



APPENDIX 6-3

**IONIC Peat Stability
Quantitative Assessment
(2021)**

MEENBOG WIND FARM

Peat Stability

Quantitative Assessment



Ionic Consulting Ltd
The Hyde Building
The Park, Carrickmines
Dublin 18, Ireland



T: +353 | 845 5031
F: +353 | 845 5612
www.ionicconsulting.ie

Document History

Doc Name	Rev	Details	Author	Checked	Approved
MNBG r057	A	Initial Issue	Cormac Ó Dubhthaigh	John Shanahan	Cormac Ó Dubhthaigh
MNBG r057	B	General Revision	Cormac Ó Dubhthaigh	John Shanahan	Cormac Ó Dubhthaigh
MNBG r057	C	Clarifications	Cormac Ó Dubhthaigh	John Shanahan	Cormac Ó Dubhthaigh

MNBG r057 Meenbog Peat Stability Rev C

Confidentiality

This document contains proprietary and confidential information, which is provided on a commercial in confidence basis. It may not be reproduced or provided in any manner to any third party without the consent of Ionic Consulting.

© Copyright Ionic Consulting

This work and the information contained in it are the copyright of Ionic Consulting. No part of this document may be reprinted or reproduced without the consent of Ionic Consulting.

Addressee

The contents of this report are for the exclusive use of the Client. If other parties choose to rely on the contents of this report they do so at their own risk.

Disclaimer

Ionic Consulting have performed the consultancy services as described in this report in accordance with a standard of best practice available within the industry. Ionic Consulting do not make any representations or warranty, expressed or otherwise as to the accuracy or completeness of the source data used in this report, and nothing contained herein is, or shall be relied upon, as a promise or representation, whether as to the past or the future in respect of that source data.

This document has been prepared by



Cormac Ó Dubhthaigh
BE MEngSc CEng MIEI
Civil Engineering Manager
Ionic Consulting

This report has been checked by



.....
John Shanahan
BE MSc CEng MIEI
Senior Civil Engineer
Ionic Consulting

This report has been authorised by



Cormac Ó Dubhthaigh
BE MEngSc CEng MIEI
Civil Engineering Manager
Ionic Consulting

CONTENTS

EXECUTIVE SUMMARY	6
1. INTRODUCTION.....	7
1.1 Scope.....	8
1.2 Assessment Methodology.....	8
1.3 As-Built Survey (Current Status)	9
1.4 Remaining Works	9
2. DATA INPUTS	11
2.1 Previous Reports.....	11
2.2 Site Ground Conditions.....	11
2.3 Topographical Survey.....	12
2.4 Testing (Shear Vane, Peat Probes).....	12
3. INFRASTRUCTURE OVERVIEW	14
3.1 Roads	14
3.2 Hardstandings	17
3.3 Turbine Foundations.....	18
3.4 Peat Storage Areas	20
4. ZONE 1	22
4.1 Substation Spine Road - Peat Stability Assessment.....	23
4.2 Main Spine - Peat Stability Assessment.....	32
4.3 T5 (from T11 to T6) - Peat Stability Assessment	46
4.4 T6 - Peat Stability Assessment.....	49
4.5 T8 - Peat Stability Assessment.....	51
4.6 T9 - Peat Stability Assessment.....	55
4.7 T10 - Peat Stability Assessment	57
4.8 T11 - Peat Stability Assessment.....	59
4.9 T12 - Peat Stability Assessment.....	61
4.10 T13 - Peat Stability Assessment.....	63
4.11 T14 - Peat Stability Assessment.....	67
4.12 T15 - Peat Stability Assessment.....	69
4.13 T16 - Peat Stability Assessment.....	73
4.14 T17 - Peat Stability Assessment.....	75
4.15 T19 - Peat Stability Assessment.....	79
4.16 Conclusion – Zone 1	81
5. ZONE 2.....	82
5.1 T1 Floating Road – Peat Stability Assessment	83
5.2 T2 Floating Road – Peat Stability Assessment	87
5.3 T3 Floating Road – Peat Stability Assessment	90
5.4 T4 Floating Road – Peat Stability Assessment	93
5.5 T5 (from T6 to T5) – Peat Stability Assessment	105

5.6	T16 – Peat Stability Assessment	107
5.7	T18 Solid upgraded floating road – Peat Stability Assessment	112
5.8	Conclusion – Zone 2	126
6.	ZONE 3	127
6.1	T7 Area – Peat Stability Assessment.....	128
6.2	T9 - Peat Stability Assessment.....	139
6.3	Conclusion – Zone 3	145
7.	SENSITIVITY ANALYSIS	146
7.1	Introduction	146
7.2	Sensitivity Analysis	148
7.3	Sensitivity Analysis Conclusion.....	179
8.	CONCLUSIONS	181
	APPENDICES.....	183
	APPENDIX A – SITE AS-BUILT DRAWINGS	183
	APPENDIX B – SITE TESTING DRAWINGS	184
	APPENDIX C – SITE ANALYSIS OVERVIEW DRAWING	185
	APPENDIX D – EUROCODE 7 OVERDESIGN FACTORS.....	186
	APPENDIX E – WORKING STRESS FACTORS OF SAFETY	187
	APPENDIX F – GPR PEAT DEPTH PROFILES.....	188
	APPENDIX G – OVERALL SHEAR STRENGTH MAP	189
	APPENDIX H – VARIABLE LOADING VERIFICATION	190
	APPENDIX I – SENSITIVITY ANALYSIS	191
	APPENDIX J – EC7 DAI COMBINATION 1 & 2 COMPARISON	192

EXECUTIVE SUMMARY

Ionic Consulting carried out a quantitative assessment of the Meenbog Wind Farm to assess the stability of peat along and adjacent to the wind farm infrastructure, including both the already constructed sections of the site and the remaining works areas. The civil engineering works were almost completed before all works were suspended on site following a peat slide at T7. Infrastructure works constructed to date are in accordance with the design. Solid roads, hardstandings and turbine foundations have been founded on solid subformation, typically directly on bedrock, and are structurally stable. Floating roads are assessed within this report.

For the purposes of this report the site is divided into 3 zones referred to as Zone 1, Zone 2 and Zone 3. These zones correspond to the three works phases which were previously proposed for the site by Planree Ltd.

The assessment focused on the stability of peat under the various scenarios, which include:

- Original undisturbed peat
- Sidecasted peat on original bog
- Construction vehicles directly on bog (wide track machines)
- Floating road permanent dead loading
- Crane loading on floating roads
- Peat Storage Areas (bermed areas)
- Peat Stabilisation (Walls 1, 2, 3, T8 & the raised Spine Road SR00 south of T10)

The assessment was carried out to Eurocode 7 with partial factors applied for materials and loads as applicable. The site has been shown to be stable based upon this quantitative assessment with the exception of a short section of the T4 floating road which will be upgraded as outlined in Section 5.4.1, as well as an area south west of turbine T7 which is outside of the works area and where tracking of vehicles will not be permitted.

Ionic Consulting can therefore confirm that the overall site is currently stable based upon this detailed assessment carried out along all roads, hardstandings, borrow pits, peat storage areas and peat stabilisation areas. Prior to component deliveries and turbine supplier crane access to T1, T2 and T4 the works outlined in Sections 5.4.1 and 5.4.2 should be completed and any outlined mitigation measures adopted.

I. INTRODUCTION

Ionic Consulting have prepared this quantitative assessment of peat stability on the Meenbog Wind Farm site, as currently constructed. This quantitative assessment informs sections of, and should be read in conjunction with, a Peat Stability Assessment of the Meenbog Wind Farm Site prepared by Fehily Timoney (FT). The civil engineering works were almost completed in November 2020 before all works were suspended on-site following a peat slide located along the access road to T7. This assessment provides a quantitative analysis of the wind farm as already constructed, and the remaining areas where works are still to be completed.

This assessment is based upon previous site testing carried out in 2019 and 2020, supplemented and verified by additional site testing carried out between December 2020 and May 2021, along with a series of walkovers, visual inspections and aerial drone footage. The in-situ testing included peat probing and shear vane testing using an Edeco Pilcon hand vane tester. Additional insitu trial hole tests and laboratory triaxial tests were carried out to validate the shear vane tests. Slope assessments were carried out by visual assessment, using site topographical surveys and with accurate 1m contours derived from Lidar DTM data.

For the purposes of this report the site has been divided into 3 zones referred to as Zone 1, Zone 2 and Zone 3.

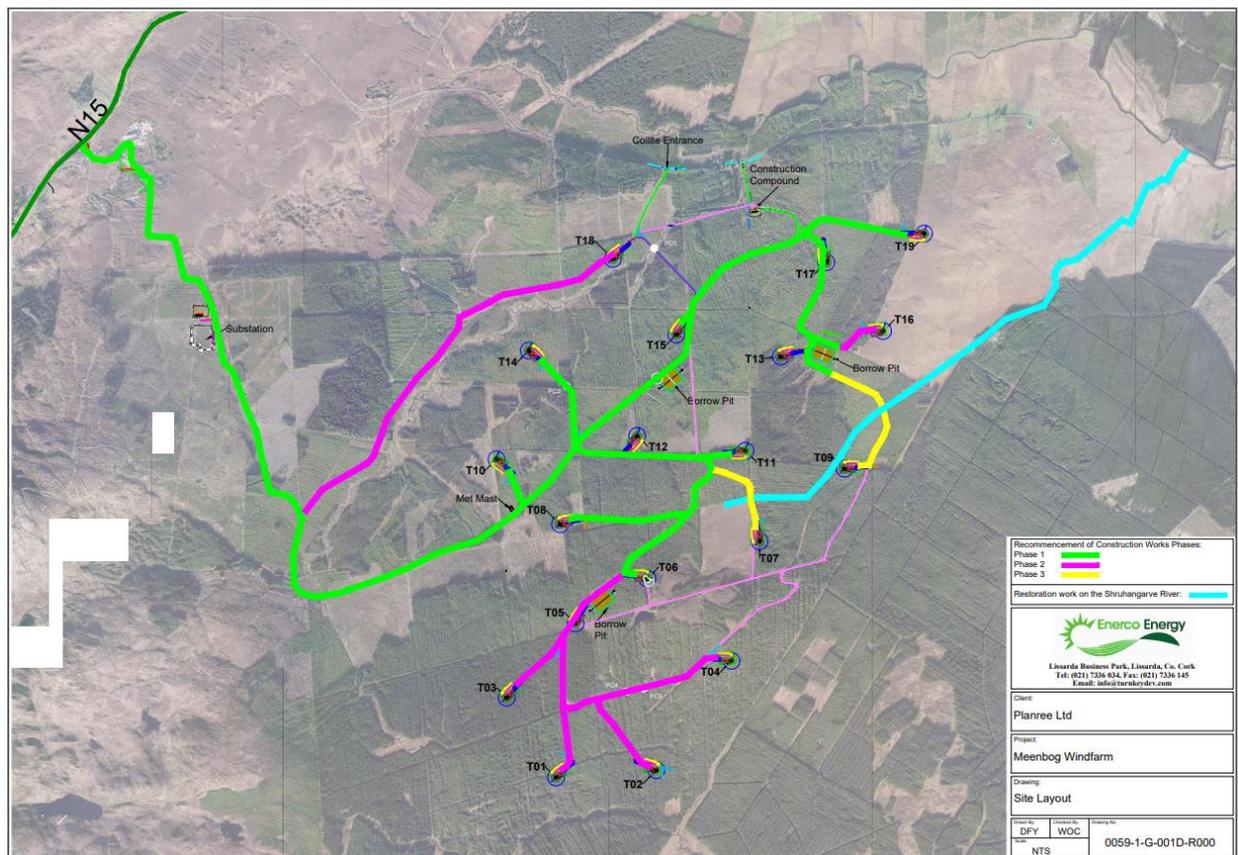


Figure 1 Map of Zones 1, 2, 3

Zone 1 consists of the already constructed solid roads, hardstandings and turbine foundations, as shown in green, and includes the Main Spine Road, T5 (north), T6, T8 - T15, T17, T19.

Zone 2 consists of the already constructed floating roads to T1 - T4, T5 (south) along with T16 and T18 where additional works are required, as shown in purple.

Zone 3 consists of T7 and T9 and includes the peat stabilisation works area, as shown in yellow.

1.1 Scope

The primary focus is on the stability of peat under the various scenarios, which include:

- Original undisturbed peat
- Sidecasted peat on original bog
- Construction vehicles directly on bog (wide track machines)
- Floating road permanent dead loading
- Crane loading on floating roads
- Peat Storage Areas (bermed areas)
- Peat Stabilisation (Walls 1, 2, 3, T8 & the raised Spine Road SR00 south of T10)

This report is not intended to assess the stability of the on-site roads, hardstands, turbine bases and other infrastructure, which has been built to solid formation, and therefore are deemed to be safe and stable. Some 17.8km of the total 20.4km of roads on-site are constructed as solid roads rather than floating roads, and these are built to solid formation. All 19 turbine bases and all 19 turbine hardstand areas, in addition to the electricity substation, are also all built to solid formation. This report focusses on the stability of the peat surrounding those parts of the wind farm development that are built to solid formation, in addition to the short overall sections of floating road that make up the remaining 2.6km of the on-site roads.

1.2 Assessment Methodology

The assessment is based upon geotechnical engineering principles, Eurocode 7, and best practice guidance reports for peat stability including the Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Executive, 2017).

Stability of existing undisturbed peat adjacent to works is assessed, as well as surcharged peat with varying loading scenarios including peat side casting, construction vehicles, floating roads and heavy crane loading. Stability calculations were previously carried out at design stage based upon working stresses which illustrate the factor of safety based on actual load conditions and measured strengths, consistent with the stability assessment carried out at planning stage. However, as pointed out in Section 2.6 of the EPA / ARUP review of peat assessment reports dated March 2021, all stability calculations have now been presented based upon Eurocode 7 limit state analysis. The calculations are carried out in accordance with IS EN 1997-1 Design Approach 1 Combination 2, which is the governing case, with the applicable partial material reduction factor of $\gamma_M = 1.4$ applied to the measured peat strengths, along with the applicable partial load factors for permanent loads ($\gamma_G = 1.0$) and variable loads ($\gamma_Q = 1.3$). Note that the calculations were also carried out for Design Approach 1 Combination 1, which does not govern in this particular scenario; these are tabulated for comparison purposes in Appendix J. Tables presenting the 'overdesign' factor (or factor of safety in excess of the required minimum of 1.0) are included along with drawings illustrating these values, based upon data inputs as outlined in detail in Section 2 below. For comparison purposes tables presenting the previous working stress approach with standard factors of safety are presented in Appendix E. The findings were essentially the same with the lowest factors of safety relating to the same areas in each assessment method. Though the Eurocode limit state partial factors are more onerous than the working stress requirement for a minimum factor of safety of 1.3, no additional areas with potential instability were identified.

The topography and peat characteristics adjacent to the entire site infrastructure has been assessed, including all areas where peat side casting or deposition has been carried out. The 'overdesign' factor is a measure of the stability of a particular slope, with higher values indicating greater stability; a minimum value of 1.0 is required to confirm stability, in accordance with Eurocode 7, allowing for the in-built partial material and load factors. The balance of forces acting on the bog is measured against the shear resistance of the in-situ peat, as measured by means of several thousand shear vane tests.

To assess the stability of peat adjacent to the as-built infrastructure, and peat in the remaining areas to be constructed, a series of site walkovers were carried out, along with additional physical testing of the peat and analysis of aerial imagery, as described further in Section 2.4.

Separately an assessment was carried out of all peat storage and peat stabilisation areas. These areas are bermed and rely on the stability of the berm walls rather than the inherent shear strength of the peat. The peat within these storage and stabilisation areas are conservatively assumed to have zero shear strength and the berm walls are therefore required to provide resistance against the entire lateral load acting on them from the stored peat, allowing also for buoyancy forces resulting from the high groundwater table. These calculations are based upon fundamental geotechnical engineering principles and carried out in accordance with Eurocode 7.

I.3 As-Built Survey (Current Status)

A detailed as-built topographical survey has been carried out of all roads, hardstandings, turbine foundations, peat storage areas, peat stabilisation works, and drainage works carried out to date. The vast majority of the site has been constructed at the time of writing of this report,

Refer to Appendix A for detailed as-built drawings.

I.4 Remaining Works

The main outstanding works on the site are in the following areas:

- T7 foundation excavation and hardstanding
- T16 foundation excavation and hardstanding
- T18 spur road
- Met Mast foundation excavation and hardstanding
- T4 spur road upgrade

The above works are considered in further detail in the relevant sub-sections of the report.

Relatively minor works also are required to widen some bends, raise hardstanding levels, build blade fingers, and provide the final Clause 804 finish to all roads and hardstandings. These works do not require significant construction in new areas of undisturbed peatland, the works are generally to and within the existing infrastructure outline. There are also a number of turning heads required to enable turbine delivery vehicles to manoeuvre and exit the turbine locations, these will be agreed with the turbine supplier and constructed where deemed necessary.

There are concrete pours required at 5 no. turbine bases (T2, T7, T16, T18, T19) as well as the Met Mast. Note that the concrete blinding and/or steel reinforcement is in place at T2, T18 and T19, therefore the heavy civil engineering works are already complete. Once the main outstanding works listed above are complete, including the T7, T16 and Met Mast foundation excavations, the concrete pours will not require heavy civil engineering or any infrastructure works, rather just the delivery and placement of concrete.

During any excavation works there will be adoption of appropriately sequenced excavate and replace operations in order to minimise stand-up time of any exposed excavated peat face. No unsupported peat faces are to be left standing. This will assist in mitigating against tension cracks developing behind excavation faces, however further mitigation measures for dealing with tension cracks will be included in the RAMS.

Remaining sections of roads or hardstands will be built incrementally using the excavate and replace method. In areas of deeper peat (e.g. the T1/T2 junction on the T4 access road) it is envisaged that the upper ~1m of bog will be excavated before utilising the displacement method, which will minimise the height of the peat face at the excavation.

In all cases, a method statement confirming the construction methodology and sequencing of the works is to be prepared prior to construction commencing. The management of water during excavations will

be addressed in the RAMS. A project organogram has been produced, which outlines the roles of responsibilities of those involved in the project.

2. DATA INPUTS

2.1 Previous Reports

A number of reports were completed as part of the planning process including the following:

- Peat Stability Assessment Report by AGECE Ltd, dated December 2017
- Peat and Spoil Management Plan by AGECE Ltd, dated December 2017
- Meenbog EIA Report 160502 Chapter 8: Land, Soils and Geology, by HES / McCarthy Keville O'Sullivan, dated November 2017

As part of the preparation of these reports a significant number of testing was carried out across the site, including >500 peat probes by HES, AGECE and MKO, along with 30 gouge cores and a significant number of shear vane tests. The findings of the various tests indicated peat depths between 0 and 2.7m at 17 of the 19 turbine locations, averaging 1.3m, but peat depths of 4.5m at T3 and 4.7m at T5. The gouge cores indicated that the peat was underlain by thin mineral subsoil or directly on bedrock. There was no evidence of past failures or any signs of peat instability across the site.

The peat stability assessment showed that a low risk rating applied across the entire site, with suitable factors of safety even under surcharge loading of 1m of peat on the original bog.

2.2 Site Ground Conditions

Ionic Consulting carried out a geotechnical assessment at design stage on behalf of the main civil engineering contractor Mid-Cork Electrical Ltd. The site is extensively sloping from approximately 86m to the north where it rises to a high point of 313m. Elevations of turbine bases range from approximately 168.5m OD to 303.5m OD. The Geological Survey of Ireland indicates that the site is underlain by Dalradian age quartz, marble and psammite of the Lough Eske Psammite and Lough Mourne Formations. This is overlain by blanket peat.

The site is dominated by commercial forestry plantations that have been planted over the blanket bog.

A series of site walkovers were initially undertaken between January 2019 and May 2020, with ongoing assessments and additional boreholes being carried out at a later stage once turbine locations were accessible. Fieldworks consisted of rotary core drilling at all accessible turbine base locations in order to provide information on the ground conditions to inform the design of wind turbine foundations and associated infrastructure. Boreholes were drilled initially in Phase I of site investigation at turbine locations T5, T10, T11, T12, T13, T15 and T17. Initial drilling was carried out in May 2020. A second phase of drilling was carried out in August 2020 at turbines T1, T3, T6, T8, T9, T14 and T18, with a further phase for the remaining turbines when accessible. The ground investigation consisted of borehole drilling including SPT testing in overburden layers, as well as geochemical testing on soil and rock samples taken from boreholes.

The above site investigation works were largely carried out to inform the design of the turbine foundations, along with the hardstandings.

Testing was also carried out on the peat across the site, with a particular focus on areas where floating roads were proposed, and areas with steeper slopes or adjacent to watercourses. Details of peat testing is outlined further in Section 2.4 below. Peat storage areas (bermed storage areas) are discussed in more detail in the relevant sections, and similarly for peat deposition areas (sidecasting on existing peat). The peat testing of existing bogland is particularly relevant to the latter, with 'overdesign' factors against instability of existing peat with surcharged loading provided.

2.3 Topographical Survey

Accurate topographical data was obtained from an aerial LiDAR survey with vertical accuracy of 5cm. The entire site is covered within the survey, including the broader area between turbines and outside the infrastructure alignments. The LiDAR data allowed Ionic to produce an accurate site contour map with 1m contours (or 0.1m if required), which enabled a detailed geometric design to be carried out of the entire site infrastructure including roads, hardstandings, substation and turbines.

In order to carry out this peat stability assessment the 1m contour maps were generally used to calculate the slopes at all points being assessed. Peat depths and shear vane strengths were measured on site and the corresponding slopes were measured at these points. A broad spread of points across the site were assessed, with a particular focus on assessing steep areas ($>5^\circ$), areas of low shear strength ($<7\text{kPa}$) and areas of deep peat ($>3\text{m}$).

2.4 Testing (Shear Vane, Peat Probes)

A series of peat probes and shear vane tests were carried out across the entire site between November 2019 and October 2020, along with additional testing in December 2020 - May 2021 to re-assess the current stability of the site.

Trial holes were carried out to failure by Fehily Timoney in April 2021 to determine the implied shear strength at 4 locations, and samples were taken to carry out laboratory testing to further validate the insitu testing. Refer to Fehily Timoney report for details.

Shear vane testing was initially carried out typically at two levels within the catotelm (below the acrotelm), commonly at 1m and 2m below ground level. Note that the lowest shear strength at any given location was used in the analysis. Single shear vane readings were taken in shallower peat. A smaller number of deep peat samples were initially taken between 3.0 and 4.4m with an extended shear vane kit. A further number of deep shear vane tests were completed in areas identified during the sensitivity analysis in order to verify and supplement the stability assessment (Sections 4, 5 and 6) and this is discussed in Section 7.

These additional deeper tests were carried out to verify earlier findings that peat shear strengths tend to marginally increase with depth within the catotelm, primarily due to consolidation within the deeper catotelm. As noted above specific areas were identified for further testing as part of the sensitivity analysis in Section 7.

The pattern of results below (based on 1100 paired results, i.e. two test results at one location) presents a slight trend of increasing strength with depth between 1 and 2m as shown below, and the smaller sample of deep peat readings between 3.0 and 4.4m also indicates a slight pattern of shear vane strengths increasing with depth. However, this data set includes testing from a range of peats depths across the entire site and therefore a more targeted analysis was also completed using a refined testing data set in deeper peat locations, refer to Section 7, which also shows a similar trend of slightly increasing strength with depth.

Note that significantly higher readings can often be obtained within the fibrous acrotelm (upper layer of peat) however these are not included within the analysis (other than areas with very shallow peat). Also, relatively higher readings can also be obtained within the catotelm layer due to, for example, more intact organic matter or penetration of the test equipment into the underlying mineral soil. These were also not included in the analysis.

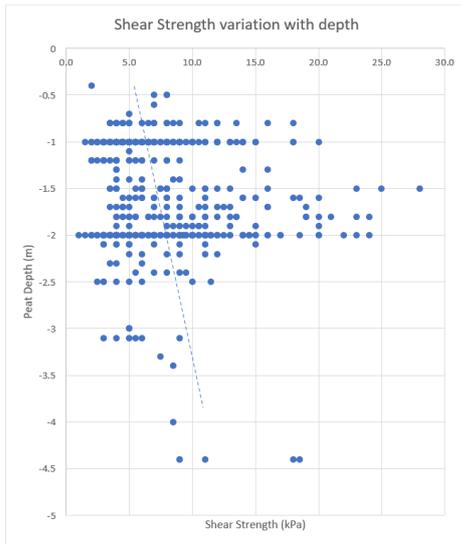


Figure 2 Shear Strength variation with depth

Refer to Appendix B for the full set of Ionic peat probe and shear vane test results.

3. INFRASTRUCTURE OVERVIEW

3.1 Roads

There are two methods of road construction across the site, conventional 'solid roads' which are excavated to suitable subgrade, and floating roads which are constructed on the original in-situ peat using mechanical stabilisation consisting of multiple layers of geogrid.

The overall layout for road types is shown below. The floating roads proposed were at spur roads to T1, T2, T3, T4 and T7, in accordance with the planning documentation and CEMP, as these were the only sections of road with average peat depths generally in excess of 1.5m.

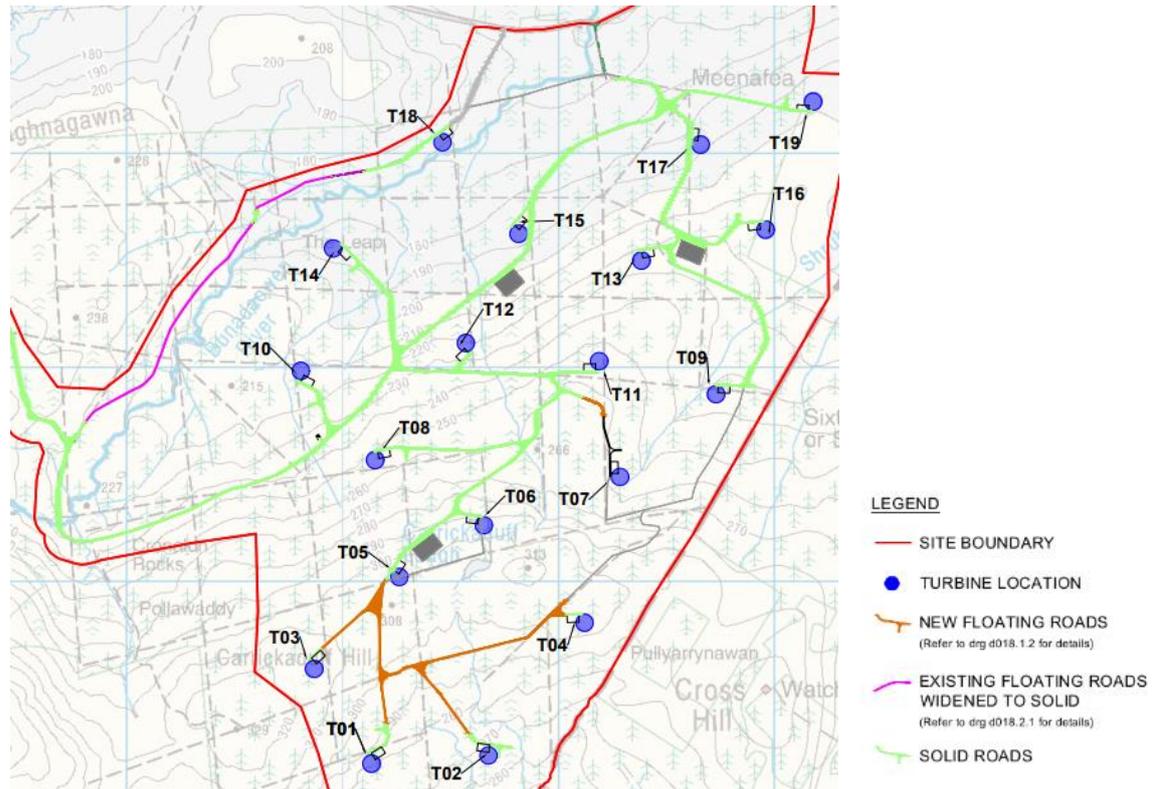
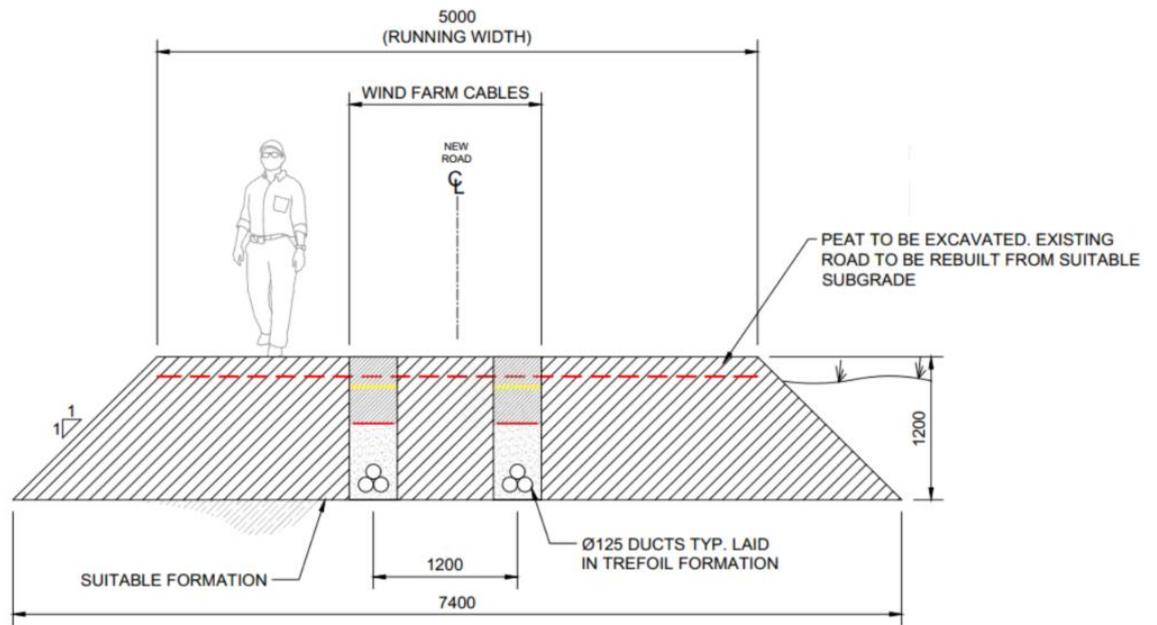


Figure 3 Overall Road Type Layout Map

Details for each type of road construction are provided below in the following sub-sections, given that the design and construction methodology is entirely different for each.

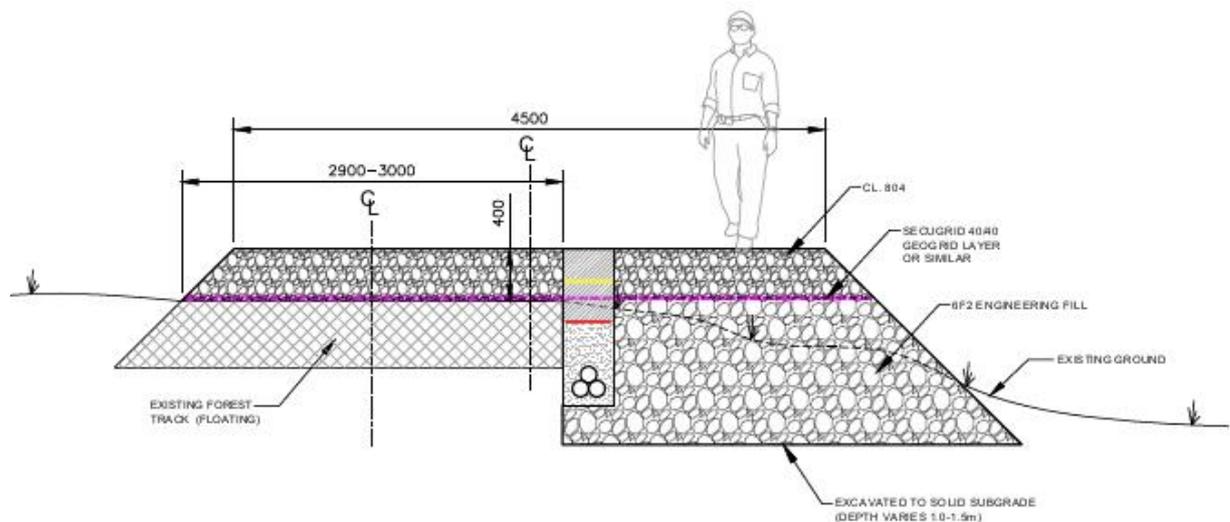
3.1.1 Solid Roads

The majority of roads across the site are founded on solid subgrade either directly on bedrock or on firm clay. There are 20.4km of roads on the site, of which 17.8km are solid roads. Note also that 13.5km of the roads were existing forestry tracks that were upgraded for the wind farm. There is no direct loading of peat with this design, but excavation of peat is required to construct using the excavate and replace method.



ILLUSTRATIVE SECTION THROUGH SITE ROAD WITH CABLE TRENCHES
 Scale 1:50

Figure 4 Solid Road section with cable trenches



T18 PROPOSED ROAD UPGRADE SECTION
(FLOATING ROAD WIDENED TO SOLID)
 Scale 1:50

Figure 5 T18 Upgraded Road Detail

3.1.2 Floating Roads

Floating roads are constructed directly on peat, usually on the upper crust of intact peat (acrotelm) but also on peatland with felled forest with roots and stumps that are infilled with brash to provide a more level surface or working platform from which to construct the road. A number of layers of geogrid are used to provide additional stability to the road structure, but ultimately the floating roads rely on the insitu strength of peat to support the dead weight of the road and the vehicle loading.

There are 2.6km of floating roads on the site, out of a total of 20.4km of site roads.

3.1.2.1 Floating Road Peat Stability Assessment:

The initial design principles were established at planning stage. Sections of access road on the site with peat depths greater than 1.5m were designated as floating roads, including the approach spur roads to T1, T2, T3, T4 and T7 where peat depths >1.5m were confirmed following further detailed testing at pre-construction stage. Factors of safety against peat instability were found to be adequate using the lower planning shear strength value of 5kPa, and a low risk rating was obtained for the entire wind farm site.

Ionic Consulting carried out a detailed analysis based upon its own shear strength, peat depth and slope readings. The assessment was based upon the shear strengths measured using an Edeco Pilcon hand vane and peat depths measured with peat probes. Gradients at assessment locations were accurately determined using LiDAR DTM data.

The dead loading and live loading were calculated based upon the required structural depth and crane loading. Dead loading is 20.7kPa for the engineering fill, based upon the 1.15m thickness and 18kN/m³ unit weight. Note that engineering fill for floating roads is not compacted given the nature of the material upon which it is being placed, and the fact that heavy compaction machinery would be unsuitable. The material is loosely placed upon geogrid to allow for aggregate interlock with the geogrid apertures. Note that the lower portion of the road within the water table would have a submerged unit weight of 8-12 kN/m³, Maximum live loading for the 750t capacity crane is 10.3kPa, based on a total weight of 1058kN and a distributed load area of 102.3m². Refer to Appendix H for verification of this loading.

The total loading is therefore 31.0kPa and is uniformly distributed across the loaded area.

Slopes were assessed at several locations along each of the floating spur roads, depending on the length of road and variability in topography and peat characteristics. The stability is calculated in accordance with Eurocode 7 based upon the slopes, peat depths and shear strength values measured by Ionic. Partial factors are applied to permanent and variable loads, and a reduction factor is applied to the peat shear strength, as described in Section 1.2. These findings are presented below for each of the floating spur roads in turn: T1, T2, T3, T4 and the initial floating section of T7.

Note that the floating roads transition to solid build-up on the lead into each of the hardstandings and turbines as there are no floating or piled hardstandings on the site.

Each of the peat assessment tables in Sections 4-6 of this report present the varying scenarios for floating roads which consists of the following:

- i) existing condition (original insitu peat)
- ii) variable load due to direct construction vehicle on peat (wide tracked machine)
- iii) floating road permanent loading (dead weight of materials)
- iv) variable load due to cranes (750t crane for turbine erection)

3.2 Hardstandings

All hardstandings on the wind farm are constructed to suitable solid sub-formation with a minimum CBR value of 2%. The site generally consists of shallow mineral soil below peat therefore the hardstandings are largely built on or close to weathered bedrock. Site won graded engineering fill material is compacted in layers up to just below the finished design hardstanding level, with a minimum 100mm of Clause 804 material placed and compacted for the final layer. The hardstandings are all tested by means of plate bearing tests to ensure that the minimum required bearing capacity is achieved. These requirements are set out in the Nordex road and hardstanding specification: E0004109636-4-CC01-EN-Transport access roads and crane requirements. Testing is carried out prior to the delivery of cranes on site, and a detailed report is provided to certify all hardstandings.

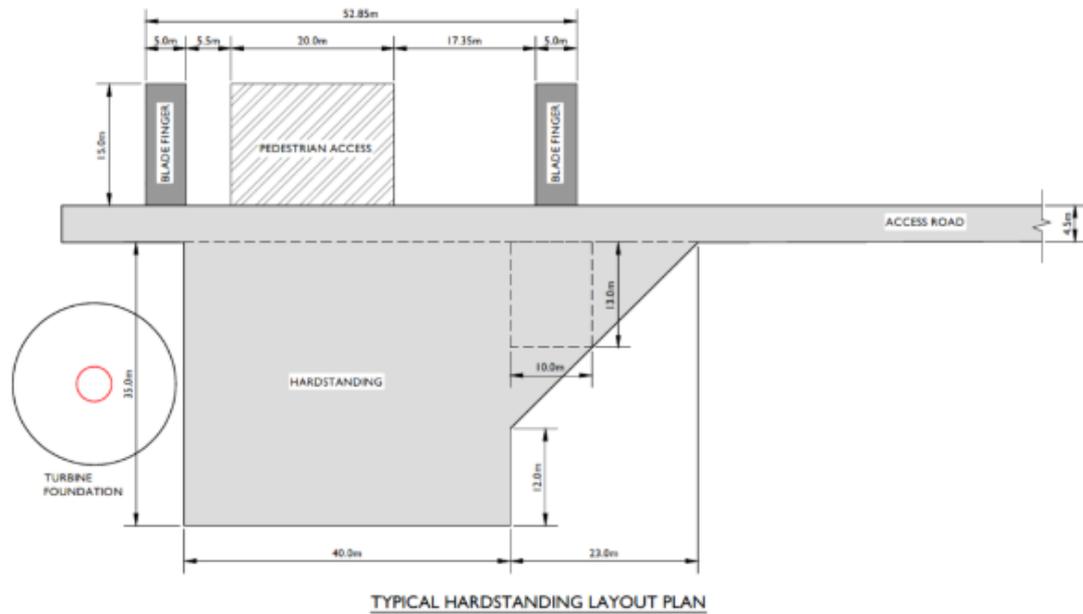


Figure 6 Hardstanding plan details

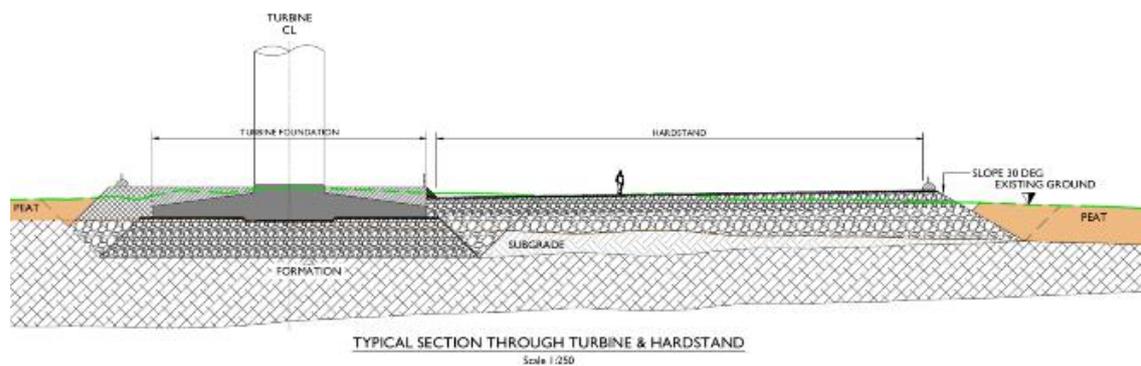


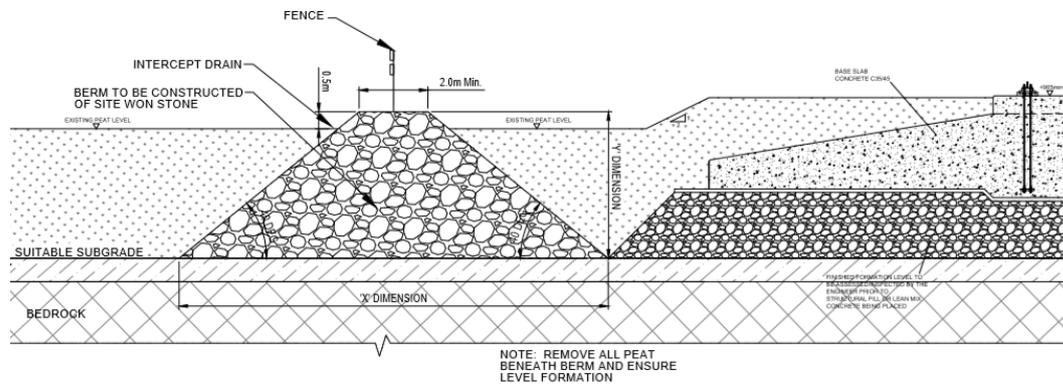
Figure 7 Hardstanding section details

Aerial image and as-built at T5, illustrating cracking around the peat retaining berm:



Figure 9 T5 as-built and aerial image

Foundation peat stabilising berm design section:



TYPICAL SECTION THROUGH PEAT BERM AND TURBINE FOUNDATION
 Scale 1:100

Figure 10 Peat Stabilising Berm around Turbine Foundation

3.4 Peat Storage Areas

Peat excavated on site is stored in peat cells or sidecast adjacent to the wind farm infrastructure at various locations across the site. The layout below indicates the various peat storage locations, with pink indicating peat cells and orange denoting areas of sidecast peat. The sidecast areas along each road are assessed under each section. Note that a conservative approach is taken to include for an assumed minimum of 1m of sidecast peat (10kPa surcharge) in all areas of the site excluding the floating roads. Any area with known peat deposition exceeding 1m is assessed for the measured height (the maximum being 2m or 20kPa surcharge). This is presented in the peat stability assessment tables, with the applicable surcharge shown for each area.

As part of earlier construction practice on site, arisings (dominantly peat) from excavations were deposited onto the existing peat surface at a number of locations. A visual inspection of the condition of the placed arisings was carried out by FT (see FT report Appendix A4). No evidence of instability of the placed arisings was identified that would be considered to represent a risk of large-scale peat failure. These observations would concur with the expected behaviour of the insitu peat, that is the placed arisings would result in consolidation of the underlying insitu peat with a subsequent gain in strength over time. As such, the stability of the insitu peat below the placed arisings will increase over time. Typically, the critical period for instability of the insitu peat is immediately following application of the load.

The peat storage cells are generally excavated below existing ground level to solid sub-formation and designed with stone/rock berms on the low side retaining the emplaced peat. The relevant sub-sections of the report that include peat storage cells include design calculations for the retaining berms at each location to demonstrate stability.

4. ZONE I

This section of the report relates to the existing solid roads across the site, along with related infrastructure in these areas including hardstandings, turbine foundations, peat storage cells, borrow pits, as well as peat deposition areas. Zone I in this report relates to the green areas outlined in the following map. All of these infrastructure elements are constructed on solid ground, primarily on bedrock but also locally on stiff subsoil.

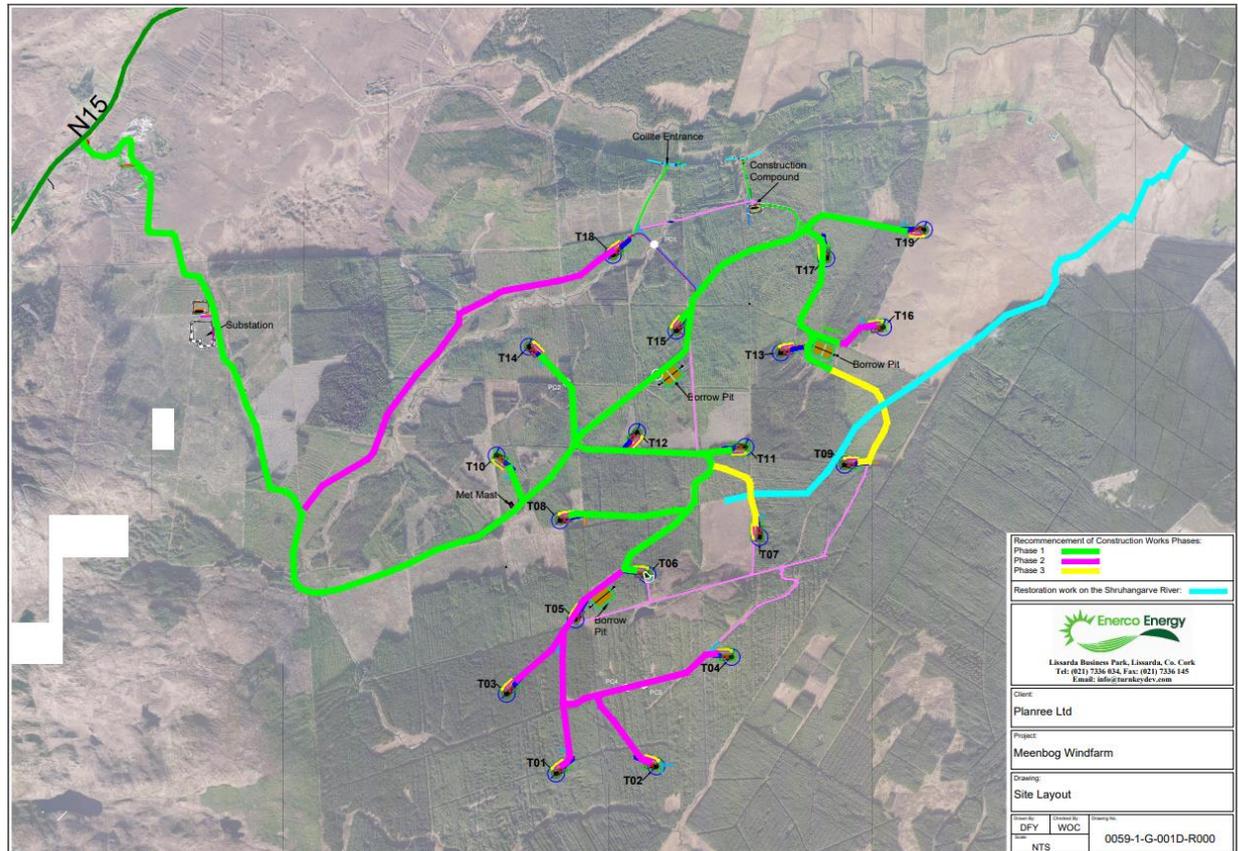


Figure 12 Zone 1 indicated in green

In the following sub-sections the peat immediately adjacent to the existing solid roads will be assessed under 3 load case scenarios, including:

- a) peat self-weight
- b) 1m peat surcharge
- c) tracked machine on peat

All roads are divided into segments based upon the original geometric design, these are outlined in each sub-section of the report for clarity. This section of the report deals with solid roads already constructed, including the **main spine roads** and spur roads to the following turbines:

- **T5, T6, T8, T10 - T15, T17 & T19**

4.1 Substation Spine Road - Peat Stability Assessment

A number of assessment points are presented below which indicate adequate factors of safety under all applicable load cases.

The Substation Spine Road runs north-south past the substation, between the T-junction south of the substation and the main site entrance. The assessment includes also the substation area and the adjacent peat storage cells. The following layout illustrates the sidecast areas along this spine road.

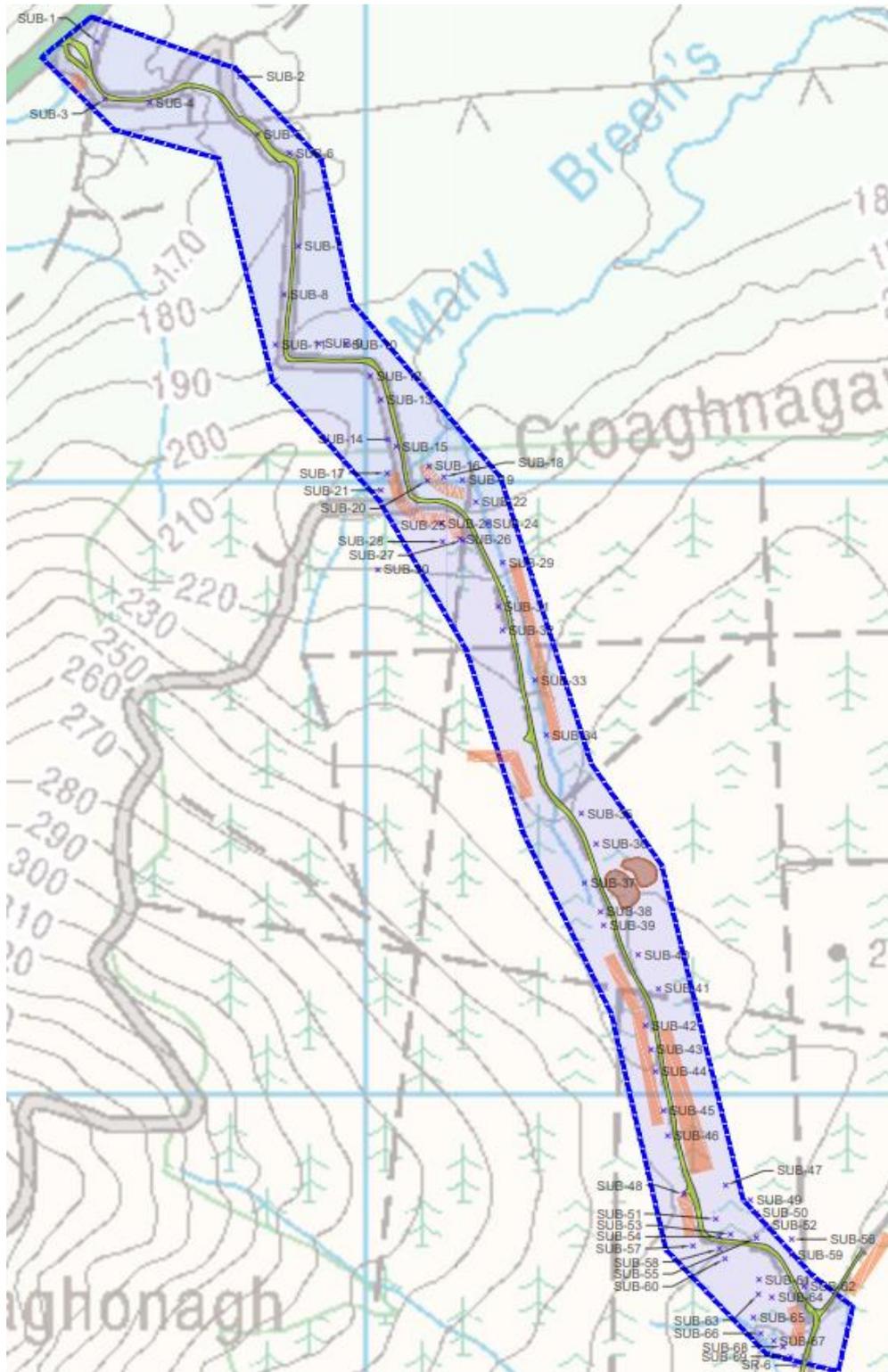


Figure 13 Substation Spine Road assessment area

The peat stability assessment points are indicated on the following layout, with the results summarised in the table below.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
SUB-1	204562	387715	1.4	10	16	7.4	10	13.3	0.0	0.0	6.39	3.73	2.86
SUB-2	204794	387658	1.7	10	8.5	2.8	10	13.3	0.0	0.0	7.32	4.61	3.63
SUB-3	204575	387621	1.2	10	9	5.4	10	13.3	0.0	0.0	5.72	3.12	2.34
SUB-4	204648	387616	1.4	10	14	7.5	10	13.3	0.0	0.0	5.52	3.22	2.47
SUB-5	204823	387564	1.0	10	12	4.1	10	13.3	0.0	0.0	12.02	6.01	4.40
SUB-6	204875	387533	2.2	10	13.5	1.5	10	13.3	0.0	0.0	16.75	11.52	9.38
SUB-7	204889	387381	2.2	10	11	3.7	10	13.3	0.0	0.0	5.55	3.81	3.11
SUB-8	204866	387302	2.3	10	14	3.4	10	13.3	0.0	0.0	7.34	5.12	4.19
SUB-9	204922	387222	4.2	10	5	2.3	10	13.3	0.0	0.0	2.12	1.71	1.50
SUB-10	204966	387221	5.0	10	6	1.5	10	13.3	0.0	0.0	3.28	2.73	2.43
SUB-11	204852	387220	2.0	10	13.5	2.4	10	13.3	0.0	0.0	11.52	7.68	6.18
SUB-12	205006	387169	2.5	10	5	3.9	10	13.3	0.0	0.0	2.11	1.50	1.24
SUB-13	205023	387130	1.8	10	10	4.8	10	13.3	0.0	0.0	4.76	3.06	2.43
SUB-14	205034	387065	0.8	10	5.5	2.4	10	13.3	0.0	0.0	11.74	5.22	3.71
SUB-15	205048	387054	1.5	10	17	2.4	10	13.3	0.0	0.0	19.35	11.61	8.99
SUB-16	205101	387021	2.5	10	8.5	4.8	10	13.3	0.0	0.0	2.91	2.08	1.72
SUB-17	205033	387010	1.4	10	10.5	6.5	10	13.3	0.0	0.0	4.76	2.78	2.13
SUB-18	205125	387004	1.2	10	6	4.2	10	13.3	0.0	0.0	4.89	2.67	2.00
SUB-19	205155	386999	0.9	10	11	4.1	10	13.3	0.0	0.0	12.24	5.80	4.19
SUB-20	205098	386998	2.6	10	11	3.1	10	13.3	0.0	0.0	5.60	4.04	3.36
SUB-21	205023	386982	2.0	10	7	2.9	10	13.3	0.0	0.0	4.95	3.30	2.65
SUB-22	205177	386963	1.7	10	8	7.4	10	13.3	0.0	0.0	2.63	1.66	1.30
SUB-23	205121	386928	2.1	10	10.5	4.4	10	13.3	0.0	0.0	4.67	3.16	2.56
SUB-24	205195	386928	0.7	10	11.5	4.8	10	13.3	0.0	0.0	14.07	5.79	4.06
SUB-25	205045	386924	1.7	10	12	3.8	10	13.3	0.0	0.0	7.62	4.80	3.78
SUB-26	205151	386903	2.7	10	11	5.8	10	13.3	0.0	0.0	2.89	2.11	1.76
SUB-27	205156	386900	3.0	10	8.5	5.8	10	13.3	0.0	0.0	2.01	1.51	1.28
SUB-28	205123	386898	3.5	10	6.5	4.7	10	13.3	0.0	0.0	1.62	1.26	1.09
SUB-29	205220	386864	1.4	10	14.5	9.4	10	13.3	0.0	0.0	4.59	2.68	2.05
SUB-30	205018	386852	2.0	10	7	2.8	10	13.3	0.0	0.0	5.12	3.42	2.75
SUB-31	205213	386792	1.5	10	9.5	5.7	10	13.3	0.0	0.0	4.58	2.75	2.13
SUB-32	205220	386753	2.5	10	12	4.9	10	13.3	0.0	0.0	4.03	2.88	2.38
SUB-33	205273	386672	0.8	10	10	7.9	10	13.3	0.0	0.0	6.56	2.91	2.07
SUB-34	205291	386582	1.5	10	9	4.5	10	13.3	0.0	0.0	5.48	3.29	2.55
SUB-35	205348	386454	3.0	10	11.5	7.1	10	13.3	0.0	0.0	2.23	1.67	1.42
SUB-36	205372	386404	1.1	10	17	5.2	10	13.3	0.0	0.0	12.23	6.41	4.76
SUB-37	205353	386340	0.3	10	28	7.4	10	13.3	0.0	0.0	52.20	12.05	7.72
SUB-38	205379	386293	1.0	10	9	5.2	10	13.3	0.0	0.0	7.12	3.56	2.61
SUB-39	205384	386271	0.9	10	8	8.9	10	13.3	0.0	0.0	4.15	1.97	1.42
SUB-40	205440	386223	0.8	10	18	8.4	10	13.3	0.0	0.0	11.12	4.94	3.52
SUB-41	205473	386167	0.9	10	10	5.8	10	13.3	0.0	0.0	7.89	3.74	2.70
SUB-42	205452	386107	1.7	10	11	6.5	10	13.3	0.0	0.0	4.11	2.59	2.04
SUB-43	205461	386068	2.0	10	11	3.4	10	13.3	0.0	0.0	6.64	4.42	3.56
SUB-44	205468	386032	1.4	10	10	2.8	10	13.3	0.0	0.0	10.46	6.10	4.68
SUB-45	205481	385968	1.3	10	8	5.6	10	13.3	0.0	0.0	4.53	2.56	1.94
SUB-46	205488	385927	5.0	10	8.5	2.5	10	13.3	0.0	0.0	2.79	2.32	2.07
SUB-47	205582	385846	1.8	10	7	2.9	10	13.3	0.0	0.0	5.50	3.53	2.80
SUB-48	205514	385831	2.4	10	9.5	3.8	10	13.3	0.0	0.0	4.28	3.02	2.49
SUB-49	205622	385822	2.5	10	9	2.9	10	13.3	0.0	0.0	5.09	3.64	3.01
SUB-50	205632	385801	2.0	10	7.5	4.6	10	13.3	0.0	0.0	3.35	2.23	1.80
SUB-51	205566	385791	3.0	10	4	3.3	10	13.3	0.0	0.0	1.66	1.24	1.05
SUB-52	205647	385781	2.2	10	3	3.1	10	13.3	0.0	0.0	1.80	1.24	1.01

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
SUB-53	205590	385766	2.9	10	8	5.2	10	13.3	0.0	0.0	2.18	1.62	1.37
SUB-54	205572	385762	1.0	10	13	6.1	10	13.3	0.0	0.0	8.79	4.39	3.22
SUB-55	205632	385760	1.7	10	16	3.6	10	13.3	0.0	0.0	10.73	6.75	5.32
SUB-56	205689	385758	2.3	10	6	2.8	10	13.3	0.0	0.0	3.90	2.70	2.21
SUB-57	205529	385747	4.2	10	7	3.7	10	13.3	0.0	0.0	1.85	1.49	1.31
SUB-58	205572	385742	1.4	10	14	6.2	10	13.3	0.0	0.0	6.65	3.88	2.98
SUB-59	205689	385733	2.7	10	11	2.6	10	13.3	0.0	0.0	6.42	4.69	3.91
SUB-60	205581	385726	1.9	10	8	4.6	10	13.3	0.0	0.0	3.76	2.46	1.97
SUB-61	205636	385692	2.3	10	8	3.5	10	13.3	0.0	0.0	4.08	2.84	2.33
SUB-62	205709	385681	2.2	10	7.5	4.4	10	13.3	0.0	0.0	3.18	2.19	1.78
SUB-63	205635	385668	5.1	10	7.5	3.3	10	13.3	0.0	0.0	1.83	1.53	1.37
SUB-64	205657	385663	2.7	10	9	3.2	10	13.3	0.0	0.0	4.27	3.12	2.60
SUB-65	205627	385630	5.3	10	6	3.4	10	13.3	0.0	0.0	1.37	1.15	1.03
SUB-66	205639	385604	3.5	10	9	4.4	10	13.3	0.0	0.0	2.40	1.87	1.61
SUB-67	205660	385592	4.2	10	9	4.3	10	13.3	0.0	0.0	2.05	1.65	1.45
SUB-68	205675	385582	3.0	10	9	4.3	10	13.3	0.0	0.0	2.87	2.15	1.82
SUB-69	205687	385566	1.8	10	7	4.1	10	13.3	0.0	0.0	3.90	2.50	1.99

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 1

4.1.1 Substation

Prior to construction of the substation compound, buildings and electrical equipment support plinths a sub-formation approval was carried out on the excavation. A detailed formation approval report MNBG r035 Croaghonagh Substation Sub-Formation Approval was prepared outlining the findings. The substation compound, buildings and equipment plinths are built directly on bedrock or on 6N engineering fill on suitable solid sub-formation.

As part of the sub-formation design and testing Ionic Consulting assessed the founding formation layer to ensure it met the required design criteria for the proposed substation buildings and compound which is also being designed by Ionic Consulting on behalf of the substation contractor H&MV Engineering. The minimum required bearing capacity for the substation is 100kPa.

An initial walkover was carried out by Ionic Consulting in August 2019. Existing ground levels at the proposed compound ranged from 216mOD in the north to 224mOD in the south. Overburden material including varying depths of peat was removed locally to expose the underlying weathered and intact bedrock and gravel substrate across the site.

The handover level of the compound is 217.35mOD with a build-up required in the northern half of the compound, and excavation including ripping and rock breaking of up to 4m at the higher elevations in the south of the compound area. Bedrock was encountered at varying depths across the compound. The southern side of the compound was founded on weathered or intact bedrock, with engineering fill required along the northern half of the compound as the ground and bedrock level falls sharply to the north. Bedrock was encountered at or above strip footing level for the two substation buildings therefore all structural foundations for buildings are built on lean-mix concrete blinding placed directly on bedrock. As bedrock was not encountered at compound level over the northern side of the compound, up to 3m of site-won material Class 6B was placed on natural formation to build up the compound to 1.5m below finished level where required. The upper 1.5m comprises Class 6F2 material.

Plate bearing tests were carried out on natural layers where weathered bedrock and the clay or gravel substrate was encountered, and in engineering upfill layers across the compound area. This ensured that an adequate bearing capacity and adequate compaction has been achieved.

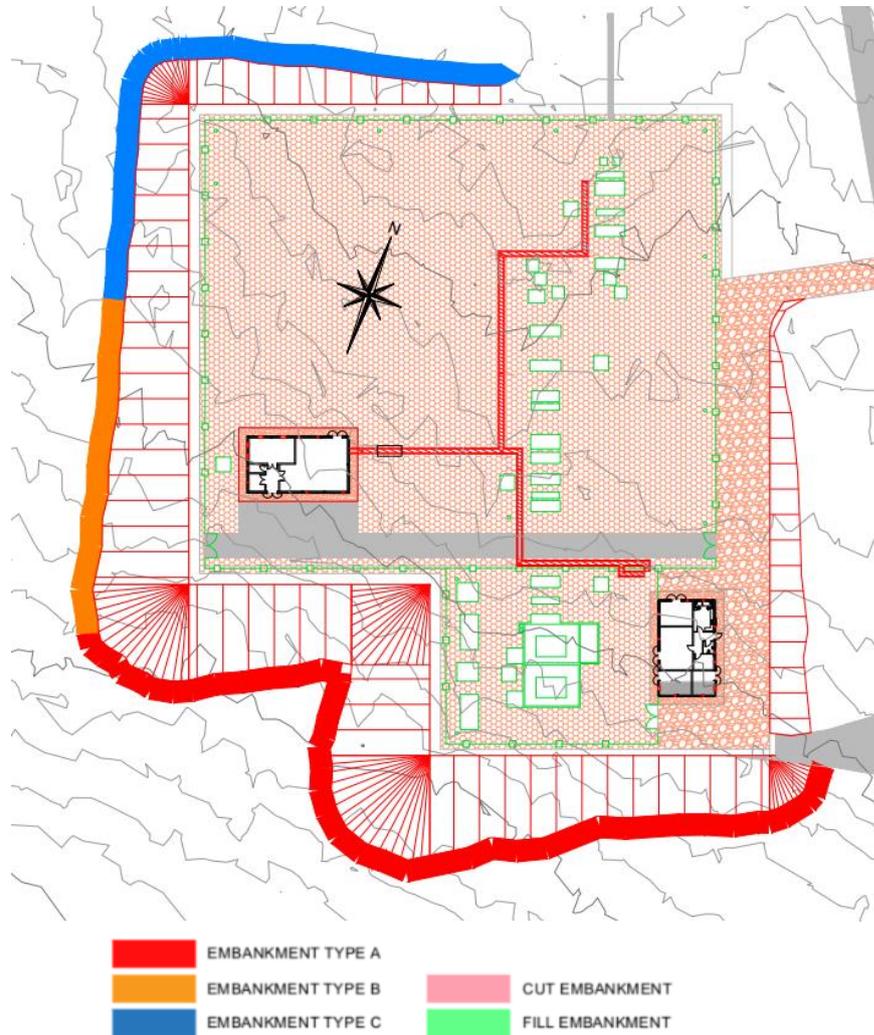


Figure 14 Substation earthworks plan

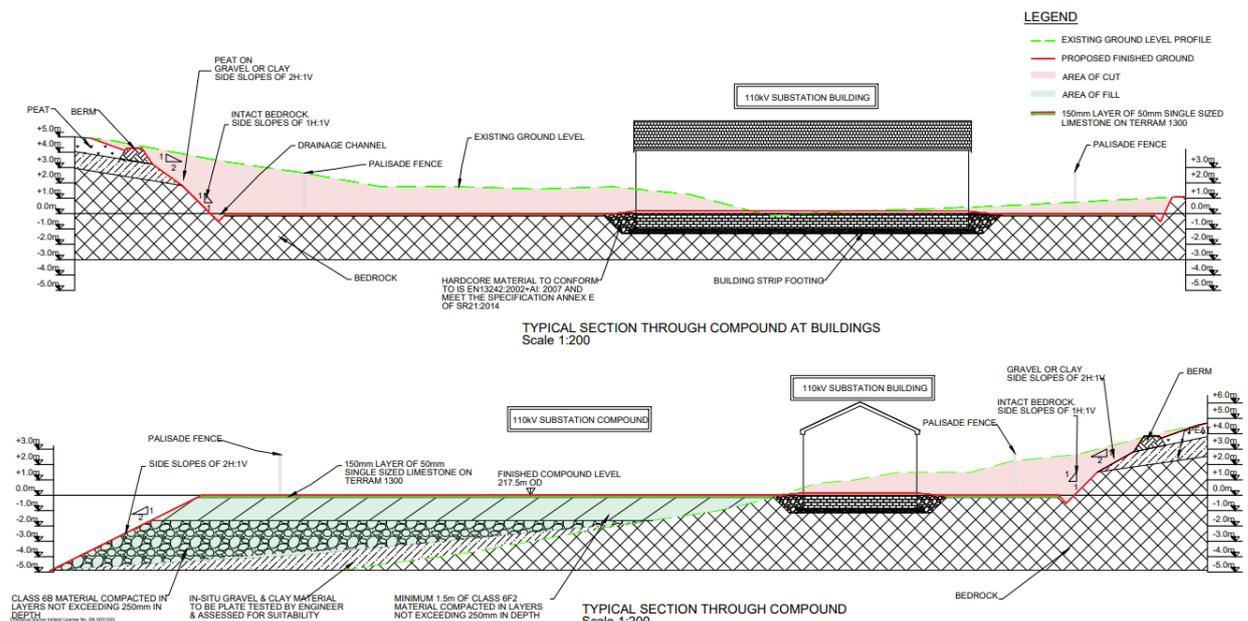


Figure 15 Substation earthworks sections

Berms are provided around the excavated perimeter of the compound to ensure the stability of the undisturbed upslope peat. Design calculations and details were provided to provide the required factor of safety against sliding. The berms were inspected by Ionic Consulting following construction and confirmed as suitable.

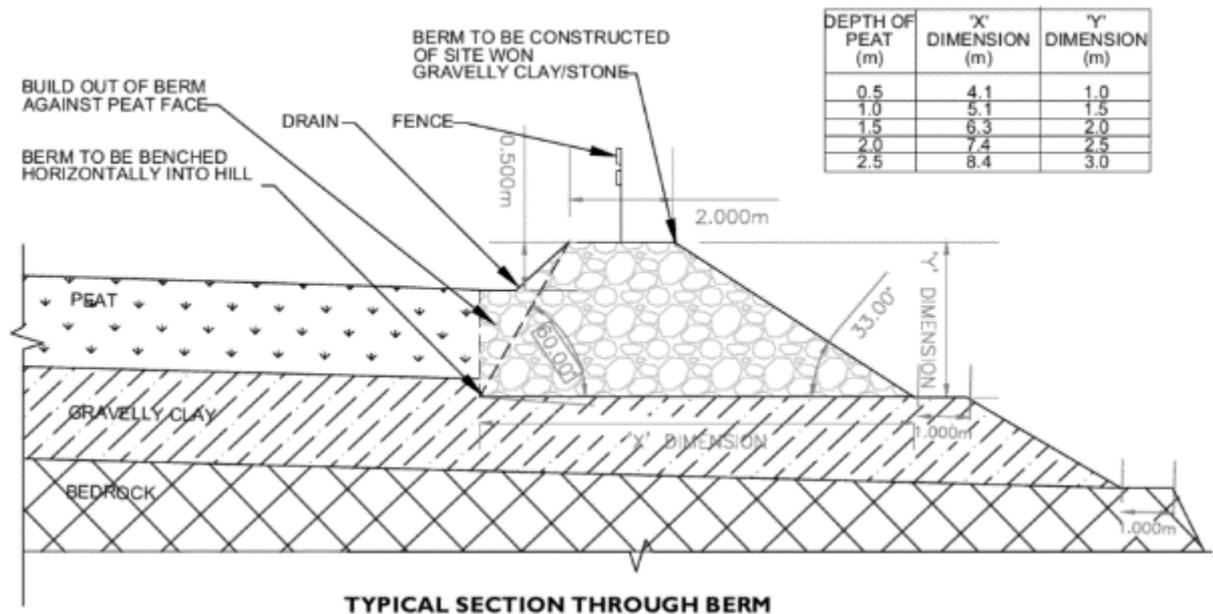


Figure 16 Substation berm section details

4.1.2 Peat Storage Cells South of Substation

Peat Storage Cells are located south of the substation and adjacent to the site spine road. They are located at the site of an existing borrow pit which was expanded. This excavated area was subsequently used to create two cells to store peat, by constructing berms along the open (south-west) sides of the cell areas. A berm calculation has been included below to demonstrate the stability of the cell. Note that the overdesign factor for sliding is 1.63 for the most onerous case which is the Eurocode 7 uplift limit state under fully buoyant conditions. Details of this peat cell are included on drawing MNBG d021.4.1.

This area is bounded on the south-west side by the site spine road which is constructed to solid formation. The stability assessment of the peat indicates an adequate safety margin in this area.



Figure 17 Peat Storage Cells South of Substation plan details

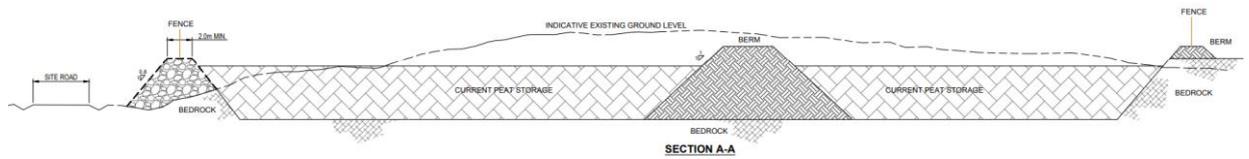
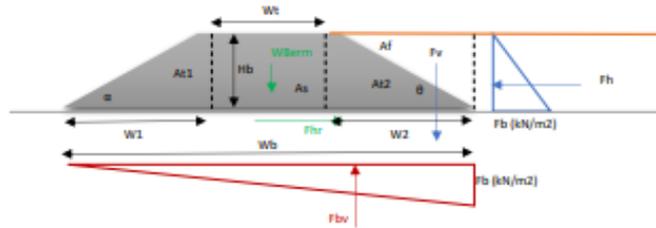


Figure 18 Peat Storage Cells South of Substation illustrative section

PROJECT DETAILS	
PROJECT:	Meenbog Wind Farm - Peat Storage South of Substation
ELEMENT:	5m PEAT BERM
DATE:	28/01/2021
BY:	JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	5	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	7.699	m	Base of triangle	
W2	7.699	m	Base of triangle	
Wb	17.40	m	Base width	
At1	19.248	m ²	Area of triangle1	
At2	19.248	m ²	Area of triangle1	
A _{berm}	48.497	m ²	Area of berm	
γ	18	kN/m ³	unit weight berm material	
W _{Berm}	873	kN / m	weight berm per m	
B. Pressure	50	kPa	bearing pressure under dead weight	
β	33	degrees	characteristic angle friction base material	
Mat. Factor	1.25		factor for angle base friction	
Design β	26	degrees	design angle friction base material	
Tan (β)	0.496			
F _{hr} (nb)	433		berm horizontal sliding resistance no uplift	
F _{hr} (b)	222		berm horizontal sliding resistance uplift	

LOADING

γ	9.81	kN/m ³	unit weight retained material
Depth of fill	5	m	equals height berm
F _b	49.05	kN/m ²	pressure
F _h	123	kN/m	horizontal force
A _f	19.25	m ²	Area of peat over berm slope
F _v	188.8	kN / m	Load peat above berm slope
F _{bv}	-427	kN / m	buoyancy force

SUMMARY

SLIDING		SLS		UPL			
		Unf. [kN]	FOS	kN	FOS		kN
Resisting Forces							
	F _{hr} (nb)	433	1.00	433	0.90	390	Horizontal sliding resistance assur
	F _{hr} (b)	222	1.00	222	0.90	199	Horizontal sliding resistance assur
Sliding Forces							
	F _h	123	1.00	123	1.00	123	Horizontal sliding force
Sliding	(nb)	3.53		3.53		3.18	>1 ok
	(b)	1.81		1.81		1.63	>1 ok
OVERTURNING							
		SLS		UPL			
		Unf. [kNm]	FOS	kNm	FOS		kNm
Resisting BM							
	Res BM (nb)	7594	1.00	7594	0.90	6835	Horizontal sliding resistance assur
	Res BM (b)	3882	1.00	3882	0.90	3494	Horizontal sliding resistance assur
Overturning							
	Ot BM (b)	-4745	1.00	-4745	1.00	-4745	Horizontal sliding force
Overturning	(nb)	61.93		61.93		55.74	>1 ok
	(b)	31.66		31.66		28.49	>1 ok

4.1.3 Substation Spine Road – Conclusion

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.8 along the route but values range from 1.01 to 9.38.

The assessment along this section of road was based on 69 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

It should be noted that this road was constructed along an existing forest track which has been in place for decades. The road was widened by up to 2m but largely follows the original alignment. The upgraded wind farm road has been constructed to solid sub-formation.

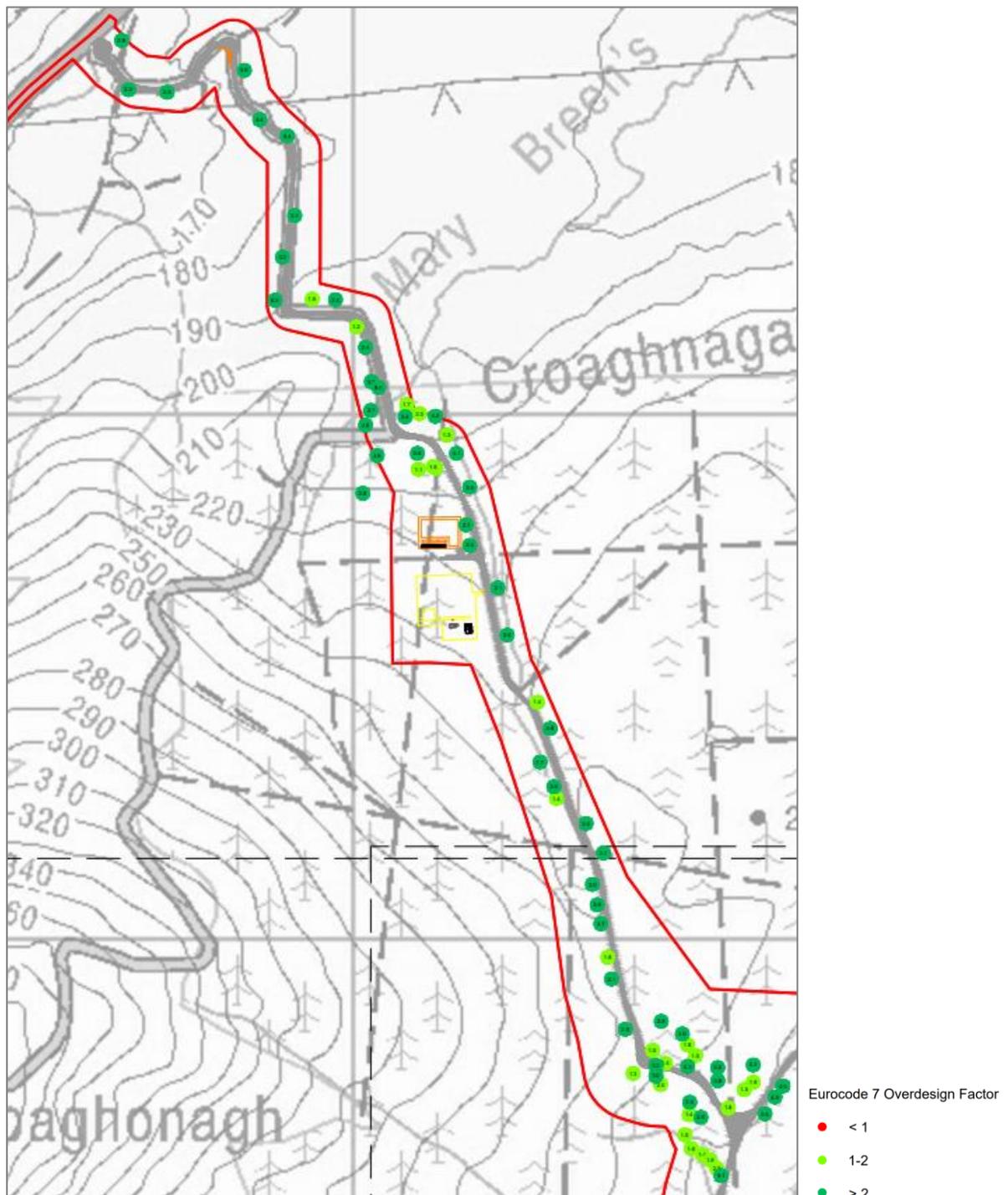


Figure 19 ODF results in this assessment section

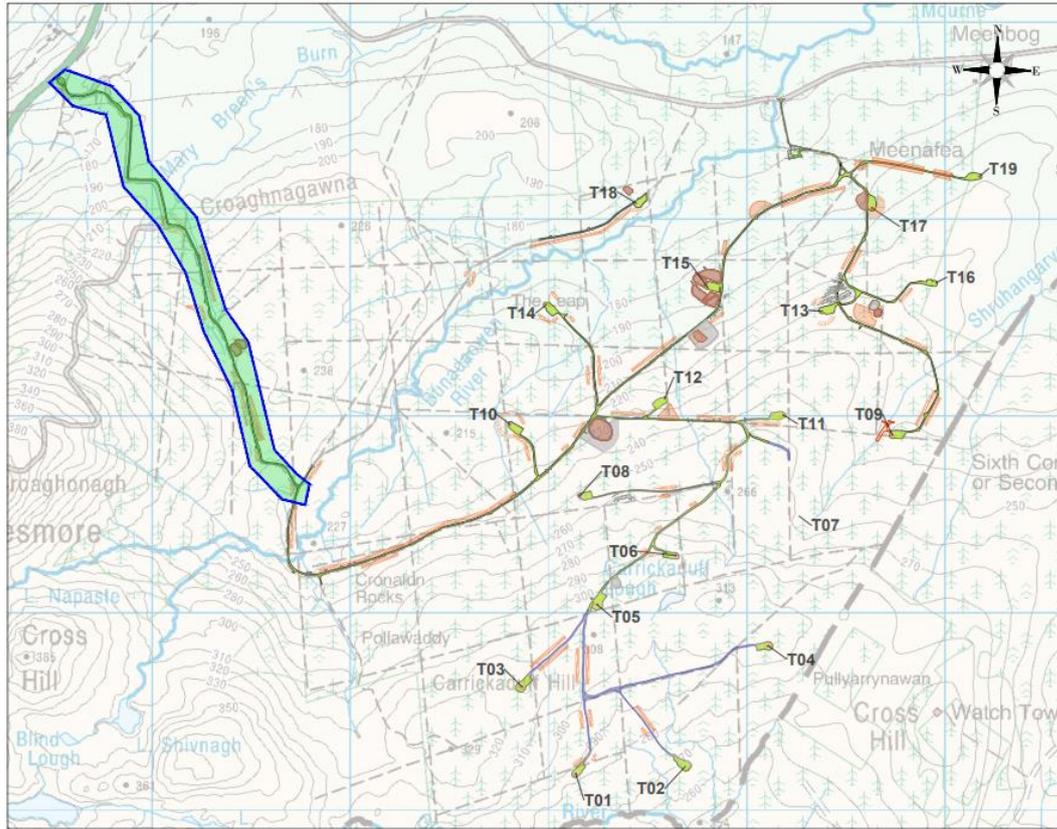


Figure 20 Outlined area has passed the assessment in this section

4.2 Main Spine - Peat Stability Assessment

Spine Road SR00 runs south-west to north-east through the site, between the T-junction south of the substation and the junction north of T17. The following layout illustrates the sidecast areas along this spine road.

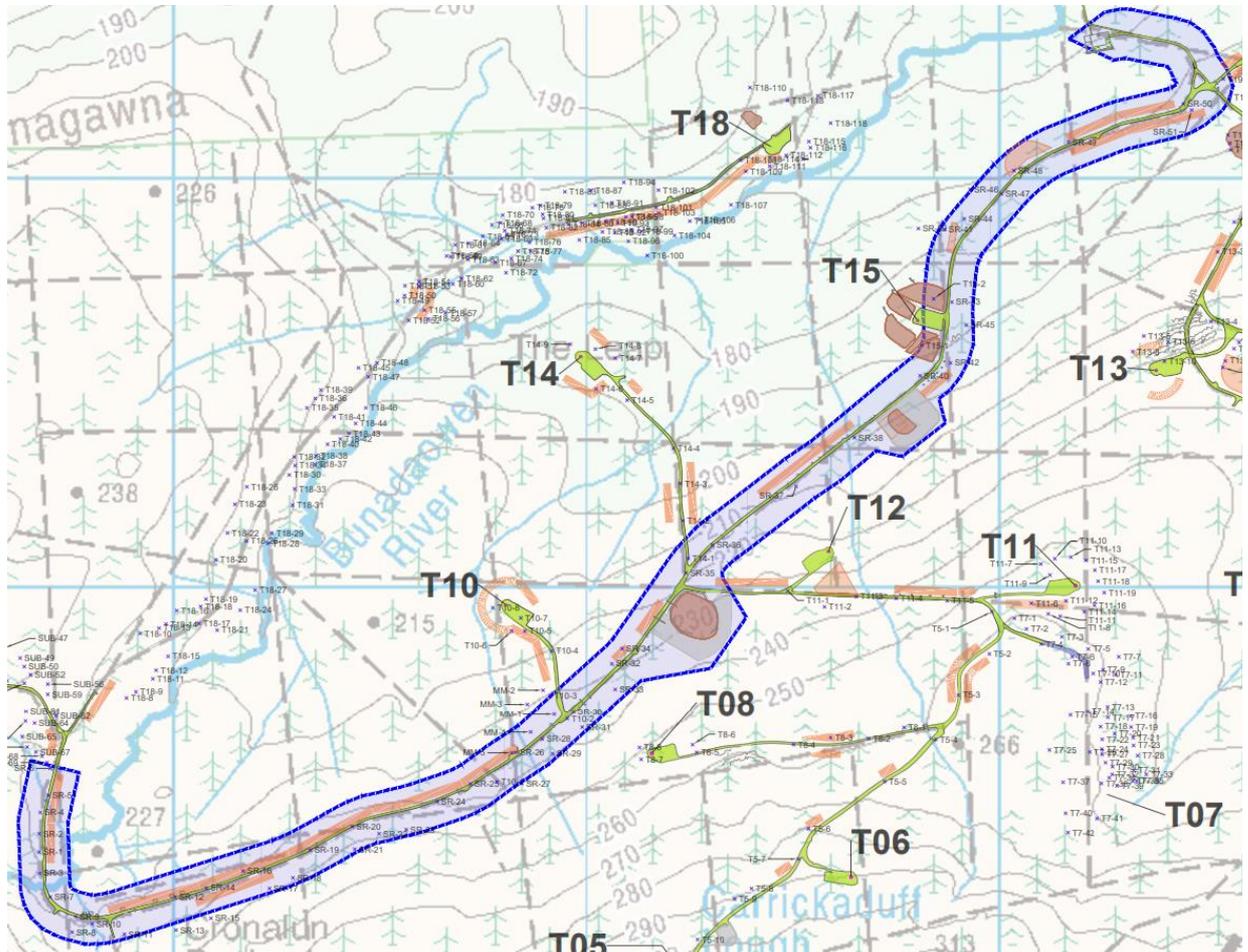


Figure 21 Spine Road assessment area

The peat stability assessment points are indicated on the following layout, with the results summarised in the table below.

The following table summarises the safety margins along Spine Road SR. The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 4.4 along the route but values range from 1.44 to 10.36.

The assessment along this section of road was based on 51 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Locally higher peat deposition of up to 2.0m (20kPa) has been assessed, as shown on the table below.

It should be noted that this road was constructed along an existing forest track which has likely been in place for decades. The road was widened by up to 2m but follows the original alignment. The upgraded wind farm road has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
SR-1	205668	385347	1.0	10	14	4.8	10	13.3	0.0	0.0	11.99	6.00	4.39
SR-2	205668	385392	0.5	10	13	5.7	10	13.3	0.0	0.0	18.79	6.26	4.22
SR-3	205669	385295	0.5	10	12	7.4	10	13.3	0.0	0.0	13.42	4.47	3.01
SR-4	205671	385444	1.7	10	17	6.3	10	13.3	0.0	0.0	6.55	4.12	3.25
SR-5	205690	385486	0.8	10	12	4.4	10	13.3	0.0	0.0	14.94	6.40	4.52
SR-6	205695	385552	1.0	10	14	2.3	10	13.3	0.0	0.0	24.94	12.47	9.14
SR-7	205695	385237	0.5	10	20	4.9	0	13.3	0.0	0.0	33.57	33.57	7.53
SR-8	205748	385151	0.8	10	12	6.9	10	13.3	0.0	0.0	8.98	3.99	2.84
SR-9	205757	385189	1.7	10	13	4.9	10	13.3	0.0	0.0	6.42	4.04	3.18
SR-10	205797	385171	1.8	10	25	6.1	10	13.3	0.0	0.0	9.39	6.04	4.79
SR-11	205875	385146	1.2	10	13	5.2	10	13.3	0.0	0.0	8.57	4.68	3.51
SR-12	205998	385237	0.50	10	14	4.4	10	13.3	0.0	0.0	26.15	8.72	5.87
SR-13	206000	385156	1.00	10	12	5.7	10	13.3	0.0	0.0	8.67	4.34	3.18
SR-14	206074	385259	1.0	10	20	2.9	10	13.3	0.0	0.0	28.27	14.14	10.36
SR-15	206085	385185	1.0	10	7	3.8	10	13.3	0.0	0.0	7.56	3.78	2.77
SR-16	206163	385301	2.0	10	14	6.6	10	13.3	0.0	0.0	4.38	2.92	2.35
SR-17	206227	385258	1.5	10	8	7.1	10	13.3	0.0	0.0	3.11	1.86	1.44
SR-18	206284	385284	1.0	10	14	5.3	10	13.3	0.0	0.0	10.87	5.44	3.98
SR-19	206326	385352	1.0	10	17.5	5.8	10	13.3	0.0	0.0	12.43	6.22	4.56
SR-20	206428	385410	0.3	10	14	7.4	10	13.3	0.0	0.0	31.32	6.26	3.96
SR-21	206434	385354	1.0	10	7	5.7	10	13.3	0.0	0.0	5.06	2.53	1.85
SR-22	206493	385392	1.0	10	10	5.8	10	13.3	0.0	0.0	7.10	3.55	2.60
SR-23	206559	385402	0.6	10	7	5.9	10	13.3	0.0	0.0	8.15	3.06	2.10
SR-24	206634	385471	0.75	10	17.5	9.6	10	13.3	0.0	0.0	10.14	4.34	3.07
SR-25	206715	385514	0.9	10	15	7.4	10	13.3	0.0	0.0	9.32	4.42	3.19
SR-26	206825	385591	0.6	10	12	4.4	10	13.3	0.0	0.0	18.68	7.00	4.81
SR-27	206840	385515	1.1	10	8.5	5.2	10	13.3	0.0	0.0	6.12	3.20	2.38
SR-28	206889	385624	0.8	10	16	5.1	10	13.3	0.0	0.0	17.21	7.38	5.21
SR-29	206914	385588	1.1	10	8	3.3	10	13.3	0.0	0.0	9.04	4.73	3.51
SR-30	206965	385691	0.8	10	20	8	10	13.3	0.0	0.0	13.82	5.92	4.18
SR-31	206986	385653	1.2	10	11	6.1	10	13.3	0.0	0.0	6.20	3.38	2.54
SR-32	207058	385808	0.8	10	15	7.4	10	13.3	0.0	0.0	11.18	4.79	3.38
SR-33	207066	385745	1.7	10	10.5	3.3	10	13.3	0.0	0.0	7.68	4.83	3.81
SR-34	207083	385845	1.0	10	23	3.9	10	13.3	0.0	0.0	24.21	12.11	8.87
SR-35	207238	386030	1.5	10	15	6.2	10	13.3	0.0	0.0	6.65	3.99	3.09
SR-36	207302	386099	0.7	10	9	5.7	10	13.3	0.0	0.0	9.29	3.83	2.68
SR-37	207505	386242	0.8	10	10	9.1	10	13.3	0.0	0.0	5.72	2.54	1.81
SR-38	207647	386361	0.8	10	17	6.2	10	13.3	0.0	0.0	14.14	6.28	4.47
SR-39	207802	386873	1.1	10	10	3.6	10	13.3	0.0	0.0	10.36	5.43	4.03
SR-40	207806	386513	0.6	10	16	4.5	10	13.3	0.0	0.0	24.35	9.13	6.27
SR-41	207865	386871	0.5	10	16	3.1	20	13.3	0.0	0.0	42.33	8.47	9.49
SR-42	207880	386544	1.2	10	19	3.6	10	13.3	0.0	0.0	18.05	9.84	7.39
SR-43	207883	386693	1.00	10	22	4.1	10	13.3	0.0	0.0	22.04	11.02	8.07
SR-44	207913	386897	0.8	10	22	4.8	20	13.3	0.0	0.0	23.56	6.73	7.45
SR-45	207918	386637	1.0	10	25	7.2	10	13.3	0.0	0.0	14.36	7.18	5.26
SR-46	207927	386969	0.6	10	10	4.8	10	13.3	0.0	0.0	14.28	5.35	3.68
SR-47	208003	386958	1.8	10	9	5.2	10	13.3	0.0	0.0	3.96	2.54	2.02
SR-48	208034	387015	1.7	10	15	4.9	10	13.3	0.0	0.0	7.41	4.66	3.67
SR-49	208166	387085	0.6	10	15	6.5	10	13.3	0.0	0.0	15.88	5.95	4.09
SR-50	208445	387178	2.8	10	17	2.7	10	13.3	0.0	0.0	9.22	6.79	5.70
SR-51	208465	387163	1.7	10	8.5	3.3	15	13.3	0.0	0.0	6.21	3.30	3.08

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 2

4.2.1 Bridge Widening EC5 (Main Spine Road)

The main civil works are complete for the bridge widening along the main spine road SR00 at IG coordinates 205681, 385269. The formation excavation was carried out in July 2020, followed by concrete blinding and pouring of reinforced concrete abutments in August 2020. The precast beams were installed on 10th September 2020.

The existing bridge was widened on the downstream side and no works were required immediately along the riverbanks as the abutments for the widened section were set back by 2 to 3m on either side of the river as shown below. The span of the widening was 8.25m compared to the original bridge span of 2.5m. The span was governed by the alignment of the river relative to the road and the desire to avoid any instream works for the foundations. The existing wing walls were maintained and the foundation excavations were constructed outside the wing walls, thereby providing a very stable buffer between the works area and the river.

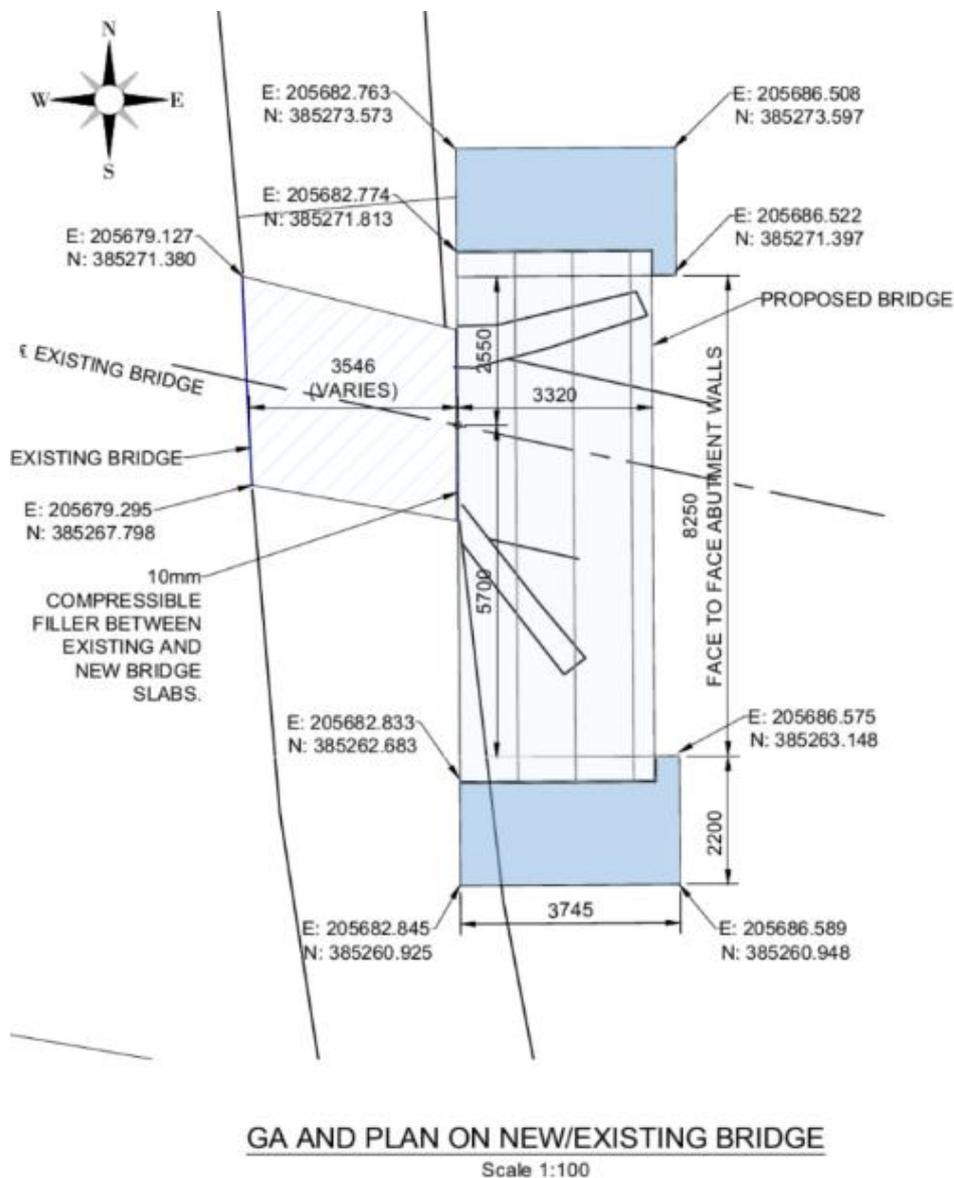
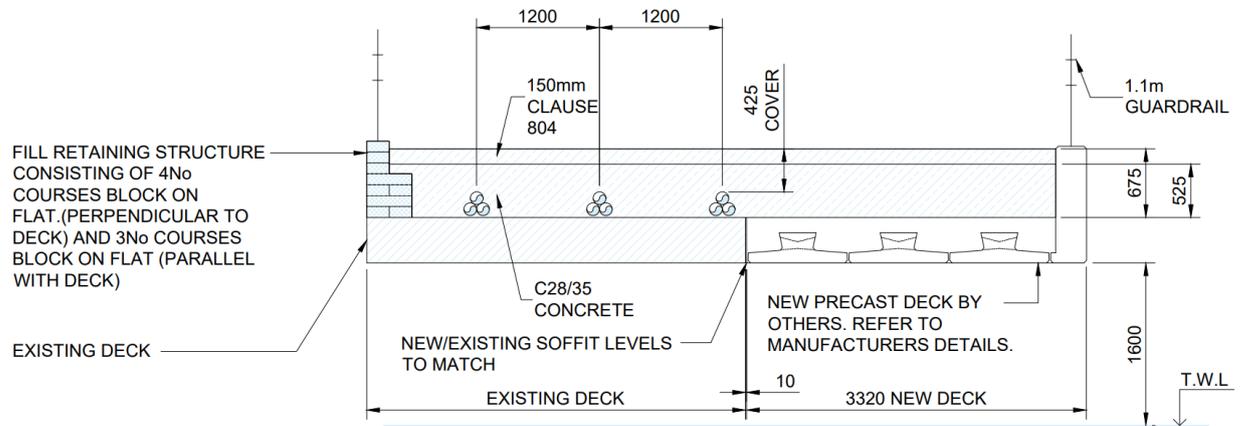


Figure 22 EC5 Bridge Widening plan details

The same deck soffit level was maintained for the new widening and the original bridge, and to prevent the need for in-situ concrete works over the river precast beams were installed. Three precast MY1 beams were installed along with a full height edge beam to act as kerb and parapet support, and to act as permanent shuttering for the in-situ deck concrete pour.



SECTION THRO' CENTRELINE OF NEW/EXISTING BRIDGE

Scale 1:50

Figure 23 EC5 Bridge Widening section details



Figure 24 Photo of precast edge beam spanning beyond the original wing walls and original bridge



Figure 25 Photo of precast MY1 deck beams and edge beam, prior to in-situ concrete slab pour

The final civil works were carried out at the bridge for safety reasons with the agreement of Donegal County Council, and included the concrete pour for the deck. The precast units were used as shuttering thereby avoiding any direct works over the river.

4.2.2 Met Mast

The permanent met mast has yet to be constructed on Meenbog Wind Farm, however the detailed design has been carried out. A reinforced concrete gravity foundation will be constructed on solid sub-formation, with 6N engineering fill as required to provide the required build-up from sub-formation level to the design foundation level. The peat will be excavated initially to a designated peat storage area, and the excavation sub-formation will be tested and approved by Ionic Consulting prior to concrete blinding and construction of the foundation.

The met mast hardstanding will be constructed adjacent to the main spine road near the junction to T10. Peat depths locally are relatively shallow and significant safety margins were calculated.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
MM-1	206918	385685	1.5	10	11	4.5	10	13.3	0.0	0.0	6.70	4.02	3.11
MM-2	206891	385743	0.7	10	9	4.1	10	13.3	0.0	0.0	12.88	5.30	3.71
MM-3	206853	385708	1.5	10	3.5	4.3	10	13.3	0.0	0.0	2.23	1.34	1.04
MM-4	206861	385641	1.0	10	7	4	10	13.3	0.0	0.0	7.19	3.59	2.63
MM-5	206815	385590	1.8	10	4.5	4.3	10	13.3	0.0	0.0	2.39	1.54	1.22

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 3

4.2.3 Spine Road South of T10

This section of the spine road SR00 is located on the uphill side of turbine T10 spur road, hardstand and foundation. The road was raised as a result of the peat movement from T5/T6, which progressed beyond the T8 area and ended at the spine road at this location. The road was raised to ensure safe access through the end section of the peat movement and to mitigate against further peat movement if it were to occur.

The raised road was designed to ensure it could act to retain the peat if further movement was to occur. The design is included below along with a summary of the overdesign factors against sliding and overturning failure. Note that these calculations are carried out to Eurocode 7 IS EN 1997-1 with partial safety factors for loads and materials also applied.

The section of the Spine Road in question is indicated in blue:



Figure 27 Spine Road south of T10 Peat Stabilisation Berm plan

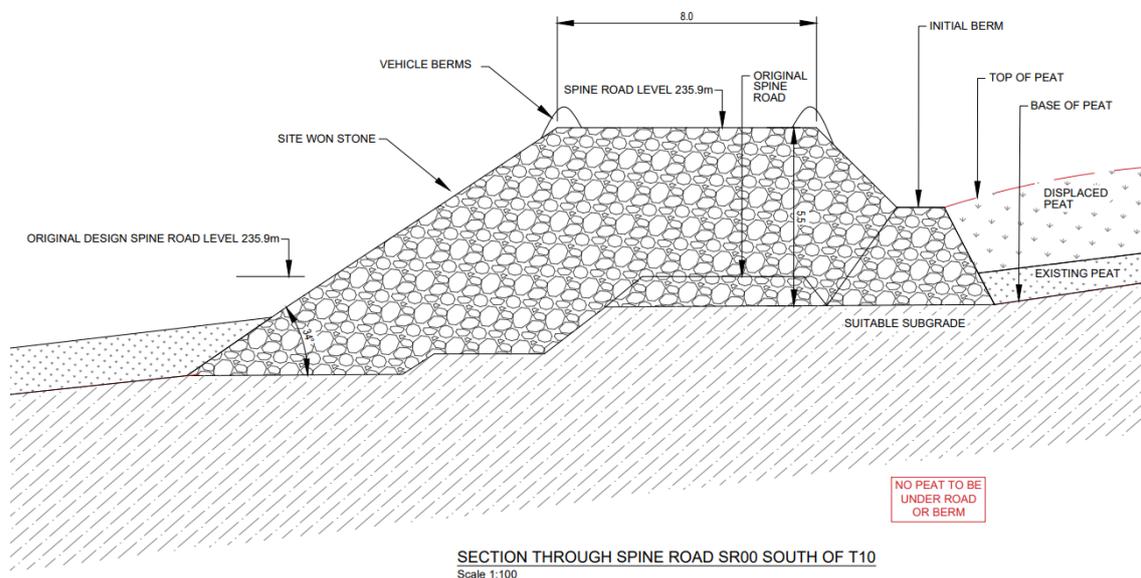
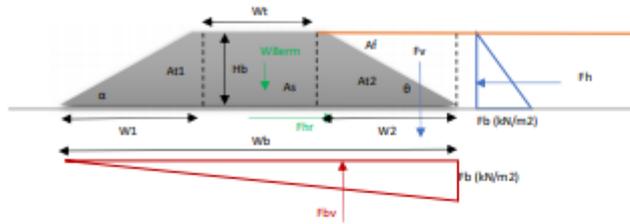


Figure 28 Spine Road south of T10 Peat Stabilisation Berm section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm
ELEMENT: Spine Road above T10
DATE: 17/06/2020
BY: COD/JS

BERM INFORMATION



Wt	8	m	width top of berm	
Hb	5	m	height of berm	
α	35	degrees	slope angle of berm downhill side	
θ	45	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.700			
Tan (θ)	1.000			
W1	7.141	m	Base of triangle	
W2	5.000		Base of triangle	
Wb	20.14	m	Base width	
At1	17.852	m ²	Area of triangle1	
At2	12.500	m ²	Area of triangle1	
A _{berm}	70.352	m ²	Area of berm	

γ	22	kN/m ³	unit weight berm material
W _{Berm}	1548	kN / m	weight berm per m
B. Pressure	77	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.496	
F _{hr} (nb)	768	berm horizontal sliding resistance no uplift
F _{hr} (b)	518	berm horizontal sliding resistance uplift

LOADING

γ	10	kN/m ³	unit weight retained material
Depth of fill	5	m	equals height berm
F _b	50	kN/m ²	pressure
F _h	125	kN/m	horizontal force
A _f	17.85	m ²	Area of peat over berm slope
F _v	178.5	kN / m	Load peat above berm slope
F _{bv}	-504	kN / m	buoyancy force

SUMMARY

		SLS			UPL		
		Unf. [kN]	FOS	kN	FOS	kN	
SLIDING							
<i>Resisting Forces</i>							
F _{hr} (nb)		768	1.00	768	0.90	691	Horizontal sliding resistance assur
F _{hr} (b)		518	1.00	518	0.90	467	Horizontal sliding resistance assur
<i>Sliding Forces</i>							
F _h		125	1.00	125	1.00	125	Horizontal sliding force
Sliding	(nb)	6.15		6.15		5.53	>1 ok
	(b)	4.15		4.15		3.73	>1 ok

		SLS			UPL		
		Unf. [kNm]	FOS	kNm	FOS	kNm	
OVERTURNING							
<i>Resisting BM</i>							
Res BM (nb)		15586	1.00	15586	0.90	14028	Horizontal sliding resistance assur
Res BM (b)		10516	1.00	10516	0.90	9464	Horizontal sliding resistance assur
<i>Overturing</i>							
Ot BM (b)		-6553	1.00	-6553	1.00	-6553	Horizontal sliding force
Overturing	(nb)	124.69		124.69		112.22	>1 ok
	(b)	84.13		84.13		75.71	>1 ok

4.2.4 Peat Storage Area I

Peat Storage Area I is located south-west of T12 and adjacent to the site spine road. It is located at the site of an expanded existing borrow pit. This excavated area was subsequently used to create a large cell to store excavated peat, by constructing a berm along the downslope (north-west) edge of the area. A berm calculation has been included below to demonstrate the stability of the cell. Details of this area are included on drawing MNBG d021.12.1.

This area is bounded to the west and north by the site spine road which is constructed to solid formation. The assessment of the peat indicates that this section of the site is stable.



Figure 29 Peat Storage Area 1 plan details

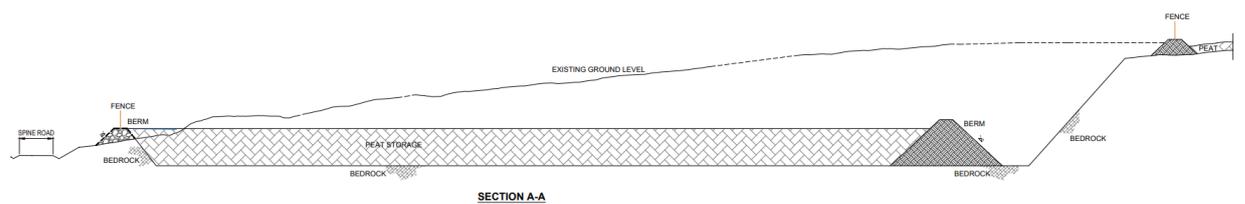
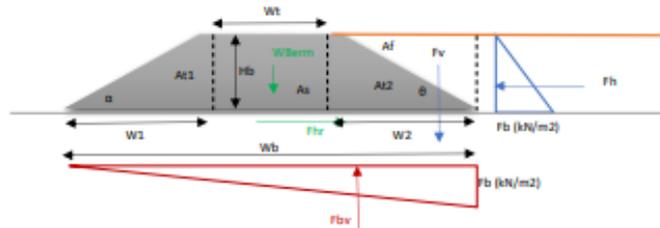


Figure 30 Peat Storage Area illustrative section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - Peat Storage Area 1
ELEMENT: 4m PEAT BERM
DATE: 28/01/2021
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	4	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	6.159	m	Base of triangle	
W2	6.159	m	Base of triangle	
Wb	14.32	m	Base width	
At1	12.319	m ²	Area of triangle1	
At2	12.319	m ²	Area of triangle1	
A_berm	32.638	m ²	Area of berm	

γ	18	kN/m ³	unit weight berm material
W _{Berm}	587	kN / m	weight berm per m
B. Pressure	41	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.496	
Fhr (nb)	292	berm horizontal sliding resistance no uplift
Fhr (b)	152	berm horizontal sliding resistance uplift

LOADING

γ	9.81	kN/m ³	unit weight retained material
Depth of fill	4	m	equals height berm
Fb	39.24	kN/m ²	pressure
Fh	78	kN/m	horizontal force
Af	12.32	m ²	Area of peat over berm slope
Fv	120.8	kN / m	Load peat above berm slope
Fbv	-281	kN / m	buoyancy force

SUMMARY

SLIDING		SLS		UPL			
		Unf. [kN]	FOS	kN	FOS		kN
Resisting Forces							
	Fhr (nb)	292	1.00	292	0.90	262	Horizontal sliding resistance assur
	Fhr (b)	152	1.00	152	0.90	137	Horizontal sliding resistance assur
Sliding Forces							
	Fh	78	1.00	78	1.00	78	Horizontal sliding force
Sliding	(nb)	3.72		3.72		3.34	>1 ok
	(b)	1.94		1.94		1.75	>1 ok
OVERTURNING							
OVERTURNING		SLS		UPL			
		Unf. [kNm]	FOS	kNm	FOS		kNm
Resisting BM							
	Res BM (nb)	4206	1.00	4206	0.90	3785	Horizontal sliding resistance assur
	Res BM (b)	2195	1.00	2195	0.90	1975	Horizontal sliding resistance assur
Overturing							
	Ot BM (b)	-2577	1.00	-2577	1.00	-2577	Horizontal sliding force
Overturing	(nb)	53.59		53.59		48.23	>1 ok
	(b)	27.96		27.96		25.17	>1 ok

4.2.5 Borrow Pit A

Borrow Pit A (also referred to Borrow Pit 2 in the planning documents) is located south of T15 and adjacent to the site spine road. The borrow pit was excavated into existing ground, commencing at the southern end. This excavated area was subsequently used to create two cells to store peat, however the berm separating the two cells has been largely removed thereby creating one larger cell. A berm calculation has been included below to demonstrate the stability of the cell. Details of this borrow pit are included on drawing MNBG d021.3.1.

