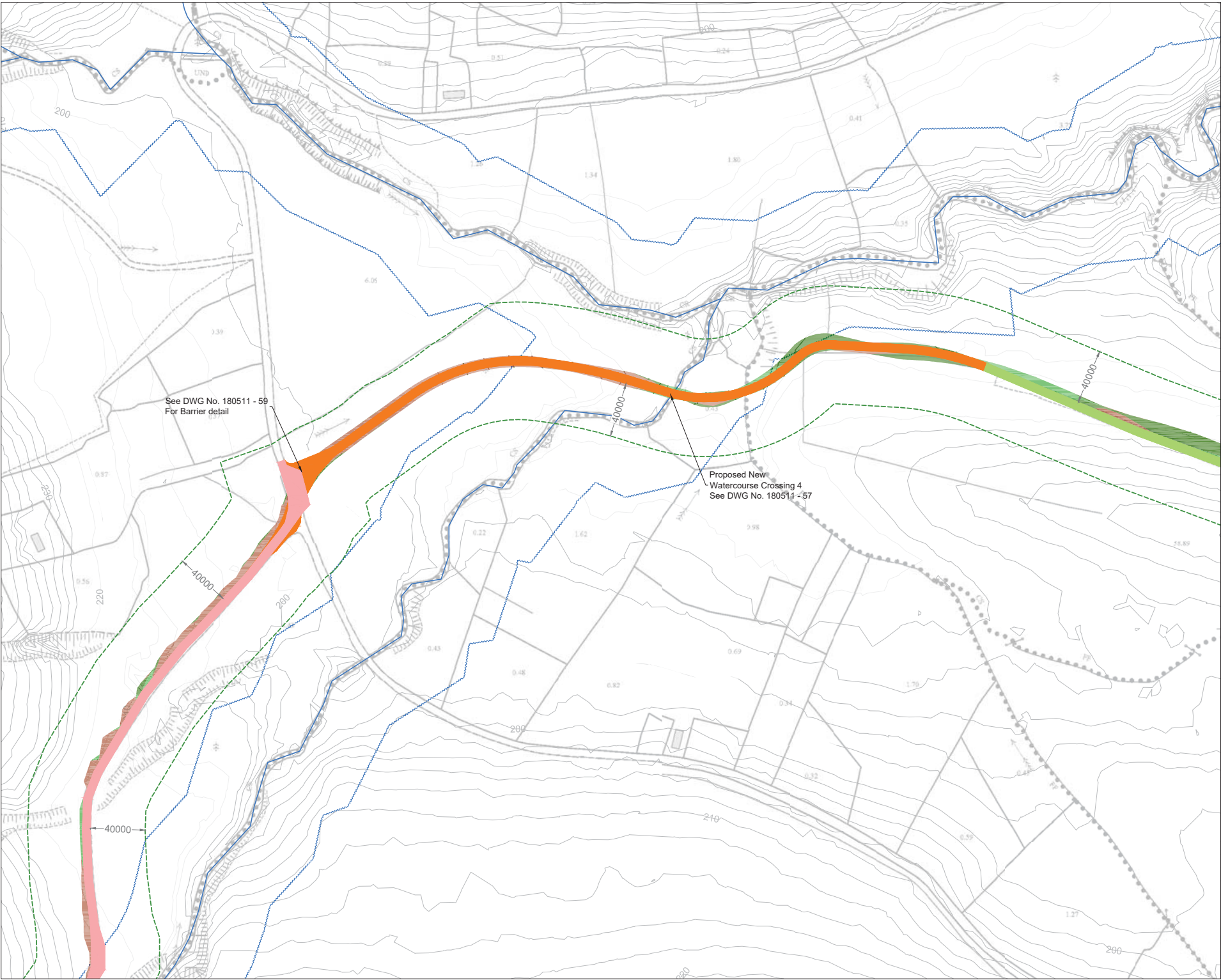
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OS SHEET NO.: 1196, 1197, 1198, 1262, 1263, 1264, 1331, 1332, 1333