This area is bounded to the north by the site spine road which is constructed to solid formation. The stability assessment of the peat in this area is covered under the Spine Road SR assessment. The stability assessment of the peat indicates an adequate safety margin in this area.



PLAN
 SCALE 1:1000

Figure 31 Borrow Pit A plan details

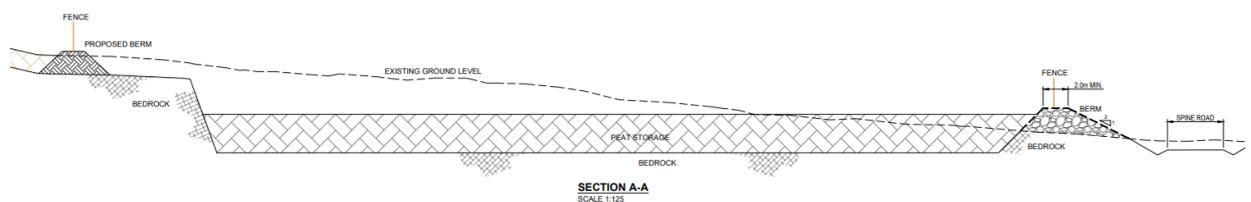
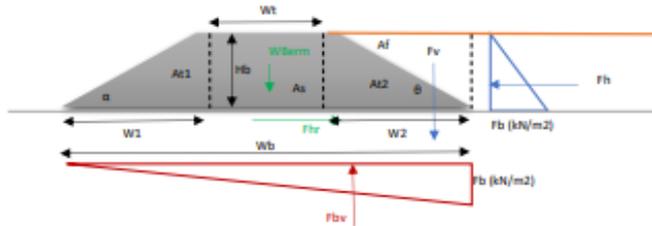


Figure 32 Borrow Pit A illustrative section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - Borrow Pit A Peat Storage
ELEMENT: 5m PEAT BERM
DATE: 28/01/2021
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	5	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	7.699	m	Base of triangle	
W2	7.699	m	Base of triangle	
Wb	17.40	m	Base width	
At1	19.248	m ²	Area of triangle1	
At2	19.248	m ²	Area of triangle1	
A _{berm}	48.497	m ²	Area of berm	
Y	18	kN/m ³	unit weight berm material	
W _{Berm}	873	kN / m	weight berm per m	
B. Pressure	50	kPa	bearing pressure under dead weight	
β	33	degrees	characteristic angle friction base material	
Mat. Factor	1.25		factor for angle base friction	
Design β	26	degrees	design angle friction base material	
Tan (β)	0.496			
Fhr (nb)	433		berm horizontal sliding resistance no uplift	
Fhr (b)	222		berm horizontal sliding resistance uplift	

LOADING

Y	9.81	kN/m ³	unit weight retained material
Depth of fill	5	m	equals height berm
Fb	49.05	kN/m ²	pressure
Fh	123	kN/m	horizontal force
Af	19.25	m ²	Area of peat over berm slope
Fv	188.8	kN / m	Load peat above berm slope
Fbv	-427	kN / m	buoyancy force

SUMMARY

		SLS		UPL			
		Unf. [kN]	FOS	kN	FOS		kN
SLIDING							
<i>Resisting Forces</i>							
Fhr (nb)		433	1.00	433	0.90	390	Horizontal sliding resistance assur
Fhr (b)		222	1.00	222	0.90	199	Horizontal sliding resistance assur
<i>Sliding Forces</i>							
Fh		123	1.00	123	1.00	123	Horizontal sliding force
Sliding	(nb)	3.53		3.53		3.18	>1 ok
	(b)	1.81		1.81		1.63	>1 ok
OVERTURNING							
<i>Resisting BM</i>							
Res BM (nb)		7594	1.00	7594	0.90	6835	Horizontal sliding resistance assur
Res BM (b)		3882	1.00	3882	0.90	3494	Horizontal sliding resistance assur
<i>Overturning</i>							
Ot BM (b)		-4745	1.00	-4745	1.00	-4745	Horizontal sliding force
Overturning	(nb)	61.93		61.93		55.74	>1 ok
	(b)	31.66		31.66		28.49	>1 ok

4.2.6 Main Spine – Conclusion

The assessment indicates that this section of the site is stable and was based on 51 peat assessment points along the road, as well as stability assessments at Peat Storage Area I, Borrow Pit A, Met Mast and bridge works.

The road was constructed along an existing forest track which has been in place for decades. It was widened by up to 2m but follows the original alignment. The upgraded wind farm road has been constructed to solid sub-formation. All peat containment berms are built on solid sub-formation and sized to provide the required safety margin in accordance with Eurocode 7

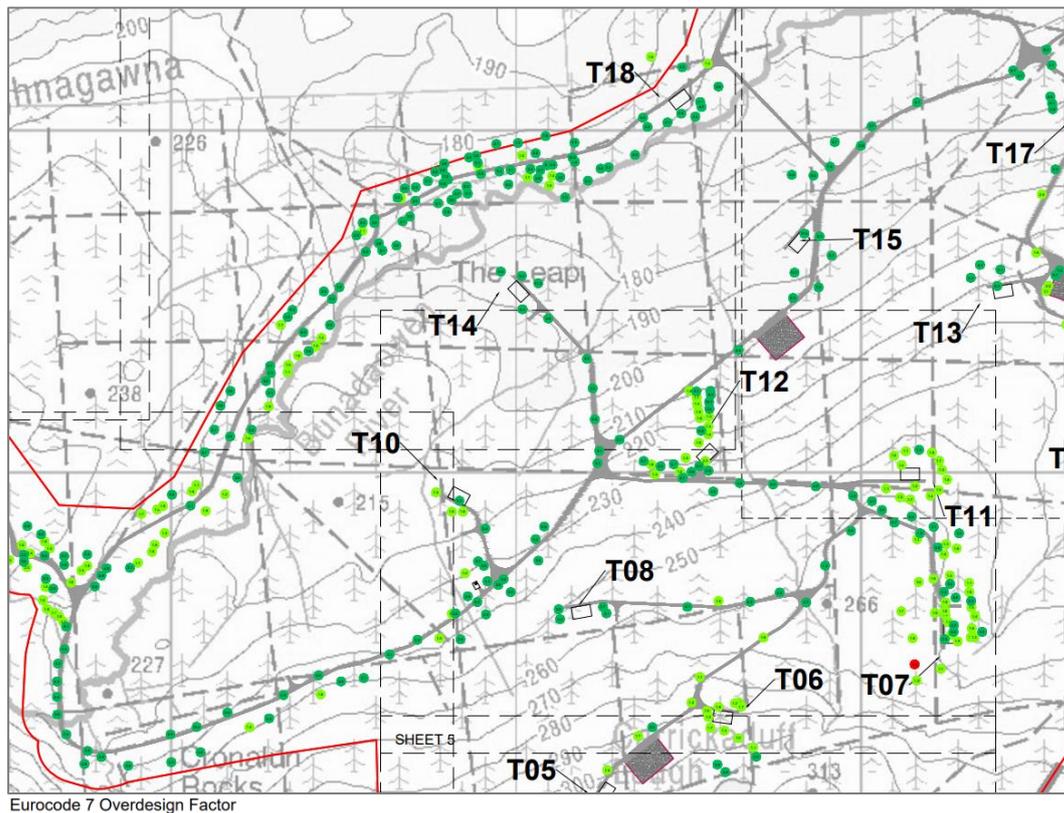


Figure 33 ODF results in this assessment section

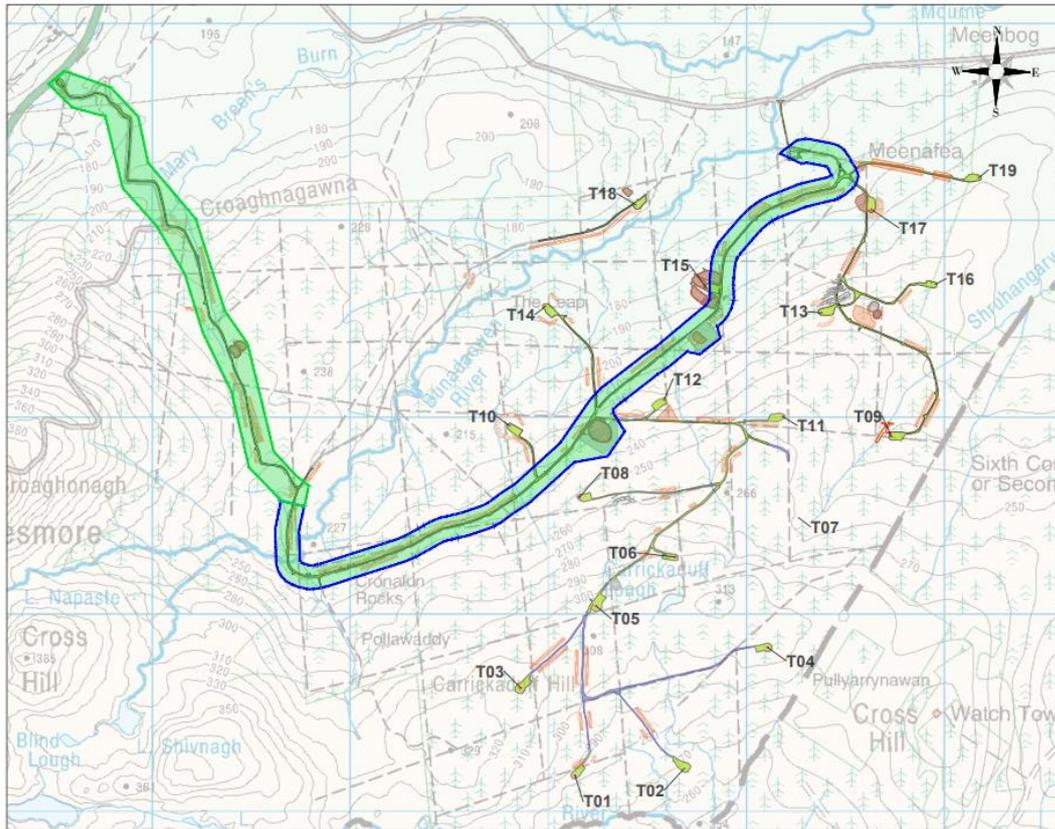


Figure 34 Outlined area has passed the assessment in this section

4.3 T5 (from T11 to T6) - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

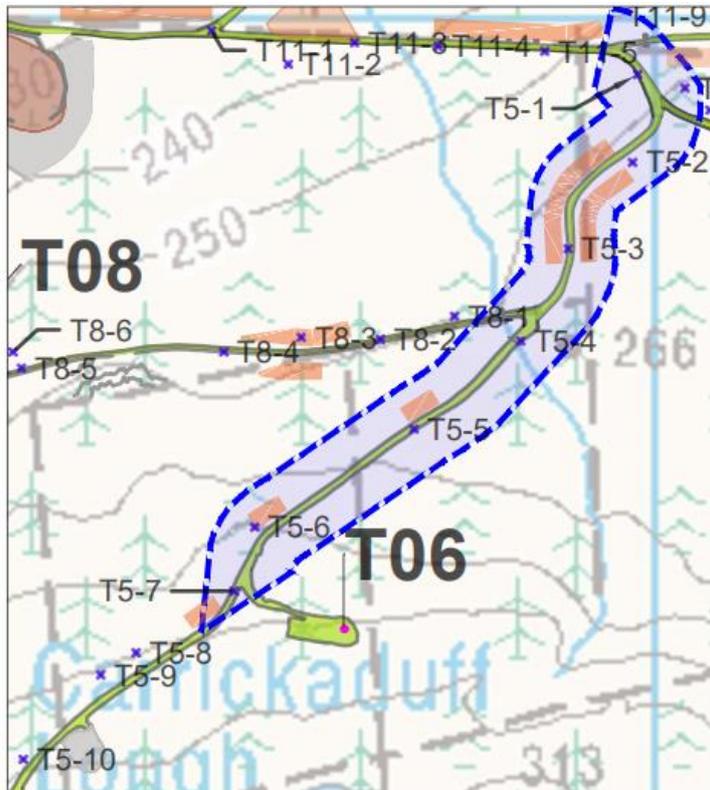


Figure 35 Section of T5 Road assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.4 along this section of road, values range from 1.09 to 4.3.

The assessment along this section of road was based on 10 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

This section of road was constructed along an existing forest track which has been in place for decades. The road was widened by up to 2m but follows the original alignment. The upgraded wind farm road has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m3)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	
T5-1	207980	385935	1.5	10	12	3.8	10	13.3	0.0	0.0	8.64	5.18	4.01	
T5-2	207974	385832	2.0	10	9	3.8	10	13.3	0.0	0.0	4.86	3.24	2.61	
T5-3	207899	385731	1.7	10	9	2.5	10	13.3	0.0	0.0	8.68	5.46	4.30	
T5-4	207844	385623	1.5	10	9	5.2	10	13.3	0.0	0.0	4.75	2.85	2.21	
T5-5	207720	385520	2.1	10	9	6	10	13.3	0.0	0.0	2.94	1.99	1.62	
T5-6	207535	385405	1.6	10	5	5.7	10	13.3	0.0	0.0	2.26	1.39	1.09	
T5-7	207511	385330	2.4	10	8	6	10	13.3	0.0	0.0	2.29	1.62	1.33	
T5-8	207397	385258	1.2	10	20	8.7	10	13.3	0.0	0.0	7.96	4.34	3.26	
T5-9	207356	385232	2.2	10	8	4.8	10	13.3	0.0	0.0	3.11	2.14	1.74	
T5-10	207266	385133	2.0	10	9.5	5.44	10	13.3	0.0	0.0	3.60	2.40	1.93	

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 4

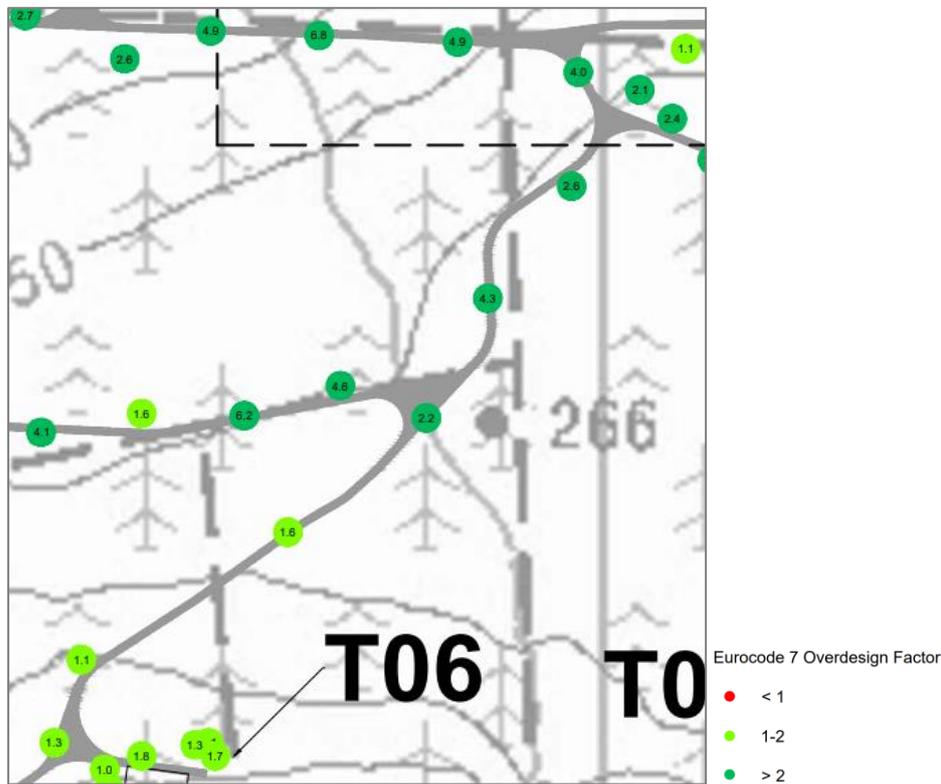


Figure 36 ODF results in this assessment section

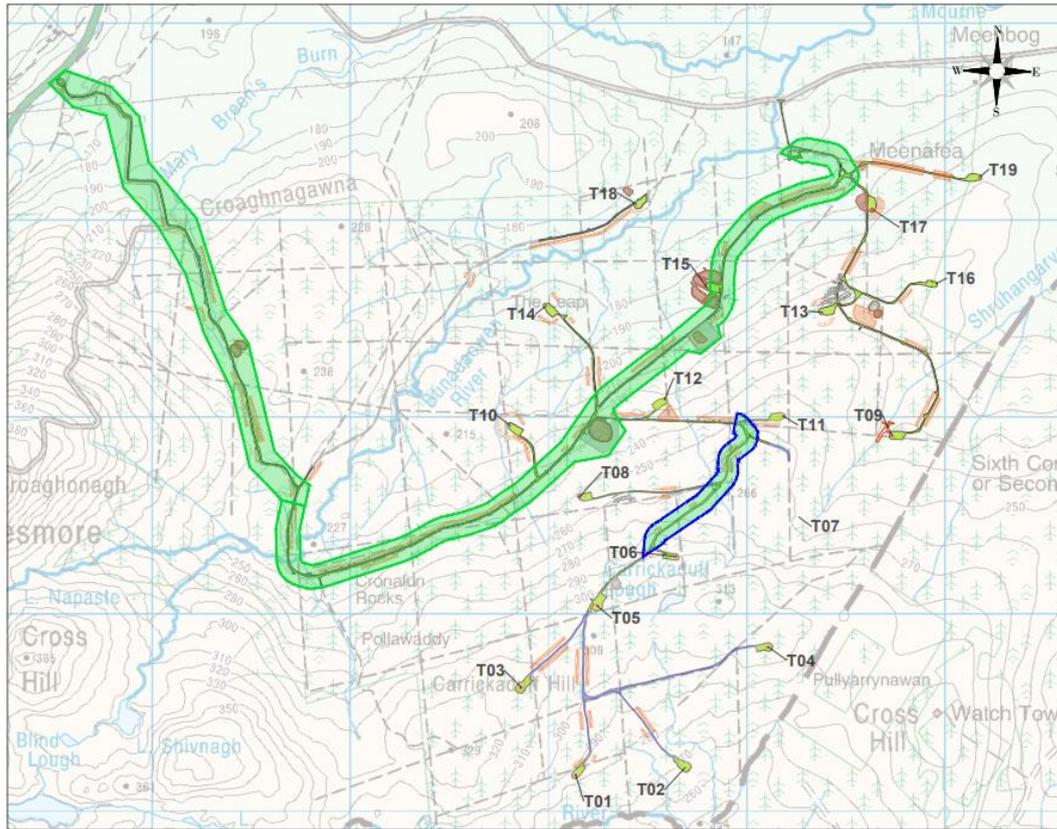


Figure 37 Outlined area has passed the assessment in this section

4.4 T6 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

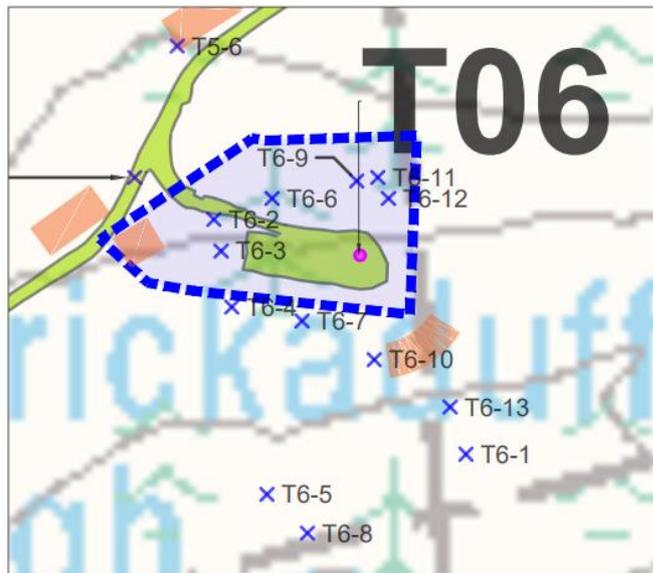


Figure 38 T6 peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 1.87, values range from 1.05 to 4.62.

The assessment along this section of road was based on 13 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The spur road and hardstanding has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T6-1	207699	385172	1.0	10	8	2.6	10	13.3	0.0	0.0	12.61	6.30	4.62
T6-2	207556	385306	1.3	10	4	5.2	10	13.3	0.0	0.0	2.43	1.38	1.05
T6-3	207560	385288	2.0	10	5	4.4	10	13.3	0.0	0.0	2.33	1.56	1.25
T6-4	207566	385256	2.3	10	6.5	3.8	10	13.3	0.0	0.0	3.05	2.13	1.74
T6-5	207586	385149	2.5	10	9	3.5	10	13.3	0.0	0.0	4.22	3.01	2.49
T6-6	207589	385318	1.7	10	7	4.8	10	13.3	0.0	0.0	3.53	2.22	1.75
T6-7	207606	385248	2.3	10	7	5.7	10	13.3	0.0	0.0	2.20	1.53	1.26
T6-8	207609	385127	1.8	10	5	1.5	10	13.3	0.0	0.0	7.58	4.87	3.87
T6-9	207637	385328	2.0	10	9	7.6	10	13.3	0.0	0.0	2.45	1.63	1.32
T6-10	207647	385226	2.0	10	4	4.2	10	13.3	0.0	0.0	1.96	1.30	1.05
T6-11	207649	385330	1.7	10	7	7.6	10	13.3	0.0	0.0	2.24	1.41	1.11
T6-12	207655	385318	0.5	10	7	7.6	10	13.3	0.0	0.0	7.63	2.54	1.71
T6-13	207690	385199	2.8	10	4.5	3.8	10	13.3	0.0	0.0	1.74	1.28	1.07

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS ≥ 1.0	Acceptable (Green)

Table 5

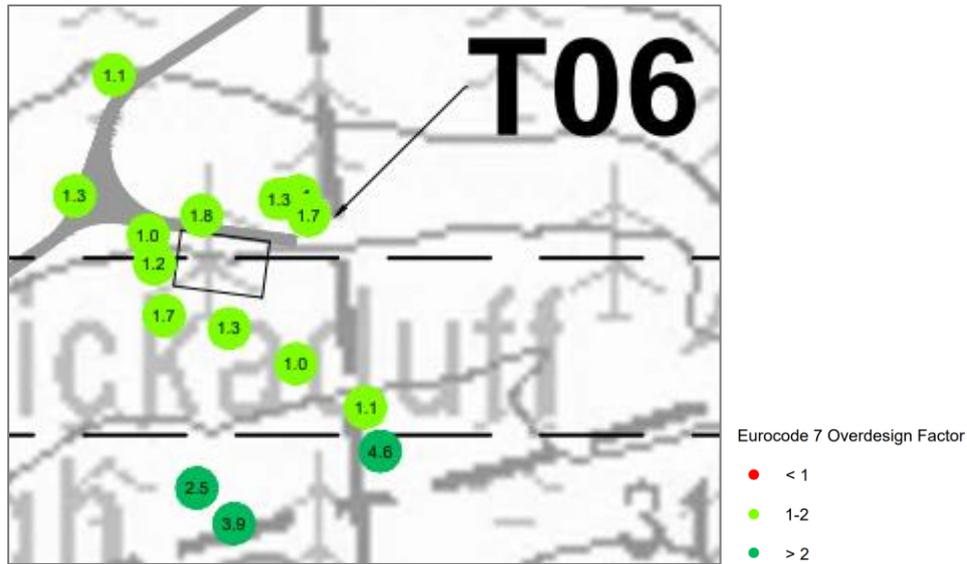


Figure 39 ODF results in this assessment section

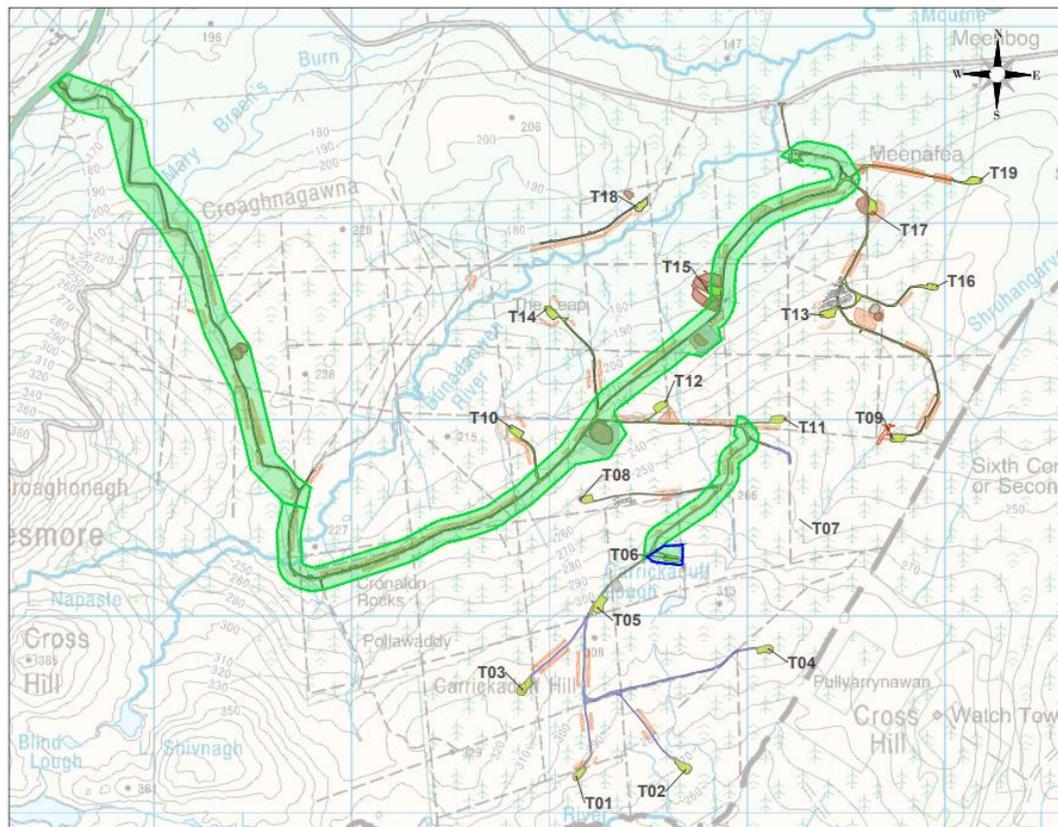


Figure 40 Outlined area has passed the assessment in this section

4.5 T8 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.



Figure 41 T8 peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.79, values range from 1.58 to 6.22.

The assessment in the vicinity of the T8 road and hardstanding was based on 8 assessment points. All of the infrastructure has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
T8-1	207767	385652	2.7	10	6.5	1.3	I	13.3	0.0	0.0	7.58	5.53	4.62
T8-2	207681	385625	0.9	10	23	5.8	II	13.3	0.0	0.0	18.16	8.60	6.22
T8-3	207589	385627	3.0	10	6	3.3	III	13.3	0.0	0.0	2.49	1.86	1.58
T8-4	207499	385610	1.8	10	11	3.1	IV	13.3	0.0	0.0	8.08	5.20	4.12
T8-5	207264	385591	1.7	10	10	5.7		13.3	0.0	0.0	4.25	2.68	2.11
T8-6	207254	385610.4	0.6	10	11	5.2		13.3	0.0	0.0	14.51	5.44	3.74
T8-7	207129	385573.6	1.2	10	21	6.8		13.3	0.0	0.0	10.63	5.80	4.36
T8-8	207125	385603	1.0	10	16	6.7		13.3	0.0	0.0	9.86	4.93	3.61

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 6

4.5.1 T8 Berm

This berm is located on the uphill side of T8 spur road, hardstand and foundation. This berm was constructed through a previous peat movement to enable access to the T8 turbine area and mitigate against further peat movement in this area. The peat movement was from T5/T6 area down toward the main site spine road (Spine Road SR) to the south of T10. The berm was extended from stable ground on the east side and continued through the peat movement area, to just beyond the turbine foundation at the west side. The berm design is included below along with a summary of the overdesign factors against sliding and overturning failure. Note that these calculations are carried out to Eurocode 7 IS EN 1997-1 with partial safety factors for loads and materials also applied.

T8 berm location indicated in blue:

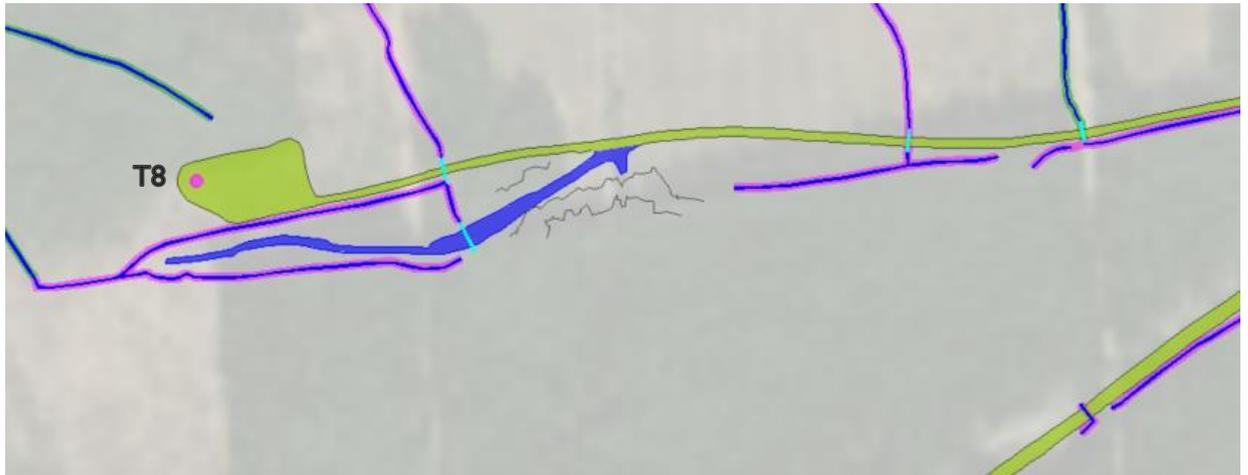


Figure 42 T8 Peat Stabilisation Berm plan

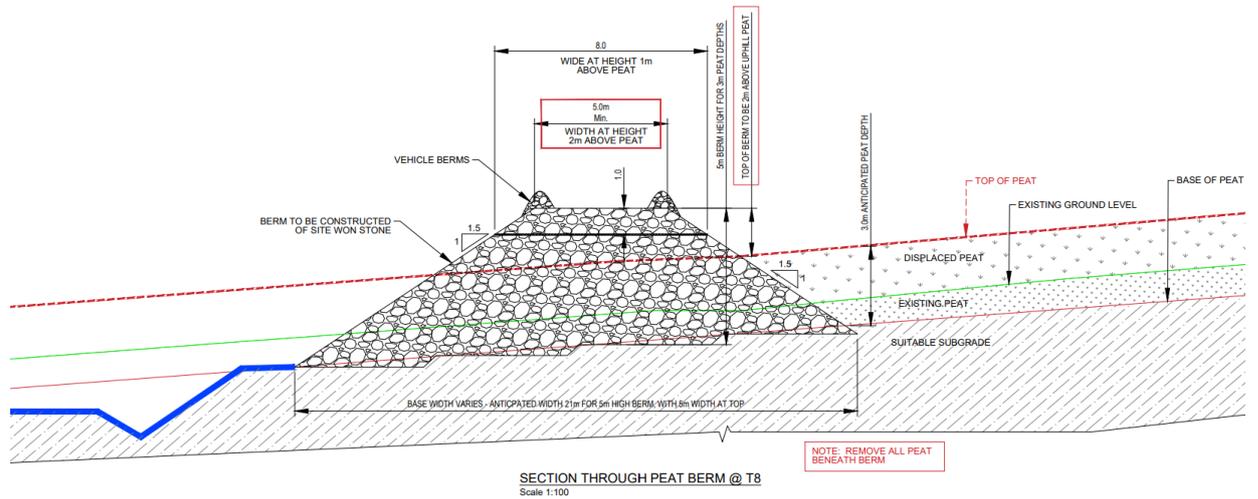
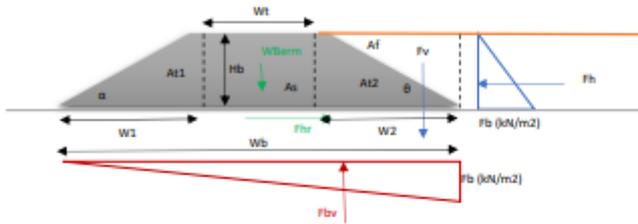


Figure 43 T8 Peat Stabilisation Berm section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - Intercept Berm above T8
ELEMENT: PEAT BERM
DATE: 24/06/2020
BY: COD/JS

BERM INFORMATION



Wt	5	m	width top of berm	
Hb	5	m	height of berm	
α	34	degrees	slope angle of berm downhill side	
θ	34	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2, \phi$ of 30° assumed
Tan (α)	0.675			
Tan (θ)	0.675			
W1	7.413	m	Base of triangle	
W2	7.413	m	Base of triangle	
Wb	19.83	m	Base width	
At1	18.532	m ²	Area of triangle1	
At2	18.532	m ²	Area of triangle1	
A _{berm}	69.0	m ²	Area of berm	

γ	22	kN/m ³	unit weight berm material
WBerm	1518	kN / m	weight berm per m
B. Pressure	77	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.496	
Fhr (nb)	754	berm horizontal sliding resistance no uplift
Fhr (b)	508	berm horizontal sliding resistance uplift

LOADING

γ	10	kN/m ³	unit weight retained material
Depth of fill	5	m	equals height berm
Fb	50	kN/m ²	pressure
Fh	125	kN/m	horizontal force
Af	18.53	m ²	Area of peat over berm slope
Fv	185.3	kN / m	Load peat above berm slope
Fbv	-496	kN / m	buoyancy force

SUMMARY

SLIDING

	Unf. [kN]	SLS		UPL		
		FOS	kN	FOS	kN	
Resisting Forces						
Fhr (nb)	754	1.00	754	0.90	678	Horizontal sliding resistance assur
Fhr (b)	508	1.00	508	0.90	457	Horizontal sliding resistance assur
Sliding Forces						
Fh	125	1.00	125	1.00	125	Horizontal sliding force
Sliding						
(nb)	6.03		6.03		5.43	>1 ok
(b)	4.06		4.06		3.65	>1 ok

OVERTURNING

	Unf. [kNm]	SLS		UPL		
		FOS	kNm	FOS	kNm	
Resisting BM						
Res BM (nb)	15048	1.00	15048	0.90	13543	Horizontal sliding resistance assur
Res BM (b)	10134	1.00	10134	0.90	9121	Horizontal sliding resistance assur
Overturning						
Ot BM (b)	-6343	1.00	-6343	1.00	-6343	Horizontal sliding force
Overturning						
(nb)	120.38		120.38		108.34	>1 ok
(b)	81.08		81.08		72.97	>1 ok

4.5.2 T8 – Conclusion

The assessment indicates that this section of the site is stable. The overdesign factor for the peat adjacent to the road and crane hardstanding is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.79, values range from 1.58 to 6.22.

The stabilising berm provided upslope of T8 to contain displaced peat has a high overdesign factor of 3.65 against sliding under the most onerous Eurocode limit state.

All of the infrastructure including the spur road, crane hardstanding, turbine foundation and peat containment berm have been constructed to solid sub-formation.

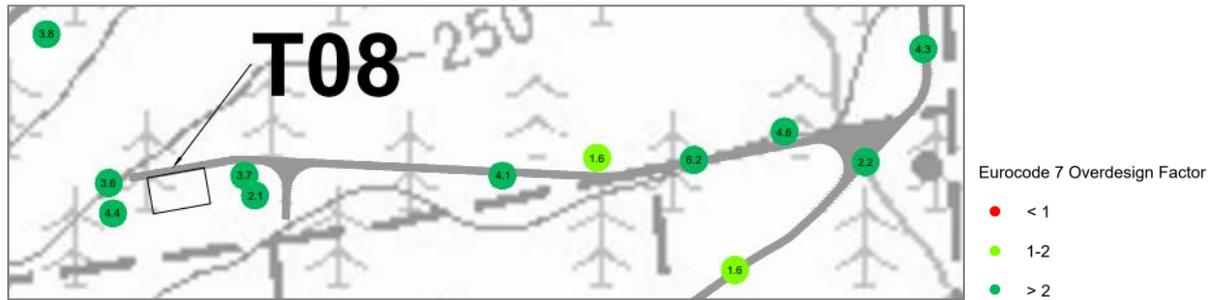


Figure 44 ODF results in this assessment section

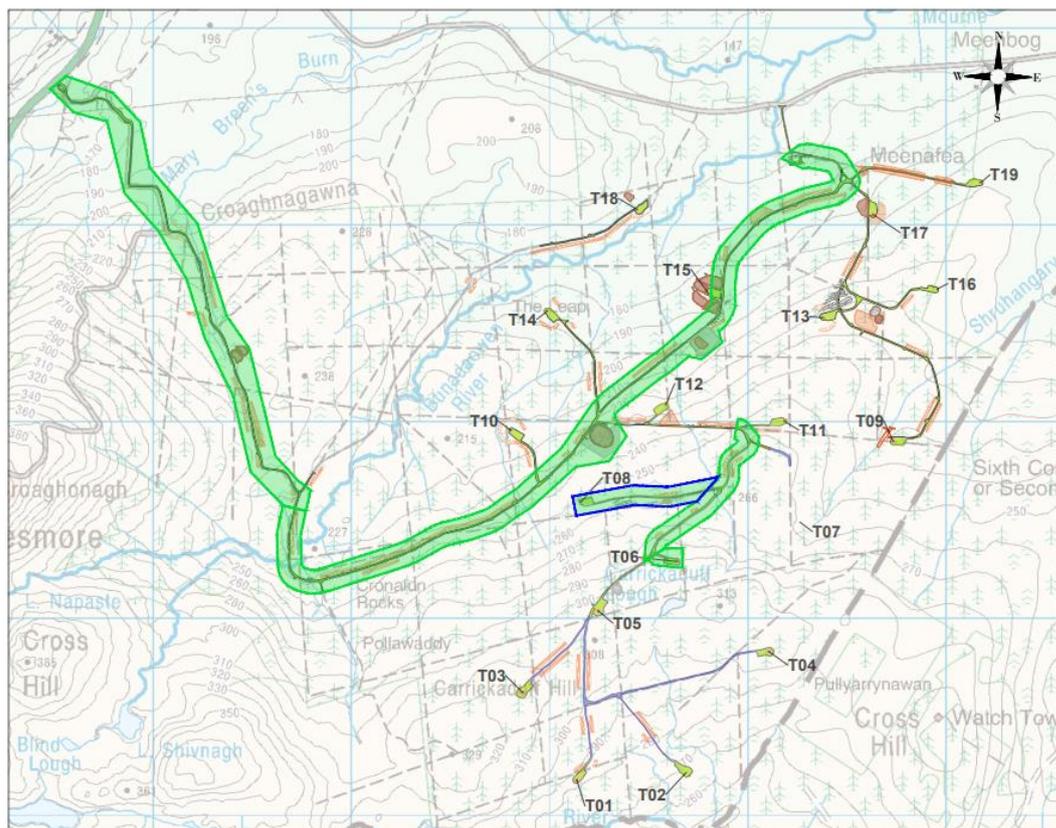


Figure 45 Outlined area has passed the assessment in this section

4.6 T9 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

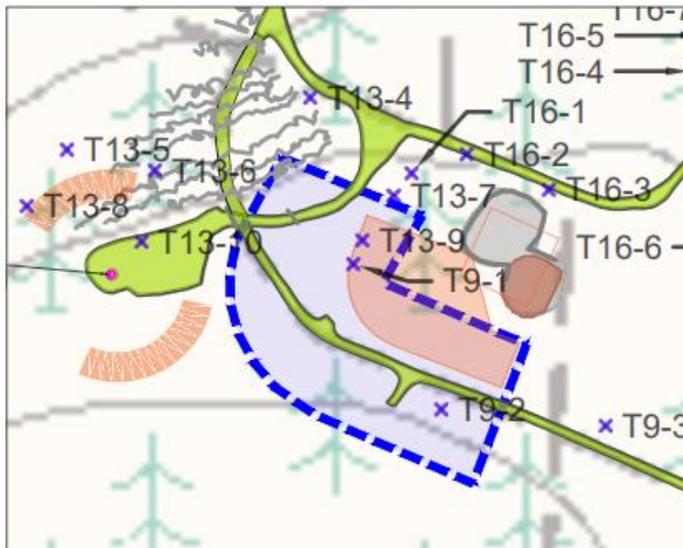


Figure 46 T9 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.75, values range from 1.65 to 12.0.

The assessment along this section of road was based on 15 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

This section of road was constructed along an existing forest track. The wind farm road has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
T9-1	208541	386533	1.0	10	7	6.3	10	13.3	0.0	0.0	4.58	2.29	1.68
T9-2	208600	386435	1.0	10	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65
T9-3	208710	386424	1.4	10	6	3.8	10	13.3	0.0	0.0	4.63	2.70	2.07
T9-4	208746	385837.5	0.8	10	20	2.7	10	13.3	0.0	0.0	37.95	16.87	12.00
T9-5	208792	385928	1.0	10	12	3.3	10	13.3	0.0	0.0	14.91	7.46	5.47
T9-6	208826	386375	0.9	10	8	2.4	10	13.3	0.0	0.0	15.18	7.19	5.20
T9-7	208853	385891	1.9	10	6.5	2.7	10	13.3	0.0	0.0	5.19	3.40	2.72
T9-8	208878	385968.5	0.9	10	10	2.9	10	13.3	0.0	0.0	15.71	7.44	5.38
T9-9	208888	385927	2.4	10	10	2.9	10	13.3	0.0	0.0	5.89	4.16	3.42
T9-10	208889	386015	1.8	10	7	1.5	10	13.3	0.0	0.0	10.62	6.82	5.41
T9-11	208936	386295	1.0	10	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65
T9-12	208937	385949	1.8	10	8.5	3.7	10	13.3	0.0	0.0	5.24	3.37	2.67
T9-13	208947	386094	1.9	10	8	3.3	10	13.3	0.0	0.0	5.23	3.43	2.74
T9-14	208949	386154	2.1	10	6	3.1	10	13.3	0.0	0.0	3.78	2.56	2.07
T9-15	208949	386054	1.7	10	6	3.3	10	13.3	0.0	0.0	4.39	2.76	2.17

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 7

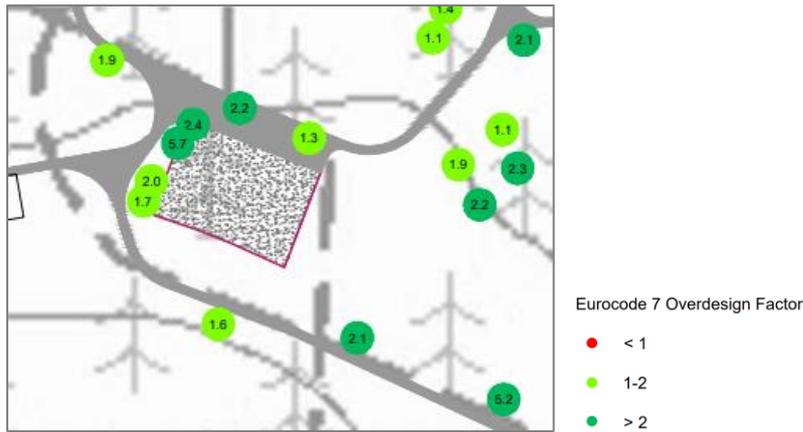


Figure 47 ODF results in this assessment section

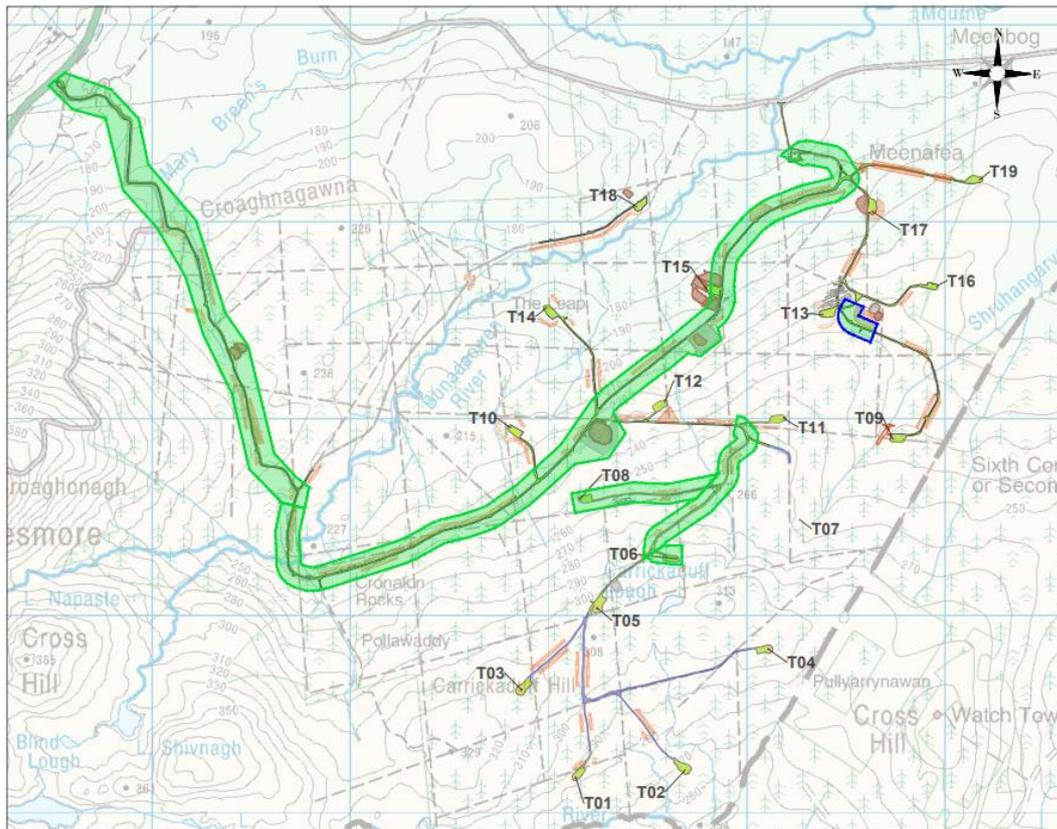


Figure 48 Outlined area has passed the assessment in this section

4.7 T10 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

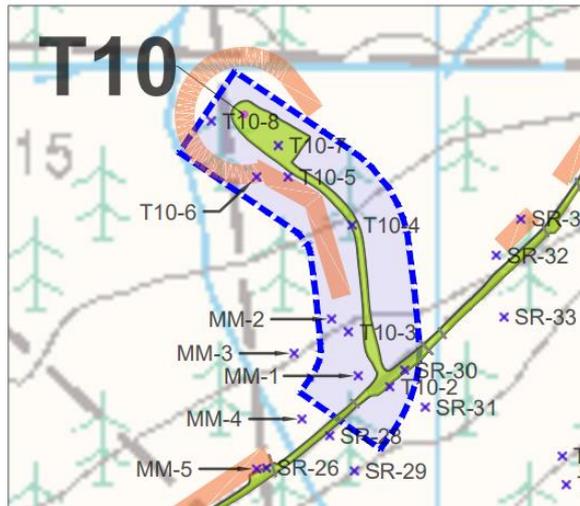


Figure 49 T10 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.52, values range from 1.29 to 3.76.

The assessment along this section of road was based on 8 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Locally higher peat deposition of 1.5m (15kPa) has been assessed, as shown on the table below.

The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T10-1	206779	385519	1.7	10	3	2.4	10	13.3	0.0	0.0	3.01	1.90	1.49
T10-2	206950	385674	1.8	10	9	2.9	10	13.3	0.0	0.0	7.07	4.54	3.61
T10-3	206908	385730	1.2	10	11	4.1	15	13.3	0.0	0.0	9.18	4.08	3.76
T10-4	206912	385839	1.2	10	12	5	15	13.3	0.0	0.0	8.23	3.66	3.37
T10-5	206847	385888	1.8	10	3	1.9	15	13.3	0.0	0.0	3.59	1.96	1.83
T10-6	206815	385888	1.9	10	3	2.1	15	13.3	0.0	0.0	3.08	1.72	1.61
T10-7	206837	385920	1.9	10	9	3.2	10	13.3	0.0	0.0	6.07	3.98	3.18
T10-8	206769	385945	2.0	10	2	1.7	15	13.3	0.0	0.0	2.41	1.38	1.29

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 8

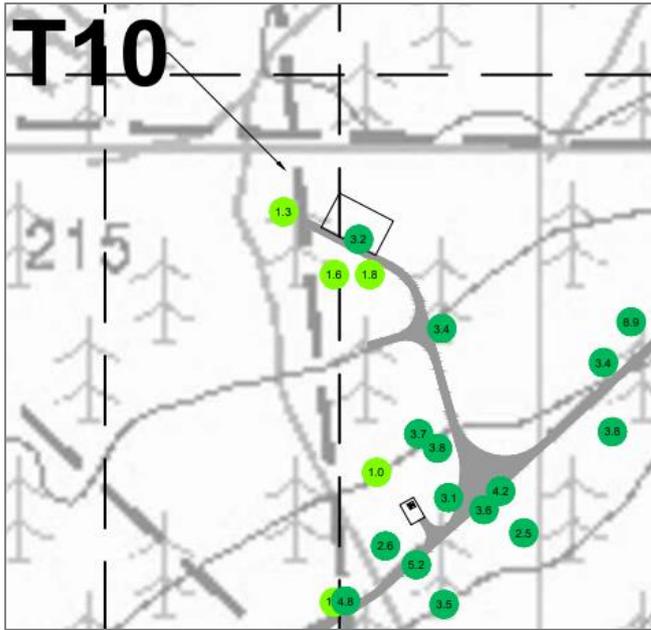


Figure 50 ODF results in this assessment section

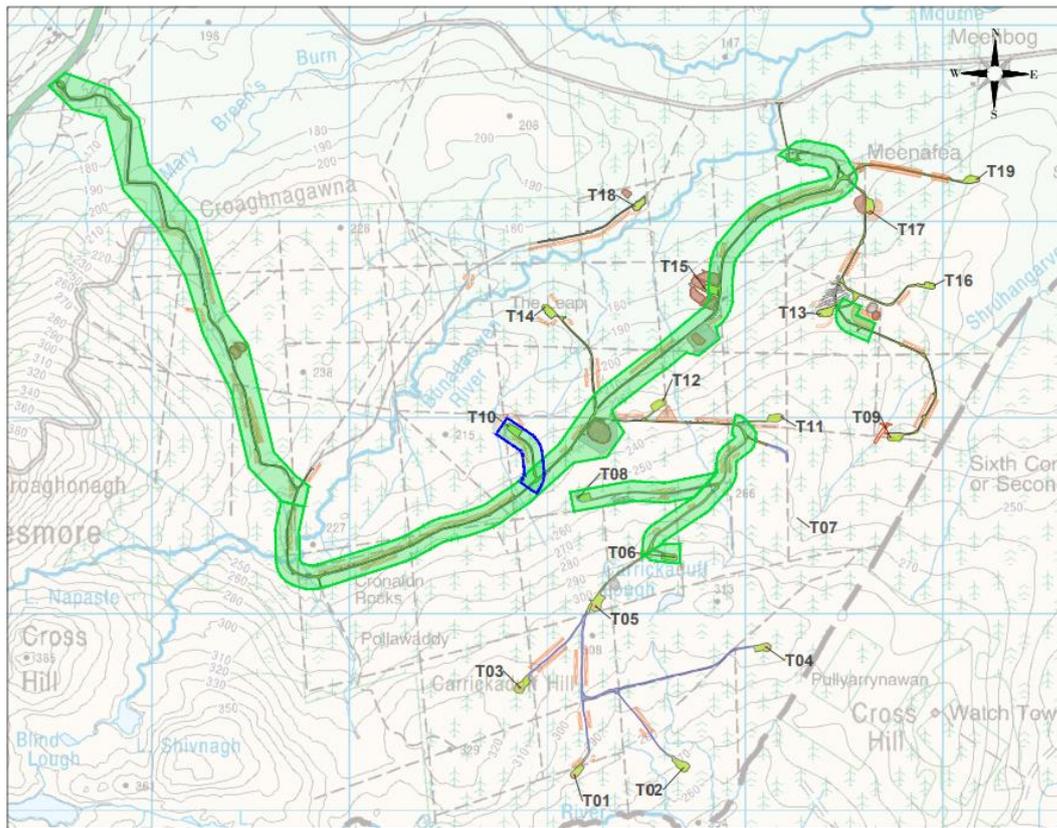


Figure 51 Outlined area has passed the assessment in this section

4.8 T11 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

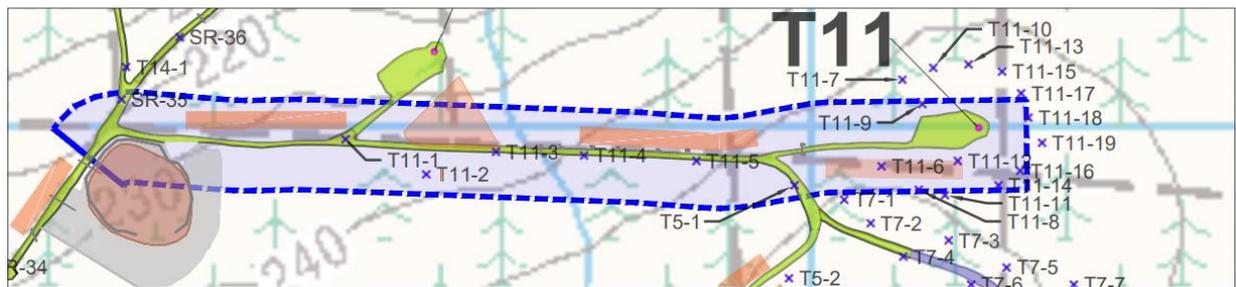


Figure 52 T11 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.25, values range from 1.08 to 6.83.

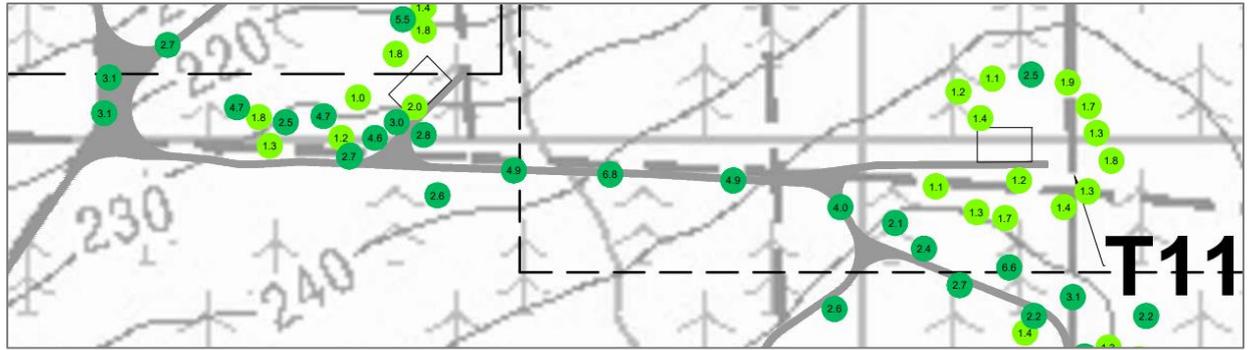
The assessment along this section of road was based on 19 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T11-1	207485	385986	1.9	10	9	3.8	10	13.3	0.0	0.0	5.12	3.35	2.68
T11-2	207574	385947	1.9	10	12	5.2	10	13.3	0.0	0.0	5.00	3.27	2.62
T11-3	207651	385972	1.8	10	11	2.6	10	13.3	0.0	0.0	9.63	6.19	4.91
T11-4	207748	385968	1.5	10	14	2.6	10	13.3	0.0	0.0	14.71	8.83	6.83
T11-5	207872	385962	1.5	10	10	2.6	10	13.3	0.0	0.0	10.51	6.30	4.88
T11-6	208076	385956	2.9	10	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08
T11-7	208099	386052	2.1	10	3.5	3.1	10	13.3	0.0	0.0	2.20	1.49	1.21
T11-8	208117	385930	3.4	10	4	2.4	10	13.3	0.0	0.0	2.01	1.55	1.33
T11-9	208121	386025	2.5	10	5	3.6	10	13.3	0.0	0.0	2.28	1.63	1.35
T11-10	208133	386065	2.9	10	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08
T11-11	208146	385924	4.0	10	3.5	1.5	10	13.3	0.0	0.0	2.39	1.91	1.67
T11-12	208160	385962	3.1	10	5.5	4	10	13.3	0.0	0.0	1.82	1.38	1.17
T11-13	208172	386069	1.7	10	6	2.9	10	13.3	0.0	0.0	4.99	3.14	2.47
T11-14	208205	385935	2.7	10	4	2.6	10	13.3	0.0	0.0	2.34	1.70	1.42
T11-15	208209	386061	2.6	10	6	3	10	13.3	0.0	0.0	3.15	2.28	1.89
T11-16	208229	385951	3.2	10	4	2.6	10	13.3	0.0	0.0	1.97	1.50	1.28
T11-17	208230	386037	2.0	10	6	3.8	10	13.3	0.0	0.0	3.24	2.16	1.74
T11-18	208238	386010	2.3	10	4	3.1	10	13.3	0.0	0.0	2.30	1.60	1.31
T11-19	208253	385982	3.7	10	5	2.1	10	13.3	0.0	0.0	2.64	2.08	1.80

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 9



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

Figure 53 ODF results in this assessment section

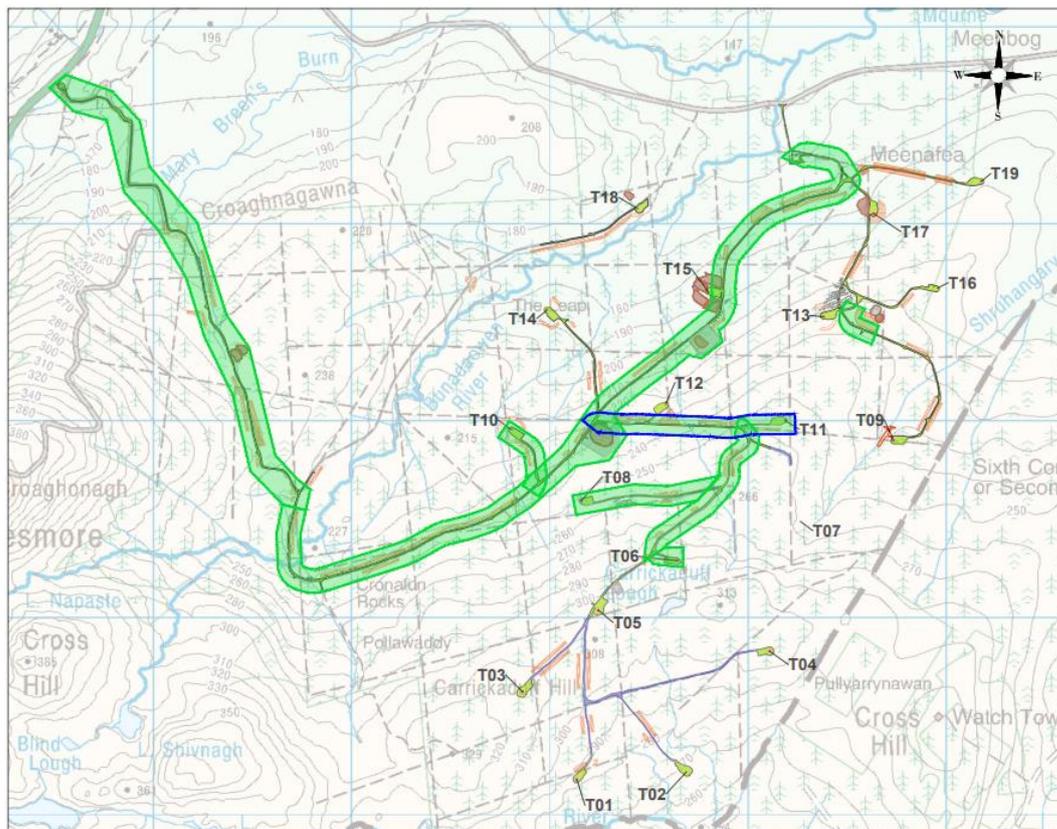


Figure 54 Outlined area has passed the assessment in this section

4.9 T12 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

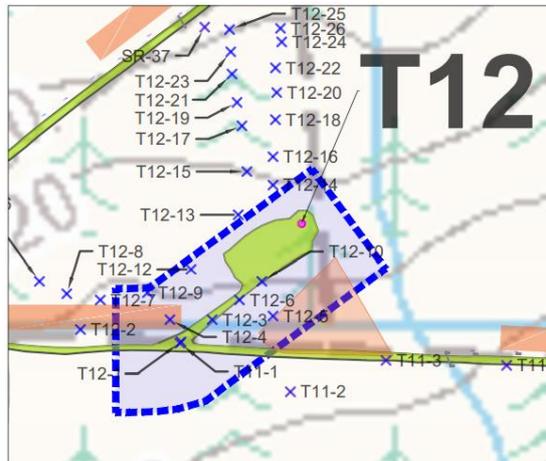


Figure 55 T12 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.02, values range from 1.02 to 10.67.

The assessment along this section of road was based on 26 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T12-1	207486	385987	1.9	10	9	4.6	10	13.3	0.0	0.0	4.23	2.77	2.22
T12-2	207405	385997	1.0	10	5	5.7	10	13.3	0.0	0.0	3.61	1.81	1.32
T12-3	207511	386005	1.4	10	13	3.7	10	13.3	0.0	0.0	10.30	6.01	4.61
T12-4	207477	386005	2.2	10	5.5	4.8	10	13.3	0.0	0.0	2.14	1.47	1.20
T12-5	207560	386008	0.9	10	10.5	5.8	10	13.3	0.0	0.0	8.29	3.93	2.84
T12-6	207533	386021	1.9	10	13	4.9	10	13.3	0.0	0.0	5.74	3.76	3.01
T12-7	207421	386021	1.7	10	8.5	4.1	10	13.3	0.0	0.0	5.01	3.15	2.48
T12-8	207394	386026	1.6	10	6	4.1	10	13.3	0.0	0.0	3.76	2.31	1.81
T12-9	207459	386027	0.8	10	11	3.8	10	13.3	0.0	0.0	14.85	6.60	4.70
T12-10	207551	386036	1.5	10	8	5.1	10	13.3	0.0	0.0	4.30	2.58	2.00
T12-11	207372	386036	0.5	10	20	7.9	10	13.3	0.0	0.0	20.99	7.00	4.71
T12-12	207494	386046	1.1	10	2.4	3.4	10	13.3	0.0	0.0	2.63	1.38	1.02
T12-13	207532	386090	1.8	10	6	3.9	10	13.3	0.0	0.0	3.51	2.26	1.79
T12-14	207560	386114	1.9	10	11.5	7.4	10	13.3	0.0	0.0	3.38	2.22	1.77
T12-15	207539	386125	1.1	10	22	5.8	10	13.3	0.0	0.0	14.21	7.44	5.52
T12-16	207560	386137	1.4	10	5	4.7	10	13.3	0.0	0.0	3.12	1.82	1.40
T12-17	207535	386162	1.4	10	7	5.7	10	13.3	0.0	0.0	3.61	2.11	1.62
T12-18	207562	386167	1.6	10	5	4.8	10	13.3	0.0	0.0	2.68	1.65	1.29
T12-19	207531	386181	2.0	10	8	4.6	10	13.3	0.0	0.0	3.57	2.38	1.92
T12-20	207563	386189	1.8	10	7	3.1	10	13.3	0.0	0.0	5.14	3.31	2.62
T12-21	207527	386204	1.9	10	4.5	3.6	10	13.3	0.0	0.0	2.70	1.77	1.41
T12-22	207562	386209	0.7	10	24	3.8	10	13.3	0.0	0.0	37.03	15.25	10.67
T12-23	207526	386222	2.1	10	6	3.8	10	13.3	0.0	0.0	3.09	2.09	1.69
T12-24	207567	386230	1.1	10	19	4.4	10	13.3	0.0	0.0	16.13	8.45	6.27

T12-25	207525	386240	1.0	10	30	11.3	10	13.3	0.0	0.0	11.15	5.58	4.09
T12-26	207566	386241	0.4	10	18	7.8	10	13.3	0.0	0.0	23.91	6.83	4.49

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS ≥ 1.0	Acceptable (Green)

Table 10

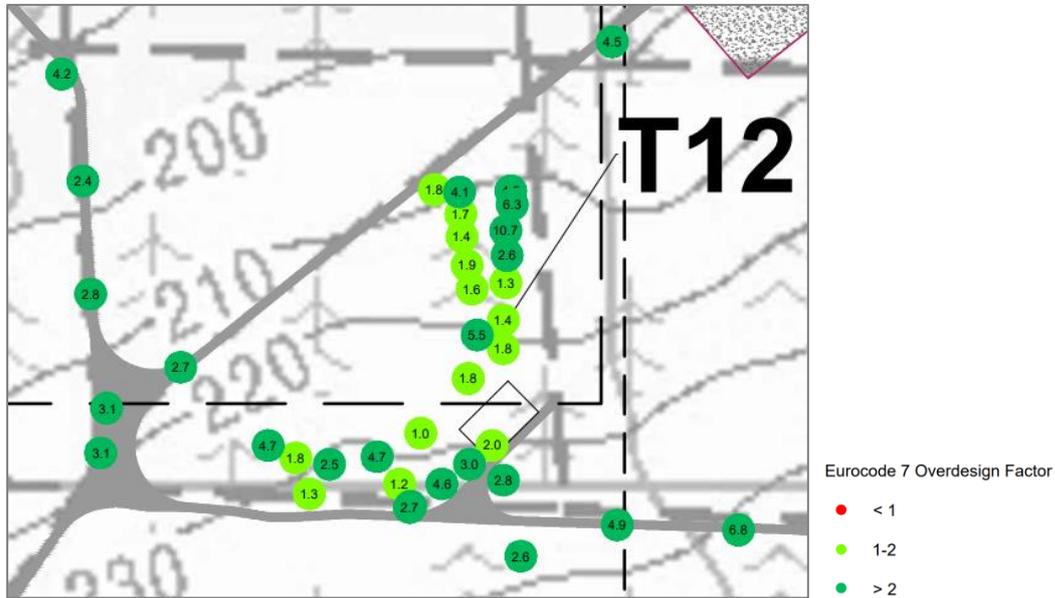


Figure 56 ODF results in this assessment section

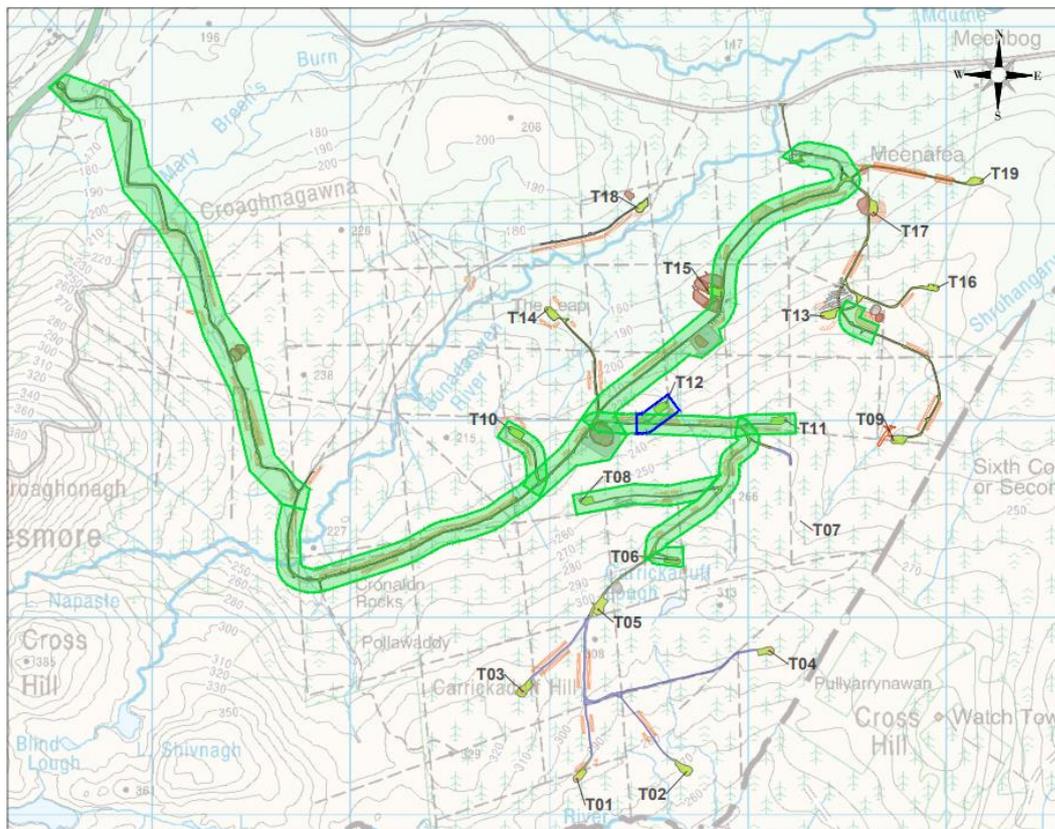


Figure 57 Outlined area has passed the assessment in this section

4.10 T13 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

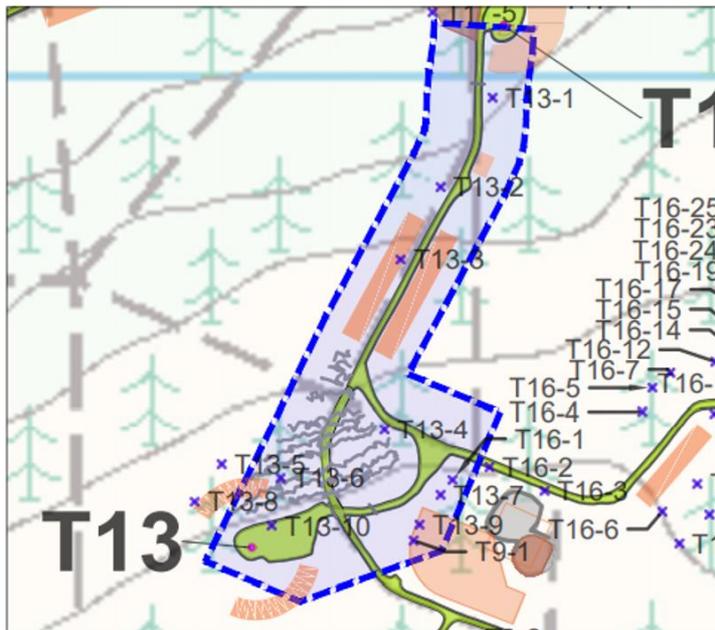


Figure 58 T13 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 4.39, values range from 1.91 to 8.3.

The assessment along this section of road was based on 10 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Locally higher peat deposition of 1.5m (15kPa) has been assessed, as shown on the table below.

The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	
T13-1	208620	386979	2.0	10	18	4.4	10	13.3	0.0	0.0	8.40	5.60	4.51	
T13-2	208568	386889	1.0	10	10	3.8	15	13.3	0.0	0.0	10.80	4.32	3.96	
T13-3	208528	386816	1.6	10	8	5	15	13.3	0.0	0.0	4.11	2.12	1.98	
T13-4	208512	386645	0.5	10	8	7.8	10	13.3	0.0	0.0	8.50	2.83	1.91	
T13-5	208349	386610	0.8	10	16	3.2	10	13.3	0.0	0.0	25.63	11.39	8.11	
T13-6	208408	386596	0.9	10	7.5	3.8	10	13.3	0.0	0.0	9.00	4.26	3.08	
T13-7	208568	386579	1.2	10	9	2.2	10	13.3	0.0	0.0	13.97	7.62	5.72	
T13-8	208322	386572	1.1	10	10	3.3	10	13.3	0.0	0.0	11.30	5.92	4.39	
T13-9	208547	386549	1.3	10	7	4.8	10	13.3	0.0	0.0	4.61	2.61	1.98	
T13-10	208399	386548	0.8	10	25	5	10	13.3	0.0	0.0	27.42	11.75	8.30	

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 11

4.10.1 Borrow Pit B

Borrow Pit B (also referred to as Borrow Pit 3 in the planning documents) is located between T13 and T16. Two pits were previously excavated into existing ground on the eastern side of the borrow pit area and these were subsequently used to store excavated peat. When works resume, it is proposed to increase the holding capacity of the northern peat cell by raising a berm along the northern edge of the cell (indicated on the section below). A berm calculation has been included below. Details are included on drawing MNBG d021.16.1.

The area to the south and west of the peat cells was used as a peat side-casting area, however when works resume, this area will be used as a borrow pit and for further peat storage cells.

This area is bounded by solids roads to T9, T13 and T16 and stability assessment of the peat in this area is covered under the assessment for those roads. The stability assessment of the peat indicates an adequate safety margin in this area.



Figure 59 Borrow Pit B plan details

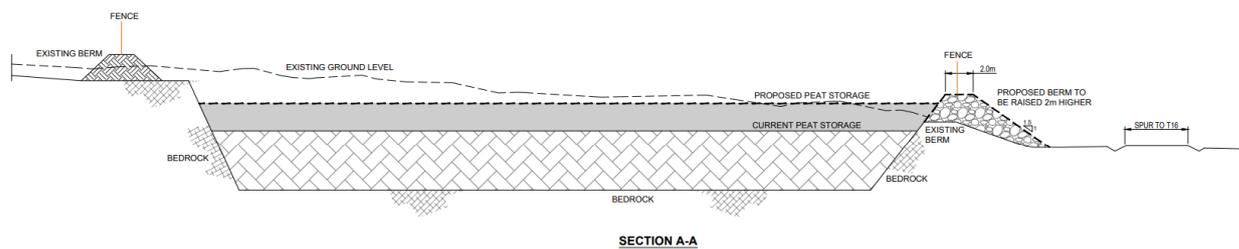
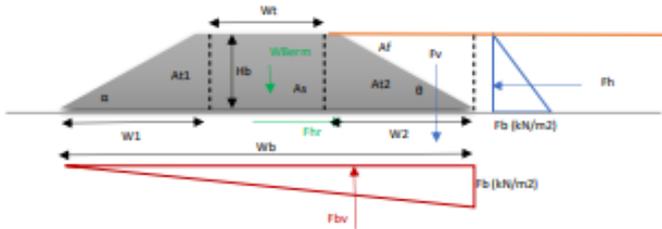


Figure 60 Borrow Pit B illustrative section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - Borrow Pit B Peat Storage
ELEMENT: PEAT BERM
DATE: 28/01/2021
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	4	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	6.159	m	Base of triangle	
W2	6.159	m	Base of triangle	
Wb	14.32	m	Base width	
At1	12.319	m ²	Area of triangle1	
At2	12.319	m ²	Area of triangle1	
A _{berm}	32.638	m ²	Area of berm	

γ	18	kN/m ³	unit weight berm material
W _{Berm}	587	kN / m	weight berm per m
B. Pressure	41	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	25	degrees	design angle friction base material

Tan (β)	0.496	
Fhr (nb)	292	berm horizontal sliding resistance no uplift
Fhr (b)	152	berm horizontal sliding resistance uplift

LOADING

γ	9.81	kN/m ³	unit weight retained material
Depth of fill	4	m	equals height berm
Fb	39.24	kN/m ²	pressure
Fh	78	kN/m	horizontal force
Af	12.32	m ²	Area of peat over berm slope
Fv	120.8	kN / m	Load peat above berm slope
Fbv	-281	kN / m	buoyancy force

SUMMARY

	Unf. [kN]	SLS		UPL		
		FOS	kN	FOS	kN	
SLIDING						
<i>Resisting Forces</i>						
Fhr (nb)	292	1.00	292	0.90	262	Horizontal sliding resistance assur
Fhr (b)	152	1.00	152	0.90	137	Horizontal sliding resistance assur
<i>Sliding Forces</i>						
Fh	78	1.00	78	1.00	78	Horizontal sliding force
Sliding (nb)	3.72		3.72		3.34	>1 ok
(b)	1.94		1.94		1.75	>1 ok

	Unf. [kNm]	SLS		UPL		
		FOS	kNm	FOS	kNm	
OVERTURNING						
<i>Resisting BM</i>						
Res BM (nb)	4206	1.00	4206	0.90	3785	Horizontal sliding resistance assur
Res BM (b)	2195	1.00	2195	0.90	1975	Horizontal sliding resistance assur
<i>Overturing</i>						
Ot BM (b)	-2577	1.00	-2577	1.00	-2577	Horizontal sliding force
Overturing (nb)	53.59		53.59		48.23	>1 ok
(b)	27.96		27.96		25.17	>1 ok

4.10.2 T13 – Conclusion

The assessment indicates that this section of the site is stable. The overdraft factor for the peat adjacent to the road and crane hardstanding is in excess of 1.0, as required to comply with Eurocode 7. The average overdraft factor is 4.39, values range from 1.91 to 8.3.

All of the infrastructure including the road, crane hardstanding, turbine foundation and borrow pit peat containment berm have been constructed to solid sub-formation.

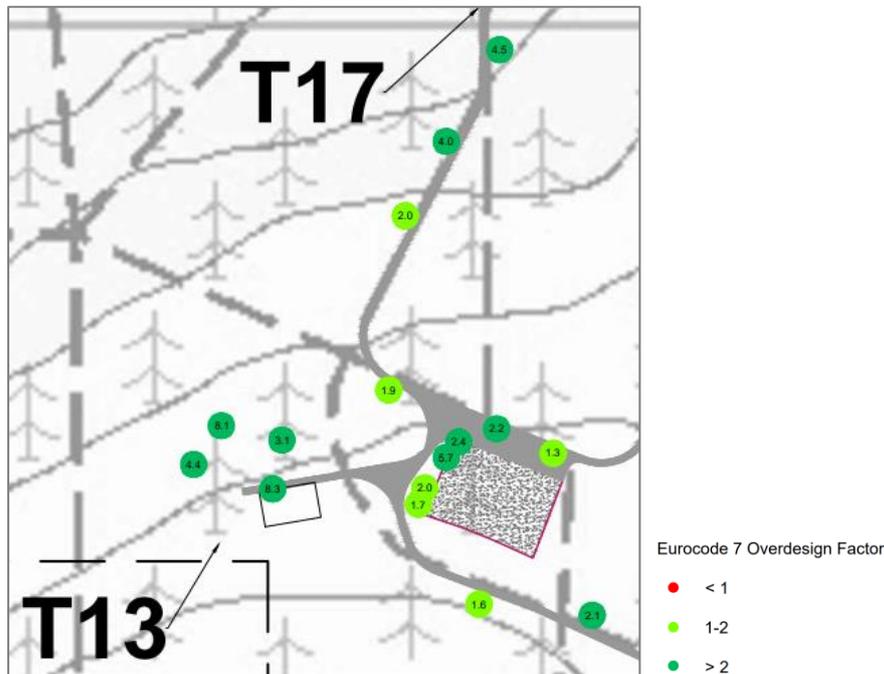


Figure 61 ODF results in this assessment section

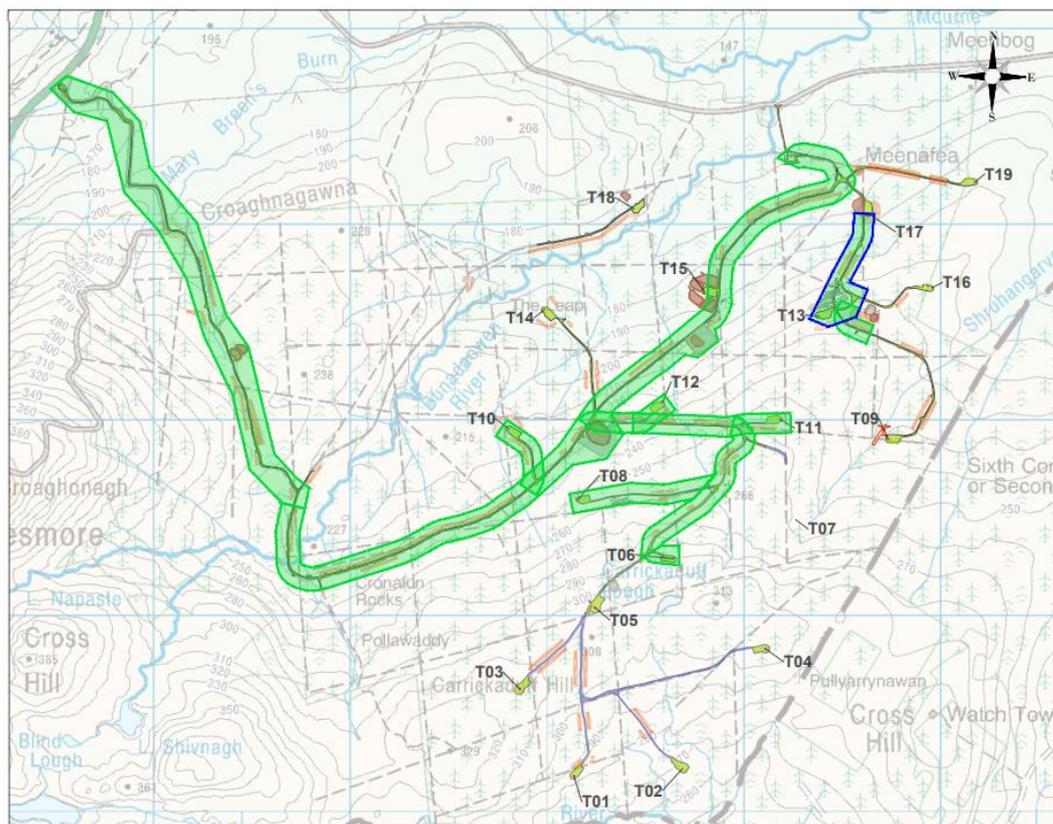


Figure 62 Outlined area has passed the assessment in this section

4.11 T14 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.



Figure 63 T14 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 5.49, values range from 2.37 to 10.25.

The assessment along this section of road was based on 9 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
T14-1	207243	386066	1.6	10	14	5.6	10	13.3	0.0	0.0	6.44	3.96	3.09
T14-2	207230	386158	2.0	10	9	3.5	10	13.3	0.0	0.0	5.27	3.52	2.83
T14-3	207224	386249	1.0	10	12	7.7	10	13.3	0.0	0.0	6.46	3.23	2.37
T14-4	207207	386335	2.7	10	13	2.9	10	13.3	0.0	0.0	6.81	4.97	4.15
T14-5	207095	386453	1.6	10	8.5	2.3	10	13.3	0.0	0.0	9.46	5.82	4.55
T14-6	207020	386480	0.8	10	16	4.1	10	13.3	0.0	0.0	20.03	8.90	6.34
T14-7	207066	386556	1.5	10	21	2.6	10	13.3	0.0	0.0	22.07	13.24	10.25
T14-8	207018	386578	1.1	10	26	4	10	13.3	0.0	0.0	24.26	12.71	9.43
T14-9	206957	386590	1.2	10	16	3.5	10	13.3	0.0	0.0	15.63	8.53	6.40

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 12

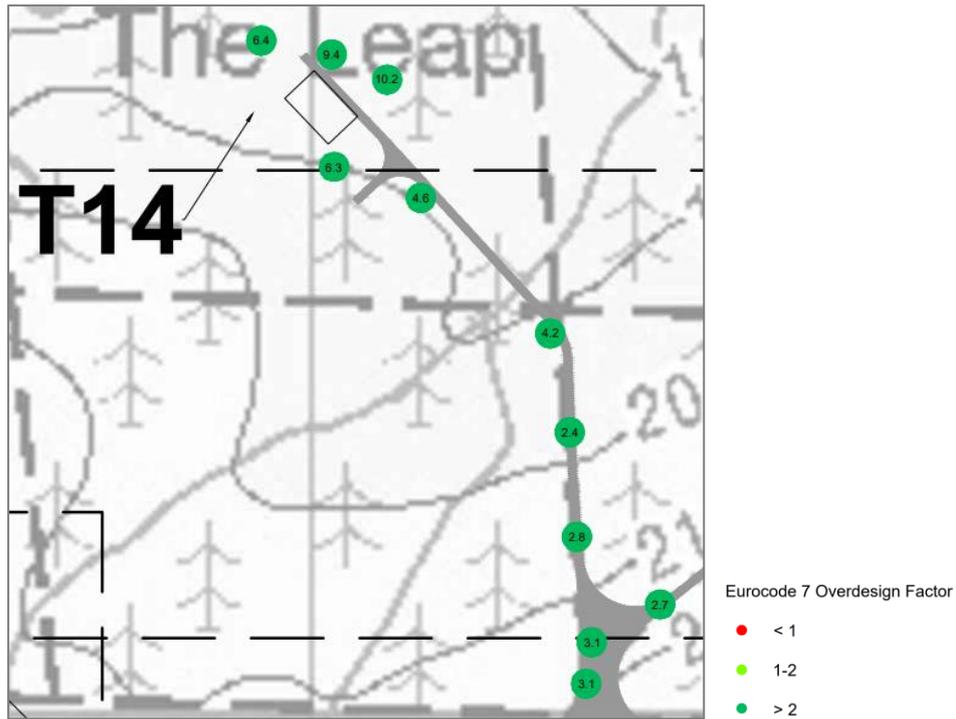


Figure 64 ODF results in this assessment section

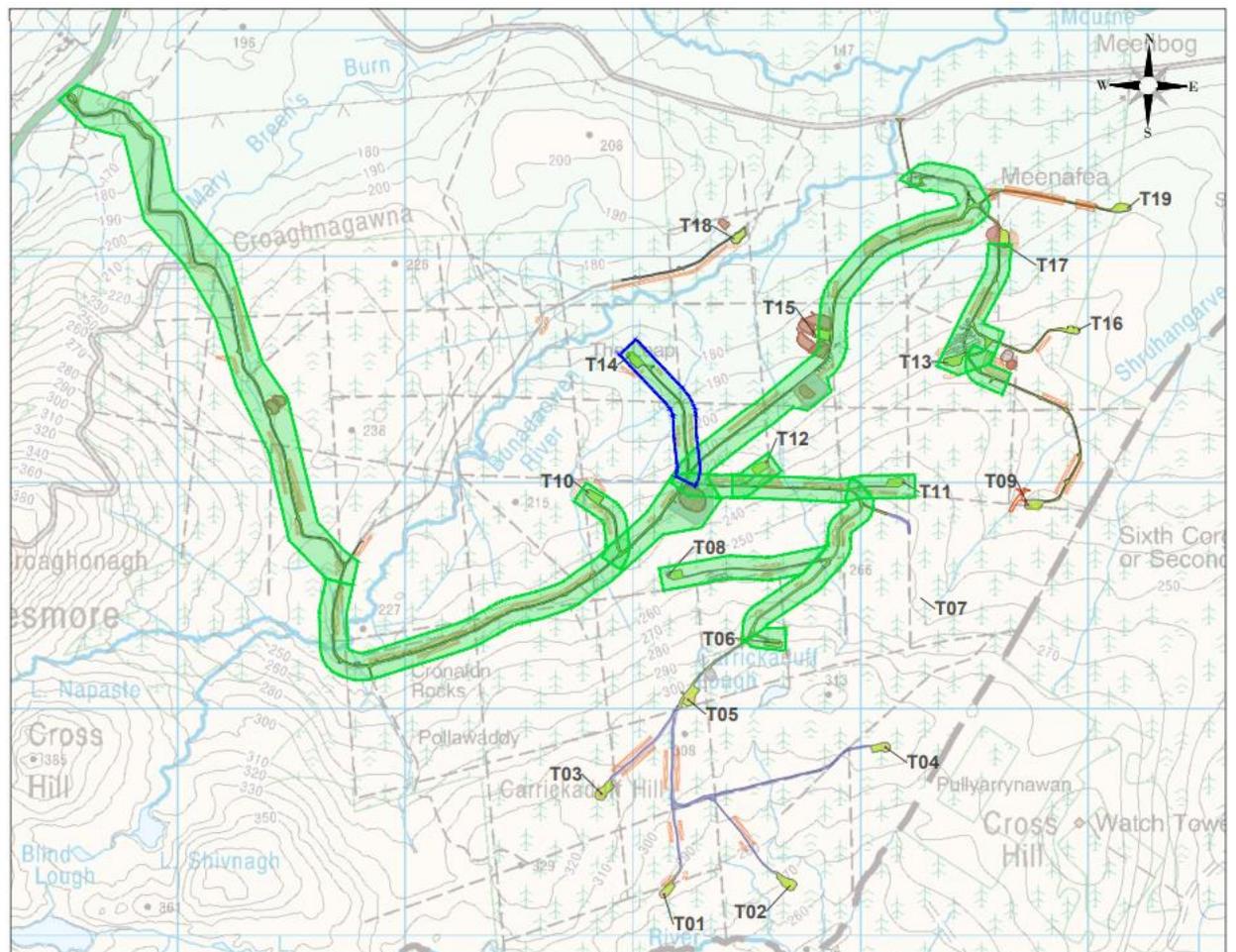


Figure 65 Outlined area has passed the assessment in this section

4.12 T15 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

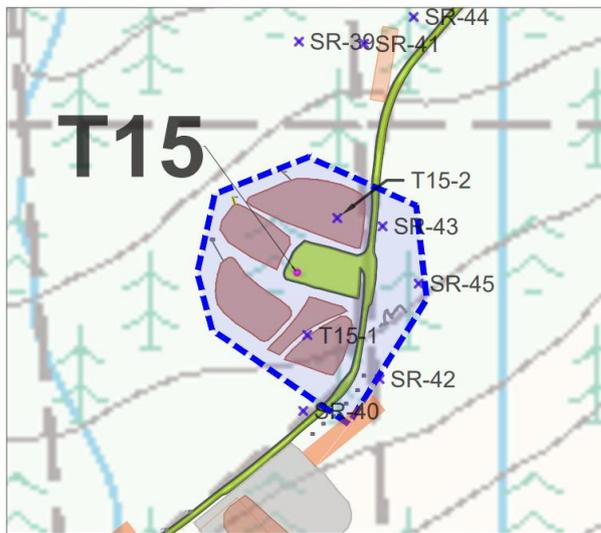


Figure 66 T15 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The overdesign factors are 10.66 and 17.01 in this local area.

The crane hardstanding and other infrastructure has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T15-1	207810	386587	0.5	10	22	3.8	10	13.3	0.0	0.0	47.53	15.84	10.66
T15-2	207839	386701	0.8	10	21	2	10	13.3	0.0	0.0	53.76	23.89	17.01

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 13

4.12.1 Peat Storage Cells at T15

These peat storage cells are located to the north and south of turbine T15. The cells were formed by constructing berms to contain areas of sloping ground to the west of the site spine road. Note that Cell B has not been constructed to date as a peat cell, but remains a potential peat storage area if required. Cell A is bounded on all sides by a berm and the site road to the east. Cell C is bounded on the north, east and west sides by berms. The berms, road and hardstand are constructed to solid formation. Minor settlement and some cracking of the berm material was noted on site along some sections of the berms. Monitoring posts were set up in these areas and additional material will be placed to increase the as-built berm size in these areas, no further signs of cracking were noted since monitoring began. A berm calculation has been included below to demonstrate the stability of the cells. Details of this peat cell are included on drawing MNBG d021.15.1. The stability assessment of the peat indicates an adequate safety margin in this area.

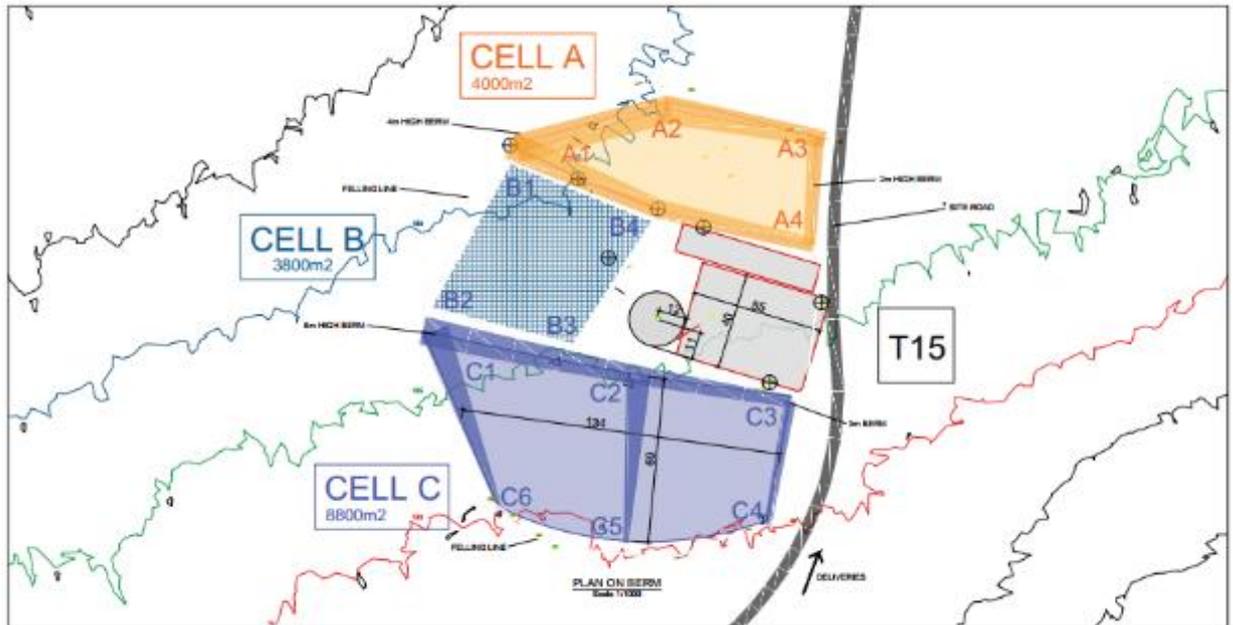


Figure 67 Peat Storage Cells at T15 plan details

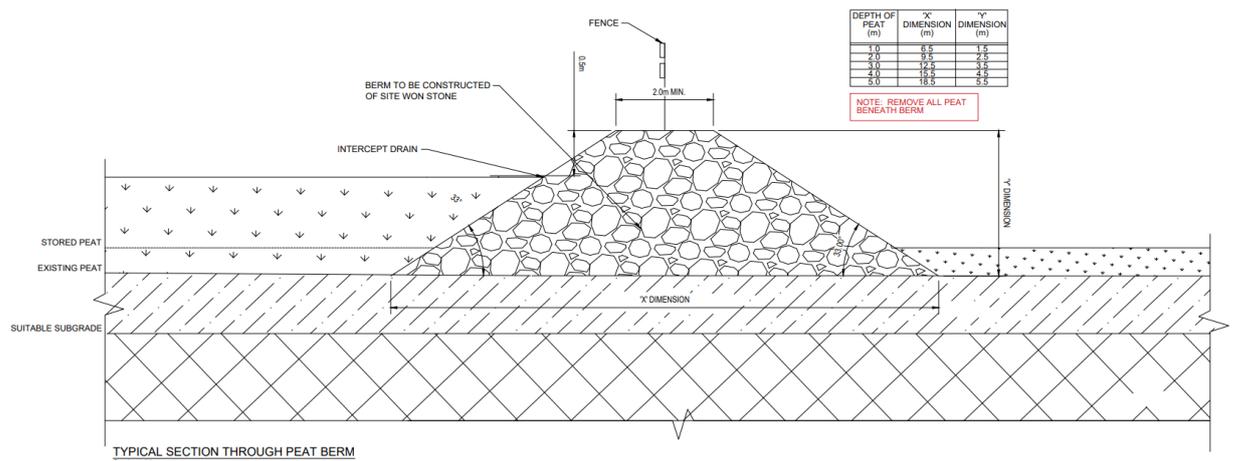
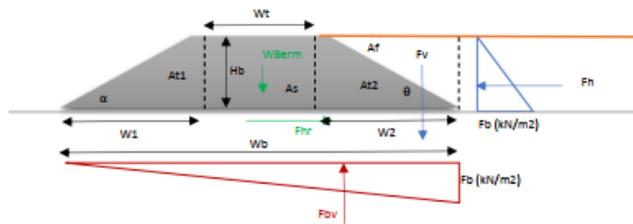


Figure 68 Peat Storage Cells at T15 illustrative section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - T15 Peat Storage
ELEMENT: PEAT BERM
DATE: 06/07/2020
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	4.5	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	6.929	m	Base of triangle	
W2	6.929	m	Base of triangle	
Wb	15.86	m	Base width	
At1	15.591	m ²	Area of triangle1	
At2	15.591	m ²	Area of triangle1	
A _{berm}	40.182	m ²	Area of berm	

γ	18	kN/m ³	unit weight berm material
WBerm	723	kN / m	weight berm per m
B. Pressure	46	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.496	
Fhr (nb)	359	berm horizontal sliding resistance no uplift
Fhr (b)	185	berm horizontal sliding resistance uplift

LOADING

γ	9.81	kN/m ³	unit weight retained material
Depth of fill	4.5	m	equals height berm
Fb	44.145	kN/m ²	pressure
Fh	99	kN/m	horizontal force
At	15.59	m ²	Area of peat over berm slope
Fv	152.9	kN / m	Load peat above berm slope
Fbv	-350	kN / m	buoyancy force

SUMMARY

SLIDING		SLS		UPL		
		Unf. [kN]	FOS	kN	FOS	
Resisting Forces						
Fhr (nb)	359	1.00	359	0.90	323	Horizontal sliding resistance assu
Fhr (b)	185	1.00	185	0.90	167	Horizontal sliding resistance assu
Sliding Forces						
Fh	99	1.00	99	1.00	99	Horizontal sliding force
Sliding	(nb)	3.61		3.61	3.25	>1 ok
	(b)	1.87		1.87	1.68	>1 ok

OVERTURNING		SLS		UPL		
		Unf. [kNm]	FOS	kNm	FOS	
Resisting BM						
Res BM (nb)	5735	1.00	5735	0.90	5162	Horizontal sliding resistance assu
Res BM (b)	2960	1.00	2960	0.90	2664	Horizontal sliding resistance assu
Overturning						
Ot BM (b)	-3552	1.00	-3552	1.00	-3552	Horizontal sliding force
Overturning	(nb)	57.74		57.74	51.97	>1 ok
	(b)	29.80		29.80	26.82	>1 ok

4.12.2 T15 – Conclusion

The assessment indicates that this section of the site is stable. The overdraft factor for the peat adjacent to the crane hardstanding is in excess of 1.0, as required to comply with Eurocode 7. The overdraft factors are greater than 1.0.

All of the infrastructure including the crane hardstanding, turbine foundation and peat storage berms have been constructed to solid sub-formation.

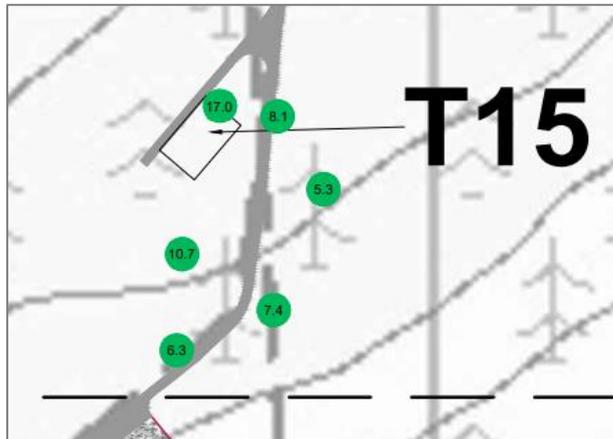


Figure 69 ODF results in this assessment section

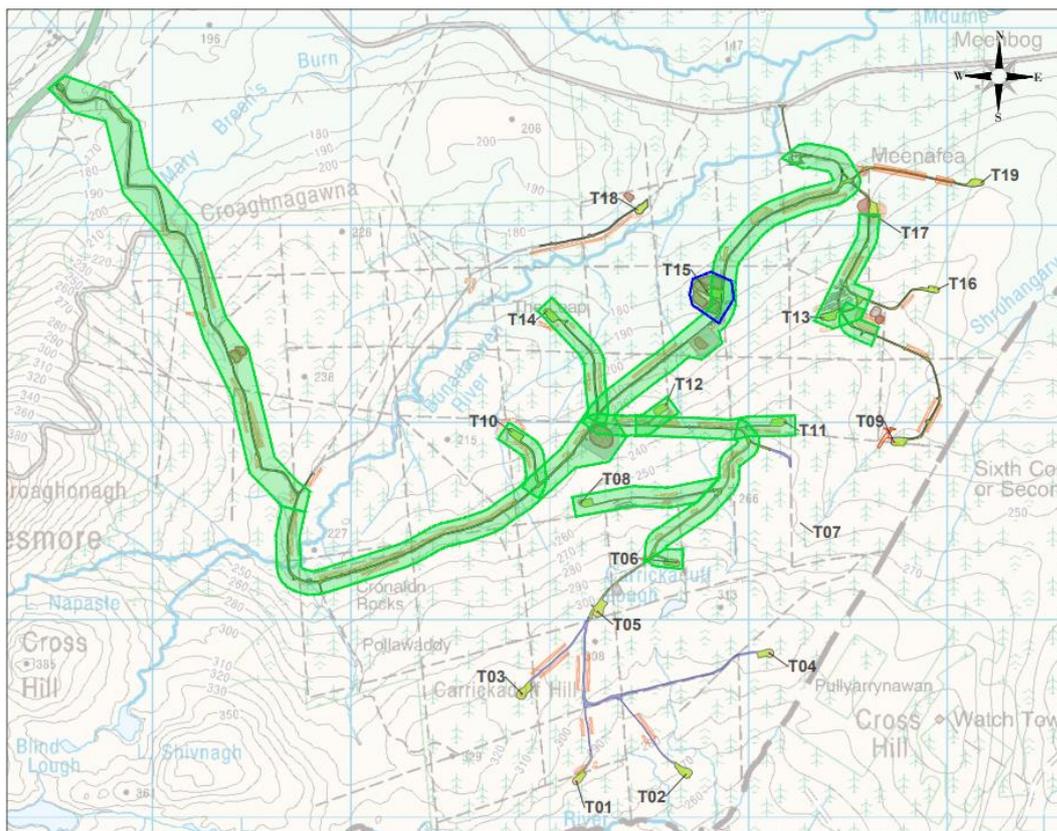


Figure 70 Outlined area has passed the assessment in this section

4.13 T16 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

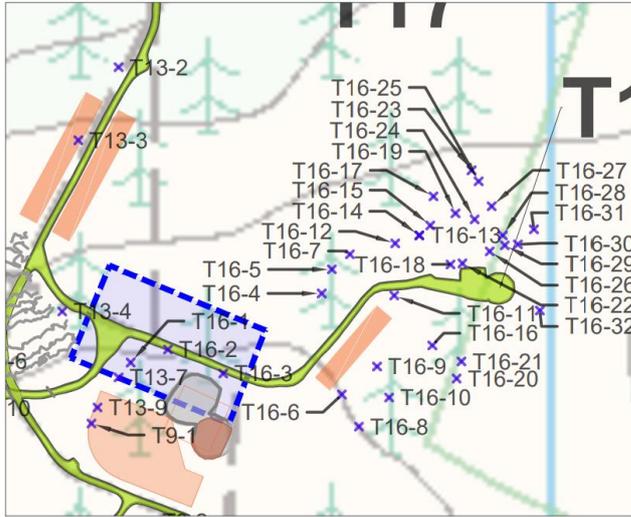


Figure 71 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 1.97, values range from 1.29 to 2.45.

The assessment along this section of road was based on 3 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only)	ODF Permanent Surcharge Peat	ODF Variable Load Construction	
T16-1	208580	386594	1.0	10	7	4.3	I	II	III	IV	6.69	3.34	2.45	
T16-2	208617	386607	1.6	10	6.5	3.7	10	13.3	0.0	0.0	4.51	2.77	2.17	
T16-3	208672	386583	2.6	10	6	4.4	10	13.3	0.0	0.0	2.15	1.56	1.29	

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS ≥ 1.0	Acceptable (Green)

Table 14

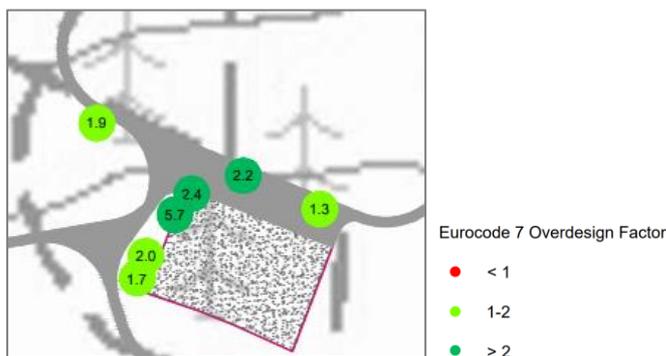


Figure 72 ODF results in this assessment section

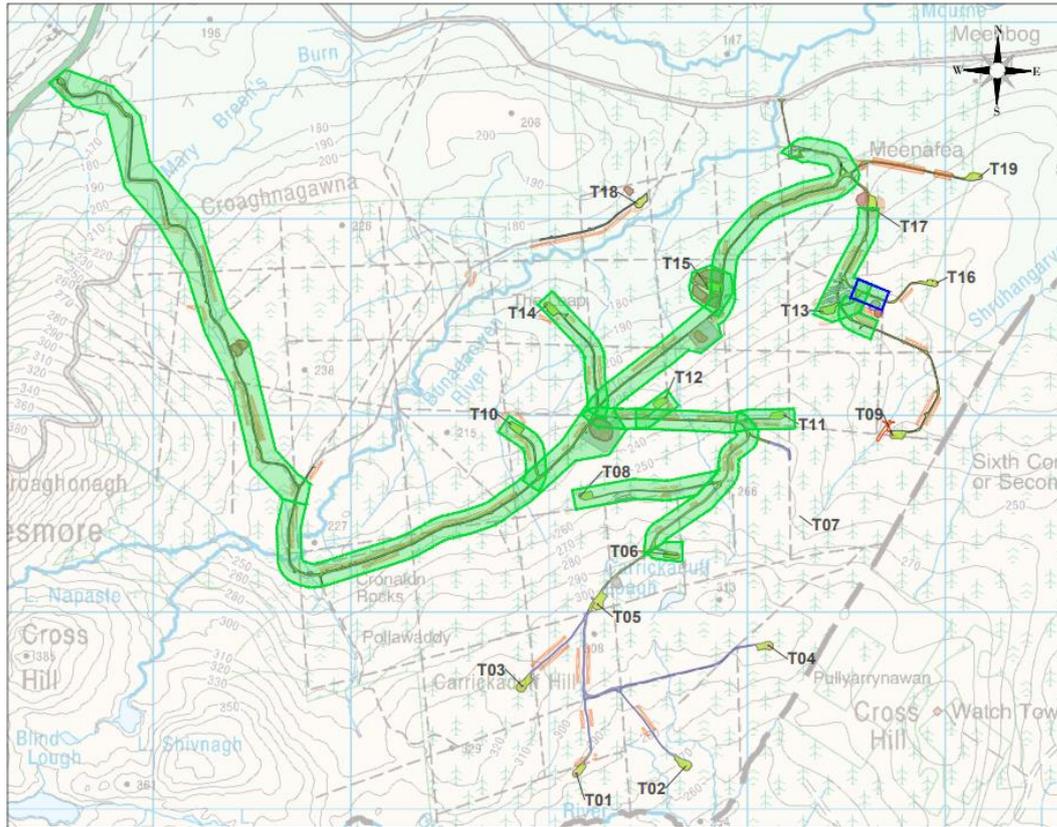


Figure 73 Outlined area has passed the assessment in this section

4.14 T17 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

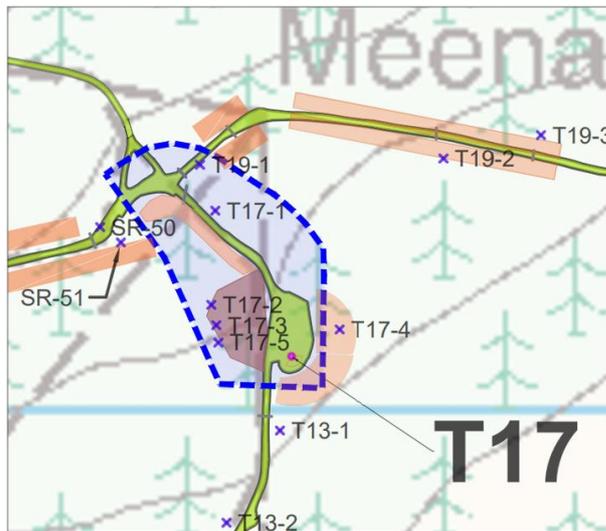


Figure 74 T17 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 4.81, values range from 2.74 to 6.50.

The assessment along this section of road was based on 5 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Locally higher peat deposition of up to 2.0m (20kPa) has been assessed, as shown on the table below.