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 - Proposed Road
 - Existing Local Road - Upgrade Proposed
 - River/Stream
 - River/Stream 50m Buffer
 - Cut
 - Fill



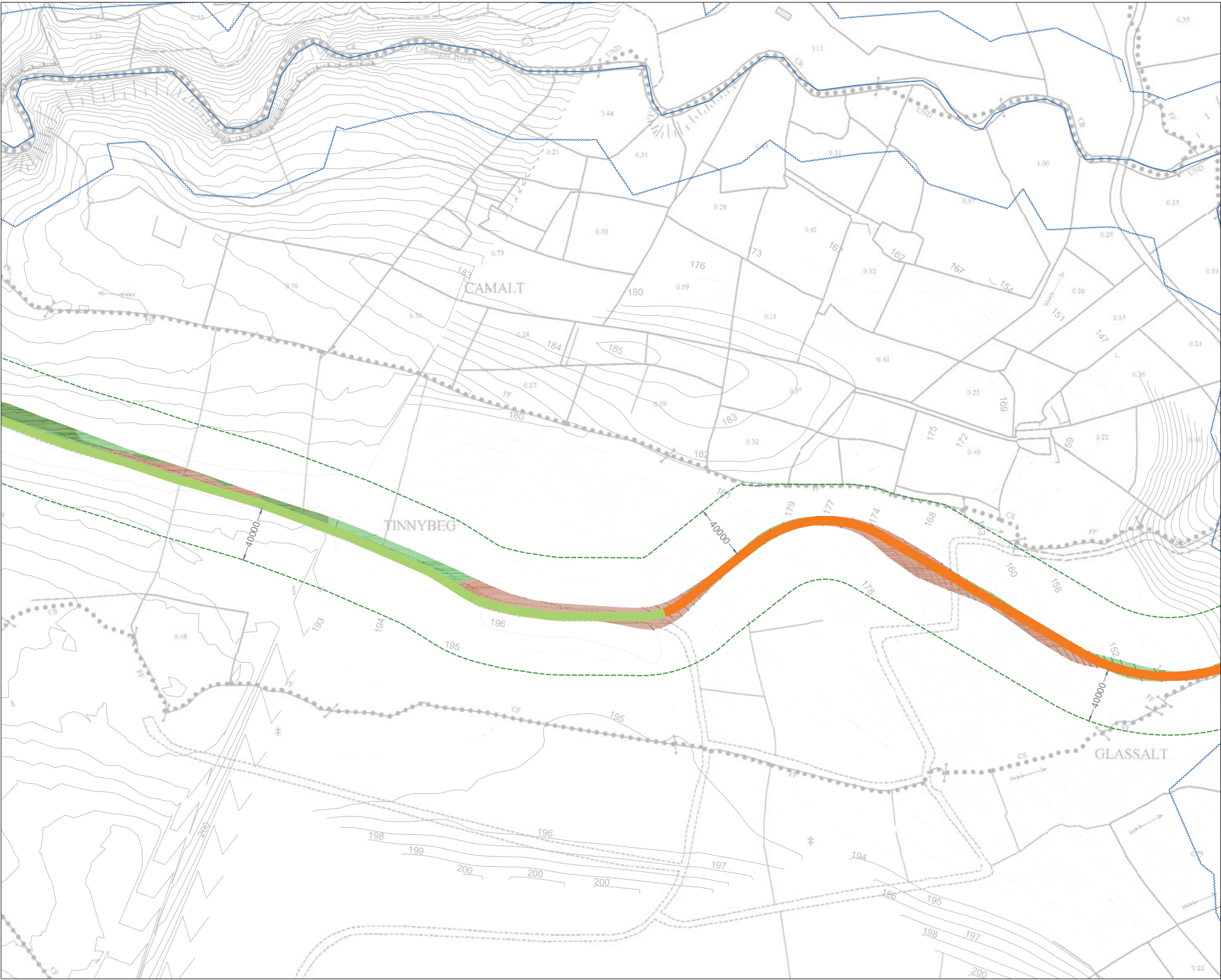
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PROJECT FILE:
Croagh Wind Farm, Co. Leitrim/ Co. Sligo