The wind farm road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
T17-1	208557	387194	1.7	10	13	5.7	20	13.3	0.0	0.0	5.53	2.54	2.74
T17-2	208553	387102	1.2	10	19	4.1	10	13.3	0.0	0.0	15.86	8.65	6.50
T17-3	208558	387082	1.0	10	23	5.7	10	13.3	0.0	0.0	16.62	8.31	6.09
T17-4	208678	387078	1.5	10	20	5.2	15	13.3	0.0	0.0	10.55	5.28	4.90
T17-5	208560	387065	1.4	10	22	7.6	10	13.3	0.0	0.0	8.56	4.99	3.83

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 15

4.14.1 Peat Storage Cell at T17

This peat storage cell is located to the west of T17 and adjacent to the site road. The cell was formed by constructing a berm to contain an area of sloping ground to the west of the road. The cell is bounded to the north, west and south by the berm and the site road to the east. The berm and road are constructed to solid formation. Minor settlement and some cracking of the berm material was noted on site along some sections of the berms. Monitoring posts were set up in these areas and additional material will be placed to increase the as-built berm size in these areas, no further signs of cracking were

noted since monitoring began. A berm calculation has been included below to demonstrate the stability of the cell. Details of this peat cell are included on drawing MNBG d021.17.1. The stability assessment of the peat indicates an adequate safety margin in this area.

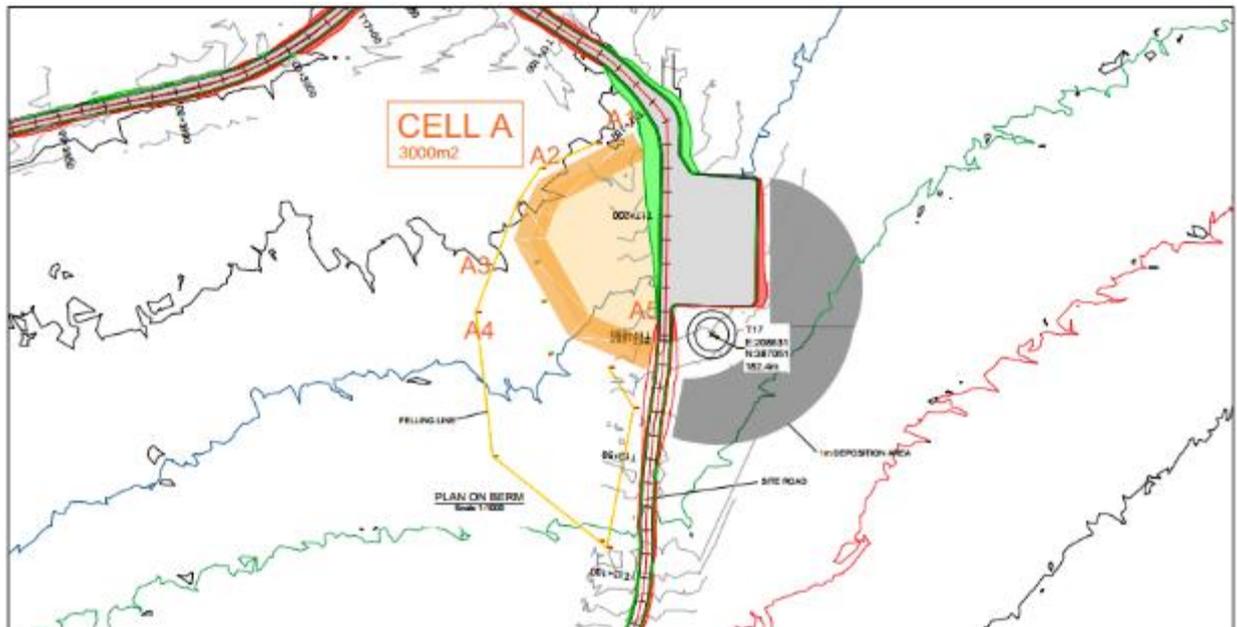


Figure 75 Peat Storage Cells at T17 plan details

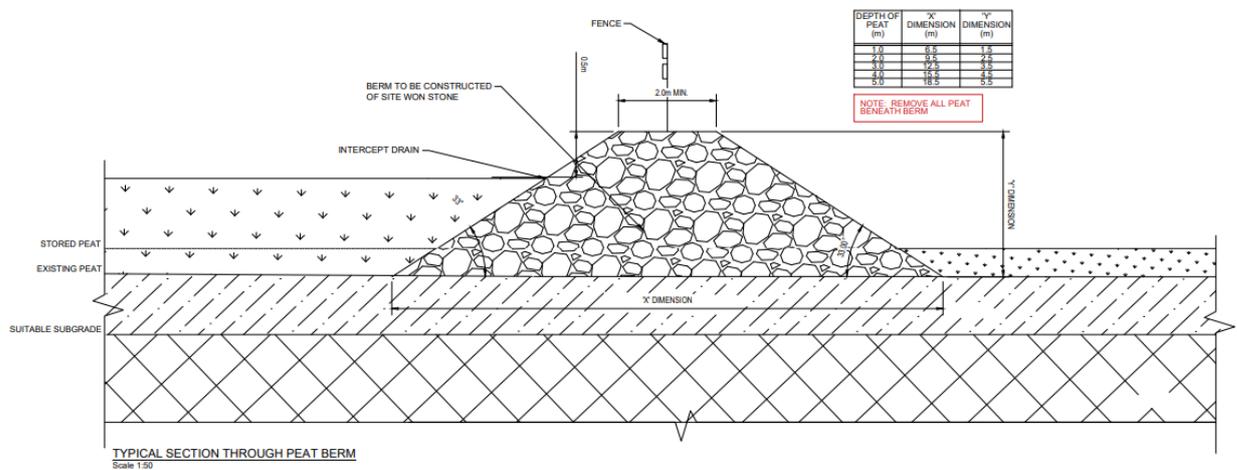
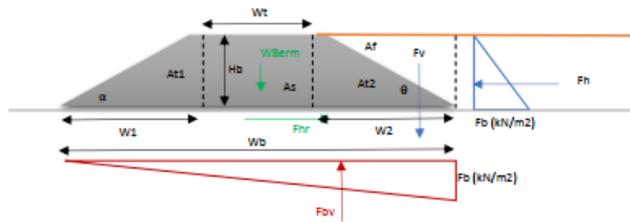


Figure 76 Peat Storage Cells at T17 illustrative section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - T17 Peat Storage
ELEMENT: PEAT BERM
DATE: 01/09/2020
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	4.5	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
θ	33	degrees	slope angle of berm uphill side	$\theta = 45^\circ + \phi/2$, ϕ of 30° assumed
Tan (α)	0.649			
Tan (θ)	0.649			
W1	6.929	m	Base of triangle	
W2	6.929	m	Base of triangle	
Wb	15.86	m	Base width	
At1	15.591	m ²	Area of triangle1	
At2	15.591	m ²	Area of triangle1	
A _{berm}	40.182	m ²	Area of berm	

γ	18	kN/m ³	unit weight berm material
WBerm	723	kN / m	weight berm per m
B. Pressure	46	kPa	bearing pressure under dead weight
β	33	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.496	
Fhr (nb)	359	berm horizontal sliding resistance no uplift
Fhr (b)	185	berm horizontal sliding resistance uplift

LOADING

γ	9.81	kN/m ³	unit weight retained material
Depth of fill	4.5	m	equals height berm
Fb	44.145	kN/m ²	pressure
Fh	99	kN/m	horizontal force
Af	15.59	m ²	Area of peat over berm slope
Fv	152.9	kN / m	Load peat above berm slope
Fbv	-350	kN / m	buoyancy force

SUMMARY

SLIDING

	Unf. [kN]	SLS		UPL		
		FOS	kN	FOS	kN	
<i>Resisting Forces</i>						
Fhr (nb)	359	1.00	359	0.90	323	Horizontal sliding resistance assum
Fhr (b)	185	1.00	185	0.90	167	Horizontal sliding resistance assum
<i>Sliding Forces</i>						
Fh	99	1.00	99	1.00	99	Horizontal sliding force
Sliding	(nb)	3.61	3.61	3.25		>1 ok
	(b)	1.87	1.87	1.68		>1 ok

OVERTURNING

	Unf. [kNm]	SLS		UPL		
		FOS	kNm	FOS	kNm	
<i>Resisting BM</i>						
Res BM (nb)	5735	1.00	5735	0.90	5162	Horizontal sliding resistance assum
Res BM (b)	2960	1.00	2960	0.90	2664	Horizontal sliding resistance assum
<i>Overturning</i>						
Ot BM (b)	-3552	1.00	-3552	1.00	-3552	Horizontal sliding force
Overturning	(nb)	57.74	57.74	51.97		>1 ok
	(b)	29.80	29.80	26.82		>1 ok

4.14.2 T17 – Conclusion

The assessment indicates that this section of the site is stable. The overdesign factor for the peat adjacent to the road and crane hardstanding is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 4.81, values range from 2.74 to 6.50.

All of the infrastructure including the road, crane hardstanding, turbine foundation and peat storage berms have been constructed to solid sub-formation.

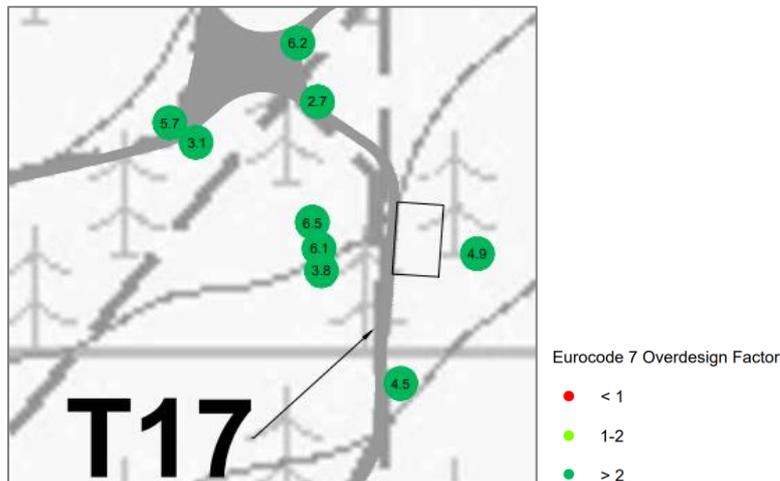


Figure 77 ODF results in this assessment section

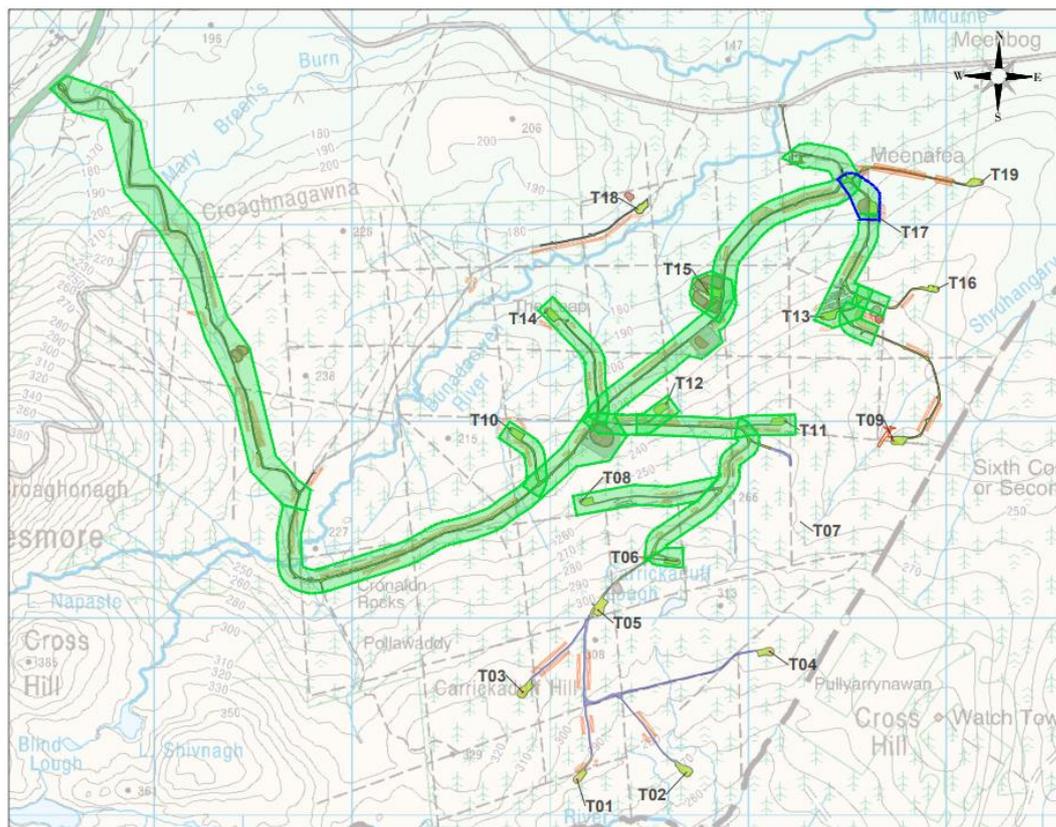


Figure 78 Outlined area has passed the assessment in this section

4.15 T19 - Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.



Figure 79 T19 Peat stability assessment area

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.81, values range from 1.01 to 10.18.

The assessment along this section of road was based on 16 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Locally higher peat deposition of 1.5m (15kPa) has been assessed, as shown on the table below.

The wind farm road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	
T19-1	208542	387239	2.2	10	12	2	10	13.3	0.0	0.0	11.17	7.68	6.25	
T19-2	208779	387245	1.2	10	7.5	4.4	15	13.3	0.0	0.0	5.84	2.59	2.39	
T19-3	208874	387268	1.8	10	5.5	3.6	15	13.3	0.0	0.0	3.48	1.90	1.78	
T19-4	209059	387236	1.7	10	9	3.8	10	13.3	0.0	0.0	5.72	3.60	2.84	
T19-5	209103	387126	0.5	10	21	3.8	10	13.3	0.0	0.0	45.37	15.12	10.18	
T19-6	209112	387161	2.9	10	4	3.5	10	13.3	0.0	0.0	1.62	1.20	1.01	
T19-7	209126	387242	1.9	10	6.5	2.7	10	13.3	0.0	0.0	5.19	3.40	2.72	
T19-8	209140	387285	1.8	10	4	3.1	10	13.3	0.0	0.0	2.94	1.89	1.50	
T19-9	209140	387126	1.0	10	10	3.4	10	13.3	0.0	0.0	12.07	6.03	4.42	
T19-10	209165	387281	2.0	10	8	2.9	10	13.3	0.0	0.0	5.65	3.77	3.03	
T19-11	209172	387122	3.8	10	3.5	2.5	10	13.3	0.0	0.0	1.51	1.20	1.04	
T19-12	209179	387242	1.5	10	4.5	2.2	10	13.3	0.0	0.0	5.59	3.35	2.60	
T19-13	209196	387280	2.1	10	4	4.1	10	13.3	0.0	0.0	1.91	1.29	1.05	
T19-14	209206	387137	3.5	10	4	2.1	10	13.3	0.0	0.0	2.23	1.73	1.49	
T19-15	209225	387237	3.4	10	3	1.6	10	13.3	0.0	0.0	2.26	1.74	1.50	
T19-16	209244	387208	1.9	10	4	4	10	13.3	0.0	0.0	2.16	1.42	1.13	

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 16

4.16 Conclusion – Zone I

This section of the report assessed Zone I which includes existing solid roads across the site, along with related infrastructure in these areas including hardstandings, turbine foundations, peat storage cells, borrow pits and peat deposition areas. Where arisings (dominantly peat) from excavations were deposited onto the existing peat surface, a visual inspection of the condition of the placed arisings carried out by FT (see FT report Appendix A4) confirmed no evidence of instability of the placed arisings that would be considered to represent a risk of large-scale peat failure, which concurs with the expected behaviour of the insitu peat, that is the placed arisings would result in consolidation of the underlying insitu peat with a subsequent gain in strength over time. Zone I passed the assessment with appropriate safety margins provided and is highlighted in green in the following map.

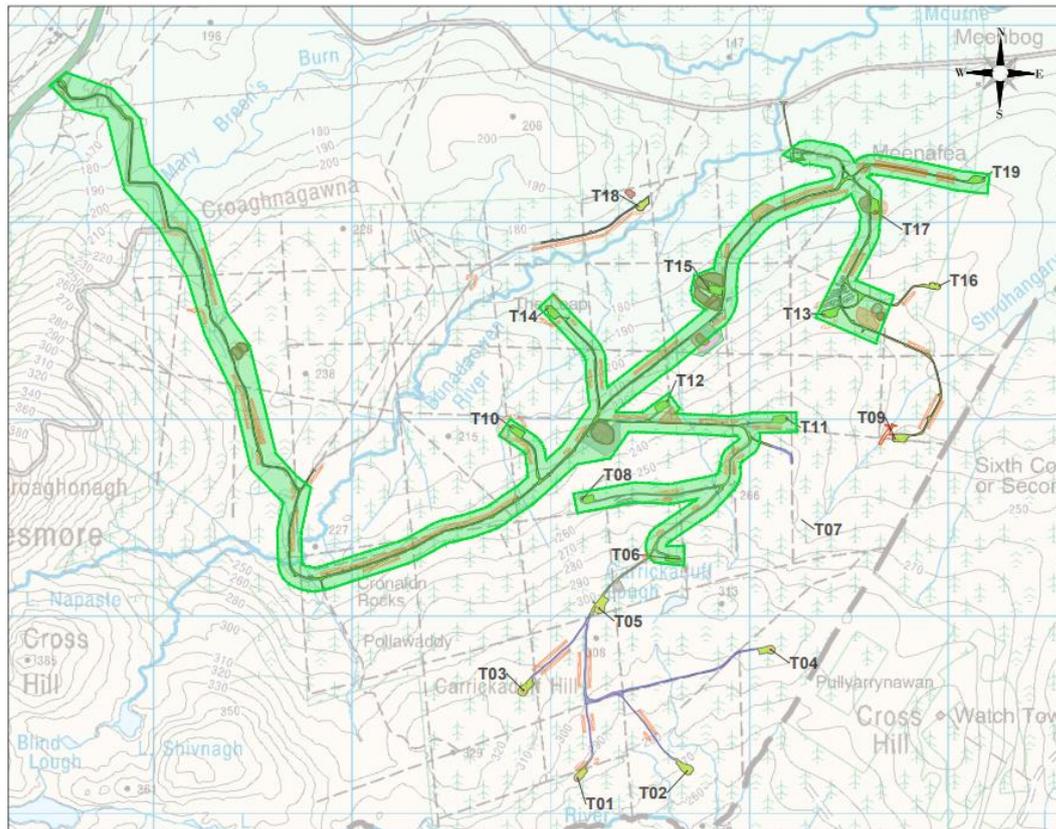


Figure 82 Zone 1 assessment outcome

5. ZONE 2

This section of the report relates primarily to the existing floating roads on the site at **T1, T2, T3 and T4**, along with the approach roads and associated works at **T16 and T18**, and also a short section of the **T5** road. The assessment areas include related infrastructure in these areas including hardstandings, turbine foundations and peat deposition areas. Refer to the map below for the Zone 2 infrastructure map.

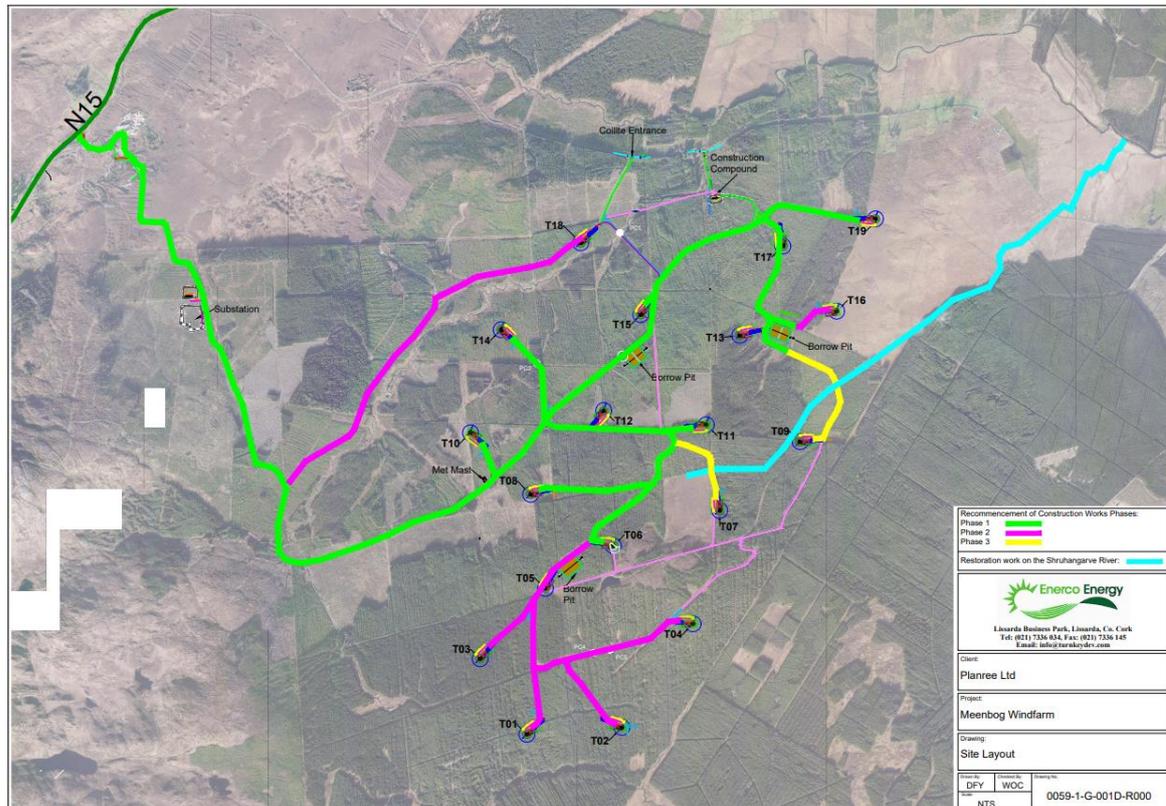


Figure 83 Zone 2 indicated in magenta

All spur roads and associated infrastructure are divided into sections based upon the original geometric design, these are highlighted separately for clarity in each section. This section of the report deals primarily with floating roads already constructed (T1-T4), along with solid construction to be completed on approaches to T5, T16 and T18.

The peat immediately adjacent to the existing floating roads at **T1, T2, T3, T4** will be assessed under the 5 load case scenarios outlined below, while peat beyond the direct zone of influence of the floating road will be assessed under load cases (a) and (c).

- peat self-weight
- 1m peat surcharge
- tracked machine on peat
- permanent surcharge of floating road
- variable crane loading

Peat adjacent to the spur roads at **T16 and T18** will be assessed under the 3 load case scenarios below, and similarly for the short southern section of the **T5** approach road.:

- peat self-weight
- 1m peat surcharge
- tracked machine on peat

5.1 T1 Floating Road – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

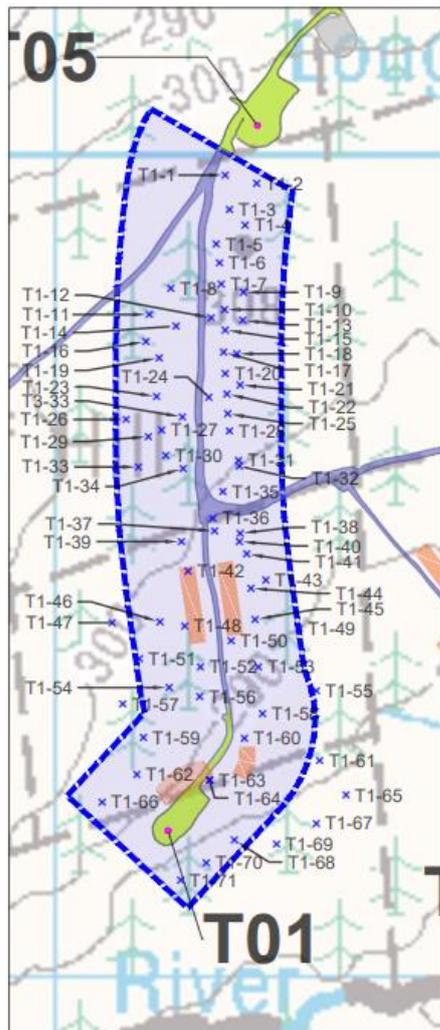


Figure 84 T1 Peat stability assessment area

The table below summarises the ‘overdesign’ factors along the T1 spur road. The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.06, values range from 1.03 to 5.8.

The assessment along this section of road was based on 71 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

This wind farm spur road is a floating road and has been in place for approximately 10 months, it was constructed during summer 2020. The initial settlement appears to have stabilised indicating that equilibrium has been reached as consolidation of the underlying peat results in a gradual strength gain in the peat. The floating road will be assessed prior to delivery of heavy crane and turbine components by means of proof load deflection tests.

The crane hardstanding has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T1-1	207202	384974	3.3	10	6	1.5	10	13.3	20.7	10.3	4.96		3.26		
T1-2	207240	384964	4.1	10	6	1.6	10	13.3	20.7	10.3	3.75		2.63		
T1-3	207207	384932	2.6	10	4	1.8	10	13.3	20.7	10.3	3.50		2.10		
T1-4	207226	384913	2.5	10	4	1.4	10	13.3	20.7	10.3	4.68		2.77		
T1-5	207191	384890	3.0	10	5	1.9	10	13.3	20.7	10.3	3.59	2.69	2.28	2.13	1.68
T1-6	207195	384867	2.4	10	5	1.7	10	13.3	20.7	10.3	5.02		2.92		
T1-7	207197	384841	1.9	10	4.5	1.7	10	13.3	20.7	10.3	5.71		2.99		
T1-8	207136	384836	2.4	10	4	1.9	10	13.3	20.7	10.3	3.59		2.09		
T1-9	207224	384831	3.7	10	3	1.5	10	13.3	20.7	10.3	2.21		1.51		
T1-10	207201	384810	3.5	10	4	1.5	10	13.3	20.7	10.3	3.12		2.09		
T1-11	207110	384804	3.0	10	4	2	10	13.3	20.7	10.3	2.73		1.73		
T1-12	207185	384800	3.0	10	14	1.7	10	13.3	20.7	10.3	11.24	8.43	7.13	6.65	5.26
T1-13	207223	384797	4.9	10	3	1.5	10	13.3	20.7	10.3	1.67		1.24		
T1-14	207132	384787	4.5	10	4	2.1	10	13.3	20.7	10.3	1.73		1.25		
T1-15	207202	384785	4.4	10	4	1.5	10	13.3	20.7	10.3	2.48		1.78		
T1-16	207106	384771	3.0	10	4	1.9	10	13.3	20.7	10.3	2.87		1.82		
T1-17	207200	384758	4.9	10	5	1.6	10	13.3	20.7	10.3	2.61		1.93		
T1-18	207216	384756	3.0	10	5	1.7	10	13.3	20.7	10.3	4.01		2.55		
T1-19	207122	384751	3.0	10	3	1.8	10	13.3	20.7	10.3	2.28		1.44		
T1-20	207202	384732	3.2	10	4.5	2.9	10	13.3	20.7	10.3	1.99		1.29		
T1-21	207220	384718	2.4	10	3	2.5	10	13.3	20.7	10.3	2.05		1.19		
T1-22	207204	384707	3.5	10	6	2.5	10	13.3	20.7	10.3	2.81		1.88		
T1-23	207119	384704	4.2	10	3	2	10	13.3	20.7	10.3	1.46		1.04		
T1-24	207182	384703	3.0	10	11	2	10	13.3	20.7	10.3	7.51	5.63	4.76	4.44	3.51
T1-25	207205	384683	3.4	10	4	2.6	10	13.3	20.7	10.3	1.85		1.23		
T1-26	207082	384676	3.3	10	4.5	2.3	10	13.3	20.7	10.3	2.43		1.59		
T1-27	207125	384663	5.0	10	6	2.5	10	13.3	20.7	10.3	1.97		1.46		
T1-28	207207	384662	2.7	10	3.5	2.7	10	13.3	20.7	10.3	1.97		1.20		
T1-29	207109	384655	4.2	10	4	1.8	10	13.3	20.7	10.3	2.17		1.53		
T1-30	207130	384632	4.7	10	5	2.4	10	13.3	20.7	10.3	1.82		1.33		
T1-31	207218	384626	2.9	10	6	2.1	10	13.3	20.7	10.3	4.04		2.53		
T1-32	207219	384619	3.0	10	5	2.2	10	13.3	20.7	10.3	3.10		1.97		
T1-33	207097	384618	3.0	10	3	2.4	10	13.3	20.7	10.3	1.71		1.08		
T1-34	207151	384616	3.3	10	5	3.3	10	13.3	20.7	10.3	1.88		1.24		
T1-35	207199	384588	4.0	10	5	1.8	10	13.3	20.7	10.3	2.84	2.28	1.99	1.87	1.54
T1-36	207187	384555	4.5	10	3	1.5	10	13.3	20.7	10.3	1.82		1.31		
T1-37	207189	384540	5.0	10	4	2.2	10	13.3	20.7	10.3	1.49		1.11		
T1-38	207220	384537	2.9	10	7.5	5.2	10	13.3	20.7	10.3	2.05		1.28		
T1-39	207149	384527	1.1	10	12	3	10	13.3	20.7	10.3	14.91		5.80		
T1-40	207219	384527	1.8	10	11	7.9	10	13.3	20.7	10.3	3.21		1.64		
T1-41	207228	384512	1.3	10	9	9.2	10	13.3	20.7	10.3	3.13		1.34		
T1-42	207157	384491	0.8	10	11	5	10	13.3	20.7	10.3	11.31	5.03	3.58	3.15	2.15
T1-43	207251	384480	3.0	10	6	2.3	10	13.3	20.7	10.3	3.56		2.26		
T1-44	207233	384470	2.0	10	3	2.1	10	13.3	20.7	10.3	2.93		1.57		
T1-45	207238	384432	1.9	10	3	3.3	10	13.3	20.7	10.3	1.96		1.03		
T1-46	207123	384429	3.1	10	7	4	10	13.3	20.7	10.3	2.32		1.49		
T1-47	207065	384428	2.5	10	5	4.1	10	13.3	20.7	10.3	2.00		1.18		
T1-48	207153	384424	1.8	10	4	2.4	10	13.3	20.7	10.3	3.79	2.44	1.94	1.76	1.31
T1-49	207291	384421	2.5	10	3	2.2	10	13.3	20.7	10.3	2.23		1.32		
T1-50	207209	384406	2.1	10	8	2.7	10	13.3	20.7	10.3	5.78		3.17		
T1-51	207098	384384	3.0	10	7	2.7	10	13.3	20.7	10.3	3.54		2.25		
T1-52	207172	384374	2.0	10	9	2.5	10	13.3	20.7	10.3	7.38	4.92	3.96	3.62	2.73
T1-53	207242	384374	2.8	10	7	2.9	10	13.3	20.7	10.3	3.53		2.18		
T1-54	207134	384349	1.7	10	5	3.6	10	13.3	20.7	10.3	3.35		1.66		
T1-55	207312	384345	3.0	10	10.5	3.8	10	13.3	20.7	10.3	3.78		2.40		
T1-56	207171	384338	1.2	10	9	4	10	13.3	20.7	10.3	7.70	4.20	3.15	2.83	2.00
T1-57	207078	384329	1.5	10	6	3.3	10	13.3	20.7	10.3	4.97		2.31		
T1-58	207247	384317	2.0	10	5	4.2	10	13.3	20.7	10.3	2.44		1.31		
T1-59	207103	384288	0.8	10	5	4.2	10	13.3	20.7	10.3	6.11		1.93		
T1-60	207225	384287	1.6	10	5	2.3	10	13.3	20.7	10.3	5.57		2.68		
T1-61	207316	384260	2.5	10	9	3	10	13.3	20.7	10.3	4.92		2.91		
T1-62	207095	384243	1.9	10	7	3.5	10	13.3	20.7	10.3	4.32		2.26		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																
LOCATION			DATA				LOADING				ANALYSIS					
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV	
T1-63	207183	384236	1.8	10	7	3.7	10	13.3	20.7	10.3	4.31	2.77	2.20	2.01	1.49	
T1-64	207183	384236	1.8	10	7	3.7	10	13.3	20.7	10.3	4.31	2.77	2.20	2.01	1.49	
T1-65	207348	384218	3.3	10	8	1.7	10	13.3	20.7	10.3	5.84		3.83			
T1-66	207053	384209	1.0	10	9	3.3	10	13.3	20.7	10.3	11.19		4.10			
T1-67	207312	384183	4.4	10	5	1.5	10	13.3	20.7	10.3	3.10		2.23			
T1-68	207213	384163	4.0	10	5	1.8	10	13.3	20.7	10.3	2.84		1.99			
T1-69	207264	384158	5.0	10	4.5	0.7	10	13.3	20.7	10.3	5.26		3.91			
T1-70	207179	384135	3.4	10	4	2.1	10	13.3	20.7	10.3	2.29		1.52			
T1-71	207148	384114	3.9	10	10	2.7	10	13.3	20.7	10.3	3.89		2.70			

FACTOR OF SAFETY LEGEND
 FOS < 1.0 Unstable (Red)
 FOS ≥ 1.0 Acceptable (Green)

Table 17

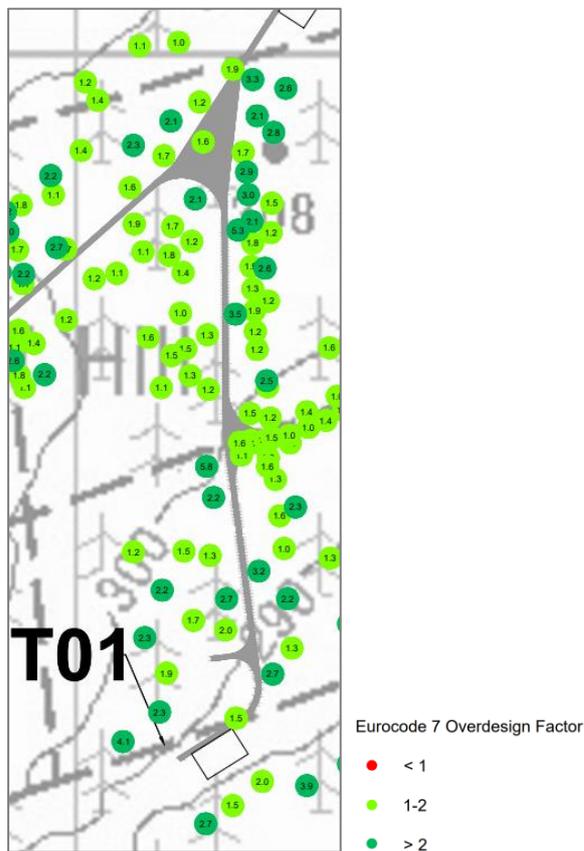


Figure 85 ODF results in this assessment section

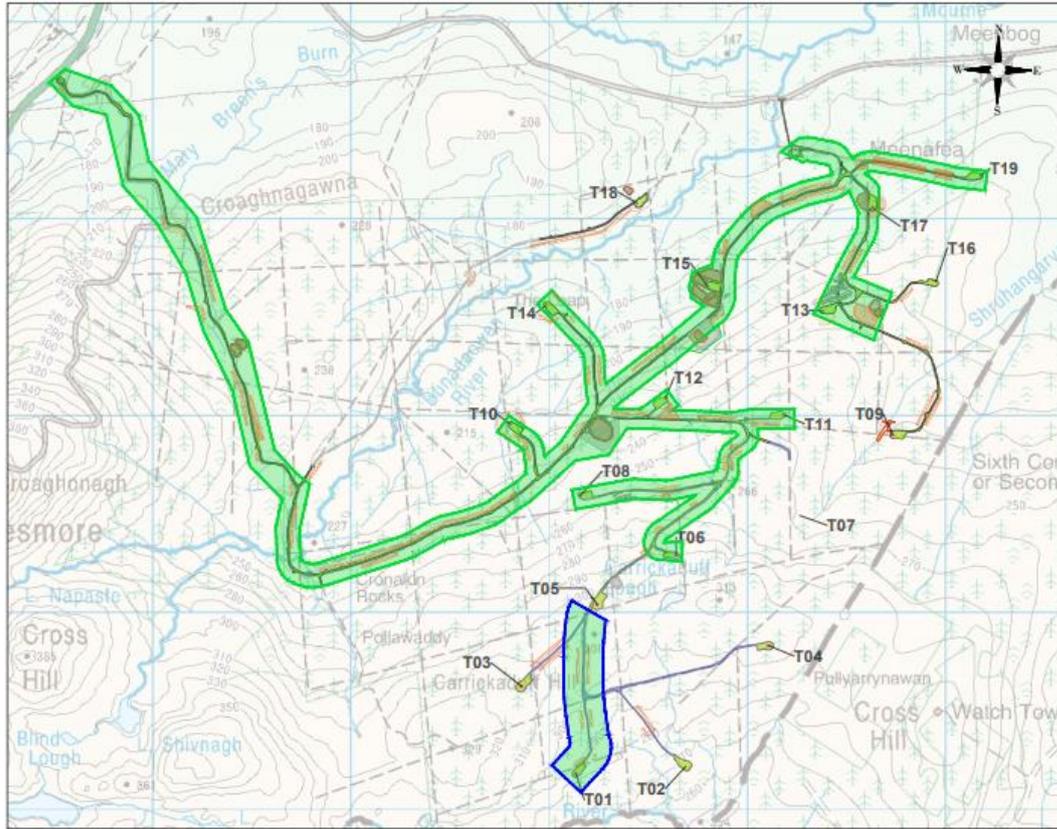


Figure 86 Outlined area has passed the assessment in this section

5.2 T2 Floating Road – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

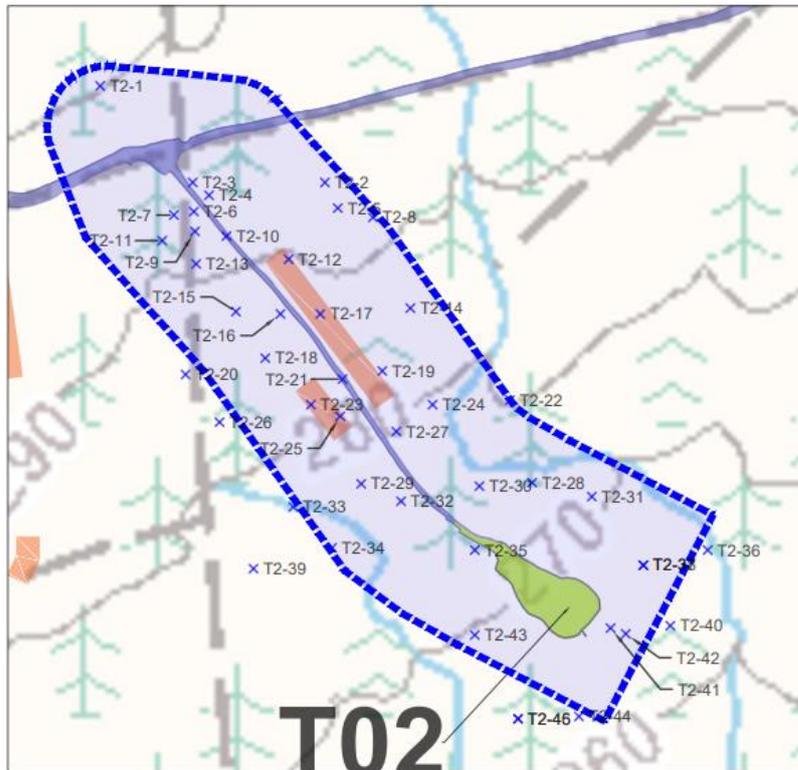


Figure 87 T2 Peat stability assessment points

The table below summarises the ‘overdesign’ factors along the T2 spur road. The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 2.7, values range from 1.05 to 7.52.

The assessment along this section of road was based on 46 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

This wind farm spur road is a floating road and has been in place for approximately 10 months, it was constructed during summer 2020. The initial settlement appears to have stabilised indicating that equilibrium has been reached as consolidation of the underlying peat results in a gradual strength gain in the peat. The floating road will be assessed prior to delivery of heavy crane and turbine components by means of proof load deflection tests.

The crane hardstanding has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T2-1	207290	384664	2.0	10	4	2.8	10	13.3	20.7	10.3	2.93		1.57		
T2-2	207482	384581	2.5	10	6	2.7	10	13.3	20.7	10.3	3.64		2.15		
T2-3	207369	384581	1.7	10	5	3.2	0	13.3	20.7	10.3	3.77	3.77	1.87	1.70	1.25
T2-4	207383	384570	0.7	10	15	7.6	0	13.3	20.7	10.3	11.68	11.68	3.36	2.95	1.99
T2-5	207493	384559	2.7	10	4.5	1.5	10	13.3	20.7	10.3	4.55		2.77		
T2-6	207370	384556	1.5	10	14	5.2	0	13.3	20.7	10.3	7.39	7.39	3.43	3.10	2.26
T2-7	207353	384553	2.0	10	8.5	4.7	10	13.3	20.7	10.3	3.72		1.99		
T2-8	207523	384551	3.0	10	2.5	1.8	10	13.3	20.7	10.3	1.90		1.20		
T2-9	207371	384539	1.9	10	5	3.3	10	13.3	20.7	10.3	3.27		1.71		
T2-10	207398	384535	1.1	10	7	3.8	0	13.3	20.7	10.3	6.87	6.87	2.67	2.39	1.68
T2-11	207343	384531	2.3	10	5	3.8	10	13.3	20.7	10.3	2.35		1.34		
T2-12	207451	384515	2.1	10	4	3.5	10	13.3	20.7	10.3	2.23		1.22		
T2-13	207372	384511	2.5	10	6	3.1	10	13.3	20.7	10.3	3.17		1.88		
T2-14	207555	384473	1.8	10	7	3.8	10	13.3	20.7	10.3	4.20		2.14		
T2-15	207406	384470	2.2	10	6	3.1	10	13.3	20.7	10.3	3.61		2.02		
T2-16	207444	384468	2.4	10	11	2.4	0	13.3	20.7	10.3	7.82	7.82	4.55	4.20	3.23
T2-17	207478	384468	1.4	10	6	3.5	10	13.3	20.7	10.3	5.02		2.25		
T2-18	207431	384430	1.7	10	7	4	10	13.3	20.7	10.3	4.23		2.10		
T2-19	207531	384419	2.1	10	5	4.5	10	13.3	20.7	10.3	2.17		1.19		
T2-20	207363	384416	2.2	10	10	2.6	10	13.3	20.7	10.3	7.16		4.01		
T2-21	207497	384412	2.6	10	11	5.2	0	13.3	20.7	10.3	3.35	3.35	2.01	1.86	1.45
T2-22	207640	384394	1.6	10	6.5	4.8	10	13.3	20.7	10.3	3.48		1.67		
T2-23	207470	384390	2.0	10	11	4.4	10	13.3	20.7	10.3	5.14		2.75		
T2-24	207574	384390	1.1	10	9	3.7	10	13.3	20.7	10.3	9.08		3.53		
T2-25	207495	384380	2.7	10	15	5.2	10	13.3	20.7	10.3	4.40	3.21	2.68	2.49	1.94
T2-26	207392	384375	1.7	10	10	4.1	10	13.3	20.7	10.3	5.89		2.92		
T2-27	207543	384367	0.9	10	8	5.2	0	13.3	20.7	10.3	7.03	7.03	2.41	2.13	1.47
T2-28	207659	384323	1.5	10	6	2.1	10	13.3	20.7	10.3	7.80		3.62		
T2-29	207512.9	384322	1.3	10	15	2.7	10	13.3	20.7	10.3	17.52		7.52		
T2-30	207614	384320	2.2	10	11	2.6	10	13.3	20.7	10.3	7.88		4.41		
T2-31	207710	384311	2.8	10	5	2.8	10	13.3	20.7	10.3	2.61		1.62		
T2-32	207547	384307	3.0	10	22	4.6	0	13.3	20.7	10.3	6.55	6.55	4.16	3.88	3.07
T2-33	207455	384302	2.3	10	13	1.9	10	13.3	20.7	10.3	12.18		6.96		
T2-34	207488	384267	2.3	10	10.5	1.6	10	13.3	20.7	10.3	11.68		6.67		
T2-35	207610	384265	1.0	10	15	4.4	0	13.3	20.7	10.3	14.01	14.01	5.13	4.56	3.18
T2-36	207809	384265	1.7	10	8	2.5	10	13.3	20.7	10.3	7.71		3.82		
T2-37	207754	384252	0.6	10	8	5	0	13.3	20.7	10.3	10.97	10.97	2.83	2.46	1.64
T2-38	207754	384252	0.6	10	8	3.1	10	13.3	20.7	10.3	17.64		4.54		
T2-39	207421	384249	1.7	10	7.5	2.6	10	13.3	20.7	10.3	6.95		3.45		
T2-40	207777	384200	2.1	10	4	3.8	10	13.3	20.7	10.3	2.06		1.13		
T2-41	207726	384198	1.5	10	5	4.4	10	13.3	20.7	10.3	3.11		1.45		
T2-42	207739	384193	1.5	10	5	4	0	13.3	20.7	10.3	3.42	3.42	1.59	1.44	1.05
T2-43	207610	384192	0.9	10	11	3.7	10	13.3	20.7	10.3	13.56		4.64		
T2-44	207699	384122	0.5	10	11	4.8	10	13.3	20.7	10.3	18.85		4.23		
T2-45	207647	384120	1.4	10	10	4	0	13.3	20.7	10.3	7.33	7.33	3.28	2.96	2.13
T2-46	207647	384120	1.4	10	10	3.8	10	13.3	20.7	10.3	7.72		3.45		

FACTOR OF SAFETY LEGEND
FOS < 1.0 Unstable (Red)
FOS >= 1.0 Acceptable (Green)

Table 18

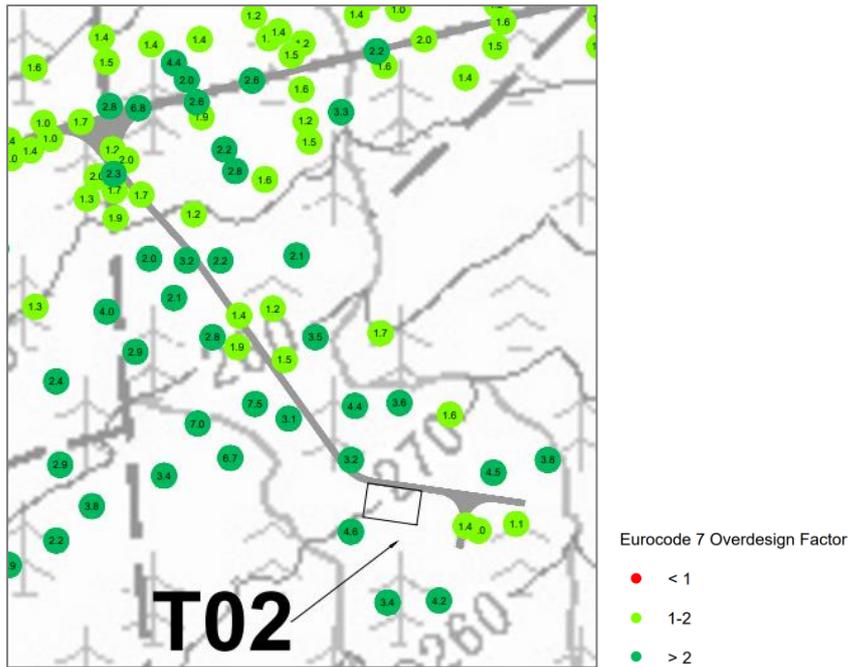


Figure 88 ODF results in this assessment section

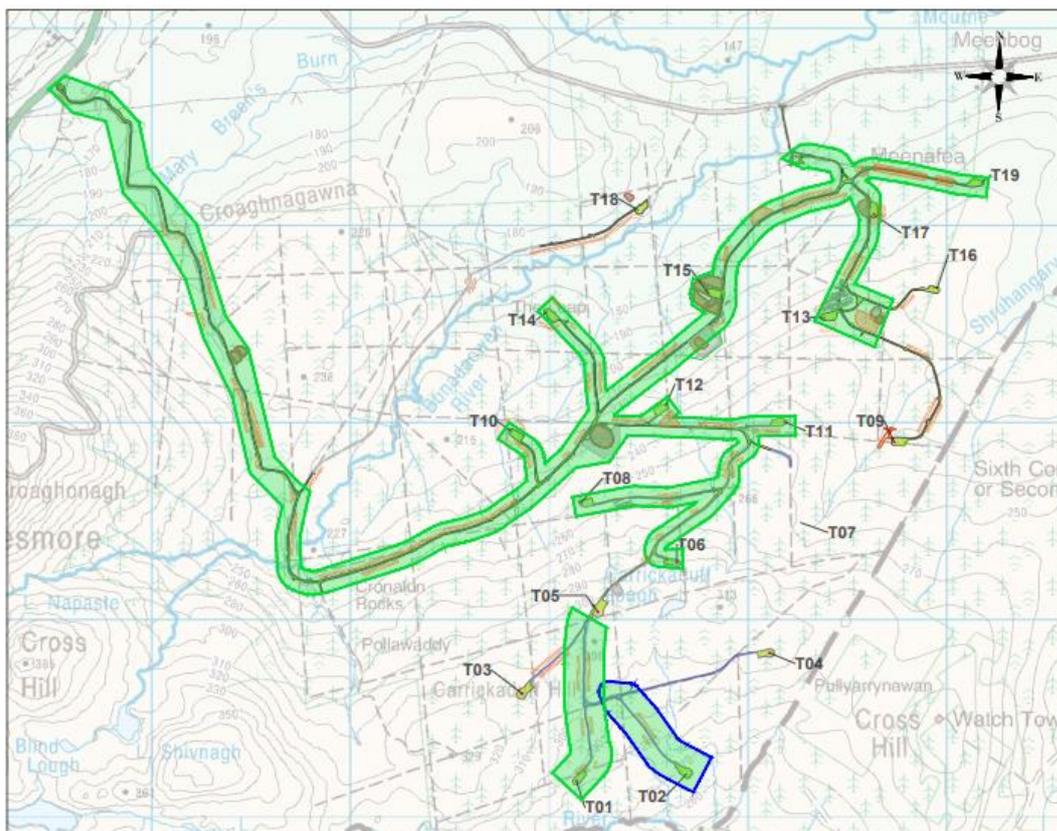


Figure 89 Outlined area has passed the assessment in this section

5.3 T3 Floating Road – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

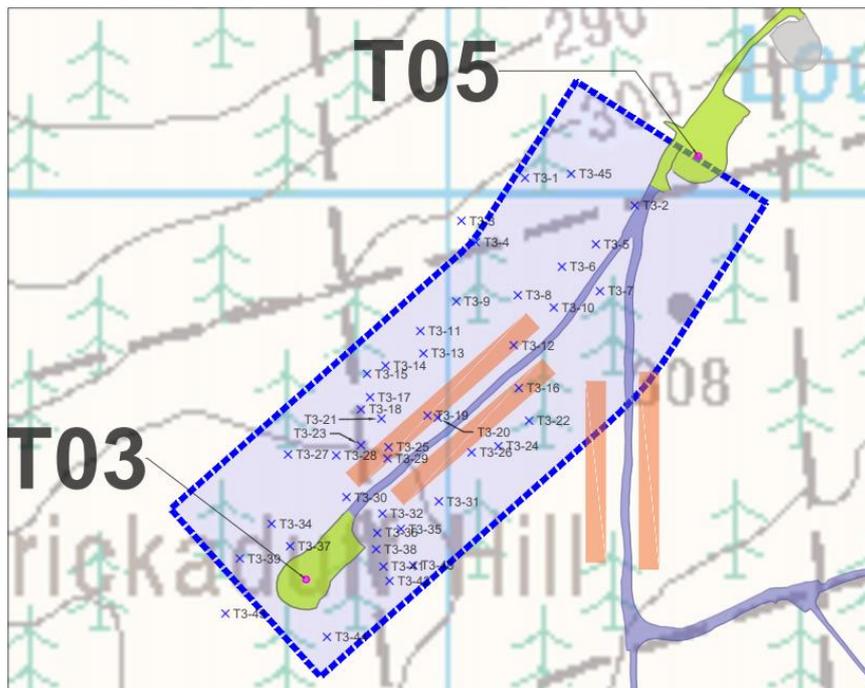


Figure 90 T3 Peat Stability Assessment points

The table below summarises the ‘overdesign’ factors along the T3 spur road. The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 1.61, values range from 1.05 to 3.42.

The assessment along this section of road was based on 45 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

This wind farm spur road is a floating road and has been in place for approximately 10 months, it was constructed during summer 2020. The initial settlement appears to have stabilised indicating that equilibrium has been reached as consolidation of the underlying peat results in a gradual strength gain in the peat. The floating road will be assessed prior to delivery of heavy crane and turbine components by means of proof load deflection tests.

The crane hardstanding has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T3-1	207072	385013	3.1	10	6	4.5	10	13.3	20.7	10.3	1.77		1.13		
T3-2	207179	384986	3.7	10	6	1.8	0	13.3	20.7	10.3	3.69	3.69	2.51	2.37	1.92
T3-3	207010	384971	2.8	10	7	5.1	10	13.3	20.7	10.3	2.02		1.25		
T3-4	207024	384950	2.1	10	5	3.8	10	13.3	20.7	10.3	2.57		1.41		
T3-5	207141	384948	2.5	10	4.5	2.7	0	13.3	20.7	10.3	2.73	2.73	1.62	1.49	1.16
T3-6	207108	384926	3.1	10	7	2.1	0	13.3	20.7	10.3	4.40	4.40	2.83	2.64	2.10
T3-7	207145	384902	3.3	10	4	1.5	0	13.3	20.7	10.3	3.31	3.31	2.17	2.03	1.63
T3-8	207065	384898	3.0	10	4.5	1.7	10	13.3	20.7	10.3	3.61		2.29		
T3-9	207005	384892	5.0	10	5	2.1	10	13.3	20.7	10.3	1.95		1.45		
T3-10	207100	384886	3.6	10	5	1.7	0	13.3	20.7	10.3	3.35	3.35	2.26	2.12	1.72
T3-11	206970	384863	2.7	10	6	2.5	10	13.3	20.7	10.3	3.64		2.22		
T3-12	207061	384849	2.7	10	4	1.7	0	13.3	20.7	10.3	3.57	3.57	2.18	2.02	1.58
T3-13	206973	384841	2.6	10	3.5	2.9	10	13.3	20.7	10.3	1.90		1.14		
T3-14	206936	384829	2.4	10	8	4.4	10	13.3	20.7	10.3	3.11		1.81		
T3-15	206918	384821	1.8	10	5.5	2.9	10	13.3	20.7	10.3	4.32		2.20		
T3-16	207066	384807	3.8	10	5	1.5	0	13.3	20.7	10.3	3.59	3.59	2.47	2.33	1.89
T3-17	206921	384798	2.4	10	5.5	2.7	10	13.3	20.7	10.3	3.48		2.02		
T3-18	206912	384786	2.5	10	4	3.3	10	13.3	20.7	10.3	1.99		1.18		
T3-19	206977	384780	3.0	10	9	2.1	0	13.3	20.7	10.3	5.85	5.85	3.71	3.46	2.74
T3-20	206987	384778	3.0	10	5.5	2.1	0	13.3	20.7	10.3	3.58	3.58	2.27	2.12	1.67
T3-21	206932	384777	3.4	10	5	2.3	10	13.3	20.7	10.3	2.62		1.74		
T3-22	207076	384775	3.5	10	3	2.2	10	13.3	20.7	10.3	1.60		1.07		
T3-23	206912	384751	3.2	10	7.4	1.8	10	13.3	20.7	10.3	5.26		3.42		
T3-24	207046	384750	5.0	10	3	1.7	10	13.3	20.7	10.3	1.45		1.07		
T3-25	206939	384749	3.0	10	4	1.6	10	13.3	20.7	10.3	3.41		2.16		
T3-26	207020	384744	4.5	10	3.5	1.9	10	13.3	20.7	10.3	1.68		1.21		
T3-27	206841	384742	3.7	10	5	3.3	10	13.3	20.7	10.3	1.68		1.14		
T3-28	206888	384741	3.5	10	4	2.8	10	13.3	20.7	10.3	1.67		1.12		
T3-29	206938	384738	3.4	10	3	1.6	0	13.3	20.7	10.3	2.26	2.26	1.50	1.40	1.13
T3-30	206898	384700	4.0	10	3.5	1.4	0	13.3	20.7	10.3	2.56	2.56	1.79	1.69	1.38
T3-31	206988	384696	2.0	10	2	1.9	10	13.3	20.7	10.3	2.16		1.16		
T3-32	206933	384684	3.8	10	4	1.9	10	13.3	20.7	10.3	2.27		1.56		
T3-33	207150	384679	4.0	10	4	1.7	0	13.3	20.7	10.3	2.41	2.41	1.68	1.59	1.30
T3-34	206825	384674	2.0	10	4	2.6	10	13.3	20.7	10.3	3.15		1.69		
T3-35	206951	384669	3.1	10	4	2.4	10	13.3	20.7	10.3	2.20		1.41		
T3-36	206928	384665	3.7	10	3	2.1	10	13.3	20.7	10.3	1.58		1.08		
T3-37	206843	384652	3.2	10	4	3.1	10	13.3	20.7	10.3	1.65		1.07		
T3-38	206927	384649	2.4	10	5.5	2.1	10	13.3	20.7	10.3	4.47		2.60		
T3-39	206794	384640	5.0	10	5	2.2	10	13.3	20.7	10.3	1.86		1.38		
T3-40	206963	384633	3.1	10	6	2.3	10	13.3	20.7	10.3	3.45		2.21		
T3-41	206934	384632	2.6	10	4	2.1	10	13.3	20.7	10.3	3.00		1.80		
T3-42	206940	384618	3.2	10	4	3	10	13.3	20.7	10.3	1.71		1.11		
T3-43	206780	384586	4.2	10	5	2.3	10	13.3	20.7	10.3	2.12		1.50		
T3-44	206879	384563	4.5	10	4	1.7	10	13.3	20.7	10.3	2.14		1.55		
T3-45	207117	385017	5.0	10	5.5	3.2	10	13.3	20.7	10.3	1.41		1.05		

FACTOR OF SAFETY LEGEND
FOS < 1.0 Unstable (Red)
FOS >= 1.0 Acceptable (Green)

Table 19

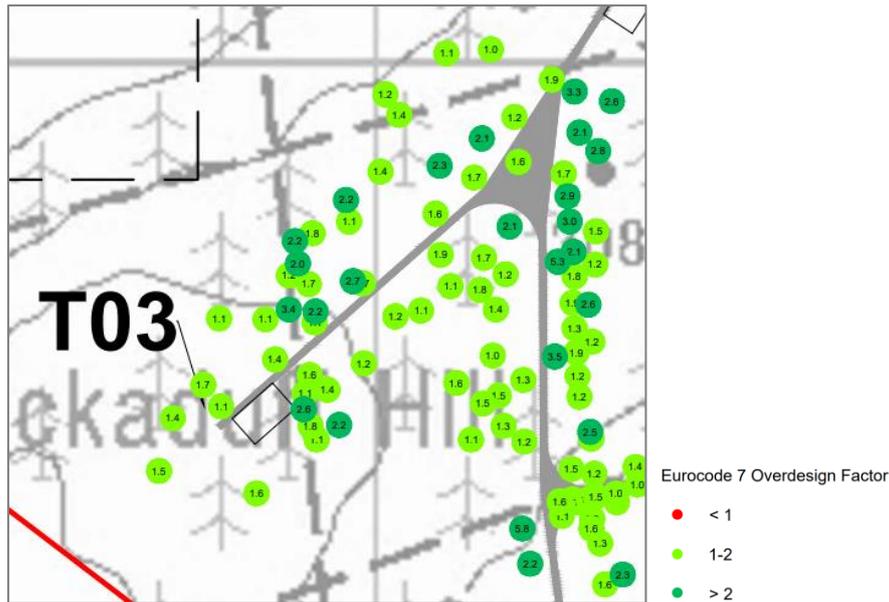


Figure 91 ODF results in this assessment section

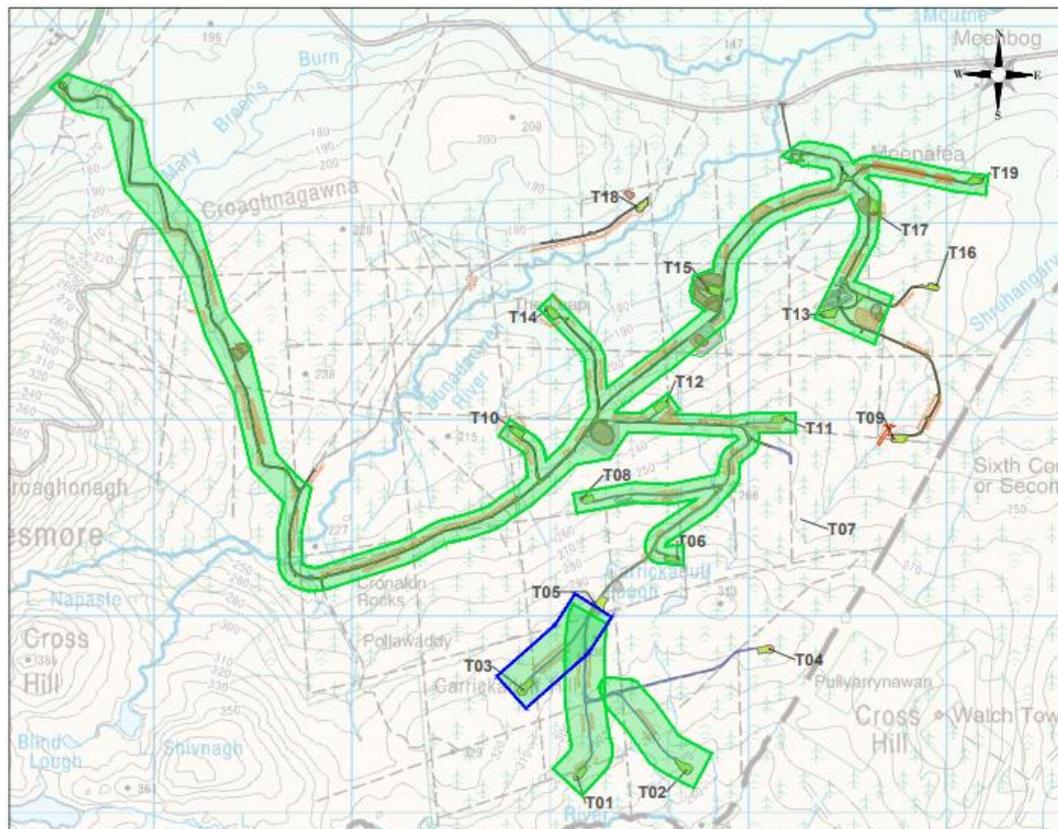


Figure 92 Outlined area has passed the assessment in this section

5.4 T4 Floating Road – Peat Stability Assessment

A number of assessment points are presented below which indicate an adequate safety margin at all locations other than T4-73 to the west of the turbine location. Given that the stability calculations did not meet requirements under a certain loadcase condition, additional peat probing and shear vane testing was carried out in that area, further details are presented below.

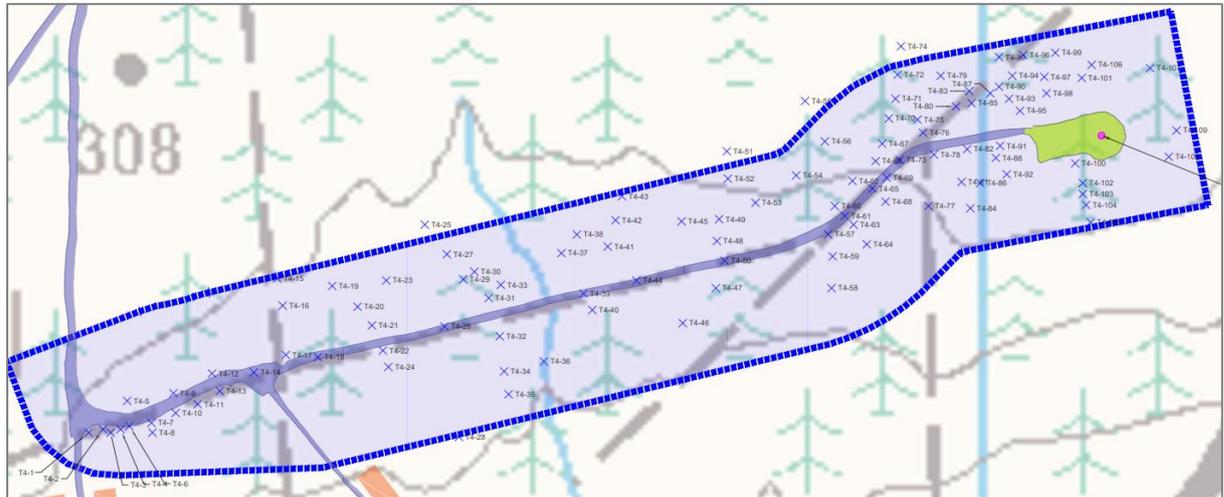


Figure 93 T4 Peat Stability Assessment points

The following table summarises the ‘overdesign’ factors along the T4 spur road. The stability assessment indicates an adequate safety margin with the exception of the area local to T4-73 under crane loading. Works are therefore proposed to improve the stability of this area, as outlined in the following sub-section.

The average overdesign factor along this spur road is 1.79, values range from 0.80 (at T4-73) to 9.37. The assessment along this section of road was based on 109 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The crane hardstanding has been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T4-1	207187	384554	4.5	10	3	1.2	10	13.3	20.7	10.3	2.27		1.64		
T4-2	207200	384557	5.9	10	2	1	10	13.3	20.7	10.3	1.39		1.07		
T4-3	207207	384554	5.7	10	3.5	1.7	10	13.3	20.7	10.3	1.48		1.13		
T4-4	207216	384557	7.3	10	5.5	1.7	0	13.3	20.7	10.3	1.81	1.81	1.47	1.41	1.24
T4-5	207222	384583	5.2	10	3.5	1.8	10	13.3	20.7	10.3	1.53		1.15		
T4-6	207224	384560	5.0	10	6	2	0	13.3	20.7	10.3	2.46	2.46	1.83	1.74	1.46
T4-7	207244	384563	4.8	10	4	1.9	0	13.3	20.7	10.3	1.80	1.80	1.32	1.26	1.05
T4-8	207245	384554	4.1	10	4.5	3.1	10	13.3	20.7	10.3	1.45		1.02		
T4-9	207264	384590	3.0	10	7	3.2	0	13.3	20.7	10.3	2.99	2.99	1.90	1.77	1.40
T4-10	207266	384572	3.0	10	7	4.4	0	13.3	20.7	10.3	2.18	2.18	1.38	1.29	1.02
T4-11	207286	384580	2.2	10	7	3.8	0	13.3	20.7	10.3	3.44	3.44	1.92	1.77	1.35
T4-12	207299	384608	2.0	10	5	3.6	0	13.3	20.7	10.3	2.85	2.85	1.53	1.40	1.05
T4-13	207306	384592	3.0	10	6	3.8	0	13.3	20.7	10.3	2.16	2.16	1.37	1.28	1.01
T4-14	207337	384609	3.0	10	8	3	0	13.3	20.7	10.3	3.64	3.64	2.31	2.16	1.71
T4-15	207358	384695	4.9	10	3.5	1.5	10	13.3	20.7	10.3	1.95		1.44		
T4-16	207363	384670	3.6	10	4	2	10	13.3	20.7	10.3	2.28		1.54		
T4-17	207366	384625	1.0	10	9	3	0	13.3	20.7	10.3	12.30	12.30	4.51	4.01	2.79
T4-18	207395	384623	0.7	10	15	2.2	0	13.3	20.7	10.3	39.90	39.90	11.50	10.08	6.80
T4-19	207408	384688	4.0	10	3	1.5	10	13.3	20.7	10.3	2.05		1.43		
T4-20	207431	384669	1.1	10	7	2.3	10	13.3	20.7	10.3	11.34		4.41		
T4-21	207444	384652	1.6	10	5	3.0	10	13.3	20.7	10.3	4.27		2.05		
T4-22	207454	384629	1.4	10	9	3.0	10	13.3	20.7	10.3	8.79	5.13	3.93	3.54	2.56
T4-23	207457	384693	3.5	10	4	2.2	10	13.3	20.7	10.3	2.13		1.42		
T4-24	207459	384614	1.8	10	5	3	10	13.3	20.7	10.3	3.80		1.94		
T4-25	207492	384744	4.3	10	4	1.8	10	13.3	20.7	10.3	2.12		1.51		
T4-26	207510	384651	2.8	10	12	3	0	13.3	20.7	10.3	5.86	5.86	3.62	3.37	2.64
T4-27	207512	384717	3.4	10	2.5	1.7	10	13.3	20.7	10.3	1.77		1.17		
T4-28	207523	384550	3.0	10	2.5	1.4	10	13.3	20.7	10.3	2.44		1.55		
T4-29	207527	384694	3.6	10	4.5	2.4	10	13.3	20.7	10.3	2.13		1.44		
T4-30	207537	384701	4.1	10	3.5	1.7	10	13.3	20.7	10.3	2.06		1.45		
T4-31	207550	384677	1.9	10	4	3	10	13.3	20.7	10.3	2.88		1.51		
T4-32	207560	384642	1.5	10	7	5.7	10	13.3	20.7	10.3	3.37		1.57		
T4-33	207561	384689	4.0	10	4	2.4	10	13.3	20.7	10.3	1.71		1.19		
T4-34	207564	384610	3.3	10	3.5	2.3	10	13.3	20.7	10.3	1.89		1.24		
T4-35	207568	384589	3.3	10	3.5	1.9	10	13.3	20.7	10.3	2.29		1.50		
T4-36	207600	384619	0.8	10	8	3.9	10	13.3	20.7	10.3	10.53		3.33		
T4-37	207616	384718	3.6	10	6	3.4	10	13.3	20.7	10.3	2.01		1.36		
T4-38	207630	384735	2.3	10	4	2.5	10	13.3	20.7	10.3	2.85		1.63		
T4-39	207636	384681	1.4	10	9	3.5	0	13.3	20.7	10.3	7.54	7.54	3.37	3.04	2.19
T4-40	207644	384666	1.7	10	5	3.8	10	13.3	20.7	10.3	3.18		1.58		
T4-41	207658	384724	2.7	10	2	1.8	10	13.3	20.7	10.3	1.69		1.03		
T4-42	207665	384748	3.7	10	2	1.1	10	13.3	20.7	10.3	2.01		1.37		
T4-43	207671	384770	3.0	10	1.5	1.2	10	13.3	20.7	10.3	1.71		1.08		
T4-44	207684	384693	1.5	10	11	4.6	0	13.3	20.7	10.3	6.55	6.55	3.04	2.75	2.00
T4-45	207725	384747	2.9	10	3.5	1.9	10	13.3	20.7	10.3	2.60		1.63		
T4-46	207726	384654	2.7	10	6	3.9	10	13.3	20.7	10.3	2.34		1.43		
T4-47	207756	384686	2.3	10	4.5	3	10	13.3	20.7	10.3	2.67		1.53		
T4-48	207757	384729	1.9	10	4	3.8	10	13.3	20.7	10.3	2.27		1.19		
T4-49	207759	384749	2.3	10	4	2.7	10	13.3	20.7	10.3	2.64		1.51		
T4-50	207764	384711	1.5	10	11	5.7	0	13.3	20.7	10.3	5.30	5.30	2.46	2.23	1.62
T4-51	207766	384811	1.8	10	4.5	4.1	10	13.3	20.7	10.3	2.50		1.28		
T4-52	207767	384786	1.7	10	4	4.1	10	13.3	20.7	10.3	2.36		1.17		
T4-53	207792	384764	2.9	10	4	2.9	10	13.3	20.7	10.3	1.95		1.22		
T4-54	207829	384789	2.2	10	6	3.75	10	13.3	20.7	10.3	2.98		1.67		
T4-55	207837	384857	1.8	10	6	3.8	10	13.3	20.7	10.3	3.60		1.84		
T4-56	207855	384820	1.7	10	2	2.3	10	13.3	20.7	10.3	2.10		1.04		
T4-57	207858	384735	0.6	10	6	5.7	0	13.3	20.7	10.3	7.23	7.23	1.86	1.62	1.08
T4-58	207861	384686	1.9	10	4	3.2	10	13.3	20.7	10.3	2.70		1.41		
T4-59	207862	384715	1.9	10	4	3	10	13.3	20.7	10.3	2.88		1.51		
T4-60	207864	384761	1.5	10	6	4.8	10	13.3	20.7	10.3	3.43		1.59		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T4-61	207873	384752	3.1	10	4	3.1	10	13.3	20.7	10.3	1.71		1.10		
T4-62	207880	384784	2.0	10	5	3.5	10	13.3	20.7	10.3	2.93		1.57		
T4-63	207881	384744	2.5	10	7	4	10	13.3	20.7	10.3	2.87		1.70		
T4-64	207893	384726	3.0	10	6	3.8	10	13.3	20.7	10.3	2.16		1.37		
T4-65	207898	384777	2.5	10	9	5.6	0	13.3	20.7	10.3	2.65	2.65	1.57	1.45	1.12
T4-66	207901	384802	1.7	10	5	5.7	10	13.3	20.7	10.3	2.13		1.05		
T4-67	207907	384818	2.8	10	4	3.4	10	13.3	20.7	10.3	1.72		1.07		
T4-68	207910	384765	3.0	10	5	4	10	13.3	20.7	10.3	1.71		1.09		
T4-69	207911	384787	3.0	10	9	4.8	0	13.3	20.7	10.3	2.57	2.57	1.63	1.52	1.20
T4-70	207913	384841	2.3	10	9	3.6	10	13.3	20.7	10.3	4.46		2.55		
T4-71	207919	384859	2.6	10	5.5	3.4	10	13.3	20.7	10.3	2.55		1.53		
T4-72	207921	384881	3.7	10	3.5	1.9	10	13.3	20.7	10.3	2.04		1.39		
T4-73	207923	384803	3.0	10	7	5.6	0	13.3	20.7	10.3	1.72	1.72	1.09	1.02	0.80
T4-74	207924	384907	4.3	10	3	1.9	10	13.3	20.7	10.3	1.50		1.07		
T4-75	207939	384840	3.3	10	5	3.4	10	13.3	20.7	10.3	1.83		1.20		
T4-76	207944	384828	2.8	10	7	3.8	0	13.3	20.7	10.3	2.70	2.70	1.67	1.55	1.22
T4-77	207949	384761	1.7	10	8	8.2	10	13.3	20.7	10.3	2.38		1.18		
T4-78	207954	384808	2.9	10	9	5.7	0	13.3	20.7	10.3	2.24	2.24	1.41	1.31	1.03
T4-79	207960	384880	3.9	10	4	1.7	10	13.3	20.7	10.3	2.47		1.71		
T4-80	207974	384852	3.6	10	3.5	2.4	10	13.3	20.7	10.3	1.66		1.12		
T4-81	207979	384783	2.1	10	8	5.2	10	13.3	20.7	10.3	3.01		1.65		
T4-82	207984	384813	2.0	10	6	3	0	13.3	20.7	10.3	4.10	4.10	2.20	2.01	1.52
T4-83	207986	384866	4.8	10	3.5	1.7	10	13.3	20.7	10.3	1.76		1.29		
T4-84	207987	384759	1.9	10	7	5	10	13.3	20.7	10.3	3.03		1.59		
T4-85	207988	384855	3.2	10	5	2.4	10	13.3	20.7	10.3	2.67		1.73		
T4-86	207996	384782	2.0	10	7	3.4	10	13.3	20.7	10.3	4.22		2.26		
T4-87	208005	384864	2.9	10	5.5	1.6	0	13.3	20.7	10.3	4.85	4.85	3.04	2.83	2.23
T4-88	208010	384805	2.1	10	7	4.3	10	13.3	20.7	10.3	3.18		1.75		
T4-89	208013	384897	4.1	10	3.5	1.9	10	13.3	20.7	10.3	1.84		1.29		
T4-90	208013	384870	2.7	10	3.5	1.6	10	13.3	20.7	10.3	3.32		2.02		
T4-91	208014	384816	2.3	10	3.5	2.1	10	13.3	20.7	10.3	2.97		1.69		
T4-92	208020	384790	2.4	10	5	2.1	10	13.3	20.7	10.3	4.06		2.36		
T4-93	208022	384859	2.2	10	7.5	1.7	10	13.3	20.7	10.3	8.21		4.60		
T4-94	208025	384880	2.0	10	6	3.5	10	13.3	20.7	10.3	3.52		1.89		
T4-95	208032	384848	2.0	10	5	1.7	10	13.3	20.7	10.3	6.02		3.23		
T4-96	208035	384899	2.2	10	6	1.7	10	13.3	20.7	10.3	6.57		3.68		
T4-97	208054	384879	1.9	10	5	1.6	10	13.3	20.7	10.3	6.73		3.53		
T4-98	208056	384864	1.7	10	6.5	2.1	0	13.3	20.7	10.3	7.46	7.46	3.70	3.36	2.48
T4-99	208064	384901	2.1	10	7	2.3	10	13.3	20.7	10.3	5.94		3.26		
T4-100	208082	384800	2.0	10	5.5	3.0	10	13.3	20.7	10.3	3.76		2.02		
T4-101	208088	384878	1.9	10	10	3	10	13.3	20.7	10.3	7.19		3.77		
T4-102	208089	384782	3.3	10	4.5	3	10	13.3	20.7	10.3	1.86		1.22		
T4-103	208089	384772	2.4	10	5	3.8	10	13.3	20.7	10.3	2.25		1.31		
T4-104	208092	384762	2.3	10	5	3.8	10	13.3	20.7	10.3	2.35		1.34		
T4-105	208096	384746	2.0	10	5	4.4	10	13.3	20.7	10.3	2.33		1.25		
T4-106	208097	384890	0.7	10	7	3.2	10	13.3	20.7	10.3	12.82		3.69		
T4-107	208150	384887	1.6	10	16	2.1	10	13.3	20.7	10.3	19.51		9.37		
T4-108	208167	384806	2.2	10	4	3	10	13.3	20.7	10.3	2.48		1.39		
T4-109	208174	384830	2.8	10	4	3.4	10	13.3	20.7	10.3	1.72		1.07		

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 20

An area of significantly deep peat is encountered on the western end of the spur road, near the junction to T1/T2, therefore additional testing and analysis was carried out in this area. Although the numerical stability assessment indicates stability factors >1 under all applicable load cases, visual observations and an assessment of the topography, potential flow paths and proximity of watercourses indicates that a higher degree of caution is warranted at this locality. It is therefore proposed that a stabilising barrage will be constructed immediately downslope of the existing floating road between the T1 and T2 junctions.

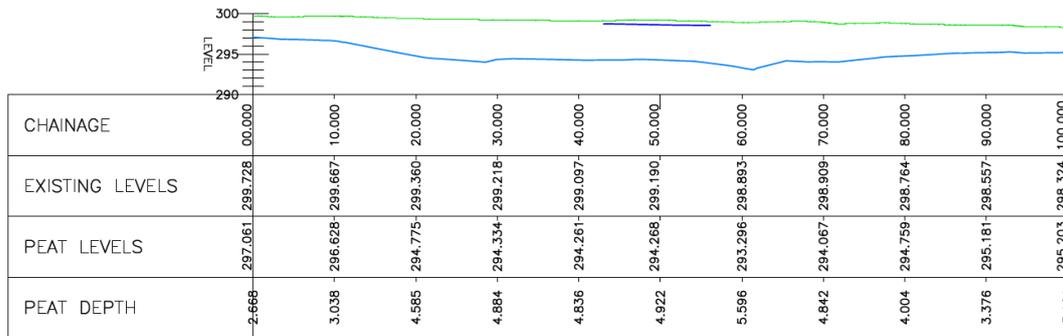
The peat depth map below in Figure 94 indicates the deep peat at the junction, and Sections A-A and B-B show the subsurface slopes. Note that the deepest peat at the westernmost end of the spur road is within a bowl shaped deep pocket of peat, therefore the peat is largely confined as the subsurface is

rising on all sides, see Section A-A below. Section B-B however indicates a subsurface crossfall and although it levels out there remains a potential flow path to the south east.

Further details for each of the proposed works are presented in Sections 5.4.1 and 5.4.2 below.

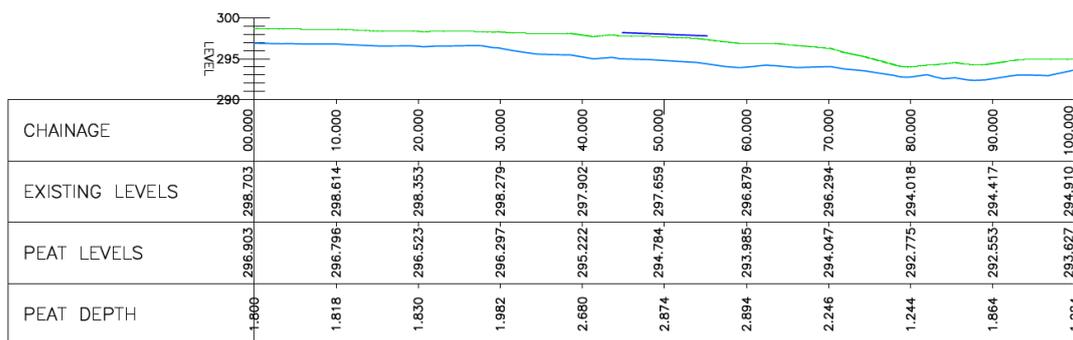


Figure 94 T4 Peat Depth Contour Map



T4 SPUR – SECTION A-A – LONGSECTION
1:500

Figure 95 T4 Section A-A



T4 SPUR – SECTION B-B – LONGSECTION
1:500

Figure 96 T4 Section B-B

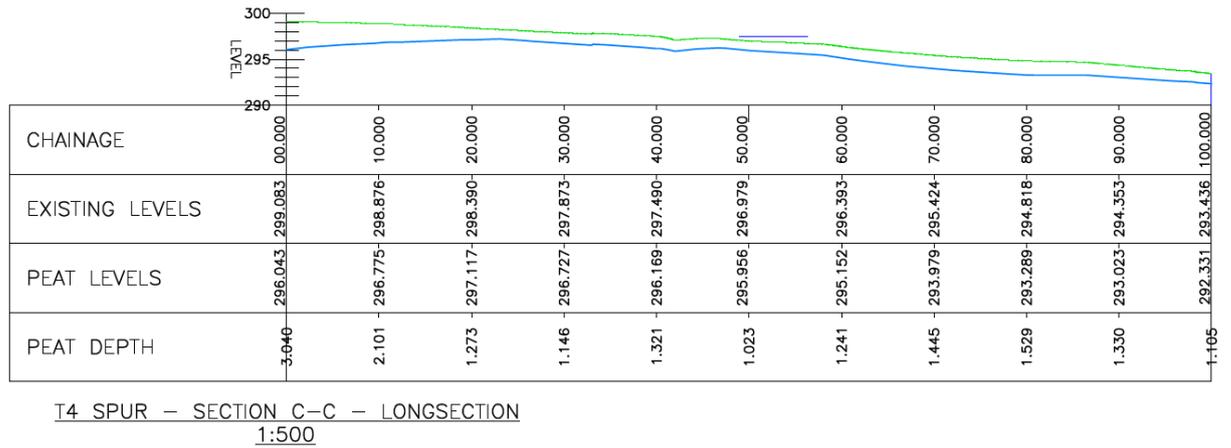


Figure 97 T4 Section C-C

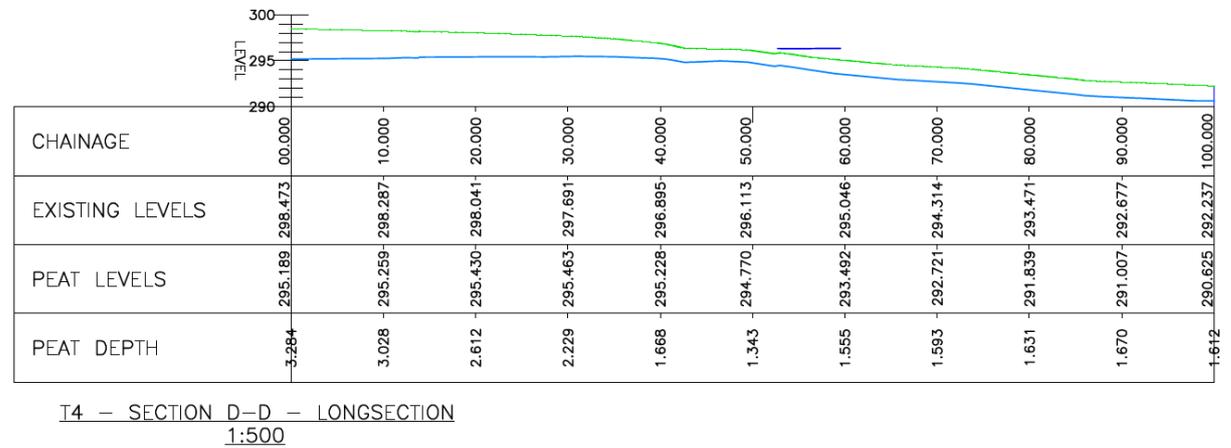


Figure 98 T4 Section D-D

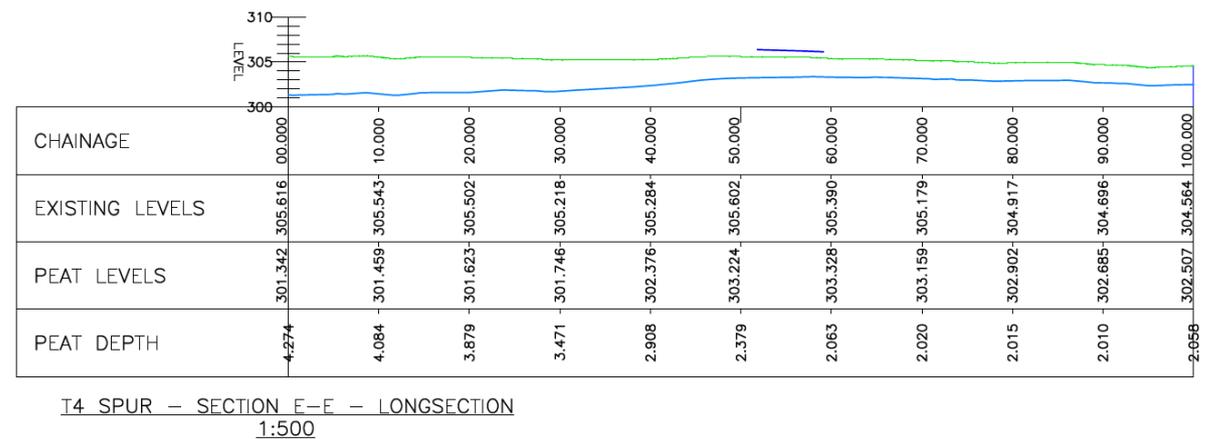


Figure 99 T4 Section E-E

5.4.1 T4 Floating Road upgrade – approach to hardstanding

Following a detailed re-assessment of the T4 floating road a short section of the floating road on the approach to the hardstanding was found to be potentially unstable under heavy crane loading. Point T4-1 below on the final S-bend had an overdesign factor <1 for crane loading, but >1 for all other load case

scenarios including permanent and construction loading. A cautious approach is being taken to increase the factor of safety before any heavy turbine components or cranes are delivered.

It is proposed to rebuild the section of road between the culvert and the hardstanding to solid sub-formation. The final 100m will also be realigned along the original planning alignment, correcting an earlier deviation which was governed by the turbine supplier specification limits for turning at a gradient in excess of 4%.

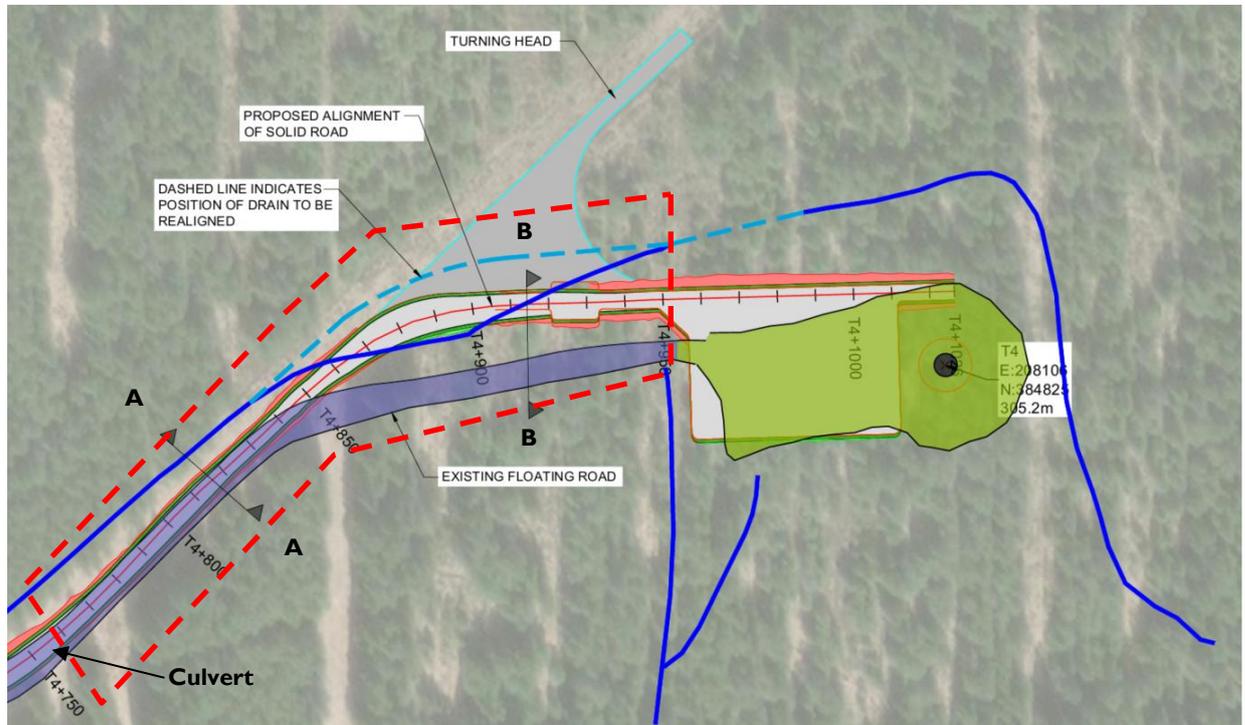
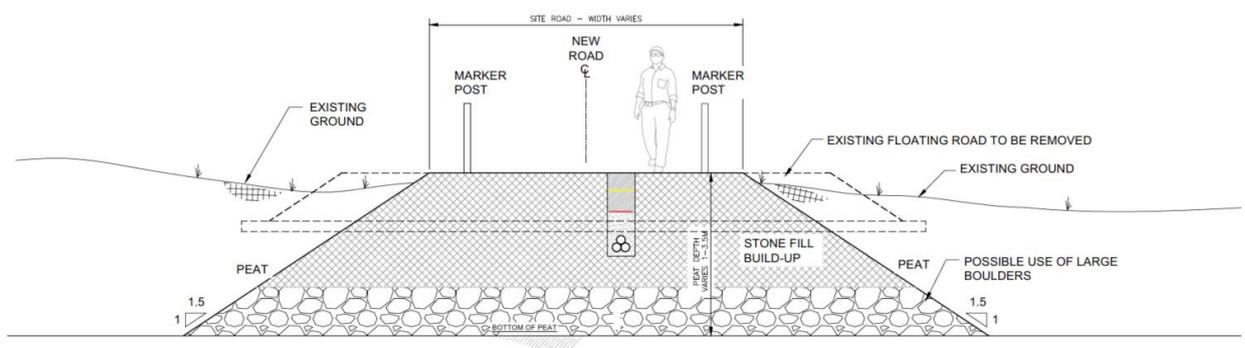


Figure 100 Proposed T4 road upgrade area illustrated with the red dashed line

From the culvert (~Chainage 750) to Chainage 850 (where the road alignments deviate), the existing floating road will be incrementally removed by pulling back the engineering fill material and geogrid, before constructing the new road to solid subgrade using the excavate and replace method. The length of road to be realigned between Chainage 850 and T4 hardstand will be built incrementally using the excavate and replace method. Once this section of new road has been completed, the remaining section of floating road can be removed and the original bog reinstated. A method statement including sequencing of the works is to be prepared prior to construction commencing.



ILLUSTRATIVE SECTION THROUGH UPGRADED SOLID ROAD INCLUDING GRID ROUTE TRENCH
 Scale 1:50

Figure 101 T4 floating road upgrade Section A-A detail

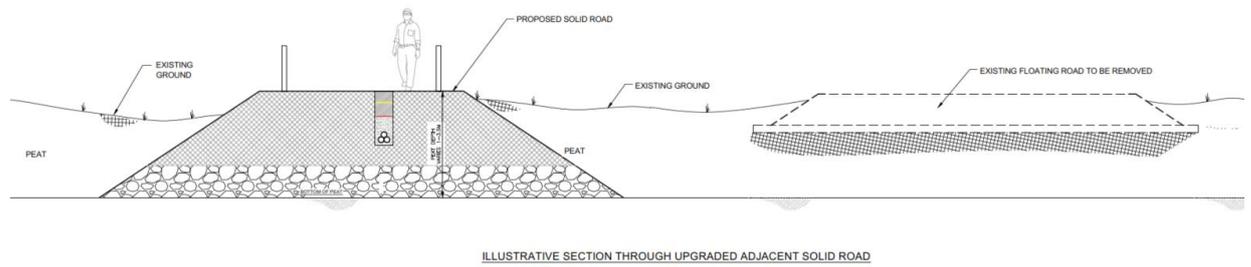


Figure 102 T4 floating road upgrade Section B-B detail

5.4.2 T4 Floating Road upgrade – approach to T2 junction

As noted previously, peat depth map indicates the deep peat at the T1/T2 junction. The deepest peat at the westernmost end of the spur road is within a bowl shaped deep pocket of peat, therefore the peat is largely confined as the subsurface is rising on all sides. However a subsurface crossfall was identified and although it levels out, there remains a potential flow path to the south east.

The deeper peat at the junction is shown below in Figure 103, depths between 5-7m were measured locally, but this deep pocket is largely surrounded by shallower peat <2m as indicated by the lighter green contours.

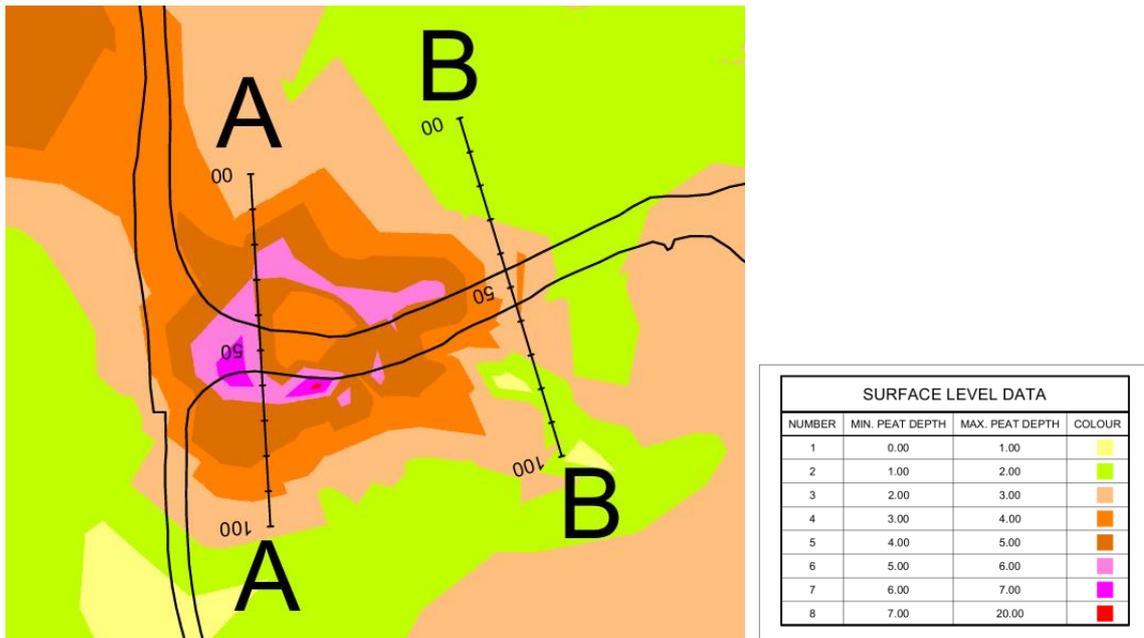


Figure 103 T4 Spur Peat Depths (T1-T2 Junction)

The general subsurface slope falls to the south east as indicated by the subsurface contour map below:

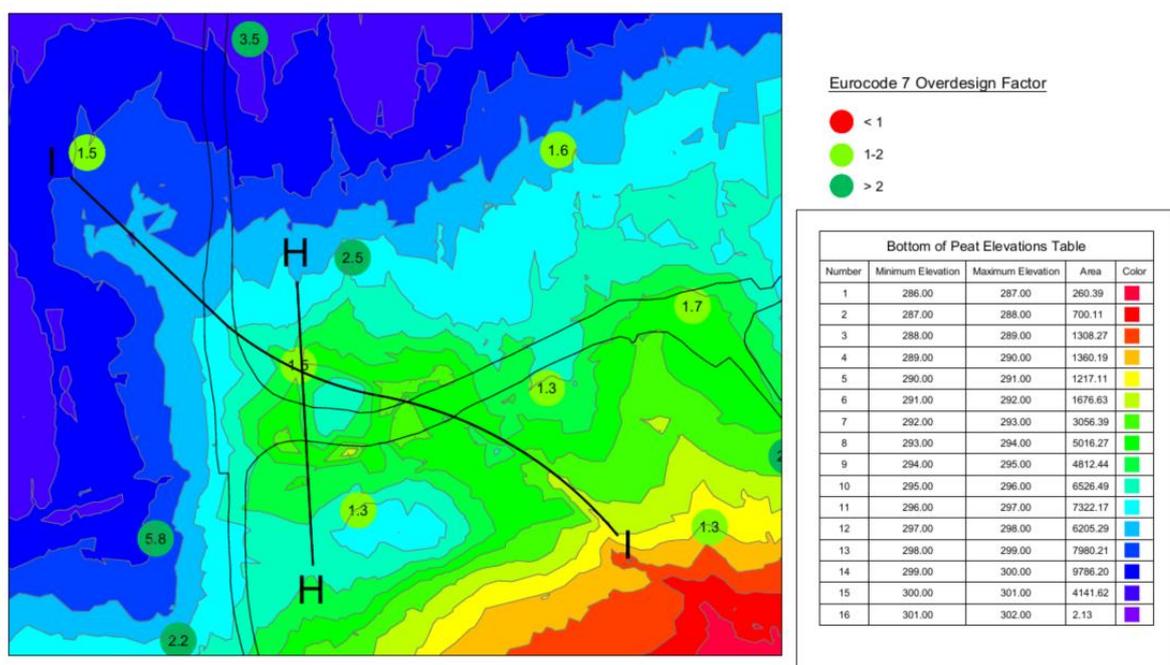


Figure 104 T4 Spur Subsurface Elevations (T2 junction)

Section H-H below illustrates the rising subsurface profile north and south of the existing floating road:

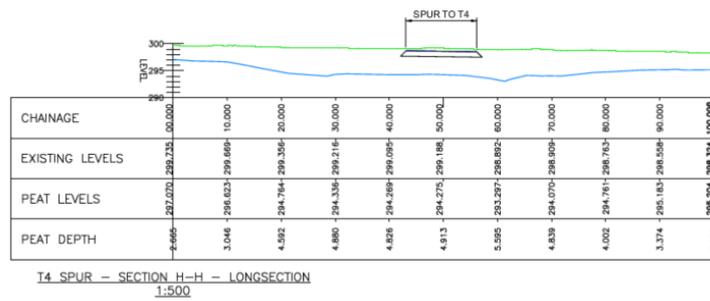


Figure 105 T4 Spur Section H-H (T2 Junction)

Section I-I below is cut along the sub-surface fall to the south-east:



Figure 106 T4 Spur Section I-I (T2 Junction)

The EC7 ‘overdesign’ factors indicated an adequate safety margin at all locations in this area. However as noted, visual observations and an assessment of the topography, potential flow paths and proximity of watercourses it was considered that a higher degree of caution is warranted at this locality. It is therefore proposed that, as a precautionary measure, a stabilising barrage will be constructed immediately downslope of the existing floating road between the T1 and T2 junctions.

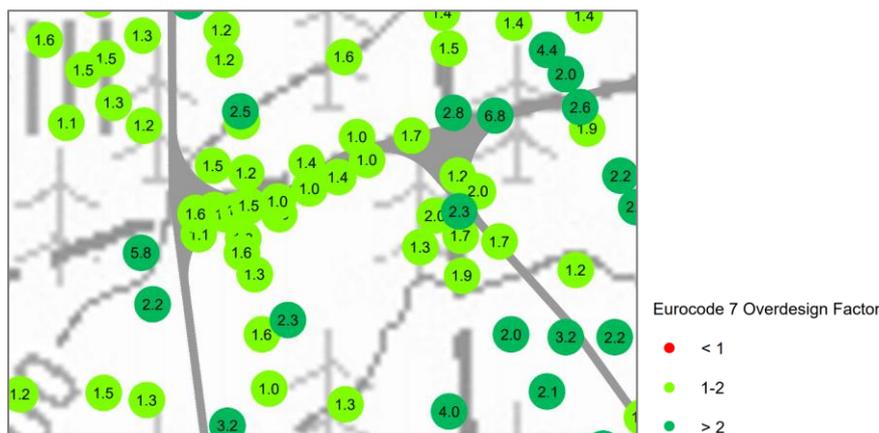


Figure 107 EC7 ‘overdesign’ factors at T1/T2 junction

The stabilising barrage is illustrated in Figure 108. The existing floating road brush will be cut back to the edge of the existing floating road incrementally before constructing the barrage to solid subgrade. It is envisaged that the barrage will be constructed by excavating the upper ~1m of bog before utilising the displacement method. The barrage will be built incrementally. A method statement confirming the construction methodology and sequencing of the works is to be prepared prior to construction commencing.

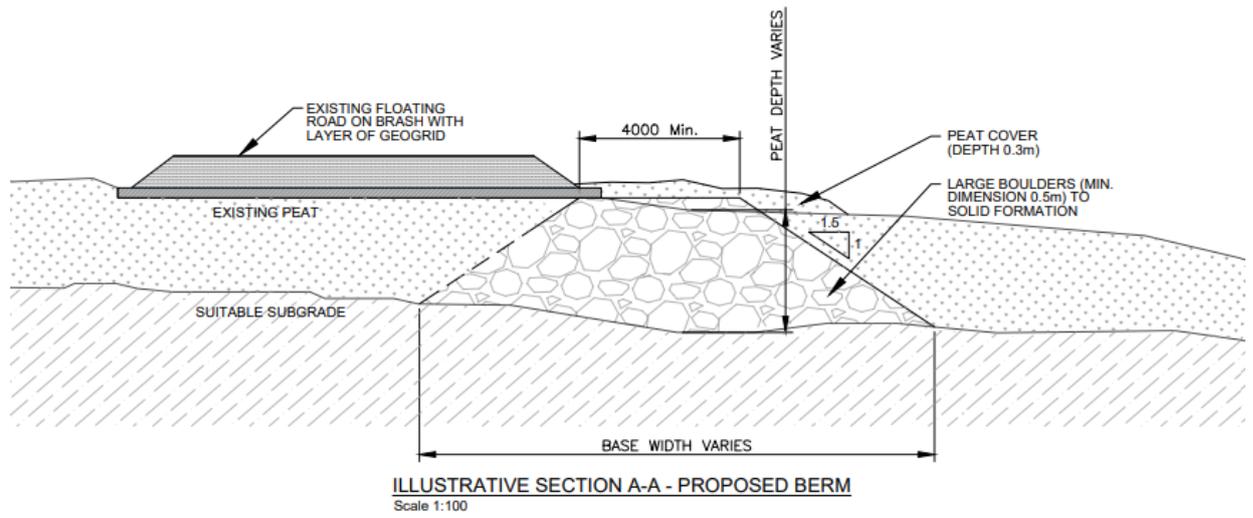


Figure 108 Existing road and proposed berm at the T1/T2 junction



SURFACE LEVEL DATA			
NUMBER	MIN. PEAT DEPTH	MAX. PEAT DEPTH	COLOUR
1	0.00	1.00	Yellow
2	1.00	2.00	Light Green
3	2.00	3.00	Orange
4	3.00	4.00	Dark Orange
5	4.00	5.00	Brown
6	5.00	6.00	Pink
7	6.00	7.00	Magenta
8	7.00	20.00	Red

Figure 109 Existing road and proposed berm at the T1/T2 junction

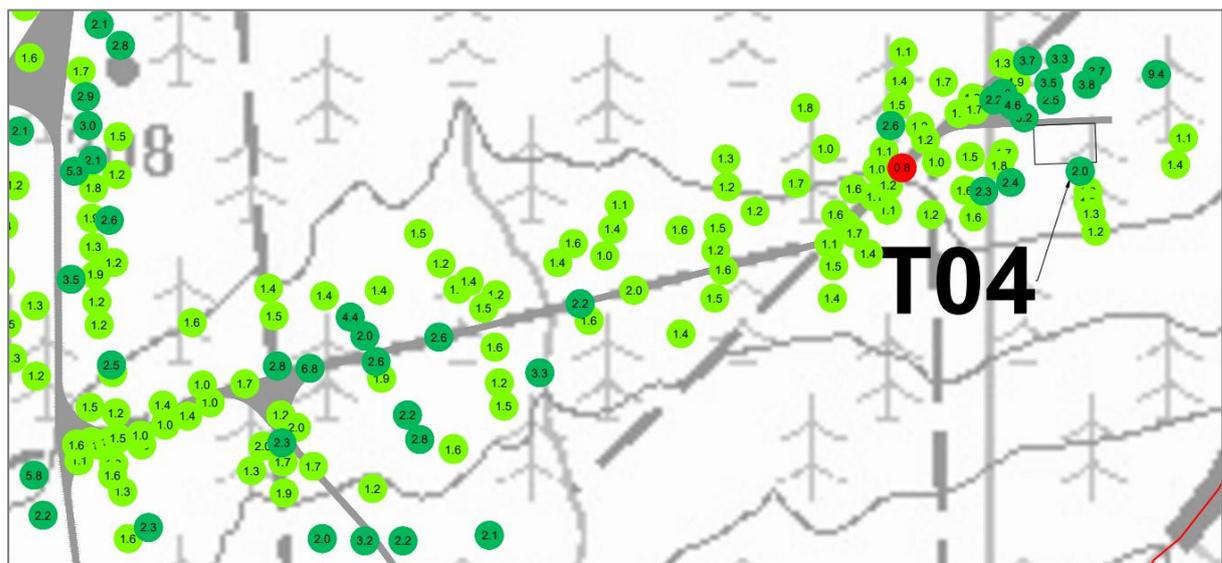
5.4.3 T4 – Conclusion

The assessment indicated adequate safety margins with the exception of one location to the west of the T4 turbine. Additional testing was carried out, and a further assessment was completed in that area.

A short section of the floating road on the approach to the T4 hardstanding was found to be potentially unstable under heavy crane loading. One point on the final S-bend an overdesign factor < 1 for crane loading was calculated, but > 1 for all other load case scenarios including permanent and construction loading. A cautious approach is being adopted to increase the factor of safety by rebuilding the section of road between the culvert and the hardstanding to solid sub-formation before any heavy turbine components or cranes are delivered. The final 100m will also be realigned along the original planning alignment, correcting an earlier deviation.

An area of significantly deep peat is present on the western end of the T4 spur road, near the junction to T1/T2. Significant additional testing and analysis was carried out in this area. Although the numerical stability assessment indicates stability factors > 1 under all applicable load cases, visual observations and an assessment of the topography, potential flow paths and proximity of watercourses indicated that a higher degree of caution is warranted at this locality. It is therefore proposed that a stabilising barrage will be constructed immediately downslope of the existing floating road between the T1 and T2 junctions as a precautionary measure.

Updated RAMS will be prepared along with additional monitoring measures prior to construction.



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

Figure 110 ODF results in this assessment section

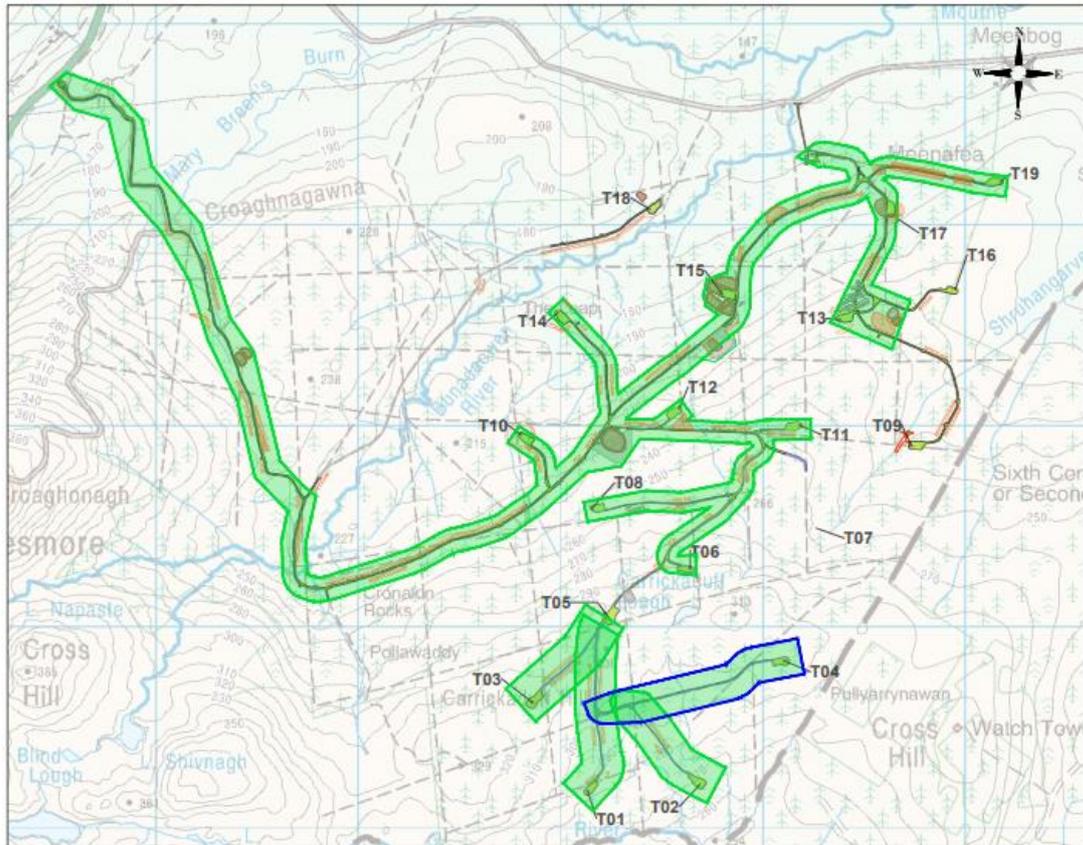


Figure 111 Outlined area has passed the assessment in this section, provided works noted above carried out

5.5 T5 (from T6 to T5) – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

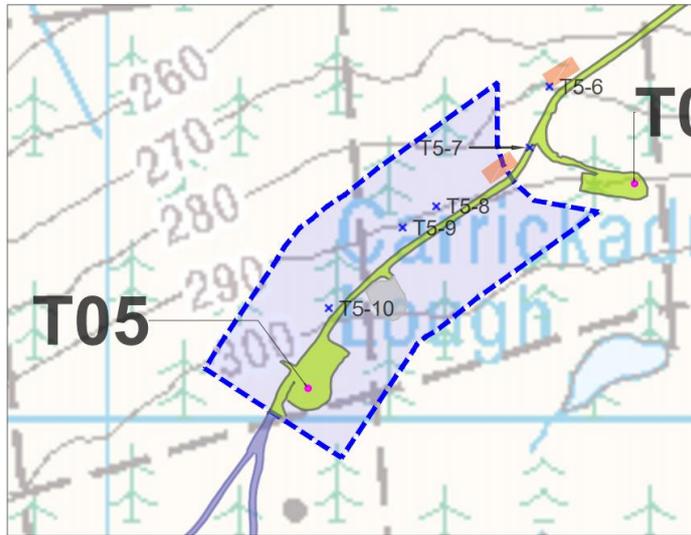


Figure 112 T5 Peat Stability Assessment points

The table below summarises the ‘overdesign’ factors along the T5 access road (southern section between T6 and T5). The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 1.88, values range from 1.09 to 3.26.

The assessment along this section of road was based on 3 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The wind farm road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II
T5-1	207980	385935	1.5	10	12	3.8	I	13.3	0.0	0.0	8.64	5.18	4.01
T5-2	207974	385832	2.0	10	9	3.8	10	13.3	0.0	0.0	4.86	3.24	2.61
T5-3	207899	385731	1.7	10	9	2.5	10	13.3	0.0	0.0	8.68	5.46	4.30
T5-4	207844	385623	1.5	10	9	5.2	10	13.3	0.0	0.0	4.75	2.85	2.21
T5-5	207720	385520	2.1	10	9	6	10	13.3	0.0	0.0	2.94	1.99	1.62
T5-6	207535	385405	1.6	10	5	5.7	10	13.3	0.0	0.0	2.26	1.39	1.09
T5-7	207511	385330	2.4	10	8	6	10	13.3	0.0	0.0	2.29	1.62	1.33
T5-8	207397	385258	1.2	10	20	8.7	10	13.3	0.0	0.0	7.96	4.34	3.26
T5-9	207356	385232	2.2	10	8	4.8	10	13.3	0.0	0.0	3.11	2.14	1.74
T5-10	207266	385133	2.0	10	9.5	5.44	10	13.3	0.0	0.0	3.60	2.40	1.93

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 21

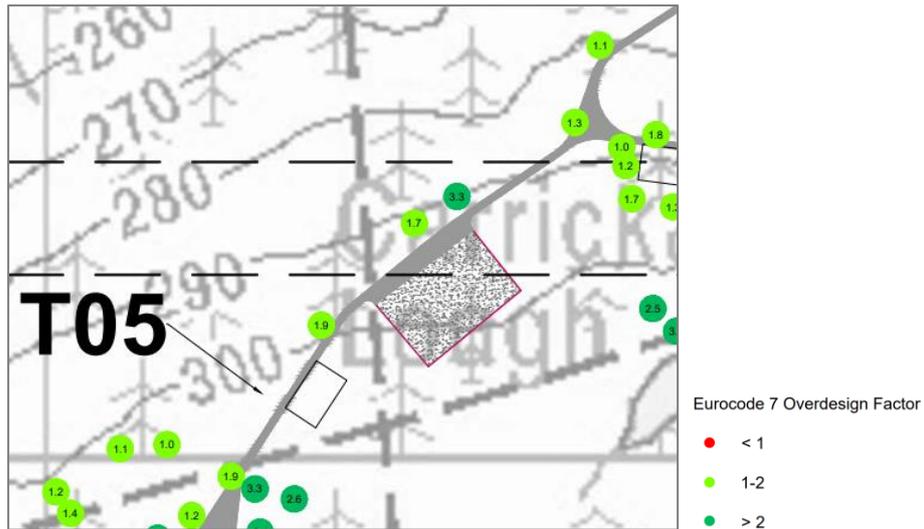


Figure 113 ODF results in this assessment section

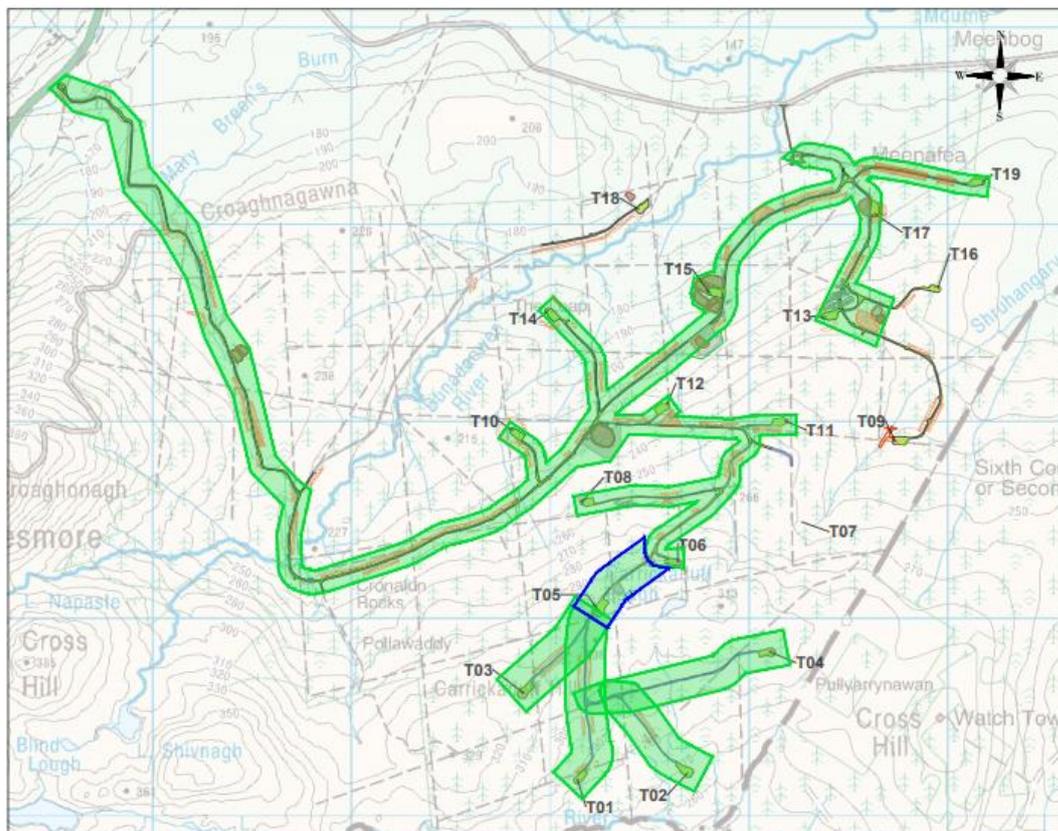


Figure 114 Outlined area has passed the assessment in this section

5.6 T16 – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

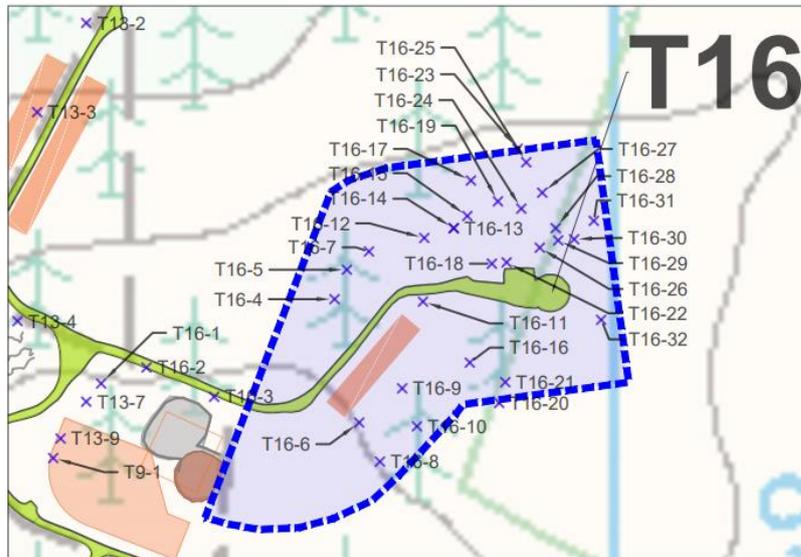


Figure 115 T16 Peat Stability Assessment points

The table below summarises the ‘overdesign’ factors along the T16 spur road (reference points T16-4 to T16-32). The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 1.67, values range from 1.04 to 3.48.

The assessment along this section of road was based on 29 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The wind farm spur road has been constructed to solid sub-formation, and the crane hardstanding is partially complete as it was under construction when works were halted on the site in November 2020. The turbine foundation remains to be constructed but the peat has already been extracted in the formation area exposing shallow bedrock at the turbine location, therefore excavation of rock will be required. Refer to further details below.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	
T16-1	208580	386594	1.0	10	7	4.3	10	13.3	0.0	0.0	6.69	3.34	2.45	
T16-2	208617	386607	1.6	10	6.5	3.7	10	13.3	0.0	0.0	4.51	2.77	2.17	
T16-3	208672	386583	2.6	10	6	4.4	10	13.3	0.0	0.0	2.15	1.56	1.29	
T16-4	208770	386663	3.1	10	3	2.3	10	13.3	0.0	0.0	1.72	1.30	1.11	
T16-5	208780	386687	3.0	10	5	3	10	13.3	0.0	0.0	2.28	1.71	1.45	
T16-6	208790	386562	2.5	10	4	2	10	13.3	0.0	0.0	3.28	2.34	1.94	
T16-7	208798	386702	3.0	10	3.5	2.5	10	13.3	0.0	0.0	1.91	1.43	1.21	
T16-8	208807	386530	3.8	10	6	2	10	13.3	0.0	0.0	3.23	2.56	2.22	
T16-9	208825	386590	5.0	10	4	2.3	10	13.3	0.0	0.0	1.43	1.19	1.06	
T16-10	208837	386559	5.1	10	5	1.3	10	13.3	0.0	0.0	3.09	2.58	2.31	
T16-11	208842	386661	1.4	10	3.5	2.2	10	13.3	0.0	0.0	4.66	2.72	2.08	
T16-12	208843	386713	1.8	10	4	3.4	10	13.3	0.0	0.0	2.68	1.72	1.37	
T16-13	208867	386721	3.2	10	4	2.9	10	13.3	0.0	0.0	1.77	1.35	1.15	
T16-14	208867	386721	3.2	10	4	3.1	10	13.3	0.0	0.0	1.65	1.26	1.07	
T16-15	208878	386731	2.7	10	5	2.5	10	13.3	0.0	0.0	3.04	2.22	1.85	
T16-16	208880	386611	2.0	10	5	2.7	10	13.3	0.0	0.0	3.80	2.53	2.04	
T16-17	208881	386760	3.3	10	3.5	2.3	10	13.3	0.0	0.0	1.89	1.45	1.24	
T16-18	208898	386692	4.0	10	4.5	2.4	10	13.3	0.0	0.0	1.92	1.54	1.34	
T16-19	208903	386743	5.1	10	5	1.8	10	13.3	0.0	0.0	2.23	1.86	1.67	
T16-20	208904	386578	2.8	10	3	2.6	10	13.3	0.0	0.0	1.69	1.24	1.04	
T16-21	208909	386595	1.6	10	5	2	10	13.3	0.0	0.0	6.40	3.94	3.08	
T16-22	208910	386693	5.2	10	5	2.4	10	13.3	0.0	0.0	1.64	1.38	1.23	
T16-23	208919	386786	2.2	10	5	3	10	13.3	0.0	0.0	3.11	2.14	1.74	
T16-24	208922	386737	4.9	10	3	1.7	10	13.3	0.0	0.0	1.47	1.22	1.09	
T16-25	208926	386775	1.8	10	4	3	10	13.3	0.0	0.0	3.04	1.95	1.55	
T16-26	208937	386705	4.9	10	3	1.7	10	13.3	0.0	0.0	1.47	1.22	1.09	
T16-27	208939	386750	1.6	10	5	2.5	10	13.3	0.0	0.0	5.12	3.15	2.46	
T16-28	208950	386721	2.6	10	2	1.5	10	13.3	0.0	0.0	2.10	1.52	1.26	
T16-29	208952	386711	3.0	10	3	1.9	10	13.3	0.0	0.0	2.16	1.62	1.37	
T16-30	208965	386712	2.1	10	5	2.2	10	13.3	0.0	0.0	4.43	3.00	2.43	
T16-31	208981	386727	1.8	10	4.5	1.5	10	13.3	0.0	0.0	6.82	4.39	3.48	
T16-32	208987	386646	2.9	10	4	2.3	10	13.3	0.0	0.0	2.46	1.83	1.54	

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 22

5.6.1 T16 Foundation & Hardstanding Excavation

Excavation for the turbine foundation had commenced prior to the peat slide at T7 and the ground conditions are therefore known to be favourable at the immediate turbine location.

The peat depth in the immediate area of the T16 turbine is relatively shallow and varies from 0.3 to 1.4m as the underlying bedrock is locally undulating. Rock breaking will be required to provide the required foundation formation level 1.8m below the average ground level within the foundation footprint area. The ground slope at the turbine location varies between 1.9 and 2.2 degrees.

As the peat has already been excavated for the entire formation area there will be no further requirement for tracking of construction vehicles onto peat.

The T16 hardstanding was partially complete when works were halted on site and the image below shows the areas of the hardstanding yet to be constructed. The image illustrates the local area within the hardstanding plan where a local section of peat has displaced on the uphill side of the works. The design and construction methodology of the hardstand was developed in anticipation that such local movements may occur and the solid hardstand acts to control any local movements as the works are

advanced. As the works were suddenly stopped after the T7 slide the hardstand area was yet to be raised to the final level. The area in question is within the footprint of the hardstand and will be removed once the construction of the hardstand recommences. The partially constructed hardstanding provides stability to the upslope peat. Figure 117 below shows the hardstanding construction controlling local movement of peat within the footprint of the works area. The works area is shown in Figure 116 which is a recent aerial image with the design layout overlaid.

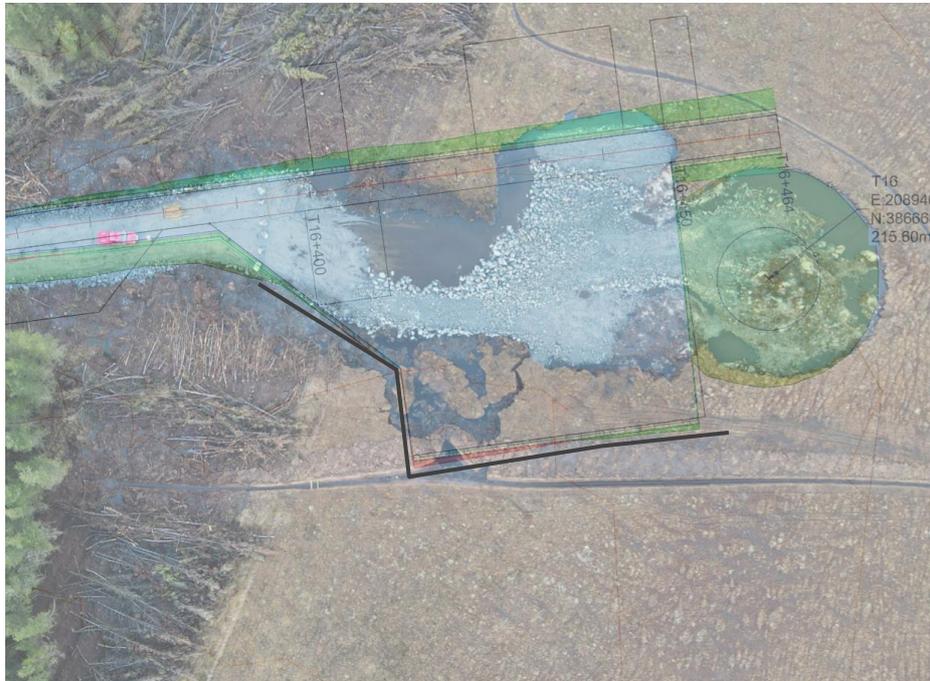


Figure 116 T16 aerial image with design layout



Figure 117 T16 photo showing incomplete hardstand construction works

T16 turbine foundation excavation: Note the peg at centre of turbine, solid bedrock below shallow peat; rock breaking will be required over the majority of the formation area:



Figure 118 T16 photo showing incomplete turbine excavation works on solid bedrock

5.6.2 T16 – Conclusion

The assessment indicates that this section of the site is stable as the safety margin is in excess of 1.0, as required to comply with Eurocode 7. A broader assessment was carried out here at T16 given the remaining works required at the turbine and hardstanding, and the average overdesign factor calculated was 1.67 based on 29 assessment points.

As noted above, the peat in the remaining section of hardstanding to be completed is contained and stabilised by the solid road and partially complete section of hardstanding which is on the downslope side of the works area. The turbine formation area has already been excavated as evident in the aerial image above.

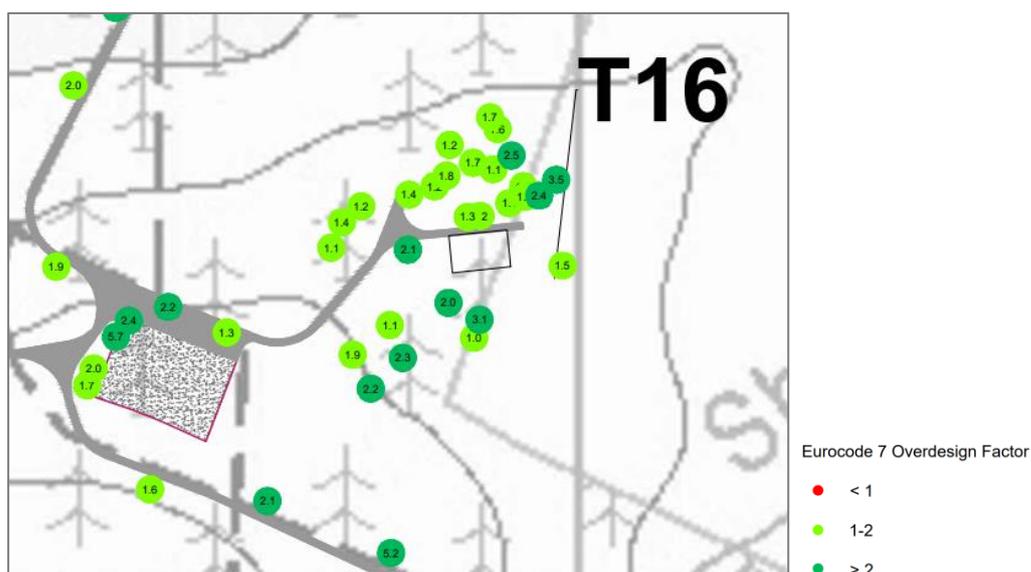


Figure 119 ODF results in this assessment section

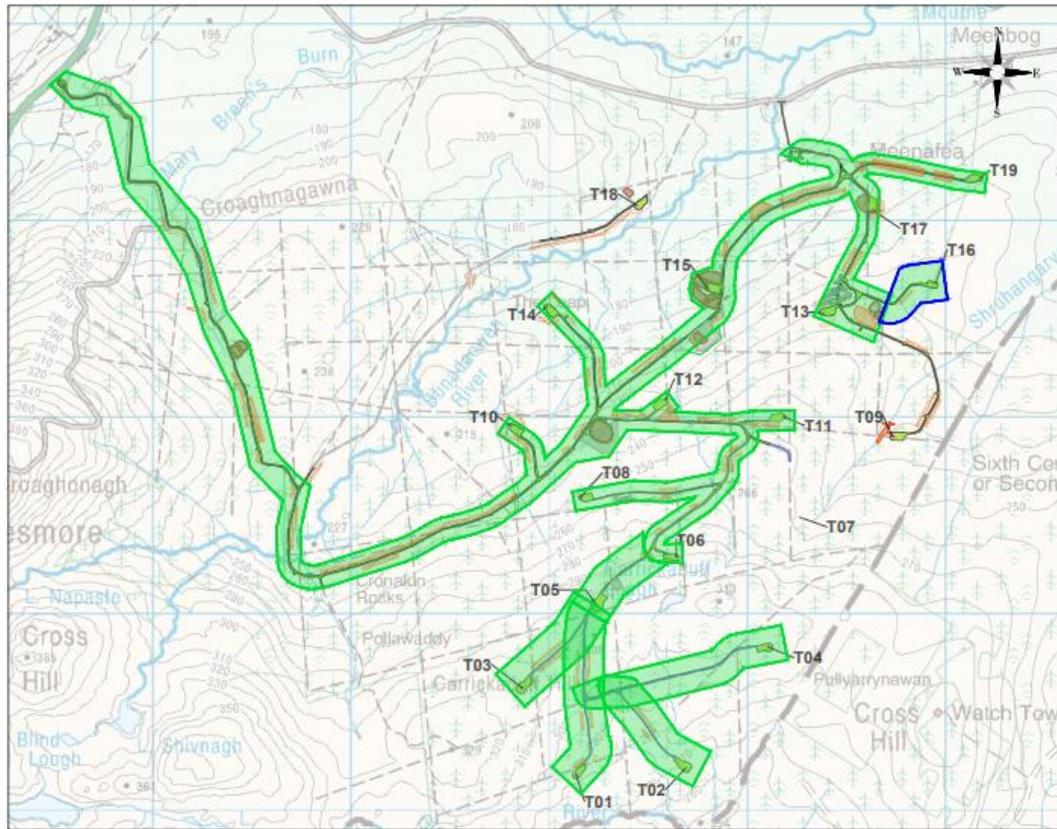


Figure 120 Outlined area has passed the assessment in this section

5.7 T18 Solid upgraded floating road – Peat Stability Assessment

A number of assessment points are presented below which indicate stability under all applicable load cases.

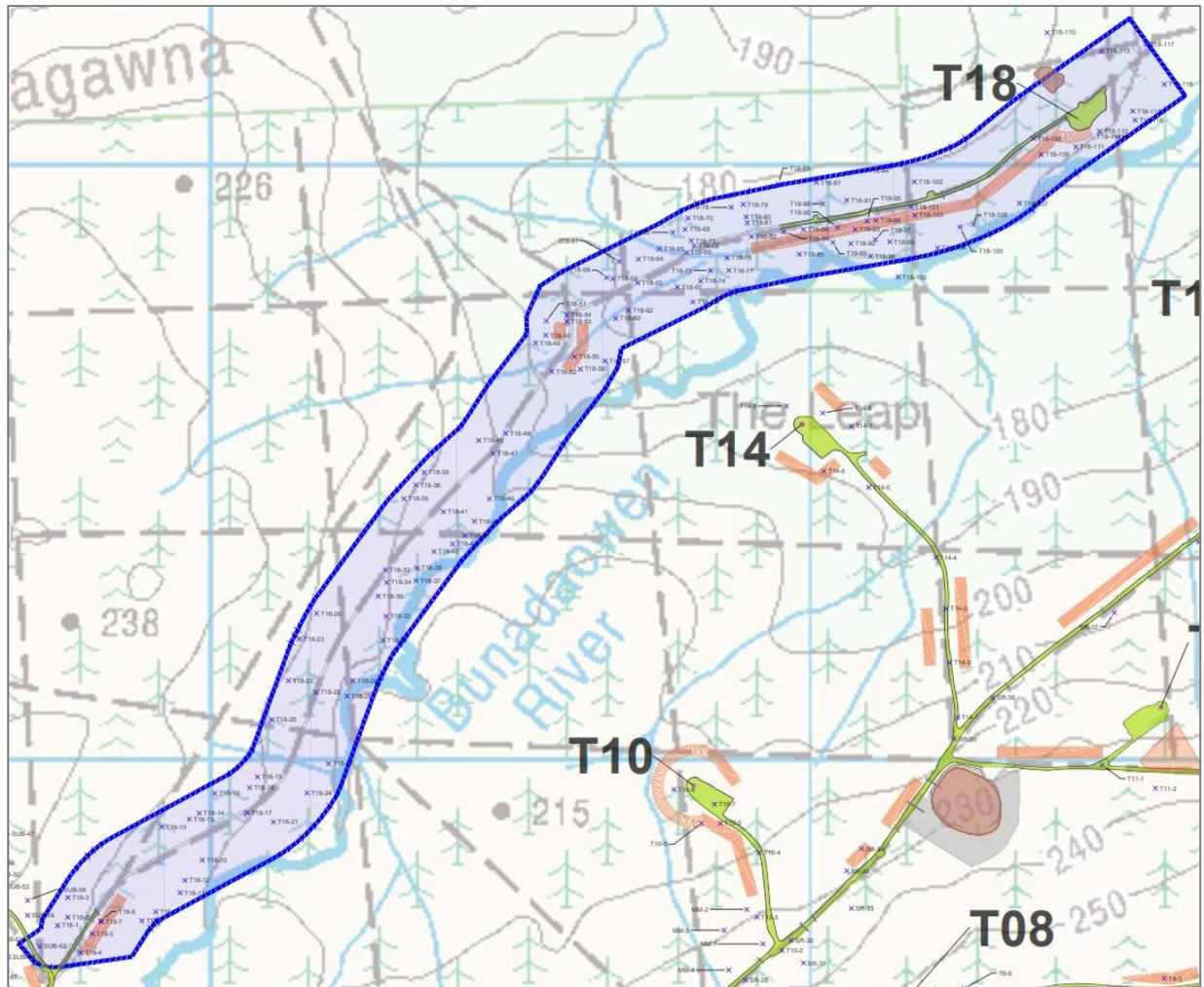


Figure 121 T18 Peat Stability Assessment points

Additional peat probing and testing was carried out along the entire 2.4km of the T18 spur road, with shear vane testing and peat probing carried out to a minimum of 50m either side of the works area. An additional series of testing was carried out where deeper peat was encountered, as shown in Figure 125 below. This enabled the subsurface profile and peat depths to be more accurately determined.

The table below summarises the ‘overdesign’ factors along the T18 spur road. The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.21, values range from 1.08 to 10.25.

The assessment along this section of road was based on 118 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations. Shear strengths utilised in the assessment varied from 2.5-21kPa.

The wind farm spur road has been partially constructed to date by widening to solid sub-formation on the downslope side, and keying into the existing forest track. All remaining works will similarly be carried out to solid sub-formation using the excavate and replace method.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	
T18-1	205739	385716	1.2	10	4	3.8	10	13.3	0.0	0.0	3.60	1.96	1.48	
T18-2	205756	385730	2.0	10	6	3.4	10	13.3	0.0	0.0	3.62	2.41	1.94	
T18-3	205756	385763	1.2	10	8	4.9	10	13.3	0.0	0.0	5.60	3.05	2.29	
T18-4	205778	385670	1.2	10	8	3.2	10	13.3	0.0	0.0	8.54	4.66	3.50	
T18-5	205797	385702	2.0	10	12	2.7	10	13.3	0.0	0.0	9.11	6.07	4.88	
T18-6	205812	385723	3.0	10	13	3.1	10	13.3	0.0	0.0	5.73	4.30	3.64	
T18-7	205812	385723	3.0	10	13	2.5	10	13.3	0.0	0.0	7.10	5.33	4.51	
T18-8	205880	385724	1.4	10	4.5	2.8	10	13.3	0.0	0.0	4.71	2.74	2.11	
T18-9	205903	385739	2.5	10	5	2.9	10	13.3	0.0	0.0	2.83	2.02	1.67	
T18-10	205913	385882	1.0	10	6	5.2	10	13.3	0.0	0.0	4.75	2.37	1.74	
T18-11	205944	385771	1.2	10	2.5	2.2	10	13.3	0.0	0.0	3.88	2.12	1.59	
T18-12	205952	385792	1.2	10	4	3	10	13.3	0.0	0.0	4.56	2.48	1.87	
T18-13	205959	385895	1.0	10	5	5.2	10	13.3	0.0	0.0	3.96	1.98	1.45	
T18-14	205976	385905	1.5	10	6	4.1	10	13.3	0.0	0.0	4.01	2.40	1.86	
T18-15	205981	385826	1.4	10	3	3	10	13.3	0.0	0.0	2.93	1.71	1.31	
T18-16	206002	385938	1.4	10	7.5	4.2	10	13.3	0.0	0.0	5.24	3.06	2.34	
T18-17	206056	385906	1.5	10	12	4.9	10	13.3	0.0	0.0	6.71	4.03	3.12	
T18-18	206060	385948	1.2	10	5	4.3	10	13.3	0.0	0.0	3.98	2.17	1.63	
T18-19	206073	385966	1.2	10	3	3.9	10	13.3	0.0	0.0	2.63	1.44	1.08	
T18-20	206097	386062	1.0	10	13	2.9	10	13.3	0.0	0.0	18.38	9.19	6.73	
T18-21	206100	385890	2.5	10	4	2	10	13.3	0.0	0.0	3.28	2.34	1.94	
T18-22	206125	386128	1.0	10	8	4.4	10	13.3	0.0	0.0	7.47	3.74	2.74	
T18-23	206143	386198	0.8	10	9	5.6	10	13.3	0.0	0.0	8.27	3.68	2.62	
T18-24	206156	385939	1.4	10	4	4.4	10	13.3	0.0	0.0	2.67	1.56	1.19	
T18-25	206171	386108	1.3	10	12	6.4	10	13.3	0.0	0.0	5.95	3.36	2.55	
T18-26	206172	386241	0.7	10	10	4.8	10	13.3	0.0	0.0	12.24	5.04	3.53	
T18-27	206192	385988	2.2	10	8	4.1	10	13.3	0.0	0.0	3.64	2.50	2.04	
T18-28	206223	386102	1.3	10	6	5.7	10	13.3	0.0	0.0	3.34	1.89	1.43	
T18-29	206233	386128	1.0	10	9	4.2	10	13.3	0.0	0.0	8.80	4.40	3.23	
T18-30	206275	386270	1.5	10	11	2.5	10	13.3	0.0	0.0	12.02	7.21	5.58	
T18-31	206283	386196	3.1	10	4	1.9	10	13.3	0.0	0.0	2.78	2.10	1.79	
T18-32	206287	386314	1.0	10	14	3.7	10	13.3	0.0	0.0	15.53	7.76	5.69	
T18-33	206288	386236	1.3	10	5	3.2	10	13.3	0.0	0.0	4.93	2.79	2.12	
T18-34	206289	386293	1.9	10	6	3	10	13.3	0.0	0.0	4.32	2.83	2.26	
T18-35	206318	386434	1.0	10	9	8.1	10	13.3	0.0	0.0	4.61	2.30	1.69	
T18-36	206338	386457	1.8	10	12	4.1	10	13.3	0.0	0.0	6.68	4.29	3.41	
T18-37	206338	386296	1.5	10	5.5	6.2	10	13.3	0.0	0.0	2.44	1.46	1.13	
T18-38	206340	386317	1.6	10	8	7.6	10	13.3	0.0	0.0	2.72	1.68	1.31	
T18-39	206352	386478	1.0	10	16	7.6	10	13.3	0.0	0.0	8.72	4.36	3.19	
T18-40	206368	386345	1.4	10	7	5.2	10	13.3	0.0	0.0	3.96	2.31	1.77	
T18-41	206384	386412	1.9	10	15	3	10	13.3	0.0	0.0	10.79	7.07	5.65	
T18-42	206399	386358	1.4	10	4.5	2.3	10	13.3	0.0	0.0	5.73	3.34	2.56	
T18-43	206420	386372	1.9	10	5	3.7	10	13.3	0.0	0.0	2.92	1.91	1.53	
T18-44	206436	386396	3.0	10	3	1.8	10	13.3	0.0	0.0	2.28	1.71	1.44	
T18-45	206443	386532	1.6	10	8	4.3	10	13.3	0.0	0.0	4.78	2.94	2.30	
T18-46	206461	386434	1.2	10	9	4.8	10	13.3	0.0	0.0	6.42	3.50	2.63	
T18-47	206467	386510	1.6	10	9	4.6	10	13.3	0.0	0.0	5.03	3.09	2.42	
T18-48	206488	386544	1.0	10	12	5.1	10	13.3	0.0	0.0	9.68	4.84	3.55	
T18-49	206538	386696	0.6	10	11	4.8	10	13.3	0.0	0.0	15.70	5.89	4.05	
T18-50	206555	386709	1.5	10	5	5.6	10	13.3	0.0	0.0	2.45	1.47	1.14	
T18-51	206556	386733	1.4	10	10	4.4	10	13.3	0.0	0.0	6.67	3.89	2.98	
T18-52	206565	386648	1.5	10	16	4.7	10	13.3	0.0	0.0	9.33	5.60	4.33	
T18-53	206590	386732	1.5	10	13	4.6	10	13.3	0.0	0.0	7.74	4.65	3.60	
T18-54	206590	386743	2.4	10	10	4.3	10	13.3	0.0	0.0	3.98	2.81	2.31	
T18-55	206603	386673	1.5	10	10	4.9	10	13.3	0.0	0.0	5.60	3.36	2.60	
T18-56	206613	386652	0.8	10	14	3.7	10	13.3	0.0	0.0	19.41	8.63	6.14	
T18-57	206654	386666	1.8	10	16	5.9	10	13.3	0.0	0.0	6.39	4.06	3.21	
T18-58	206657	386806	1.6	10	6	3.3	10	13.3	0.0	0.0	4.66	2.87	2.24	
T18-59	206667	386804	2.7	10	5	3.3	10	13.3	0.0	0.0	2.30	1.68	1.40	
T18-60	206672	386737	1.5	10	8	4.8	10	13.3	0.0	0.0	4.57	2.74	2.12	
T18-61	206678	386833	1.7	10	7	3.2	10	13.3	0.0	0.0	5.28	3.32	2.62	
T18-62	206693	386751	1.3	10	7	3	10	13.3	0.0	0.0	7.36	4.16	3.16	
T18-63	206709	386797	2.4	10	7	3.2	10	13.3	0.0	0.0	3.74	2.64	2.17	
T18-64	206710	386837	2.5	10	7	2.9	10	13.3	0.0	0.0	3.96	2.83	2.34	

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)													
LOCATION			DATA				LOADING				ANALYSIS		
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II
T18-65	206745	386854	1.8	10	8	4.4	10	13.3	0.0	0.0	4.15	2.67	2.12
T18-66	206767	386882	2.0	10	7	3.5	10	13.3	0.0	0.0	4.10	2.74	2.20
T18-67	206775	386790	2.0	10	6.5	2.3	10	13.3	0.0	0.0	5.79	3.86	3.10
T18-68	206788	386887	2.8	10	9.5	3	10	13.3	0.0	0.0	4.64	3.42	2.87
T18-69	206790	386848	1.7	10	15	3.2	10	13.3	0.0	0.0	11.31	7.12	5.61
T18-70	206793	386906	2.4	10	7	2.4	10	13.3	0.0	0.0	4.98	3.51	2.89
T18-71	206798	386868	2.0	10	9.5	2.5	10	13.3	0.0	0.0	7.79	5.19	4.18
T18-72	206801	386765	1.80	10	9	2.2	10	13.3	0.0	0.0	9.31	5.99	4.75
T18-73	206803	386859	1.5	10	9	4.8	10	13.3	0.0	0.0	5.14	3.08	2.39
T18-74	206814	386800	2.5	10	6	2.2	10	13.3	0.0	0.0	4.47	3.19	2.64
T18-75	206830	386818	1.5	10	8	3.8	10	13.3	0.0	0.0	5.76	3.46	2.68
T18-76	206858	386839	1.2	10	10	1.7	10	13.3	0.0	0.0	20.07	10.95	8.22
T18-77	206861	386818	1.8	10	10	3.8	10	13.3	0.0	0.0	6.00	3.86	3.06
T18-78	206865	386924	1.2	10	7	2.6	10	13.3	0.0	0.0	9.19	5.02	3.77
T18-79	206885	386929	1.9	10	7	3.1	10	13.3	0.0	0.0	4.87	3.19	2.55
T18-80	206890	386908	3.4	10	7	2.7	10	13.3	0.0	0.0	3.13	2.42	2.07
T18-81	206892	386898	2.5	10	4.5	2.9	10	13.3	0.0	0.0	2.54	1.82	1.50
T18-82	206899	386875	3.1	10	8	2.9	10	13.3	0.0	0.0	3.65	2.76	2.34
T18-83	206944	386963	1.8	10	6	3.3	10	13.3	0.0	0.0	4.14	2.66	2.11
T18-84	206953	386883	2.1	10	13	2.6	10	13.3	0.0	0.0	9.76	6.61	5.35
T18-85	206979	386845	2.7	10	11	1.9	10	13.3	0.0	0.0	8.78	6.41	5.35
T18-86	206986	386887	2.0	10	13	2	10	13.3	0.0	0.0	13.31	8.87	7.14
T18-87	207007	386966	0.6	10	11	2.5	10	13.3	0.0	0.0	30.05	11.27	7.74
T18-88	207018	386930	2.4	10	5	3.3	10	13.3	0.0	0.0	2.59	1.83	1.51
T18-89	207035	386865	3.2	10	10.5	5.2	10	13.3	0.0	0.0	2.60	1.98	1.69
T18-90	207043	386890	3.5	10	10	1.8	10	13.3	0.0	0.0	6.50	5.06	4.35
T18-91	207058	386936	2.9	10	6	1.8	10	13.3	0.0	0.0	4.71	3.50	2.95
T18-92	207065	386863	5.0	10	19	4.2	10	13.3	0.0	0.0	3.72	3.10	2.76
T18-93	207072	386887	4.0	10	8	2.1	10	13.3	0.0	0.0	3.90	3.12	2.72
T18-94	207087	386986	0.6	10	13	3	10	13.3	0.0	0.0	29.61	11.10	7.63
T18-95	207092	386901	3.0	10	7	3	10	13.3	0.0	0.0	3.19	2.39	2.02
T18-96	207098	386842	3.7	10	10	4.6	10	13.3	0.0	0.0	2.41	1.90	1.65
T18-97	207106	386870	4.4	10	5	2.3	10	13.3	0.0	0.0	2.02	1.65	1.45
T18-98	207107	386902	3.7	10	13	2.9	10	13.3	0.0	0.0	4.97	3.91	3.39
T18-99	207130	386866	3.1	10	8	2.1	10	13.3	0.0	0.0	5.03	3.81	3.23
T18-100	207144	386807	3.0	10	21	2.6	10	13.3	0.0	0.0	11.03	8.28	7.00
T18-101	207165	386924	1.2	10	11	1.5	10	13.3	0.0	0.0	25.02	13.65	10.25
T18-102	207171	386967	1.2	10	10	3.1	10	13.3	0.0	0.0	11.02	6.01	4.52
T18-103	207172	386911	2.3	10	13	1.5	10	13.3	0.0	0.0	15.43	10.75	8.81
T18-104	207210	386856	2.1	10	8	3.5	10	13.3	0.0	0.0	4.47	3.03	2.45
T18-105	207247	386891	1.8	10	8	2.7	10	13.3	0.0	0.0	6.75	4.34	3.44
T18-106	207270	386895	1.7	10	6	3.1	10	13.3	0.0	0.0	4.67	2.94	2.31
T18-107	207347	386931	2.0	10	14	2.6	10	13.3	0.0	0.0	11.03	7.36	5.92
T18-108	207370	387040	1.5	10	16	3.4	10	13.3	0.0	0.0	12.87	7.72	5.98
T18-109	207383	387013	2.0	10	12	3.1	10	13.3	0.0	0.0	7.94	5.29	4.26
T18-110	207393	387218	1.5	10	7	4.7	10	13.3	0.0	0.0	4.08	2.45	1.90
T18-111	207441	387026	1.5	10	13	4	10	13.3	0.0	0.0	8.90	5.34	4.13
T18-112	207481	387052	2.0	10	11	3.6	10	13.3	0.0	0.0	6.27	4.18	3.36
T18-113	207484	387187	0.7	10	12	3.9	10	13.3	0.0	0.0	18.04	7.43	5.20
T18-114	207522	387043	2.0	10	6	2.7	10	13.3	0.0	0.0	4.55	3.04	2.44
T18-115	207536	387086	1.6	10	7	2.1	10	13.3	0.0	0.0	8.53	5.25	4.10
T18-116	207540	387071	1.3	10	8	2.3	10	13.3	0.0	0.0	10.96	6.20	4.70
T18-117	207558	387198	2.0	10	4.5	3.5	10	13.3	0.0	0.0	2.64	1.76	1.41
T18-118	207589	387131	1.9	10	6	1.8	10	13.3	0.0	0.0	7.18	4.71	3.76

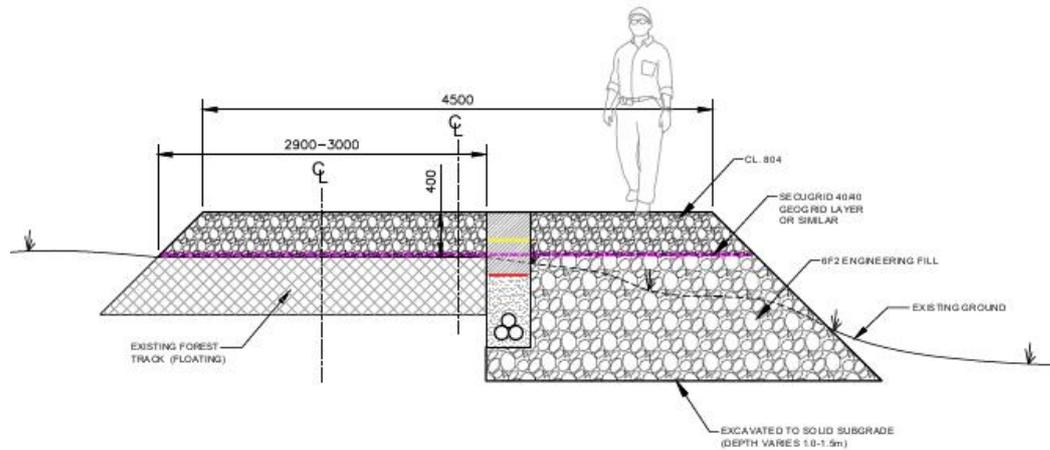
FACTOR OF SAFETY LEGEND
FOS < 1.0 Unstable (Red)
FOS ≥ 1.0 Acceptable (Green)

Table 23

5.7.1 T18 Spur Road

The final section of site access road to be constructed on Meenbog Wind Farm is along the T18 spur road. This road is partially constructed but an additional 1.5km remains to be completed. The construction follows an existing floating forestry track which is being upgraded by widening to solid formation on the downslope side and then reinforcing the entire width with geogrid and additional engineering fill. The construction design detail is shown below. Note that in certain sections where the

peat was shallower the existing track was entirely rebuilt to solid, refer to the road type map above (Figure 3) in Section 3.1.



T18 PROPOSED ROAD UPGRADE SECTION
(FLOATING ROAD WIDENED TO SOLID)

Scale 1:50

Figure 122 T18 proposed road upgrade detail



Figure 123 T18 photo showing widening works along T18 spur

The photo above shows a section of the original floating forest track that has been widened to solid on the south (RHS in photo), with 0.5m of sidecasting adjacent to the road. The geogrid has yet to be placed across the full width, this will only be completed when the cable trench is excavated, as shown in the section details above.

The overdraft factors vary between 1.08 and 10.25 along this entire spur road which is approximately 2.4km long. Peat side casting has been carried out locally in three areas where the road has been widened already, as shown in Figure 121 above. There is up to 1m of peat side casting (10kPa surcharge loading) in areas, and 0.5m of peat side casting locally elsewhere (5kPa surcharge loading), however the entire

length of road has conservatively been assessed assuming 10kPa surcharge loading. Shear strengths immediately adjacent to this section of road vary from 2.5 to 21kPa. Peat depths are generally lower and the peat appears to be better drained given the topography. Refer to notes on morphology, drainage and vegetation in the accompanying Fehily Timoney report.

Refer to the GPR peat depth profile drawings in Appendix F for the full extent of the peat depth profile along the T18 spur road. Depths typically average 1.5m along the spur road with the exception of the area shown below where peat depths of between 2-3m were found over a distance of 350m. The GPR correlated well with the insitu probing carried out by Ionic.

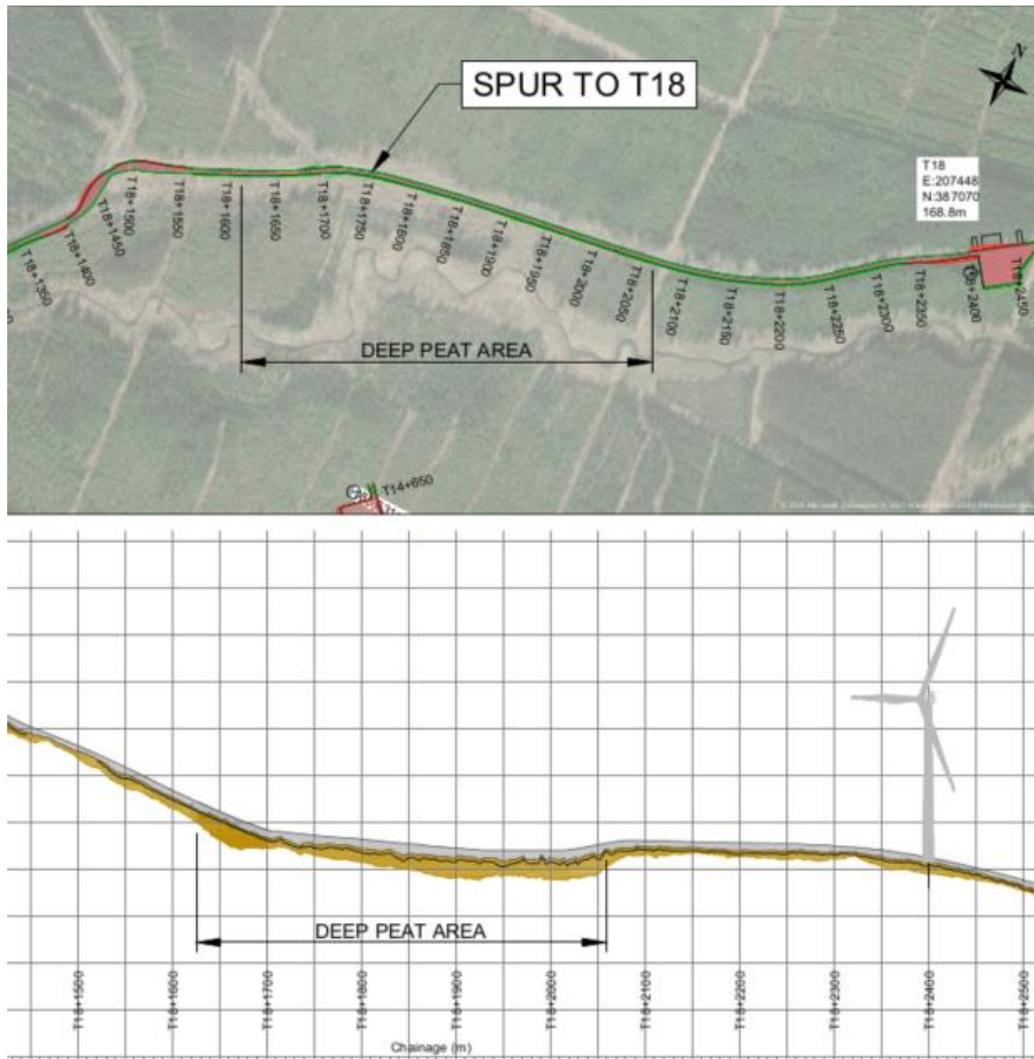


Figure 124 GPR Peat Depth Profile T18

Subsurface slopes were determined and sections taken at a number points as shown below to confirm findings in relation to peat depths in the deeper peat area shown above.

Note that the deepest pocket of peat is adjacent to an already constructed section of road which was widened to solid subgrade, see Figure 125 below. No further excavation works are required in this area. The subsurface slopes are very shallow in the deeper peat area, approximately 1-2°, as indicated by the widening of contours in Figure 127 below, and the profile shown in Section D-D. The stability assessment at this deeper peat location indicates overdesign factors of 2.1 to 4.8, where peat depths between 3-4m were encountered, see Table 23 above. Note that this is conservative as the load cases considered include tracking of machinery on the bog, which will not be required or permitted.

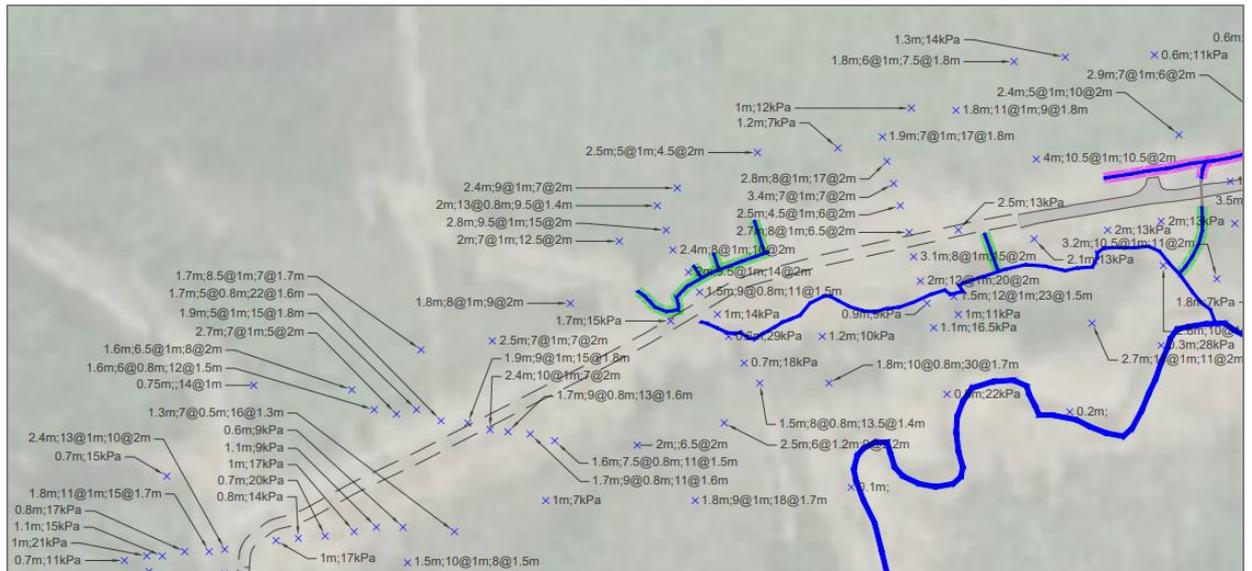


Figure 125 Peat Testing Map T18 CH1450-1850

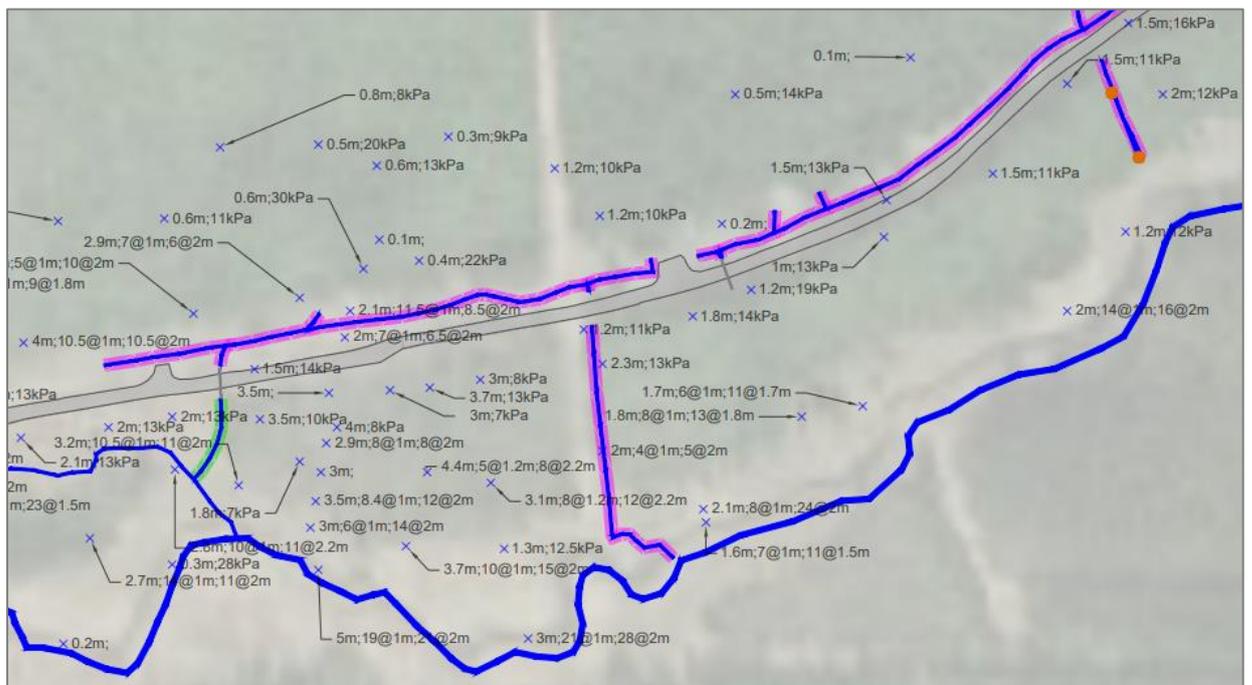
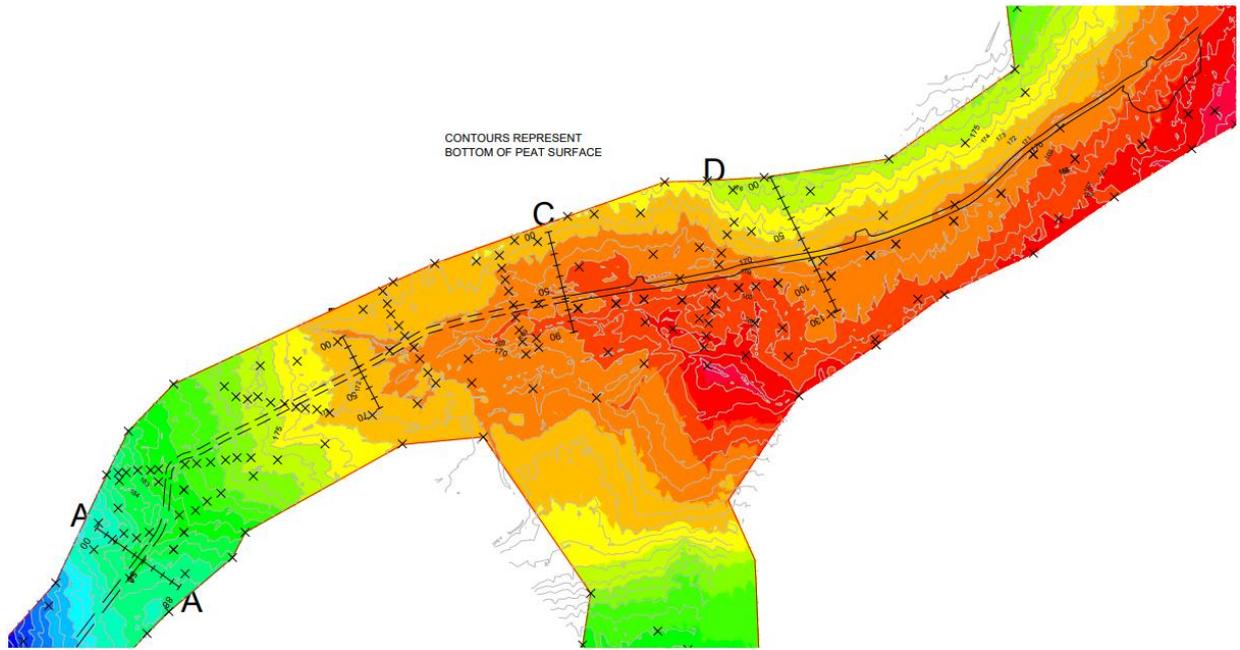


Figure 126 Peat Testing Map CH1800-2200



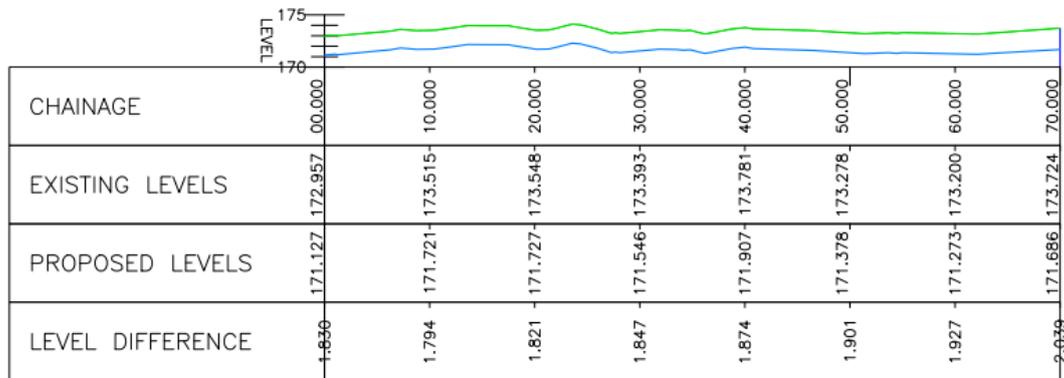
Bottom of Peat Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	163.00	164.00	346.69	Red
2	164.00	165.00	2980.62	Red
3	165.00	166.00	4903.28	Red
4	166.00	167.00	9198.70	Red
5	167.00	168.00	13564.44	Orange
6	168.00	169.00	18368.90	Orange
7	169.00	170.00	24573.42	Orange
8	170.00	171.00	23425.86	Orange
9	171.00	172.00	22425.03	Yellow
10	172.00	173.00	17753.49	Yellow
11	173.00	174.00	12140.22	Yellow
12	174.00	175.00	8681.10	Yellow
13	175.00	176.00	8306.67	Light Green
14	176.00	177.00	6968.27	Light Green
15	177.00	178.00	4727.50	Light Green
16	178.00	179.00	4383.29	Light Green
17	179.00	180.00	5072.57	Light Green
18	180.00	181.00	5652.93	Light Green
19	181.00	182.00	5685.66	Light Green
20	182.00	183.00	2951.01	Light Green
21	183.00	184.00	2042.91	Light Green
22	184.00	185.00	2301.66	Light Green
23	185.00	186.00	2534.40	Light Green
24	186.00	187.00	2686.45	Light Green
25	187.00	188.00	1981.19	Light Green
26	188.00	189.00	1589.14	Light Green
27	189.00	190.00	922.27	Light Green
28	190.00	191.00	875.53	Light Green
29	191.00	192.00	792.44	Light Green
30	192.00	193.00	686.70	Light Green
31	193.00	194.00	537.79	Light Green
32	194.00	195.00	432.39	Light Green
33	195.00	196.00	339.45	Light Green
34	196.00	197.00	207.28	Light Green
35	197.00	198.00	168.47	Light Green
36	198.00	199.00	197.31	Light Green
37	199.00	200.00	152.31	Light Green
38	200.00	201.00	96.14	Light Green
39	201.00	202.00	70.45	Light Green
40	202.00	203.00	11.96	Light Green

Figure 127 Subsurface Contours T18 CH1450-2450



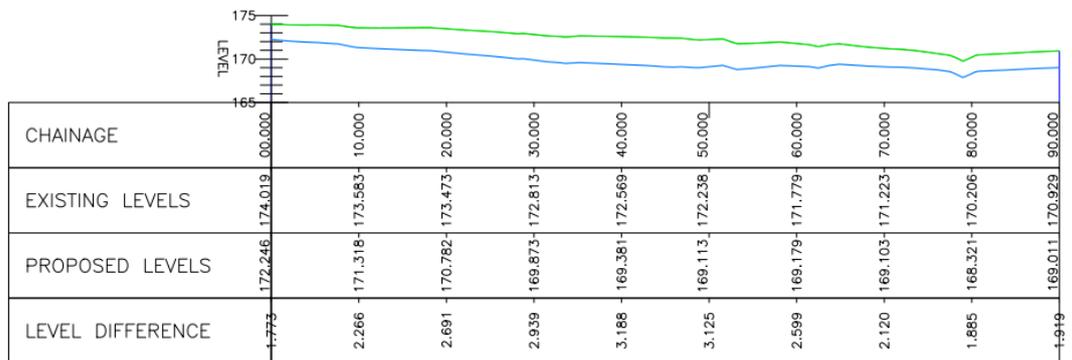
T18 SPUR - SECTION A-A
 1:500

Figure 128 T18 Section A-A



T18 SPUR - SECTION B-B
 1:500

Figure 129 T18 Section B-B



T18 SPUR - SECTION C-C
 1:500

Figure 130 T18 Section C-C

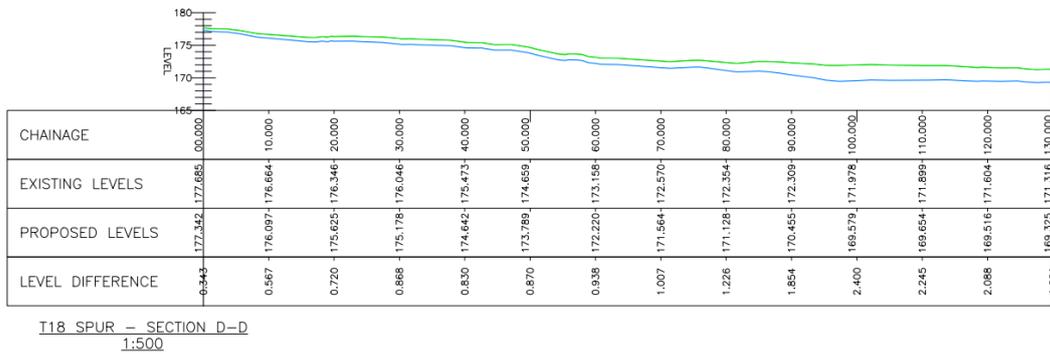


Figure 131 Section D-D

A more conservative approach will be taken for the remainder of the works, and therefore no side casting will be carried out along the remaining section of road to be completed, any peat to be excavated will be brought to a designated peat storage area.

The hardstanding for T18 is partially complete but will require widening and raising to meet the required design level.

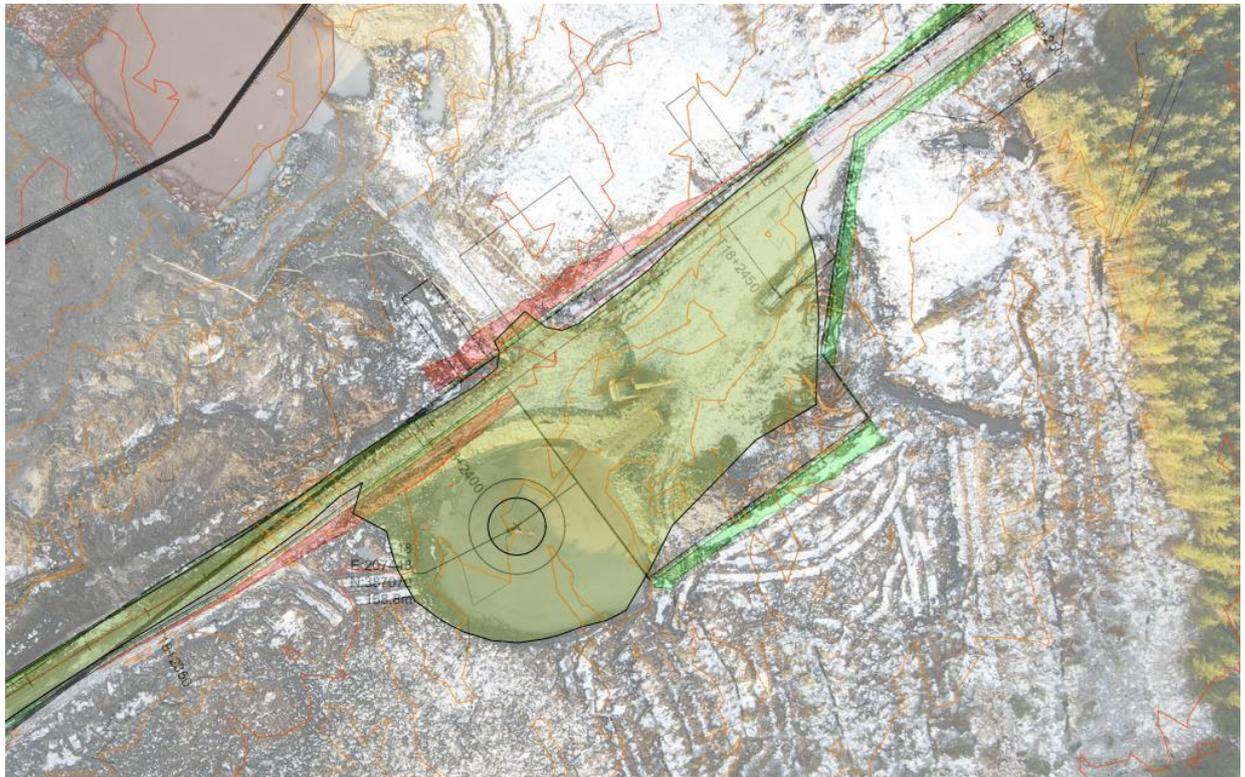


Figure 132 T18 aerial image overlaid on incomplete hardstanding

5.7.2 Peat Storage Cells at T18

A peat storage cell is currently under construction north of T18. It will be offset from the site road to allow space for wind turbine blade deliveries. The cell will be formed by constructing a berm to contain an area of sloping ground to the north of the road. The cell will be bounded to the east, west and south by the berm. The berm and road will be constructed to solid formation. A berm calculation has been included below to demonstrate the stability of the cell. Details of this peat cell are included on drawing MNBG d021.18.1 and as-built drawing d021.18.2 illustrates the area under construction. The stability assessment of the peat indicates that this area is stable. At the time works ceased in the area, an area

had been excavated down into existing ground on uphill side, however the berm walls had not yet commenced construction.

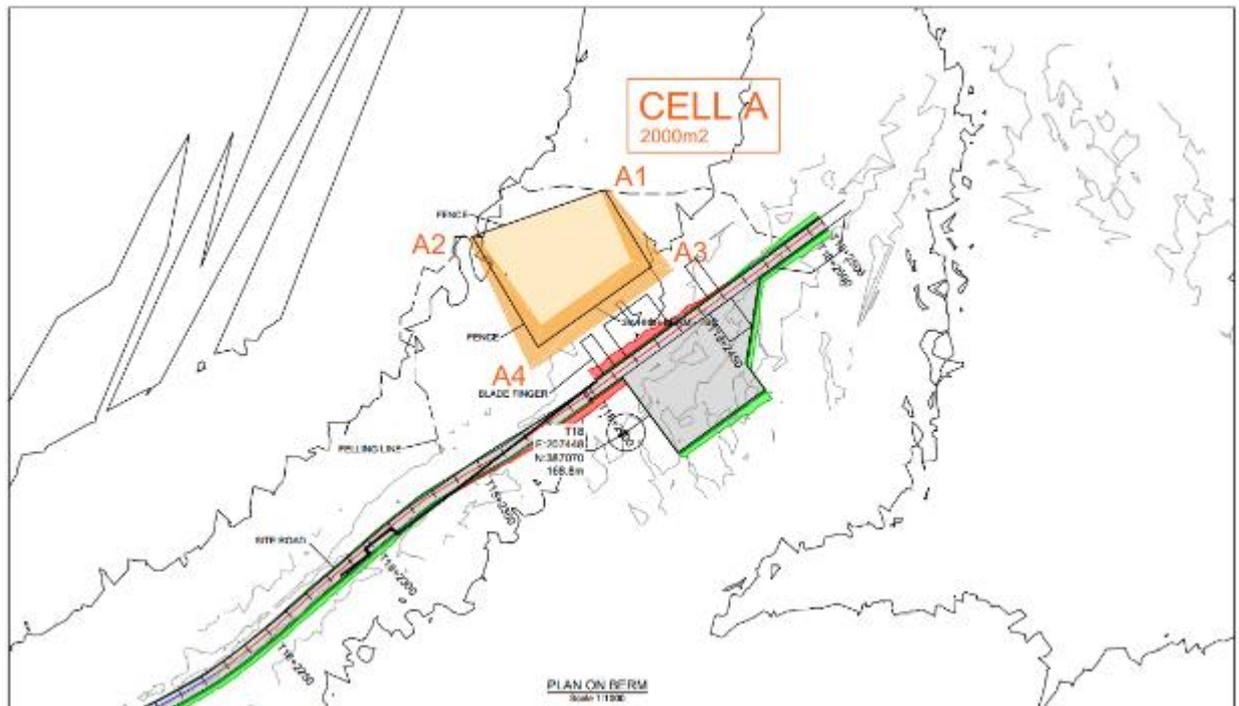


Figure 133 Peat Storage Cells at T18 proposed plan

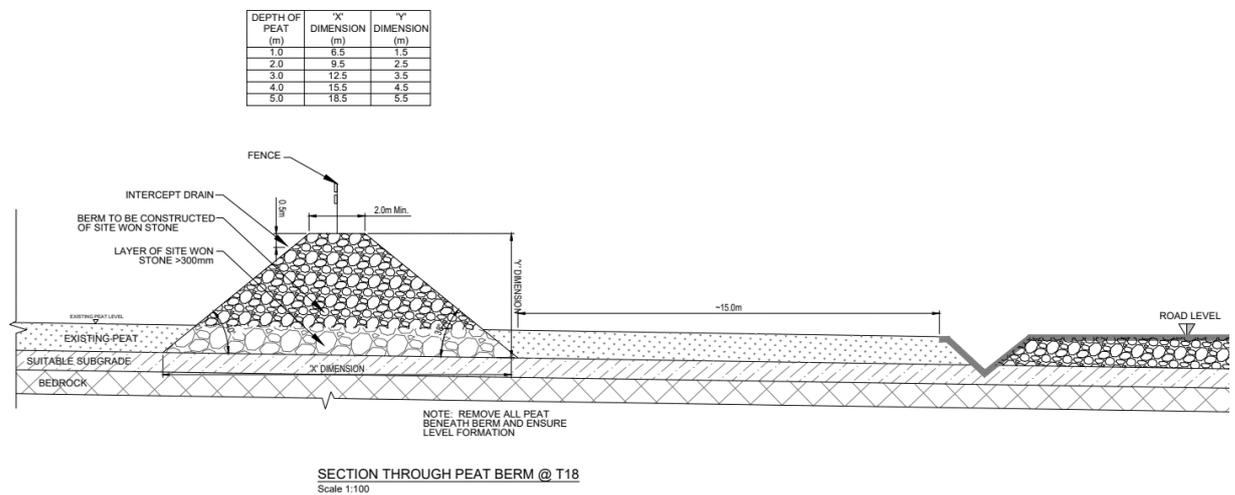


Figure 134 Peat Storage Cells at T18 design section



Figure 135 Peat Storage Cells at T18 current as-built plan

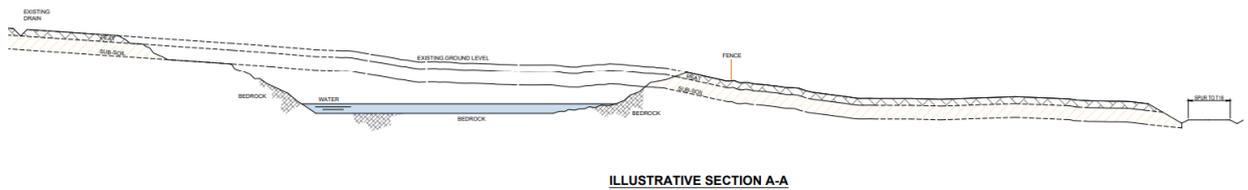
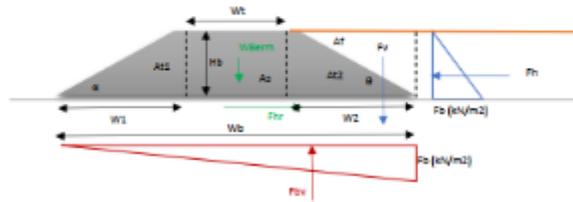


Figure 136 Peat Storage Cells at T18 current illustrative as-built section

PROJECT DETAILS

PROJECT: Meenbog Wind Farm - T18 Peat Storage
ELEMENT: PEAT BERM
DATE: 04/09/2020
BY: JS

BERM INFORMATION



Wt	2	m	width top of berm	
Hb	4.5	m	height of berm	
α	33	degrees	slope angle of berm downhill side	
β	33	degrees	slope angle of berm uphill side	β = 45° + φ/2, φ of 30° assumed
Tan (α)	0.649			
Tan (β)	0.649			
W1	6.929	m	Base of triangle	
W2	6.929	m	Base of triangle	
Wb	13.86	m	Base width	
At1	15.591	m²	Area of triangle1	
At2	15.591	m²	Area of triangle1	
Aberm	40.182	m²	Area of berm	
γ	18	kN/m³	unit weight berm material	
WBerm	723	kN / m	weight berm per m	
B. Pressure	46	kPa	bearing pressure under dead weight	
β	33	degrees	characteristic angle friction base material	
Mat. Factor	1.25		factor for angle base friction	
Design β	26	degrees	design angle friction base material	
Tan (β)	0.496			
Fhr (nb)	359		berm horizontal sliding resistance no uplift	
Fhr (b)	185		berm horizontal sliding resistance uplift	

LOADING

γ	9.81	kN/m³	unit weight retained material
Depth of fill	4.5	m	equals height berm
Fb	44.145	kN/m²	pressure
Fh	99	kN/m	horizontal force
Af	15.59	m²	Area of peat over berm slope
Fv	152.9	kN / m	Load peat above berm slope
Fbv	-350	kN / m	buoyancy force

SUMMARY

	Unf. (kN)	SLS		UPL		
		FOS	kN	FOS	kN	
SLIDING						
<i>Resisting Forces</i>						
Fhr (nb)	359	1.00	359	0.90	323	Horizontal sliding resistance assu
Fhr (b)	185	1.00	185	0.90	167	Horizontal sliding resistance assu
<i>Sliding Forces</i>						
Fh	99	1.00	99	1.00	99	Horizontal sliding force
Sliding	(nb)	3.61	3.61	3.25		>1 ok
	(b)	1.87	1.87	1.68		>1 ok

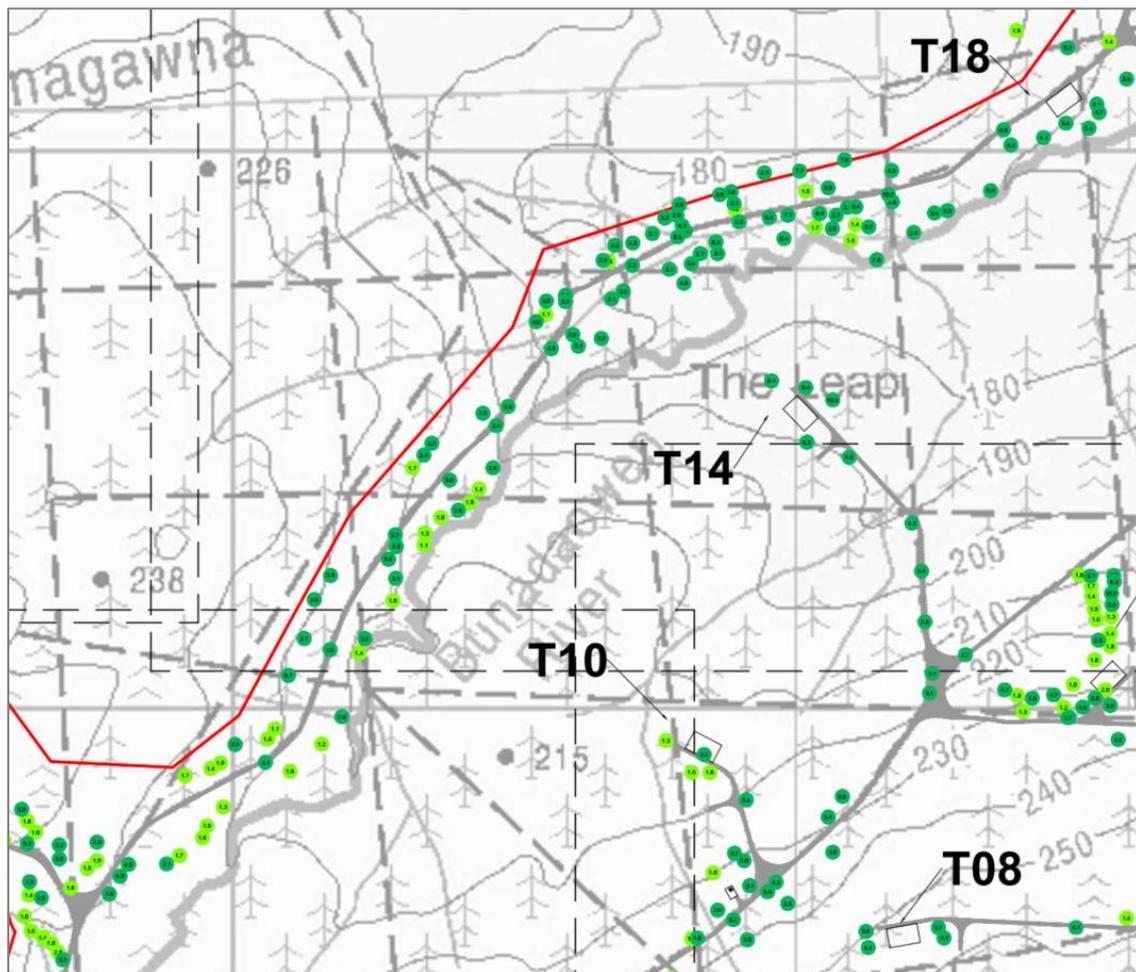
	Unf. (kNm)	SLS		UPL		
		FOS	kNm	FOS	kNm	
OVERTURNING						
<i>Resisting BM</i>						
Res BM (nb)	5735	1.00	5735	0.90	5162	Horizontal sliding resistance assu
Res BM (b)	2960	1.00	2960	0.90	2664	Horizontal sliding resistance assu
<i>Overturing</i>						
Ot BM (b)	-3552	1.00	-3552	1.00	-3552	Horizontal sliding force
Overturing	(nb)	57.74	57.74	51.97		>1 ok
	(b)	29.80	29.80	26.82		>1 ok

5.7.3 T18 – Conclusion

The assessment indicates that this section of the site is stable as the safety margin is in excess of 1.0, as required to comply with Eurocode 7. A broader assessment was carried out here at T18 given the remaining works required along the spur road and at the hardstanding, and the average overdesign factor calculated was 3.21 based on 118 assessment points.

The deeper peat areas were assessed in more detail to assess the local subsurface topography and carry out further assessment calculations. It was found that the overdesign factor in the deeper peat area ranged from 2.1 to 4.8 as slopes were generally shallower in this area.

Calculations were also carried out for the peat storage area where an overdesign factor of 1.68 was obtained for the most onerous Eurocode 7 limit state under buoyant conditions.



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

Figure 137 ODF results in this assessment section

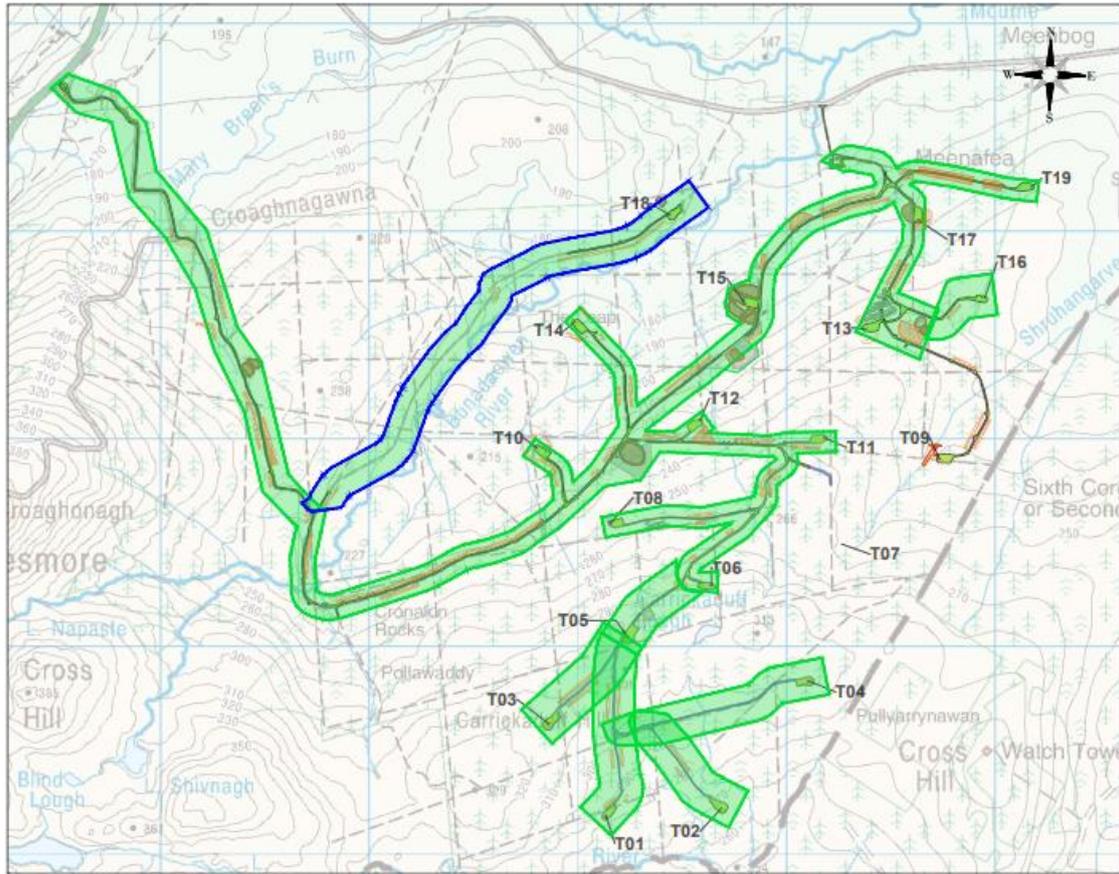


Figure 138 Outlined area has passed the assessment in this section

5.8 Conclusion – Zone 2

This section of the report assessed Zone 2 which relates primarily to the existing floating roads on the site at T1, T2, T3 and T4, along with the approach roads and associated works at T16 and T18. The assessment areas include related infrastructure in these areas including hardstandings, turbine foundations and peat deposition areas. Where arisings (dominantly peat) from excavations were deposited onto the existing peat surface, a visual inspection of the condition of the placed arisings carried out by FT (see FT report Appendix A4) confirmed no evidence of instability of the placed arisings that would be considered to represent a risk of large-scale peat failure, which concurs with the expected behaviour of the insitu peat, that is the placed arisings would result in consolidation of the underlying insitu peat with a subsequent gain in strength over time.

Zone 2 passes the assessment with an adequate safety margin provided the modification works outlined for the T4 floating road are carried out in accordance with the design, and provided the remaining T18 spur road works are carried out in accordance with the design and control measures outlined in the Fehily Timoney and Ionic report.

Zone 2 is highlighted in green in the following map, along with the earlier Zone 1 areas which were assessed in Section 4.

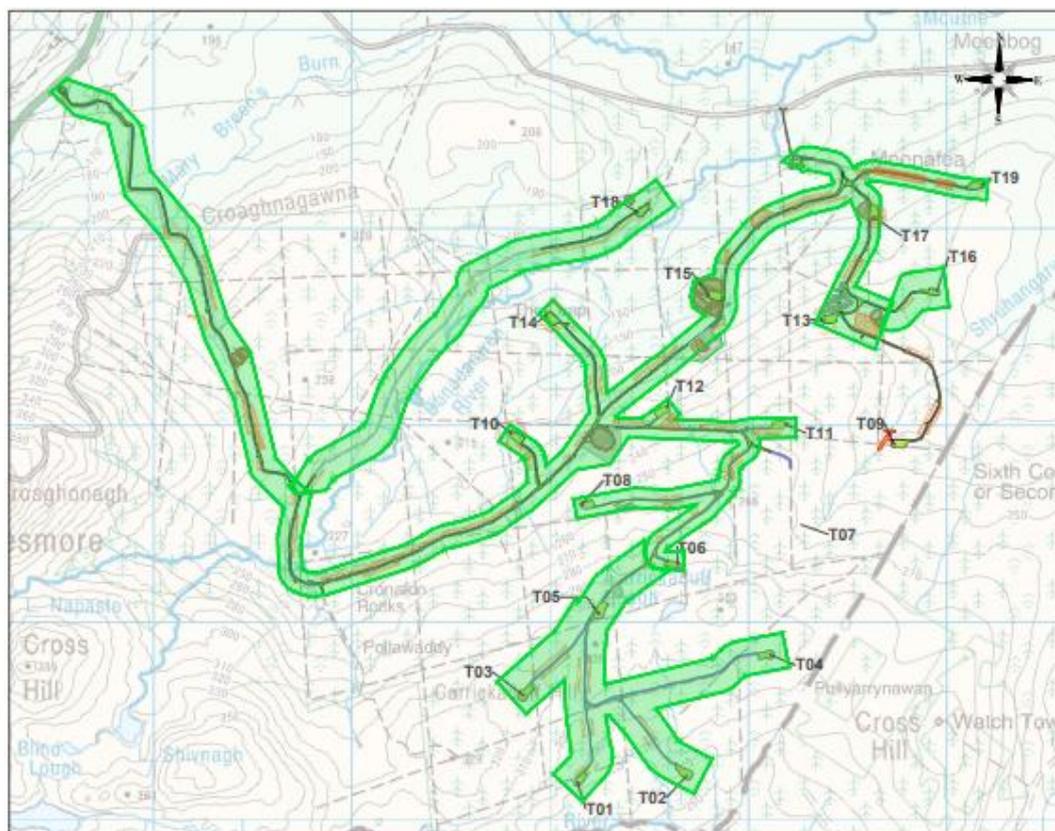


Figure 139 Zone 1 and Zone 2 assessment outcomes

6. ZONE 3

This section of the report relates primarily to the roads on the site at **T7** and **T9** along with the T7 peat slide stabilisation works at **Wall 1, Wall 2 and Wall 3**. The assessment areas include related infrastructure in these areas including hardstandings, turbine foundations, peat stabilisation and peat deposition areas. Refer to the map below for the Zone 3 infrastructure map, outlined in yellow.

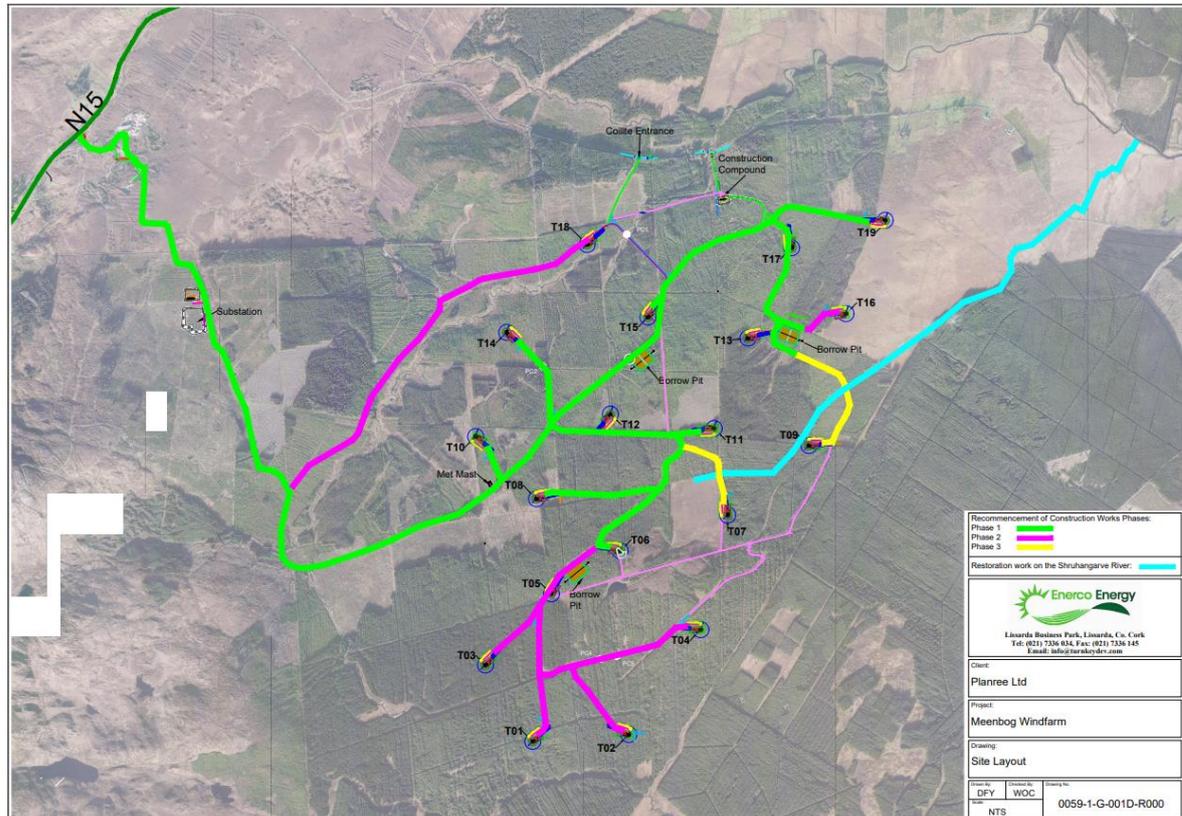


Figure 140 Zone 3 indicated in yellow

All spur roads and associated infrastructure are divided into sections based upon the original geometric design, these are highlighted separately for clarity in each section. This section of the report deals with the short length of T7 floating road already constructed, along with solid construction to be completed on approaches to T7 and T9.

The peat immediately adjacent to the existing floating road at **T7** will be assessed under the 5 load case scenarios outlined below, while peat beyond the direct zone of influence of the floating road will be assessed under load cases (a) and (c).

- peat self-weight
- 1m peat surcharge
- tracked machine on peat
- permanent surcharge of floating road
- variable crane loading

Peat adjacent to the solid spur roads at **T7 (Wall 3) and T9** will be assessed under 3 load case scenarios as they are not of floating construction:

- peat self-weight
- 1m peat surcharge
- tracked machine on peat

6.1 T7 Area – Peat Stability Assessment

A number of assessment points are presented below which indicate an adequate safety margin at all locations other than T7-40 to the south west of the turbine location. Given that the stability calculations did not meet the EC7 requirement under certain loadcase conditions, additional peat probing and shear vane testing was carried out in that area, further details are presented below.

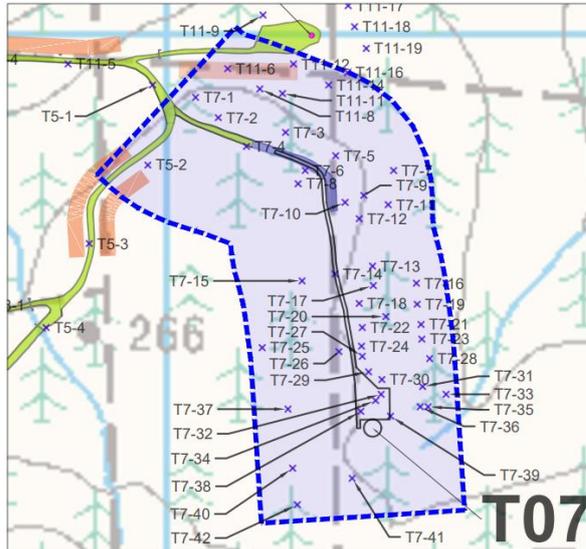


Figure 141 T7 assessment area

The following table summarises the ‘overdesign’ factors for this section of the T7 spur road. Note the value <1 at T7-40 which is a distance of 30-50m south west of the works area.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T7-1	208035	385919	1.2	10	7	4.7	10	13.3	0.0	0.0	5.10		2.09		
T7-2	208064	385893	2.4	10	7	2.9	10	13.3	0.0	0.0	4.12		2.40		
T7-3	208150	385874	2.1	10	13	2.1	10	13.3	0.0	0.0	12.08		6.62		
T7-4	208100	385856	2.9	10	8	1.9	0	13.3	20.7	10.3	5.95	5.95	3.73	3.47	2.73
T7-5	208214	385844	2.0	10	10	3.5	10	13.3	0.0	0.0	5.86		3.14		
T7-6	208175	385825	2.8	10	8	2.4	0	13.3	20.7	10.3	4.88	4.88	3.02	2.80	2.20
T7-7	208288	385825	1.0	10	5	3.5	10	13.3	0.0	0.0	5.86		2.15		
T7-8	208166	385808	3.5	10	5	2.8	10	13.3	0.0	0.0	2.09		1.40		
T7-9	208250	385793	2.4	10	4.5	3.5	10	13.3	0.0	0.0	2.20		1.28		
T7-10	208226	385784	2.9	10	7	2.4	10	13.3	0.0	0.0	4.12		2.58		
T7-11	208281	385781	2.0	10	6	4.1	10	13.3	0.0	0.0	3.00		1.61		
T7-12	208244	385763	1.8	10	5	4.1	10	13.3	0.0	0.0	2.78		1.42		
T7-13	208261	385702	2.0	10	5.5	4	10	13.3	0.0	0.0	2.82		1.51		
T7-14	208213	385692	3.4	10	7	3.2	10	13.3	0.0	0.0	2.64		1.75		
T7-15	208171	385683	3.5	10	5	2.6	10	13.3	0.0	0.0	2.25		1.51		
T7-16	208317	385680	2.1	10	4	3.8	10	13.3	0.0	0.0	2.06		1.13		
T7-17	208262	385677	1.2	10	9	4	10	13.3	0.0	0.0	7.70		3.15		
T7-18	208244	385654	2.0	10	8	3.9	10	13.3	0.0	0.0	4.21		2.26		
T7-19	208318	385653	2.2	10	4	2.7	10	13.3	0.0	0.0	2.76		1.55		
T7-20	208278	385637	1.6	10	7	3.3	10	13.3	0.0	0.0	5.44		2.61		
T7-21	208323	385627	2.5	10	5.5	2.3	10	13.3	0.0	0.0	3.92		2.32		
T7-22	208248	385623	2.0	10	4.5	2.7	10	13.3	0.0	0.0	3.42		1.83		
T7-23	208324	385608	1.7	10	5	4.1	10	13.3	0.0	0.0	2.95		1.46		
T7-24	208247	385599	1.5	10	6	4.8	10	13.3	0.0	0.0	3.43		1.59		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m3)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T7-25	208120	385597	4.8	10	3	1.1	10	13.3	0.0	0.0	2.33		1.71		
T7-26	208218	385592	3.0	10	9	4.9	10	13.3	0.0	0.0	2.52		1.60		
T7-27	208248	385586	2.1	10	5	5.1	10	13.3	0.0	0.0	1.92		1.05		
T7-28	208334	385583	2.4	10	3.5	2.4	10	13.3	0.0	0.0	2.49		1.45		
T7-29	208256	385566	2.2	10	4	3.9	10	13.3	0.0	0.0	1.91		1.07		
T7-30	208273	385556	1.6	10	9	4.1	10	13.3	0.0	0.0	5.63		2.71		
T7-31	208325	385547	1.4	10	5	3.7	10	13.3	0.0	0.0	3.96		1.77		
T7-32	208272	385537	2.2	10	16	3.8	10	13.3	0.0	0.0	7.86		4.40		
T7-33	208355	385537	0.5	10	5	3.1	10	13.3	0.0	0.0	13.23		2.97		
T7-34	208265	385529	2.5	10	4	3.7	10	13.3	0.0	0.0	1.77		1.05		
T7-35	208332	385521	1.2	10	4	4.2	10	13.3	0.0	0.0	3.26		1.34		
T7-36	208322	385521	1.2	10	4	5.2	10	13.3	0.0	0.0	2.64		1.08		
T7-37	208153	385518	3.5	10	3.5	1.7	10	13.3	0.0	0.0	2.41		1.61		
T7-38	208246	385515	3.0	10	7	2.6	10	13.3	0.0	0.0	3.68		2.33		
T7-39	208284	385509	1.5	10	5	3.3	10	13.3	0.0	0.0	4.14		1.92		
T7-40	208159	385442	5.5	10	2.5	1.8	10	13.3	0.0	0.0	1.03		0.79		
T7-41	208235	385429	2.0	10	3	3.1	10	13.3	0.0	0.0	1.98		1.06		
T7-42	208165	385395	3.0	10	4	3	10	13.3	0.0	0.0	1.82		1.16		

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 24

Although no works are proposed in this immediate area (the turbine foundation and hardstanding are east of the road alignment below), a significant number of additional test locations were assessed over a wide area. Subsurface profiles indicate a local bowl shaped deeper pocket of peat which is surrounded by shallower and more stable peat. Note that all green points are stable, with darker green indicating 'overdesign' factors >2.

Sections B-B and C-C below indicates the sub-surface slopes towards the red failure points, so the area is confined in terms of topography, and also surrounded by shallower and higher strength peat. Given the bowl shaped local subsurface topography it is likely that the peat is not just deeper but more heavily saturated and poorly drained, explaining the lower shear strengths.

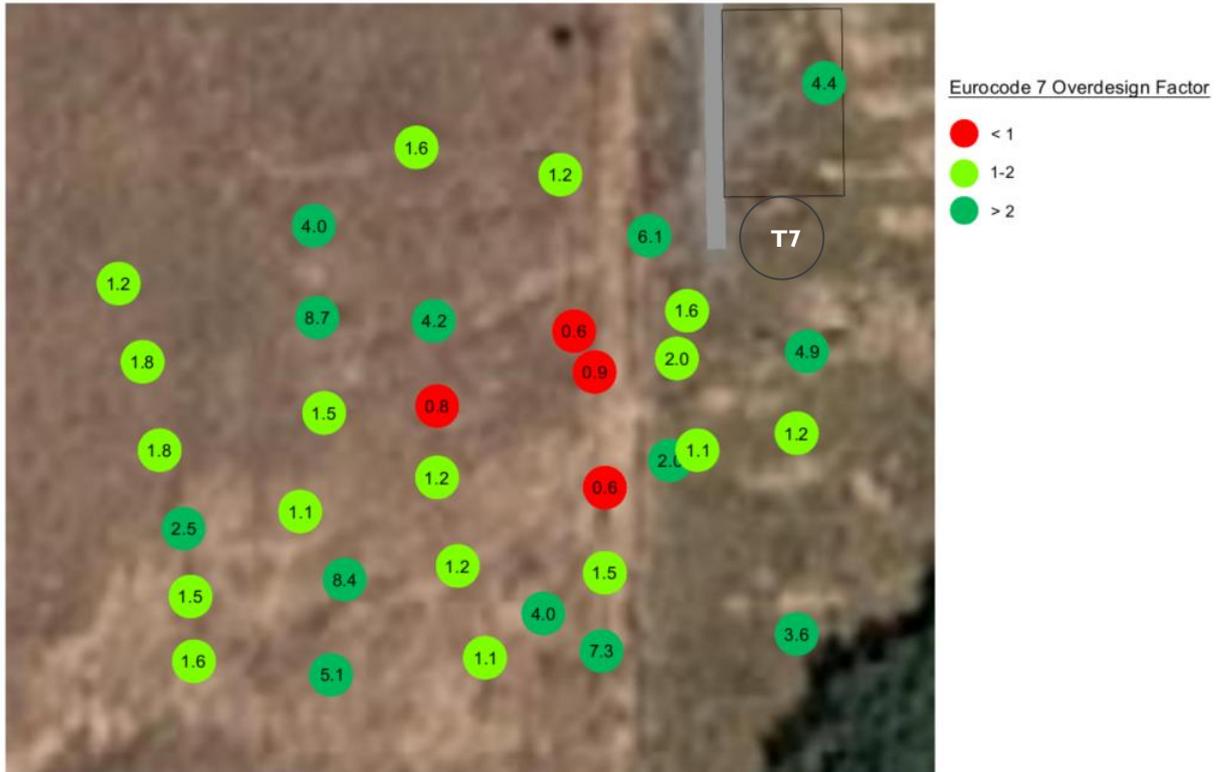


Figure 142 EC7 Overdesign Factors SW of T7

Although it was not envisaged that tracked machines would need to be working at this distance from the works area, a strict no works zone will be implemented, with no vehicles permitted in the area immediately west and south west of the T7 foundation excavation works area. It should be noted that the area immediately surrounding the foundation indicates high ‘overdesign’ factors between 1.6 and 4.9. The peat depth at the turbine centre is 1.7m and the proposed foundation blinding level is 1.8m below ground level therefore relatively shallow excavations will be required for the turbine foundation. Further details are presented below in Section 6.1.1 for the proposed construction works. A detailed RAMS will be prepared by MCE prior to works being resumed in this area.

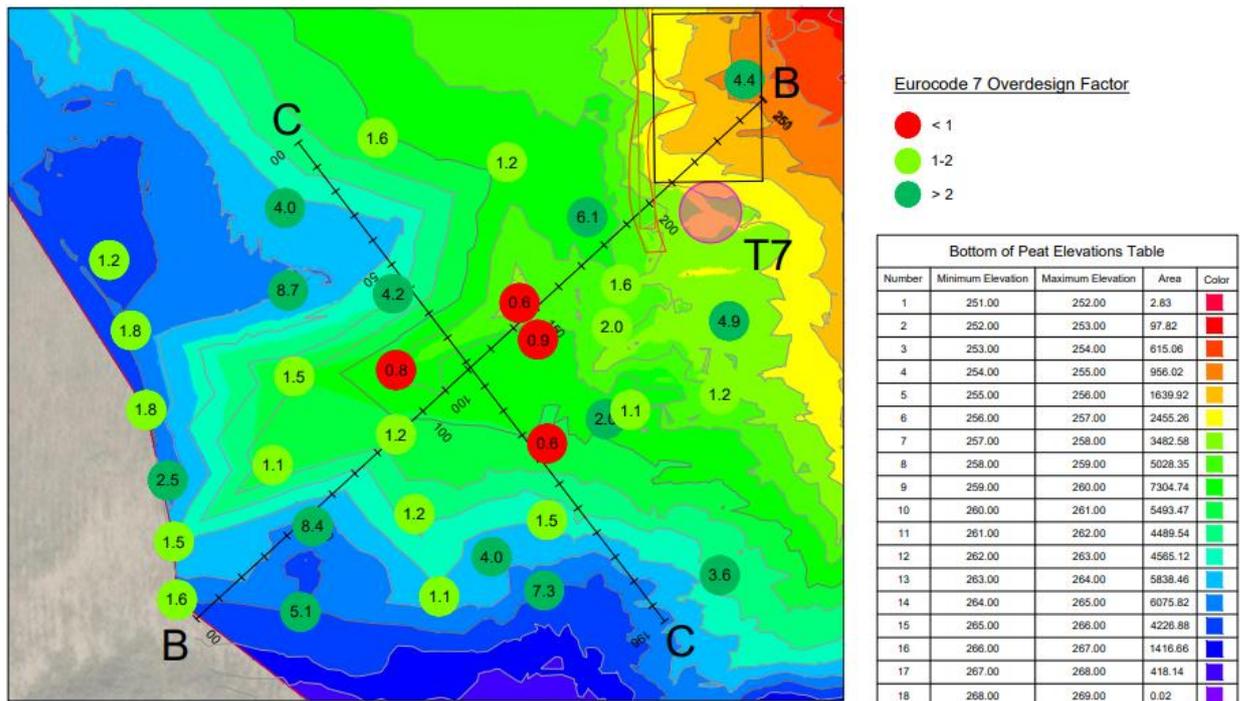


Figure 143 T7 Subsurface Elevation Map

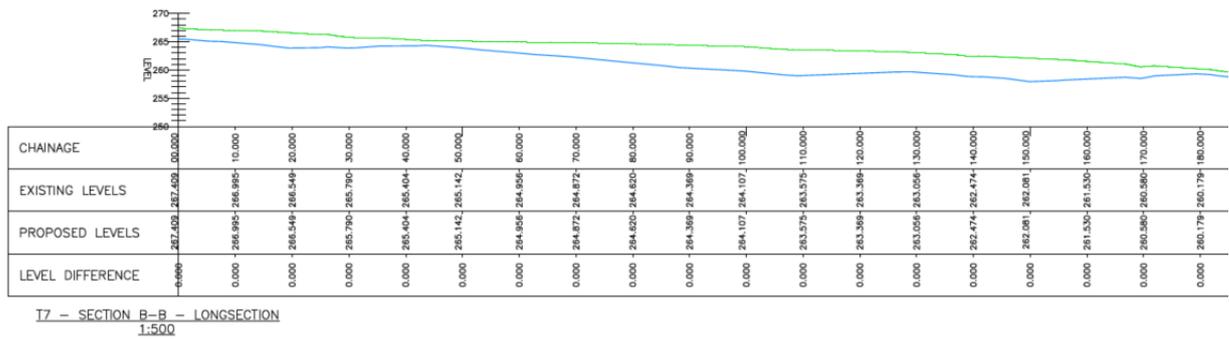


Figure 144 T7 Subsurface Profile B-B

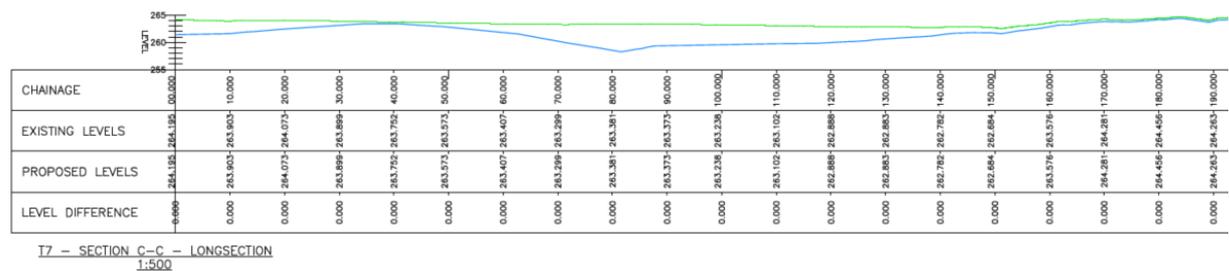


Figure 145 T7 Subsurface Profile C-C

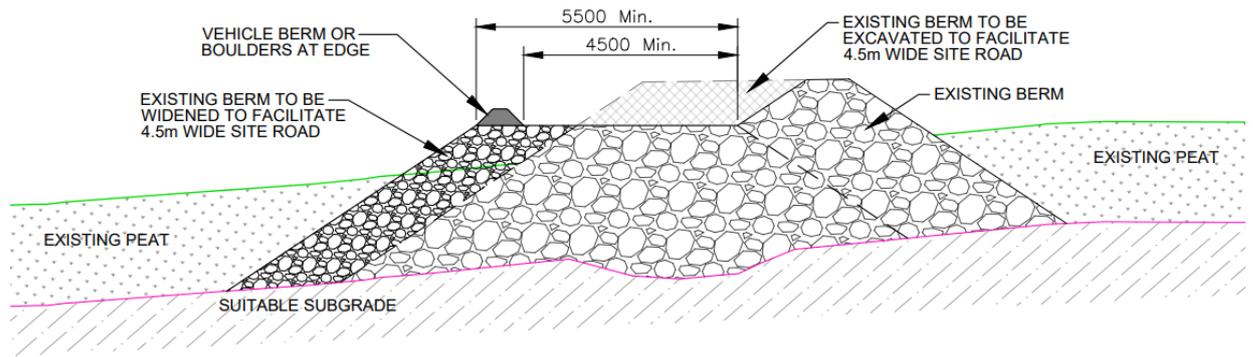
6.1.1 T7 Foundation Excavation and Hardstanding

Excavation has not commenced for the hardstanding or turbine foundation excavation at T7. Following the peat slide along the spur road alignment to T7 a peat stabilisation berm was constructed (Wall 3 as detailed in Section 6.1.3). The alignment of the berm required to stabilise the potentially susceptible peat is roughly aligned with the intended route of the access road to T7.