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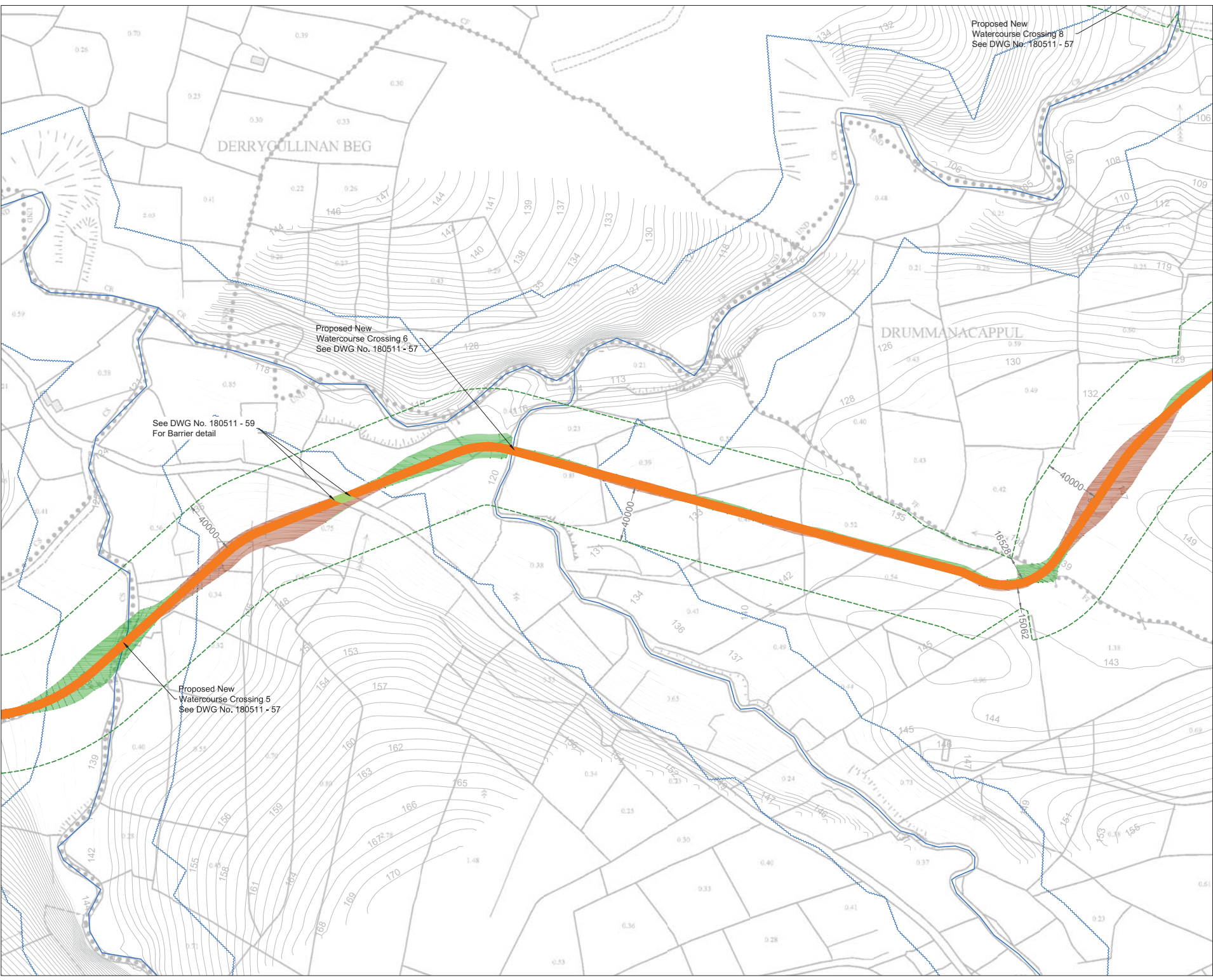