When works resume the berm structure will be modified and repurposed as an access track to the turbine. Ionic Consulting will provide MCE with the design for the modified berm and wind farm infrastructure. The stabilising function of the berm will be retained and will be enhanced closer to the turbine location through the provision of the access road, hardstand and foundation.

Between the slip scar and T7 hardstand there is a limited section where it will be possible to lower the height of the existing berm. A topographical survey was completed along the top of the as-built berm. The berm levels were assessed and a geometric design completed to determine the alignment of the proposed wind farm road and hardstand. Details are included on a plan and section below.

The peat depths in the immediate area of the T7 turbine are shallower than along the approach road. The peat depth at the turbine centre is 1.7m, and varies from 1.6 to 2.2m in the hardstanding area, whereas peat depths of up to 3.4m were measured along the access road. As shown above in Figure 147 the overdesign factors in the works area are between 1.6 and 4.9, primarily due to the shallower peat.



ILLUSTRATIVE SECTION A-A - T7 SPUR
Scale 1:100

Figure 146 Illustrative section through Wall 1 showing the proposed wind farm road

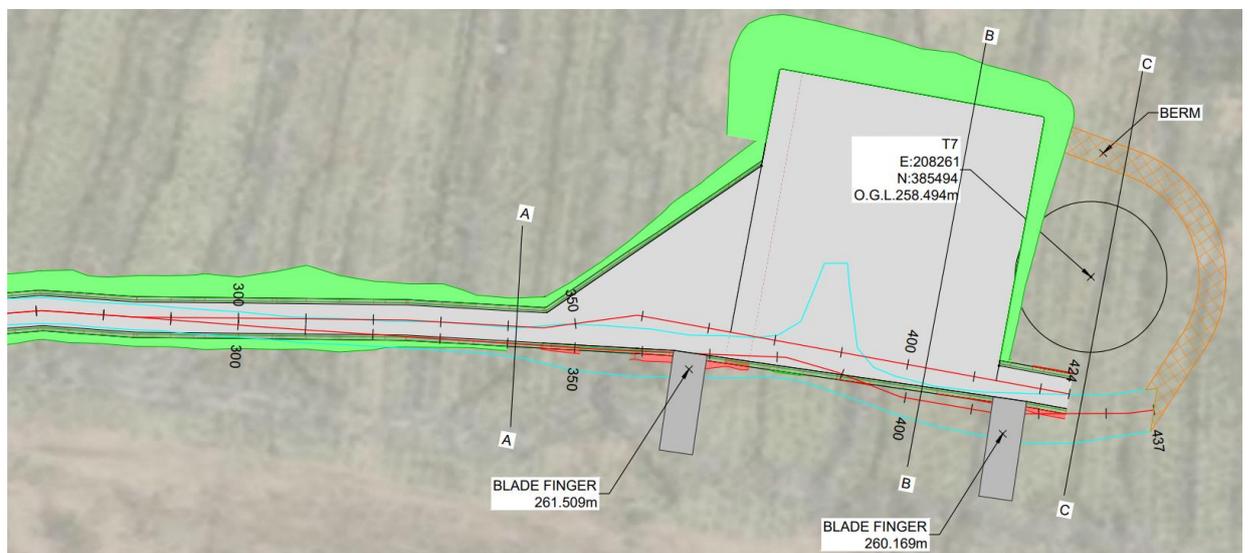


Figure 147 T7 Turbine and Hardstanding plan

Based upon the geotechnical data available it is anticipated that suitable formation will be achieved almost directly below the peat as very shallow mineral deposits exist in this area. The turbine sub-formation will be on the underlying strong phyllite bedrock at an anticipated depth of 2m below original ground level. A deep excavation is not therefore required at T7 but a peat stabilising berm (refer Section 3.3) will be constructed surrounding the foundation area prior to excavation to formation level. Updated RAMS will be prepared along with additional monitoring measures prior to construction of the T7 road, turbine base and hardstanding.

Tree stumps, heavy vegetation and new tree growth are shown below in the T7 hardstand area, photo taken on 22/09/2020.



Figure 148 photo of T7 hardstanding location (22/09/2020)

6.1.2 T7 Peat Slide Stabilisation Berms

Three rock/stone berms were constructed to mitigate against further peat movement from the T7 area, these berms were referred to as Wall 1, Wall 2 and Wall 3. The following layout plan indicates the location of the three berms.

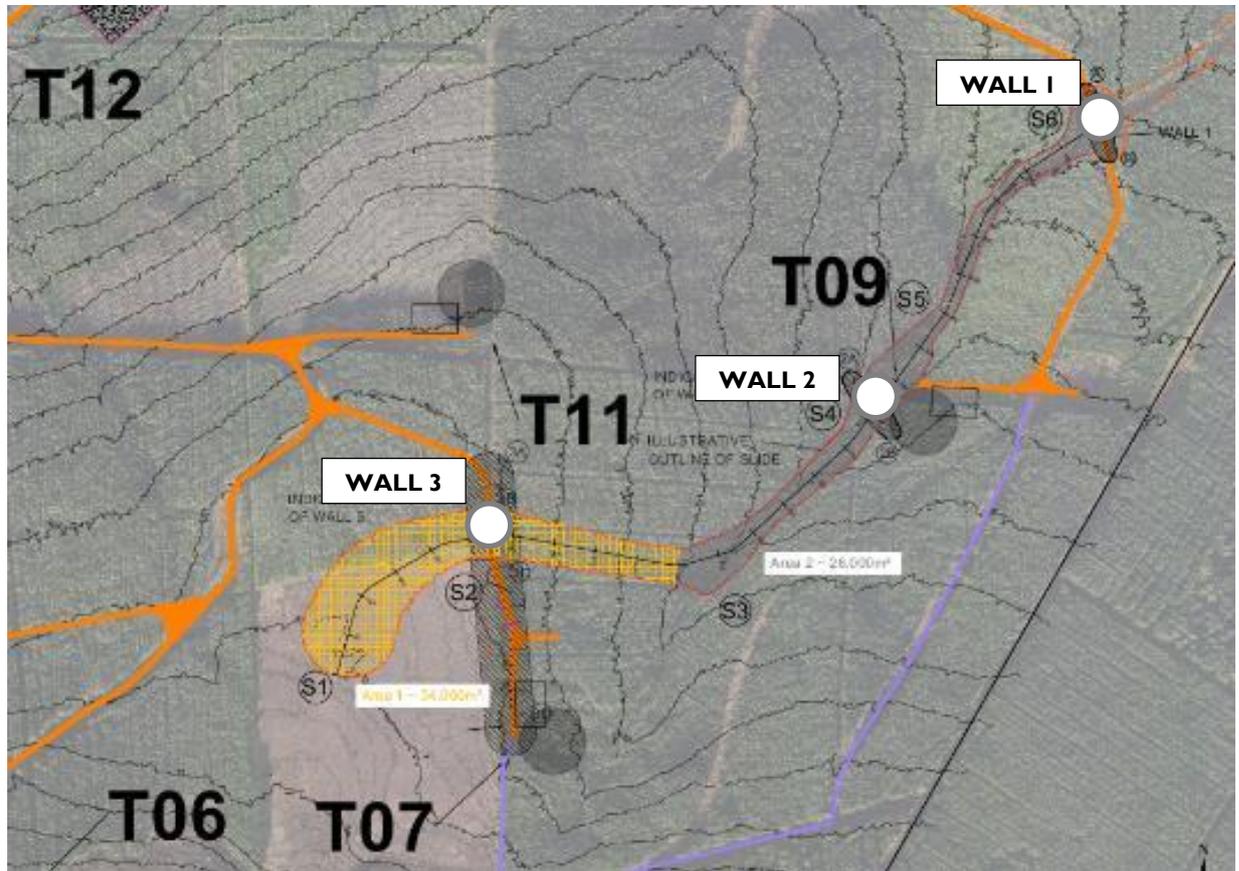


Figure 149 T7 Peat Stabilisation Berms

6.1.3 T7 Spur Road Berm - Wall 3

Wall 3 is located along/adjacent to the T7 spur road. This berm stabilises the failure area uphill of the T7 spur road and continues further south beyond the region of bog that has been compromised. The berm design is included below along with a summary of the factors of safety against sliding and overturning failure. Note that these calculations are carried out to Eurocode 7 IS EN 1997-1 with partial safety factors for loads and materials also applied.

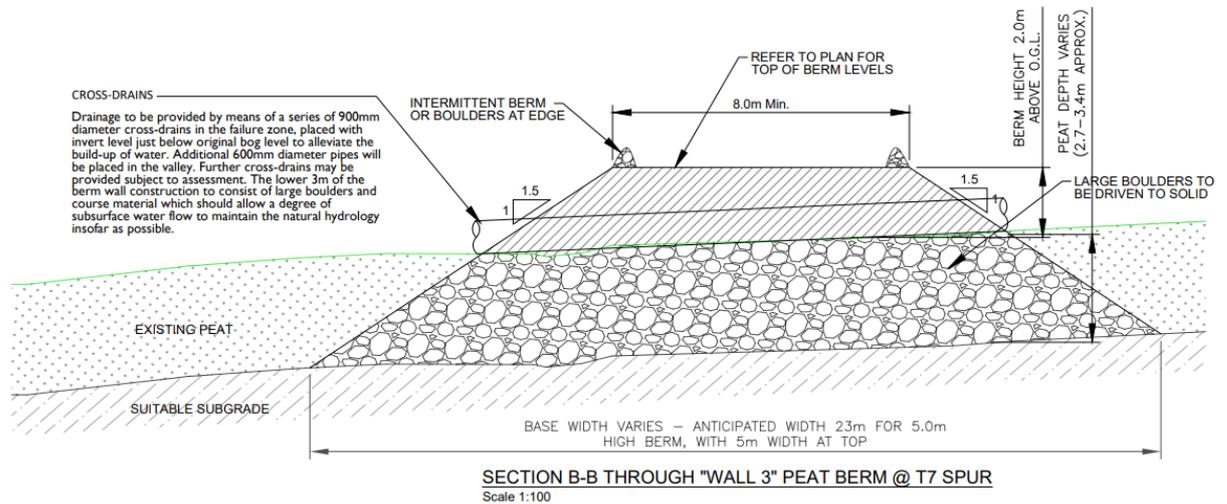
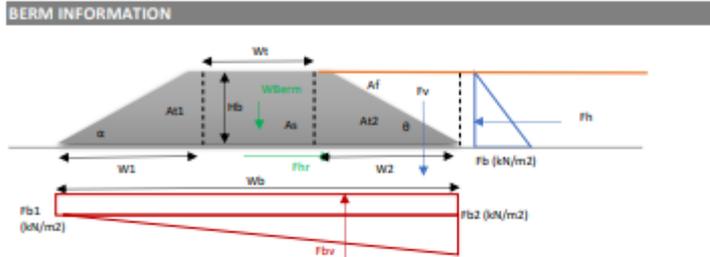


Figure 150 Wall 3 section detail

PROJECT DETAILS	
PROJECT:	Meenbog Wind Farm
ELEMENT:	T7 SPUR PEAT BERM - WALL 3
DATE:	27/11/2020
BY:	COD/JS



Wt	8.0	m	width top of berm	
Hb	3.9	m	current height of berm, 0.5m above OGL	
α	34	degrees	slope angle of berm downhill side	1 in 1.5
β	34	degrees	slope angle of berm uphill side	1 in 1.5
$\tan(\alpha)$	0.675			
$\tan(\beta)$	0.675			
W1	5.782	m	Base of triangle	
W2	5.782	m	Base of triangle	
Wb	19.56	m	Base width	
At1	11.275	m ²	Area of triangle1	
At2	11.275	m ²	Area of triangle1	
A _{berm}	53.750	m ²	Area of berm	

γ	22	kN/m ³	unit weight berm material	
WBerm	1182	kN / m	weight berm per m	
B. Pressure	60	kPa	bearing pressure under dead weight	
β	32	degrees	characteristic angle friction base material	
Mat. Factor	1.25		factor for angle base friction	
Design β	26	degrees	design angle friction base material	

$\tan(\beta)$	0.479			
Fhr (nb)	567		berm horizontal sliding resistance no uplift	
Fhr (b)	313		berm horizontal sliding resistance uplift	

LOADING				
γ	10	kN/m ³	unit weight retained material	
Depth of fill	3.4	m	equals maximum depth of peat behind the berm	
Fb1	20	kN/m ²	pressure	
Fb2	34	kN/m ²	pressure	
Fh	57.80	kN/m	horizontal force	
Af	9.83	m ²	Area of peat over berm slope	
Fv	98.3	kN / m	Load peat above berm slope	
Fbv	-528	kN / m	buoyancy force	

SUMMARY

		SLS		UPL			
		Unf. [kN]	FOS	kN	FOS		kN
SLIDING							
<i>Resisting Forces</i>							
Fhr (nb)		567	1.00	567	0.90	510	(nb - non-buoyant scenario)
Fhr (b)		313	1.00	313	0.90	282	(b - buoyant scenario)
<i>Sliding Forces</i>							
Fh		58	1.00	58	1.00	58	Horizontal sliding force
Sliding	(nb)	9.80		9.80		8.82	>1 ok
	(b)	5.42		5.42		4.88	>1 ok

		SLS		UPL			
		Unf. [kNm]	FOS	kNm	FOS		kNm
OVERTURNING							
<i>Resisting BM</i>							
Res BM (nb)		11567	1.00	11567	0.90	10410	(nb - non-buoyant scenario)
Res BM (b)		6400	1.00	6400	0.90	5760	(b - buoyant scenario)
<i>Overtuning</i>							
Ot BM (b)		-6815	1.00	-6815	1.00	-6815	Horizontal sliding force
Overtuning	(nb)	200.12		200.12		180.11	>1 ok
	(b)	110.73		110.73		99.65	>1 ok

6.1.4 T7 Area – Conclusion

The assessment indicated adequate safety margins with the exception of one location to the south west of the T7 turbine. Additional testing was carried out, and a further assessment was completed in that area.

The assessment determined the area in question is confined in terms of sub-surface topography, and also surrounded by shallower and higher strength peat. As a precautionary measure a no works zone will be implemented, with no construction vehicles permitted in the area immediately west and south west of the T7 foundation excavation works area.

The assessment indicated high ‘overdesign’ factors between 1.6 and 4.9 in the area immediately surrounding the foundation. A deep excavation is not required at T7 but a peat stabilising berm will be constructed surrounding the foundation area prior to excavation to formation level. Hardstand excavations will be bounded by Wall 3 on the uphill side and the foundation berm to the south. Updated RAMS will be prepared along with additional monitoring measures prior to construction of the T7 turbine base and hardstanding.

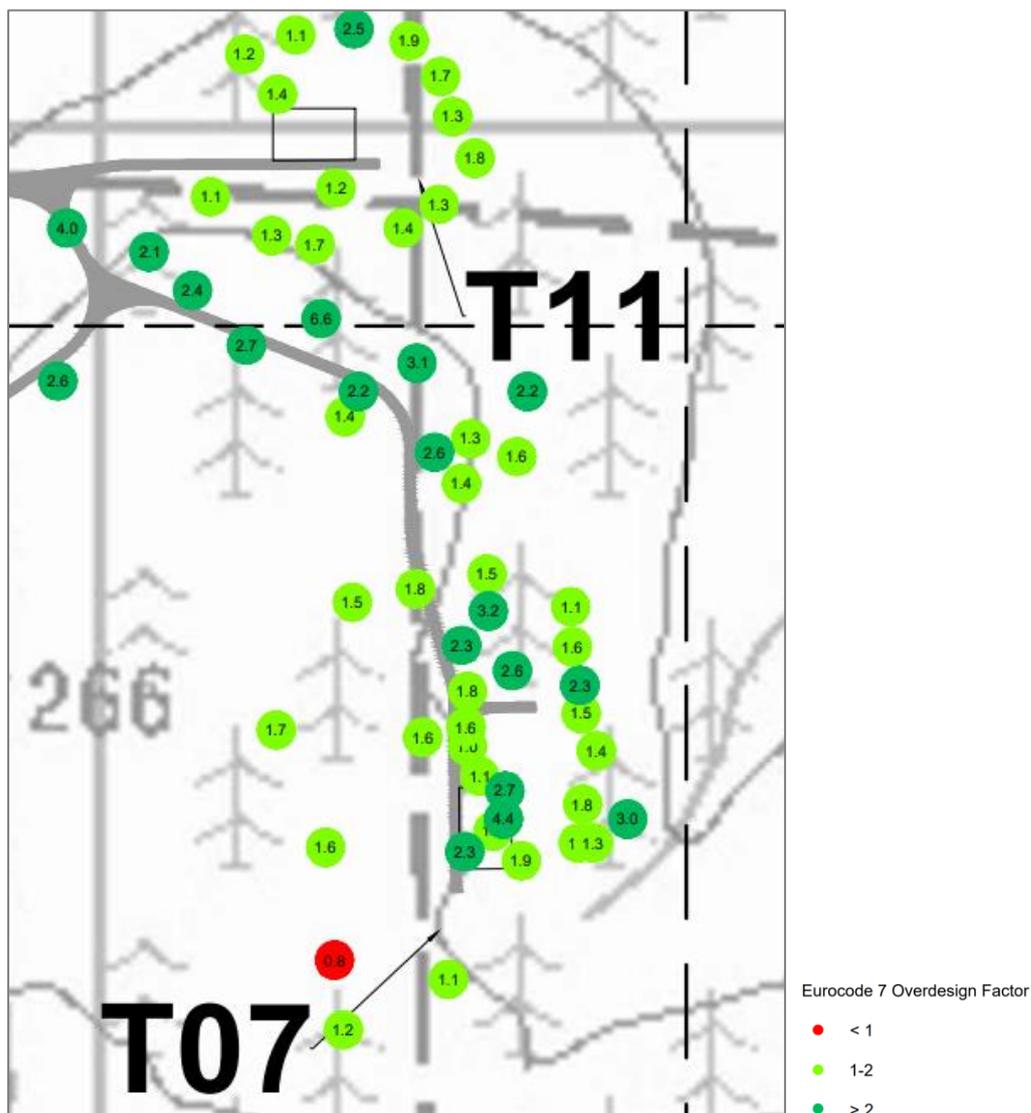


Figure 151 ODF results in this assessment section

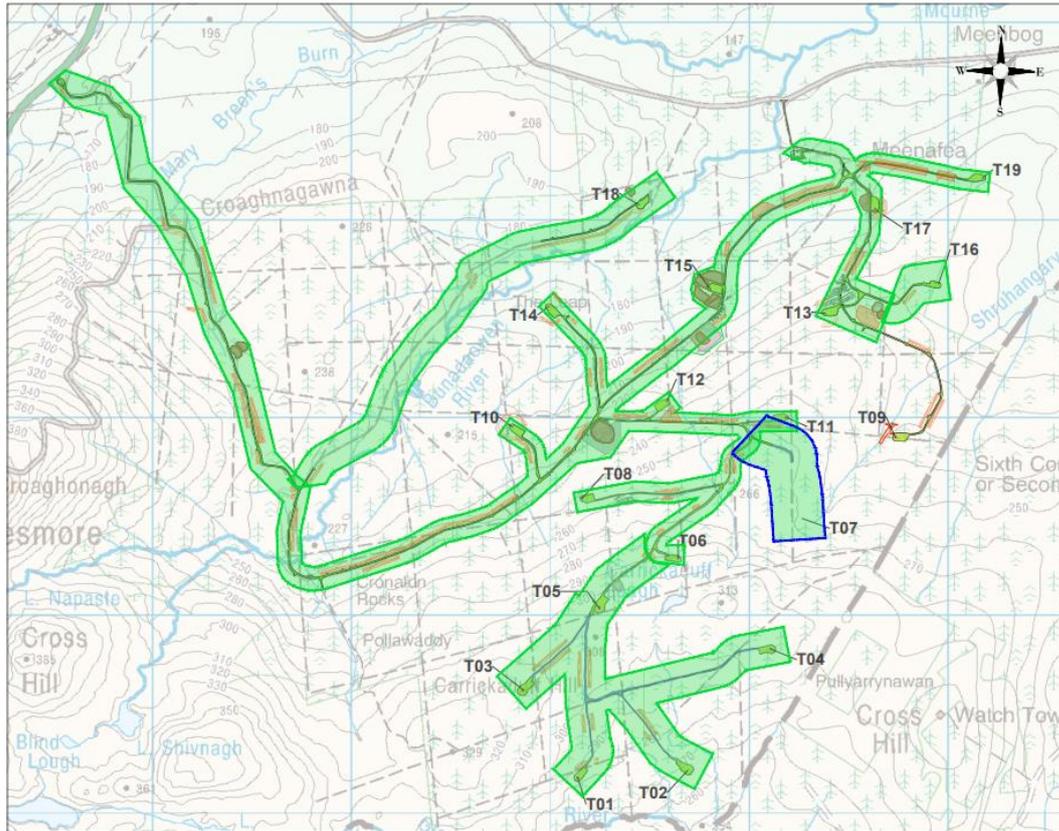


Figure 152 Outlined area has passed the assessment in this section

6.2 T9 - Peat Stability Assessment

A number of assessment points are presented below which indicate that the area is stable under all applicable load cases.

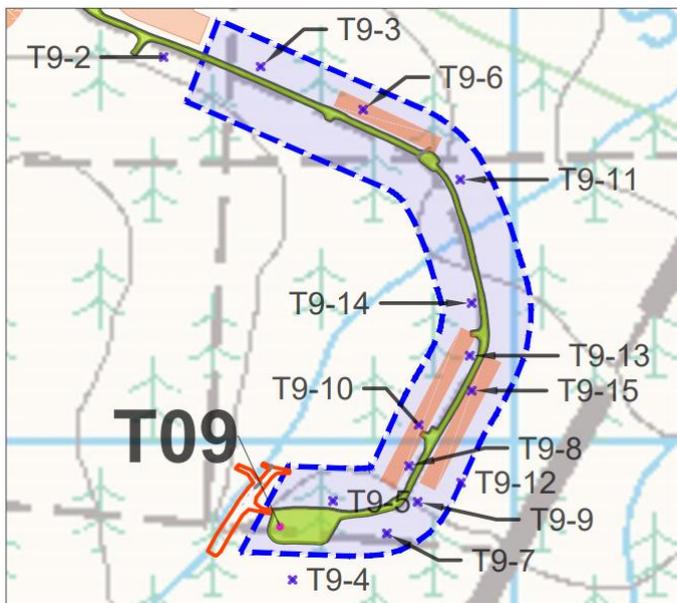


Figure 153 T9 Peat Stability Assessment points

The assessment indicates that this section of the site is stable, and that the safety margin is in excess of 1.0, as required to comply with Eurocode 7. The average overdesign factor is 3.75, values range from 1.65 to 12.0.

The assessment along this section of road was based on 15 assessment points which were selected from a wider set of data points. The most onerous locations are selected based upon the lowest shear strengths or the deepest peat measured, with reference also to the gradients at different locations.

The wind farm spur road and crane hardstanding have been constructed to solid sub-formation.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA				LOADING				ANALYSIS			
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	
T9-1	208541	386533	1.0	10	7	6.3	10	13.3	0.0	0.0	4.58	2.29	1.68	
T9-2	208600	386435	1.0	10	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65	
T9-3	208710	386424	1.4	10	6	3.8	10	13.3	0.0	0.0	4.63	2.70	2.07	
T9-4	208746	385837.5	0.8	10	20	2.7	10	13.3	0.0	0.0	37.95	16.87	12.00	
T9-5	208792	385928	1.0	10	12	3.3	10	13.3	0.0	0.0	14.91	7.46	5.47	
T9-6	208826	386375	0.9	10	8	2.4	10	13.3	0.0	0.0	15.18	7.19	5.20	
T9-7	208853	385891	1.9	10	6.5	2.7	10	13.3	0.0	0.0	5.19	3.40	2.72	
T9-8	208878	385968.5	0.9	10	10	2.9	10	13.3	0.0	0.0	15.71	7.44	5.38	
T9-9	208888	385927	2.4	10	10	2.9	10	13.3	0.0	0.0	5.89	4.16	3.42	
T9-10	208889	386015	1.8	10	7	1.5	10	13.3	0.0	0.0	10.62	6.82	5.41	
T9-11	208936	386295	1.0	10	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65	
T9-12	208937	385949	1.8	10	8.5	3.7	10	13.3	0.0	0.0	5.24	3.37	2.67	
T9-13	208947	386094	1.9	10	8	3.3	10	13.3	0.0	0.0	5.23	3.43	2.74	
T9-14	208949	386154	2.1	10	6	3.1	10	13.3	0.0	0.0	3.78	2.56	2.07	
T9-15	208949	386054	1.7	10	6	3.3	10	13.3	0.0	0.0	4.39	2.76	2.17	

FACTOR OF SAFETY LEGEND	
FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

Table 25

6.2.1 T9 Spur Road Berm - Wall 1

Wall 1 is located long the spur road to T9 and was constructed as a mitigation measure to retain peat with the site following the T7 peat slide.

The level of water and peat contained behind Wall 1 was at 220.3mOD. The top of the berm is at 221.0mOD. Original ground was approximately 216.3m OD on the upslope side of the berm and 215.5mOD on the downslope side.

The berm design is included below along with a summary of the factors of safety against sliding and overturning failure. Note that these calculations are carried out to Eurocode 7 IS EN 1997-1 with partial safety factors for loads and materials also applied.

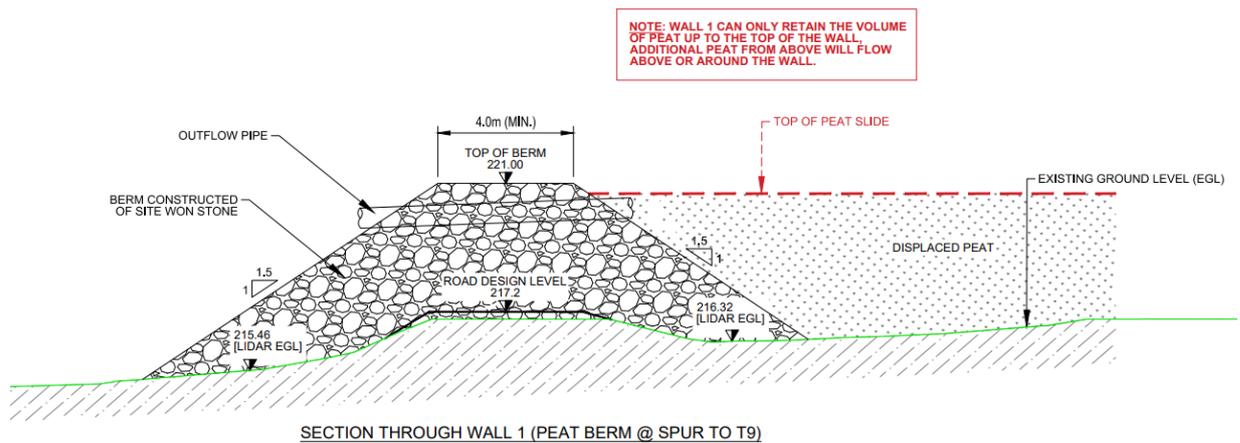
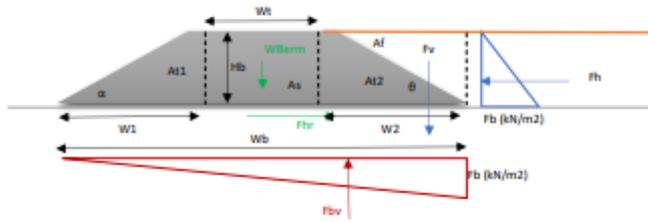


Figure 154 Wall 1 section detail

PROJECT DETAILS

PROJECT: Meenbog Wind Farm
ELEMENT: T9 SPUR PEAT BERM - WALL 1
DATE: 27/11/2020 - status update on this date
BY: COD/JS

BERM INFORMATION



Wt	4.0	m	width top of berm	
Hb	4.5	m	height of berm	
α	34	degrees	slope angle of berm downhill side	1 in 1.5
β	34	degrees	slope angle of berm uphill side	1 in 1.5
tan (α)	0.675			
tan (β)	0.675			
W1	6.672	m	Base of triangle	
W2	6.672	m	Base of triangle	
Wb	17.34	m	Base width	
At1	15.011	m ²	Area of triangle1	
At2	15.011	m ²	Area of triangle1	
A_{berm}	48.022	m ²	Area of berm	

γ	20	kN/m ³	unit weight berm material
WBerm	960	kN / m	weight berm per m
B. Pressure	55	kPa	bearing pressure under dead weight
β	32	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

tan (β)	0.479	
Fhr (nb)	460	berm horizontal sliding resistance no uplift
Fhr (b)	298	berm horizontal sliding resistance uplift

LOADING

γ	10	kN/m ³	unit weight retained material
Depth of fill	3.9	m	water level 220.3mOD as measured 27.11.2020, above pipe invert level
Fb	39	kN/m ²	pressure
Fh	76.05	kN/m	horizontal force
Af	13.01	m ²	Area of peat over berm slope
Fv	130.1	kN / m	Load peat above berm slope
Fbv	-338	kN / m	buoyancy force

SUMMARY

SLIDING

	Unf. [kN]	SLS		UPL		
		FOS	kN	FOS	kN	
Resisting Forces						
Fhr (nb)	460	1.00	460	0.90	414	(nb - non-buoyant scenario)
Fhr (b)	298	1.00	298	0.90	268	(b - buoyant scenario)
Sliding Forces						
Fh	76	1.00	76	1.00	76	Horizontal sliding force
Sliding						
(nb)	6.05		6.05		5.45	>1 ok
(b)	3.92		3.92		3.53	>1 ok

OVERTURNING

	Unf. [kNm]	SLS		UPL		
		FOS	kNm	FOS	kNm	
Resisting BM						
Res BM (nb)	8328	1.00	8328	0.90	7496	(nb - non-buoyant scenario)
Res BM (b)	5396	1.00	5396	0.90	4856	(b - buoyant scenario)
Overtuning						
Ot BM (b)	-3796	1.00	-3796	1.00	-3796	Horizontal sliding force
Overtuning						
(nb)	109.51		109.51		98.56	>1 ok
(b)	70.95		70.95		63.86	>1 ok

6.2.2 Wall 2 (Berm near turbine T9)

Wall 2 is located in the vicinity of turbine T9. The berm design is included below along with a summary of the factors of safety against sliding and overturning failure. Note that these calculations are carried out to Eurocode 7 IS EN 1997-1 with partial safety factors for loads and materials also applied. This berm was the last of the three berms to be constructed, once the slide area above Walls 1 and 3 had been stabilised.

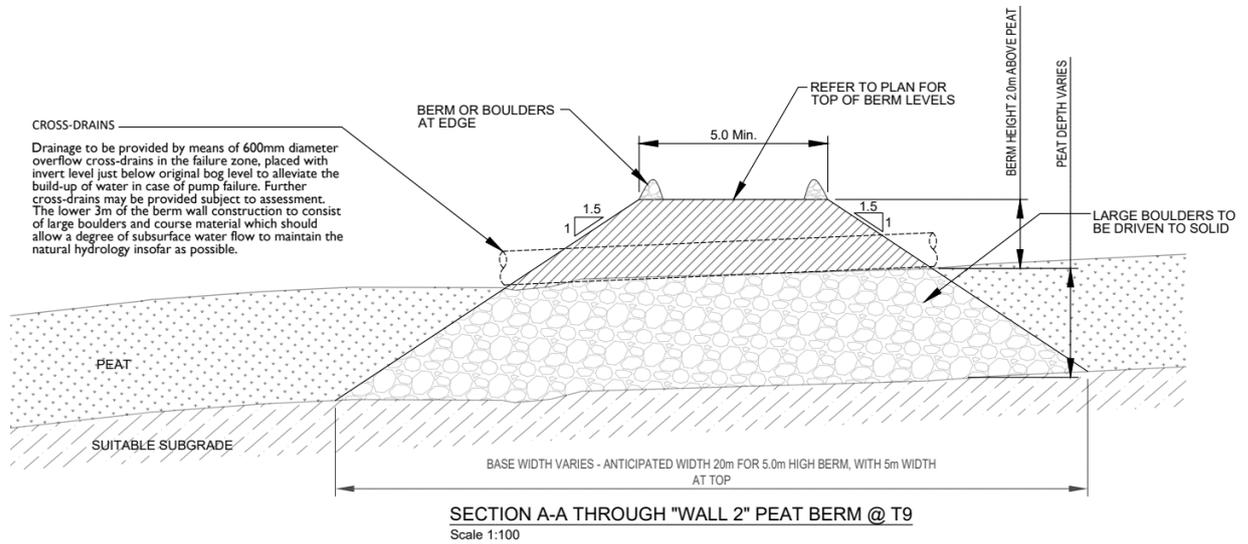
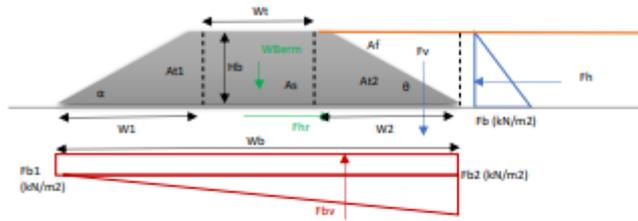


Figure 155 Wall 2 section detail

PROJECT DETAILS

PROJECT: Meenbog Wind Farm
ELEMENT: T9 PEAT BERM - WALL 2
DATE: 27/11/2020
BY: COD/JS

BERM INFORMATION



Wt	5.0	m	width top of berm	
Hb	3.5	m	current height of berm, 0.5m above OGL	
α	34	degrees	slope angle of berm downhill side	1 in 1.5
β	34	degrees	slope angle of berm uphill side	1 in 1.5
Tan (α)	0.675			
Tan (β)	0.675			
W1	5.189	m	Base of triangle	
W2	5.189	m	Base of triangle	
Wb	15.38	m	Base width	
At1	9.081	m ²	Area of triangle1	
At2	9.081	m ²	Area of triangle1	
A _{berm}	35.661	m ²	Area of berm	

γ	22	kN/m ³	unit weight berm material
W/Berm	785	kN / m	weight berm per m
B. Pressure	51	kPa	bearing pressure under dead weight
β	32	degrees	characteristic angle friction base material
Mat. Factor	1.25		factor for angle base friction
Design β	26	degrees	design angle friction base material

Tan (β)	0.479	
Fhr (nb)	376	berm horizontal sliding resistance no uplift
Fhr (b)	177	berm horizontal sliding resistance uplift

LOADING

γ	10	kN/m ³	unit weight retained material
Depth of fill	3.4	m	equals maximum depth of peat behind the berm
Fb1	20	kN/m ²	pressure
Fb2	34	kN/m ²	pressure
Fh	57.80	kN/m	horizontal force
Af	8.82	m ²	Area of peat over berm slope
Fv	88.2	kN / m	Load peat above berm slope
Fbv	-415	kN / m	buoyancy force

SUMMARY

SLIDING

	Unf. [kN]	SLS		UPL		
		FOS	kN	FOS	kN	
Resisting Forces						
Fhr (nb)	376	1.00	376	0.90	338	(nb - non-buoyant scenario)
Fhr (b)	177	1.00	177	0.90	159	(b - buoyant scenario)
Sliding Forces						
Fh	58	1.00	58	1.00	58	Horizontal sliding force
Sliding						
(nb)	6.50		6.50		5.85	>1 ok
(b)	3.06		3.06		2.76	>1 ok

OVERTURNING

	Unf. [kNm]	SLS		UPL		
		FOS	kNm	FOS	kNm	
Resisting BM						
Res BM (nb)	6032	1.00	6032	0.90	5429	(nb - non-buoyant scenario)
Res BM (b)	2840	1.00	2840	0.90	2556	(b - buoyant scenario)
Overturing						
Ot BM (b)	-4189	1.00	-4189	1.00	-4189	Horizontal sliding force
Overturing						
(nb)	104.37		104.37		93.93	>1 ok
(b)	49.13		49.13		44.22	>1 ok

6.2.3 T9 Area – Conclusion

The assessment indicates that this section of the site is stable.

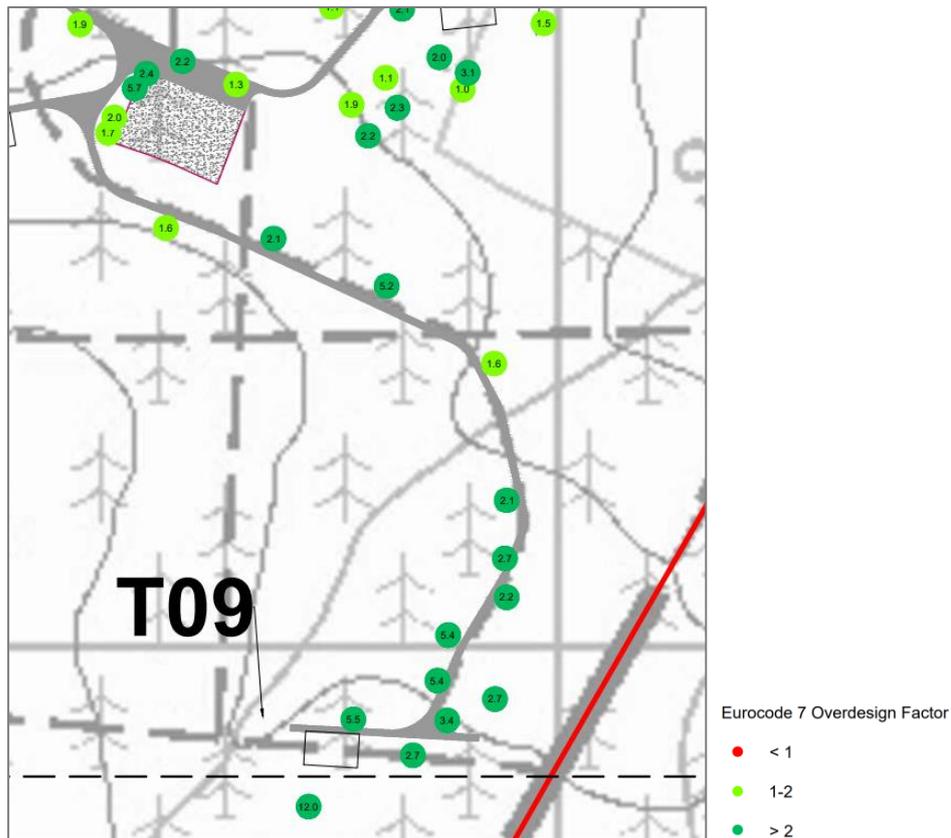


Figure 156 ODF results in this assessment section

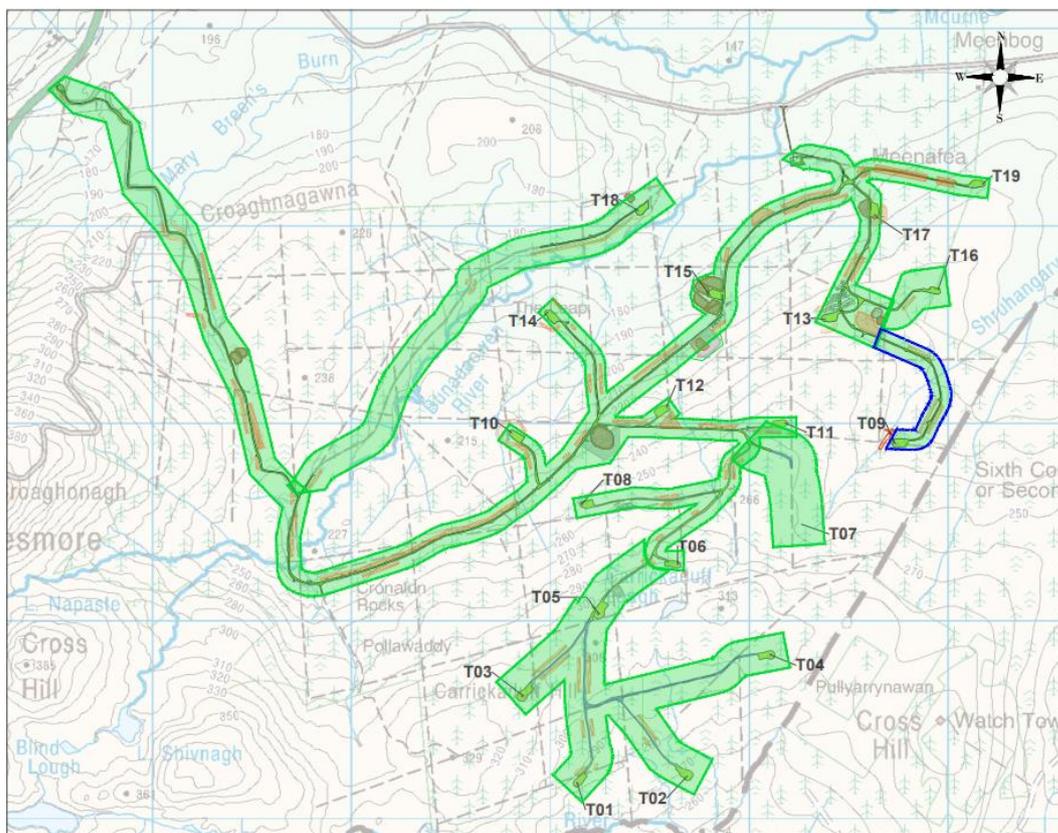


Figure 157 Outlined area has passed the assessment in this section

6.3 Conclusion – Zone 3

This section of the report assessed Zone 3 which relates primarily to the roads on the site at **T7 and T9** along with the T7 peat slide stabilisation works at **Wall 1, Wall 2 and Wall 3**. The assessment areas include related infrastructure in these areas including hardstandings, turbine foundations, peat stabilisation and peat deposition areas. Where arisings (dominantly peat) from excavations were deposited onto the existing peat surface, a visual inspection of the condition of the placed arisings carried out by FT (see FT report Appendix A4) confirmed no evidence of instability of the placed arisings that would be considered to represent a risk of large-scale peat failure, which concurs with the expected behaviour of the insitu peat, that is the placed arisings would result in consolidation of the underlying insitu peat with a subsequent gain in strength over time.

Zone 3 passes the assessment with an adequate safety margin provided the exclusion zone for the area south-west of T7 Turbine foundation is adhered to, and provided the remaining T7 and T9 works are carried out in accordance with the design and control measures outlined in the Fehily Timoney and Ionic report.

Zone 3 is highlighted in green in the following map, along with the earlier Zone 1 and 2 areas which were assessed in Sections 4 and 5.

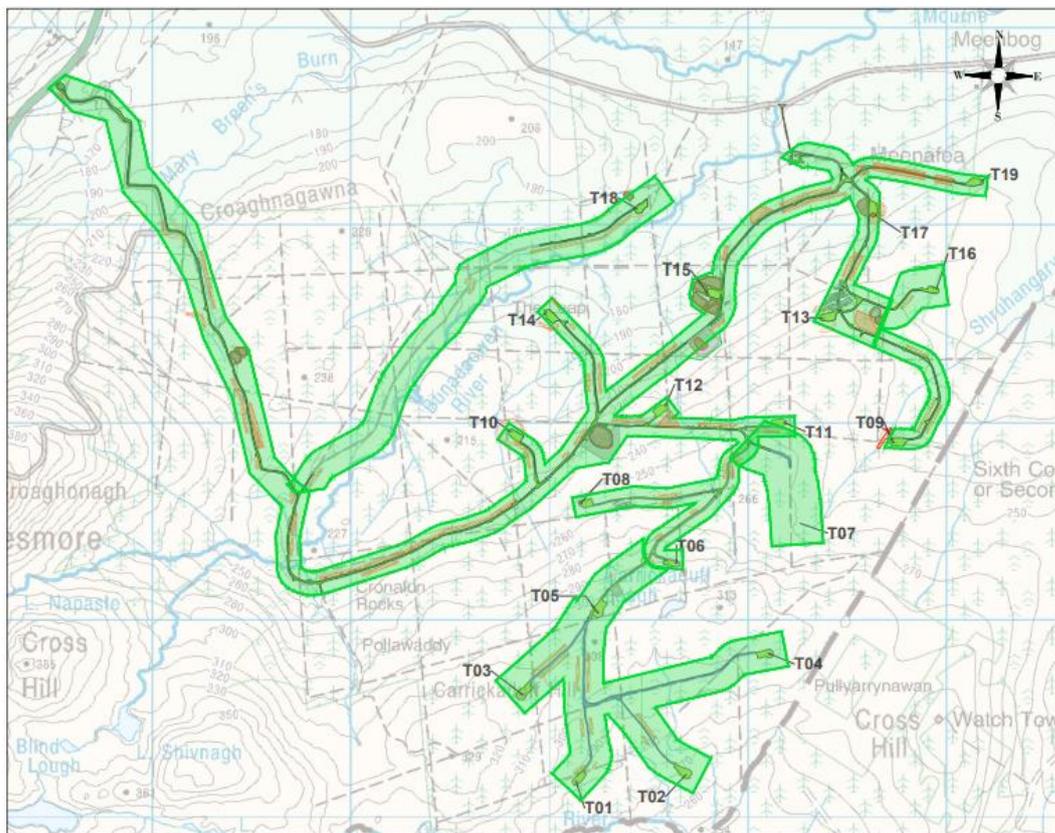


Figure 158 Zone 1, 2 and 3 assessment outcomes

7. SENSITIVITY ANALYSIS

7.1 Introduction

Further to the stability assessment described in Sections 4, 5 and 6 of this report, a sensitivity analysis was undertaken on a site wide basis to identify defined areas of the site for further consideration/assessment.

While the stability assessment complies with EN 1997-1 (EC7) and satisfies the requirement for ODF ≥ 1 , it is recognised that there is potential variability in the assessment parameters (e.g. shear strength) and as such a sensitivity analysis has been completed.

This sensitivity analysis identifies areas that may be sensitive to changes in the parameters used in the peat stability assessment. The sensitivity analysis used ODF values less than 1.2 to identify areas which may be sensitive to variability, in particular shear strength. The areas identified were subject to further assessment, the findings of which are included in this section. In areas identified for further assessment, consideration is also given to the depth at which shear strength tests were undertaken relative to the depth of peat in those locations.

Following the peat stability assessment there were 87 locations identified with an ODF value of between 1.0 and 1.2. There were 2 locations with an ODF value of less than 1.0. These two locations were in the designated no works area south of T7 turbine and the road on approach to T4, which was previously designated for reconstruction.

To categorise them, the 89 locations were divided into 6 scenarios described in the table and figure below. A breakdown of the number of ODFs in each scenario is provided.

Table 26 Number of ODF values <1.2 by scenario

SCENARIO	NUMBER
SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD	38
SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE	3
SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)	28
SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS	16
SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING	3
SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA	1
TOTAL	89

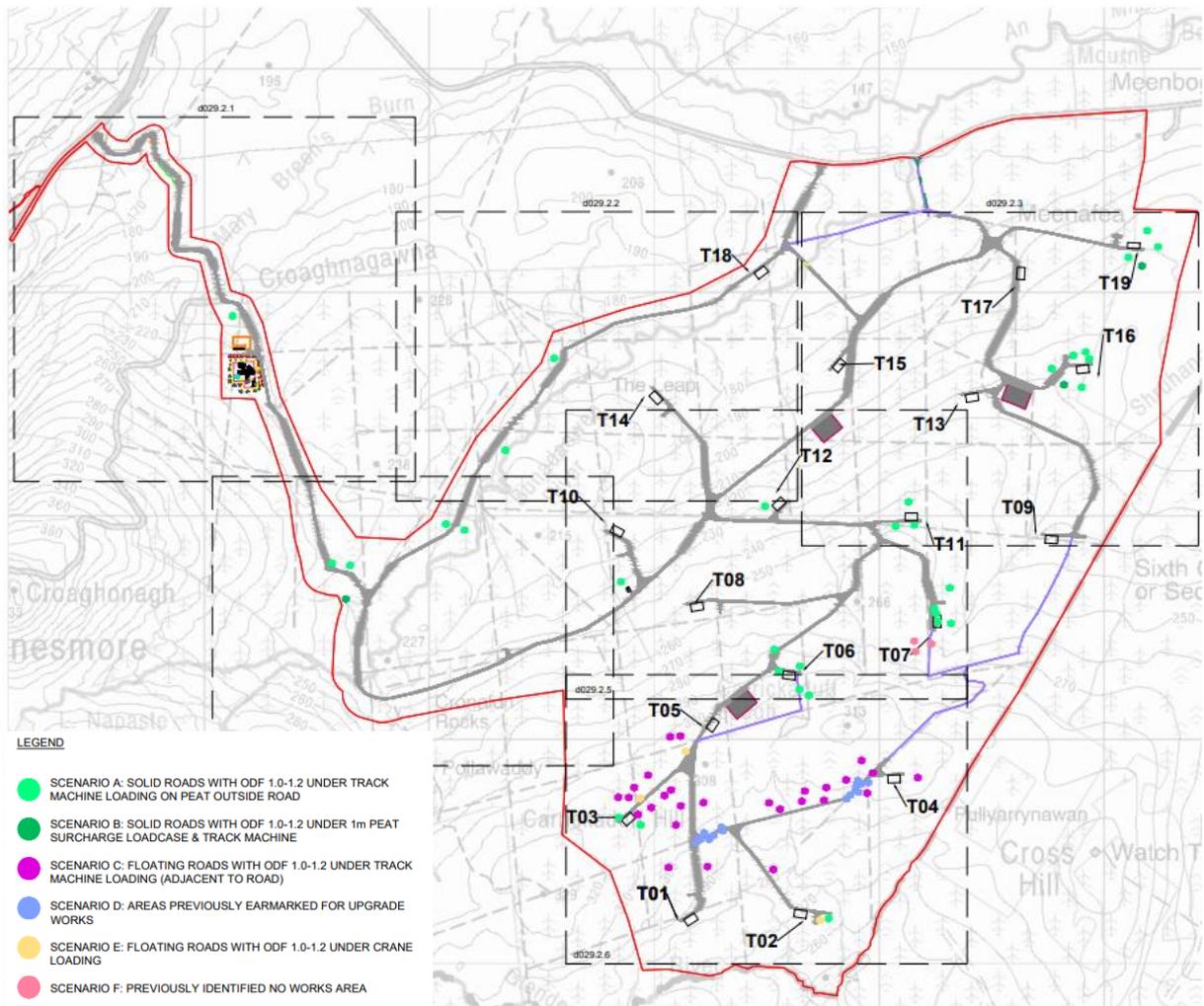


Figure 159 ODF values <1.2 [refer to maps in Appendix I]

Two loadcase used in the peat stability assessment considered vehicle loading, these were

- Loadcase II Variable Load Construction
- Loadcase IV Variable Load Crane

Details of these vehicles and loading are contained in Appendix H.

7.2 Sensitivity Analysis

Every point identified within the sensitivity analysis with an $ODR < 1.2$ has been assessed, and these are tabulated in Appendix I. At a number of locations, it was recommended that supplementary testing and/or assessment should be completed and these areas are summarised below.

Due to the depth of peat and as they were previously identified for works, two sections of T4 spur will also be included for further consideration. These are the T1/T2 junction and the T4 spur approaching the hardstand. Due to the proximity to the November peat slide and the outstanding road and hardstand works, the ODFs identified around T7 hardstand will also be included for further consideration.

Areas recommended for supplementary testing and/or assessment:

- i. Substation Road, SUB-51 & 56
- ii. T3 Spur Road, T3-5 & 29
- iii. T4 Spur Road (T1/T2 Junction & spur road near hardstand)
- iv. T6 Spur Road, T6-2 & T5-6
- v. T7 Hardstand and approach
- vi. T11 Hardstand, T11-10 & T11-12
- vii. T16 Hardstand, T16-13, 14, 24 & 26
- viii. T18 Spur Road, T18-19 & 24
- ix. Met Mast MM-3

The further assessment is documented in the following sub-sections.

For each area, a figure is provided which illustrates the completed testing. Test locations which include shear vane test results within the bottom 1m of peat are highlighted – these include previous tests and additional tests completed for the sensitivity analysis. These figures illustrate the extent of peat testing carried out within the bottom 1m of peat at each location.

Testing at 49 additional test locations was completed for the sensitivity analysis, with 36 tests completed at a depth greater than 2m (at 29 locations). The additional test results are tabulated in each sub-section. In the sensitivity analysis assessment (and as was the case for the stability assessment) the lowest shear strength at each location was used in the calculations.

The test locations with results deeper than 2m are plotted in the following figure, which generally indicates a slight increase in strength with depth for this set of test results. A series of relatively high shear vane results (orange circles) were discounted as outliers. These results were obtained close to base of peat in some locations and may be an indication the test was partially completed in the sub-soil at that depth. These discounted results were not relied upon in the stability assessment or sensitivity analysis calculations. A trend line has been plotted, however it should be noted that this is for illustration purposes and was not used as a design line.

The red dashed line indicates the average depth of peat across the site (approximately 1.8m) and the green dash line indicates the average peat depth (approximately 2.6m) at additional test locations.

Note the assumption of increasing strength with depth is not relied upon in the sensitivity analysis assessment as testing has been completed throughout the peat depth and within the bottom 1m of peat in each area of interest.

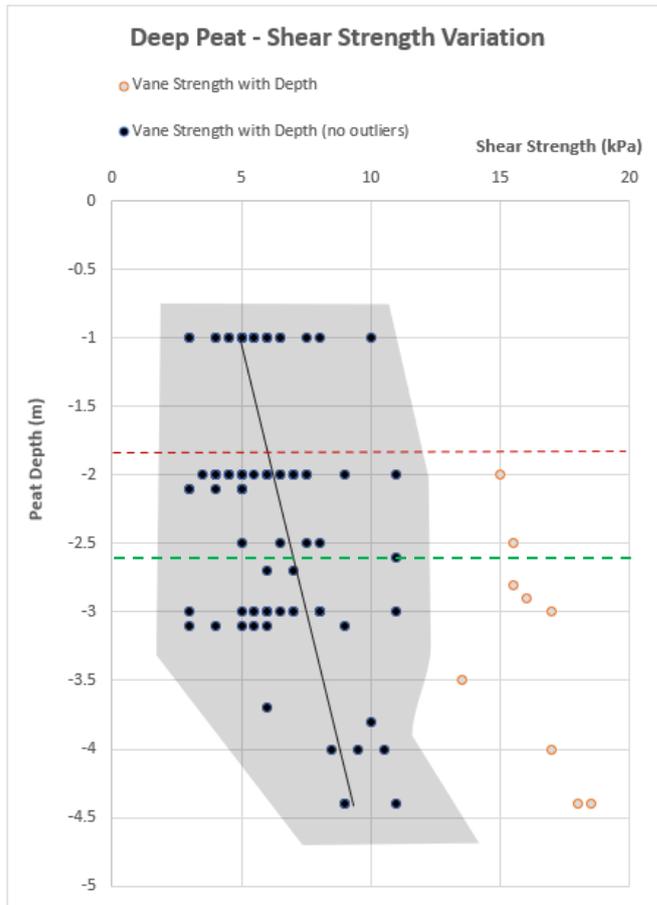


Figure 160 Peat shear strength test results in areas of deeper peat

The following points should be taken into account when considering the sensitivity analysis:

- Average site peat depth is approximately 1.8m and average peat depth at areas of interest identified for further testing in the sensitivity analysis is approximately 2.6m (green dash line in figure above).
- Approximately 15% of site roads are located in areas with peat depths 2m or greater, with 8% in areas with peat depths 3m or greater. This equates to approximately 3500m and 1700m of infrastructure respectively, most of which has already been constructed. These areas have been assessed, with some areas identified for supplementary testing and assessment as part of the sensitivity analysis.
- Supplementary testing has been completed where required in order to profile the peat strength throughout the depth of the peat at each area highlighted by the sensitivity analysis. This includes the areas of remaining significant works at T4, T7, T16, T18 and the met mast.
- The critical time for peat failure along the site roads is during construction of those roads. The site roads are already constructed with the exception of the T4 works, T7 spur road and hardstand, T16 foundation and hardstand and the T18 road. These areas have been subject to a supplementary testing and assessment as part of the sensitivity analysis.
- Site roads have previously been subjected to construction vehicle loading, such as a Volvo A25D, which has a total weight of 45 tonnes (vehicle loading information has been included in Appendix H).

7.2.1 Substation Road – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below. Point SUB-52 did not require further testing or assessment as there is an adjacent ODF assessment point closer to the road with ODF value of 5.3, refer to Figure I63.

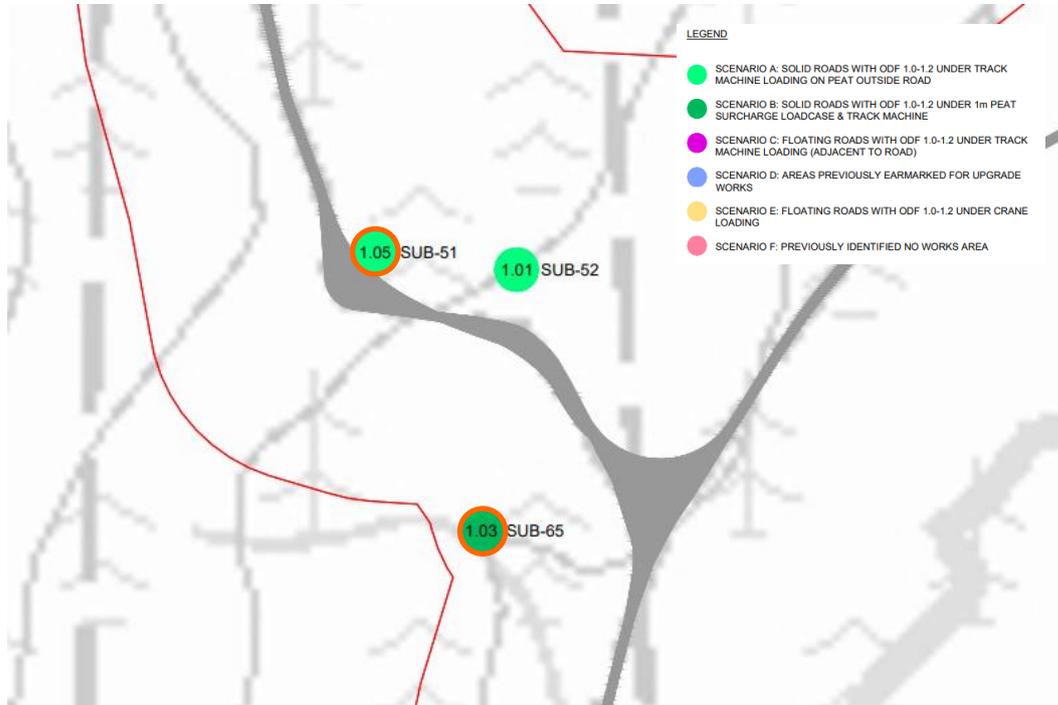


Figure 161 ODF assessment point highlighted by the sensitivity analysis, ODFs for supplementary assessment highlighted with orange circle [refer to maps in Appendix I]

The testing completed in this area is indicated in the figure below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots, while additional tests within the bottom 1m of peat completed as part of the sensitivity analysis are indicated with darker blue dots. This figure illustrates the extent of peat testing carried out in the bottom 1m of peat at the location. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

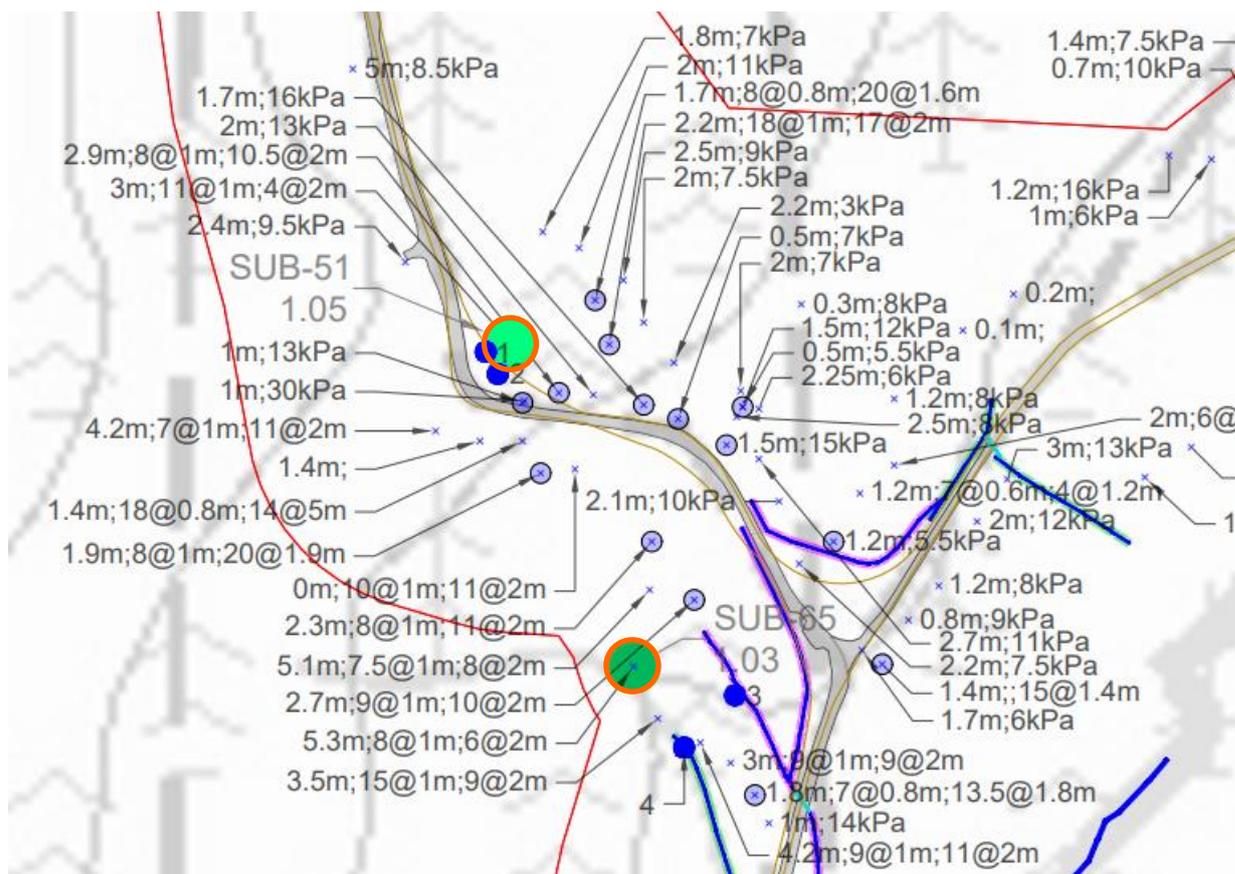


Figure 162 Peat testing locations

Location	Number	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
SUB RD	1 (SUB-70)	0.8	11.5							
	2 (SUB-71)	0.8	9.5							
	3 (SUB-72)	1.2	9							
	4 (SUB-73)	2.5	12	1	11.5	2				

Table 27 Supplementary peat testing

An additional assessment was completed at 2 locations between the road and ODF SUB-51. The additional assessment indicates that this area is stable, and that the new ODFs are 5.65 and 4.67. The peat depths in the vicinity of the road are shallow (<1m) whereas the peat depth was 3m at the SUB-51 location. Therefore, the new ODFs (SUB-70 and SUB-71) are more representative of conditions in the vicinity of the road. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

An additional assessment was completed between the road and ODF SUB-65, as well as another location to the south, where a second shear vane test was completed at depth. The additional assessment indicates that this area is stable, and that the new ODFs are 2.01 and 2.79. The peat depths closer to the road are shallower (1.2 and 2.5m) whereas the peat depth was 5.3m at the SUB-65 location. Therefore, the new ODFs (SUB-72 and SUB-73) are more representative of conditions in the vicinity of the road. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

The additional assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
SUB-51	205566	385791	3.0	10	4	3.3	10	13.3	0.0	0.0	1.66	1.24	1.05		
SUB-65	205627	385630	5.3	10	6	3.4	10	13.3	0.0	0.0	1.37	1.15	1.03		
SUB-70	205553	385786	0.8	10	11.5	3.3	10	13.3	0.0	0.0	17.87	7.94	5.65		
SUB-71	205559	385775	0.8	10	9.5	3.3	10	13.3	0.0	0.0	14.76	6.56	4.67		
SUB-72	205677	385615	1.2	10	9	6.3	10	13.3	0.0	0.0	4.91	2.68	2.01		
SUB-73	205651	385589	2.5	10	11.5	4	10	13.3	0.0	0.0	4.72	3.37	2.79		

Table 28 Supplementary assessment points (blue)

The following figure indicates the ODFs assessed (orange circle) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

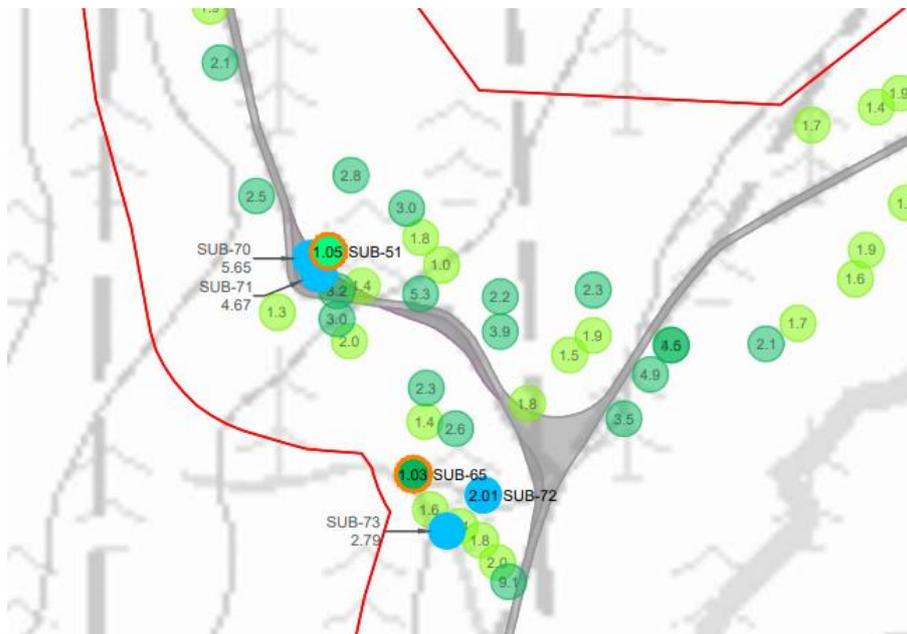


Figure 163 ODF values

Mitigation

No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.2 T3 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below.

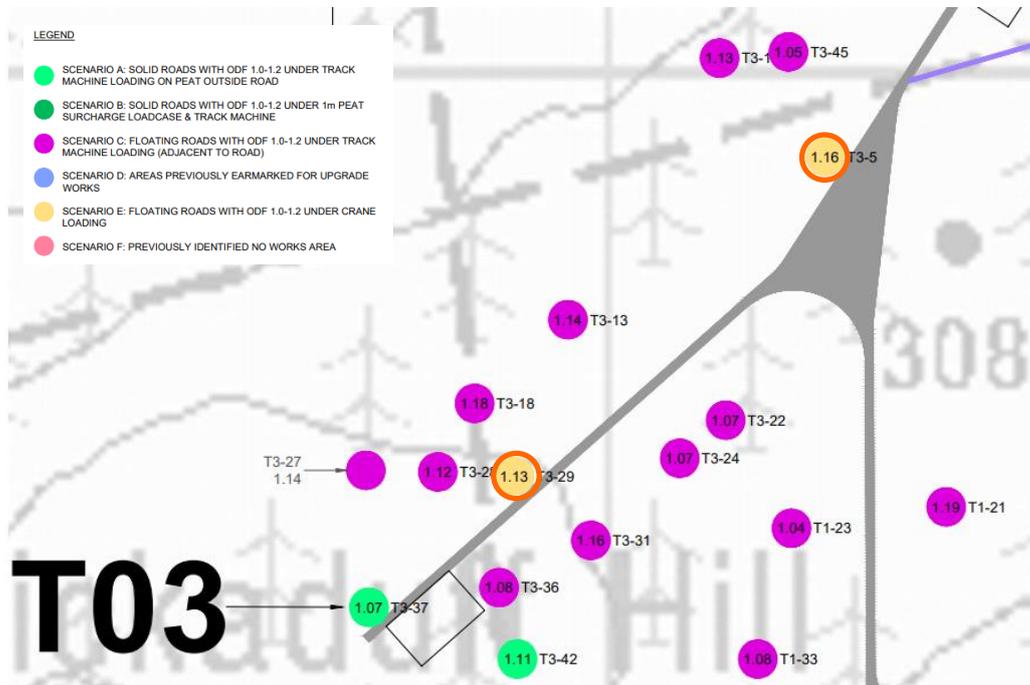


Figure 164 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

The testing completed in this area is indicated in the figure below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots, while additional tests within the bottom 1m of peat completed as part of the sensitivity analysis are indicated with darker blue dots. This figure illustrates the extent of peat testing carried out in the bottom 1m of peat at the location. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

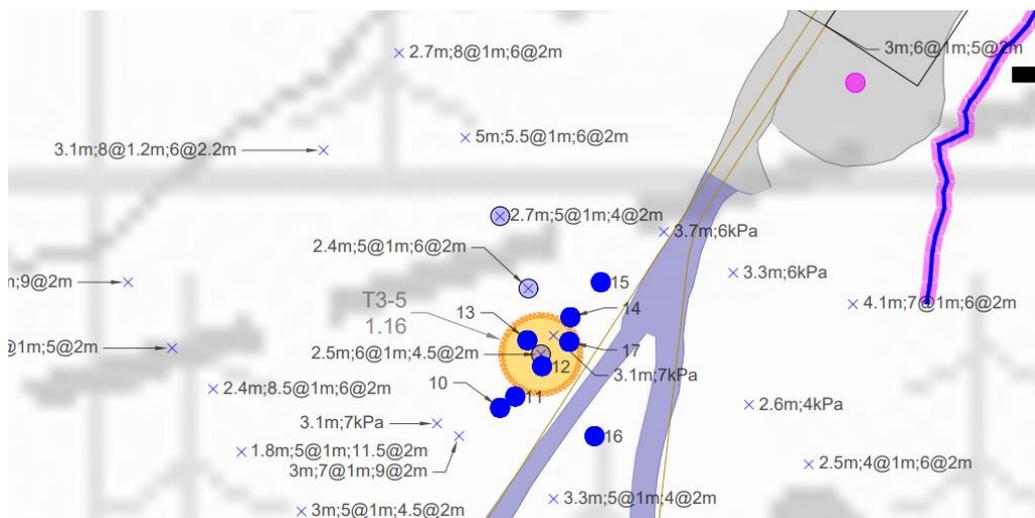


Figure 165 Peat testing @ T3-5 (note tests at depth in the wider area are not highlighted)

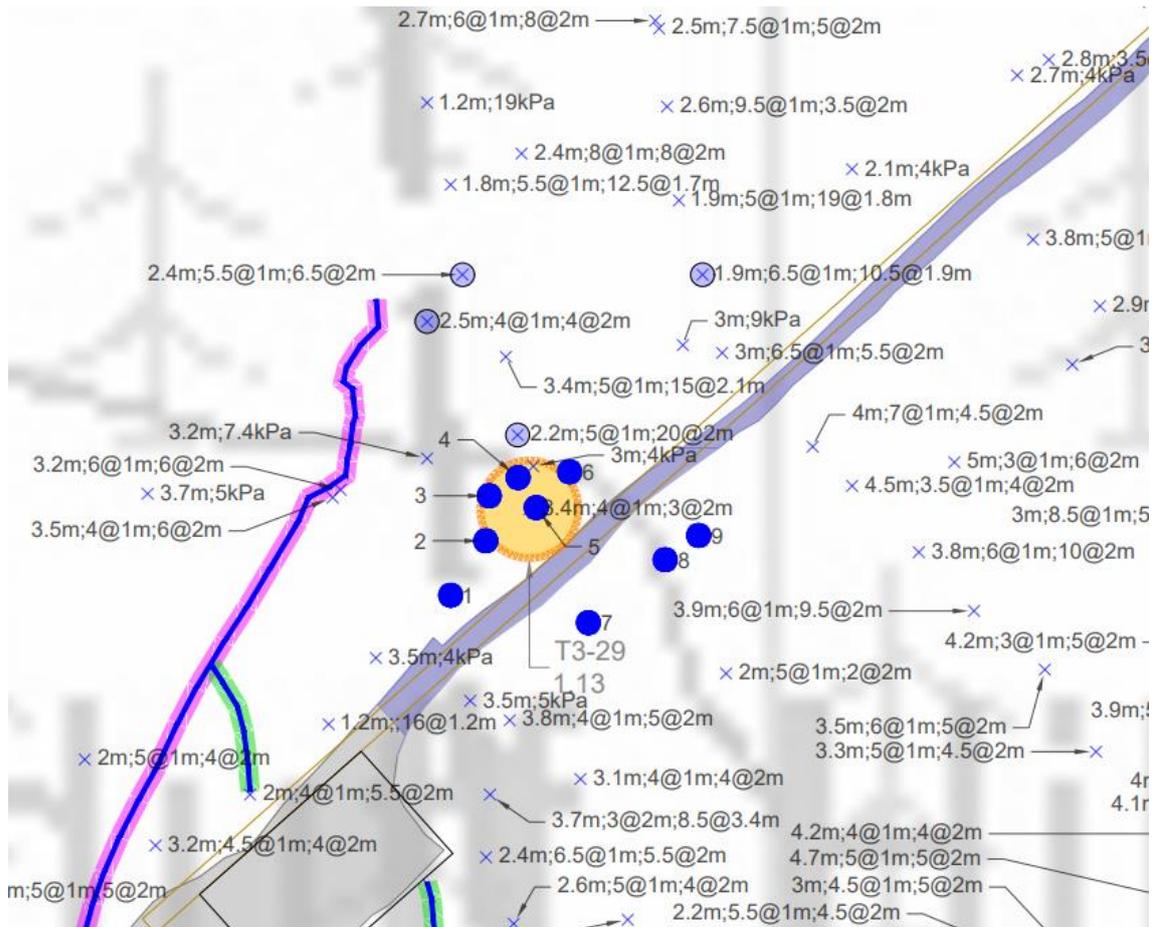


Figure 166 Peat testing @ T3-29 (note tests at depth in the wider area are not highlighted)

An additional assessment was completed at 14 locations in proximity to the ODFs in question. The assessment indicates that these areas are stable, and that the ODF values are greater than 1.0, as required to comply with Eurocode 7. Two supplementary assessment points T3-57 and T3-58 returned ODF values of 1.17 and 1.05. Both points are directly adjacent to the point of interest T3-5.

The assessment points and results are included in the table below.

Location	Number	E	N	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T3	1 (T3-54)	206918	384716	3.8	6	1	5	2	7	3	6	3.7
	2 (T3-53)	206927	384730	3.5	4	1	5.5	2	5.5	3		
	3 (T3-52)	206928	384741	2.9	4	1	3.5	2				
	4 (T3-51)	206935	384746	2.6	3.5	1	3.5	2				
	5	206940	384738	3.4	5	1	4	2	6	3		
	6 (T3-50)	206948	384748	3.0	3	1	4	2	5	2.5		
	7 (T3-59)	206953	384709	3.1	5.5	1	7.5	2	3	3		
	8 (T3-56)	206973	384725	2.3	4	1	3	2				
	9 (T3-55)	206981	384731	3.1	4	1	3.5	2	*17	3		
	10 (T3-47)	207128	384931	3.1	5.5	1	5	2	5.5	3		
	11	207133	384935	3.1	6	1	6	2	7	3		
	12	207141	384947	2.7	6.5	1	5	2	8	2.5		
	13 (T3-48)	207137	384953	2.6	6	1	6.5	2				
	14 (T3-58)	207150	384957	3.1	5	1	4.5	2	8	3		
	15 (T3-49)	207160	384971	3.5	5	1	5	2	6	3	13.5*	3.5
	16 (T3-46)	207158	384922	3.0	5	1	4.5	2	5	3		
	17 (T3-57)	207146	384955	3.1	5.5	1	5	2				

Table 29 Supplementary peat testing (*test result discounted from assessment as may be outlier, e.g. due to testing within more intact organic matter or partially within the sub-soil, resulting in a higher result)

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T3-5	207141	384948	2.5	10	4.5	2.7	0	13.3	20.7	10.3	2.73	2.73	1.62	1.49	1.16
T3-29	206938	384738	3.4	10	3	1.6	0	13.3	20.7	10.3	2.26	2.26	1.50	1.40	1.13
T3-46	207158	384922	3.0	10	4.5	1.7	10	13.3	20.7	10.3	3.66	2.74	2.32	2.16	1.71
T3-47	207128	384931	3.1	10	5	2.2	10	13.3	20.7	10.3	3.00	2.27	1.93	1.80	1.43
T3-48	207136	384952	2.6	10	6	2.7	10	13.3	20.7	10.3	3.50	2.53	2.10	1.95	1.52
T3-49	207159	384970	3.5	10	5	1.9	10	13.3	20.7	10.3	3.08	2.40	2.06	1.93	1.56
T3-50	206948	384747	3.0	10	3	1.6	0	14.3	20.7	10.3	2.56	2.56	1.58	1.51	1.20
T3-51	206935	384746	2.6	10	3.5	1.6	10	15.3	20.7	10.3	3.45	2.49	1.95	1.92	1.49
T3-52	206927	384741	2.9	10	3.5	1.6	10	16.3	20.7	10.3	3.09	2.30	1.78	1.80	1.42
T3-53	206926	384729	3.5	10	4	1.6	10	17.3	20.7	10.3	2.92	2.27	1.78	1.84	1.48
T3-54	206917	384715	3.8	10	5	1.6	10	18.3	20.7	10.3	3.37	2.67	2.07	2.18	1.77
T3-55	206981	384731	3.1	10	3.5	1.8	10	19.3	20.7	10.3	2.57	1.94	1.42	1.54	1.22
T3-56	206972	384725	2.3	10	3	1.6	10	20.3	20.7	10.3	3.34	2.33	1.55	1.76	1.34
T3-57	207148	384954	3.1	10	5	2.7	0	14.3	20.7	10.3	2.45	2.45	1.53	1.47	1.17
T3-58	207150	384956	3.1	10	4.5	2.7	0	15.3	20.7	10.3	2.20	2.20	1.34	1.32	1.05
T3-59	206953	384709	3.1	10	3	1.6	0	14.3	20.7	10.3	2.52	2.52	1.58	1.51	1.20

Table 30 Supplementary assessment points (blue)

The following figure indicates the ODFs assessed (orange circle) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded. T3-57 and T3-58 are immediately adjacent to T3-5 and confirm the previous assessment finding in the immediate location, however the surrounding assessment points confirm higher ODFs in the area.

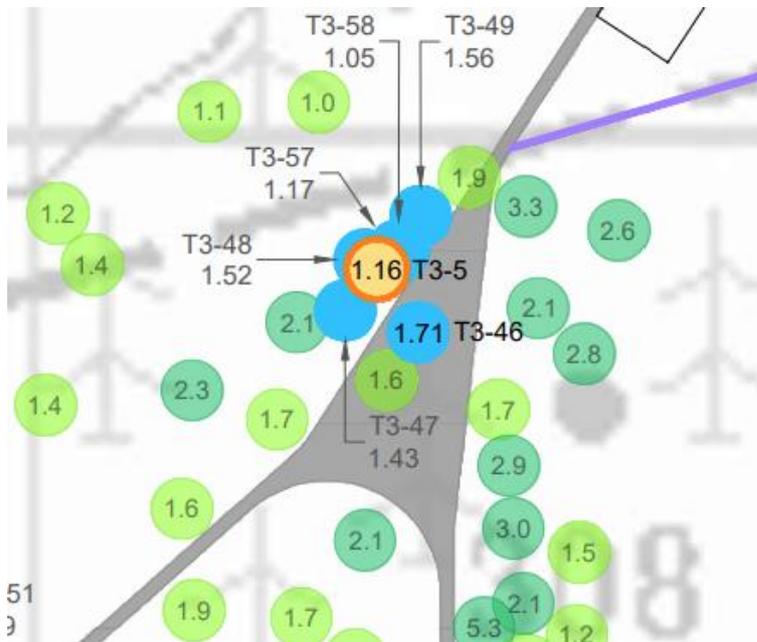


Figure 167 ODF values in the vicinity of T3-5

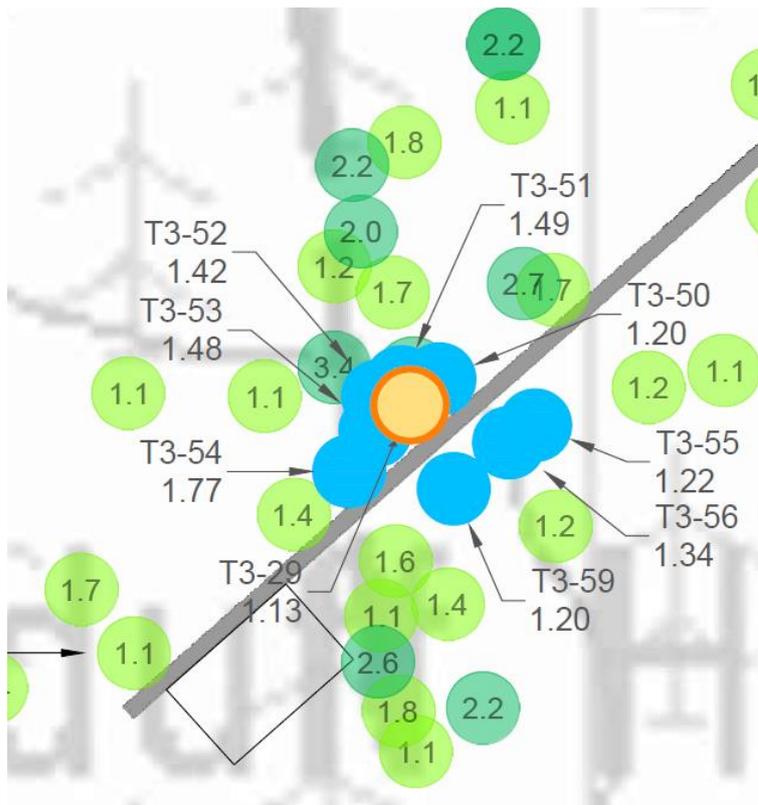


Figure 168 ODF values in the vicinity of T3-29

Supplementary assessment indicates ODF values >1.2 in the area surrounding the areas of interest. Supplementary testing was completed. Peat testing within the bottom 1m of peat has been completed throughout the areas being assessed.

Mitigation

This floating road will be subject to a formal load test and certification (by Ionic) prior to turbine erection cranes being permitted to access them. The load test will involve incrementally increasing vehicle loads. Floating roads have also previously been subjected to construction vehicles such as the A25D, which has a total weight of 45 tonnes. Vehicle loading information has been included in Appendix H. The turbine crane will be restricted to an axle load of 12t, lower than the axle load of the A25 vehicles. No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.3 T4 – Supplementary Assessment

As two sections of T4 spur road in deeper peat were previously identified for works, they were included for further consideration. They are the T1/T2 junction and the T4 spur road approaching the hardstand. The assessment points highlighted for further consideration are the Scenario D points illustrated below.

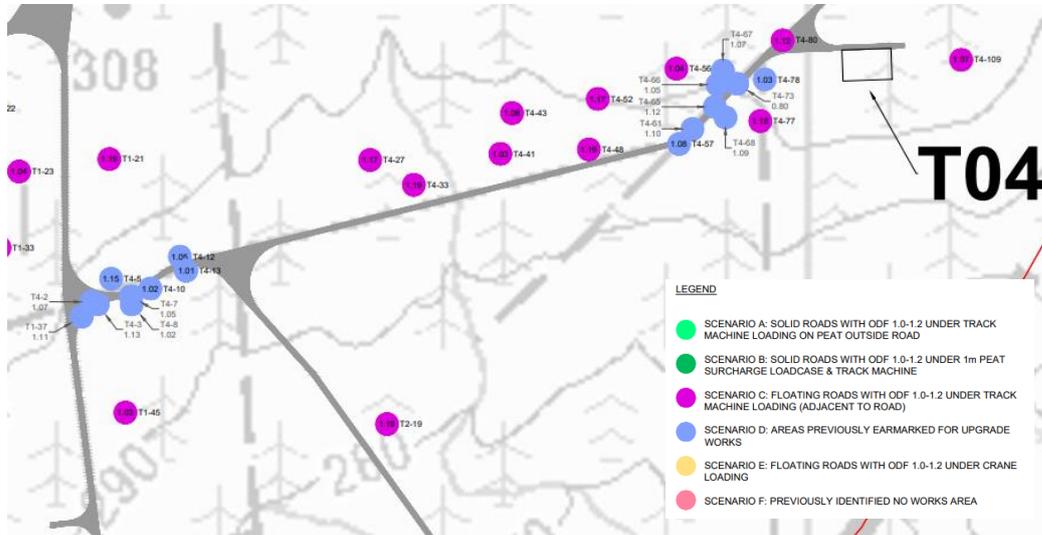


Figure 169 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

The testing completed in these areas are indicated in the figures below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots, while additional tests within the bottom 1m of peat completed as part of the sensitivity analysis are indicated with darker blue dots. This figure illustrates the extent of peat testing carried out in the bottom 1m of peat at the location. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

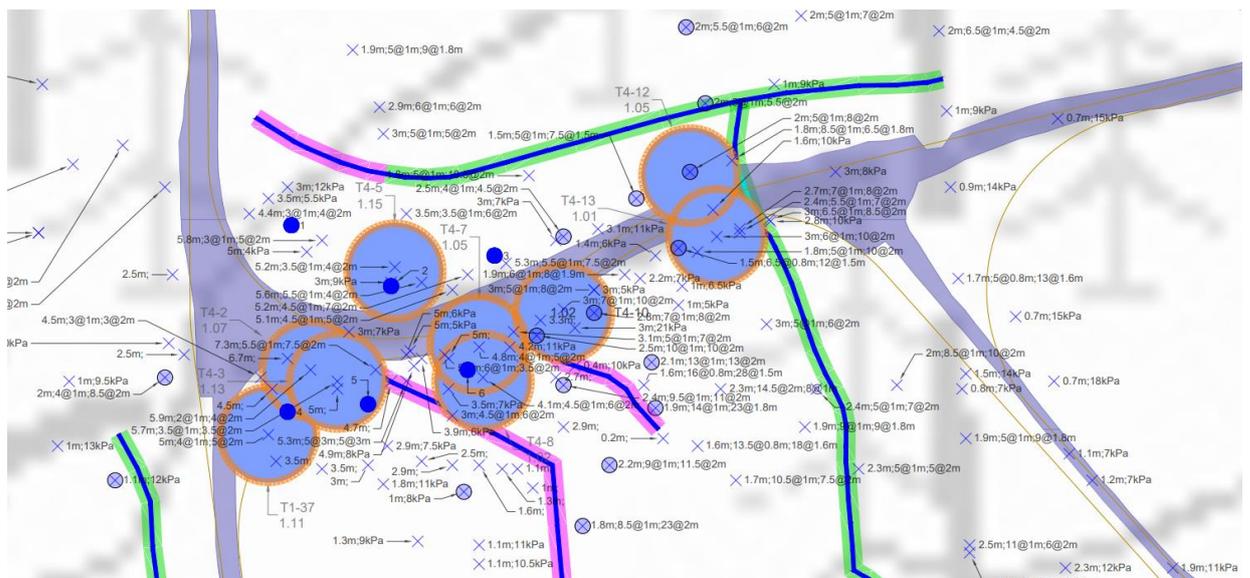


Figure 170 Peat testing - T4 Road approaching T2 junction

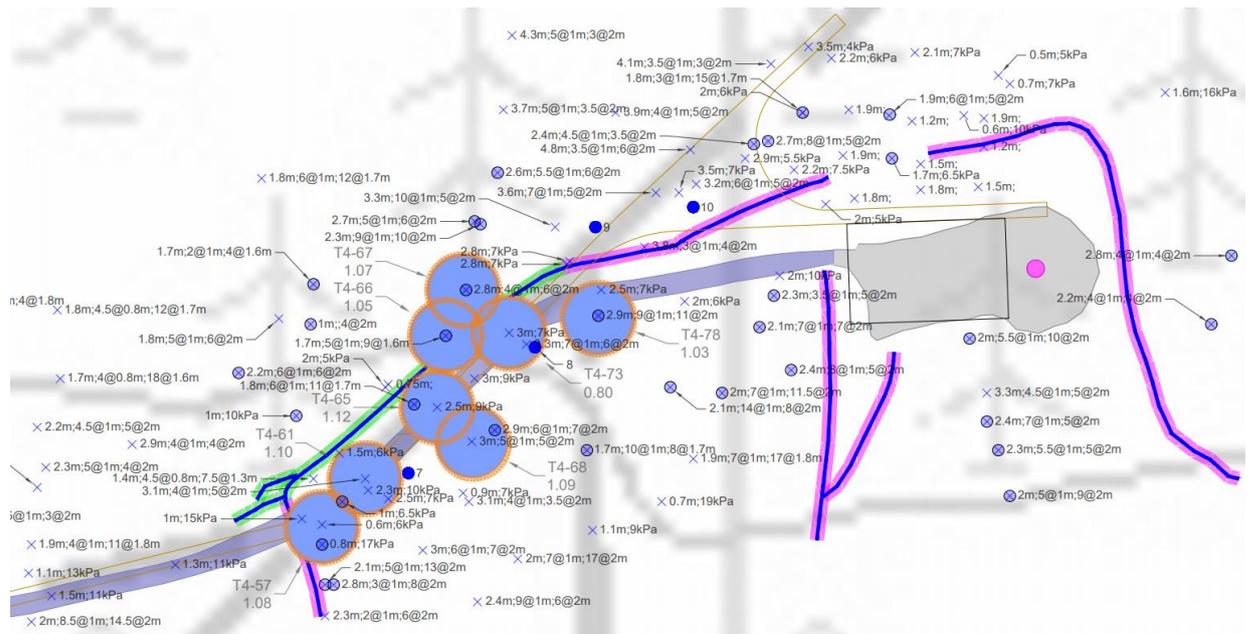


Figure 171 Peat testing – T4 hardstand area

Location	Number	E	N	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T4	1	207195	384595	3.2	4	1	4	2	10	3		
	2	207221	384579	4.3	5.5	1	7	2	6.5	3	10.5	4
	3	207248	384587	2.8	5.5	1	7.5	2	*15.5	2.8		
	4	207194	384546	4.2	5	1	4	2	6	3	10	3.8
	5	207215	384548	4.0	4	1	4	2	8	3	17*	4
	6	207241	384557	4.1	6	1	6	2	8	3	9.5	4
	7	207888	384754	2.1	8	1	6.5	2				
	8	207932	384798	2.6	7.5	1	15	2	15.5	2.5		
	9	207953	384840	3.0	6.5	1	6.5	2	11	3		
	10	207987	384847	2.0	4.5	1	3.5	2				

Table 31 Supplementary peat testing (*test result discounted from assessment as may be outlier, e.g. due to testing within more intact organic matter or partially within the sub-soil, resulting in a higher result)

The supplementary testing at T4 access road ensures that shear vane test results were obtained at depth across the works areas and assist in verifying the previous test results and stability assessment. One test at location 10 above indicated a lower shear strength of 3.5kPa at 2m depth, however this area of peat will be removed when the road is reconstructed following the detailed methodology outlined in the RAMS.

The following figure indicates the ODFs assessed (orange circle) and the other ODFs completed for the stability assessment are indicated but faded. Deeper peat testing assisted in verifying the previous stability assessment. These sections of road will be subject to works as described in section 5.4.

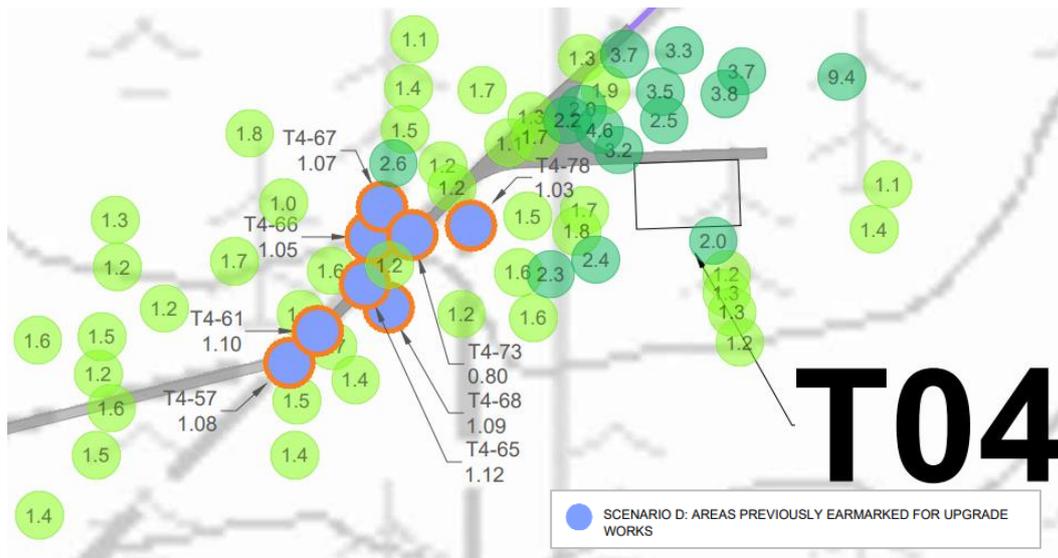


Figure 172 ODF values

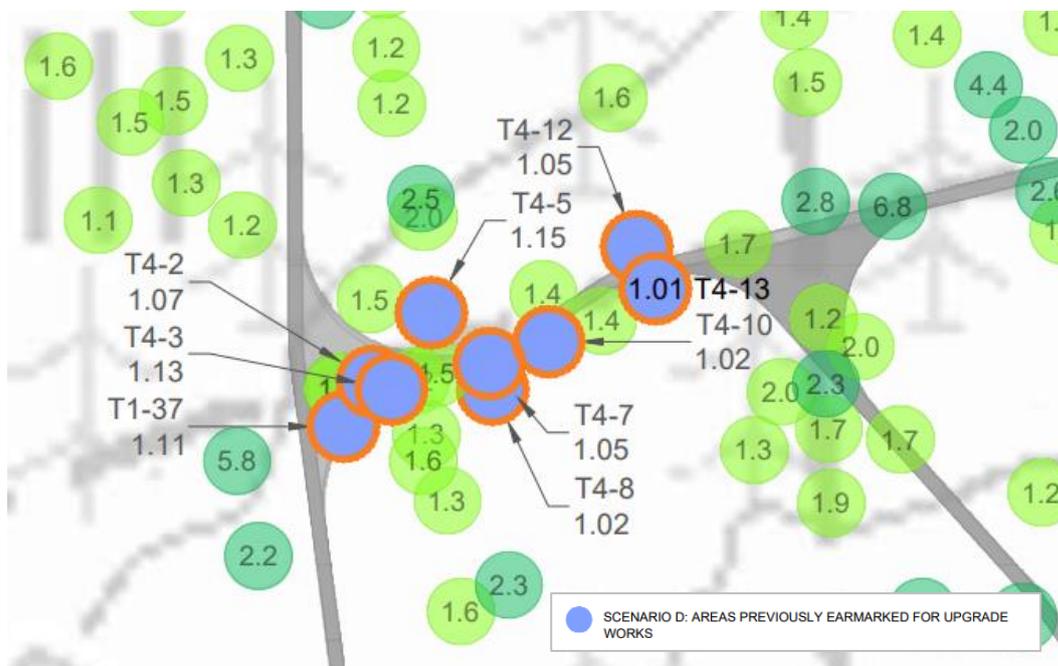


Figure 173 ODF values

Supplementary testing at T4 ensures that shear vane test results were obtained at depth across the works areas and assist in verifying the previous test results and stability assessment.

Mitigation

Works were previously specified for these areas. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.4 T6 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below.

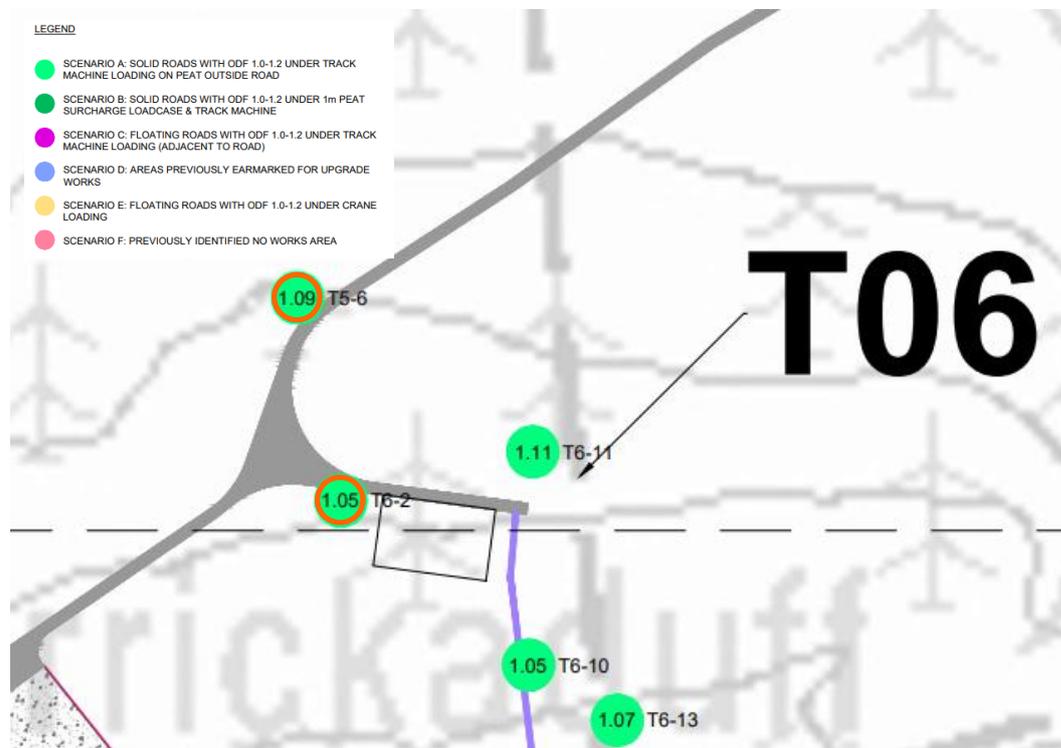


Figure 174 ODF assessment point highlighted by the sensitivity analysis, ODFs for supplementary assessment highlighted with orange circle [refer to maps in Appendix I]

The testing completed in this area is indicated in the figure below. Previous tests included shear vane test results within the bottom 1m of peat due to the peat depths at this location. Additional tests completed as part of the sensitivity analysis are indicated with dark blue dots. This figure illustrates the extent of peat testing carried out within the bottom 1m of peat at the location. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

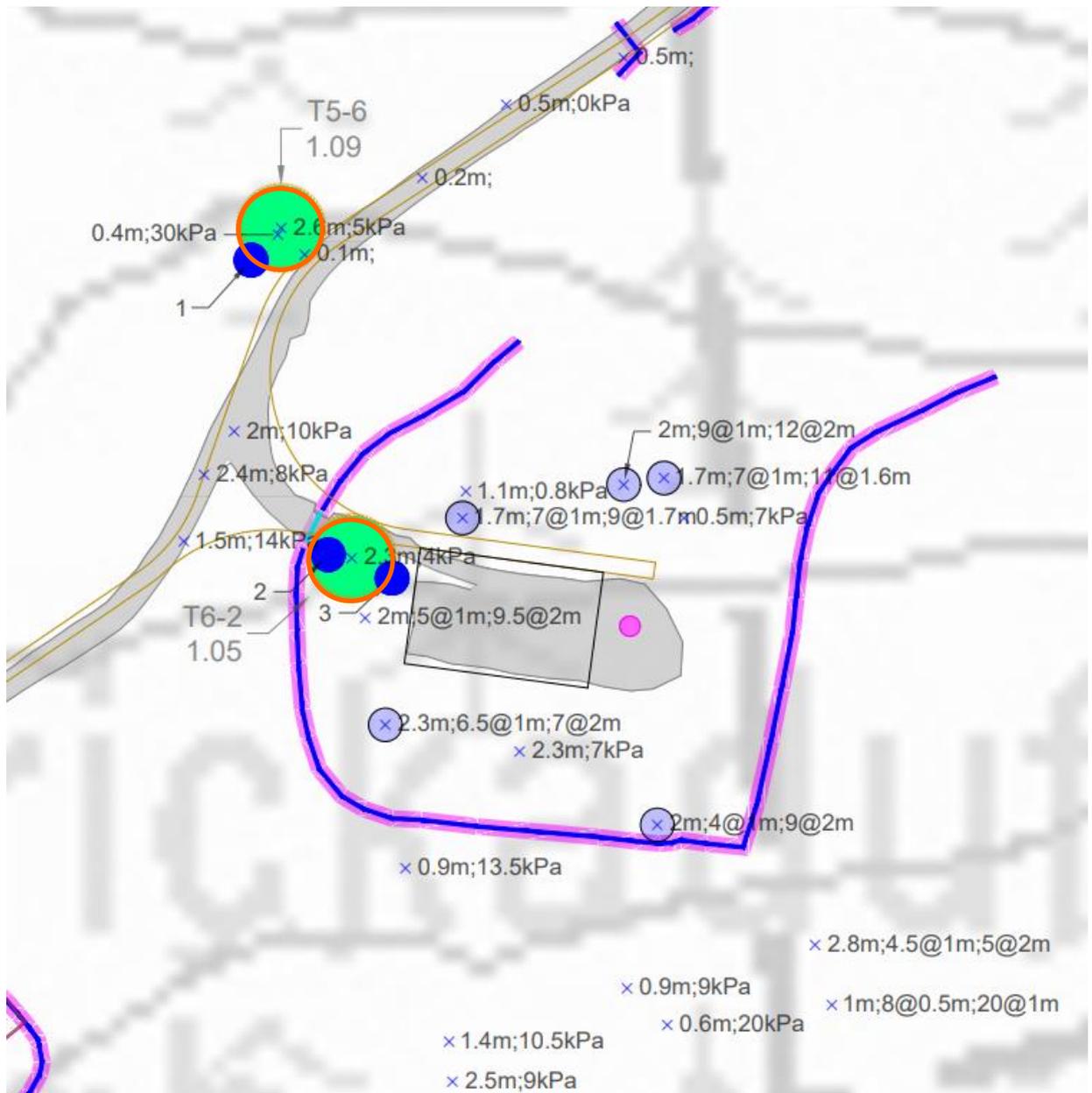


Figure 175 Peat testing locations

Location	Number	E	N	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T6	1 (T5-11)	207525.99	385395.35	0.3	21							
	2 (T6-14)	207549	385307	1.3	4	1	8.5	2				
	3 (T6-15)	207568	385300	1.2	7	1	7.5	2				

Table 32 Supplementary peat testing

An additional assessment was completed at 2 locations adjacent to ODF T6-2 using new test data. The additional assessment indicates that this area is stable, and that the new ODFs are 1.21 and 1.97. Peat depths are shallow at this location (~1.3m) however the slope is relatively steep. The area slopes toward the solid road to T6.

An additional assessment was completed adjacent to ODF T5-6 also, using new test data. The additional assessment indicates that this area is stable, with an ODF of 7.48. Further inspection on site confirmed that the peat closer to the road is shallower in this area.

The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																
LOCATION			DATA				LOADING				ANALYSIS					
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV	
T5-6	207535	385405	1.6	10	5	5.7	10	13.3	0.0	0.0	2.26	1.39	1.09			
T5-11	207525	385395	0.3	10	21	5.7	10	13.3	0.0	0.0	50.59	11.68	7.48			
T6-2	207556	385306	1.3	10	4	5.2	10	13.3	0.0	0.0	2.43	1.38	1.05			
T6-14	207549	385307	1.3	10	4	4.5	10	13.3	0.0	0.0	2.81	1.59	1.21			
T6-15	207567	385300	1.2	10	7	5	10	13.3	0.0	0.0	4.80	2.62	1.97			

Table 33 Supplementary assessment points (blue)

The following figure indicates the ODFs assessed (orange circle) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

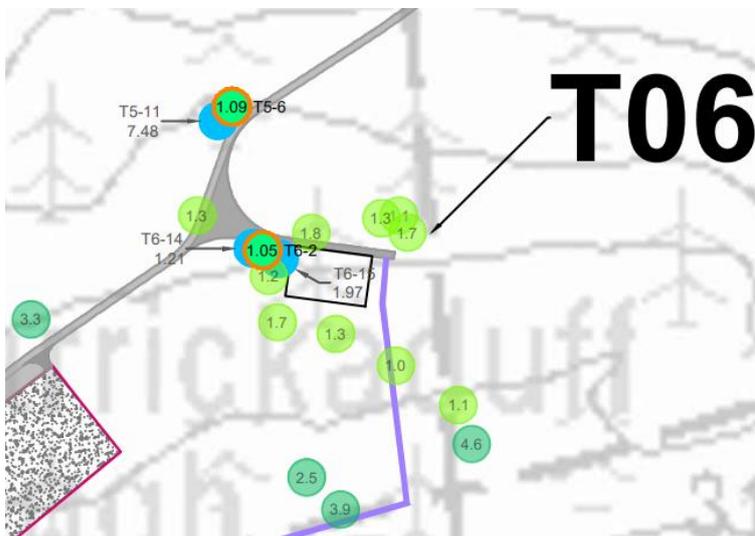


Figure 176 ODF values

Supplementary testing was completed, with peat testing within the bottom 1m of peat carried out around T16. Supplementary assessment indicates ODF values >1.2 in the areas of interest.

Mitigation

No vehicles to track onto peat. No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.5 T7 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below.

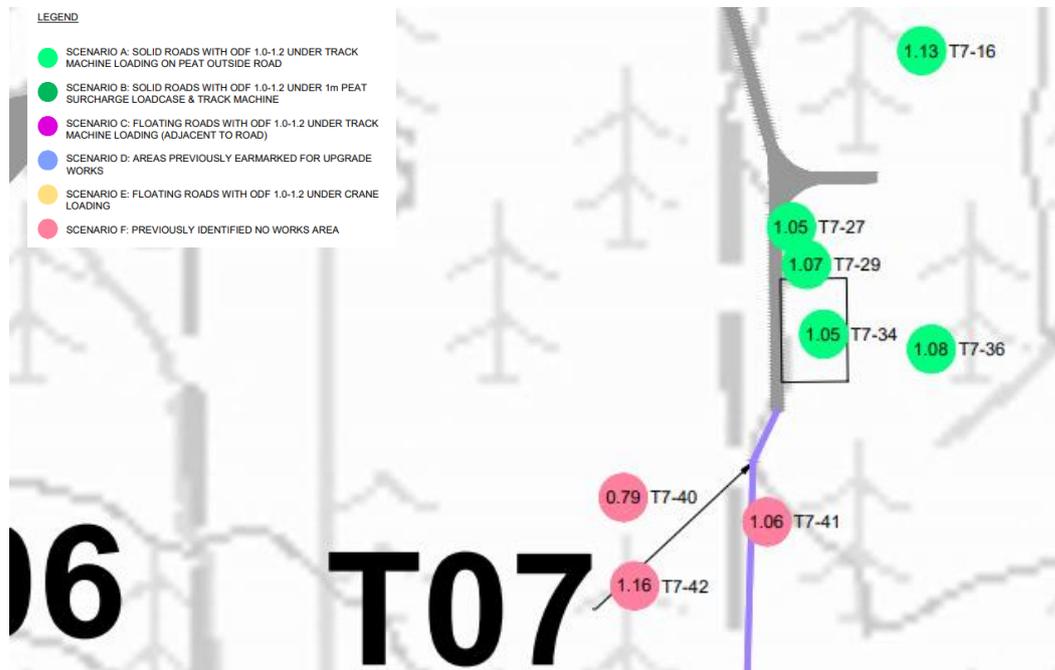


Figure 177 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

The testing completed in the area is indicated in the figure below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots. This figure illustrates the extensive peat testing completed in the bottom 1m of peat at this location.

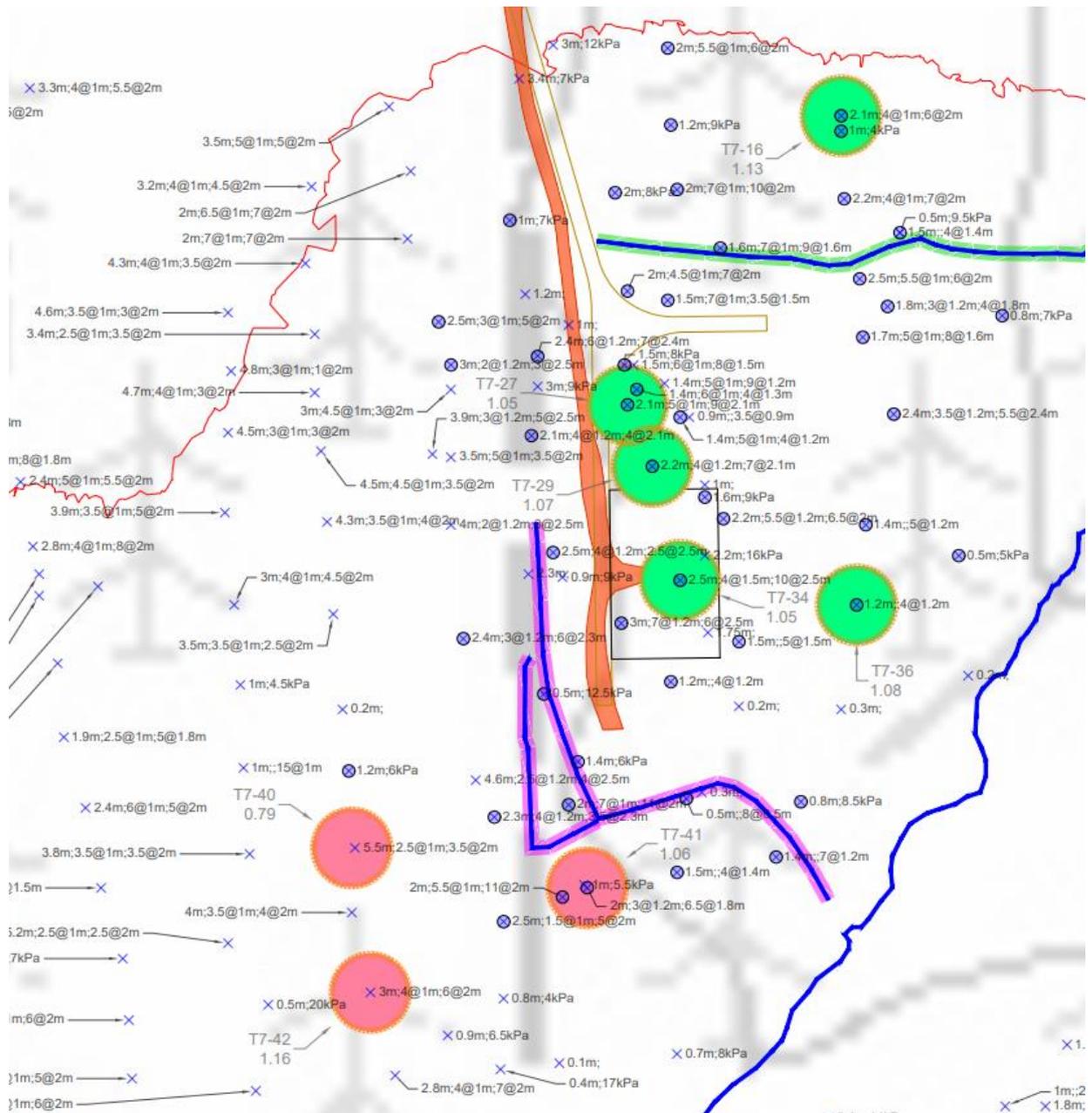


Figure 178 Peat testing locations

The stability assessment ODF points and results are reproduced in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T7-25	208120	385597	4.8	10	3	1.1	10	13.3	0.0	0.0	2.33		1.71		
T7-26	208218	385592	3.0	10	9	4.9	10	13.3	0.0	0.0	2.52		1.60		
T7-27	208248	385586	2.1	10	5	5.1	10	13.3	0.0	0.0	1.92		1.05		
T7-28	208334	385583	2.4	10	3.5	2.4	10	13.3	0.0	0.0	2.49		1.45		
T7-29	208256	385566	2.2	10	4	3.9	10	13.3	0.0	0.0	1.91		1.07		
T7-30	208273	385556	1.6	10	9	4.1	10	13.3	0.0	0.0	5.63		2.71		
T7-31	208325	385547	1.4	10	5	3.7	10	13.3	0.0	0.0	3.96		1.77		
T7-32	208272	385537	2.2	10	16	3.8	10	13.3	0.0	0.0	7.86		4.40		
T7-33	208355	385537	0.5	10	5	3.1	10	13.3	0.0	0.0	13.23		2.97		
T7-34	208265	385529	2.5	10	4	3.7	10	13.3	0.0	0.0	1.77		1.05		
T7-35	208332	385521	1.2	10	4	4.2	10	13.3	0.0	0.0	3.26		1.34		
T7-36	208322	385521	1.2	10	4	5.2	10	13.3	0.0	0.0	2.64		1.08		
T7-37	208153	385518	3.5	10	3.5	1.7	10	13.3	0.0	0.0	2.41		1.61		
T7-38	208246	385515	3.0	10	7	2.6	10	13.3	0.0	0.0	3.68		2.33		
T7-39	208284	385509	1.5	10	5	3.3	10	13.3	0.0	0.0	4.14		1.92		
T7-40	208159	385442	5.5	10	2.5	1.8	10	13.3	0.0	0.0	1.03		0.79		
T7-41	208235	385429	2.0	10	3	3.1	10	13.3	0.0	0.0	1.98		1.06		
T7-42	208165	385395	3.0	10	4	3	10	13.3	0.0	0.0	1.82		1.16		

FACTOR OF SAFETY LEGEND
FOS < 1.0 Unstable (Red)
FOS >= 1.0 Acceptable (Green)

Table 34 Stability assessment ODF results

The following figure indicates the ODFs highlighted by the sensitivity analysis (orange circle). Other ODFs previously completed for the stability assessment are indicated but faded.

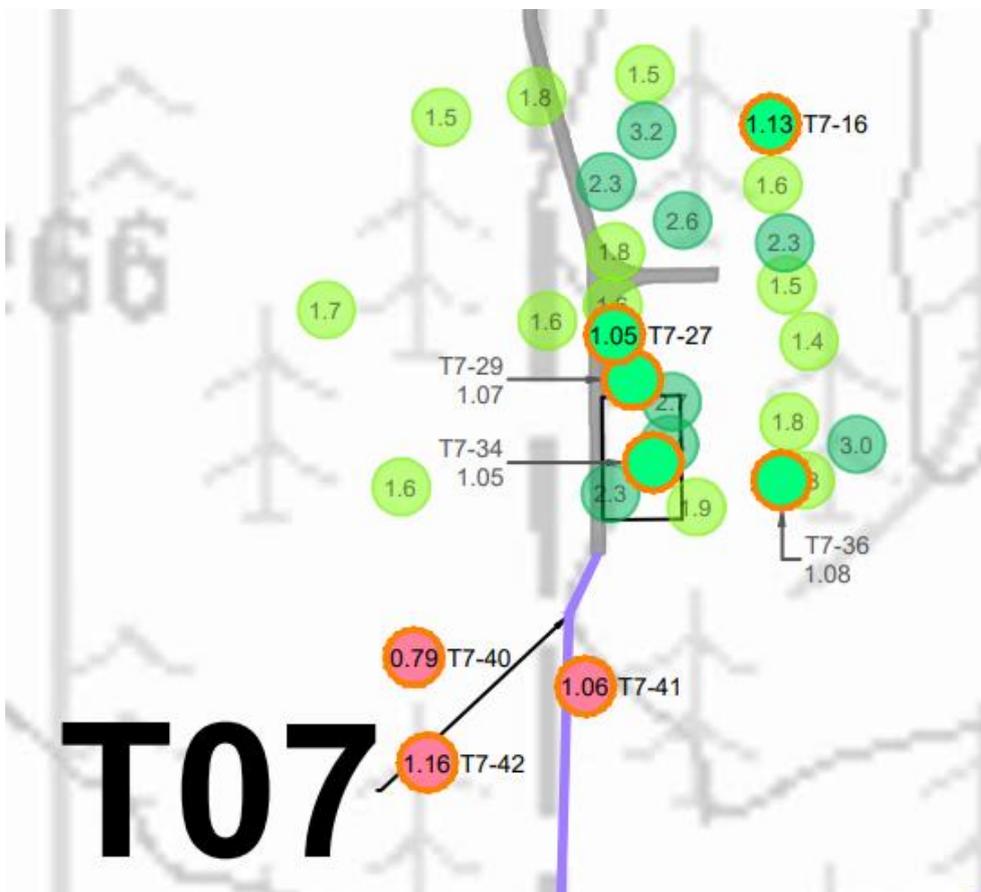


Figure 179 ODF values

Given the extensive testing coverage at this location it was not deemed necessary to complete more testing for this supplementary assessment. The following is an assessment of each ODF point with a value less than 1.2.

- T7-16: The ODF is located ~80m downslope of Wall 3, on which the road to T7 will be located. It is remote from the works and will not be trafficked. There is an adjacent ODF of 1.6 and ODFs of 1.5, 3.2 and 2.3 between this point and the road.
- T7-27 & T7-29: This point is located adjacent to the existing Wall 3 on the downslope side. Machinery will only be operating from existing solid construction (Wall 3) as the hardstand works progress and will not be required to track across this section of bog.
- T7-34: This point is surrounded by ODF values of 4.4, 1.9 and 2.3. It is located where the hardstand will be constructed to solid formation.
- T7-36: The ODF is located ~40m downslope of the proposed hardstand. There is an adjacent ODF of 1.3 and 1.8, and it is noted that the peat is shallow at 1.2m depth at this location.
- T7-40, T7-41 & T7-42: These points are located in a previously identified no works zone.

Peat depths in the vicinity of the hardstand predominantly range from 1m to 2.2m deep, but with a local pocket 3m deep adjacent to the existing berm (Wall 3). Shear strengths range from 4 to 9kPa (refer to figure below).

There is a convex break in slope upslope of the proposed T7 road and hardstand. The Wall 3 berm has previously been constructed and generally tracks this break in slope. This berm acts to isolate the deeper peat on the upslope from the T7 works.

Downslope of the berm there is a relatively consistent 4-degree slope down to the stream, which is approximately 100m away from the works at the closest point. There are pre-existing forestry furrows and drains, which generally run with the slope and down to the stream from the T7 area.

The T7 foundation and hardstand area stability and construction are discussed in Section 6.1.1. Excavation works are to be progressed from solid construction and tracking machinery across peat is to be avoided. Where tracking onto peat is required, an advance assessment will be completed by Ionic.

Notwithstanding the above, where there are wetter areas of peat or drainage channels/furrows localised cracking can occur during excavation works, unless the detailed method and mitigations outlined in the RAMS are followed. Due to the orientation of the drains/furrows, which run with the slope, these cracks would be lateral and parallel to the line of the slope.

As noted in Section 6.1 a detailed RAMS will be prepared by MCE prior to works being resumed in the area.

A further assessment has been completed of ODF values <1.2. These lower ODFs were predominantly identified under the vehicle tracking on peat loadcase. Works will be advanced from solid construction (as previously planned) to avoid the need for plant to track over peat.

Mitigation

Works will be advanced from solid construction (as previously planned) to avoid the need for plant to track over peat. No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road. There is a no works zone to be enforced in an area south of T7 turbine works zone.

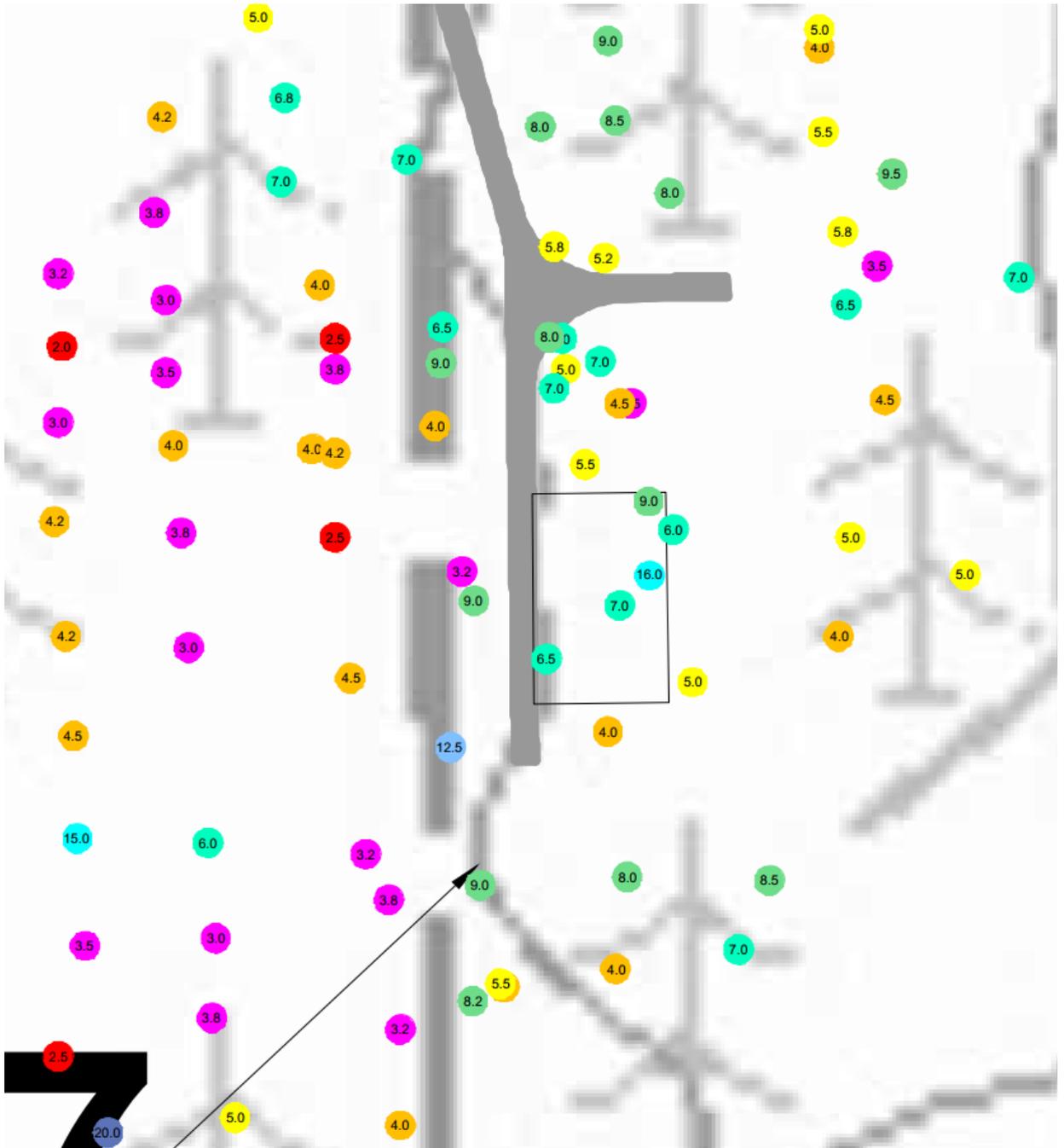


Table 35 Peat Shear strengths T7

7.2.6 T11 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below. Point T11-6 did not require further testing or assessment as there is an adjacent result closer to the road with <1m of peat and a sheet strength of 20kPa.

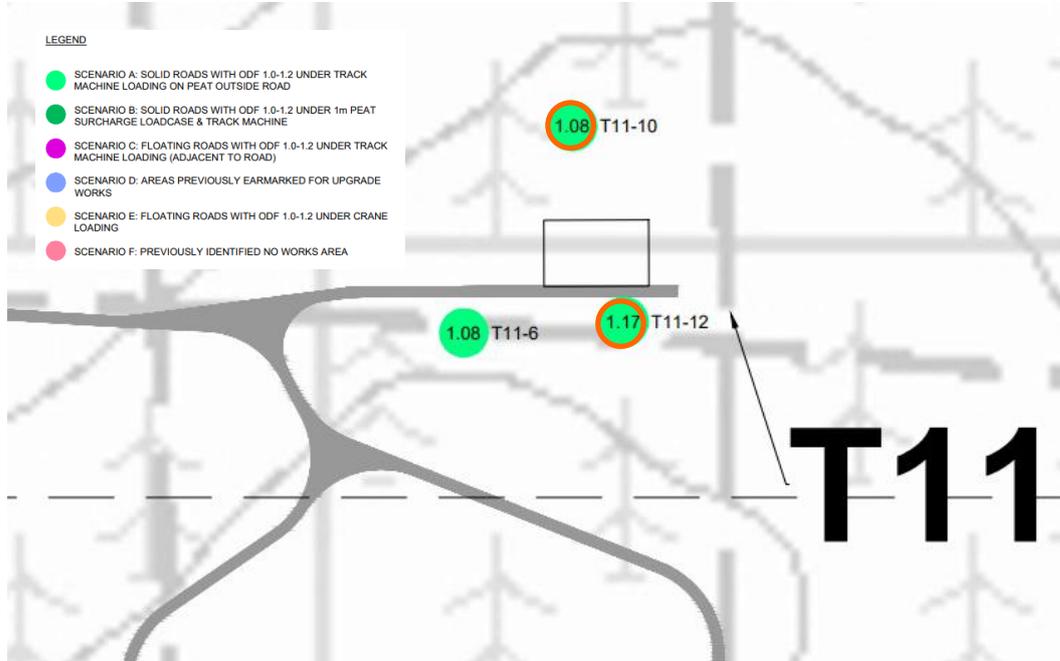


Figure 180 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

The testing completed in this area is indicated in the figure below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots, while additional tests within the bottom 1m of peat completed as part of the sensitivity analysis are indicated with darker blue dots. This figure illustrates the extent of peat testing carried out in the bottom 1m of peat at the location. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

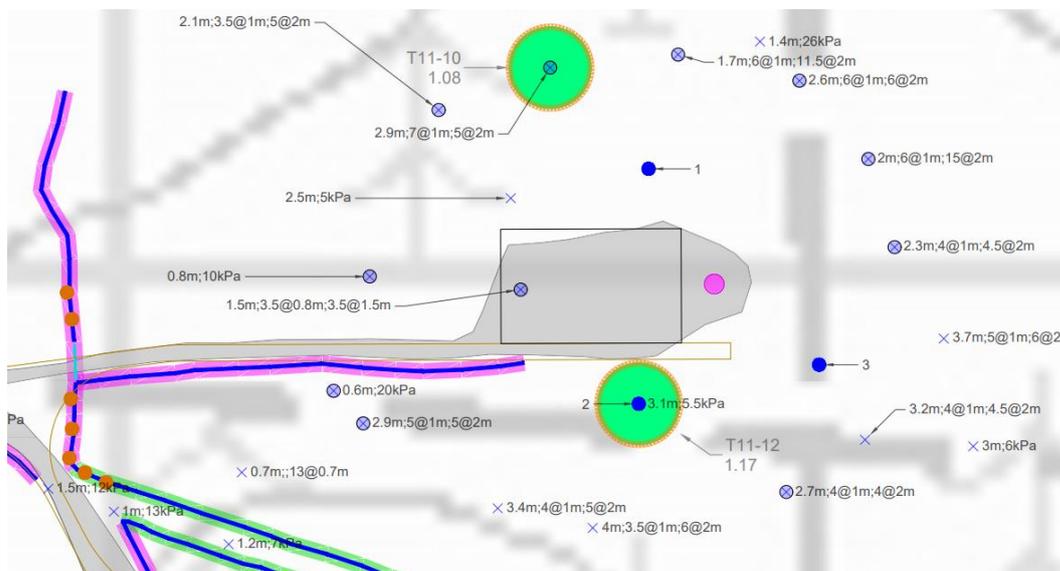


Figure 181 Peat testing locations

Location	Number	E	N	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T11	1 (T11-20)	208163	386034	2.5	4.5	1	7	2	7.5	2.5		
	2 (T11-21)	208160	385962	2.9	8	1	7	2	16*	2.9		
	3 (T11-22)	208215	385974	2.7	4.5	1	6	2	11	2.6		

Table 36 Supplementary peat testing (*test result discounted from assessment as may be outlier, e.g. due to testing within more intact organic matter or partially within the sub-soil, resulting in a higher result)

An additional assessment was completed at 3 locations. The additional assessment indicates that this area is stable, and that the new ODFs are 1.82, 1.55 and 1.89.

Assessment point T11-10 is remote from the hardstand area and there are ODF values >1.2 surrounding it and between it and the hardstand. T11-12 is adjacent to the existing road and hardstand, which are constructed to solid formation and there are ODF values >1.2 adjacent to it and upslope from it away from the hardstand. The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) O	ODF Permanent Surcharge Peat O+I	ODF Variable Load Construction O+II	ODF Permanent Surcharge Floating Road O+III	ODF Variable Load Crane O+III+IV
T11-6	208076	385956	2.9	10	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08		
T11-10	208133	386065	2.9	10	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08		
T11-12	208160	385962	3.1	10	5.5	4	10	13.3	0.0	0.0	1.82	1.38	1.17		
T11-20	208162	386034	2.5	10	4.5	2.4	10	13.3	0.0	0.0	3.07	2.20	1.82		
T11-21	208160	385961	2.9	10	7	4	10	13.3	0.0	0.0	2.48	1.84	1.55		
T11-22	208215	385973	2.7	10	4.5	2.2	10	13.3	0.0	0.0	3.10	2.26	1.89		

Table 37 Supplementary assessment points (blue)

The following figure indicates the ODFs highlighted by the sensitivity analysis (orange circle) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

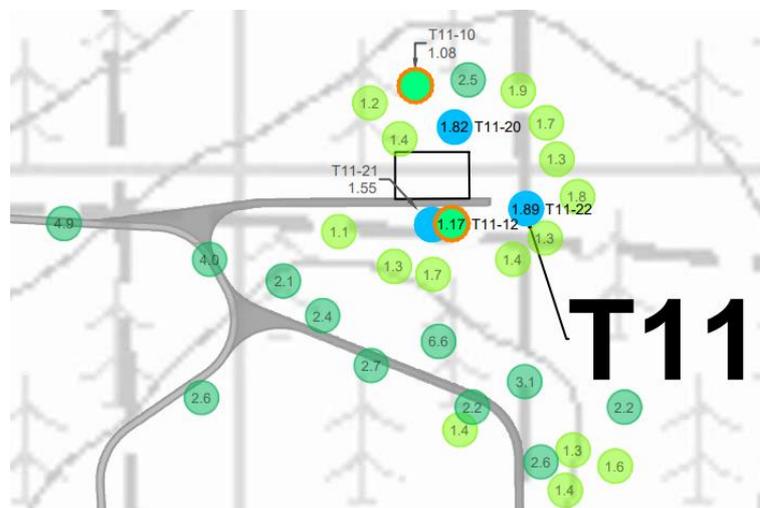


Figure 182 ODF values

Supplementary testing was completed in the area of deeper peat. Peat testing within the bottom 1m of peat has been carried out throughout this area. Existing and supplementary ODF values >1.2 are in proximity to the areas of interest. Vehicles will not be permitted to track over peat without a prior location specific assessment by Ionic.

Mitigation

No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.7 T16 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below.

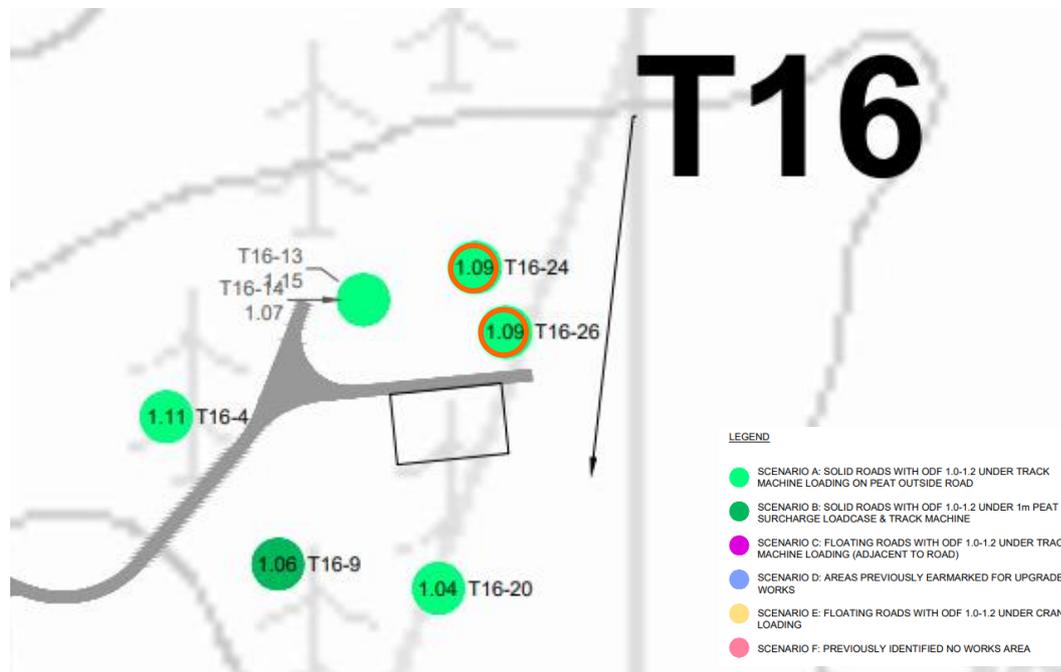


Figure 183 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

The testing completed in this area is indicated in the figure below. Previous test locations which included shear vane test results within the bottom 1m of peat are indicated with light blue dots, while additional tests within the bottom 1m of peat completed as part of the sensitivity analysis are indicated with darker blue dots. This figure illustrates the extent of peat testing carried out in the bottom 1m of peat at the location.

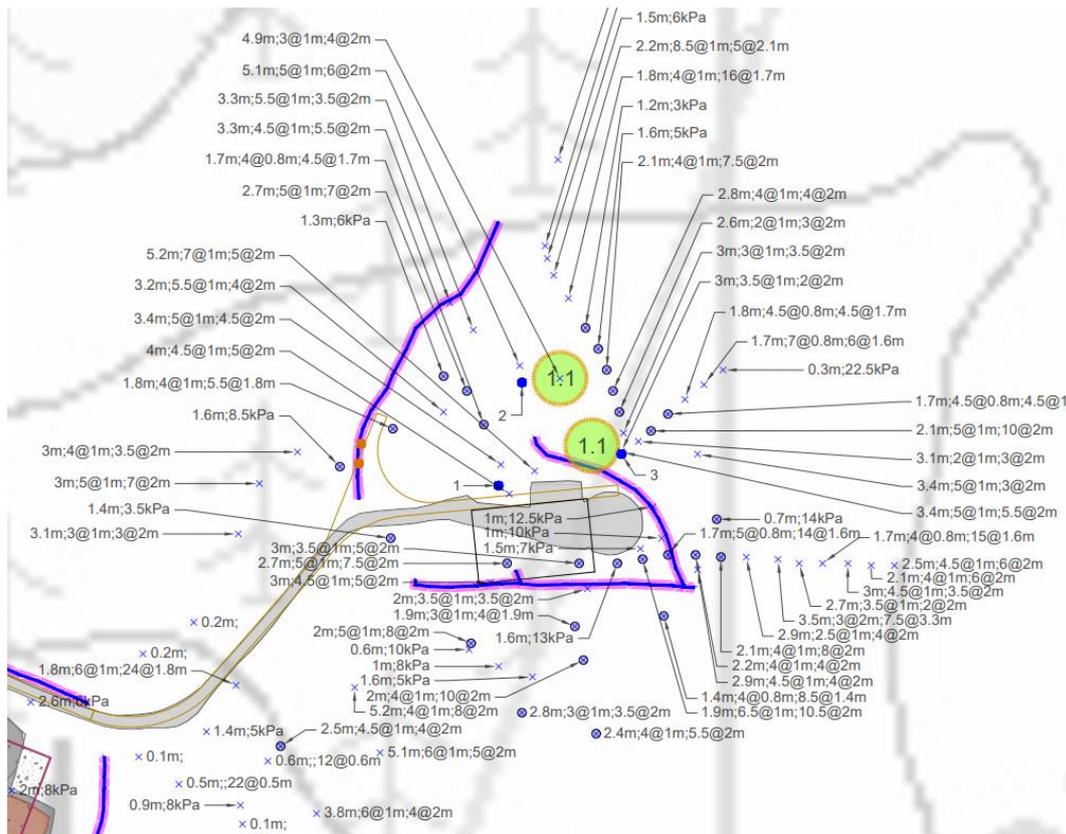


Figure 184 Peat testing locations

Location	Number	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T16	1 (T16-33)	3.1	4	1	4	2	8	3		
	2 (T16-34)	2.7	5	1	6.5	2	6.5	2.5		
	3 (T16-35)	2.8	3	1	6	2	6	2.7		

Table 38 Supplementary peat testing

An additional assessment was completed at 3 locations based on additional testing data. The assessment indicates that this area is stable, and that the new ODFs are 1.31, 1.60 and 1.81.

Assessment point T16-34 is somewhat remote from the works area and there are adjacent ODF values of 1.6 and 2.5. Assessment point T16-35 is in closer proximity to the works area however it is adjacent to assessment points with ODF values of 1.2, 1.3, 1.4 and 1.81. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only)	ODF Permanent Surcharge Peat	ODF Variable Load Construction	ODF Permanent Surcharge Floating Road	ODF Variable Load Crane
							I	II	III	IV	0	0+I	0+II	0+III	0+III+IV
T16-9	208825	386590	5.0	10	4	2.3	10	13.3	0.0	0.0	1.43	1.19	1.06		
T16-26	208937	386705	4.9	10	3	1.7	10	13.3	0.0	0.0	1.47	1.22	1.09		
T16-33	208893	386686	3.1	10	4	2.6	10	13.3	0.0	0.0	2.03	1.54	1.31		
T16-34	208903	386735	2.7	10	5	2.9	10	13.3	0.0	0.0	2.62	1.91	1.60		
T16-35	208951	386701	2.8	10	3	1.5	10	13.3	0.0	0.0	2.92	2.15	1.81		

Table 39 Supplementary assessment points (blue)

The following figure indicates the ODFs highlighted by the sensitivity analysis (orange circles) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

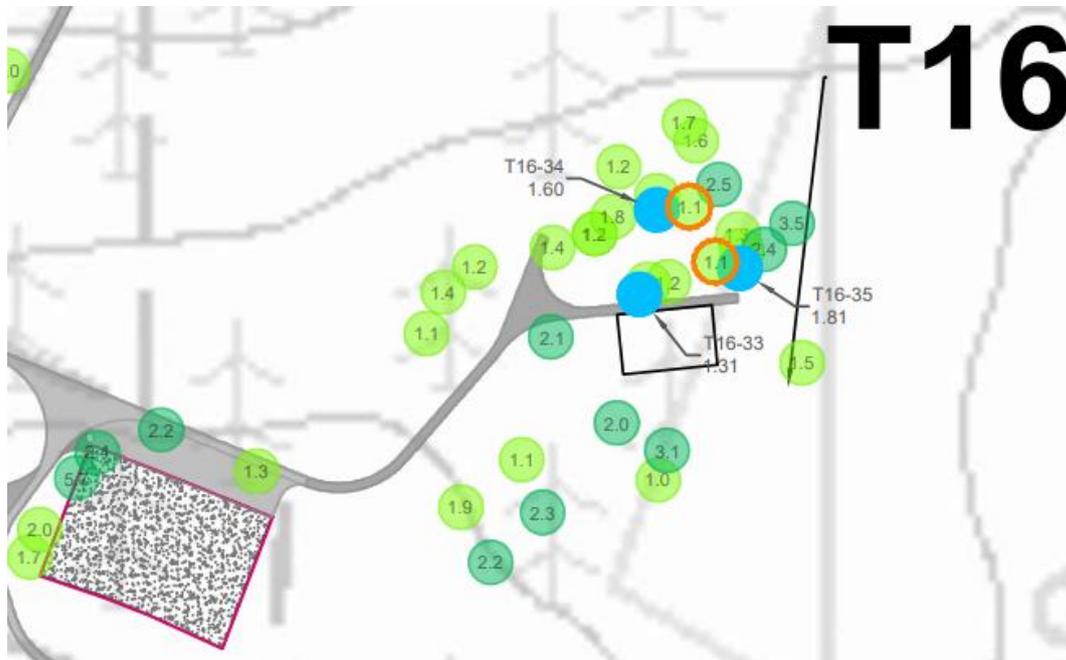


Figure 185 ODF values

Supplementary testing was completed in the area of deeper peat and testing has now been completed within the bottom 1m of peat throughout this area. Existing ODF values >1.2 surround the area of interest, and supplementary assessment points indicate ODF values >1.2.

Mitigation

No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.2.8 T18 – Supplementary Assessment

The assessment points highlighted for further consideration as part of the sensitivity analysis are presented below.

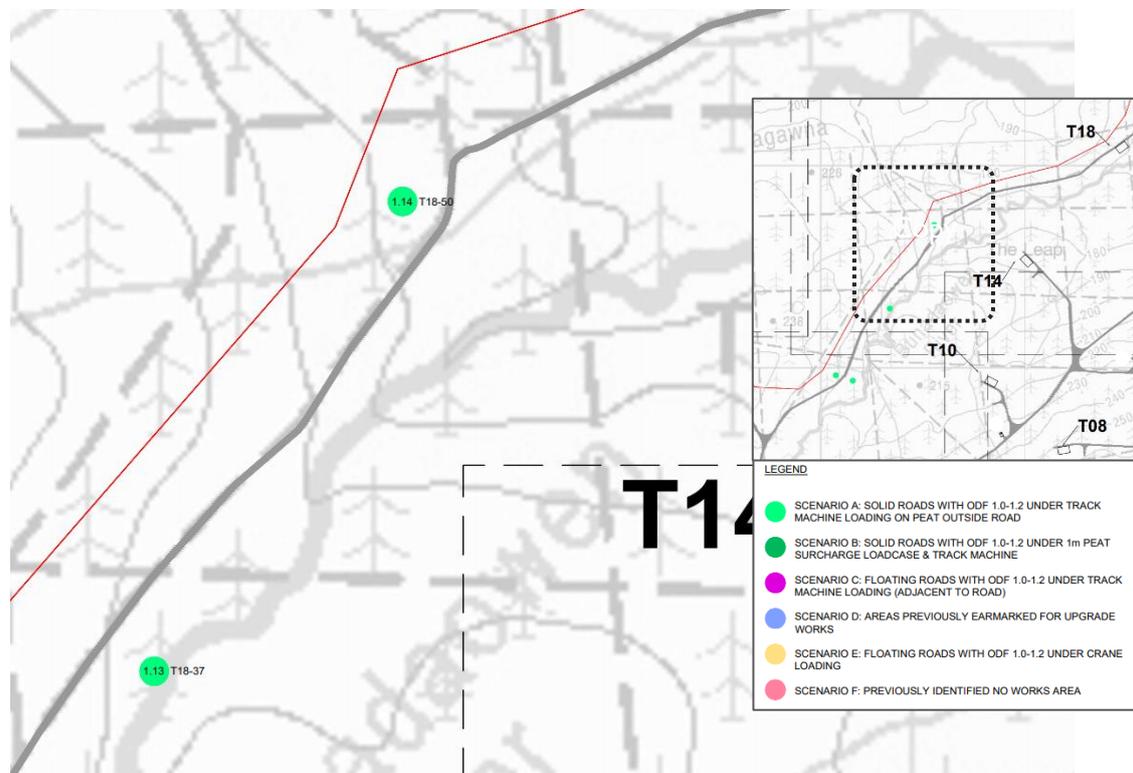


Figure 186 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

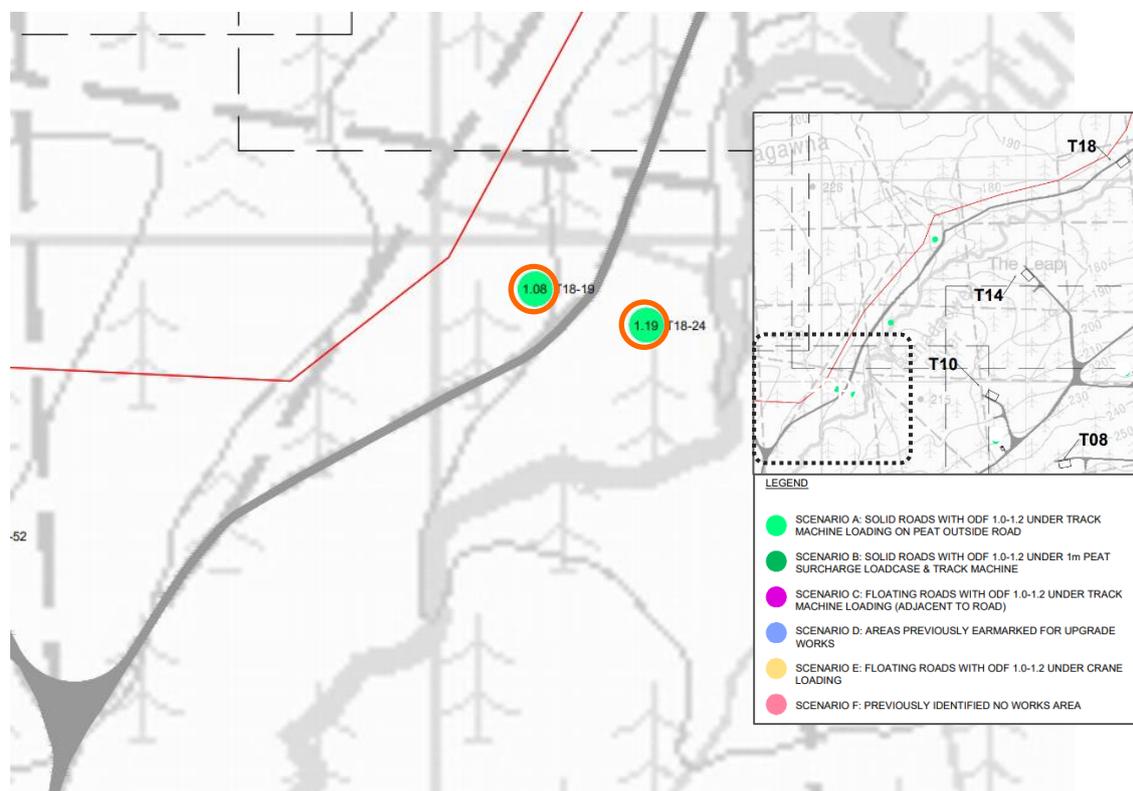


Figure 187 ODF assessment point highlighted by the sensitivity analysis [refer to maps in Appendix I]

T18-19 & T18-24

The testing completed in the area of T18-19 and T18-24 is indicated in the figure below. Previous tests generally included shear vane test results within the bottom 1m of peat due to the peat depths at this location. Additional tests completed as part of the sensitivity analysis are indicated with dark blue dots. This figure illustrates the extent of peat testing carried out within the bottom 1m of peat at the location.

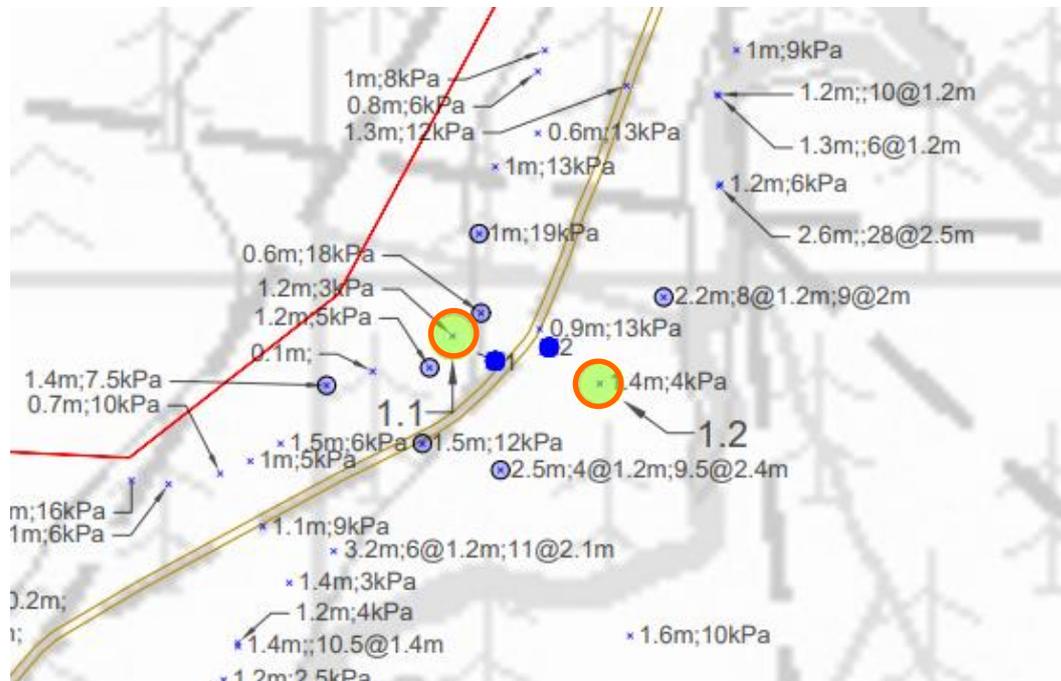


Figure 188 Peat testing locations

An additional assessment was completed at 2 locations between the proposed works area and ODFs T18-19 and T18-24. The additional assessment confirms that this area is stable, and that the new ODFs are 1.31 and 1.51. Note that higher readings are generally discounted as the lowest shear strength values are taken from each location for the assessment.

Location	Number	E	N	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
T18	1 (T18-119)	206096.97	385951.84	1.1	5							
	2 (T18-120)	206127.41	385959.6	0.8	4.5							
	3 (T18-121)	206899	386874	2.3	11	1	13	2				
	4 (T18-122)	206943.03	386905	3.2	10	1	11	2	6	3		
	5 (T18-123)	207068.39	386886.52	2.8	5	1	9	2	7	2.7		
	6	207103.92	386898.21	2.7	8	1	8	2	13*	2.6		

Table 40 Supplementary peat testing (*test result discounted from assessment as may be outlier, e.g. due to testing within more intact organic matter or partially within the sub-soil, resulting in a higher result)

The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only)	ODF Permanent Surcharge Peat	ODF Variable Load Construction	ODF Permanent Surcharge Floating Road	ODF Variable Load Crane
T18-19	206073	385966	1.2	10	3	3.9	10	13.3	0.0	0.0	2.63	1.44	1.08		
T18-24	206156	385939	1.4	10	4	4.4	10	13.3	0.0	0.0	2.67	1.56	1.19		
T18-119	206096	385951	1.1	10	5	4.8	10	13.3	0.0	0.0	3.89	2.04	1.51		
T18-120	206127	385959	0.8	10	4.5	5.6	10	13.3	0.0	0.0	4.14	1.84	1.31		

Table 41 Supplementary assessment points (blue)

There were no previous ODFs less than 1.2 in this area of deeper peat, however an additional assessment was completed at 3 locations using supplementary tests in areas of deeper peat. The additional assessment confirms that this area is stable, and that the new ODFs are 3.91, 2.17 and 2.83. The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition	Variable Load Construction (kPa)	Permanent Surcharge Floating Road (kPa)	Variable Load Crane (kPa)	ODF Existing (Self-weight Peat Only)	ODF Permanent Surcharge Peat	ODF Variable Load Construction	ODF Permanent Surcharge Floating Road	ODF Variable Load Crane
T18-121	206898	386873	2.3	10	11	2.86	I	13.3	0.0	0.0	6.86	4.78	3.91		
T18-122	206942	386905	3.2	10	6	2.3	10	13.3	0.0	0.0	3.34	2.54	2.17		
T18-123	207068	386886	2.8	10	5	1.6	10	13.3	0.0	0.0	4.57	3.37	2.83		

Table 42 Supplementary assessment points (blue)

The following figure indicates the ODFs in this area and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

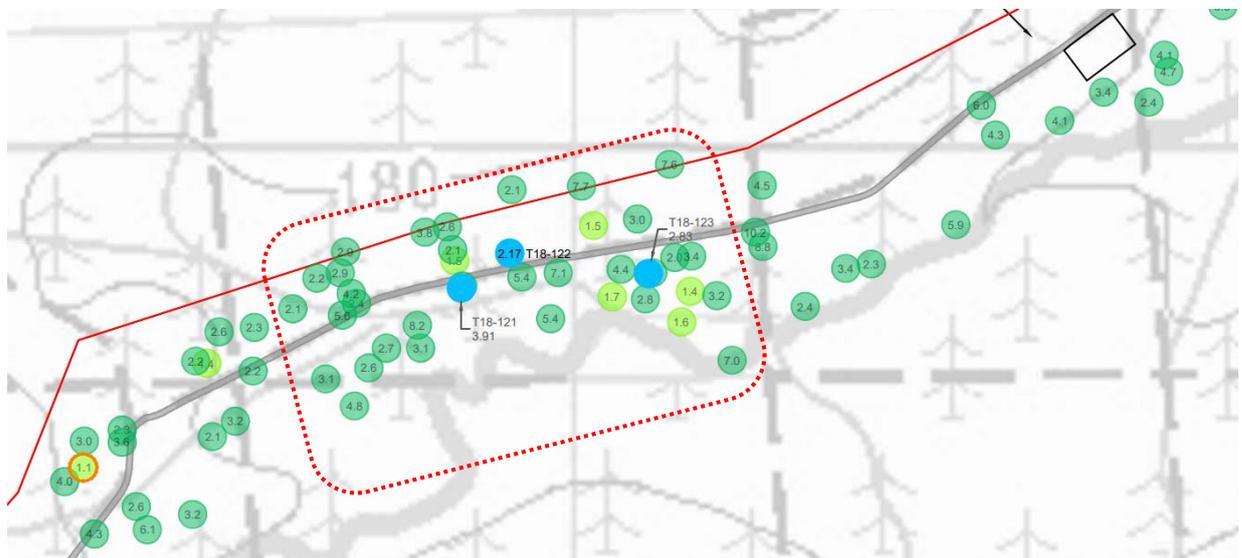


Figure 191 Deeper Peat section: ODF values

Mitigation

Works will be advanced from solid construction (as previously planned) to avoid the need for plant to track over peat. No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

Location	Number	PD (m)	SV 1 (kPa)	At depth (m)	SV 2 (kPa)	At a depth (m)	SV 3 (kPa)	At a depth (m)	SV 4 (kPa)	At a depth (m)
MM	1 (MM-6)	1.4	5	0.8	5	1.4				
	2 (MM-7)	1.2	3	1						

Table 43 Supplementary peat testing

An additional assessment was completed at 2 locations between the proposed works area and the ODF MM-3. The additional assessment confirms that this area is stable, and that the new ODFs are 1.61 and 1.82. The assessment points and results are included in the following table.

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat (kN/m ³)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
MM-3	206853	385708	1.5	10	3.5	4.3	10	13.3	0.0	0.0	2.23	1.34	1.04		
MM-6	206870	385693	1.4	10	5	3.6	10	13.3	0.0	0.0	4.07	2.37	1.82		
MM-7	206891	385703	1.2	10	3	2.6	10	13.3	0.0	0.0	3.94	2.15	1.61		

Table 44 Supplementary assessment points (blue)

The following figure indicates the ODF highlighted by the sensitivity analysis (orange circle) and the supplementary assessment points (blue). Previous ODFs completed for the stability assessment are indicated but faded.

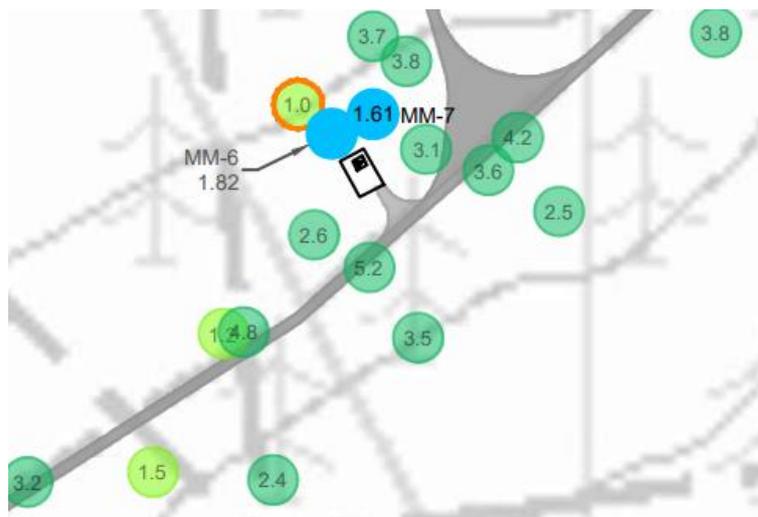


Figure 194 ODF values

Mitigation

No vehicles to track onto peat. Signage to be erected to indicate prohibition of construction vehicles tracking off-road.

7.3 Sensitivity Analysis Conclusion

For the sensitivity analysis, assessment point ODF values less than 1.2 were categorised into various scenarios. Each value was subsequently re-assessed in Section 7.2.

SCENARIO	NUMBER
SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD	38
SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE	3
SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)	28
SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS	16
SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING	3
SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA	1
TOTAL	89

Table 45

As ODF values <1.2 in scenarios A, B and C related to construction traffic loading on in-situ peat, the primary mitigation is that tracking of construction plant across peat is to be avoided. It should only be undertaken following an advance assessment of the area in question (to be completed by Ionic).

Scenario D includes ODF assessment points in areas already identified for further works and have therefore already been identified and addressed.

Scenario E included 3 points, 2 along T3 spur road and 1 point near T2 turbine. The T2 point was discounted as it had been erroneously assessed as a floating road. The 2 points along T3 have been subjected to further testing and assessment. The supplementary assessment validates the stability assessment previously completed and generally demonstrates ODF values of greater than 1.2 in the surrounding area.

All floating roads will be subject to a formal load test and certification (by Ionic) prior to turbine erection cranes being permitted to access them. Floating roads have also previously been subjected to construction vehicles such as the A25D, which has a total weight of 45 tonnes. Vehicle loading information has been included in Appendix H. The turbine crane will be restricted to an axle load of 12t, lower than the axle load of the A25 vehicles.

The following are conclusions of the location specific supplementary assessment completed in section 7.2:

- 1) Substation Road [SUB-51 & SUB-56]
 - Supplementary assessment indicates ODF values >1.2 between the road and the areas of interest.
 - Supplementary testing was completed. Peat testing within the bottom 1m of peat has been completed throughout the areas being assessed.
- 2) T3 Spur Road [T3-5 & T3-29]
 - 2 locations in the stability assessment returned ODF values <1.2 for the crane on floating road loadcase. Supplementary testing was completed in these areas which were located in deeper peat. Peat testing within the bottom 1m of peat has now been carried out throughout these areas of interest.

- A supplementary assessment indicates ODF values >1.2 surrounding the areas of interest. Existing adjacent ODF values are also >1.2 surround the areas of interest.
- 3) T4 Spur Road [T1/T2 Junction & spur road near hardstand]
 - Supplementary testing at T4 ensures that shear vane test results were obtained at depth across the works areas and assist in verifying the previous test results and stability assessment. Works were previously specified for these areas.
- 4) T6 Spur Road [T6-2 & T5-6]
 - Supplementary testing was completed in the area of interest. Peat testing within the bottom 1m of peat has been carried out throughout this area.
 - Supplementary assessment indicates ODF values >1.2 in the areas of interest.
- 5) T7 Hardstand and approach
 - A further assessment has been completed of ODF values <1.2 . These lower ODFs were predominantly identified under the vehicle tracking on peat loadcase. Works will be advanced from solid construction to avoid the need for plant to track over peat.
- 6) T11 Hardstand [T11-10 & T11-12]
 - Supplementary testing was completed in the area of deeper peat. Peat testing within the bottom 1m of peat has been carried out throughout this area.
 - Existing ODF values >1.2 adjacent to the areas of interest. Supplementary assessment indicates ODF values >1.2 in the areas of interest.
- 7) T16 Hardstand [T16-13, 14, 24 & 26]
 - Supplementary testing was completed in the area of deeper peat. Peat testing within the bottom 1m of peat has been carried out throughout this area.
 - Existing ODF values >1.2 surround the area of interest. Supplementary assessment indicates ODF values >1.2 in the areas of interest.
- 8) T18 Spur Road [T18-19 & 24, deep peat section]
 - Supplementary assessment indicates ODF values >1.2 between the road and T18-19 / T18-24.
 - Supplementary testing was completed in area of deeper peat. Peat testing within the bottom 1m of peat carried out throughout this deeper peat area. Supplementary assessment indicates ODF values >1.2 for new test locations. The supplementary testing ensures that shear vane test results were obtained at depth across the area and assist in verifying the previous test results and stability assessment.
- 9) Met Mast [MM-3]
 - New assessment points indicate ODF >1.2 in the area.

This sensitivity analysis identified areas that may be sensitive to changes in the parameters used in the peat stability assessment. Areas were subsequently identified where further assessment was required and was completed. In areas identified, where required, additional testing was completed at depth to ensure widespread testing in the bottom 1m of peat throughout the areas of interest. The sensitivity analysis and supplementary testing has validated the peat stability assessment in Sections 4 and 6 of this report. These areas will be addressed specifically in the construction RAMS prior to construction recommencing. Refer to the mitigation measures outlined within each sub-section.

8. CONCLUSIONS

Ionic Consulting have prepared this quantitative assessment of peat stability on the Meenbog Wind Farm site, as currently constructed. This quantitative assessment informs sections of, and should be read in conjunction with, a Peat Stability Assessment of the Meenbog Wind Farm Site prepared by Fehily Timoney (FT). The civil engineering works were almost completed in November 2020 before all works were suspended on-site following a peat slide located along the access road to T7. This assessment provides a quantitative analysis of the wind farm as already constructed, and the remaining areas where works are still to be completed.

To inform the assessment an as-built survey was carried out of all roads, hardstandings, turbine foundations, peat storage areas, peat stabilisation works, and drainage works carried out to date. The vast majority of the site has been constructed at the time of writing of this report.

The Lidar terrain data, civil engineering design, as-built survey, existing and supplemental peat testing were relied upon to complete the assessment, along with a series of walkovers, visual inspections and review of aerial drone footage.

The assessment focused on the stability of peat under the various scenarios, which include:

- Original undisturbed peat
- Sidecasted peat on original bog
- Construction vehicles directly on bog (wide track machines)
- Floating road permanent dead loading
- Crane loading on floating roads
- Peat Storage Areas (bermed areas)
- Peat Stabilisation (Walls 1, 2, 3, T8 & the raised Spine Road SR00 south of T10)

This report is not intended to assess the stability of the solid roads, hardstands, turbine bases and other infrastructure, which have been built to solid formation, and therefore are deemed to be safe and stable.

The assessment was carried out to Eurocode 7 with partial factors applied for materials and loads as applicable. The site has been shown to be stable based upon this quantitative assessment with the exception of a short sections of the T4 floating road which will be upgraded as outlined in Section 5.4.1, as well as an area south west of turbine T7 which is outside of the works area and where tracking of vehicles will not be permitted. A sensitivity analysis was completed which validates the peat stability assessment in Sections 4, 5 and 6 of this report.

Ionic Consulting can therefore confirm that the overall site is currently stable based upon this detailed assessment carried out along all roads, hardstandings, borrow pits, peat storage areas and peat stabilisation areas. Prior to component deliveries and turbine supplier crane access to T1, T2 and T4 the works outlined in Sections 5.4.1 and 5.4.2 should be completed and any outlined mitigation measures adopted.

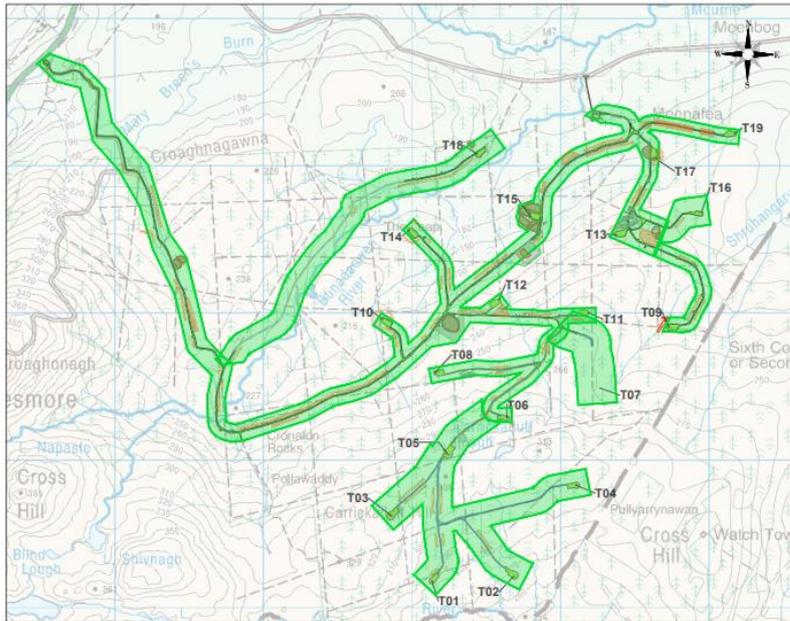
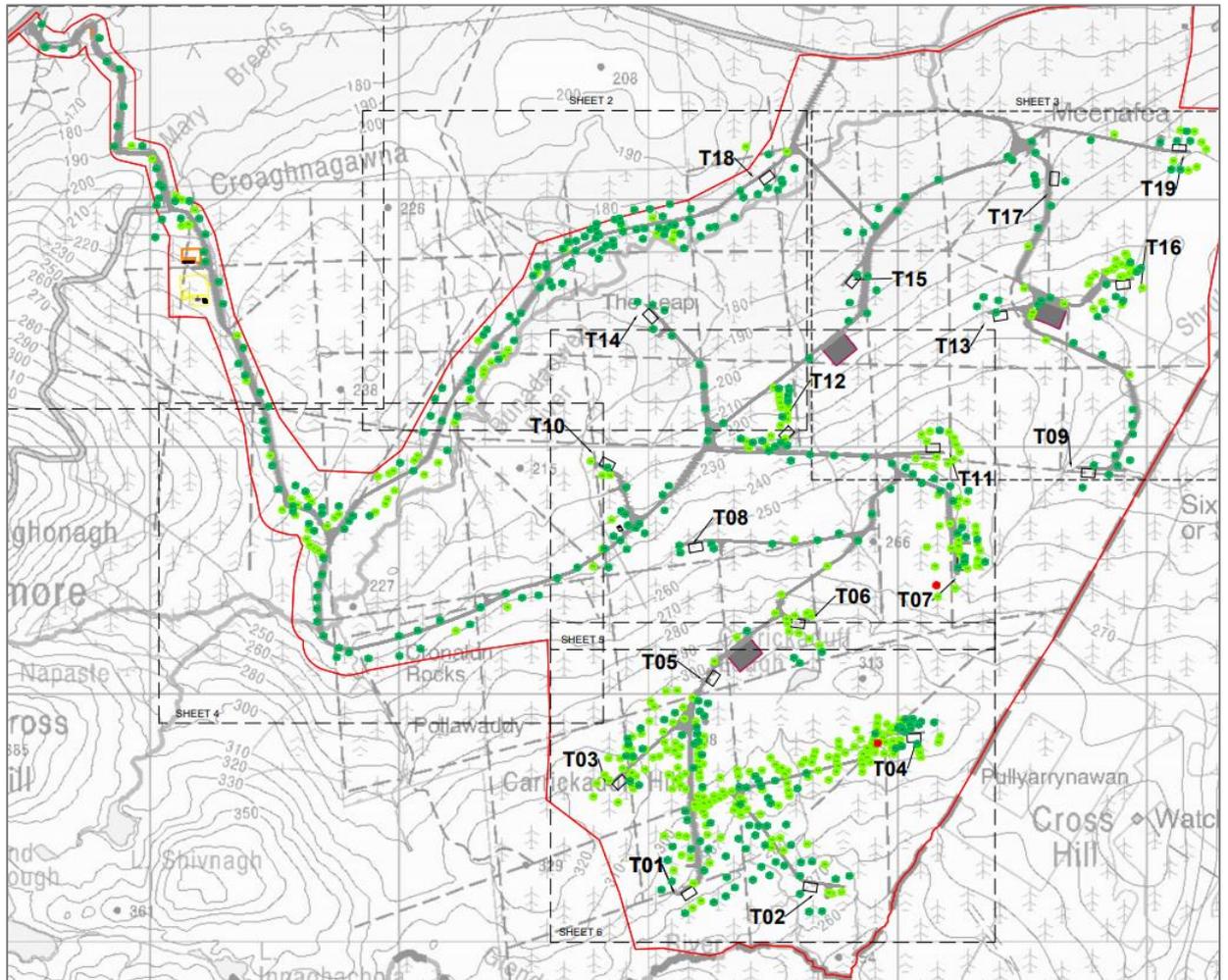


Figure 195 Site overview



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

Figure 196 ODF results for the site

APPENDICES

APPENDIX A – Site As-Built Drawings

AS-BUILT TURBINE COORDINATES

Turbine	Easting	Northing
T1	207133	384174
T2	Not Constructed	
T3	206859	384619
T4	208106	384825
T5	207241	385034
T6	207637	385283
T7	Not Constructed	
T8	207155	385589
T9	208732	385899
T10	206803	385951
T11	208183	385998
T12	207583	386083
T13	208379	386526
T14	206983	386559
T15	207800	386648
T16	Not Constructed	
T17	208631	387051
T18	Not Constructed	
T19	209173	387212

LEGEND

- AS-BUILT TURBINE BASE
- AS-BUILT SOLID SITE ROADS
- AS-BUILT FLOATING SITE ROADS
- AS-BUILT FLOATING ROAD WIDENED TO SOLID
- AS-BUILT HARDSTANDS
- AS-BUILT STONE BERMS
- AS-BUILT EMERGENCY CONTAINMENT/STABILISATION WALLS
- AS-BUILT WIND FARM DRAIN
- EXISTING DRAIN
- AS-BUILT SILT TRAP
- AS-BUILT SETTLEMENT POND
- PEAT STORAGE AREAS
- EXCAVATED BORROW PIT
- PLANNING BOUNDARY
- PLANNING LAYOUT HARDSTANDS
- PLANNING LAYOUT ROADS
- PLANNING LAYOUT BORROW PITS



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

NOTES

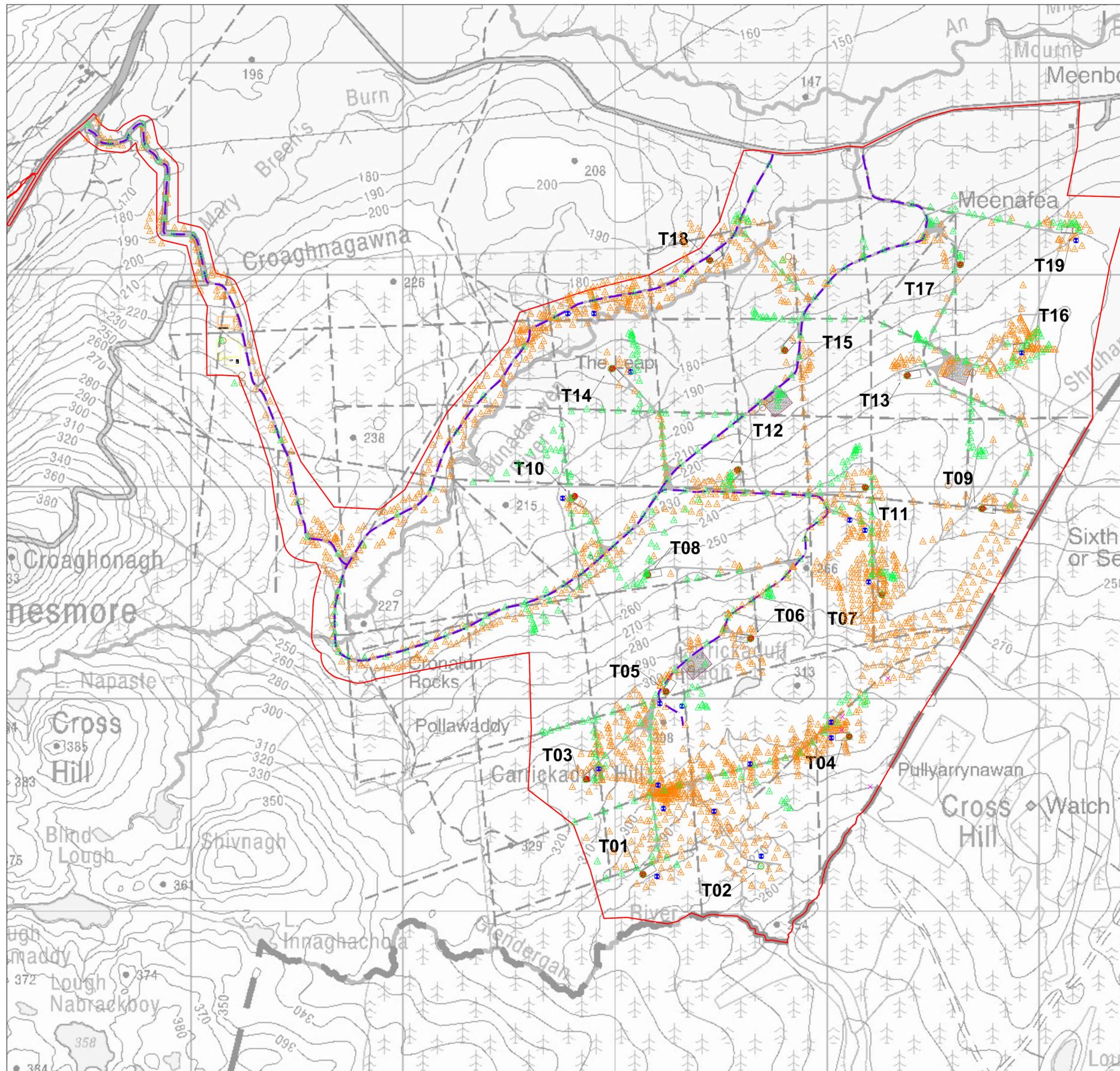
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	11/02/2021	E.A.	C.O.D.	DRAINAGE AND GENERAL AS-BUILT UPDATED
A	18/12/2020	S.O.M.	C.O.D.	FIRST ISSUE

ENGINEER  The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		CLIENT MEENBOG WIND FARM	
DRAWN BY S.O'MAHONY	DATE 15/12/2020	PAPER SIZE A1	SCALE 1:10000
CHECKED AND APPROVED C.O'DUBHTHAIGH	DATE 15/12/2020	STATUS AS-BUILT	DRAWING NUMBER MNBG d024.1.0

PROJECT MEENBOG WIND FARM		REVISION B
TITLE AS-BUILT LAYOUT OVERVIEW		

Plot No.: 1002021 12 0111
Z:\Projects\Meenbog\MNBG\Drawings\024.1.0\AS-Built.dwg

APPENDIX B – Site Testing Drawings



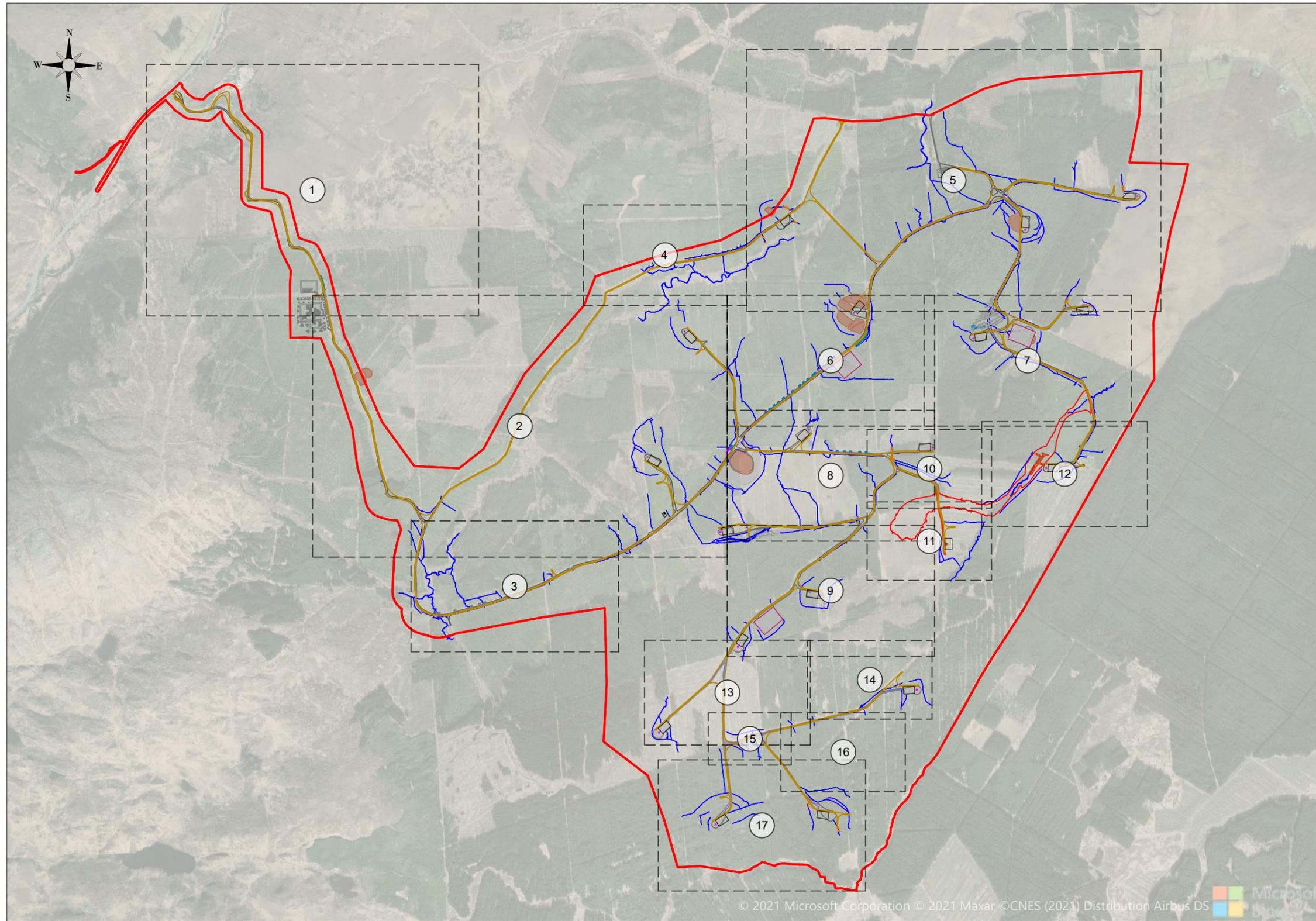
- SITE INVESTIGATION LEGEND**
- Boreholes
 - ▲ Peat Probes (Planning)
 - ▲ Peat Probes & Shear Vanes (Ionic)
 - Fehily Timoney 2021 Russian Core Peat Samples
 - ✕ Fehily Timoney Shear Strength Trial Holes 2021
 - Gouge Core 2017 Locations
 - GPR Ground Penetrating Radar

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	2004/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		CLIENT MEENBOG WIND FARM	
DRAWN BY M. BROWNE		DATE 05/05/2021	
CHECKED AND APPROVED J. SHANAHAN		SCALE 1:10,000	
STATUS INFORMATION		DRAWING NUMBER MNBG d031.1.0	

PROJECT MEENBOG WIND FARM		REVISION A
TITLE SITE INVESTIGATION MAP OVERALL SITE		
STATUS INFORMATION		DRAWING NUMBER MNBG d031.1.0



LEGEND

- 00 Sheet number for referred area
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/ Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary

© 2021 Microsoft Corporation © 2021 Maxar © CNES (2021) Distribution Airbus DS

Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
D	06/05/2021	E.A.	J.S.	GENERAL REVISION
C	07/04/2021	E.A.	J.S.	GENERAL REVISION
B	02/02/2021	M.B.	J.S.	GENERAL REVISION
A	08/12/2020	E.A.	J.S.	FIRST ISSUE

--	--	--	--	--	--	--	--

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
E. hello@ionicconsulting.ie
T. +353 (0) 1 845 5031
W. www.ionicconsulting.ie
Formerly known as WIND PROSPECT IRELAND

DRAWN BY
E. ANDRADE

CHECKED AND APPROVED
J. SHANAHAN

DATE
08/12/2020

PAPER SIZE A3	SCALE 1:20,000
STATUS INFORMATION	

CLIENT

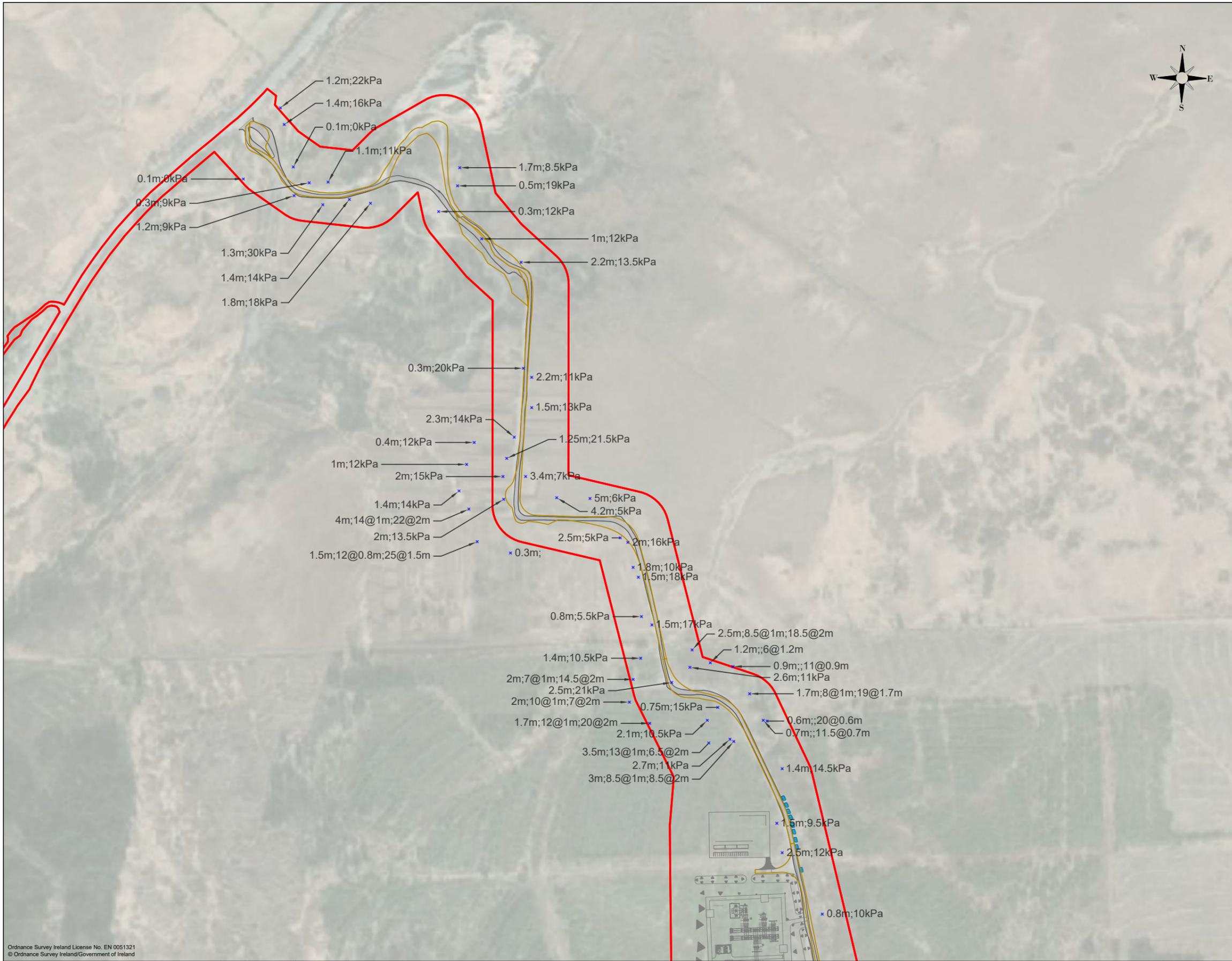
PROJECT
MEENBOG WIND FARM

TITLE
PEAT TESTING MAP OVERALL SITE

REVISION
D

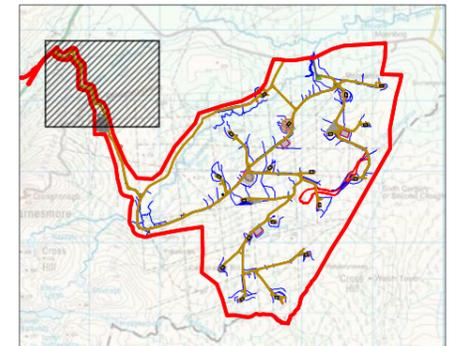
DRAWING NUMBER
MNBG d017.2.0

Printed: 07/03/2021 10:34:02
\\P:\DUB\APP\Plan\Project\WindFarm\Meenbog\Drawings\MNBG d017 Final Depth\MNBG d017.2 Peat Testing



LEGEND

- 1.00m;8.0@1m — Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING (1:100,000)

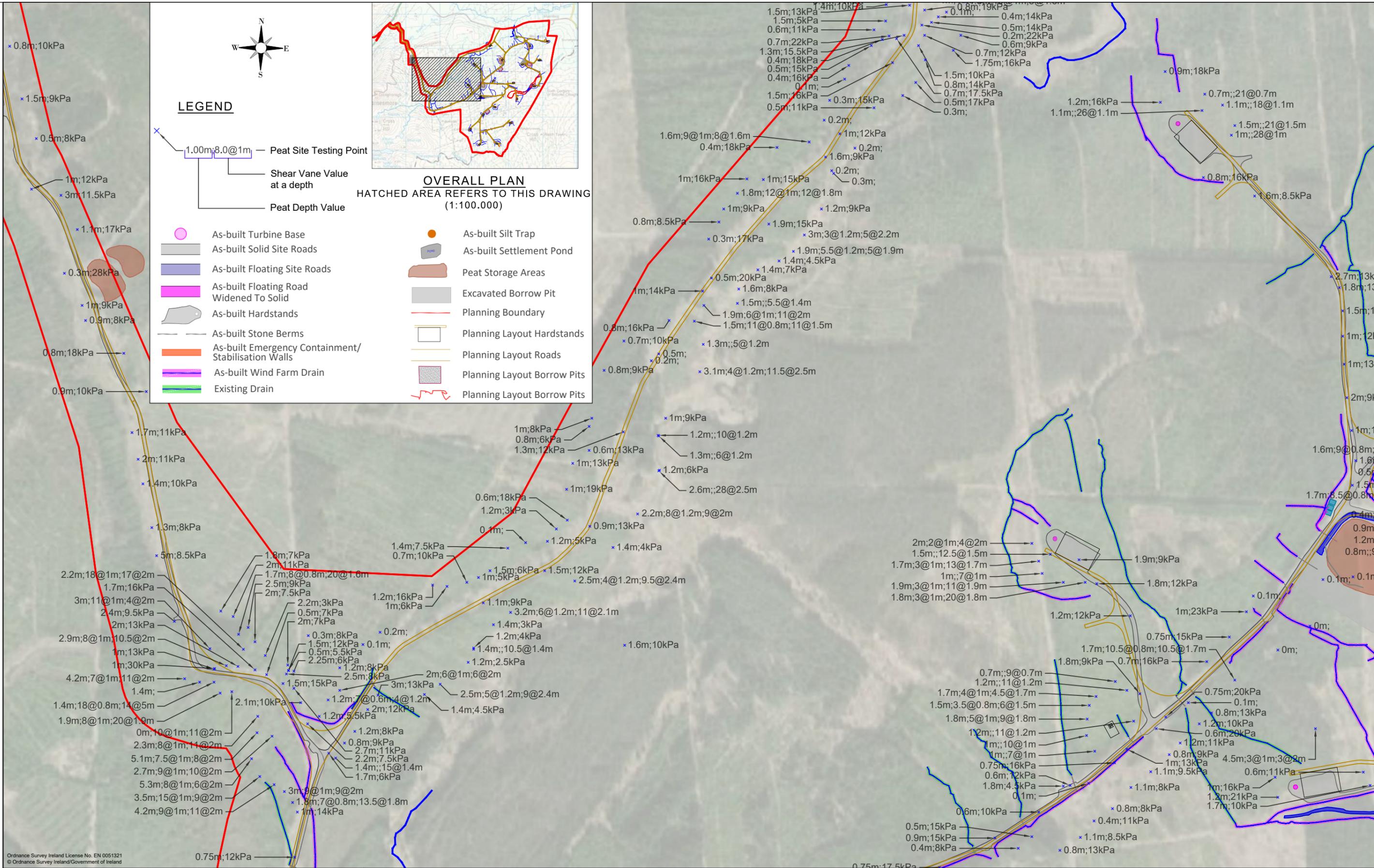
Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
C	06/05/2021	E.A.	J.S.	GENERAL REVISION
B	02/02/2021	M.B.	J.S.	GENERAL REVISION
A	08/12/2020	E.A.	J.S.	FIRST ISSUE

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		MEENBOG WIND FARM
E. ANDRADE		PEAT TESTING MAP SHEET 1
J. SHANAHAN		C

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		MEENBOG WIND FARM
E. ANDRADE		PEAT TESTING MAP SHEET 1
J. SHANAHAN		C

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		MEENBOG WIND FARM
E. ANDRADE		PEAT TESTING MAP SHEET 1
J. SHANAHAN		C



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
D	19/05/2021	E.A.	J.S.	PEAT DEPTH POINTS UPDATED
C	06/05/2021	E.A.	J.S.	GENERAL REVISION
B	02/02/2021	M.B.	J.S.	GENERAL REVISION
A	08/12/2020	E.A.	J.S.	FIRST ISSUE

ENGINEER				
CLIENT	The Hyde Building, The Park, Carrickmines, Dublin 18, D18V4C4, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND			
DRAWN BY	E. ANDRADE	DATE	08/12/2020	
CHECKED AND APPROVED	J. SHANAHAN	DATE	08/12/2020	
PROJECT	MEENBOG WIND FARM		REVISION	D
TITLE	PEAT TESTING MAP SHEET 2		DRAWING NUMBER	MNBOG d017.2.2
PAPER SIZE	A3	SCALE	1:5,000	
STATUS	INFORMATION			

PROJECT: MEENBOG WIND FARM

TITLE: PEAT TESTING MAP SHEET 2

REVISION: D

DRAWING NUMBER: MNBOG d017.2.2

STATUS: INFORMATION

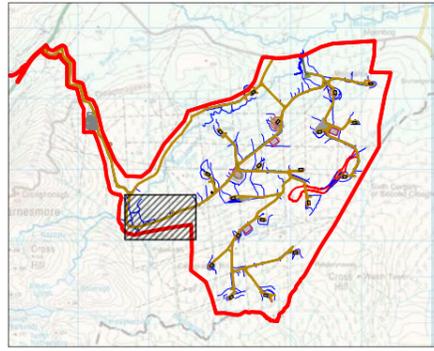
SCALE: 1:5,000

PAPER SIZE: A3

DATE: 08/12/2020

ENGINEER: E. ANDRADE

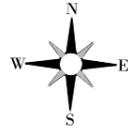
CHECKED AND APPROVED: J. SHANAHAN



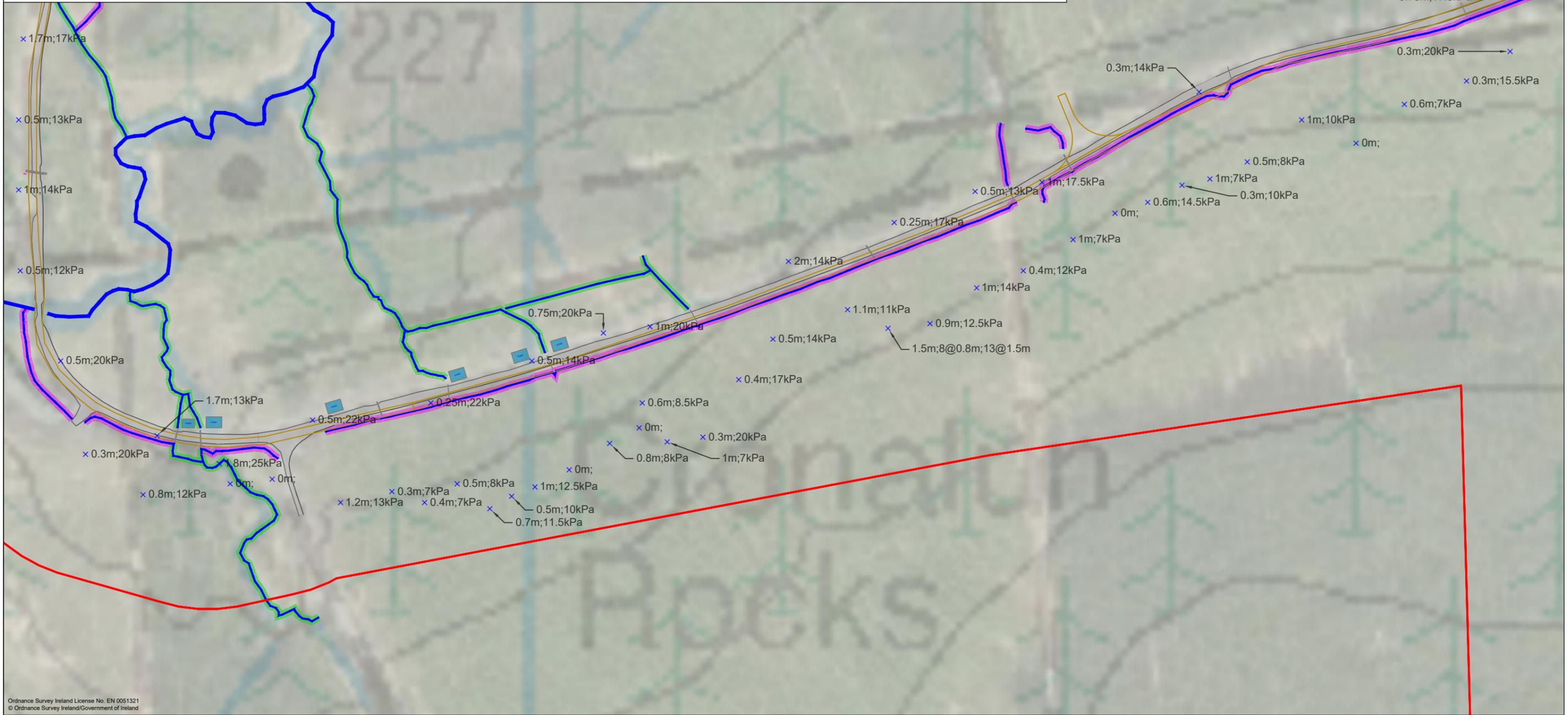
OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value



- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

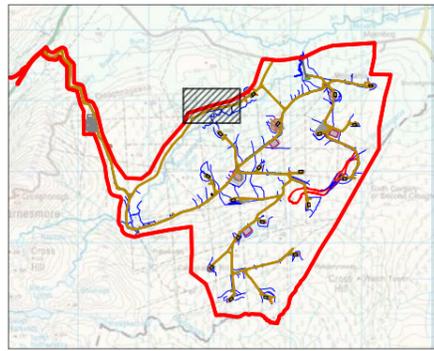
NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
C	06/05/2021	E.A.	J.S.	GENERAL REVISION
B	02/02/2021	M.B.	J.S.	GENERAL REVISION
A	08/12/2020	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	MEENBOG WIND FARM		
DRAWN BY	E. ANDRADE	DATE	08/12/2020	PAPER SIZE	A3	SCALE	1:2,500
CHECKED AND APPROVED	J. SHANAHAN	DATE	08/12/2020	STATUS	INFORMATION		
				DRAWING NUMBER	MNBG d017.2.3		

<p>PROJECT</p> <p>MEENBOG WIND FARM</p>		REVISION	C
<p>TITLE</p> <p>PEAT TESTING MAP SHEET 3</p>			
<p>DRAWING NUMBER</p> <p>MNBG d017.2.3</p>			

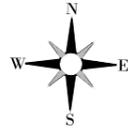
Printed: 07/03/2021 11:24:29
\\WP-DUB-APP\Projects\Wind\Meenbog\MNBG Drawings\MNBG D017 Peat Depth\MNBG D017.2 Peat Testing



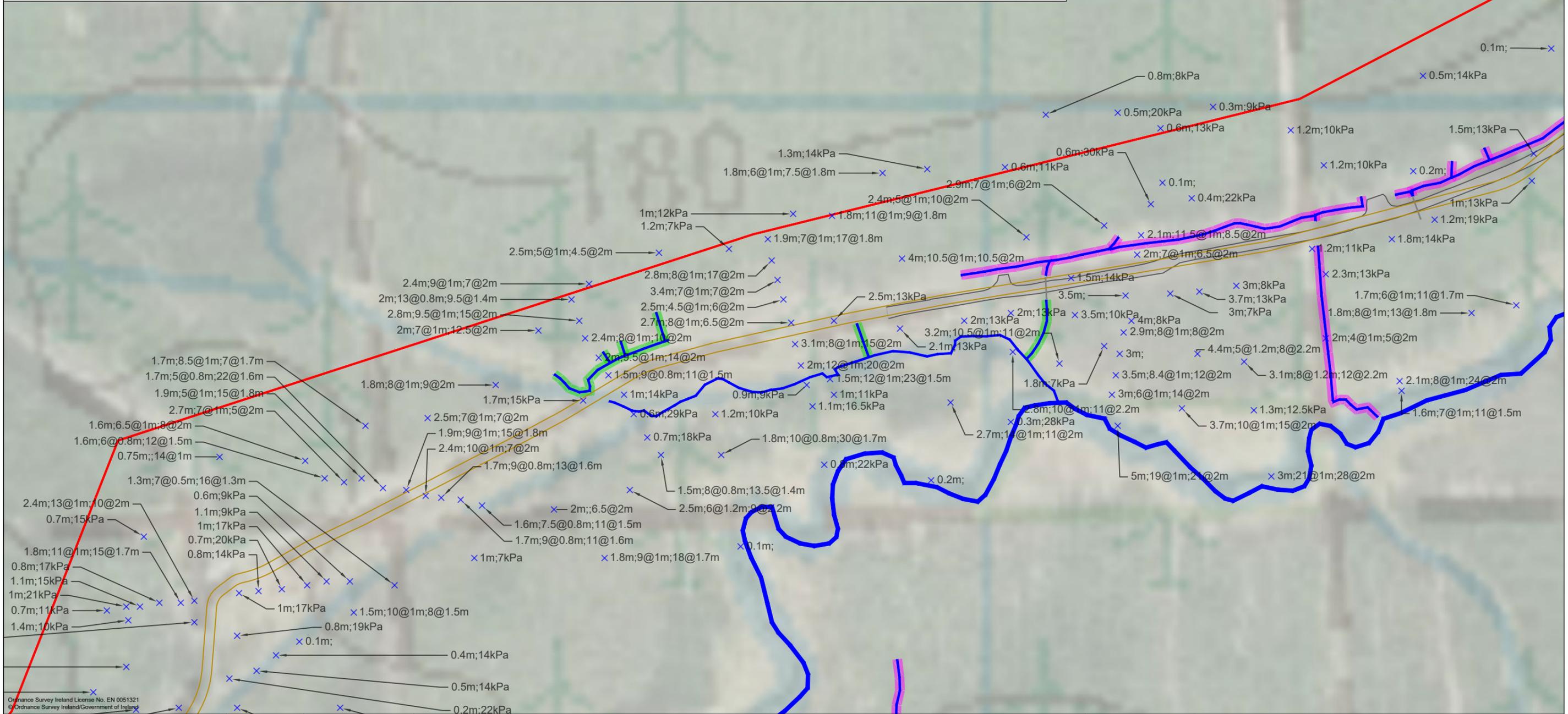
OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

1.00m;8.0@1m — Peat Site Testing Point
Shear Vane Value at a depth
Peat Depth Value



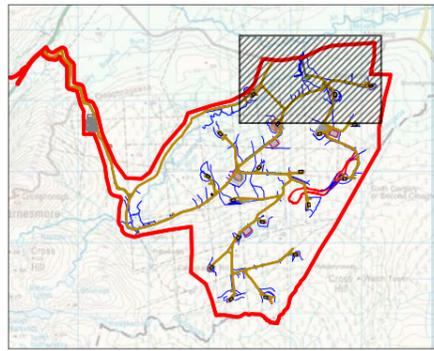
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
C	06/05/2021	E.A.	J.S.	GENERAL REVISION
B	02/02/2021	M.B.	J.S.	GENERAL REVISION
A	08/12/2020	E.A.	J.S.	FIRST ISSUE

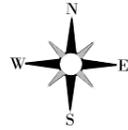
ENGINEER		CLIENT		PROJECT	
<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>		<p>MEENBOG WIND FARM</p>		TITLE	
				<p>PEAT TESTING MAP SHEET 4</p>	
DRAWN BY		DATE		PAPER SIZE	
E. ANDRADE		08/12/2020		A3	
CHECKED AND APPROVED		DATE		SCALE	
J. SHANAHAN		08/12/2020		1:2,000	
STATUS		DRAWING NUMBER		REVISION	
INFORMATION		MNBG d017.2.4		C	



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value



- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

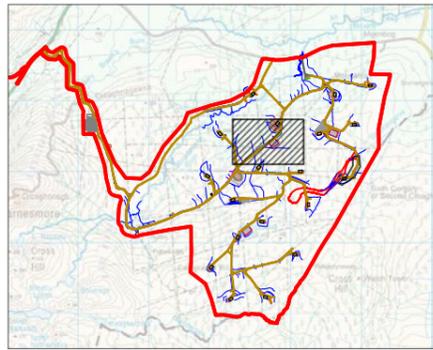
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER		CLIENT		PROJECT	
E. ANDRADE		MEENBOG WIND FARM		PEAT TESTING MAP SHEET 5	
J. SHANAHAN		INFORMATION		MNBG d017.2.5	

DRAWN BY		DATE		PAPER SIZE		SCALE	
E. ANDRADE		06/05/2021		A3		1:5,000	
CHECKED AND APPROVED		DATE		STATUS		DRAWING NUMBER	
J. SHANAHAN		06/05/2021		INFORMATION		MNBG d017.2.5	

ENGINEER		CLIENT		PROJECT	
The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		MEENBOG WIND FARM		PEAT TESTING MAP SHEET 5	
J. SHANAHAN		INFORMATION		MNBG d017.2.5	

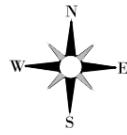
REVISION
A



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value



- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits

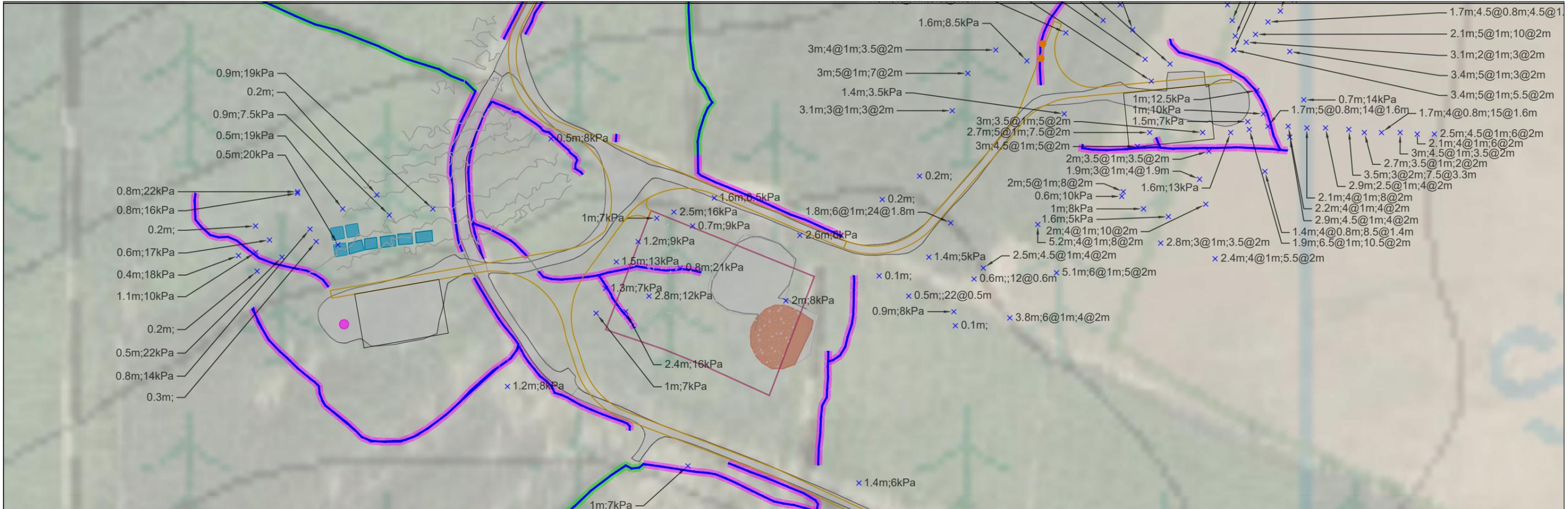


Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	E.A.	J.S.	PEAT DEPTH POINTS UPDATED
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

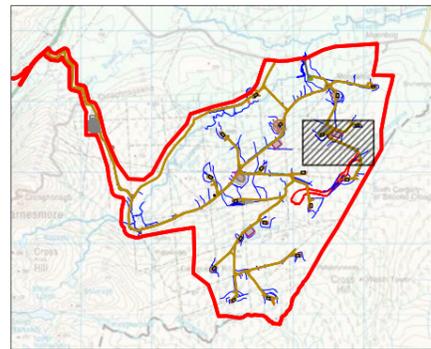
ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	MEENBOG WIND FARM	
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3	
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	SCALE	1:2.500	
				STATUS	INFORMATION	
				DRAWING NUMBER	MNBG d017.2.6	

TITLE PEAT TESTING MAP SHEET 6		REVISION B
<small>Project: 19052021-18-4839 \\WP-DUB-APP\Projects\Wind\Meenbog\MNBG\Drawings\MNBG D017 Peat Depth\MNBG D017.2 Peat Testing</small>		



LEGEND

- 1.00m;8.0@1m — Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value



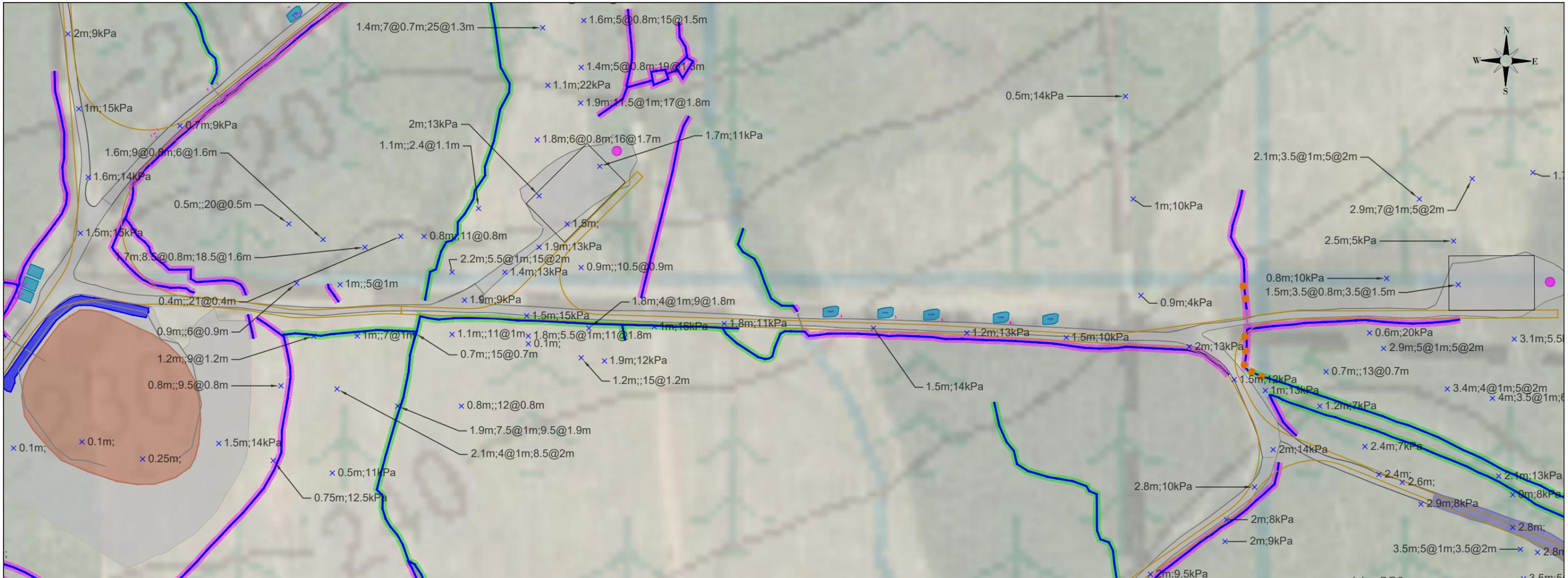
OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits

Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	E.A.	J.S.	PEAT DEPTH POINTS UPDATED
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER <p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>		CLIENT 		PROJECT MEENBOG WIND FARM	
DRAWN BY E. ANDRADE		DATE 06/05/2021		PAPER SIZE A3	
CHECKED AND APPROVED J. SHANAHAN		DATE 06/05/2021		SCALE 1:2.500	
STATUS INFORMATION				REVISION B	
DRAWING NUMBER MNBG d017.2.7				TITLE PEAT TESTING MAP SHEET 7	



LEGEND

- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary
- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value

OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING (1:100,000)

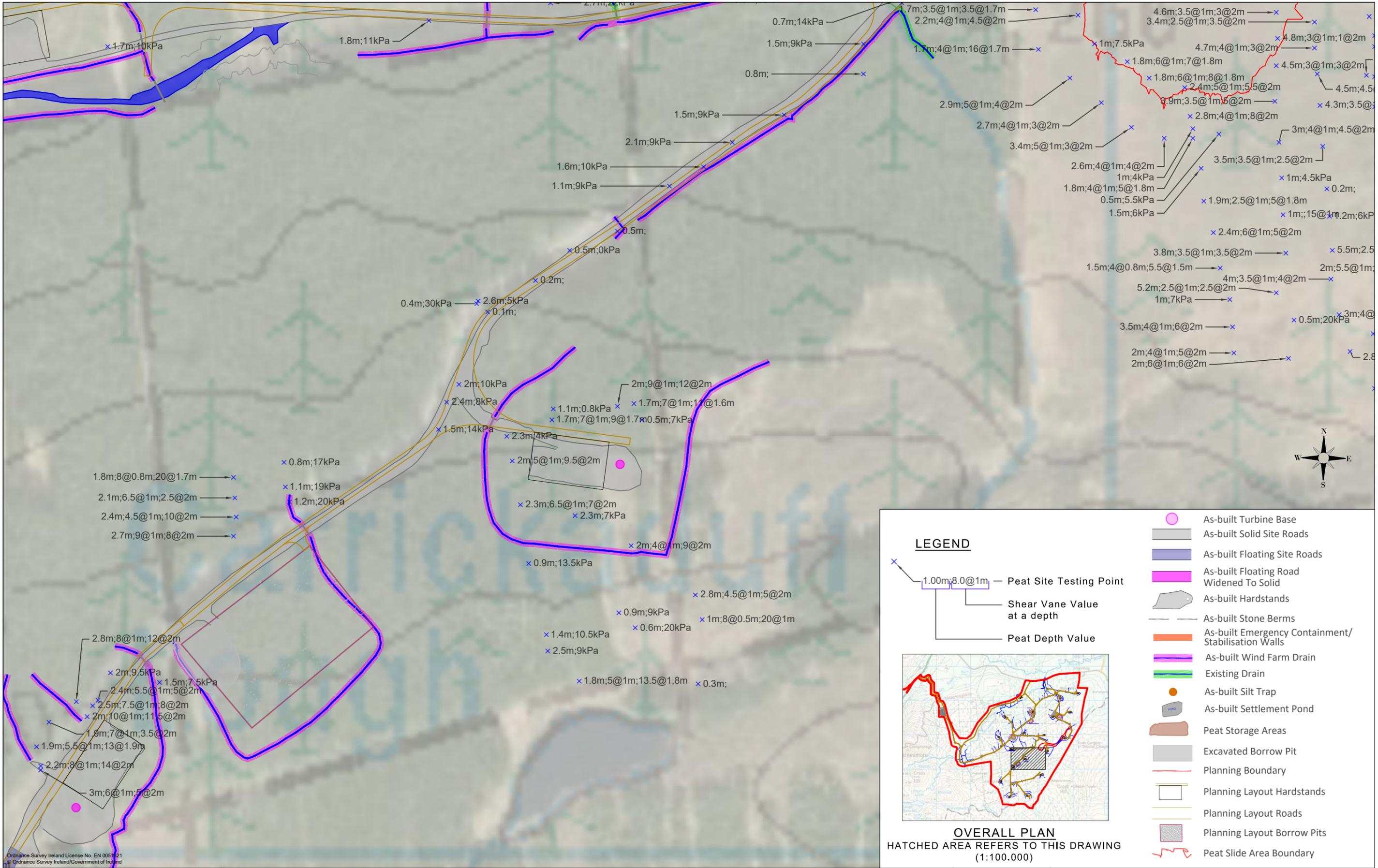
Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	E.A.	J.S.	PEAT DEPTH POINTS UPDATED
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND			CLIENT	
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	SCALE	1:2,500
				PROJECT	MEENBOG WIND FARM
				TITLE	PEAT TESTING MAP SHEET 8
				REVISION	B
				DRAWING NUMBER	MNBG d017.2.8

ENGINEER	 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND			CLIENT	
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	SCALE	1:2,500
				PROJECT	MEENBOG WIND FARM
				TITLE	PEAT TESTING MAP SHEET 8
				REVISION	B
				DRAWING NUMBER	MNBG d017.2.8



LEGEND

- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary

Peat Site Testing Point: 1.00m;8.0@1m

Shear Vane Value at a depth

Peat Depth Value

OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING (1:100,000)

Ordnance Survey Ireland License No. EN 0051621
Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
E. hello@ionicconsulting.ie
T. +353 (0) 1 845 5031
W. www.ionicconsulting.ie
Formerly known as WIND PROSPECT IRELAND

CLIENT

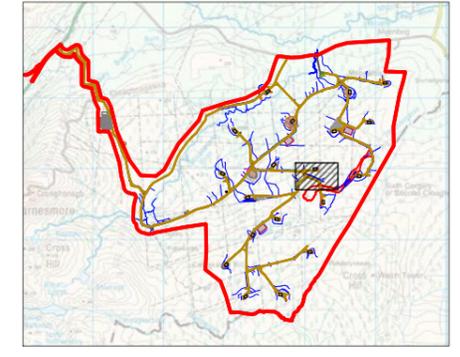
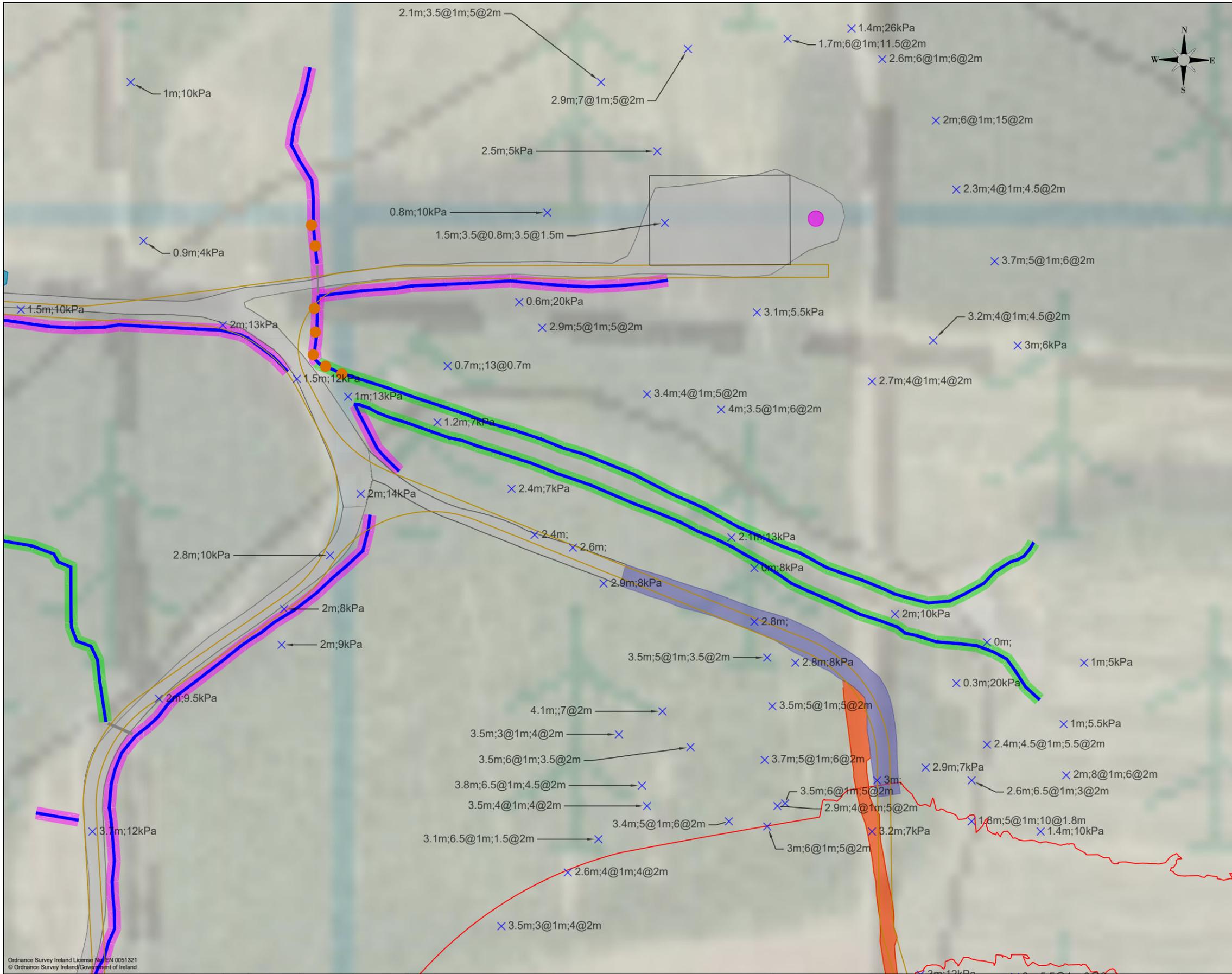
PROJECT