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Site Layout Sheet 15 of 19

PROJECT FILE:
Croagh Wind Farm, Co. Leitrim/ Co. Sligo

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Proposed New
Watercourse Crossing 8
See DWG No. 180511 - 57

Proposed New
Watercourse Crossing 6
See DWG No. 180511 - 57

See DWG No. 180511 - 59
For Barrier detail

Proposed New
Watercourse Crossing 5
See DWG No. 180511 - 57

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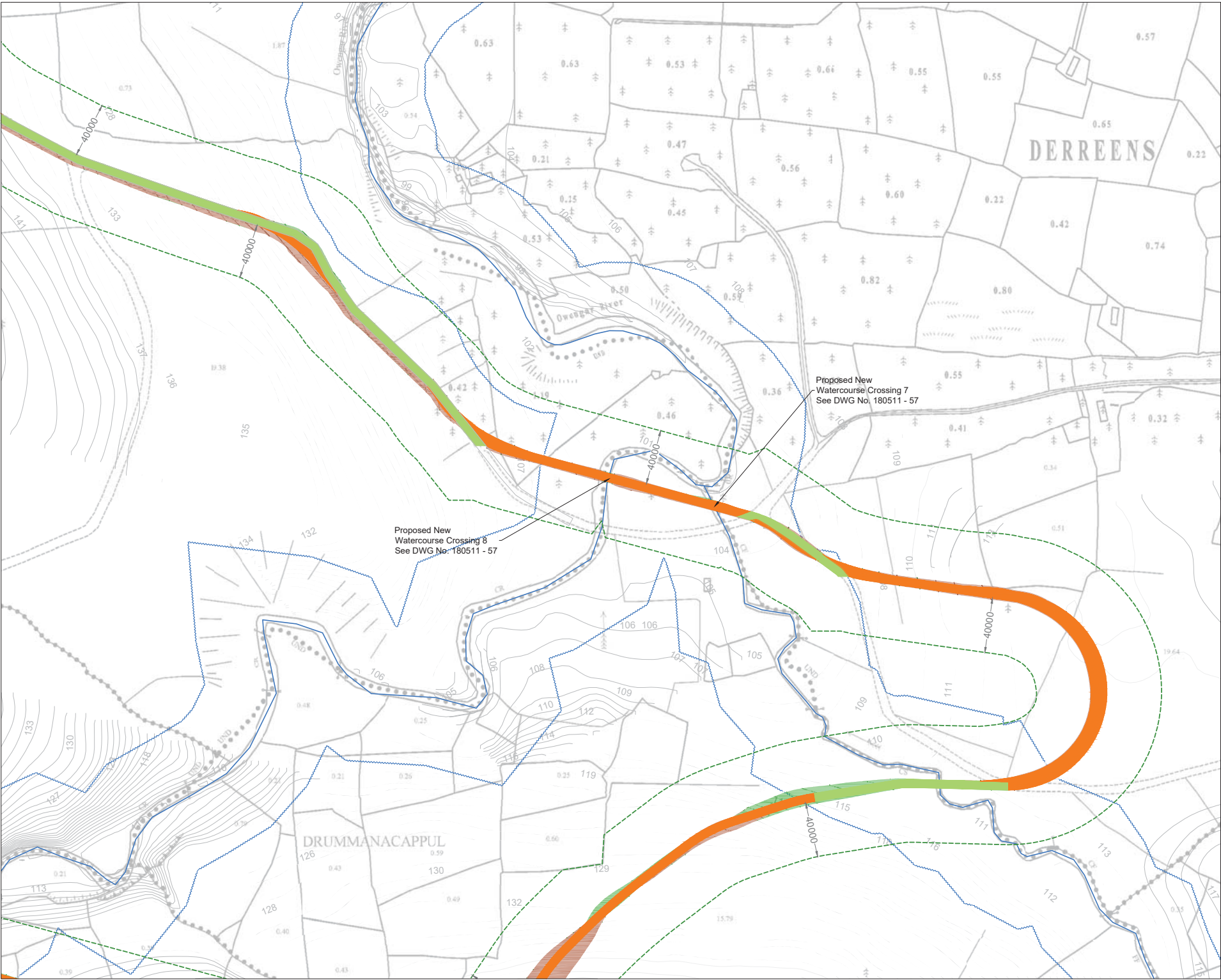