PROJECT TITLE: **MEENBOG WIND FARM**

PROJECT SHEET: **PEAT TESTING MAP SHEET 9**

REVISION: **A**

ENGINEER	CLIENT	PROJECT
E. ANDRADE		MEENBOG WIND FARM
J. SHANAHAN		PEAT TESTING MAP SHEET 9
DATE: 06/05/2021	PAPER SIZE: A3	SCALE: 1:2,500
DATE: 06/05/2021	STATUS: INFORMATION	DRAWING NUMBER: MNBG d017.2.9



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100,000)

LEGEND

- 1.00m;8.0@1m — Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary

Ordnance Survey Ireland License No: EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

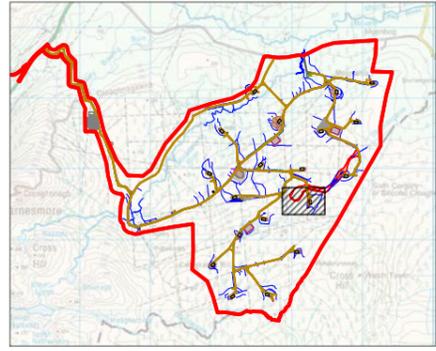
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>		
DRAWN BY	E. ANDRADE	DATE	06/05/2021
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021

CLIENT	MEENBOG WIND FARM		
PAPER SIZE	A3	SCALE	1:1,500
STATUS	INFORMATION		
DRAWING NUMBER	MNBG d017.2.10		

TITLE	PEAT TESTING MAP SHEET 10		REVISION	A
-------	---------------------------	--	----------	---

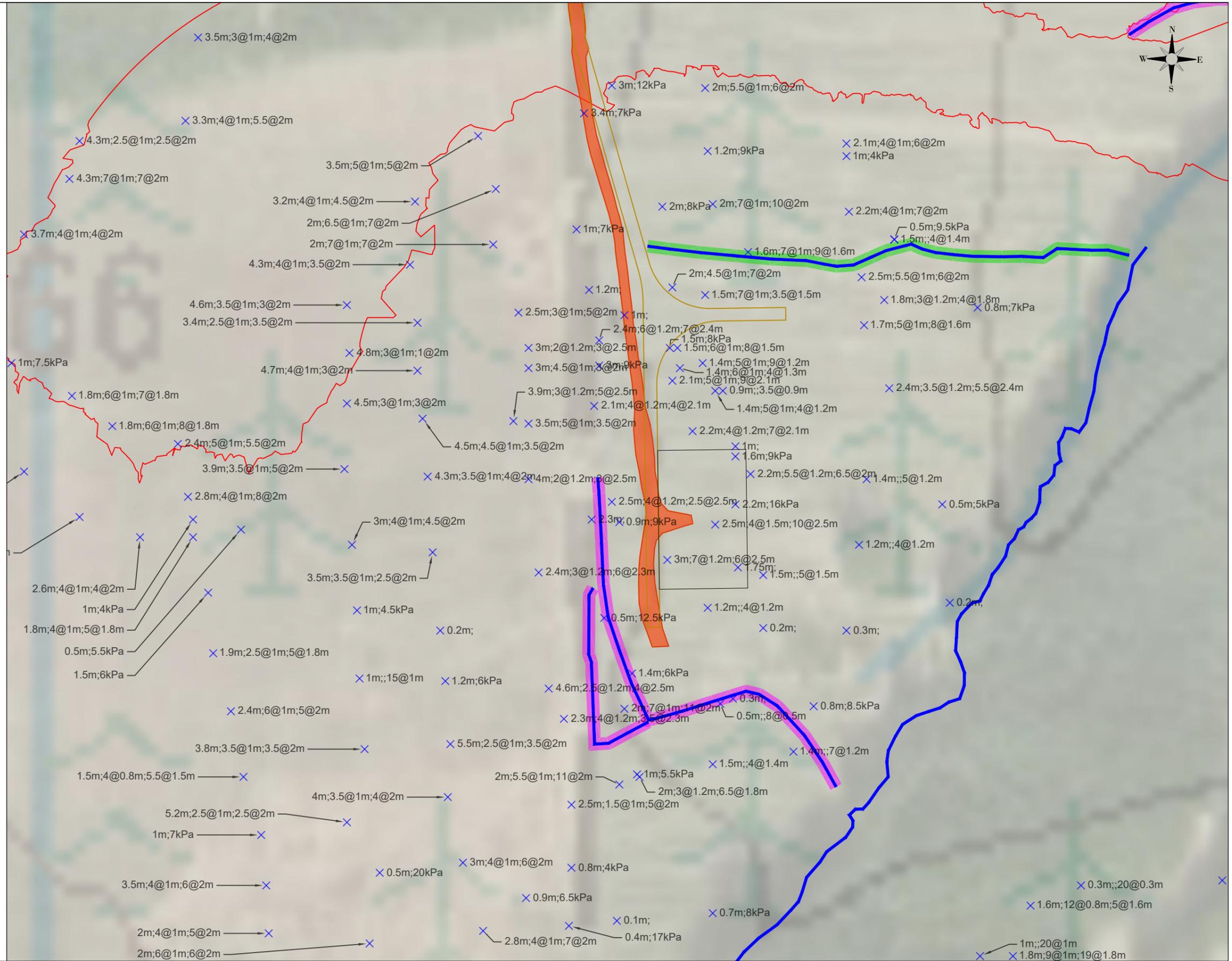
Printed: 17/05/2021 12:44:11
 \\P:\DUB\APP\Wind\Projects\Wind\Meenbog\MNBG Drawings\MNBG D017 Peat Depth\MNBG D017.2 Peat Testing



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

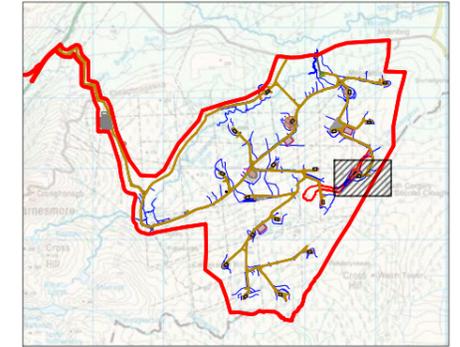
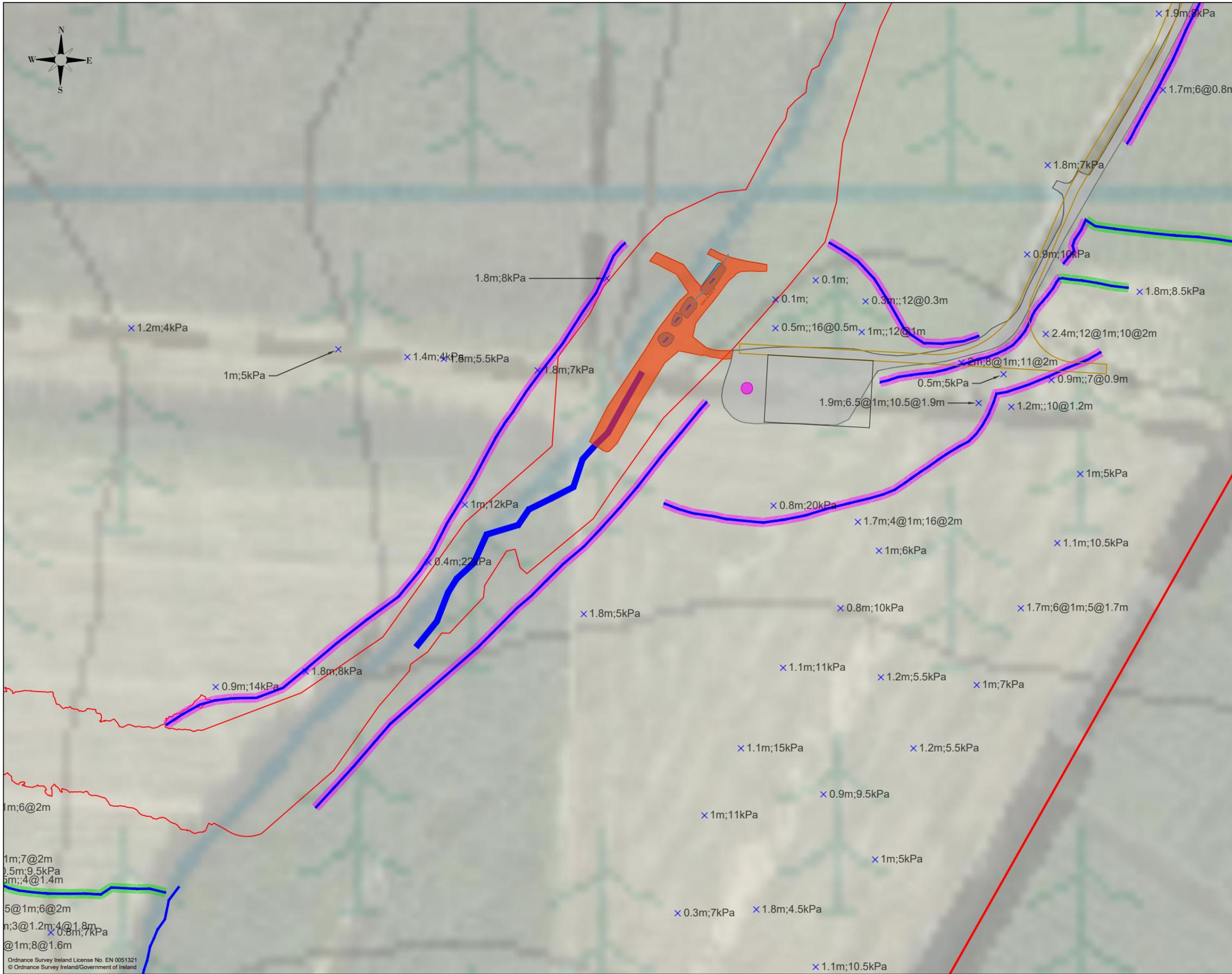
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	MEENBOG WIND FARM		
DRAWN BY	E. ANDRADE			PAPER SIZE	A3		
CHECKED AND APPROVED	J. SHANAHAN			SCALE	1:1,500		
DATE	06/05/2021			STATUS	INFORMATION		
DATE	06/05/2021			DRAWING NUMBER	MNBG d017.2.11		

PROJECT		MEENBOG WIND FARM	
TITLE		PEAT TESTING MAP SHEET 11	
REVISION		A	

NOTES	
-------	--

Printed: 07/05/2021 10:25:17
\\P:\DUB\APP\Projects\Wind\Meenbog\MNBG Drawings\MNBG D017 Peat Depth\MNBG D017.2 Peat Testing



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	E.A.	J.S.	PEAT DEPTH POINTS UPDATED
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	PROJECT
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	SCALE	1:2,000
				STATUS	INFORMATION
				DRAWING NUMBER	MNBG d017.2.12

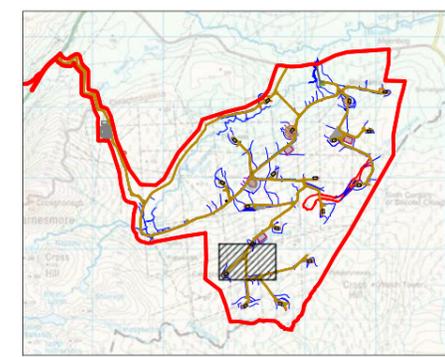
<p>MEENBOG WIND FARM</p> <p>PEAT TESTING MAP SHEET 12</p>		REVISION	B
---	--	----------	----------

<p>Ordnance Survey Ireland License No. EN 0051321 © Ordnance Survey Ireland/Government of Ireland</p>	<p>Project: 19052021_18-09-19 \\WP-DUB-APP\Projects\WindFarm\Meenbog\Drawings\MNBG d017.2 Peat Testing</p>
---	--



LEGEND

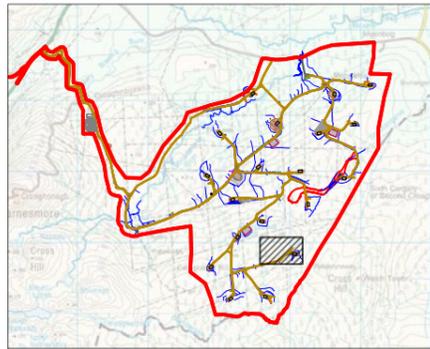
- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

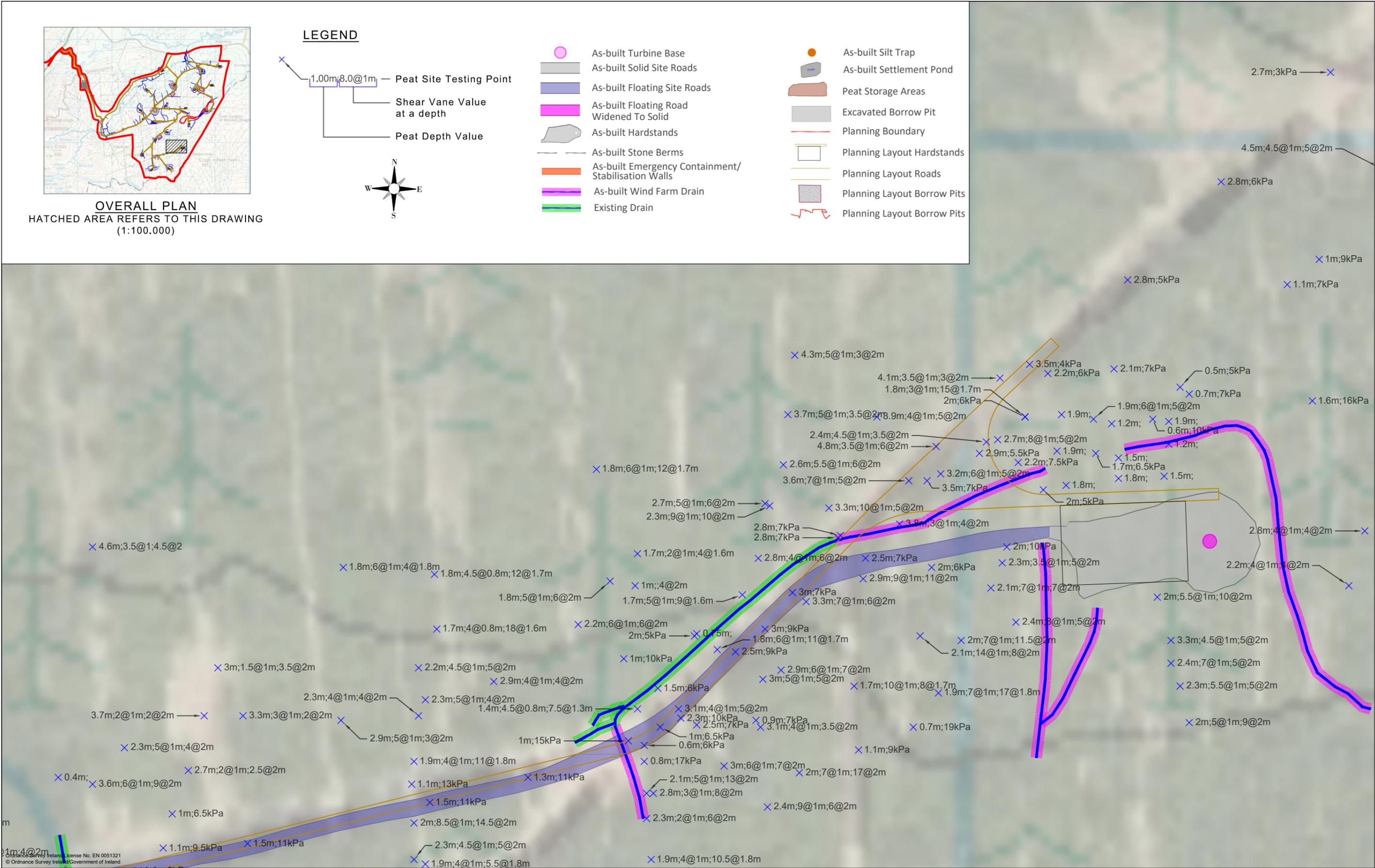
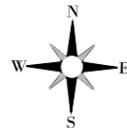
ENGINEER		CLIENT		PROJECT	
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND				MEENBOG WIND FARM	
DRAWN BY		DATE		TITLE	
E. ANDRADE		06/05/2021		PEAT TESTING MAP SHEET 13	
CHECKED AND APPROVED		DATE		REVISION	
J. SHANAHAN		06/05/2021		A	
		PAPER SIZE		SCALE	
		A3		1:2,000	
		STATUS		DRAWING NUMBER	
		INFORMATION		MNBG d017.2.13	



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits

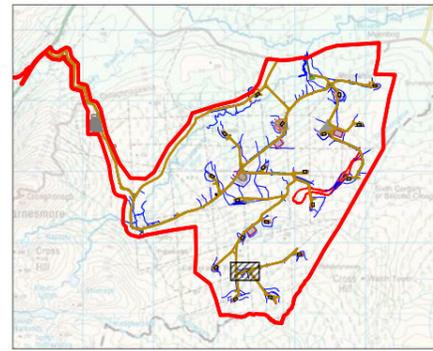


1:100,000
© Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland Government of Ireland

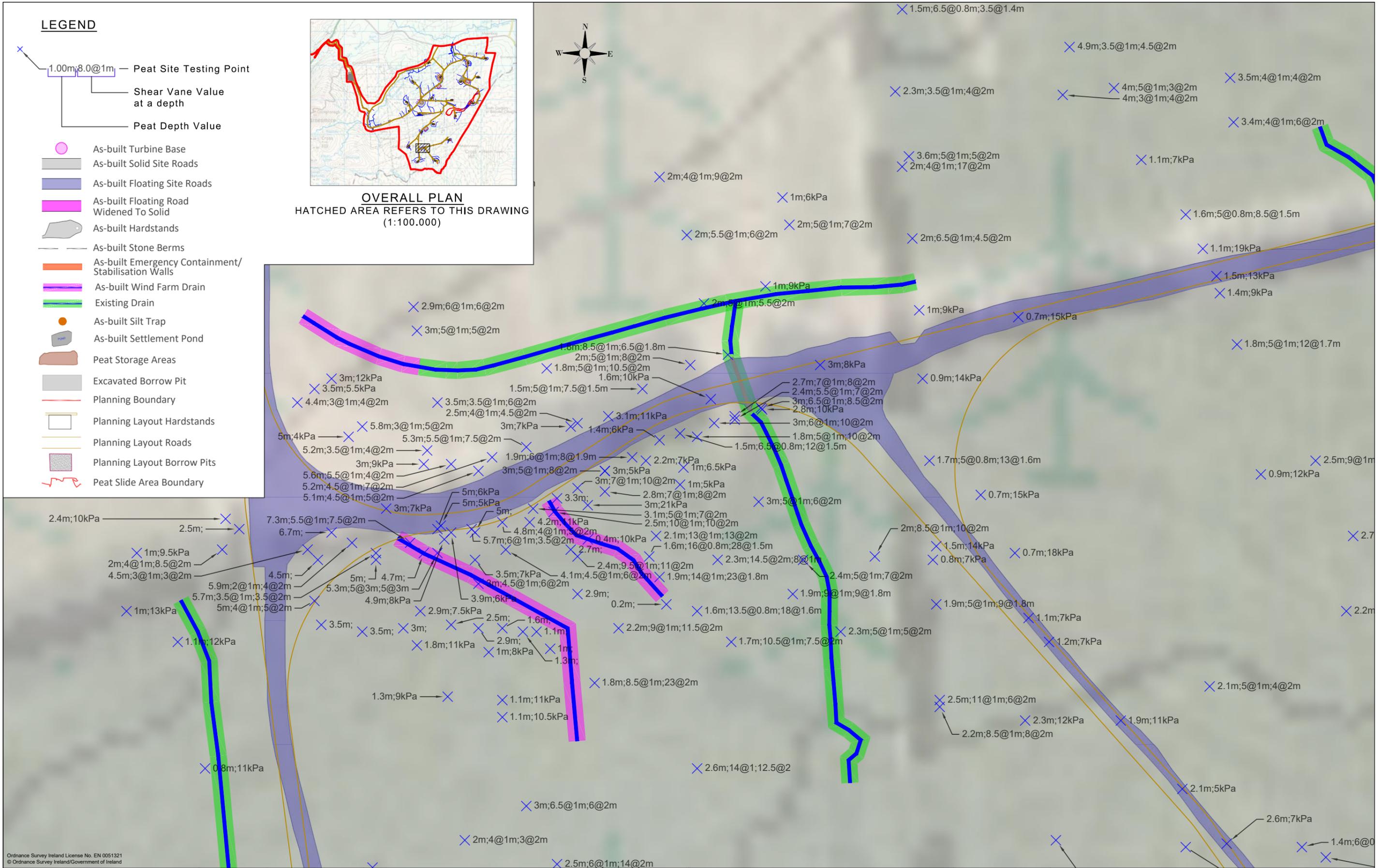
<p>NOTES</p>					<p>ENGINEER</p> <p>IONIC CONSULTING</p> <p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 945 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			<p>CLIENT</p>		<p>PROJECT</p> <p>MEENBOG WIND FARM</p>													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">REV</td> <td style="width: 10%;">DATE</td> <td style="width: 10%;">DRAWN BY</td> <td style="width: 10%;">CHECKED BY</td> <td style="width: 10%;">DETAILS</td> </tr> <tr> <td>A</td> <td>06/05/2021</td> <td>E.A.</td> <td>J.S.</td> <td>FIRST ISSUE</td> </tr> </table>					REV	DATE	DRAWN BY	CHECKED BY	DETAILS	A	06/05/2021	E.A.	J.S.	FIRST ISSUE	<p>DRAWN BY</p> <p>E. ANDRADE</p> <p>CHECKED AND APPROVED</p> <p>J. SHANAHAN</p>			<p>DATE</p> <p>06/05/2021</p> <p>DATE</p> <p>06/05/2021</p>		<p>PAPER SIZE</p> <p>A3</p> <p>SCALE</p> <p>1:1,500</p> <p>STATUS</p> <p>INFORMATION</p>		<p>TITLE</p> <p>PEAT TESTING MAP SHEET 14</p> <p>REVISION</p> <p>A</p> <p>DRAWING NUMBER</p> <p>MNBG d017.2.14</p>	
REV	DATE	DRAWN BY	CHECKED BY	DETAILS																			
A	06/05/2021	E.A.	J.S.	FIRST ISSUE																			

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100.000)



Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

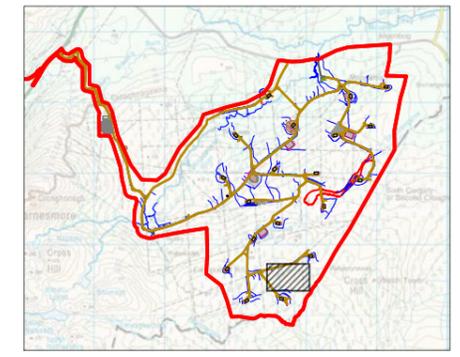
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	MEENBOG WIND FARM		
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3	SCALE	1:1.000
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	STATUS	INFORMATION		
NOTES				DRAWING NUMBER	MNBG d017.2.15		

<p>PEAT TESTING MAP SHEET 15</p>		REVISION	A
---	--	----------	---

<p>PEAT TESTING MAP SHEET 15</p>		REVISION	A
---	--	----------	---

Printed: 07/05/2021 13:18:10
\\WP-DUB-APP\Projects\WindFarm\Meenbog\Drawings\MNBG d017.2.15 Peat Testing



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Peat Slide Area Boundary



Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT			
DRAWN BY	E. ANDRADE	DATE	06/05/2021	PAPER SIZE	A3	SCALE	1:1,500
CHECKED AND APPROVED	J. SHANAHAN	DATE	06/05/2021	STATUS	INFORMATION		

PROJECT		MEENBOG WIND FARM	
TITLE		PEAT TESTING MAP SHEET 16	
DRAWING NUMBER		MNBG d017.2.16	
REVISION		A	

PROJECT: MEENBOG WIND FARM

TITLE: PEAT TESTING MAP SHEET 16

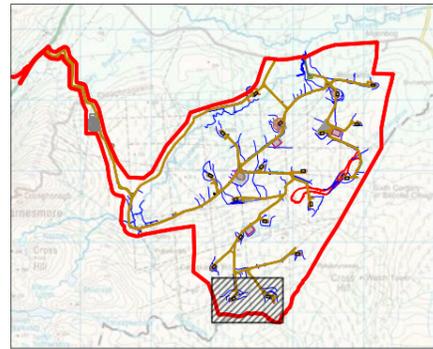
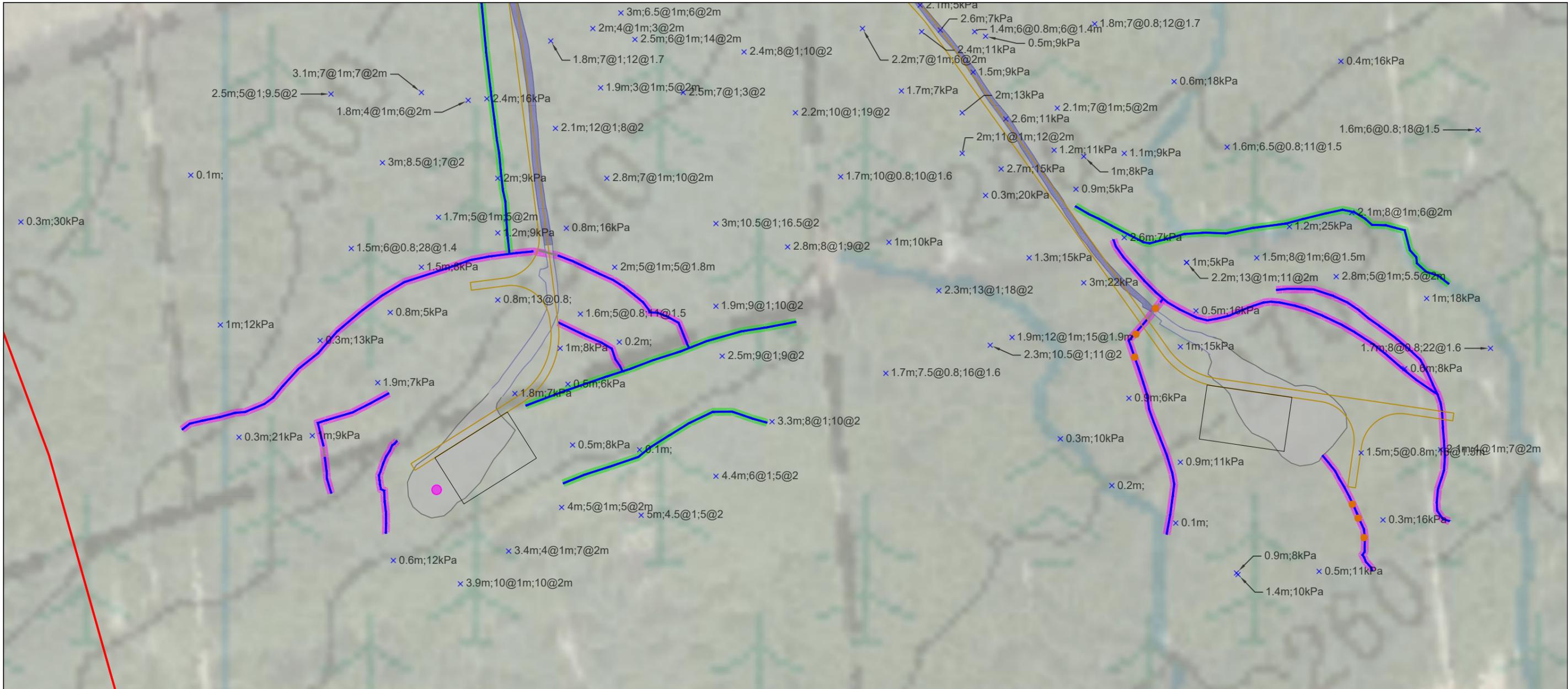
DRAWING NUMBER: MNBG d017.2.16

REVISION: A

DATE: 06/05/2021

SCALE: 1:1,500

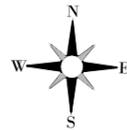
STATUS: INFORMATION



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- Peat Site Testing Point
- Shear Vane Value at a depth
- Peat Depth Value



- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits
- Planning Layout Borrow Pits

Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

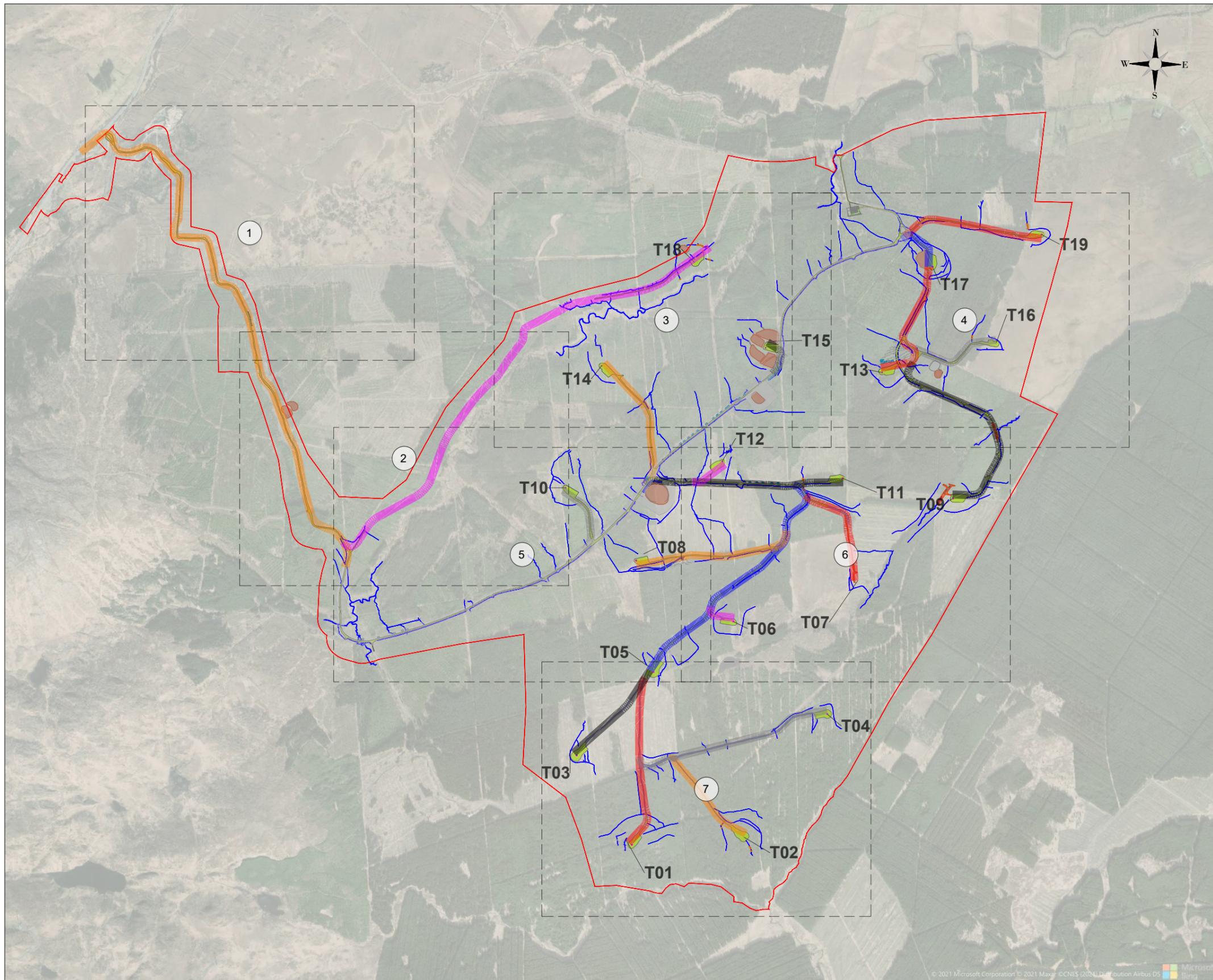
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	06/05/2021	E.A.	J.S.	FIRST ISSUE

<p>ENGINEER</p> <p>IONIC CONSULTING</p> <p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 945 5031 W. www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>					
DRAWN BY		DATE		PAPER SIZE	SCALE
E. ANDRADE		06/05/2021		A3	1:2,500
CHECKED AND APPROVED		DATE		STATUS	
J. SHANAHAN		06/05/2021		INFORMATION	

CLIENT		PROJECT	
		MEENBOG WIND FARM	
TITLE		REVISION	
PEAT TESTING MAP SHEET 17		A	
DRAWING NUMBER		MNBG d017.2.17	

<p>NOTES</p>			
--------------	--	--	--

APPENDIX C – Site Analysis Overview Drawing



LEGEND

- 00 Sheet number for referred area
- T18-D — Assesment Point
- SPINE ROAD
- T1, T7, T13, T19
- T2, T8, T14, SUB
- T3, T9, T11, T15
- T4, T10, T16
- T5, T17
- T6, T12, T18

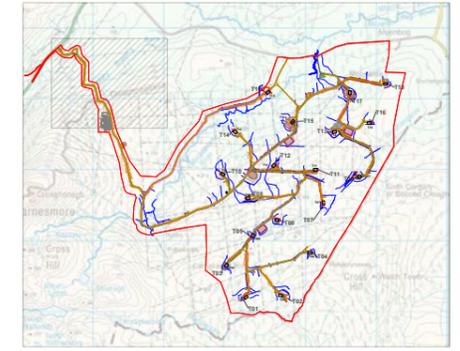
NOTES

1. Refer to MNBG r041.1 for peat assessment.

Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
E	21/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED AND GENERAL REVISION
D	04/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED
C	19/02/2021	M.B.	J.S.	ISSUE FOR STABILITY REPORT
B	01/02/2021	M.B.	J.S.	PEAT ASSESSMENT POINTS ADDED
A	15/01/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER	CLIENT	PROJECT
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie	MEENBOG WIND FARM	PEAT STABILITY ASSESSMENT OVERALL SITE
DRAWN BY M. BROWNE	PAPER SIZE A3	SCALE 1:20.000
CHECKED AND APPROVED J. SHANAHAN	DATE 15/01/2021	STATUS INFORMATION
DRAWING NUMBER MNBG d017.3.0	REVISION E	<small>Printed: 24/05/2021 10:02:33 C:\SUB-APP\Projects\Meenbog\Meenbog\MNBG\Drawings\MNBG d017.3. Peat Stability Assessment</small>



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100.000)

LEGEND

- T18-D — Assesment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits

NOTES

1. Refer to MNBG r041.1 for peat assessment.

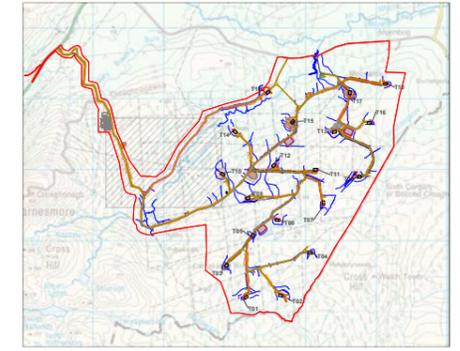
Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
E	21/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED AND GENERAL REVISION
D	04/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED
C	19/02/2021	M.B.	J.S.	ISSUE FOR STABILITY REPORT
B	01/02/2021	M.B.	J.S.	PEAT ASSESSMENT POINTS ADDED
A	15/01/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER	CLIENT	PROJECT
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie		MEENBOG WIND FARM
DRAWN BY M. BROWNE	DATE 15/01/2021	PAPER SIZE A3
CHECKED AND APPROVED J. SHANAHAN	DATE 15/01/2021	SCALE 1:5.000
	STATUS INFORMATION	DRAWING NUMBER MNBG d017.3.1

TITLE	REVISION
PEAT STABILITY ASSESSMENT SHEET 1	E

Printed: 24/05/2021 10:31:27
 Path: \\S:\APP\Projects\Meenbog\Meenbog\MNBG\Drawings\MNBG 017.3 Peat Stability Assessment



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100.000)

LEGEND

- T18-D — Assesment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits

NOTES

1. Refer to MNBG r041.1 for peat assessment.

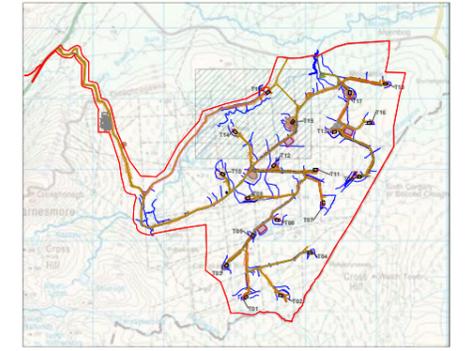
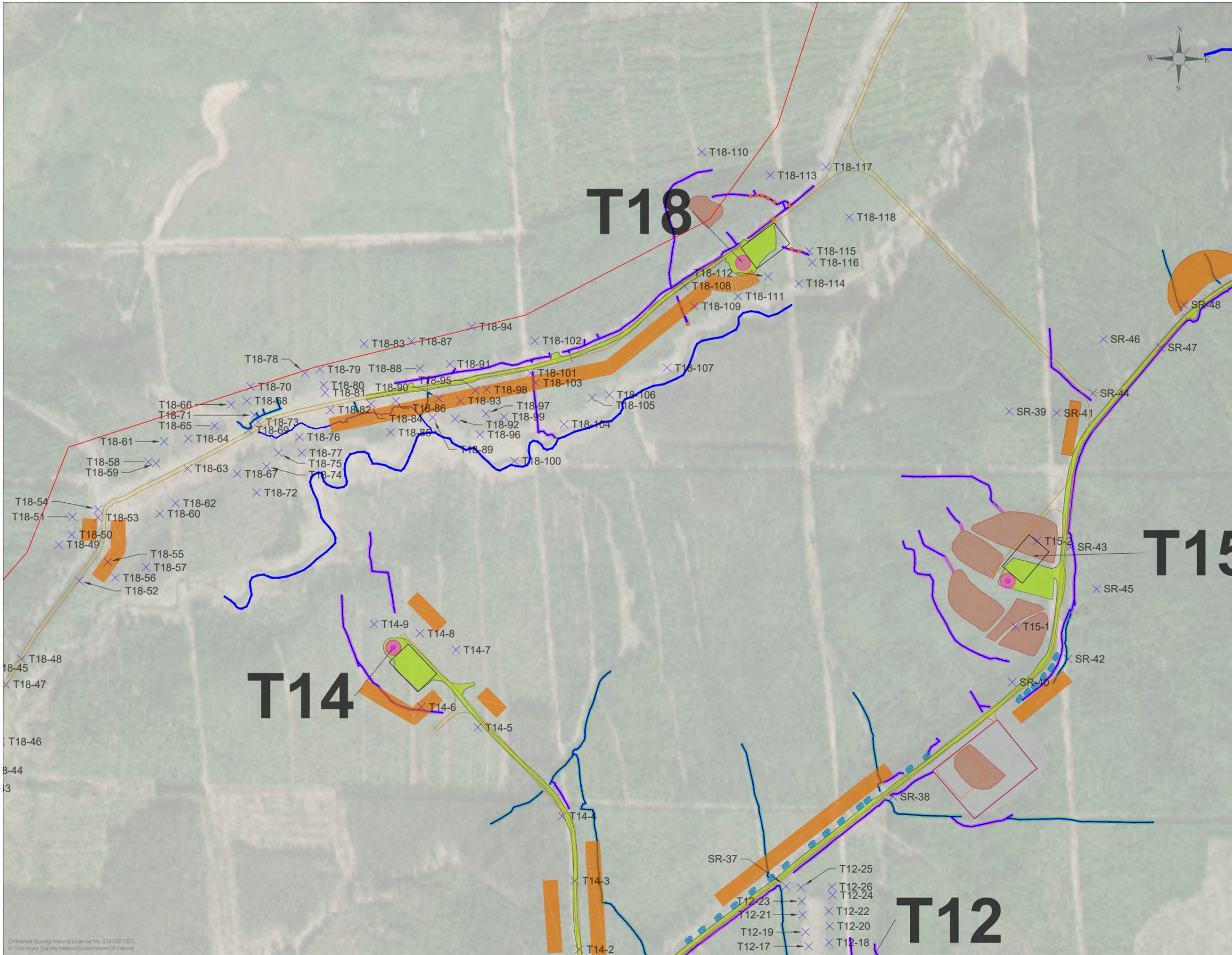
Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
E	21/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED AND GENERAL REVISION
D	04/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED
C	19/02/2021	M.B.	J.S.	ISSUE FOR STABILITY REPORT
B	01/02/2021	M.B.	J.S.	PEAT ASSESSMENT POINTS ADDED
A	15/01/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER				The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie			
DRAWN BY	M. BROWNE	DATE	15/01/2021	PAPER SIZE	A3	SCALE	1:5.000
CHECKED AND APPROVED	J. SHANAHAN	DATE	15/01/2021	STATUS	INFORMATION		

CLIENT	MEENBOG WIND FARM			
PROJECT	PEAT STABILITY ASSESSMENT SHEET 2			
TITLE	PEAT STABILITY ASSESSMENT SHEET 2		REVISION	E
DRAWING NUMBER	MNBG d017.3.2			

Printed: 2021/05/21 10:41:03
 Path: \\S:\APP\Projects\Meenbog\Meenbog\MNBG\Drawings\MNBG 017.3 Peat Stability Assessment



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100.000)

LEGEND

- T18-D — Assesment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits

NOTES

1. Refer to MNBG r041.1 for peat assessment.

Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
E	21/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED AND GENERAL REVISION
D	04/05/2021	E.A.	J.S.	PEAT ASSESSMENT POINTS REVIEWED
C	19/02/2021	M.B.	J.S.	ISSUE FOR STABILITY REPORT
B	01/02/2021	M.B.	J.S.	PEAT ASSESSMENT POINTS ADDED
A	15/01/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie		MEENBOG WIND FARM
M. BROWNE	15/01/2021	PEAT STABILITY ASSESSMENT SHEET 3
J. SHANAHAN	15/01/2021	E

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie		MEENBOG WIND FARM
M. BROWNE	15/01/2021	PEAT STABILITY ASSESSMENT SHEET 3
J. SHANAHAN	15/01/2021	E

ENGINEER	CLIENT	PROJECT
IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie		MEENBOG WIND FARM
M. BROWNE	15/01/2021	PEAT STABILITY ASSESSMENT SHEET 3
J. SHANAHAN	15/01/2021	E

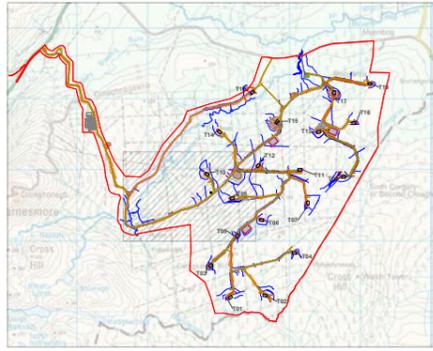
MEENBOG WIND FARM

PEAT STABILITY ASSESSMENT SHEET 3

E

INFORMATION

MNBG d017.3.3



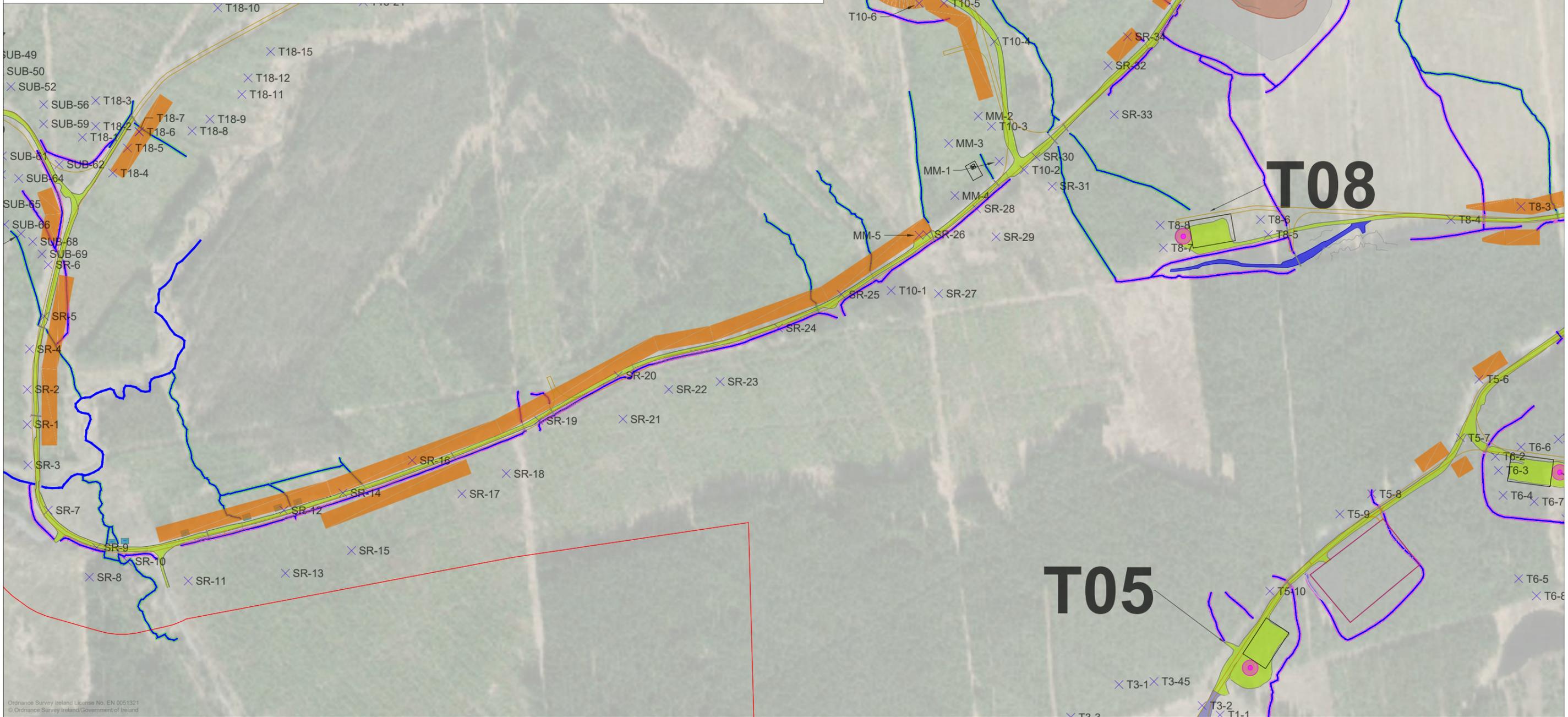
LEGEND

- T18-D — Assessment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain

NOTES

1. Refer to MNBG r041.1 for peat assessment.
- As-built Silt Trap
 - As-built Settlement Pond
 - Peat Storage Areas
 - Excavated Borrow Pit
 - Planning Boundary
 - Planning Layout Hardstands
 - Planning Layout Roads
 - Planning Layout Borrow Pits

OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)



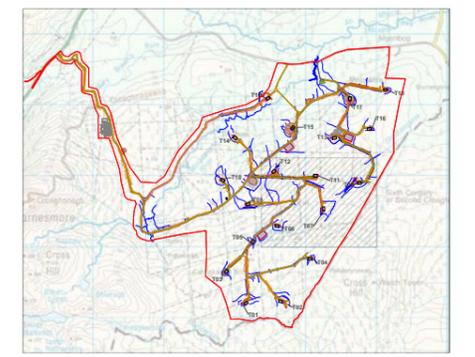
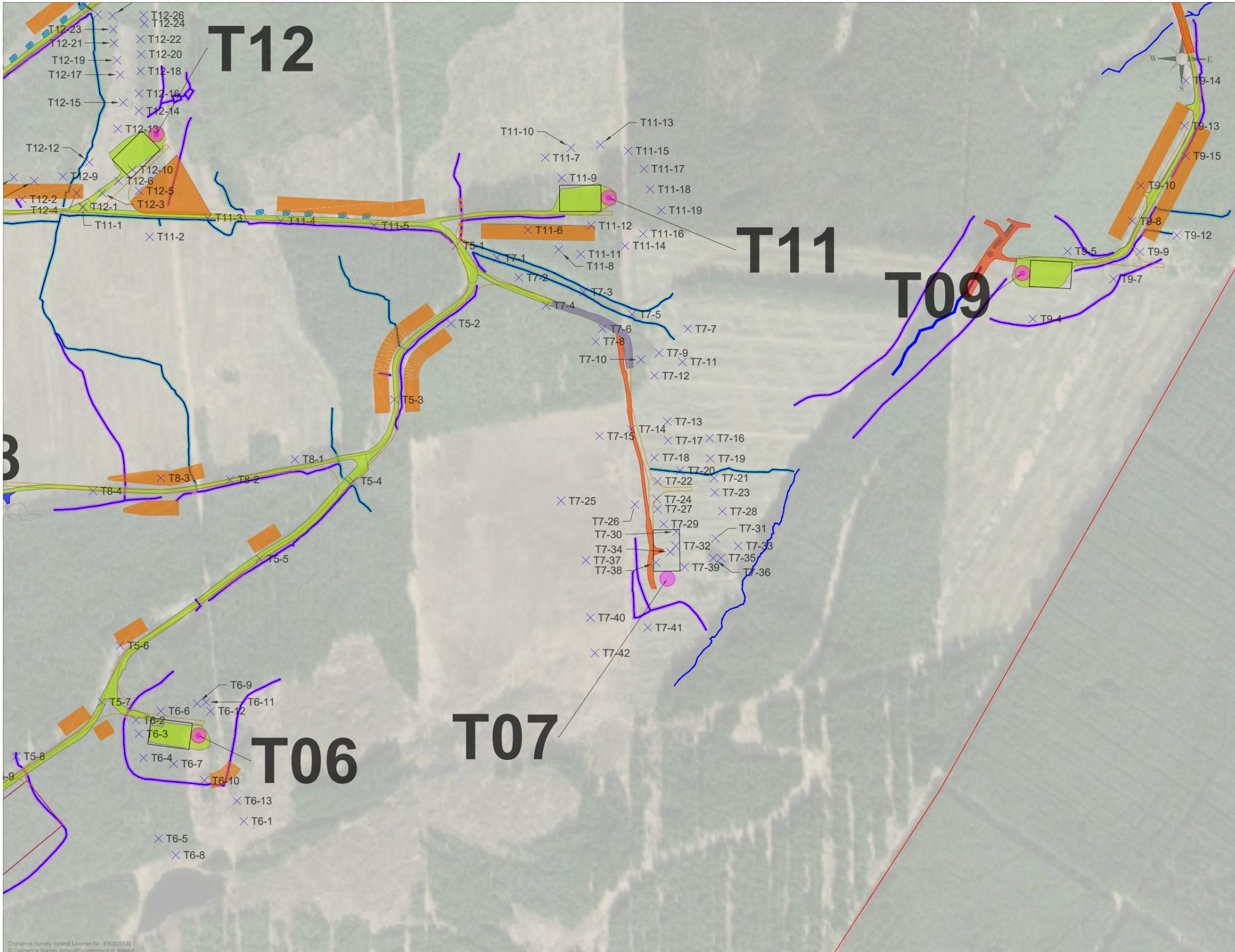
Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	21/05/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie</p>		CLIENT	MEENBOG WIND FARM	
DRAWN BY	E. ANDRADE	DATE	21/05/2021	PAPER SIZE	A3
CHECKED AND APPROVED	J. SHANAHAN	DATE	21/05/2021	SCALE	1:5,000
			STATUS	INFORMATION	

TITLE			PEAT STABILITY ASSESSMENT SHEET 5			REVISION	A
DRAWING NUMBER			MNBG d017.3.5			<small>Printed: 24/05/2021 10:30:33 Path: \\S:\BAP\PM\Projects\Inland\Meenbog\MNBG\Drawings\MNMG 017.3 Peat Stability Assessment</small>	



OVERALL PLAN
 HATCHED AREA REFERS TO THIS DRAWING
 (1:100,000)

LEGEND

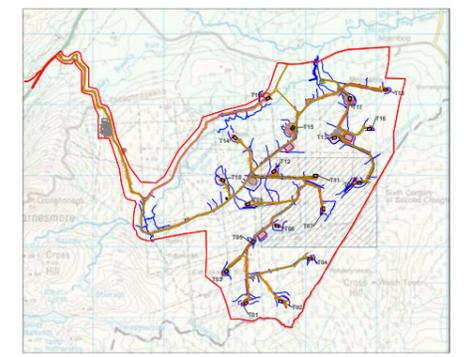
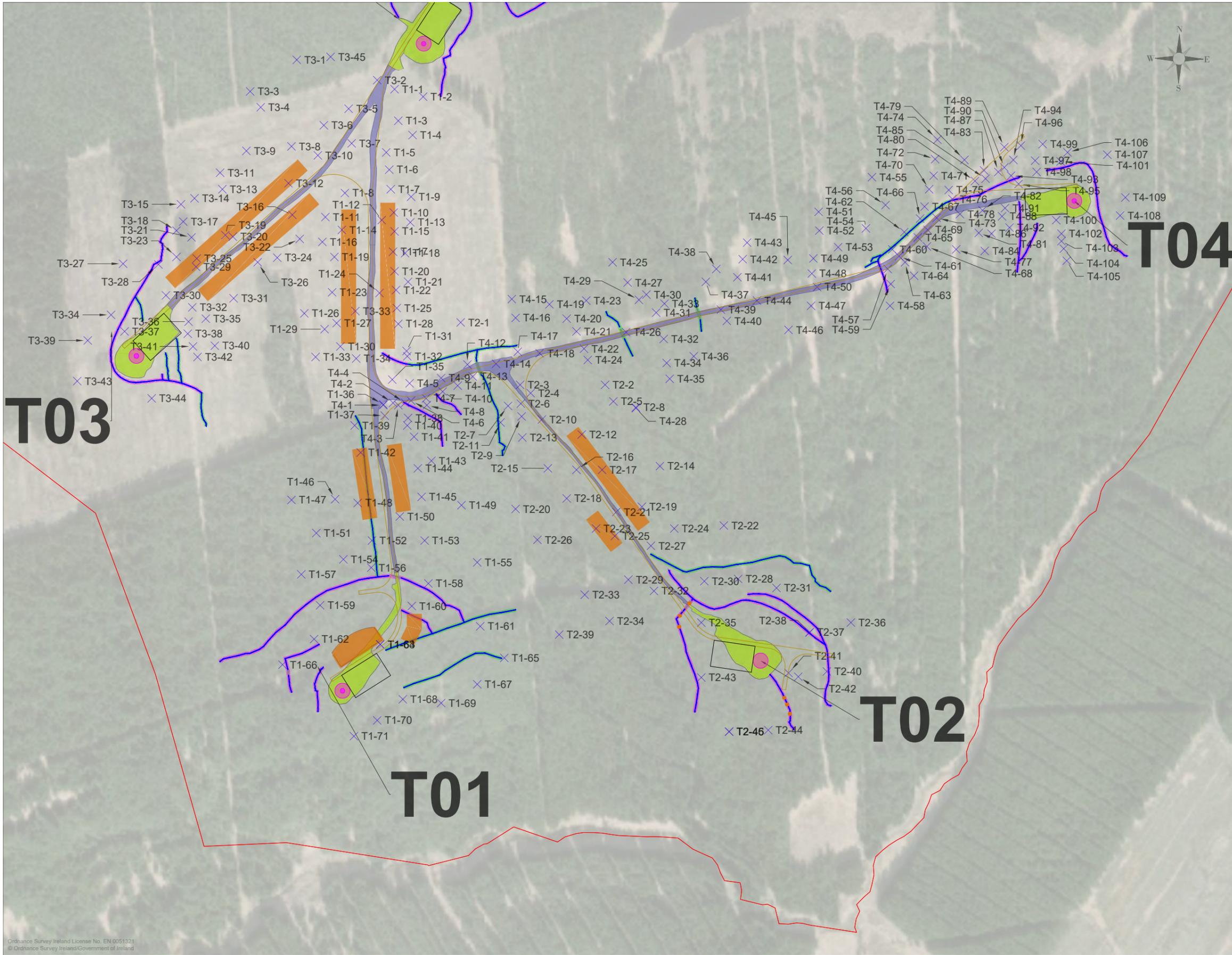
- T18-D — Assesment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits

NOTES

1. Refer to MNBG r041.1 for peat assessment.

Ordnance Survey Ireland License No. EN 0051321
 © Ordnance Survey Ireland/Government of Ireland

NOTES					ENGINEER The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie		CLIENT 		PROJECT MEENBOG WIND FARM											
					DRAWN BY E. ANDRADE		DATE 21/05/2021		PAPER SIZE A3											
					CHECKED AND APPROVED J. SHANAHAN		DATE 21/05/2021		SCALE 1:5,000											
					STATUS INFORMATION		DRAWING NUMBER MNBG d017.3.6		REVISION 											
<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DRAWN BY</th> <th>CHECKED BY</th> <th>DETAILS</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>21/05/2021</td> <td>E.A.</td> <td>J.S.</td> <td>FIRST ISSUE</td> </tr> </tbody> </table>					REV	DATE	DRAWN BY	CHECKED BY	DETAILS	A	21/05/2021	E.A.	J.S.	FIRST ISSUE			TITLE PEAT STABILITY ASSESSMENT SHEET 6		REVISION A	
REV	DATE	DRAWN BY	CHECKED BY	DETAILS																
A	21/05/2021	E.A.	J.S.	FIRST ISSUE																



OVERALL PLAN
HATCHED AREA REFERS TO THIS DRAWING
(1:100,000)

LEGEND

- T18-D — Assesment Point
- As-built Turbine Base
- As-built Solid Site Roads
- As-built Floating Site Roads
- As-built Floating Road Widened To Solid
- As-built Hardstands
- As-built Stone Berms
- As-built Emergency Containment/Stabilisation Walls
- As-built Wind Farm Drain
- Existing Drain
- As-built Silt Trap
- As-built Settlement Pond
- Peat Storage Areas
- Excavated Borrow Pit
- Planning Boundary
- Planning Layout Hardstands
- Planning Layout Roads
- Planning Layout Borrow Pits

NOTES

1. Refer to MNBG r041.1 for peat assessment.

Ordnance Survey Ireland License No. EN 0051321
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	21/05/2021	E.A.	J.S.	FIRST ISSUE

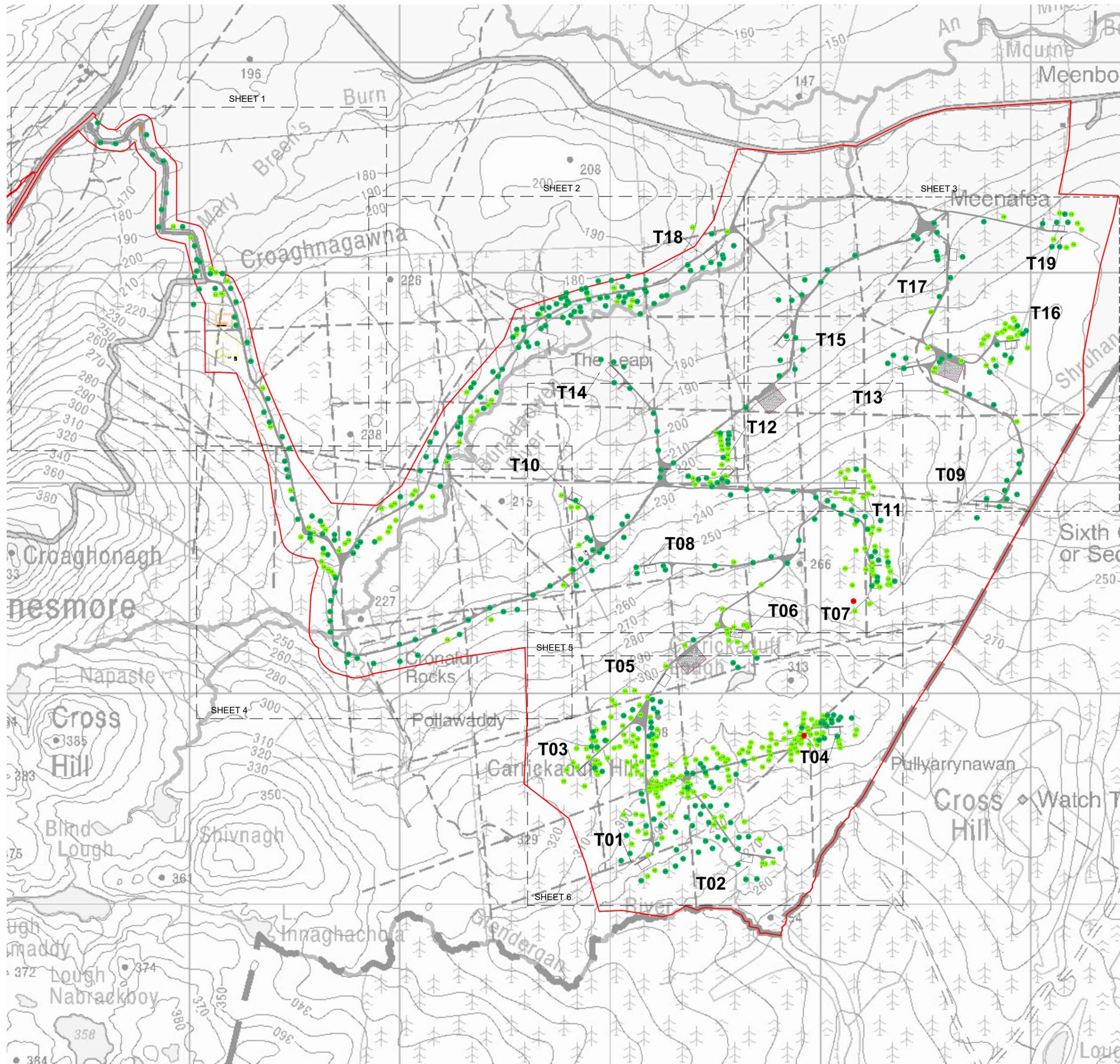
		The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E. hello@ionicconsulting.ie T. +353 (0) 1 845 5031 W. www.ionicconsulting.ie	
ENGINEER	E. ANDRADE	DATE	21/05/2021
CHECKED AND APPROVED	J. SHANAHAN	DATE	21/05/2021

CLIENT	MEENBOG WIND FARM		
PROJECT	PEAT STABILITY ASSESSMENT SHEET 7		
TITLE	A		
DRAWING NUMBER	MNBG d017.3.7		
PAPER SIZE	A3	SCALE	1:5,000
STATUS	INFORMATION		

REVISION	A
----------	---

Printed: 24/05/2021 10:30:33
Path: \\D:\BAP\Projects\Windfarm\Meenbog\MNBG\Drawings\MNBG 017.3 Peat Stability Assessment

APPENDIX D – Eurocode 7 Overdesign Factors



Eurocode 7 Overdesign Factor

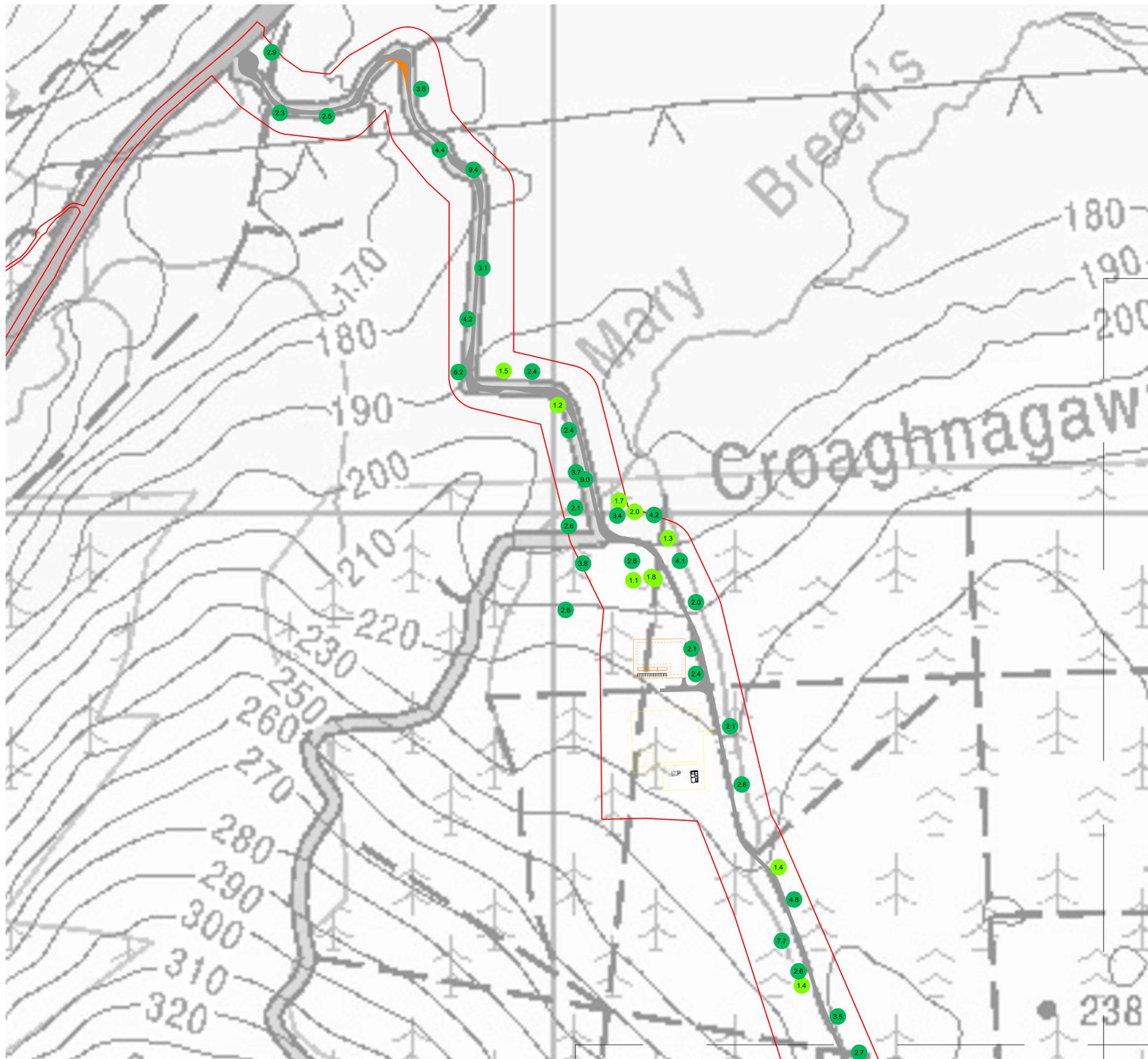
- < 1
- 1-2
- > 2

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	ODF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER 		The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie	
CLIENT MEENBOG WIND FARM		PROJECT OVERDESIGN F.O.S. MAP OVERALL SITE	
DRAWN BY M. BROWNE	DATE 05/05/2021	PAPER SIZE A1	SCALE 1:10,000
CHECKED AND APPROVED J. SHANAHAN	DATE 05/05/2021	STATUS INFORMATION	DRAWING NUMBER MNBG d029.1.0

PROJECT MEENBOG WIND FARM		REVISION B
TITLE OVERDESIGN F.O.S. MAP OVERALL SITE		DRAWING NUMBER MNBG d029.1.0



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

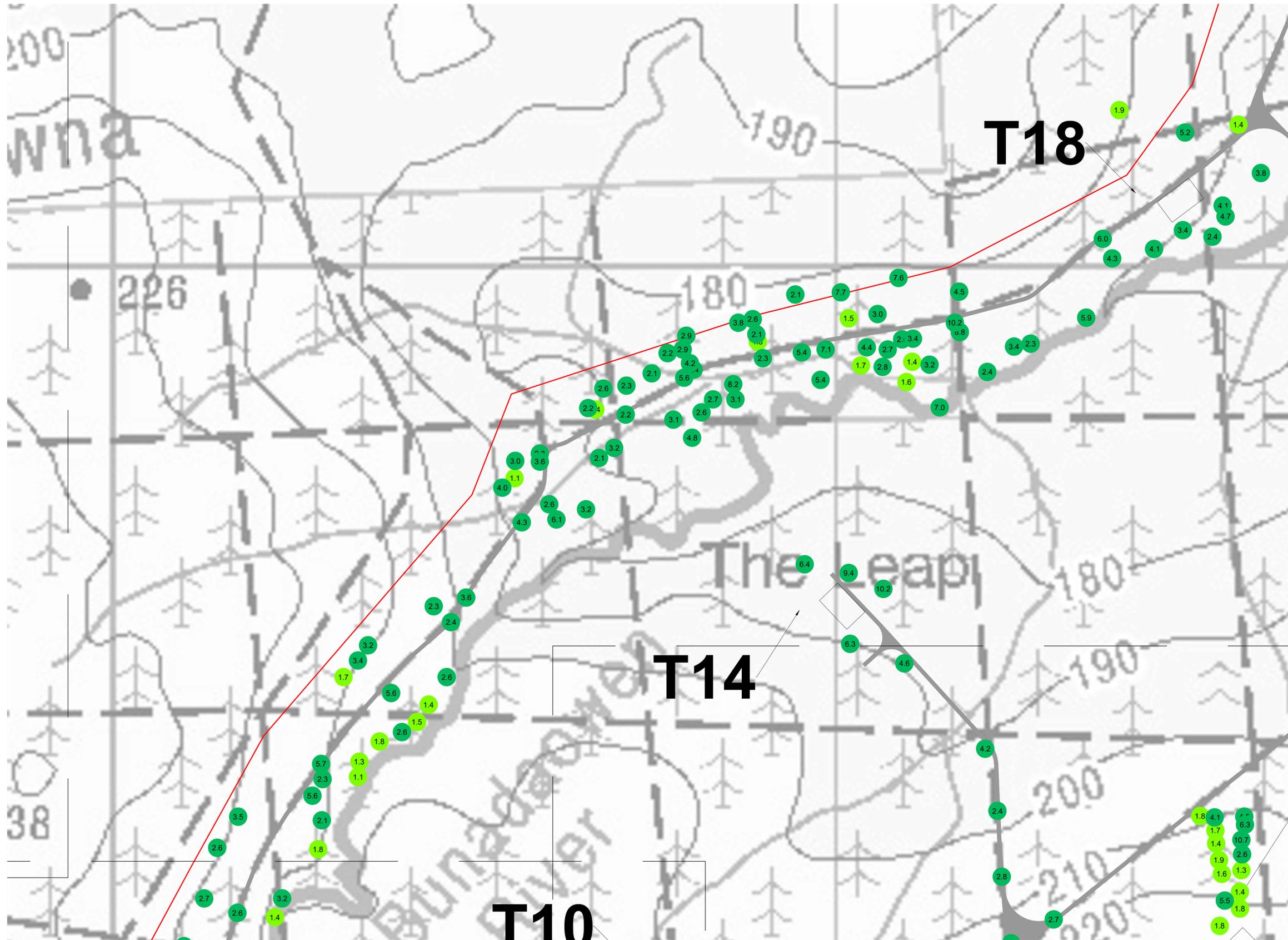
REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	COF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER	IONIC CONSULTING The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie
CLIENT	
PROJECT	MEENBOG WIND FARM
TITLE	OVERDESIGN F.O.S. MAP SHEET 1
REVISION	B

DRAWN BY	M. BROWNE	DATE	05/05/2021
CHECKED AND APPROVED	J. SHANAHAN	DATE	05/05/2021

PAPER SIZE	A1	SCALE	NTS
STATUS	INFORMATION		

DRAWING NUMBER	MNBG d029.1.1
----------------	---------------



Eurocode 7 Overdesign Factor

- <math>< 1</math>
- $1-2$
- > 2

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	COF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
 E: info@ionicconsulting.ie
 T: +353 (0) 1 845 5031
 W: www.ionicconsulting.ie

CLIENT

PROJECT

MEENBOG WIND FARM

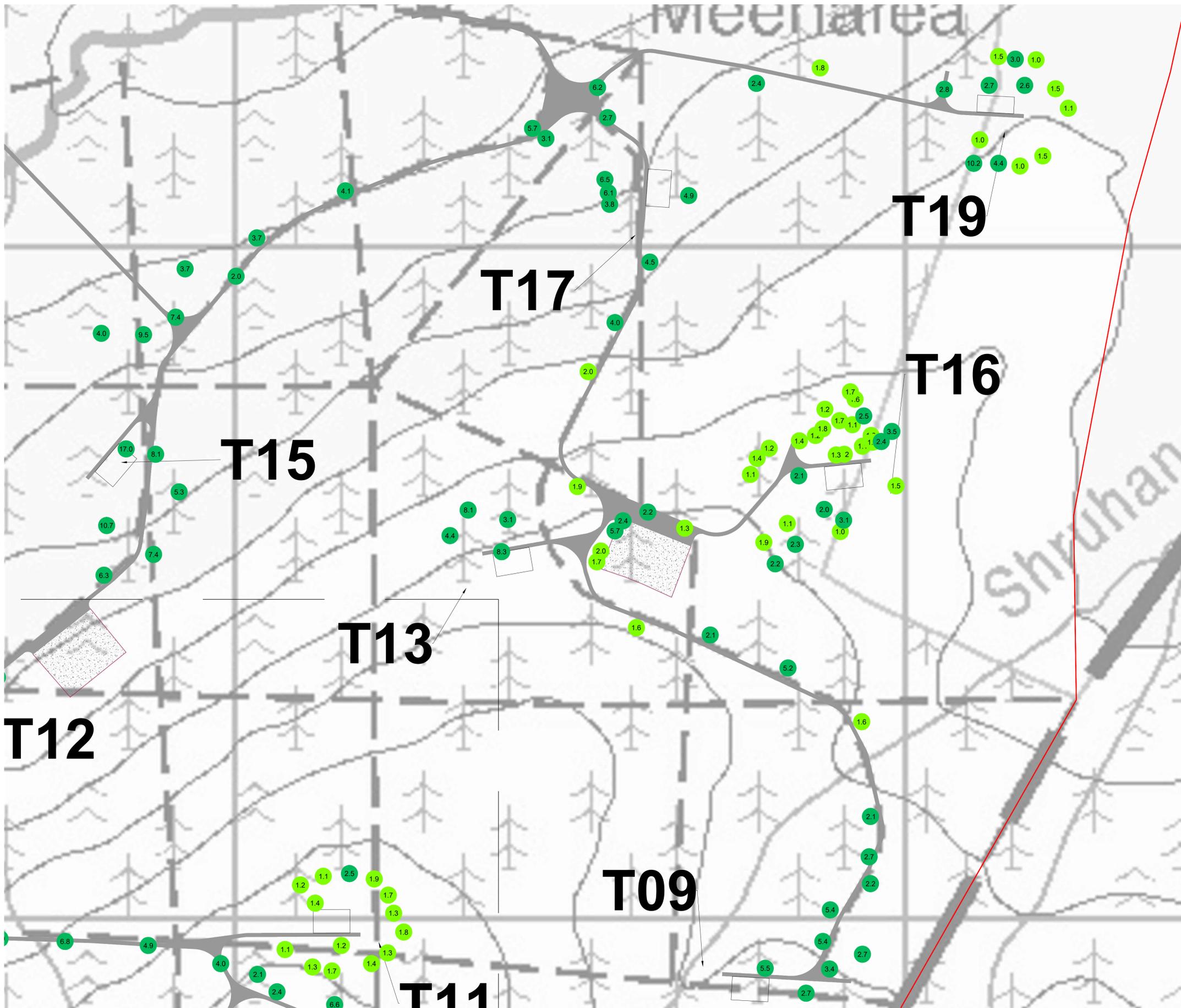
OVERDESIGN F.O.S. MAP SHEET 2

REVISION

B

DRAWN BY M. BROWNE CHECKED AND APPROVED J. SHANAHAN	DATE 05/05/2021	PAPER SIZE A1	SCALE NTS	DRAWING NUMBER MNBG d029.1.2
--	--------------------	------------------	--------------	---------------------------------

© Project/Revision/Meeting/MNBG/Overdesign/F.O.S. Map Factor of Safety/MNBG 0201 - Part Factor of Safety Map



Eurocode 7 Overdesign Factor

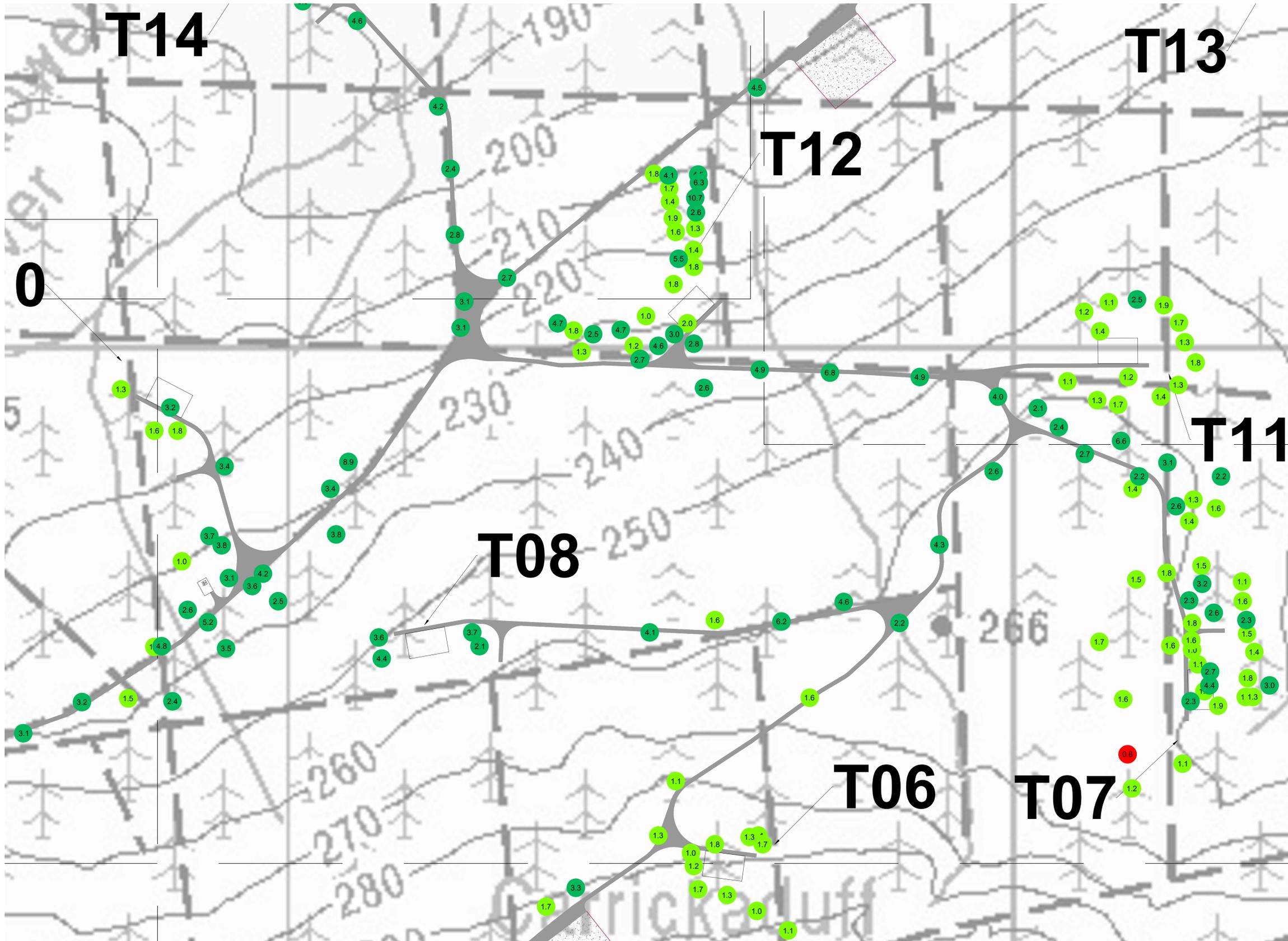
- < 1
- 1-2
- > 2

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	COF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: info@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		CLIENT MEENBOG WIND FARM	
DRAWN BY M. BROWNE	DATE 05/05/2021	PAPER SIZE A1	SCALE NTS
CHECKED AND APPROVED J. SHANAHAN	DATE 05/05/2021	STATUS INFORMATION	

PROJECT MEENBOG WIND FARM		REVISION B
TITLE OVERDESIGN F.O.S. MAP SHEET 3		
DRAWING NUMBER MNBG d029.1.3		<small>© Project/Issue/Meeting/MNBG/Overdesign/2021/Post Factor of Safety/MNBG 029.1/Post Factor of Safety/Map</small>



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

0

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	COF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
 E: info@ionicconsulting.ie
 T: +353 (0) 1 845 5031
 W: www.ionicconsulting.ie

CLIENT

PROJECT

MEENBOG WIND FARM

TITLE

OVERDESIGN F.O.S. MAP SHEET 5

REVISION

B

DRAWN BY

M. BROWNE

CHECKED AND APPROVED

J. SHANAHAN

DATE

05/05/2021

PAPER SIZE

A1

SCALE

NTS

STATUS

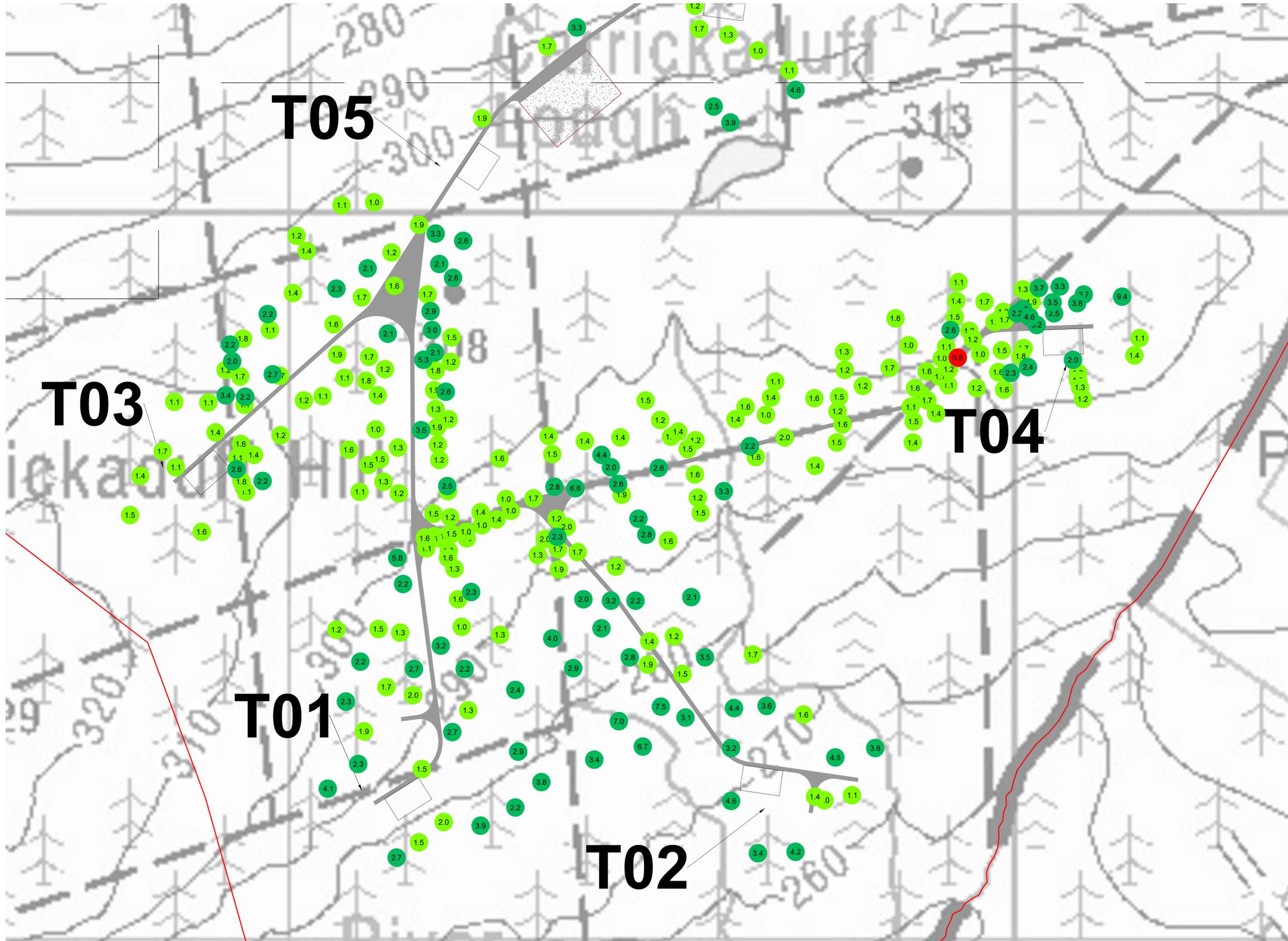
INFORMATION

DRAWING NUMBER

MNBG d029.1.5

DATE

05/05/2021



Eurocode 7 Overdesign Factor

- < 1
- 1-2
- > 2

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	19/05/2021	M.B.	C.O.D.	ODF POINTS ADDED
A	20/04/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER  The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		CLIENT 	
DRAWN BY M. BROWNE	DATE 05/05/2021	PAPER SIZE A1	SCALE NTS
CHECKED AND APPROVED J. SHANAHAN	DATE 05/05/2021	STATUS INFORMATION	

PROJECT MEENBOG WIND FARM		REVISION B
TITLE OVERDESIGN F.O.S. MAP SHEET 6		
DRAWING NUMBER MNBG d029.1.6		<small>© Project: Meenbog Wind Farm; MNBG d029.1.6; All Rights Reserved. 2021. All Rights Reserved. 2021. All Rights Reserved. 2021. All Rights Reserved. 2021.</small>

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
SUB-1	204562	387715	1.4	16	7.4	10	13.3	0.0	0.0	6.39	3.73	2.86		
SUB-2	204794	387658	1.7	8.5	2.8	10	13.3	0.0	0.0	7.32	4.61	3.63		
SUB-3	204575	387621	1.2	9	5.4	10	13.3	0.0	0.0	5.72	3.12	2.34		
SUB-4	204648	387616	1.4	14	7.5	10	13.3	0.0	0.0	5.52	3.22	2.47		
SUB-5	204823	387564	1.0	12	4.1	10	13.3	0.0	0.0	12.02	6.01	4.40		
SUB-6	204875	387533	2.2	13.5	1.5	10	13.3	0.0	0.0	16.75	11.52	9.38		
SUB-7	204889	387381	2.2	11	3.7	10	13.3	0.0	0.0	5.55	3.81	3.11		
SUB-8	204866	387302	2.3	14	3.4	10	13.3	0.0	0.0	7.34	5.12	4.19		
SUB-9	204922	387222	4.2	5	2.3	10	13.3	0.0	0.0	2.12	1.71	1.50		
SUB-10	204966	387221	5.0	6	1.5	10	13.3	0.0	0.0	3.28	2.73	2.43		
SUB-11	204852	387220	2.0	13.5	2.4	10	13.3	0.0	0.0	11.52	7.68	6.18		
SUB-12	205006	387169	2.5	5	3.9	10	13.3	0.0	0.0	2.11	1.50	1.24		
SUB-13	205023	387130	1.8	10	4.8	10	13.3	0.0	0.0	4.76	3.06	2.43		
SUB-14	205034	387065	0.8	5.5	2.4	10	13.3	0.0	0.0	11.74	5.22	3.71		
SUB-15	205048	387054	1.5	17	2.4	10	13.3	0.0	0.0	19.35	11.61	8.99		
SUB-16	205101	387021	2.5	8.5	4.8	10	13.3	0.0	0.0	2.91	2.08	1.72		
SUB-17	205033	387010	1.4	10.5	6.5	10	13.3	0.0	0.0	4.76	2.78	2.13		
SUB-18	205125	387004	1.2	6	4.2	10	13.3	0.0	0.0	4.89	2.67	2.00		
SUB-19	205155	386999	0.9	11	4.1	10	13.3	0.0	0.0	12.24	5.80	4.19		
SUB-20	205098	386998	2.6	11	3.1	10	13.3	0.0	0.0	5.60	4.04	3.36		
SUB-21	205023	386982	2.0	7	2.9	10	13.3	0.0	0.0	4.95	3.30	2.65		
SUB-22	205177	386963	1.7	8	7.4	10	13.3	0.0	0.0	2.63	1.66	1.30		
SUB-23	205121	386928	2.1	10.5	4.4	10	13.3	0.0	0.0	4.67	3.16	2.56		
SUB-24	205195	386928	0.7	11.5	4.8	10	13.3	0.0	0.0	14.07	5.79	4.06		
SUB-25	205045	386924	1.7	12	3.8	10	13.3	0.0	0.0	7.62	4.80	3.78		
SUB-26	205151	386903	2.7	11	5.8	10	13.3	0.0	0.0	2.89	2.11	1.76		
SUB-27	205156	386900	3.0	8.5	5.8	10	13.3	0.0	0.0	2.01	1.51	1.28		
SUB-28	205123	386898	3.5	6.5	4.7	10	13.3	0.0	0.0	1.62	1.26	1.09		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
SUB-29	205220	386864	1.4	14.5	9.4	10	13.3	0.0	0.0	4.59	2.68	2.05		
SUB-30	205018	386852	2.0	7	2.8	10	13.3	0.0	0.0	5.12	3.42	2.75		
SUB-31	205213	386792	1.5	9.5	5.7	10	13.3	0.0	0.0	4.58	2.75	2.13		
SUB-32	205220	386753	2.5	12	4.9	10	13.3	0.0	0.0	4.03	2.88	2.38		
SUB-33	205273	386672	0.8	10	7.9	10	13.3	0.0	0.0	6.56	2.91	2.07		
SUB-34	205291	386582	1.5	9	4.5	10	13.3	0.0	0.0	5.48	3.29	2.55		
SUB-35	205348	386454	3.0	11.5	7.1	10	13.3	0.0	0.0	2.23	1.67	1.42		
SUB-36	205372	386404	1.1	17	5.2	10	13.3	0.0	0.0	12.23	6.41	4.76		
SUB-37	205353	386340	0.3	28	7.4	10	13.3	0.0	0.0	52.20	12.05	7.72		
SUB-38	205379	386293	1.0	9	5.2	10	13.3	0.0	0.0	7.12	3.56	2.61		
SUB-39	205384	386271	0.9	8	8.9	10	13.3	0.0	0.0	4.15	1.97	1.42		
SUB-40	205440	386223	0.8	18	8.4	10	13.3	0.0	0.0	11.12	4.94	3.52		
SUB-41	205473	386167	0.9	10	5.8	10	13.3	0.0	0.0	7.89	3.74	2.70		
SUB-42	205452	386107	1.7	11	6.5	10	13.3	0.0	0.0	4.11	2.59	2.04		
SUB-43	205461	386068	2.0	11	3.4	10	13.3	0.0	0.0	6.64	4.42	3.56		
SUB-44	205468	386032	1.4	10	2.8	10	13.3	0.0	0.0	10.46	6.10	4.68		
SUB-45	205481	385968	1.3	8	5.6	10	13.3	0.0	0.0	4.53	2.56	1.94		
SUB-46	205488	385927	5.0	8.5	2.5	10	13.3	0.0	0.0	2.79	2.32	2.07		
SUB-47	205582	385846	1.8	7	2.9	10	13.3	0.0	0.0	5.50	3.53	2.80		
SUB-48	205514	385831	2.4	9.5	3.8	10	13.3	0.0	0.0	4.28	3.02	2.49		
SUB-49	205622	385822	2.5	9	2.9	10	13.3	0.0	0.0	5.09	3.64	3.01		
SUB-50	205632	385801	2.0	7.5	4.6	10	13.3	0.0	0.0	3.35	2.23	1.80		
SUB-51	205566	385791	3.0	4	3.3	10	13.3	0.0	0.0	1.66	1.24	1.05		
SUB-52	205647	385781	2.2	3	3.1	10	13.3	0.0	0.0	1.80	1.24	1.01		
SUB-53	205590	385766	2.9	8	5.2	10	13.3	0.0	0.0	2.18	1.62	1.37		
SUB-54	205572	385762	1.0	13	6.1	10	13.3	0.0	0.0	8.79	4.39	3.22		
SUB-55	205632	385760	1.7	16	3.6	10	13.3	0.0	0.0	10.73	6.75	5.32		
SUB-56	205689	385758	2.3	6	2.8	10	13.3	0.0	0.0	3.90	2.70	2.21		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
SUB-57	205529	385747	4.2	7	3.7	10	13.3	0.0	0.0	1.85	1.49	1.31		
SUB-58	205572	385742	1.4	14	6.2	10	13.3	0.0	0.0	6.65	3.88	2.98		
SUB-59	205689	385733	2.7	11	2.6	10	13.3	0.0	0.0	6.42	4.69	3.91		
SUB-60	205581	385726	1.9	8	4.6	10	13.3	0.0	0.0	3.76	2.46	1.97		
SUB-61	205636	385692	2.3	8	3.5	10	13.3	0.0	0.0	4.08	2.84	2.33		
SUB-62	205709	385681	2.2	7.5	4.4	10	13.3	0.0	0.0	3.18	2.19	1.78		
SUB-63	205635	385668	5.1	7.5	3.3	10	13.3	0.0	0.0	1.83	1.53	1.37		
SUB-64	205657	385663	2.7	9	3.2	10	13.3	0.0	0.0	4.27	3.12	2.60		
SUB-65	205627	385630	5.3	6	3.4	10	13.3	0.0	0.0	1.37	1.15	1.03		
SUB-66	205639	385604	3.5	9	4.4	10	13.3	0.0	0.0	2.40	1.87	1.61		
SUB-67	205660	385592	4.2	9	4.3	10	13.3	0.0	0.0	2.05	1.65	1.45		
SUB-68	205675	385582	3.0	9	4.3	10	13.3	0.0	0.0	2.87	2.15	1.82		
SUB-69	205687	385566	1.8	7	4.1	10	13.3	0.0	0.0	3.90	2.50	1.99		
SR-1	205668	385347	1.0	14	4.8	10	13.3	0.0	0.0	11.99	6.00	4.39		
SR-2	205668	385392	0.5	13	5.7	10	13.3	0.0	0.0	18.79	6.26	4.22		
SR-3	205669	385295	0.5	12	7.4	10	13.3	0.0	0.0	13.42	4.47	3.01		
SR-4	205671	385444	1.7	17	6.3	10	13.3	0.0	0.0	6.55	4.12	3.25		
SR-5	205690	385486	0.8	12	4.4	10	13.3	0.0	0.0	14.94	6.40	4.52		
SR-6	205695	385552	1.0	14	2.3	10	13.3	0.0	0.0	24.94	12.47	9.14		
SR-7	205695	385237	0.5	20	4.9	10	13.3	0.0	0.0	33.57	11.19	7.53		
SR-8	205748	385151	0.8	12	6.9	10	13.3	0.0	0.0	8.98	3.99	2.84		
SR-9	205757	385189	1.7	13	4.9	10	13.3	0.0	0.0	6.42	4.04	3.18		
SR-10	205797	385171	1.8	25	6.1	10	13.3	0.0	0.0	9.39	6.04	4.79		
SR-11	205875	385146	1.2	13	5.2	10	13.3	0.0	0.0	8.57	4.68	3.51		
SR-12	205998	385237	0.50	14	4.4	10	13.3	0.0	0.0	26.15	8.72	5.87		
SR-13	206000	385156	1.00	12	5.7	10	13.3	0.0	0.0	8.67	4.34	3.18		
SR-14	206074	385259	1.0	20	2.9	10	13.3	0.0	0.0	28.27	14.14	10.36		
SR-15	206085	385185	1.0	7	3.8	10	13.3	0.0	0.0	7.56	3.78	2.77		
SR-16	206163	385301	2.0	14	6.6	10	13.3	0.0	0.0	4.38	2.92	2.35		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
SR-17	206227	385258	1.5	8	7.1	10	13.3	0.0	0.0	3.11	1.86	1.44		
SR-18	206284	385284	1.0	14	5.3	10	13.3	0.0	0.0	10.87	5.44	3.98		
SR-19	206326	385352	1.0	17.5	5.8	10	13.3	0.0	0.0	12.43	6.22	4.56		
SR-20	206428	385410	0.3	14	7.4	10	13.3	0.0	0.0	31.32	6.26	3.96		
SR-21	206434	385354	1.0	7	5.7	10	13.3	0.0	0.0	5.06	2.53	1.85		
SR-22	206493	385392	1.0	10	5.8	10	13.3	0.0	0.0	7.10	3.55	2.60		
SR-23	206559	385402	0.6	7	5.9	10	13.3	0.0	0.0	8.15	3.06	2.10		
SR-24	206634	385471	0.75	17.5	9.6	10	13.3	0.0	0.0	10.14	4.34	3.07		
SR-25	206715	385514	0.9	15	7.4	10	13.3	0.0	0.0	9.32	4.42	3.19		
SR-26	206825	385591	0.6	12	4.4	10	13.3	0.0	0.0	18.68	7.00	4.81		
SR-27	206840	385515	1.1	8.5	5.2	10	13.3	0.0	0.0	6.12	3.20	2.38		
SR-28	206889	385624	0.8	16	5.1	10	13.3	0.0	0.0	17.21	7.38	5.21		
SR-29	206914	385588	1.1	8	3.3	10	13.3	0.0	0.0	9.04	4.73	3.51		
SR-30	206965	385691	0.8	20	8	10	13.3	0.0	0.0	13.82	5.92	4.18		
SR-31	206986	385653	1.2	11	6.1	10	13.3	0.0	0.0	6.20	3.38	2.54		
SR-32	207058	385808	0.8	15	7.4	10	13.3	0.0	0.0	11.18	4.79	3.38		
SR-33	207066	385745	1.7	10.5	3.3	10	13.3	0.0	0.0	7.68	4.83	3.81		
SR-34	207083	385845	1.0	23	3.9	10	13.3	0.0	0.0	24.21	12.11	8.87		
SR-35	207238	386030	1.5	15	6.2	10	13.3	0.0	0.0	6.65	3.99	3.09		
SR-36	207302	386099	0.7	9	5.7	10	13.3	0.0	0.0	9.29	3.83	2.68		
SR-37	207505	386242	0.8	10	9.1	10	13.3	0.0	0.0	5.72	2.54	1.81		
SR-38	207647	386361	0.8	17	6.2	10	13.3	0.0	0.0	14.14	6.28	4.47		
SR-39	207802	386873	1.1	10	3.6	10	13.3	0.0	0.0	10.36	5.43	4.03		
SR-40	207806	386513	0.6	16	4.5	10	13.3	0.0	0.0	24.35	9.13	6.27		
SR-41	207865	386871	0.5	16	3.1	20	13.3	0.0	0.0	42.33	8.47	9.49		
SR-42	207880	386544	1.2	19	3.6	10	13.3	0.0	0.0	18.05	9.84	7.39		
SR-43	207883	386693	1.00	22	4.1	10	13.3	0.0	0.0	22.04	11.02	8.07		
SR-44	207913	386897	0.8	22	4.8	20	13.3	0.0	0.0	23.56	6.73	7.45		
SR-45	207918	386637	1.0	25	7.2	10	13.3	0.0	0.0	14.36	7.18	5.26		
SR-46	207927	386969	0.6	10	4.8	10	13.3	0.0	0.0	14.28	5.35	3.68		
SR-47	208003	386958	1.8	9	5.2	10	13.3	0.0	0.0	3.96	2.54	2.02		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
SR-48	208034	387015	1.7	15	4.9	10	13.3	0.0	0.0	7.41	4.66	3.67		
SR-49	208166	387085	0.6	15	6.5	10	13.3	0.0	0.0	15.88	5.95	4.09		
SR-50	208445	387178	2.8	17	2.7	10	13.3	0.0	0.0	9.22	6.79	5.70		
SR-51	208465	387163	1.7	8.5	3.3	15	13.3	0.0	0.0	6.21	3.30	3.08		
T1-1	207202	384974	3.3	6	1.5	10	13.3	20.7	10.3	4.96		3.26		
T1-2	207240	384964	4.1	6	1.6	10	13.3	20.7	10.3	3.75		2.63		
T1-3	207207	384932	2.6	4	1.8	10	13.3	20.7	10.3	3.50		2.10		
T1-4	207226	384913	2.5	4	1.4	10	13.3	20.7	10.3	4.68		2.77		
T1-5	207191	384890	3.0	5	1.9	10	13.3	20.7	10.3	3.59	2.69	2.28	2.13	1.68
T1-6	207195	384867	2.4	5	1.7	10	13.3	20.7	10.3	5.02		2.92		
T1-7	207197	384841	1.9	4.5	1.7	10	13.3	20.7	10.3	5.71		2.99		
T1-8	207136	384836	2.4	4	1.9	10	13.3	20.7	10.3	3.59		2.09		
T1-9	207224	384831	3.7	3	1.5	10	13.3	20.7	10.3	2.21		1.51		
T1-10	207201	384810	3.5	4	1.5	10	13.3	20.7	10.3	3.12		2.09		
T1-11	207110	384804	3.0	4	2	10	13.3	20.7	10.3	2.73		1.73		
T1-12	207185	384800	3.0	14	1.7	10	13.3	20.7	10.3	11.24	8.43	7.13	6.65	5.26
T1-13	207223	384797	4.9	3	1.5	10	13.3	20.7	10.3	1.67		1.24		
T1-14	207132	384787	4.5	4	2.1	10	13.3	20.7	10.3	1.73		1.25		
T1-15	207202	384785	4.4	4	1.5	10	13.3	20.7	10.3	2.48		1.78		
T1-16	207106	384771	3.0	4	1.9	10	13.3	20.7	10.3	2.87		1.82		
T1-17	207200	384758	4.9	5	1.6	10	13.3	20.7	10.3	2.61		1.93		
T1-18	207216	384756	3.0	5	1.7	10	13.3	20.7	10.3	4.01		2.55		
T1-19	207122	384751	3.0	3	1.8	10	13.3	20.7	10.3	2.28		1.44		
T1-20	207202	384732	3.2	4.5	2.9	10	13.3	20.7	10.3	1.99		1.29		
T1-21	207220	384718	2.4	3	2.5	10	13.3	20.7	10.3	2.05		1.19		
T1-22	207204	384707	3.5	6	2.5	10	13.3	20.7	10.3	2.81		1.88		
T1-23	207119	384704	4.2	3	2	10	13.3	20.7	10.3	1.46		1.04		
T1-24	207182	384703	3.0	11	2	10	13.3	20.7	10.3	7.51	5.63	4.76	4.44	3.51
T1-25	207205	384683	3.4	4	2.6	10	13.3	20.7	10.3	1.85		1.23		
T1-26	207082	384676	3.3	4.5	2.3	10	13.3	20.7	10.3	2.43		1.59		
T1-27	207125	384663	5.0	6	2.5	10	13.3	20.7	10.3	1.97		1.46		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T1-28	207207	384662	2.7	3.5	2.7	10	13.3	20.7	10.3	1.97		1.20		
T1-29	207109	384655	4.2	4	1.8	10	13.3	20.7	10.3	2.17		1.53		
T1-30	207130	384632	4.7	5	2.4	10	13.3	20.7	10.3	1.82		1.33		
T1-31	207218	384626	2.9	6	2.1	10	13.3	20.7	10.3	4.04		2.53		
T1-32	207219	384619	3.0	5	2.2	10	13.3	20.7	10.3	3.10		1.97		
T1-33	207097	384618	3.0	3	2.4	10	13.3	20.7	10.3	1.71		1.08		
T1-34	207151	384616	3.3	5	3.3	10	13.3	20.7	10.3	1.88		1.24		
T1-35	207199	384588	4.0	5	1.8	10	13.3	20.7	10.3	2.84	2.28	1.99	1.87	1.54
T1-36	207187	384555	4.5	3	1.5	10	13.3	20.7	10.3	1.82		1.31		
T1-37	207189	384540	5.0	4	2.2	10	13.3	20.7	10.3	1.49		1.11		
T1-38	207220	384537	2.9	7.5	5.2	10	13.3	20.7	10.3	2.05		1.28		
T1-39	207149	384527	1.1	12	3	10	13.3	20.7	10.3	14.91		5.80		
T1-40	207219	384527	1.8	11	7.9	10	13.3	20.7	10.3	3.21		1.64		
T1-41	207228	384512	1.3	9	9.2	10	13.3	20.7	10.3	3.13		1.34		
T1-42	207157	384491	0.8	11	5	10	13.3	20.7	10.3	11.31	5.03	3.58	3.15	2.15
T1-43	207251	384480	3.0	6	2.3	10	13.3	20.7	10.3	3.56		2.26		
T1-44	207233	384470	2.0	3	2.1	10	13.3	20.7	10.3	2.93		1.57		
T1-45	207238	384432	1.9	3	3.3	10	13.3	20.7	10.3	1.96		1.03		
T1-46	207123	384429	3.1	7	4	10	13.3	20.7	10.3	2.32		1.49		
T1-47	207065	384428	2.5	5	4.1	10	13.3	20.7	10.3	2.00		1.18		
T1-48	207153	384424	1.8	4	2.4	10	13.3	20.7	10.3	3.79	2.44	1.94	1.76	1.31
T1-49	207291	384421	2.5	3	2.2	10	13.3	20.7	10.3	2.23		1.32		
T1-50	207209	384406	2.1	8	2.7	10	13.3	20.7	10.3	5.78		3.17		
T1-51	207098	384384	3.0	7	2.7	10	13.3	20.7	10.3	3.54		2.25		
T1-52	207172	384374	2.0	9	2.5	10	13.3	20.7	10.3	7.38	4.92	3.96	3.62	2.73
T1-53	207242	384374	2.8	7	2.9	10	13.3	20.7	10.3	3.53		2.18		
T1-54	207134	384349	1.7	5	3.6	10	13.3	20.7	10.3	3.35		1.66		
T1-55	207312	384345	3.0	10.5	3.8	10	13.3	20.7	10.3	3.78		2.40		
T1-56	207171	384338	1.2	9	4	10	13.3	20.7	10.3	7.70	4.20	3.15	2.83	2.00
T1-57	207078	384329	1.5	6	3.3	10	13.3	20.7	10.3	4.97		2.31		
T1-58	207247	384317	2.0	5	4.2	10	13.3	20.7	10.3	2.44		1.31		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T1-59	207103	384288	0.8	5	4.2	10	13.3	20.7	10.3	6.11		1.93		
T1-60	207225	384287	1.6	5	2.3	10	13.3	20.7	10.3	5.57		2.68		
T1-61	207316	384260	2.5	9	3	10	13.3	20.7	10.3	4.92		2.91		
T1-62	207095	384243	1.9	7	3.5	10	13.3	20.7	10.3	4.32		2.26		
T1-63	207183	384236	1.8	7	3.7	10	13.3	20.7	10.3	4.31	2.77	2.20	2.01	1.49
T1-64	207183	384236	1.8	7	3.7	10	13.3	20.7	10.3	4.31	2.77	2.20	2.01	1.49
T1-65	207348	384218	3.3	8	1.7	10	13.3	20.7	10.3	5.84		3.83		
T1-66	207053	384209	1.0	9	3.3	10	13.3	20.7	10.3	11.19		4.10		
T1-67	207312	384183	4.4	5	1.5	10	13.3	20.7	10.3	3.10		2.23		
T1-68	207213	384163	4.0	5	1.8	10	13.3	20.7	10.3	2.84		1.99		
T1-69	207264	384158	5.0	4.5	0.7	10	13.3	20.7	10.3	5.26		3.91		
T1-70	207179	384135	3.4	4	2.1	10	13.3	20.7	10.3	2.29		1.52		
T1-71	207148	384114	3.9	10	2.7	10	13.3	20.7	10.3	3.89		2.70		
T2-1	207290	384664	2.0	4	2.8	10	13.3	20.7	10.3	2.93		1.57		
T2-2	207482	384581	2.5	6	2.7	10	13.3	20.7	10.3	3.64		2.15		
T2-3	207369	384581	1.7	5	3.2	0	13.3	20.7	10.3	3.77	3.77	1.87	1.70	1.25
T2-4	207383	384570	0.7	15	7.6	0	13.3	20.7	10.3	11.68	11.68	3.36	2.95	1.99
T2-5	207493	384559	2.7	4.5	1.5	10	13.3	20.7	10.3	4.55		2.77		
T2-6	207370	384556	1.5	14	5.2	0	13.3	20.7	10.3	7.39	7.39	3.43	3.10	2.26
T2-7	207353	384553	2.0	8.5	4.7	10	13.3	20.7	10.3	3.72		1.99		
T2-8	207523	384551	3.0	2.5	1.8	10	13.3	20.7	10.3	1.90		1.20		
T2-9	207371	384539	1.9	5	3.3	10	13.3	20.7	10.3	3.27		1.71		
T2-10	207398	384535	1.1	7	3.8	0	13.3	20.7	10.3	6.87	6.87	2.67	2.39	1.68
T2-11	207343	384531	2.3	5	3.8	10	13.3	20.7	10.3	2.35		1.34		
T2-12	207451	384515	2.1	4	3.5	10	13.3	20.7	10.3	2.23		1.22		
T2-13	207372	384511	2.5	6	3.1	10	13.3	20.7	10.3	3.17		1.88		
T2-14	207555	384473	1.8	7	3.8	10	13.3	20.7	10.3	4.20		2.14		
T2-15	207406	384470	2.2	6	3.1	10	13.3	20.7	10.3	3.61		2.02		
T2-16	207444	384468	2.4	11	2.4	0	13.3	20.7	10.3	7.82	7.82	4.55	4.20	3.23
T2-17	207478	384468	1.4	6	3.5	10	13.3	20.7	10.3	5.02		2.25		
T2-18	207431	384430	1.7	7	4	10	13.3	20.7	10.3	4.23		2.10		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T2-19	207531	384419	2.1	5	4.5	10	13.3	20.7	10.3	2.17		1.19		
T2-20	207363	384416	2.2	10	2.6	10	13.3	20.7	10.3	7.16		4.01		
T2-21	207497	384412	2.6	11	5.2	0	13.3	20.7	10.3	3.35	3.35	2.01	1.86	1.45
T2-22	207640	384394	1.6	6.5	4.8	10	13.3	20.7	10.3	3.48		1.67		
T2-23	207470	384390	2.0	11	4.4	10	13.3	20.7	10.3	5.14		2.75		
T2-24	207574	384390	1.1	9	3.7	10	13.3	20.7	10.3	9.08		3.53		
T2-25	207495	384380	2.7	15	5.2	10	13.3	20.7	10.3	4.40	3.21	2.68	2.49	1.94
T2-26	207392	384375	1.7	10	4.1	10	13.3	20.7	10.3	5.89		2.92		
T2-27	207543	384367	0.9	8	5.2	0	13.3	20.7	10.3	7.03	7.03	2.41	2.13	1.47
T2-28	207659	384323	1.5	6	2.1	10	13.3	20.7	10.3	7.80		3.62		
T2-29	207512.9	384322	1.3	15	2.7	10	13.3	20.7	10.3	17.52		7.52		
T2-30	207614	384320	2.2	11	2.6	10	13.3	20.7	10.3	7.88		4.41		
T2-31	207710	384311	2.8	5	2.8	10	13.3	20.7	10.3	2.61		1.62		
T2-32	207547	384307	3.0	22	4.6	0	13.3	20.7	10.3	6.55	6.55	4.16	3.88	3.07
T2-33	207455	384302	2.3	13	1.9	10	13.3	20.7	10.3	12.18		6.96		
T2-34	207488	384267	2.3	10.5	1.6	10	13.3	20.7	10.3	11.68		6.67		
T2-35	207610	384265	1.0	15	4.4	0	13.3	20.7	10.3	14.01	14.01	5.13	4.56	3.18
T2-36	207809	384265	1.7	8	2.5	10	13.3	20.7	10.3	7.71		3.82		
T2-37	207754	384252	0.6	8	5	0	13.3	20.7	10.3	10.97	10.97	2.83	2.46	1.64
T2-38	207754	384252	0.6	8	3.1	10	13.3	20.7	10.3	17.64		4.54		
T2-39	207421	384249	1.7	7.5	2.6	10	13.3	20.7	10.3	6.95		3.45		
T2-40	207777	384200	2.1	4	3.8	10	13.3	20.7	10.3	2.06		1.13		
T2-41	207726	384198	1.5	5	4.4	10	13.3	20.7	10.3	3.11		1.45		
T2-42	207739	384193	1.5	5	4	0	13.3	20.7	10.3	3.42	3.42	1.59	1.44	1.05
T2-43	207610	384192	0.9	11	3.7	10	13.3	20.7	10.3	13.56		4.64		
T2-44	207699	384122	0.5	11	4.8	10	13.3	20.7	10.3	18.85		4.23		
T2-45	207647	384120	1.4	10	4	0	13.3	20.7	10.3	7.33	7.33	3.28	2.96	2.13
T2-46	207647	384120	1.4	10	3.8	10	13.3	20.7	10.3	7.72		3.45		
T3-1	207072	385013	3.1	6	4.5	10	13.3	20.7	10.3	1.77		1.13		
T3-2	207179	384986	3.7	6	1.8	0	13.3	20.7	10.3	3.69	3.69	2.51	2.37	1.92
T3-3	207010	384971	2.8	7	5.1	10	13.3	20.7	10.3	2.02		1.25		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T3-4	207024	384950	2.1	5	3.8	10	13.3	20.7	10.3	2.57		1.41		
T3-5	207141	384948	2.5	4.5	2.7	0	13.3	20.7	10.3	2.73	2.73	1.62	1.49	1.16
T3-6	207108	384926	3.1	7	2.1	0	13.3	20.7	10.3	4.40	4.40	2.83	2.64	2.10
T3-7	207145	384902	3.3	4	1.5	0	13.3	20.7	10.3	3.31	3.31	2.17	2.03	1.63
T3-8	207065	384898	3.0	4.5	1.7	10	13.3	20.7	10.3	3.61		2.29		
T3-9	207005	384892	5.0	5	2.1	10	13.3	20.7	10.3	1.95		1.45		
T3-10	207100	384886	3.6	5	1.7	0	13.3	20.7	10.3	3.35	3.35	2.26	2.12	1.72
T3-11	206970	384863	2.7	6	2.5	10	13.3	20.7	10.3	3.64		2.22		
T3-12	207061	384849	2.7	4	1.7	0	13.3	20.7	10.3	3.57	3.57	2.18	2.02	1.58
T3-13	206973	384841	2.6	3.5	2.9	10	13.3	20.7	10.3	1.90		1.14		
T3-14	206936	384829	2.4	8	4.4	10	13.3	20.7	10.3	3.11		1.81		
T3-15	206918	384821	1.8	5.5	2.9	10	13.3	20.7	10.3	4.32		2.20		
T3-16	207066	384807	3.8	5	1.5	0	13.3	20.7	10.3	3.59	3.59	2.47	2.33	1.89
T3-17	206921	384798	2.4	5.5	2.7	10	13.3	20.7	10.3	3.48		2.02		
T3-18	206912	384786	2.5	4	3.3	10	13.3	20.7	10.3	1.99		1.18		
T3-19	206977	384780	3.0	9	2.1	0	13.3	20.7	10.3	5.85	5.85	3.71	3.46	2.74
T3-20	206987	384778	3.0	5.5	2.1	0	13.3	20.7	10.3	3.58	3.58	2.27	2.12	1.67
T3-21	206932	384777	3.4	5	2.3	10	13.3	20.7	10.3	2.62		1.74		
T3-22	207076	384775	3.5	3	2.2	10	13.3	20.7	10.3	1.60		1.07		
T3-23	206912	384751	3.2	7.4	1.8	10	13.3	20.7	10.3	5.26		3.42		
T3-24	207046	384750	5.0	3	1.7	10	13.3	20.7	10.3	1.45		1.07		
T3-25	206939	384749	3.0	4	1.6	10	13.3	20.7	10.3	3.41		2.16		
T3-26	207020	384744	4.5	3.5	1.9	10	13.3	20.7	10.3	1.68		1.21		
T3-27	206841	384742	3.7	5	3.3	10	13.3	20.7	10.3	1.68		1.14		
T3-28	206888	384741	3.5	4	2.8	10	13.3	20.7	10.3	1.67		1.12		
T3-29	206938	384738	3.4	3	1.6	0	13.3	20.7	10.3	2.26	2.26	1.50	1.40	1.13
T3-30	206898	384700	4.0	3.5	1.4	0	13.3	20.7	10.3	2.56	2.56	1.79	1.69	1.38
T3-31	206988	384696	2.0	2	1.9	10	13.3	20.7	10.3	2.16		1.16		
T3-32	206933	384684	3.8	4	1.9	10	13.3	20.7	10.3	2.27		1.56		
T3-33	207150	384679	4.0	4	1.7	0	13.3	20.7	10.3	2.41	2.41	1.68	1.59	1.30
T3-34	206825	384674	2.0	4	2.6	10	13.3	20.7	10.3	3.15		1.69		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T3-35	206951	384669	3.1	4	2.4	10	13.3	20.7	10.3	2.20		1.41		
T3-36	206928	384665	3.7	3	2.1	10	13.3	20.7	10.3	1.58		1.08		
T3-37	206843	384652	3.2	4	3.1	10	13.3	20.7	10.3	1.65		1.07		
T3-38	206927	384649	2.4	5.5	2.1	10	13.3	20.7	10.3	4.47		2.60		
T3-39	206794	384640	5.0	5	2.2	10	13.3	20.7	10.3	1.86		1.38		
T3-40	206963	384633	3.1	6	2.3	10	13.3	20.7	10.3	3.45		2.21		
T3-41	206934	384632	2.6	4	2.1	10	13.3	20.7	10.3	3.00		1.80		
T3-42	206940	384618	3.2	4	3	10	13.3	20.7	10.3	1.71		1.11		
T3-43	206780	384586	4.2	5	2.3	10	13.3	20.7	10.3	2.12		1.50		
T3-44	206879	384563	4.5	4	1.7	10	13.3	20.7	10.3	2.14		1.55		
T3-45	207117	385017	5.0	5.5	3.2	10	13.3	20.7	10.3	1.41		1.05		
T4-1	207187	384554	4.5	3	1.2	10	13.3	20.7	10.3	2.27		1.64		
T4-2	207200	384557	5.9	2	1	10	13.3	20.7	10.3	1.39		1.07		
T4-3	207207	384554	5.7	3.5	1.7	10	13.3	20.7	10.3	1.48		1.13		
T4-4	207216	384557	7.3	5.5	1.7	0	13.3	20.7	10.3	1.81	1.81	1.47	1.41	1.24
T4-5	207222	384583	5.2	3.5	1.8	10	13.3	20.7	10.3	1.53		1.15		
T4-6	207224	384560	5.0	6	2	0	13.3	20.7	10.3	2.46	2.46	1.83	1.74	1.46
T4-7	207244	384563	4.8	4	1.9	0	13.3	20.7	10.3	1.80	1.80	1.32	1.26	1.05
T4-8	207245	384554	4.1	4.5	3.1	10	13.3	20.7	10.3	1.45		1.02		
T4-9	207264	384590	3.0	7	3.2	0	13.3	20.7	10.3	2.99	2.99	1.90	1.77	1.40
T4-10	207266	384572	3.0	7	4.4	0	13.3	20.7	10.3	2.18	2.18	1.38	1.29	1.02
T4-11	207286	384580	2.2	7	3.8	0	13.3	20.7	10.3	3.44	3.44	1.92	1.77	1.35
T4-12	207299	384608	2.0	5	3.6	0	13.3	20.7	10.3	2.85	2.85	1.53	1.40	1.05
T4-13	207306	384592	3.0	6	3.8	0	13.3	20.7	10.3	2.16	2.16	1.37	1.28	1.01
T4-14	207337	384609	3.0	8	3	0	13.3	20.7	10.3	3.64	3.64	2.31	2.16	1.71
T4-15	207358	384695	4.9	3.5	1.5	10	13.3	20.7	10.3	1.95		1.44		
T4-16	207363	384670	3.6	4	2	10	13.3	20.7	10.3	2.28		1.54		
T4-17	207366	384625	1.0	9	3	0	13.3	20.7	10.3	12.30	12.30	4.51	4.01	2.79
T4-18	207395	384623	0.7	15	2.2	0	13.3	20.7	10.3	39.90	39.90	11.50	10.08	6.80
T4-19	207408	384688	4.0	3	1.5	10	13.3	20.7	10.3	2.05		1.43		
T4-20	207431	384669	1.1	7	2.3	10	13.3	20.7	10.3	11.34		4.41		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T4-21	207444	384652	1.6	5	3.0	10	13.3	20.7	10.3	4.27		2.05		
T4-22	207454	384629	1.4	9	3.0	10	13.3	20.7	10.3	8.79	5.13	3.93	3.54	2.56
T4-23	207457	384693	3.5	4	2.2	10	13.3	20.7	10.3	2.13		1.42		
T4-24	207459	384614	1.8	5	3	10	13.3	20.7	10.3	3.80		1.94		
T4-25	207492	384744	4.3	4	1.8	10	13.3	20.7	10.3	2.12		1.51		
T4-26	207510	384651	2.8	12	3	0	13.3	20.7	10.3	5.86	5.86	3.62	3.37	2.64
T4-27	207512	384717	3.4	2.5	1.7	10	13.3	20.7	10.3	1.77		1.17		
T4-28	207523	384550	3.0	2.5	1.4	10	13.3	20.7	10.3	2.44		1.55		
T4-29	207527	384694	3.6	4.5	2.4	10	13.3	20.7	10.3	2.13		1.44		
T4-30	207537	384701	4.1	3.5	1.7	10	13.3	20.7	10.3	2.06		1.45		
T4-31	207550	384677	1.9	4	3	10	13.3	20.7	10.3	2.88		1.51		
T4-32	207560	384642	1.5	7	5.7	10	13.3	20.7	10.3	3.37		1.57		
T4-33	207561	384689	4.0	4	2.4	10	13.3	20.7	10.3	1.71		1.19		
T4-34	207564	384610	3.3	3.5	2.3	10	13.3	20.7	10.3	1.89		1.24		
T4-35	207568	384589	3.3	3.5	1.9	10	13.3	20.7	10.3	2.29		1.50		
T4-36	207600	384619	0.8	8	3.9	10	13.3	20.7	10.3	10.53		3.33		
T4-37	207616	384718	3.6	6	3.4	10	13.3	20.7	10.3	2.01		1.36		
T4-38	207630	384735	2.3	4	2.5	10	13.3	20.7	10.3	2.85		1.63		
T4-39	207636	384681	1.4	9	3.5	0	13.3	20.7	10.3	7.54	7.54	3.37	3.04	2.19
T4-40	207644	384666	1.7	5	3.8	10	13.3	20.7	10.3	3.18		1.58		
T4-41	207658	384724	2.7	2	1.8	10	13.3	20.7	10.3	1.69		1.03		
T4-42	207665	384748	3.7	2	1.1	10	13.3	20.7	10.3	2.01		1.37		
T4-43	207671	384770	3.0	1.5	1.2	10	13.3	20.7	10.3	1.71		1.08		
T4-44	207684	384693	1.5	11	4.6	0	13.3	20.7	10.3	6.55	6.55	3.04	2.75	2.00
T4-45	207725	384747	2.9	3.5	1.9	10	13.3	20.7	10.3	2.60		1.63		
T4-46	207726	384654	2.7	6	3.9	10	13.3	20.7	10.3	2.34		1.43		
T4-47	207756	384686	2.3	4.5	3	10	13.3	20.7	10.3	2.67		1.53		
T4-48	207757	384729	1.9	4	3.8	10	13.3	20.7	10.3	2.27		1.19		
T4-49	207759	384749	2.3	4	2.7	10	13.3	20.7	10.3	2.64		1.51		
T4-50	207764	384711	1.5	11	5.7	0	13.3	20.7	10.3	5.30	5.30	2.46	2.23	1.62
T4-51	207766	384811	1.8	4.5	4.1	10	13.3	20.7	10.3	2.50		1.28		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T4-52	207767	384786	1.7	4	4.1	10	13.3	20.7	10.3	2.36		1.17		
T4-53	207792	384764	2.9	4	2.9	10	13.3	20.7	10.3	1.95		1.22		
T4-54	207829	384789	2.2	6	3.75	10	13.3	20.7	10.3	2.98		1.67		
T4-55	207837	384857	1.8	6	3.8	10	13.3	20.7	10.3	3.60		1.84		
T4-56	207855	384820	1.7	2	2.3	10	13.3	20.7	10.3	2.10		1.04		
T4-57	207858	384735	0.6	6	5.7	0	13.3	20.7	10.3	7.23	7.23	1.86	1.62	1.08
T4-58	207861	384686	1.9	4	3.2	10	13.3	20.7	10.3	2.70		1.41		
T4-59	207862	384715	1.9	4	3	10	13.3	20.7	10.3	2.88		1.51		
T4-60	207864	384761	1.5	6	4.8	10	13.3	20.7	10.3	3.43		1.59		
T4-61	207873	384752	3.1	4	3.1	10	13.3	20.7	10.3	1.71		1.10		
T4-62	207880	384784	2.0	5	3.5	10	13.3	20.7	10.3	2.93		1.57		
T4-63	207881	384744	2.5	7	4	10	13.3	20.7	10.3	2.87		1.70		
T4-64	207893	384726	3.0	6	3.8	10	13.3	20.7	10.3	2.16		1.37		
T4-65	207898	384777	2.5	9	5.6	0	13.3	20.7	10.3	2.65	2.65	1.57	1.45	1.12
T4-66	207901	384802	1.7	5	5.7	10	13.3	20.7	10.3	2.13		1.05		
T4-67	207907	384818	2.8	4	3.4	10	13.3	20.7	10.3	1.72		1.07		
T4-68	207910	384765	3.0	5	4	10	13.3	20.7	10.3	1.71		1.09		
T4-69	207911	384787	3.0	9	4.8	0	13.3	20.7	10.3	2.57	2.57	1.63	1.52	1.20
T4-70	207913	384841	2.3	9	3.6	10	13.3	20.7	10.3	4.46		2.55		
T4-71	207919	384859	2.6	5.5	3.4	10	13.3	20.7	10.3	2.55		1.53		
T4-72	207921	384881	3.7	3.5	1.9	10	13.3	20.7	10.3	2.04		1.39		
T4-73	207923	384803	3.0	7	5.6	0	13.3	20.7	10.3	1.72	1.72	1.09	1.02	0.80
T4-74	207924	384907	4.3	3	1.9	10	13.3	20.7	10.3	1.50		1.07		
T4-75	207939	384840	3.3	5	3.4	10	13.3	20.7	10.3	1.83		1.20		
T4-76	207944	384828	2.8	7	3.8	0	13.3	20.7	10.3	2.70	2.70	1.67	1.55	1.22
T4-77	207949	384761	1.7	8	8.2	10	13.3	20.7	10.3	2.38		1.18		
T4-78	207954	384808	2.9	9	5.7	0	13.3	20.7	10.3	2.24	2.24	1.41	1.31	1.03
T4-79	207960	384880	3.9	4	1.7	10	13.3	20.7	10.3	2.47		1.71		
T4-80	207974	384852	3.6	3.5	2.4	10	13.3	20.7	10.3	1.66		1.12		
T4-81	207979	384783	2.1	8	5.2	10	13.3	20.7	10.3	3.01		1.65		
T4-82	207984	384813	2.0	6	3	0	13.3	20.7	10.3	4.10	4.10	2.20	2.01	1.52