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16 of 19**

PROJECT FILE:
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PROJECT FILE: Croagh Wind Farm, Co. Leitrim/ Co. Sligo	
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Proposed New
Watercourse Crossing 9
See DWG No. 180511-57

Link Road Arrangement
See DWG No. 180511 -
60a-60b

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Drawing Legend

- Planning Application Boundary (Leitrim County Council)
- Existing Road to be Upgraded
- Proposed Road
- River/Stream
- River/Stream 50m Buffer
- Cut
- Fill



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**Site Layout Sheet
19 of 19**

PROJECT TITLE:
**Croagh Wind Farm, Co. Leitrim/
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PROJECT NO:	DRAWING NO:
180511	180511 - 22

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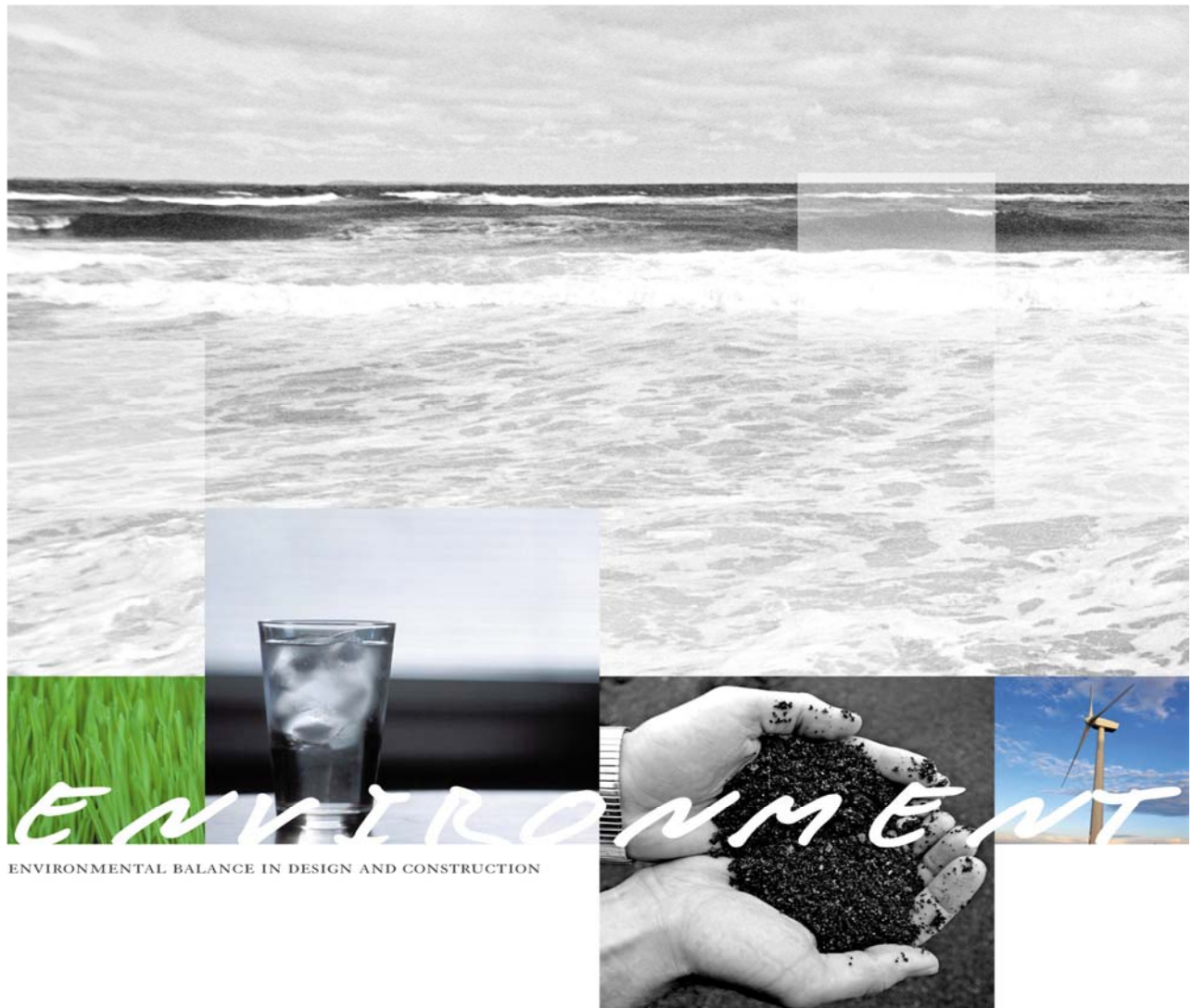


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APPENDIX 4-2

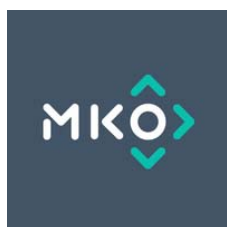
PEAT AND SPOIL MANAGEMENT PLAN



PEAT & SPOIL MANAGEMENT PLAN FOR CROAGH WIND FARM, COUNTY LEITRIM/SLIGO

McCarthy Keville O'Sullivan

JUNE 2020



Peat & Spoil Management Plan for Croagh Wind Farm, County Leitrim/Sligo

McCarthy Keville O'Sullivan

User is Responsible for Checking the Revision Status of This Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Issued to client for comment	GK	IH	BdH	4 Dec 2019
1	Updated with revised met mast location and entrance road	IH	PJ	BdH	20 Mar 20
2	Updated following Client comments	IH	PJ	BdeH	22 May 20
3	Alteration to access road	IH	PJ	BdeH	19 Jun 20

Client: McCarthy Keville O'Sullivan

Keywords: Peat, Spoil, Management, Excavation, Floated, Borrow Pit, Repository Area

Abstract: Fehily Timoney and Company (FT) were engaged in August 2018 by McCarthy Keville O'Sullivan to compile a Peat & Spoil Management Plan (PSMP) for Croagh wind farm in County Leitrim/Sligo. The purpose of this report is to provide a Peat & Spoil Management Plan for the construction phase of the wind farm. The report describes how peat and spoil which will be excavated from infrastructure locations such as turbine bases and roads and will be handled and placed/reinstated onsite. The report also provides construction details for the types of roads which will be put in place at the site and proposed peat and spoil placement/reinstatement areas which will be developed at the site. In addition, the report contains a cut and fill assessment for the site which quantifies and graphically presents the total volume of cut and fill earthworks required for the construction of the development.

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1 INTRODUCTION

1.1 Background and Experience

Fehily Timoney and Company (FT) formerly Applied Ground Engineering Consultants Ltd (AGEC) were engaged in August 2018 by McCarthy Keville O'Sullivan to compile a Peat & Spoil Management Plan (PSMP) for the proposed Croagh wind farm in County Leitrim/Sligo.

FT/AGEC have been involved in over 100 wind farm developments in both Ireland and the UK at various stages of development i.e. preliminary feasibility, planning, design, construction and operational stage and have established themselves as one of the leading engineering consultancies in peat stability assessment, geohazard mapping in peat land areas, investigation of peat failures and site assessment of peat.

The proposed Croagh wind farm site is located on the boundary of County Sligo and County Leitrim, adjacent to the village of Drumkeeran.

The site is within the northwest part of the Lough Allen upland, which typically comprises plateaux and ridges with steep sides separated by valleys. The approximate development area for the site is 6.7km². A number of existing wind farm developments are located in the area of the site.

The proposed wind farm will comprise 10 no. turbines with a tip height of up to 170 metres and all associated foundations and hardstanding areas, access roads including upgrade of existing site roads and provision of new roads, 1 no. onsite electrical substation, excavation of 1 no. borrow pit, underground electrical and communications cabling connecting the turbines to the proposed onsite substation, underground cabling connecting the onsite substation to the existing Garvagh substation, 2 no. temporary construction compounds, 1 no. permanent anemometry mast, recreational car park, trails and signage, demolition of 1 no. derelict building, site drainage and all associated works.

The purpose of this report is to provide a Peat & Spoil Management Plan (PSMP) for the construction phase of the Croagh wind farm. The intention of the report is to describe how peat and spoil which will be excavated from infrastructure locations such as turbine bases and roads and will be handled and placed/reinstated onsite. The report also provides construction details for the types of roads which will be put in place at the site and proposed peat and spoil placement/reinstatement areas which will be developed at the site.

The PSMP contains some drainage guidelines for construction works and for management of peat and spoil on site. It should be noted that the control of water quality and drainage measures for site is outlined in the Environmental Impact Assessment Report (EIAR), Chapter 4 and Chapter 9.

This report also contains a cut and fill assessment for the site which quantifies and graphically presents the total volume of cut and fill earthworks required for the construction of the development.

As work is carried out on site the contents of the PSMP and peat stability monitoring programme will be updated in the Construction & Environmental Management Plan (CEMP) for the construction phase.

1.2 Scope of Report

This report contains the following:

- (1) Road construction types for site
- (2) Methodology for the construction of each type of access road along with section drawings for each type of access road
- (3) Methodology for the excavation and placement/reinstatement of peat and spoil arising's
- (4) Summary of repository areas and borrow pit on site along with construction guidelines and drawings
- (5) General recommendations for good working practice on site
- (6) Monitoring instrumentation programme and guidelines
- (7) Contingency plan should peat instability/failure occur at the site
- (8) Cut & fill assessment methodology and associated drawings and findings

2 CONSTRUCTION ACTIVITIES COVERED BY PEAT & SPOIL MANAGEMENT PLAN

2.1 Construction Activities

For the construction phase of Croagh wind farm the activities that will generate peat and spoil are as follows:

- (1) Upgrade of existing access tracks (excavate and replace and floating tracks)
- (2) Construction of new excavated roads through peat
- (3) Construction of floating roads over peat (will not generate peat & spoil but the methodology for construction is included for completeness)
- (4) Excavation and placement/reinstatement areas for peat and spoil
- (5) Excavations in peat for turbine bases, hardstandings, met mast, substation, temporary construction compounds, repository areas and borrow pit

Peat and spoil management of the above construction activities are covered individually in this report.

2.2 Road Construction Types

To provide access within the site and to connect the wind turbines and associated infrastructure existing tracks will need to be upgraded and new access roads will need to be constructed. The road construction preliminary design has taken into account the following key factors:

- (1) Buildability considerations
- (2) Maximising use of existing infrastructure
- (3) Serviceability requirements for construction and wind turbine delivery and maintenance vehicles
- (4) Minimise excavation arisings
- (5) Requirement to minimise disruption to peat hydrology

The road construction types proposed for the Croagh wind farm site are summarised in Table 2-1.

It should be noted that this report does not include a detailed design for the access roads on the Croagh wind farm site. This report includes the most suitable type of road construction envisaged for each section of access road based on the ground/site conditions recorded during the site walkovers. Where floating roads are proposed in this report, a typical methodology is presented however a confirmatory ground investigation will be carried out prior to construction on site.

Table 2-1: General Road Construction Techniques

Construction Method	Construction Type	Ground Conditions		Comment
		Typical Peat Depth (m)	Typical Slope Inclination (deg)	
Upgrade of existing access tracks	Type A	<3.0	Varies	Upgrade existing excavated access track to the required width and finished with a layer of selected granular fill – Figure 2-1
	Type B	>3.0	Varies	Upgrade existing floated access track to the required width and finished with a layer of geogrid and stone fill – Figure 2-1
Construction of new excavated roads through peat	Type C	Typically, <2.5, locally up to 4.5	Varies	New access road construction technique envisaged for various locations on site – Figure 2-1
Construction of floating road over peat	Type D	>1.5	Typically, <5	New access road construction technique envisaged for various locations on site – Figure 2-1

Further details on access road construction types A to D are given in Sections 3, 4 and 5 of the report.