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T4-83	207986	384866	4.8	3.5	1.7	10	13.3	20.7	10.3	1.76		1.29		
T4-84	207987	384759	1.9	7	5	10	13.3	20.7	10.3	3.03		1.59		
T4-85	207988	384855	3.2	5	2.4	10	13.3	20.7	10.3	2.67		1.73		
T4-86	207996	384782	2.0	7	3.4	10	13.3	20.7	10.3	4.22		2.26		
T4-87	208005	384864	2.9	5.5	1.6	0	13.3	20.7	10.3	4.85	4.85	3.04	2.83	2.23
T4-88	208010	384805	2.1	7	4.3	10	13.3	20.7	10.3	3.18		1.75		
T4-89	208013	384897	4.1	3.5	1.9	10	13.3	20.7	10.3	1.84		1.29		
T4-90	208013	384870	2.7	3.5	1.6	10	13.3	20.7	10.3	3.32		2.02		
T4-91	208014	384816	2.3	3.5	2.1	10	13.3	20.7	10.3	2.97		1.69		
T4-92	208020	384790	2.4	5	2.1	10	13.3	20.7	10.3	4.06		2.36		
T4-93	208022	384859	2.2	7.5	1.7	10	13.3	20.7	10.3	8.21		4.60		
T4-94	208025	384880	2.0	6	3.5	10	13.3	20.7	10.3	3.52		1.89		
T4-95	208032	384848	2.0	5	1.7	10	13.3	20.7	10.3	6.02		3.23		
T4-96	208035	384899	2.2	6	1.7	10	13.3	20.7	10.3	6.57		3.68		
T4-97	208054	384879	1.9	5	1.6	10	13.3	20.7	10.3	6.73		3.53		
T4-98	208056	384864	1.7	6.5	2.1	0	13.3	20.7	10.3	7.46	7.46	3.70	3.36	2.48
T4-99	208064	384901	2.1	7	2.3	10	13.3	20.7	10.3	5.94		3.26		
T4-100	208082	384800	2.0	5.5	3.0	10	13.3	20.7	10.3	3.76		2.02		
T4-101	208088	384878	1.9	10	3	10	13.3	20.7	10.3	7.19		3.77		
T4-102	208089	384782	3.3	4.5	3	10	13.3	20.7	10.3	1.86		1.22		
T4-103	208089	384772	2.4	5	3.8	10	13.3	20.7	10.3	2.25		1.31		
T4-104	208092	384762	2.3	5	3.8	10	13.3	20.7	10.3	2.35		1.34		
T4-105	208096	384746	2.0	5	4.4	10	13.3	20.7	10.3	2.33		1.25		
T4-106	208097	384890	0.7	7	3.2	10	13.3	20.7	10.3	12.82		3.69		
T4-107	208150	384887	1.6	16	2.1	10	13.3	20.7	10.3	19.51		9.37		
T4-108	208167	384806	2.2	4	3	10	13.3	20.7	10.3	2.48		1.39		
T4-109	208174	384830	2.8	4	3.4	10	13.3	20.7	10.3	1.72		1.07		
T5-1	207980	385935	1.5	12	3.8	10	13.3	0.0	0.0	8.64	5.18	4.01		
T5-2	207974	385832	2.0	9	3.8	10	13.3	0.0	0.0	4.86	3.24	2.61		
T5-3	207899	385731	1.7	9	2.5	10	13.3	0.0	0.0	8.68	5.46	4.30		
T5-4	207844	385623	1.5	9	5.2	10	13.3	0.0	0.0	4.75	2.85	2.21		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T5-5	207720	385520	2.1	9	6	10	13.3	0.0	0.0	2.94	1.99	1.62		
T5-6	207535	385405	1.6	5	5.7	10	13.3	0.0	0.0	2.26	1.39	1.09		
T5-7	207511	385330	2.4	8	6	10	13.3	0.0	0.0	2.29	1.62	1.33		
T5-8	207397	385258	1.2	20	8.7	10	13.3	0.0	0.0	7.96	4.34	3.26		
T5-9	207356	385232	2.2	8	4.8	10	13.3	0.0	0.0	3.11	2.14	1.74		
T5-10	207266	385133	2.0	9.5	5.44	10	13.3	0.0	0.0	3.60	2.40	1.93		
T6-1	207699	385172	1.0	8	2.6	10	13.3	0.0	0.0	12.61	6.30	4.62		
T6-2	207556	385306	1.3	4	5.2	10	13.3	0.0	0.0	2.43	1.38	1.05		
T6-3	207560	385288	2.0	5	4.4	10	13.3	0.0	0.0	2.33	1.56	1.25		
T6-4	207566	385256	2.3	6.5	3.8	10	13.3	0.0	0.0	3.05	2.13	1.74		
T6-5	207586	385149	2.5	9	3.5	10	13.3	0.0	0.0	4.22	3.01	2.49		
T6-6	207589	385318	1.7	7	4.8	10	13.3	0.0	0.0	3.53	2.22	1.75		
T6-7	207606	385248	2.3	7	5.7	10	13.3	0.0	0.0	2.20	1.53	1.26		
T6-8	207609	385127	1.8	5	1.5	10	13.3	0.0	0.0	7.58	4.87	3.87		
T6-9	207637	385328	2.0	9	7.6	10	13.3	0.0	0.0	2.45	1.63	1.32		
T6-10	207647	385226	2.0	4	4.2	10	13.3	0.0	0.0	1.96	1.30	1.05		
T6-11	207649	385330	1.7	7	7.6	10	13.3	0.0	0.0	2.24	1.41	1.11		
T6-12	207655	385318	0.5	7	7.6	10	13.3	0.0	0.0	7.63	2.54	1.71		
T6-13	207690	385199	2.8	4.5	3.8	10	13.3	0.0	0.0	1.74	1.28	1.07		
T7-1	208035	385919	1.2	7	4.7	10	13.3	0.0	0.0	5.10		2.09		
T7-2	208064	385893	2.4	7	2.9	10	13.3	0.0	0.0	4.12		2.40		
T7-3	208150	385874	2.1	13	2.1	10	13.3	0.0	0.0	12.08		6.62		
T7-4	208100	385856	2.9	8	1.9	0	13.3	20.7	10.3	5.95	5.95	3.73	3.47	2.73
T7-5	208214	385844	2.0	10	3.5	10	13.3	0.0	0.0	5.86		3.14		
T7-6	208175	385825	2.8	8	2.4	0	13.3	20.7	10.3	4.88	4.88	3.02	2.80	2.20
T7-7	208288	385825	1.0	5	3.5	10	13.3	0.0	0.0	5.86		2.15		
T7-8	208166	385808	3.5	5	2.8	10	13.3	0.0	0.0	2.09		1.40		
T7-9	208250	385793	2.4	4.5	3.5	10	13.3	0.0	0.0	2.20		1.28		
T7-10	208226	385784	2.9	7	2.4	10	13.3	0.0	0.0	4.12		2.58		
T7-11	208281	385781	2.0	6	4.1	10	13.3	0.0	0.0	3.00		1.61		
T7-12	208244	385763	1.8	5	4.1	10	13.3	0.0	0.0	2.78		1.42		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T7-13	208261	385702	2.0	5.5	4	10	13.3	0.0	0.0	2.82		1.51		
T7-14	208213	385692	3.4	7	3.2	10	13.3	0.0	0.0	2.64		1.75		
T7-15	208171	385683	3.5	5	2.6	10	13.3	0.0	0.0	2.25		1.51		
T7-16	208317	385680	2.1	4	3.8	10	13.3	0.0	0.0	2.06		1.13		
T7-17	208262	385677	1.2	9	4	10	13.3	0.0	0.0	7.70		3.15		
T7-18	208244	385654	2.0	8	3.9	10	13.3	0.0	0.0	4.21		2.26		
T7-19	208318	385653	2.2	4	2.7	10	13.3	0.0	0.0	2.76		1.55		
T7-20	208278	385637	1.6	7	3.3	10	13.3	0.0	0.0	5.44		2.61		
T7-21	208323	385627	2.5	5.5	2.3	10	13.3	0.0	0.0	3.92		2.32		
T7-22	208248	385623	2.0	4.5	2.7	10	13.3	0.0	0.0	3.42		1.83		
T7-23	208324	385608	1.7	5	4.1	10	13.3	0.0	0.0	2.95		1.46		
T7-24	208247	385599	1.5	6	4.8	10	13.3	0.0	0.0	3.43		1.59		
T7-25	208120	385597	4.8	3	1.1	10	13.3	0.0	0.0	2.33		1.71		
T7-26	208218	385592	3.0	9	4.9	10	13.3	0.0	0.0	2.52		1.60		
T7-27	208248	385586	2.1	5	5.1	10	13.3	0.0	0.0	1.92		1.05		
T7-28	208334	385583	2.4	3.5	2.4	10	13.3	0.0	0.0	2.49		1.45		
T7-29	208256	385566	2.2	4	3.9	10	13.3	0.0	0.0	1.91		1.07		
T7-30	208273	385556	1.6	9	4.1	10	13.3	0.0	0.0	5.63		2.71		
T7-31	208325	385547	1.4	5	3.7	10	13.3	0.0	0.0	3.96		1.77		
T7-32	208272	385537	2.2	16	3.8	10	13.3	0.0	0.0	7.86		4.40		
T7-33	208355	385537	0.5	5	3.1	10	13.3	0.0	0.0	13.23		2.97		
T7-34	208265	385529	2.5	4	3.7	10	13.3	0.0	0.0	1.77		1.05		
T7-35	208332	385521	1.2	4	4.2	10	13.3	0.0	0.0	3.26		1.34		
T7-36	208322	385521	1.2	4	5.2	10	13.3	0.0	0.0	2.64		1.08		
T7-37	208153	385518	3.5	3.5	1.7	10	13.3	0.0	0.0	2.41		1.61		
T7-38	208246	385515	3.0	7	2.6	10	13.3	0.0	0.0	3.68		2.33		
T7-39	208284	385509	1.5	5	3.3	10	13.3	0.0	0.0	4.14		1.92		
T7-40	208159	385442	5.5	2.5	1.8	10	13.3	0.0	0.0	1.03		0.79		
T7-41	208235	385429	2.0	3	3.1	10	13.3	0.0	0.0	1.98		1.06		
T7-42	208165	385395	3.0	4	3	10	13.3	0.0	0.0	1.82		1.16		
T8-1	207767	385652	2.7	6.5	1.3	10	13.3	0.0	0.0	7.58	5.53	4.62		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T8-2	207681	385625	0.9	23	5.8	10	13.3	0.0	0.0	18.16	8.60	6.22		
T8-3	207589	385627	3.0	6	3.3	10	13.3	0.0	0.0	2.49	1.86	1.58		
T8-4	207499	385610	1.8	11	3.1	10	13.3	0.0	0.0	8.08	5.20	4.12		
T8-5	207264	385591	1.7	10	5.7	10	13.3	0.0	0.0	4.25	2.68	2.11		
T8-6	207254	385610.4	0.6	11	5.2	10	13.3	0.0	0.0	14.51	5.44	3.74		
T8-7	207129	385573.6	1.2	21	6.8	10	13.3	0.0	0.0	10.63	5.80	4.36		
T8-8	207125	385603	1.0	16	6.7	10	13.3	0.0	0.0	9.86	4.93	3.61		
T9-1	208541	386533	1.0	7	6.3	10	13.3	0.0	0.0	4.58	2.29	1.68		
T9-2	208600	386435	1.0	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65		
T9-3	208710	386424	1.4	6	3.8	10	13.3	0.0	0.0	4.63	2.70	2.07		
T9-4	208746	385837.5	0.8	20	2.7	10	13.3	0.0	0.0	37.95	16.87	12.00		
T9-5	208792	385928	1.0	12	3.3	10	13.3	0.0	0.0	14.91	7.46	5.47		
T9-6	208826	386375	0.9	8	2.4	10	13.3	0.0	0.0	15.18	7.19	5.20		
T9-7	208853	385891	1.9	6.5	2.7	10	13.3	0.0	0.0	5.19	3.40	2.72		
T9-8	208878	385968.5	0.9	10	2.9	10	13.3	0.0	0.0	15.71	7.44	5.38		
T9-9	208888	385927	2.4	10	2.9	10	13.3	0.0	0.0	5.89	4.16	3.42		
T9-10	208889	386015	1.8	7	1.5	10	13.3	0.0	0.0	10.62	6.82	5.41		
T9-11	208936	386295	1.0	7	6.4	10	13.3	0.0	0.0	4.51	2.26	1.65		
T9-12	208937	385949	1.8	8.5	3.7	10	13.3	0.0	0.0	5.24	3.37	2.67		
T9-13	208947	386094	1.9	8	3.3	10	13.3	0.0	0.0	5.23	3.43	2.74		
T9-14	208949	386154	2.1	6	3.1	10	13.3	0.0	0.0	3.78	2.56	2.07		
T9-15	208949	386054	1.7	6	3.3	10	13.3	0.0	0.0	4.39	2.76	2.17		
T10-1	206779	385519	1.7	3	2.4	10	13.3	0.0	0.0	3.01	1.90	1.49		
T10-2	206950	385674	1.8	9	2.9	10	13.3	0.0	0.0	7.07	4.54	3.61		
T10-3	206908	385730	1.2	11	4.1	15	13.3	0.0	0.0	9.18	4.08	3.76		
T10-4	206912	385839	1.2	12	5	15	13.3	0.0	0.0	8.23	3.66	3.37		
T10-5	206847	385888	1.8	3	1.9	15	13.3	0.0	0.0	3.59	1.96	1.83		
T10-6	206815	385888	1.9	3	2.1	15	13.3	0.0	0.0	3.08	1.72	1.61		
T10-7	206837	385920	1.9	9	3.2	10	13.3	0.0	0.0	6.07	3.98	3.18		
T10-8	206769	385945	2.0	2	1.7	15	13.3	0.0	0.0	2.41	1.38	1.29		
T11-1	207485	385986	1.9	9	3.8	10	13.3	0.0	0.0	5.12	3.35	2.68		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T11-2	207574	385947	1.9	12	5.2	10	13.3	0.0	0.0	5.00	3.27	2.62		
T11-3	207651	385972	1.8	11	2.6	10	13.3	0.0	0.0	9.63	6.19	4.91		
T11-4	207748	385968	1.5	14	2.6	10	13.3	0.0	0.0	14.71	8.83	6.83		
T11-5	207872	385962	1.5	10	2.6	10	13.3	0.0	0.0	10.51	6.30	4.88		
T11-6	208076	385956	2.9	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08		
T11-7	208099	386052	2.1	3.5	3.1	10	13.3	0.0	0.0	2.20	1.49	1.21		
T11-8	208117	385930	3.4	4	2.4	10	13.3	0.0	0.0	2.01	1.55	1.33		
T11-9	208121	386025	2.5	5	3.6	10	13.3	0.0	0.0	2.28	1.63	1.35		
T11-10	208133	386065	2.9	5	4.1	10	13.3	0.0	0.0	1.73	1.28	1.08		
T11-11	208146	385924	4.0	3.5	1.5	10	13.3	0.0	0.0	2.39	1.91	1.67		
T11-12	208160	385962	3.1	5.5	4	10	13.3	0.0	0.0	1.82	1.38	1.17		
T11-13	208172	386069	1.7	6	2.9	10	13.3	0.0	0.0	4.99	3.14	2.47		
T11-14	208205	385935	2.7	4	2.6	10	13.3	0.0	0.0	2.34	1.70	1.42		
T11-15	208209	386061	2.6	6	3	10	13.3	0.0	0.0	3.15	2.28	1.89		
T11-16	208229	385951	3.2	4	2.6	10	13.3	0.0	0.0	1.97	1.50	1.28		
T11-17	208230	386037	2.0	6	3.8	10	13.3	0.0	0.0	3.24	2.16	1.74		
T11-18	208238	386010	2.3	4	3.1	10	13.3	0.0	0.0	2.30	1.60	1.31		
T11-19	208253	385982	3.7	5	2.1	10	13.3	0.0	0.0	2.64	2.08	1.80		
T12-1	207486	385987	1.9	9	4.6	10	13.3	0.0	0.0	4.23	2.77	2.22		
T12-2	207405	385997	1.0	5	5.7	10	13.3	0.0	0.0	3.61	1.81	1.32		
T12-3	207511	386005	1.4	13	3.7	10	13.3	0.0	0.0	10.30	6.01	4.61		
T12-4	207477	386005	2.2	5.5	4.8	10	13.3	0.0	0.0	2.14	1.47	1.20		
T12-5	207560	386008	0.9	10.5	5.8	10	13.3	0.0	0.0	8.29	3.93	2.84		
T12-6	207533	386021	1.9	13	4.9	10	13.3	0.0	0.0	5.74	3.76	3.01		
T12-7	207421	386021	1.7	8.5	4.1	10	13.3	0.0	0.0	5.01	3.15	2.48		
T12-8	207394	386026	1.6	6	4.1	10	13.3	0.0	0.0	3.76	2.31	1.81		
T12-9	207459	386027	0.8	11	3.8	10	13.3	0.0	0.0	14.85	6.60	4.70		
T12-10	207551	386036	1.5	8	5.1	10	13.3	0.0	0.0	4.30	2.58	2.00		
T12-11	207372	386036	0.5	20	7.9	10	13.3	0.0	0.0	20.99	7.00	4.71		
T12-12	207494	386046	1.1	2.4	3.4	10	13.3	0.0	0.0	2.63	1.38	1.02		
T12-13	207532	386090	1.8	6	3.9	10	13.3	0.0	0.0	3.51	2.26	1.79		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T12-14	207560	386114	1.9	11.5	7.4	10	13.3	0.0	0.0	3.38	2.22	1.77		
T12-15	207539	386125	1.1	22	5.8	10	13.3	0.0	0.0	14.21	7.44	5.52		
T12-16	207560	386137	1.4	5	4.7	10	13.3	0.0	0.0	3.12	1.82	1.40		
T12-17	207535	386162	1.4	7	5.7	10	13.3	0.0	0.0	3.61	2.11	1.62		
T12-18	207562	386167	1.6	5	4.8	10	13.3	0.0	0.0	2.68	1.65	1.29		
T12-19	207531	386181	2.0	8	4.6	10	13.3	0.0	0.0	3.57	2.38	1.92		
T12-20	207563	386189	1.8	7	3.1	10	13.3	0.0	0.0	5.14	3.31	2.62		
T12-21	207527	386204	1.9	4.5	3.6	10	13.3	0.0	0.0	2.70	1.77	1.41		
T12-22	207562	386209	0.7	24	3.8	10	13.3	0.0	0.0	37.03	15.25	10.67		
T12-23	207526	386222	2.1	6	3.8	10	13.3	0.0	0.0	3.09	2.09	1.69		
T12-24	207567	386230	1.1	19	4.4	10	13.3	0.0	0.0	16.13	8.45	6.27		
T12-25	207525	386240	1.0	30	11.3	10	13.3	0.0	0.0	11.15	5.58	4.09		
T12-26	207566	386241	0.4	18	7.8	10	13.3	0.0	0.0	23.91	6.83	4.49		
T13-1	208620	386979	2.0	18	4.4	10	13.3	0.0	0.0	8.40	5.60	4.51		
T13-2	208568	386889	1.0	10	3.8	15	13.3	0.0	0.0	10.80	4.32	3.96		
T13-3	208528	386816	1.6	8	5	15	13.3	0.0	0.0	4.11	2.12	1.98		
T13-4	208512	386645	0.5	8	7.8	10	13.3	0.0	0.0	8.50	2.83	1.91		
T13-5	208349	386610	0.8	16	3.2	10	13.3	0.0	0.0	25.63	11.39	8.11		
T13-6	208408	386596	0.9	7.5	3.8	10	13.3	0.0	0.0	9.00	4.26	3.08		
T13-7	208568	386579	1.2	9	2.2	10	13.3	0.0	0.0	13.97	7.62	5.72		
T13-8	208322	386572	1.1	10	3.3	10	13.3	0.0	0.0	11.30	5.92	4.39		
T13-9	208547	386549	1.3	7	4.8	10	13.3	0.0	0.0	4.61	2.61	1.98		
T13-10	208399	386548	0.8	25	5	10	13.3	0.0	0.0	27.42	11.75	8.30		
T14-1	207243	386066	1.6	14	5.6	10	13.3	0.0	0.0	6.44	3.96	3.09		
T14-2	207230	386158	2.0	9	3.5	10	13.3	0.0	0.0	5.27	3.52	2.83		
T14-3	207224	386249	1.0	12	7.7	10	13.3	0.0	0.0	6.46	3.23	2.37		
T14-4	207207	386335	2.7	13	2.9	10	13.3	0.0	0.0	6.81	4.97	4.15		
T14-5	207095	386453	1.6	8.5	2.3	10	13.3	0.0	0.0	9.46	5.82	4.55		
T14-6	207020	386480	0.8	16	4.1	10	13.3	0.0	0.0	20.03	8.90	6.34		
T14-7	207066	386556	1.5	21	2.6	10	13.3	0.0	0.0	22.07	13.24	10.25		
T14-8	207018	386578	1.1	26	4	10	13.3	0.0	0.0	24.26	12.71	9.43		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T14-9	206957	386590	1.2	16	3.5	10	13.3	0.0	0.0	15.63	8.53	6.40		
T15-1	207810	386587	0.5	22	3.8	10	13.3	0.0	0.0	47.53	15.84	10.66		
T15-2	207839	386701	0.8	21	2	10	13.3	0.0	0.0	53.76	23.89	17.01		
T16-1	208580	386594	1.0	7	4.3	10	13.3	0.0	0.0	6.69	3.34	2.45		
T16-2	208617	386607	1.6	6.5	3.7	10	13.3	0.0	0.0	4.51	2.77	2.17		
T16-3	208672	386583	2.6	6	4.4	10	13.3	0.0	0.0	2.15	1.56	1.29		
T16-4	208770	386663	3.1	3	2.3	10	13.3	0.0	0.0	1.72	1.30	1.11		
T16-5	208780	386687	3.0	5	3	10	13.3	0.0	0.0	2.28	1.71	1.45		
T16-6	208790	386562	2.5	4	2	10	13.3	0.0	0.0	3.28	2.34	1.94		
T16-7	208798	386702	3.0	3.5	2.5	10	13.3	0.0	0.0	1.91	1.43	1.21		
T16-8	208807	386530	3.8	6	2	10	13.3	0.0	0.0	3.23	2.56	2.22		
T16-9	208825	386590	5.0	4	2.3	10	13.3	0.0	0.0	1.43	1.19	1.06		
T16-10	208837	386559	5.1	5	1.3	10	13.3	0.0	0.0	3.09	2.58	2.31		
T16-11	208842	386661	1.4	3.5	2.2	10	13.3	0.0	0.0	4.66	2.72	2.08		
T16-12	208843	386713	1.8	4	3.4	10	13.3	0.0	0.0	2.68	1.72	1.37		
T16-13	208867	386721	3.2	4	2.9	10	13.3	0.0	0.0	1.77	1.35	1.15		
T16-14	208867	386721	3.2	4	3.1	10	13.3	0.0	0.0	1.65	1.26	1.07		
T16-15	208878	386731	2.7	5	2.5	10	13.3	0.0	0.0	3.04	2.22	1.85		
T16-16	208880	386611	2.0	5	2.7	10	13.3	0.0	0.0	3.80	2.53	2.04		
T16-17	208881	386760	3.3	3.5	2.3	10	13.3	0.0	0.0	1.89	1.45	1.24		
T16-18	208898	386692	4.0	4.5	2.4	10	13.3	0.0	0.0	1.92	1.54	1.34		
T16-19	208903	386743	5.1	5	1.8	10	13.3	0.0	0.0	2.23	1.86	1.67		
T16-20	208904	386578	2.8	3	2.6	10	13.3	0.0	0.0	1.69	1.24	1.04		
T16-21	208909	386595	1.6	5	2	10	13.3	0.0	0.0	6.40	3.94	3.08		
T16-22	208910	386693	5.2	5	2.4	10	13.3	0.0	0.0	1.64	1.38	1.23		
T16-23	208919	386786	2.2	5	3	10	13.3	0.0	0.0	3.11	2.14	1.74		
T16-24	208922	386737	4.9	3	1.7	10	13.3	0.0	0.0	1.47	1.22	1.09		
T16-25	208926	386775	1.8	4	3	10	13.3	0.0	0.0	3.04	1.95	1.55		
T16-26	208937	386705	4.9	3	1.7	10	13.3	0.0	0.0	1.47	1.22	1.09		
T16-27	208939	386750	1.6	5	2.5	10	13.3	0.0	0.0	5.12	3.15	2.46		
T16-28	208950	386721	2.6	2	1.5	10	13.3	0.0	0.0	2.10	1.52	1.26		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T16-29	208952	386711	3.0	3	1.9	10	13.3	0.0	0.0	2.16	1.62	1.37		
T16-30	208965	386712	2.1	5	2.2	10	13.3	0.0	0.0	4.43	3.00	2.43		
T16-31	208981	386727	1.8	4.5	1.5	10	13.3	0.0	0.0	6.82	4.39	3.48		
T16-32	208987	386646	2.9	4	2.3	10	13.3	0.0	0.0	2.46	1.83	1.54		
T17-1	208557	387194	1.7	13	5.7	20	13.3	0.0	0.0	5.53	2.54	2.74		
T17-2	208553	387102	1.2	19	4.1	10	13.3	0.0	0.0	15.86	8.65	6.50		
T17-3	208558	387082	1.0	23	5.7	10	13.3	0.0	0.0	16.62	8.31	6.09		
T17-4	208678	387078	1.5	20	5.2	15	13.3	0.0	0.0	10.55	5.28	4.90		
T17-5	208560	387065	1.4	22	7.6	10	13.3	0.0	0.0	8.56	4.99	3.83		
T18-1	205739	385716	1.2	4	3.8	10	13.3	0.0	0.0	3.60	1.96	1.48		
T18-2	205756	385730	2.0	6	3.4	10	13.3	0.0	0.0	3.62	2.41	1.94		
T18-3	205756	385763	1.2	8	4.9	10	13.3	0.0	0.0	5.60	3.05	2.29		
T18-4	205778	385670	1.2	8	3.2	10	13.3	0.0	0.0	8.54	4.66	3.50		
T18-5	205797	385702	2.0	12	2.7	10	13.3	0.0	0.0	9.11	6.07	4.88		
T18-6	205812	385723	3.0	13	3.1	10	13.3	0.0	0.0	5.73	4.30	3.64		
T18-7	205812	385723	3.0	13	2.5	10	13.3	0.0	0.0	7.10	5.33	4.51		
T18-8	205880	385724	1.4	4.5	2.8	10	13.3	0.0	0.0	4.71	2.74	2.11		
T18-9	205903	385739	2.5	5	2.9	10	13.3	0.0	0.0	2.83	2.02	1.67		
T18-10	205913	385882	1.0	6	5.2	10	13.3	0.0	0.0	4.75	2.37	1.74		
T18-11	205944	385771	1.2	2.5	2.2	10	13.3	0.0	0.0	3.88	2.12	1.59		
T18-12	205952	385792	1.2	4	3	10	13.3	0.0	0.0	4.56	2.48	1.87		
T18-13	205959	385895	1.0	5	5.2	10	13.3	0.0	0.0	3.96	1.98	1.45		
T18-14	205976	385905	1.5	6	4.1	10	13.3	0.0	0.0	4.01	2.40	1.86		
T18-15	205981	385826	1.4	3	3	10	13.3	0.0	0.0	2.93	1.71	1.31		
T18-16	206002	385938	1.4	7.5	4.2	10	13.3	0.0	0.0	5.24	3.06	2.34		
T18-17	206056	385906	1.5	12	4.9	10	13.3	0.0	0.0	6.71	4.03	3.12		
T18-18	206060	385948	1.2	5	4.3	10	13.3	0.0	0.0	3.98	2.17	1.63		
T18-19	206073	385966	1.2	3	3.9	10	13.3	0.0	0.0	2.63	1.44	1.08		
T18-20	206097	386062	1.0	13	2.9	10	13.3	0.0	0.0	18.38	9.19	6.73		
T18-21	206100	385890	2.5	4	2	10	13.3	0.0	0.0	3.28	2.34	1.94		
T18-22	206125	386128	1.0	8	4.4	10	13.3	0.0	0.0	7.47	3.74	2.74		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T18-23	206143	386198	0.8	9	5.6	10	13.3	0.0	0.0	8.27	3.68	2.62		
T18-24	206156	385939	1.4	4	4.4	10	13.3	0.0	0.0	2.67	1.56	1.19		
T18-25	206171	386108	1.3	12	6.4	10	13.3	0.0	0.0	5.95	3.36	2.55		
T18-26	206172	386241	0.7	10	4.8	10	13.3	0.0	0.0	12.24	5.04	3.53		
T18-27	206192	385988	2.2	8	4.1	10	13.3	0.0	0.0	3.64	2.50	2.04		
T18-28	206223	386102	1.3	6	5.7	10	13.3	0.0	0.0	3.34	1.89	1.43		
T18-29	206233	386128	1.0	9	4.2	10	13.3	0.0	0.0	8.80	4.40	3.23		
T18-30	206275	386270	1.5	11	2.5	10	13.3	0.0	0.0	12.02	7.21	5.58		
T18-31	206283	386196	3.1	4	1.9	10	13.3	0.0	0.0	2.78	2.10	1.79		
T18-32	206287	386314	1.0	14	3.7	10	13.3	0.0	0.0	15.53	7.76	5.69		
T18-33	206288	386236	1.3	5	3.2	10	13.3	0.0	0.0	4.93	2.79	2.12		
T18-34	206289	386293	1.9	6	3	10	13.3	0.0	0.0	4.32	2.83	2.26		
T18-35	206318	386434	1.0	9	8.1	10	13.3	0.0	0.0	4.61	2.30	1.69		
T18-36	206338	386457	1.8	12	4.1	10	13.3	0.0	0.0	6.68	4.29	3.41		
T18-37	206338	386296	1.5	5.5	6.2	10	13.3	0.0	0.0	2.44	1.46	1.13		
T18-38	206340	386317	1.6	8	7.6	10	13.3	0.0	0.0	2.72	1.68	1.31		
T18-39	206352	386478	1.0	16	7.6	10	13.3	0.0	0.0	8.72	4.36	3.19		
T18-40	206368	386345	1.4	7	5.2	10	13.3	0.0	0.0	3.96	2.31	1.77		
T18-41	206384	386412	1.9	15	3	10	13.3	0.0	0.0	10.79	7.07	5.65		
T18-42	206399	386358	1.4	4.5	2.3	10	13.3	0.0	0.0	5.73	3.34	2.56		
T18-43	206420	386372	1.9	5	3.7	10	13.3	0.0	0.0	2.92	1.91	1.53		
T18-44	206436	386396	3.0	3	1.8	10	13.3	0.0	0.0	2.28	1.71	1.44		
T18-45	206443	386532	1.6	8	4.3	10	13.3	0.0	0.0	4.78	2.94	2.30		
T18-46	206461	386434	1.2	9	4.8	10	13.3	0.0	0.0	6.42	3.50	2.63		
T18-47	206467	386510	1.6	9	4.6	10	13.3	0.0	0.0	5.03	3.09	2.42		
T18-48	206488	386544	1.0	12	5.1	10	13.3	0.0	0.0	9.68	4.84	3.55		
T18-49	206538	386696	0.6	11	4.8	10	13.3	0.0	0.0	15.70	5.89	4.05		
T18-50	206555	386709	1.5	5	5.6	10	13.3	0.0	0.0	2.45	1.47	1.14		
T18-51	206556	386733	1.4	10	4.4	10	13.3	0.0	0.0	6.67	3.89	2.98		
T18-52	206565	386648	1.5	16	4.7	10	13.3	0.0	0.0	9.33	5.60	4.33		
T18-53	206590	386732	1.5	13	4.6	10	13.3	0.0	0.0	7.74	4.65	3.60		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T18-54	206590	386743	2.4	10	4.3	10	13.3	0.0	0.0	3.98	2.81	2.31		
T18-55	206603	386673	1.5	10	4.9	10	13.3	0.0	0.0	5.60	3.36	2.60		
T18-56	206613	386652	0.8	14	3.7	10	13.3	0.0	0.0	19.41	8.63	6.14		
T18-57	206654	386666	1.8	16	5.9	10	13.3	0.0	0.0	6.39	4.06	3.21		
T18-58	206657	386806	1.6	6	3.3	10	13.3	0.0	0.0	4.66	2.87	2.24		
T18-59	206667	386804	2.7	5	3.3	10	13.3	0.0	0.0	2.30	1.68	1.40		
T18-60	206672	386737	1.5	8	4.8	10	13.3	0.0	0.0	4.57	2.74	2.12		
T18-61	206678	386833	1.7	7	3.2	10	13.3	0.0	0.0	5.28	3.32	2.62		
T18-62	206693	386751	1.3	7	3	10	13.3	0.0	0.0	7.36	4.16	3.16		
T18-63	206709	386797	2.4	7	3.2	10	13.3	0.0	0.0	3.74	2.64	2.17		
T18-64	206710	386837	2.5	7	2.9	10	13.3	0.0	0.0	3.96	2.83	2.34		
T18-65	206745	386854	1.8	8	4.4	10	13.3	0.0	0.0	4.15	2.67	2.12		
T18-66	206767	386882	2.0	7	3.5	10	13.3	0.0	0.0	4.10	2.74	2.20		
T18-67	206775	386790	2.0	6.5	2.3	10	13.3	0.0	0.0	5.79	3.86	3.10		
T18-68	206788	386887	2.8	9.5	3	10	13.3	0.0	0.0	4.64	3.42	2.87		
T18-69	206790	386848	1.7	15	3.2	10	13.3	0.0	0.0	11.31	7.12	5.61		
T18-70	206793	386906	2.4	7	2.4	10	13.3	0.0	0.0	4.98	3.51	2.89		
T18-71	206798	386868	2.0	9.5	2.5	10	13.3	0.0	0.0	7.79	5.19	4.18		
T18-72	206801	386765	1.80	9	2.2	10	13.3	0.0	0.0	9.31	5.99	4.75		
T18-73	206803	386859	1.5	9	4.8	10	13.3	0.0	0.0	5.14	3.08	2.39		
T18-74	206814	386800	2.5	6	2.2	10	13.3	0.0	0.0	4.47	3.19	2.64		
T18-75	206830	386818	1.5	8	3.8	10	13.3	0.0	0.0	5.76	3.46	2.68		
T18-76	206858	386839	1.2	10	1.7	10	13.3	0.0	0.0	20.07	10.95	8.22		
T18-77	206861	386818	1.8	10	3.8	10	13.3	0.0	0.0	6.00	3.86	3.06		
T18-78	206865	386924	1.2	7	2.6	10	13.3	0.0	0.0	9.19	5.02	3.77		
T18-79	206885	386929	1.9	7	3.1	10	13.3	0.0	0.0	4.87	3.19	2.55		
T18-80	206890	386908	3.4	7	2.7	10	13.3	0.0	0.0	3.13	2.42	2.07		
T18-81	206892	386898	2.5	4.5	2.9	10	13.3	0.0	0.0	2.54	1.82	1.50		
T18-82	206899	386875	3.1	8	2.9	10	13.3	0.0	0.0	3.65	2.76	2.34		
T18-83	206944	386963	1.8	6	3.3	10	13.3	0.0	0.0	4.14	2.66	2.11		
T18-84	206953	386883	2.1	13	2.6	10	13.3	0.0	0.0	9.76	6.61	5.35		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T18-85	206979	386845	2.7	11	1.9	10	13.3	0.0	0.0	8.78	6.41	5.35		
T18-86	206986	386887	2.0	13	2	10	13.3	0.0	0.0	13.31	8.87	7.14		
T18-87	207007	386966	0.6	11	2.5	10	13.3	0.0	0.0	30.05	11.27	7.74		
T18-88	207018	386930	2.4	5	3.3	10	13.3	0.0	0.0	2.59	1.83	1.51		
T18-89	207035	386865	3.2	10.5	5.2	10	13.3	0.0	0.0	2.60	1.98	1.69		
T18-90	207043	386890	3.5	10	1.8	10	13.3	0.0	0.0	6.50	5.06	4.35		
T18-91	207058	386936	2.9	6	1.8	10	13.3	0.0	0.0	4.71	3.50	2.95		
T18-92	207065	386863	5.0	19	4.2	10	13.3	0.0	0.0	3.72	3.10	2.76		
T18-93	207072	386887	4.0	8	2.1	10	13.3	0.0	0.0	3.90	3.12	2.72		
T18-94	207087	386986	0.6	13	3	10	13.3	0.0	0.0	29.61	11.10	7.63		
T18-95	207092	386901	3.0	7	3	10	13.3	0.0	0.0	3.19	2.39	2.02		
T18-96	207098	386842	3.7	10	4.6	10	13.3	0.0	0.0	2.41	1.90	1.65		
T18-97	207106	386870	4.4	5	2.3	10	13.3	0.0	0.0	2.02	1.65	1.45		
T18-98	207107	386902	3.7	13	2.9	10	13.3	0.0	0.0	4.97	3.91	3.39		
T18-99	207130	386866	3.1	8	2.1	10	13.3	0.0	0.0	5.03	3.81	3.23		
T18-100	207144	386807	3.0	21	2.6	10	13.3	0.0	0.0	11.03	8.28	7.00		
T18-101	207165	386924	1.2	11	1.5	10	13.3	0.0	0.0	25.02	13.65	10.25		
T18-102	207171	386967	1.2	10	3.1	10	13.3	0.0	0.0	11.02	6.01	4.52		
T18-103	207172	386911	2.3	13	1.5	10	13.3	0.0	0.0	15.43	10.75	8.81		
T18-104	207210	386856	2.1	8	3.5	10	13.3	0.0	0.0	4.47	3.03	2.45		
T18-105	207247	386891	1.8	8	2.7	10	13.3	0.0	0.0	6.75	4.34	3.44		
T18-106	207270	386895	1.7	6	3.1	10	13.3	0.0	0.0	4.67	2.94	2.31		
T18-107	207347	386931	2.0	14	2.6	10	13.3	0.0	0.0	11.03	7.36	5.92		
T18-108	207370	387040	1.5	16	3.4	10	13.3	0.0	0.0	12.87	7.72	5.98		
T18-109	207383	387013	2.0	12	3.1	10	13.3	0.0	0.0	7.94	5.29	4.26		
T18-110	207393	387218	1.5	7	4.7	10	13.3	0.0	0.0	4.08	2.45	1.90		
T18-111	207441	387026	1.5	13	4	10	13.3	0.0	0.0	8.90	5.34	4.13		
T18-112	207481	387052	2.0	11	3.6	10	13.3	0.0	0.0	6.27	4.18	3.36		
T18-113	207484	387187	0.7	12	3.9	10	13.3	0.0	0.0	18.04	7.43	5.20		
T18-114	207522	387043	2.0	6	2.7	10	13.3	0.0	0.0	4.55	3.04	2.44		
T18-115	207536	387086	1.6	7	2.1	10	13.3	0.0	0.0	8.53	5.25	4.10		

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)														
LOCATION			DATA			LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV
T18-116	207540	387071	1.3	8	2.3	10	13.3	0.0	0.0	10.96	6.20	4.70		
T18-117	207558	387198	2.0	4.5	3.5	10	13.3	0.0	0.0	2.64	1.76	1.41		
T18-118	207589	387131	1.9	6	1.8	10	13.3	0.0	0.0	7.18	4.71	3.76		
T19-1	208542	387239	2.2	12	2	10	13.3	0.0	0.0	11.17	7.68	6.25		
T19-2	208779	387245	1.2	7.5	4.4	15	13.3	0.0	0.0	5.84	2.59	2.39		
T19-3	208874	387268	1.8	5.5	3.6	15	13.3	0.0	0.0	3.48	1.90	1.78		
T19-4	209059	387236	1.7	9	3.8	10	13.3	0.0	0.0	5.72	3.60	2.84		
T19-5	209103	387126	0.5	21	3.8	10	13.3	0.0	0.0	45.37	15.12	10.18		
T19-6	209112	387161	2.9	4	3.5	10	13.3	0.0	0.0	1.62	1.20	1.01		
T19-7	209126	387242	1.9	6.5	2.7	10	13.3	0.0	0.0	5.19	3.40	2.72		
T19-8	209140	387285	1.8	4	3.1	10	13.3	0.0	0.0	2.94	1.89	1.50		
T19-9	209140	387126	1.0	10	3.4	10	13.3	0.0	0.0	12.07	6.03	4.42		
T19-10	209165	387281	2.0	8	2.9	10	13.3	0.0	0.0	5.65	3.77	3.03		
T19-11	209172	387122	3.8	3.5	2.5	10	13.3	0.0	0.0	1.51	1.20	1.04		
T19-12	209179	387242	1.5	4.5	2.2	10	13.3	0.0	0.0	5.59	3.35	2.60		
T19-13	209196	387280	2.1	4	4.1	10	13.3	0.0	0.0	1.91	1.29	1.05		
T19-14	209206	387137	3.5	4	2.1	10	13.3	0.0	0.0	2.23	1.73	1.49		
T19-15	209225	387237	3.4	3	1.6	10	13.3	0.0	0.0	2.26	1.74	1.50		
T19-16	209244	387208	1.9	4	4	10	13.3	0.0	0.0	2.16	1.42	1.13		
MM-1	206918	385685	1.5	11	4.5	10	13.3	0.0	0.0	6.70	4.02	3.11		
MM-2	206891	385743	0.7	9	4.1	10	13.3	0.0	0.0	12.88	5.30	3.71		
MM-3	206853	385708	1.5	3.5	4.3	10	13.3	0.0	0.0	2.23	1.34	1.04		
MM-4	206861	385641	1.0	7	4	10	13.3	0.0	0.0	7.19	3.59	2.63		
MM-5	206815	385590	1.8	4.5	4.3	10	13.3	0.0	0.0	2.39	1.54	1.22		

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
FOS >= 1.0	Acceptable (Green)

APPENDIX E – Working Stress Factors of Safety

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
SUB-A	204562	387715	1.4	10	16	7.4	10	13.3	0.0	0.0	8.95	5.22	4.59		
SUB-B	204575	387621	1.2	10	9	5.4	10	13.3	0.0	0.0	8.01	4.37	3.80		
SUB-C	204648	387616	1.4	10	14	7.5	10	13.3	0.0	0.0	7.73	4.51	3.96		
SUB-D	204794	387658	1.7	10	8.5	2.8	10	13.3	0.0	0.0	10.25	6.45	5.75		
SUB-E	204823	387564	1.0	10	12	4.1	10	13.3	0.0	0.0	16.83	8.41	7.22		
SUB-F	204875	387533	2.2	10	13.5	1.5	10	13.3	0.0	0.0	23.45	16.12	14.61		
SUB-G	204889	387381	2.2	10	11	3.7	10	13.3	0.0	0.0	7.76	5.34	4.84		
SUB-H	204866	387302	2.3	10	14	3.4	10	13.3	0.0	0.0	10.28	7.17	6.51		
SUB-I	204852	387220	2.0	10	13.5	2.4	10	13.3	0.0	0.0	16.13	10.76	9.69		
SUB-J	204922	387222	4.2	10	5	2.3	10	13.3	0.0	0.0	2.97	2.40	2.25		
SUB-K	205006	387169	2.5	10	5	3.9	10	13.3	0.0	0.0	2.95	2.11	1.92		
SUB-L	205033	387010	1.4	10	10.5	6.5	10	13.3	0.0	0.0	6.67	3.89	3.42		
SUB-M	205151	386903	2.7	10	11	5.8	10	13.3	0.0	0.0	4.05	2.96	2.71		
SUB-N	205220	386753	2.5	10	12	4.9	10	13.3	0.0	0.0	5.64	4.03	3.68		
SUB-O	205291	386582	1.5	10	9	4.5	10	13.3	0.0	0.0	7.67	4.60	4.07		
SUB-P	205348	386454	3.0	10	11.5	7.1	10	13.3	0.0	0.0	3.13	2.34	2.17		
SUB-Q	205384	386271	0.9	10	8	8.9	10	13.3	0.0	0.0	5.82	2.75	2.35		
SUB-R	205452	386107	1.7	10	11	6.5	10	13.3	0.0	0.0	5.75	3.62	3.23		
SUB-S	205488	385927	5.0	10	8.5	2.5	10	13.3	0.0	0.0	3.90	3.25	3.08		
SUB-T	205572	385762	1.0	10	13	6.1	10	13.3	0.0	0.0	12.30	6.15	5.28		
SUB-U	205709	385681	2.2	10	7.5	4.4	10	13.3	0.0	0.0	4.46	3.06	2.78		
T1-A	207191	384890	3.0	10	5	1.9	10	13.3	20.7	10.3	5.03	3.77	3.48	2.98	2.47
T1-B	207185	384800	3.0	10	14	1.7	10	13.3	20.7	10.3	15.74	11.80	10.90	9.31	7.74
T1-C	207182	384703	3.0	10	11	2	10	13.3	20.7	10.3	10.51	7.88	7.28	6.22	5.17

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T1-D	207199	384588	4.0	10	5	1.8	10	13.3	20.7	10.3	3.98	3.19	2.99	2.62	2.24
T1-E	207157	384491	0.8	10	11	5	10	13.3	20.7	10.3	15.84	7.04	5.95	4.41	3.25
T1-F	207172	384374	2.0	10	9	2.5	0	13.3	20.7	10.3	10.33	10.33	6.20	5.07	4.05
T1-G	207171	384338	1.2	10	9	4	0	13.3	20.7	10.3	10.78	10.78	5.11	3.96	3.01
T1-H	207183	384236	1.8	10	7	3.7	10	13.3	20.7	10.3	6.04	3.88	3.47	2.81	2.22
T1-1	207226	384913	2.5	10	4	1.4	10	13.3	20.7	10.3	6.55		4.28		
T1-2	207136	384836	2.4	10	4	1.9	10	13.3	20.7	10.3	5.03		3.24		
T1-3	207224	384831	3.7	10	3	1.5	10	13.3	20.7	10.3	3.10		2.28		
T1-4	207110	384804	3.0	10	4	2	10	13.3	20.7	10.3	3.82		2.65		
T1-5	207216	384756	3.0	10	5	1.7	10	13.3	20.7	10.3	5.62		3.89		
T1-6	207218	384626	2.9	10	6	2.1	10	13.3	20.7	10.3	5.65		3.87		
T1-7	207125	384663	5.0	10	6	2.5	10	13.3	20.7	10.3	2.75		2.18		
T1-8	207149	384527	1.1	10	12	3	10	13.3	20.7	10.3	20.87		9.45		
T1-9	207123	384429	3.1	10	7	4	10	13.3	20.7	10.3	3.24		2.27		
T1-10	207220	384537	2.9	10	7.5	5.2	10	13.3	20.7	10.3	2.87		1.96		
T1-11	207238	384432	1.9	10	3	3.3	10	13.3	20.7	10.3	2.75		1.62		
T1-12	207242	384374	2.8	10	7	2.9	10	13.3	20.7	10.3	4.95		3.35		
T1-13	207134	384349	1.7	10	5	3.6	10	13.3	20.7	10.3	4.69		2.63		
T1-14	207103	384288	0.8	10	5	4.2	10	13.3	20.7	10.3	8.56		3.21		
T1-15	207247	384317	2.0	10	5	4.2	10	13.3	20.7	10.3	3.42		2.06		
T1-16	207213	384163	4.0	10	5	1.8	10	13.3	20.7	10.3	3.98		2.99		
T2-A	207370	384556	1.5	10	14	5.2	0	13.3	20.7	10.3	10.34	10.34	5.48	4.34	3.37
T2-B	207383	384570	0.7	10	15	7.6	0	13.3	20.7	10.3	16.35	16.35	5.64	4.13	3.01
T2-C	207398	384535	1.1	10	7	3.8	10	13.3	20.7	10.3	9.62	5.04	4.36	3.34	2.52

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T2-D	207444	384468	2.4	10	11	2.4	10	13.3	20.7	10.3	10.95	7.73	7.05	5.88	4.78
T2-E	207495	384380	2.7	10	15	5.2	10	13.3	20.7	10.3	6.16	4.49	4.12	3.48	2.87
T2-F	207497	384412	2.6	10	11	5.2	10	13.3	20.7	10.3	4.69	3.39	3.10	2.61	2.14
T2-G	207543	384367	0.9	10	8	5.2	10	13.3	20.7	10.3	9.85	4.66	3.97	2.98	2.22
T2-H	207547	384307	3.0	10	22	4.6	0	13.3	20.7	10.3	9.17	9.17	6.36	5.43	4.51
T2-I	207610	384265	1.0	10	15	4.4	0	13.3	20.7	10.3	19.61	19.61	8.42	6.39	4.78
T2-J	207647	384120	1.4	10	10	4	10	13.3	20.7	10.3	10.26	5.99	5.26	4.14	3.19
T2-K	207739	384193	1.5	10	5	4	10	13.3	20.7	10.3	4.79	2.87	2.54	2.01	1.56
T2-L	207754	384252	0.6	10	8	5	10	13.3	20.7	10.3	15.36	5.76	4.77	3.45	2.49
T2-1	207290	384664	2.0	10	4	2.8	10	13.3	20.7	10.3	4.10		2.46		
T2-2	207343	384531	2.3	10	5	3.8	10	13.3	20.7	10.3	3.29		2.08		
T2-3	207482	384581	2.5	10	6	2.7	10	13.3	20.7	10.3	5.10		3.33		
T2-4	207406	384470	2.2	10	6	3.1	10	13.3	20.7	10.3	5.05		3.15		
T2-5	207470	384390	2.0	10	11	4.4	10	13.3	20.7	10.3	7.19		4.32		
T2-6	207478	384468	1.4	10	6	3.5	10	13.3	20.7	10.3	7.03		3.61		
T2-7	207531	384419	2.1	10	5	4.5	10	13.3	20.7	10.3	3.04		1.86		
T2-8	207513	384322	1.3	10	15	2.7	10	13.3	20.7	10.3	24.52		12.12		
T2-9	207614	384320	2.2	10	11	2.6	10	13.3	20.7	10.3	11.03		6.88		
T2-10	207710	384311	2.8	10	5	2.8	10	13.3	20.7	10.3	3.66		2.48		
T2-11	207610	384192	0.9	10	11	3.7	10	13.3	20.7	10.3	18.98		7.66		
T2-12	207754	384252	0.6	10	8	3.1	10	13.3	20.7	10.3	24.69		7.68		
T3-A	207179	384986	3.7	10	6	1.8	16	13.3	20.7	10.3	5.17	3.61	3.80	3.31	2.81
T3-B	207108	384926	3.1	10	7	2.1	10	13.3	20.7	10.3	6.17	4.66	4.32	3.70	3.08
T3-C	207061	384849	2.7	10	4	1.7	10	13.3	20.7	10.3	5.00	3.65	3.35	2.83	2.33

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T3-D	206977	384780	3.0	10	9	2.1	10	13.3	20.7	10.3	8.19	6.14	5.68	4.85	4.03
T3-E	206898	384700	4.0	10	3.5	1.4	10	13.3	20.7	10.3	3.58	2.87	2.69	2.36	2.02
T3-1	207072	385013	3.1	10	6	4.5	10	13.3	20.7	10.3	2.47		1.73		
T3-2	207005	384892	5.0	10	5	3.2	10	13.3	20.7	10.3	1.79		1.42		
T3-3	206970	384863	2.7	10	6	2.5	10	13.3	20.7	10.3	5.10		3.42		
T3-4	207076	384775	3.5	10	3	2.2	10	13.3	20.7	10.3	2.23		1.62		
T3-5	206888	384741	3.5	10	4	2.8	10	13.3	20.7	10.3	2.34		1.70		
T3-6	206951	384669	3.1	10	4	2.4	10	13.3	20.7	10.3	3.08		2.16		
T3-7	206794	384640	5.0	10	5	2.2	10	13.3	20.7	10.3	2.61		2.06		
T3-8	206940	384618	3.2	10	4	3	10	13.3	20.7	10.3	2.39		1.69		
T4-A	207286	384580	2.2	10	7	3.8	0	13.3	20.7	10.3	4.81	4.81	3.00	2.48	2.00
T4-B	207337	384609	3.0	10	8	3	0	13.3	20.7	10.3	5.10	5.10	3.54	3.02	2.51
T4-C	207395	384623	0.7	10	15	2.2	0	13.3	20.7	10.3	55.86	55.86	19.26	14.12	10.29
T4-D	207510	384651	2.8	10	12	3	0	13.3	20.7	10.3	8.20	8.20	5.56	4.71	3.89
T4-E	207636	384681	1.4	10	9	3.5	0	13.3	20.7	10.3	10.55	10.55	5.41	4.26	3.28
T4-F	207684	384693	1.5	10	11	4.6	0	13.3	20.7	10.3	9.17	9.17	4.86	3.85	2.99
T4-G	207764	384711	1.5	10	11	5.7	0	13.3	20.7	10.3	7.42	7.42	3.93	3.12	2.42
T4-H	207898	384777	2.5	10	9	5.6	0	13.3	20.7	10.3	3.71	3.71	2.42	2.03	1.65
T4-I	207923	384803	3.0	10	7	5.6	0	13.3	20.7	10.3	2.40	2.40	1.66	1.42	1.18
T4-J	207944	384828	2.8	10	7	3.8	0	13.3	20.7	10.3	3.78	3.78	2.56	2.17	1.79
T4-K	208005	384864	2.9	10	5.5	1.6	0	13.3	20.7	10.3	6.80	6.80	4.66	3.96	3.28
T4-L	208056	384864	1.7	10	6.5	2.1	0	13.3	20.7	10.3	10.44	10.44	5.86	4.71	3.70
T4-1	207457	384693	3.5	10	4	2.2	10	13.3	20.7	10.3	2.98		2.16		
T4-2	207600	384619	0.8	10	8	3.9	10	13.3	20.7	10.3	14.74		5.53		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction II	Permanent Surcharge Floating Road III	Variable Load Crane IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T4-3	207527	384694	3.6	10	4.5	2.4	10	13.3	20.7	10.3	2.99		2.18		
T4-4	207630	384735	2.3	10	4	2.5	10	13.3	20.7	10.3	3.99		2.53		
T4-5	207726	384654	2.7	10	6	3.9	10	13.3	20.7	10.3	3.27		2.19		
T4-6	207725	384747	2.9	10	3.5	1.9	10	13.3	20.7	10.3	3.64		2.50		
T4-7	207829	384789	2.2	10	6	3.8	10	13.3	20.7	10.3	4.18		2.60		
T4-8	207862	384715	1.9	10	4	3.0	10	13.3	20.7	10.3	4.03		2.37		
T4-9	207880	384784	2.0	10	5	3.5	10	13.3	20.7	10.3	4.10		2.46		
T4-10	207910	384765	3.0	10	5	4.0	10	13.3	20.7	10.3	2.40		1.66		
T4-11	207913	384841	2.3	10	9	3.6	10	13.3	20.7	10.3	6.24		3.96		
T4-12	208010	384805	2.1	10	7	4.3	10	13.3	20.7	10.3	4.46		2.73		
T4-13	208025	384880	2.0	10	6	3.5	10	13.3	20.7	10.3	4.92		2.96		
T4-14	208064	384901	2.1	10	7	2.3	10	13.3	20.7	10.3	8.31		5.09		
T4-15	208097	384890	0.7	10	7	3.2	10	13.3	20.7	10.3	17.94		6.19		
T4-16	208174	384830	2.8	10	4	3.4	10	13.3	20.7	10.3	2.41		1.64		
T5-A	207980	385935	1.5	10	12	3.8	0	13.3	0.0	0.0	12.10	12.10	6.41		
T5-B	207974	385832	2.0	10	9	3.8	10	13.3	0.0	0.0	6.80	4.54	4.09		
T5-C	207899	385731	1.7	10	9	2.5	10	13.3	0.0	0.0	12.15	7.65	6.82		
T5-D	207844	385623	1.5	10	9	5.2	0	13.3	0.0	0.0	6.65	6.65	3.52		
T5-E	207720	385520	2.1	10	9	6	10	13.3	0.0	0.0	4.12	2.79	2.52		
T5-F	207535	385405	1.6	10	5	5.7	10	13.3	0.0	0.0	3.16	1.95	1.73		
T5-G	207511	385330	2.4	10	8	6	10	13.3	0.0	0.0	3.21	2.26	2.06		
T5-H	207397	385258	1.2	10	20	8.7	10	13.3	0.0	0.0	11.15	6.08	5.29		
T5-I	207356	385232	2.2	10	8	4.8	10	13.3	0.0	0.0	4.36	3.00	2.72		
T5-J	207266	385133	2.0	10	9.5	5.44	10	13.3	0.0	0.0	5.03	3.36	3.02		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T6-A	207556	385306	1.3	10	4	5.2	10	13.3	0.0	0.0	3.41	1.93	1.69		
T6-B	207655	385318	0.5	10	7	7.6	10	13.3	0.0	0.0	10.68	3.56	2.92		
T7-A	208100	385856	2.9	10	8	1.9	0	13.3	20.7	10.3	8.32	8.32	5.71	4.86	4.02
T7-B	208175	385825	2.8	10	8	2.4	0	13.3	20.7	10.3	6.83	6.83	4.63	3.93	3.24
T7-C	208226	385784	2.9	10	7	2.4	0	13.3	0.0	0.0	5.77	5.77	3.96		
T7-D	208213	385692	3.4	10	7	3.2	0	13.3	0.0	0.0	3.69	3.69	2.66		
T7-E	208244	385654	2.0	10	8	3.9	0	13.3	0.0	0.0	5.89	5.89	3.54		
T7-F	208218	385592	3.0	10	9	4.9	0	13.3	0.0	0.0	3.53	3.53	2.44		
T7-G	208272	385537	2.2	10	16	3.8	0	13.3	0.0	0.0	11.00	11.00	6.85		
T7-1	208035	385919	1.2	10	7	4.7	10	13.3	20.7	10.3	7.14		3.39		
T7-2	208150	385874	2.1	10	13	2.1	10	13.3	20.7	10.3	16.91		10.35		
T7-3	208166	385808	3.5	10	5	2.8	10	13.3	20.7	10.3	2.93		2.12		
T7-4	208214	385844	2.0	10	10	3.5	10	13.3	20.7	10.3	8.21		4.93		
T7-5	208250	385793	2.4	10	4.5	3.5	10	13.3	20.7	10.3	3.08		1.98		
T7-6	208317	385680	2.1	10	4	3.8	10	13.3	20.7	10.3	2.88		1.76		
T7-7	208171	385683	3.5	10	5	2.6	0	13.3	20.7	10.3	3.15		2.28		
T7-8	208324	385608	1.7	10	5	4.1	10	13.3	20.7	10.3	4.12		2.31		
T7-9	208120	385597	4.8	10	3	1.1	0	13.3	20.7	10.3	3.26		2.55		
T7-10	208325	385547	1.4	10	5	3.7	10	13.3	20.7	10.3	5.55		2.84		
T7-11	208153	385518	3.5	10	3.5	1.7	0	13.3	20.7	10.3	3.37		2.44		
T7-12	208235	385429	2.0	10	3	3.1	10	13.3	20.7	10.3	2.78		1.67		
T7-13	208159	385442	5.5	10	2.5	1.8	10	13.3	20.7	10.3	1.45		1.17		
T7-14	208165	385395	3.0	10	4	3	10	13.3	20.7	10.3	2.55		1.77		
T8-A	207767	385652	2.7	10	6.5	1.3	10	13.3	0.0	0.0	10.61	7.75	7.11		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T8-B	207681	385625	0.9	10	23	5.8	10	13.3	0.0	0.0	25.42	12.04	10.26		
T8-C	207589	385627	3.0	10	6	3.3	10	13.3	0.0	0.0	3.48	2.61	2.41		
T8-D	207499	385610	1.8	10	11	3.1	10	13.3	0.0	0.0	11.32	7.28	6.51		
T8-E	207264	385591	1.7	10	10	5.7	10	13.3	0.0	0.0	5.95	3.75	3.34		
T9-A	208541	386533	1.0	10	7	6.3	10	13.3	0.0	0.0	6.42	3.21	2.75		
T9-B	208600	386435	1.0	10	7	6.4	10	13.3	0.0	0.0	6.32	3.16	2.71		
T9-C	208710	386424	1.4	10	6	3.8	10	13.3	0.0	0.0	6.48	3.78	3.32		
T9-D	208936	386295	1.0	10	7	6.4	10	13.3	0.0	0.0	6.32	3.16	2.71		
T9-E	208947	386094	1.9	10	8	3.3	10	13.3	0.0	0.0	7.33	4.80	4.31		
T9-F	208937	385949	1.8	10	8.5	3.7	10	13.3	0.0	0.0	7.33	4.71	4.22		
T10-A	206950	385674	1.8	10	9	2.9	10	13.3	0.0	0.0	9.90	6.36	5.69		
T10-B	206912	385839	1.2	10	12	5	10	13.3	0.0	0.0	11.52	6.28	5.46		
T10-C	206837	385920	1.9	10	9	3.2	10	13.3	0.0	0.0	8.50	5.57	5.00		
T11-A	207485	385986	1.9	10	9	3.8	10	13.3	0.0	0.0	7.16	4.69	4.21		
T11-B	207574	385947	1.9	10	12	5.2	10	13.3	0.0	0.0	7.00	4.58	4.12		
T11-C	207651	385972	1.8	10	11	2.6	10	13.3	0.0	0.0	13.49	8.67	7.76		
T11-D	207748	385968	1.5	10	14	2.6	10	13.3	0.0	0.0	20.60	12.36	10.92		
T11-E	207872	385962	1.5	10	10	2.6	10	13.3	0.0	0.0	14.71	8.83	7.80		
T11-F	208121	386025	2.5	10	5	3.6	0	13.3	0.0	0.0	3.19	3.19	2.08		
T11-G	208160	385962	3.1	10	5.5	4	10	13.3	0.0	0.0	2.55	1.93	1.78		
T12-A	207486	385987	1.9	10	9	4.6	10	13.3	0.0	0.0	5.93	3.88	3.49		
T12-B	207511	386005	1.4	10	13	3.7	10	13.3	0.0	0.0	14.42	8.41	7.39		
T12-C	207533	386021	1.9	10	13	4.9	10	13.3	0.0	0.0	8.04	5.27	4.73		
T12-D	207551	386036	1.5	10	8	5.1	10	13.3	0.0	0.0	6.02	3.61	3.19		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T13-A	208528	386816	1.6	10	8	5	10	13.3	0.0	0.0	5.76	3.54	3.14		
T13-B	208512	386645	0.5	10	8	7.8	0	13.3	0.0	0.0	11.90	11.90	3.25		
T13-C	208568	386579	1.2	10	9	2.2	10	13.3	0.0	0.0	19.55	10.66	9.27		
T13-D	208547	386549	1.3	10	7	4.8	10	13.3	0.0	0.0	6.46	3.65	3.19		
T13-E	208399	386548	0.8	10	25	5	10	13.3	0.0	0.0	38.39	16.45	13.84		
T14-A	207243	386066	1.6	10	14	5.6	10	13.3	0.0	0.0	9.01	5.54	4.92		
T14-B	207230	386158	2.0	10	9	3.5	10	13.3	0.0	0.0	7.38	4.92	4.44		
T14-C	207224	386249	1.0	10	12	7.7	10	13.3	0.0	0.0	9.04	4.52	3.88		
T14-D	207207	386335	2.7	10	13	2.9	10	13.3	0.0	0.0	9.53	6.95	6.38		
T14-E	207095	386453	1.6	10	8.5	2.3	10	13.3	0.0	0.0	13.25	8.15	7.23		
T14-F	207018	386578	1.1	10	26	4	10	13.3	0.0	0.0	33.97	17.79	15.38		
T15-A	207810	386587	0.5	10	22	3.8	10	13.3	0.0	0.0	66.54	22.18	18.18		
T15-B	207839	386701	0.8	10	21	2	10	13.3	0.0	0.0	75.26	33.45	28.27		
T16-A	208580	386594	1.0	10	7	4.3	10	13.3	0.0	0.0	9.36	4.68	4.02		
T16-B	208617	386607	1.6	10	6.5	3.7	10	13.3	0.0	0.0	6.31	3.88	3.44		
T16-C	208672	386583	2.6	10	6	4.4	10	13.3	0.0	0.0	3.02	2.18	2.00		
T16-D	208842	386661	1.4	10	3.5	2.2	10	13.3	0.0	0.0	6.52	3.80	3.34		
T16-1	208807	386530	3.8	10	6	2	10	13.3	0.0	0.0	4.53		3.35		
T16-2	208825	386590	5.0	10	4	2.3	10	13.3	0.0	0.0	2.00		1.58		
T16-3	208909	386595	1.6	10	5	2	10	13.3	0.0	0.0	8.96		4.89		
T16-4	208780	386687	3.0	10	5	3	10	13.3	0.0	0.0	3.19		2.21		
T16-5	208843	386713	1.8	10	4	3.4	10	13.3	0.0	0.0	3.75		2.16		
T16-6	208937	386705	4.9	10	3	1.7	10	13.3	0.0	0.0	2.06		1.62		
T16-7	208987	386646	2.9	10	4	2.3	10	13.3	0.0	0.0	3.44		2.36		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T16-8	208881	386760	3.3	10	3.5	2.3	10	13.3	0.0	0.0	2.64		1.89		
T16-9	208939	386750	1.6	10	5	2.5	10	13.3	0.0	0.0	7.17		3.92		
T16-10	208965	386712	2.1	10	5	2.2	10	13.3	0.0	0.0	6.21		3.80		
T17-A	208557	387194	1.7	10	13	5.7	10	13.3	0.0	0.0	7.74	4.87	4.34		
T17-B	208560	387065	1.4	10	22	7.6	10	13.3	0.0	0.0	11.99	6.99	6.15		
T17-C	208678	387078	1.5	10	20	5.2	10	13.3	0.0	0.0	14.77	8.86	7.83		
T18-A	205778	385670	1.2	10	8	3.2	10	13.3	0.0	0.0	11.96	6.52	5.67		
T18-B	205812	385723	3.0	10	13	3.1	10	13.3	0.0	0.0	8.02	6.02	5.56		
T18-C	206056	385906	1.5	10	12	4.9	0	13.3	0.0	0.0	9.40	9.40	4.98		
T18-D	206171	386108	1.3	10	12	6.4	0	13.3	0.0	0.0	8.33	8.33	4.12		
T18-E	206287	386314	1.0	10	14	3.7	0	13.3	0.0	0.0	21.74	21.74	9.33		
T18-F	206488	386544	1.0	10	12	5.1	0	13.3	0.0	0.0	13.55	13.55	5.82		
T18-G	206603	386673	1.5	10	10	4.9	5	13.3	0.0	0.0	7.83	5.88	4.15		
T18-H	206790	386848	1.7	10	15	3.2	0	13.3	0.0	0.0	15.83	15.83	8.88		
T18-I	206953	386883	2.1	10	13	2.6	5	13.3	0.0	0.0	13.66	11.03	8.36		
T18-J	207043	386890	3.5	10	10	1.8	5	13.3	0.0	0.0	9.10	7.96	6.59		
T18-K	207165	386924	1.2	10	11	1.5	0	13.3	0.0	0.0	35.03	35.03	16.62		
T18-L	207370	387040	1.5	10	16	3.4	0	13.3	0.0	0.0	18.02	18.02	9.55		
T18-M	207481	387052	2.0	10	11	3.6	10	13.3	0.0	0.0	8.78	5.85	5.27		
T18-1	205756	385730	2.0	10	6	3.4	10	13.3	0.0	0.0	5.07		3.04		
T18-2	205880	385724	1.4	10	4.5	2.8	10	13.3	0.0	0.0	6.59		3.38		
T18-3	205952	385792	1.2	10	4	3	10	13.3	0.0	0.0	6.38		3.03		
T18-4	205976	385905	1.5	10	6	4.1	10	13.3	0.0	0.0	5.61		2.97		
T18-5	206060	385948	1.2	10	5	4.3	10	13.3	0.0	0.0	5.57		2.64		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction II	Permanent Surcharge Floating Road III	Variable Load Crane IV	FOS Existing (Self-weight Peat Only) O	FOS Permanent Surcharge Peat O+I	FOS Variable Load Construction O+II	FOS Permanent Surcharge Floating Road O+III	FOS Variable Load Crane O+III+IV
T18-6	206192	385988	2.2	10	8	4.1	10	13.3	0.0	0.0	5.10		3.18		
T18-7	206233	386128	1.0	10	9	4.2	10	13.3	0.0	0.0	12.32		5.29		
T18-8	206288	386236	1.3	10	5	3.2	10	13.3	0.0	0.0	6.90		3.41		
T18-9	206172	386241	0.7	10	10	4.8	10	13.3	0.0	0.0	17.13		5.91		
T18-10	206420	386372	1.9	10	5	3.7	10	13.3	0.0	0.0	4.09		2.40		
T18-11	206338	386457	1.8	10	12	4.1	10	13.3	0.0	0.0	9.35		5.38		
T18-12	206613	386652	0.8	10	14	3.7	10	13.3	0.0	0.0	27.17		10.21		
T18-13	206538	386696	0.6	10	11	4.8	10	13.3	0.0	0.0	21.99		6.84		
T18-14	206693	386751	1.3	10	7	3	10	13.3	0.0	0.0	10.30		5.09		
T18-15	206678	386833	1.7	10	7	3.2	10	13.3	0.0	0.0	7.39		4.15		
T18-16	206858	386839	1.2	10	10	1.7	10	13.3	0.0	0.0	28.10		13.33		
T18-17	206865	386924	1.2	10	7	2.6	10	13.3	0.0	0.0	12.87		6.11		
T18-18	206986	386887	2.0	10	13	2	10	13.3	0.0	0.0	18.64		11.19		
T18-19	207007	386966	0.6	10	11	2.5	10	13.3	0.0	0.0	42.07		13.08		
T18-20	207130	386866	3.1	10	8	2.1	10	13.3	0.0	0.0	7.05		4.93		
T18-21	207087	386986	0.6	10	13	3	10	13.3	0.0	0.0	41.46		12.89		
T18-22	207247	386891	1.8	10	8	2.7	10	13.3	0.0	0.0	9.45		5.43		
T18-23	207171	386967	1.2	10	10	3.1	10	13.3	0.0	0.0	15.43		7.32		
T18-24	207441	387026	1.5	10	13	4	10	13.3	0.0	0.0	12.45		6.60		
T18-25	207484	387187	0.7	10	12	3.9	10	13.3	0.0	0.0	25.26		8.71		
T18-26	207540	387071	1.3	10	8	2.3	10	13.3	0.0	0.0	15.35		7.59		
T19-A	208542	387239	2.2	10	12	2	10	13.3	0.0	0.0	15.64	10.75	9.75		
T19-B	208779	387245	1.2	10	7.5	4.4	10	13.3	0.0	0.0	8.17	4.46	3.88		
T19-C	208874	387268	1.8	10	5.5	3.6	10	13.3	0.0	0.0	4.88	3.13	2.80		

MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction II	Permanent Surcharge Floating Road III	Variable Load Crane IV	FOS Existing (Self-weight Peat Only) 0	FOS Permanent Surcharge Peat 0+I	FOS Variable Load Construction 0+II	FOS Permanent Surcharge Floating Road 0+III	FOS Variable Load Crane 0+III+IV
T19-D	209059	387236	1.7	10	9	3.8	10	13.3	0.0	0.0	8.01	5.04	4.49		
T19-E	209196	387280	2.1	10	4	4.1	10	13.3	0.0	0.0	2.67	1.81	1.64		
T19-F	209244	387208	1.9	10	4	4	10	13.3	0.0	0.0	3.03	1.98	1.78		
T19-G	209206	387137	3.5	10	4	2.1	10	13.3	0.0	0.0	3.12	2.43	2.26		
T19-H	209112	387161	2.9	10	4	3.5	10	13.3	0.0	0.0	2.26	1.68	1.55		
SR00-A	205695	385552	1.0	10	14	2.3	10	13.3	0.0	0.0	34.91	17.46	14.98		
SR00-B	205671	385444	1.7	10	17	6.3	10	13.3	0.0	0.0	9.17	5.77	5.14		
SR00-C	205668	385347	1.0	10	14	4.8	10	13.3	0.0	0.0	16.79	8.39	7.21		
SR00-D	205695	385237	0.5	10	20	4.9	0	13.3	0.0	0.0	47.00	47.00	12.84		
SR00-E	205797	385171	1.8	10	25	6.1	10	13.3	0.0	0.0	13.14	8.45	7.56		
SR00-F	205998	385237	0.5	10	14	4.4	10	13.3	0.0	0.0	36.60	12.20	10.00		
SR00-G	206163	385301	2.0	10	14	6.6	10	13.3	0.0	0.0	6.13	4.09	3.68		
SR00-H	206326	385352	1.0	10	17.5	5.8	10	13.3	0.0	0.0	17.41	8.70	7.47		
SR00-I	206428	385410	0.3	10	14	7.4	10	13.3	0.0	0.0	43.84	8.77	6.94		
SR00-J	206634	385471	0.8	10	17.5	9.6	10	13.3	0.0	0.0	14.19	6.08	5.12		
SR00-K	206825	385591	0.6	10	12	4.4	10	13.3	0.0	0.0	26.15	9.80	8.13		
SR00-L	206889	385624	0.75	10	16	5.1	0	13.3	0.0	0.0	24.09	24.09	8.69		
SR00-M	206965	385691	0.75	10	20	8	0	13.3	0.0	0.0	19.35	19.35	6.98		
SR00-N	207083	385845	1.0	10	23	3.9	10	13.3	0.0	0.0	33.89	16.95	14.55		
SR00-O	207238	386030	1.5	10	15	6.2	10	13.3	0.0	0.0	9.31	5.59	4.94		
SR00-P	207505	386242	0.8	10	10	9.1	10	13.3	0.0	0.0	8.00	3.56	3.01		
SR00-Q	207806	386513	0.6	10	16	4.5	10	13.3	0.0	0.0	34.09	12.78	10.60		
SR00-R	207883	386693	1.0	10	22	4.1	10	13.3	0.0	0.0	30.85	15.42	13.24		
SR00-S	207913	386897	0.8	10	22	4.8	10	13.3	0.0	0.0	32.98	14.66	12.39		

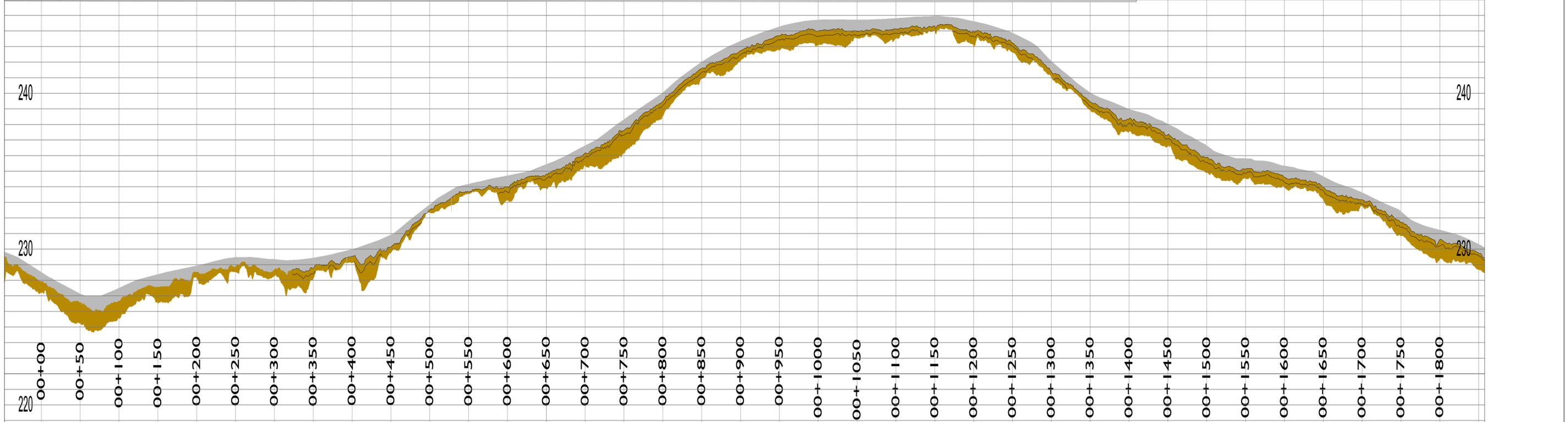
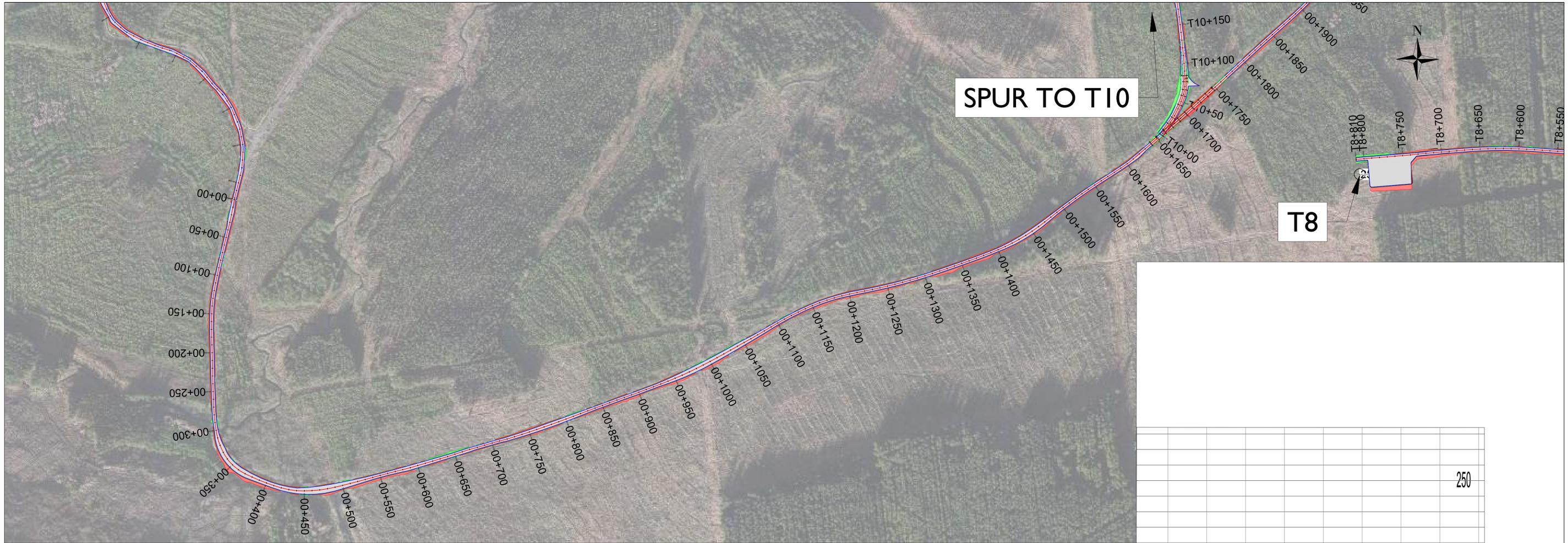
MEENBOG WIND FARM - PEAT ASSESSMENT															
LOCATION			DATA				LOADING				ANALYSIS				
Location Ref.	Easting	Northing	Peat Depth (m)	Unit Weight Peat	Undrained Shear Strength (kPa)	Slope (degrees)	Permanent Surcharge Peat Deposition I	Variable Load Construction (kPa) II	Permanent Surcharge Floating Road (kPa) III	Variable Load Crane (kPa) IV	FOS Existing (Self-weight Peat Only) O	FOS Permanent Surcharge Peat O+I	FOS Variable Load Construction O+II	FOS Permanent Surcharge Floating Road O+III	FOS Variable Load Crane O+III+IV
SR00-T	208034	387015	1.7	10	15	4.9	10	13.3	0.0	0.0	10.37	6.53	5.82		
SR00-U	208166	387085	0.6	10	15	6.5	10	13.3	0.0	0.0	22.23	8.34	6.91		
SR00-V	208445	387178	2.8	10	17	2.7	10	13.3	0.0	0.0	12.90	9.51	8.75		
SR00-W	208465	387163	1.7	10	8.5	3.3	10	13.3	0.0	0.0	8.70	5.48	4.88		
MM-A	206918	385685	1.5	10	11	4.5	10	13.3	0.0	0.0	9.38	5.63	4.97	9.38	
MM-B	206891	385743	0.7	10	9	4.1	10	13.3	0.0	0.0	18.03	7.42	6.22	18.03	
MM-C	206853	385708	1.5	10	3.5	4.3	10	13.3	0.0	0.0	3.12	1.87	1.65	3.12	
MM-D	206861	385641	1.0	10	7	4	10	13.3	0.0	0.0	10.06	5.03	4.32	10.06	
MM-E	206815	385590	1.8	10	4.5	4.3	10	13.3	0.0	0.0	3.34	2.15	1.92	3.34	

FACTOR OF SAFETY LEGEND

FOS < 1.0	Unstable (Red)
1.0 < FOS < 1.3	Marginally stable (Yellow)
FOS > 1.3	Acceptable (Green)

↑ Increasing stability
 ↓

APPENDIX F – GPR Peat Depth Profiles



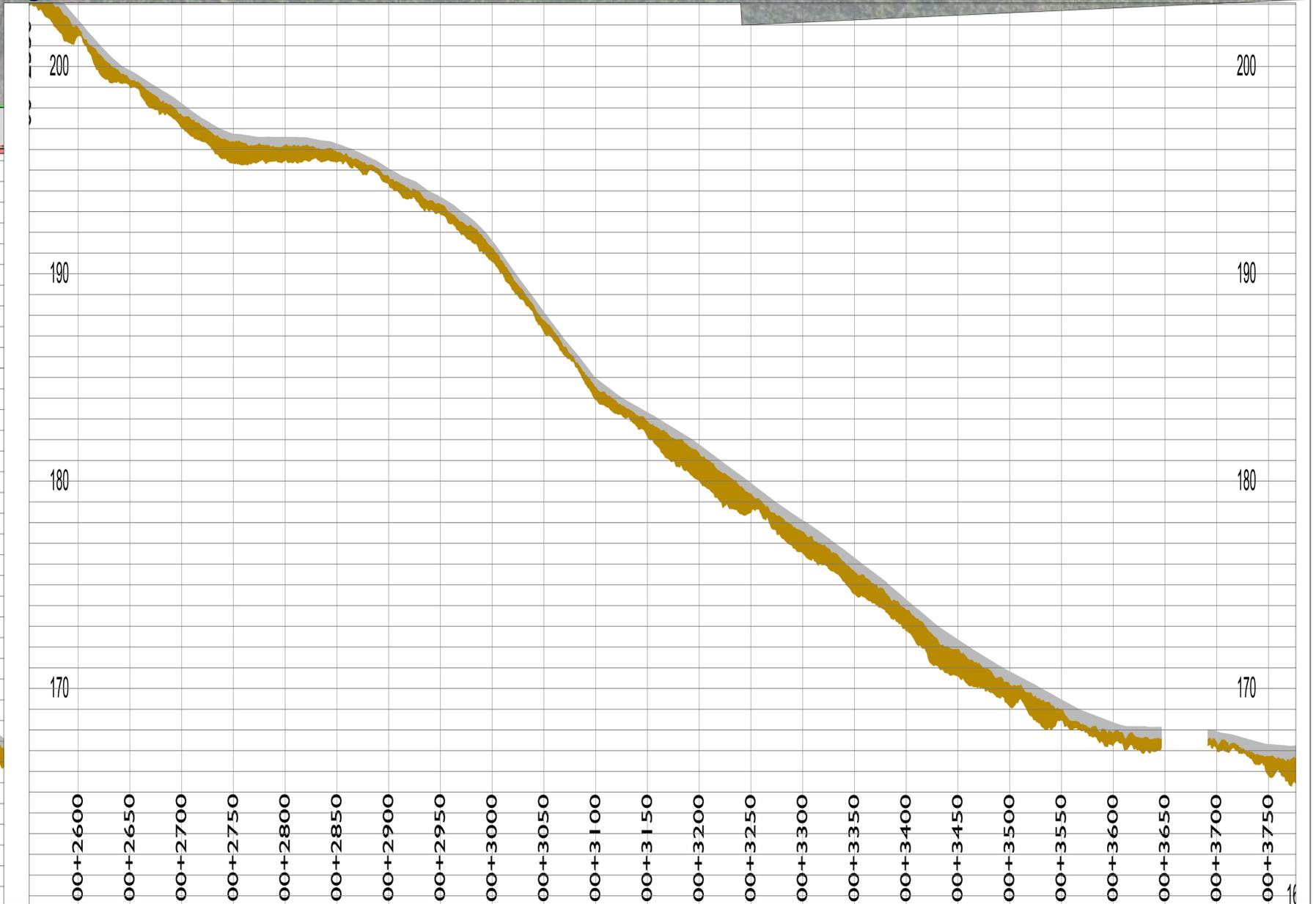
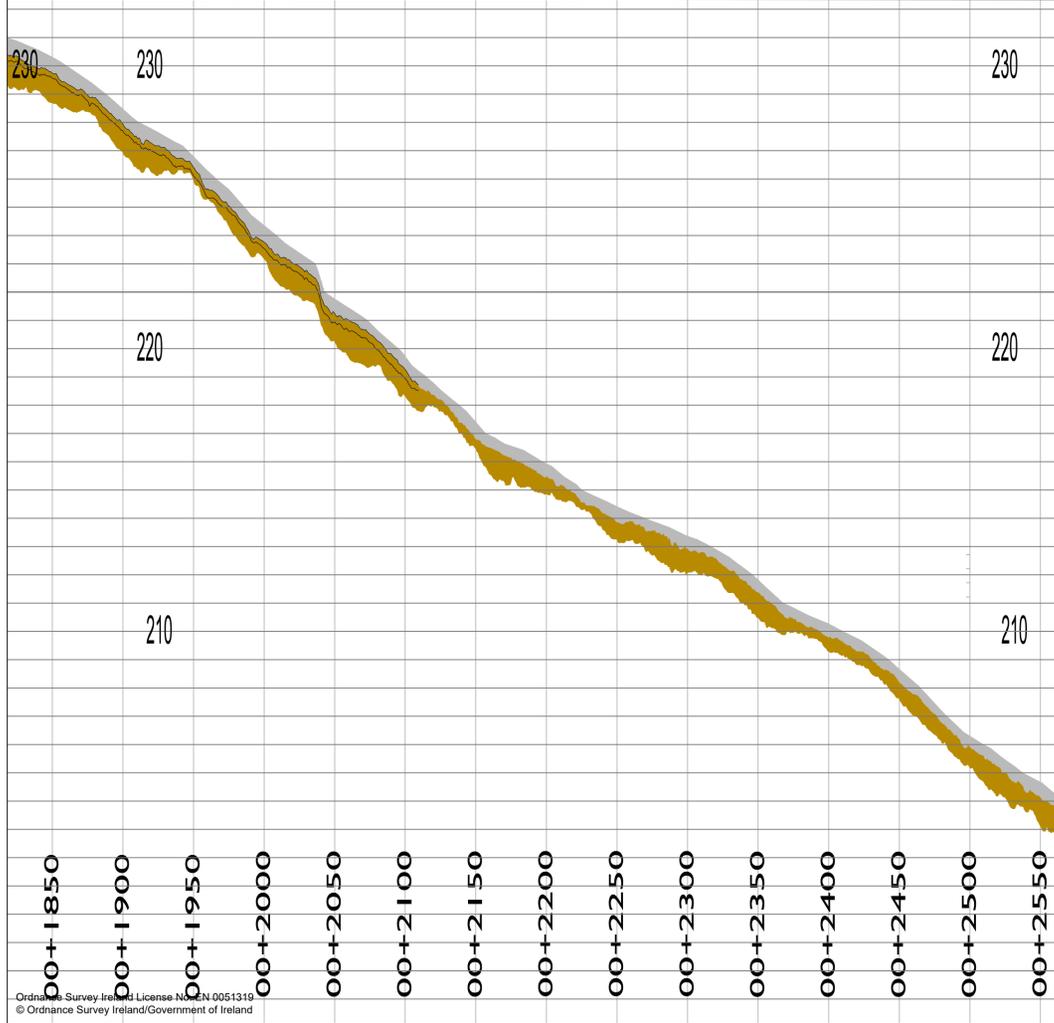
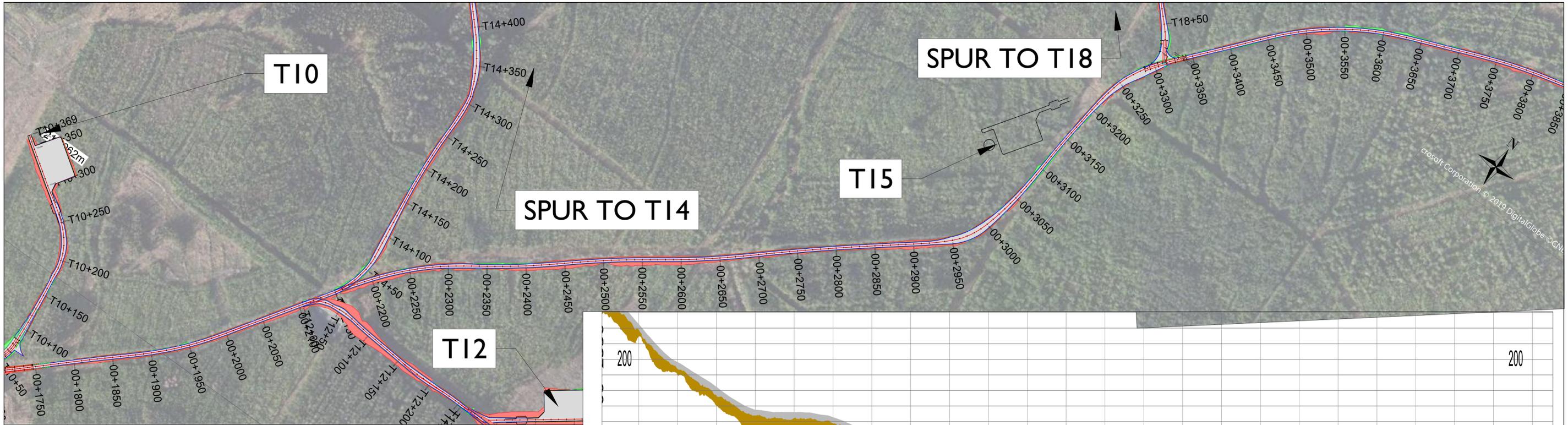
Ordnance Survey Ireland License No. EN 0051319
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	03/12/2019	BF	COD	REVISED ALIGNMENT
A	29/11/2019	BF	COD	FIRST ISSUE

ENGINEER	CLIENT	PROJECT
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5331 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND		MEENBOG WIND FARM
DRAWN BY M. BROWNE CHECKED AND APPROVED C. Ó DUBHTHAIGH	PAPER SIZE A1 SCALE 1:2,500 STATUS INFORMATION	TITLE PEAT DEPTHS SPINE ROADS - SHEET I DRAWING NUMBER MNBG d017.1.1

DATE	REVISION
03/12/2019	B
03/12/2019	

REVISION	DATE	DETAILS
B	03/12/2019	REVISED ALIGNMENT



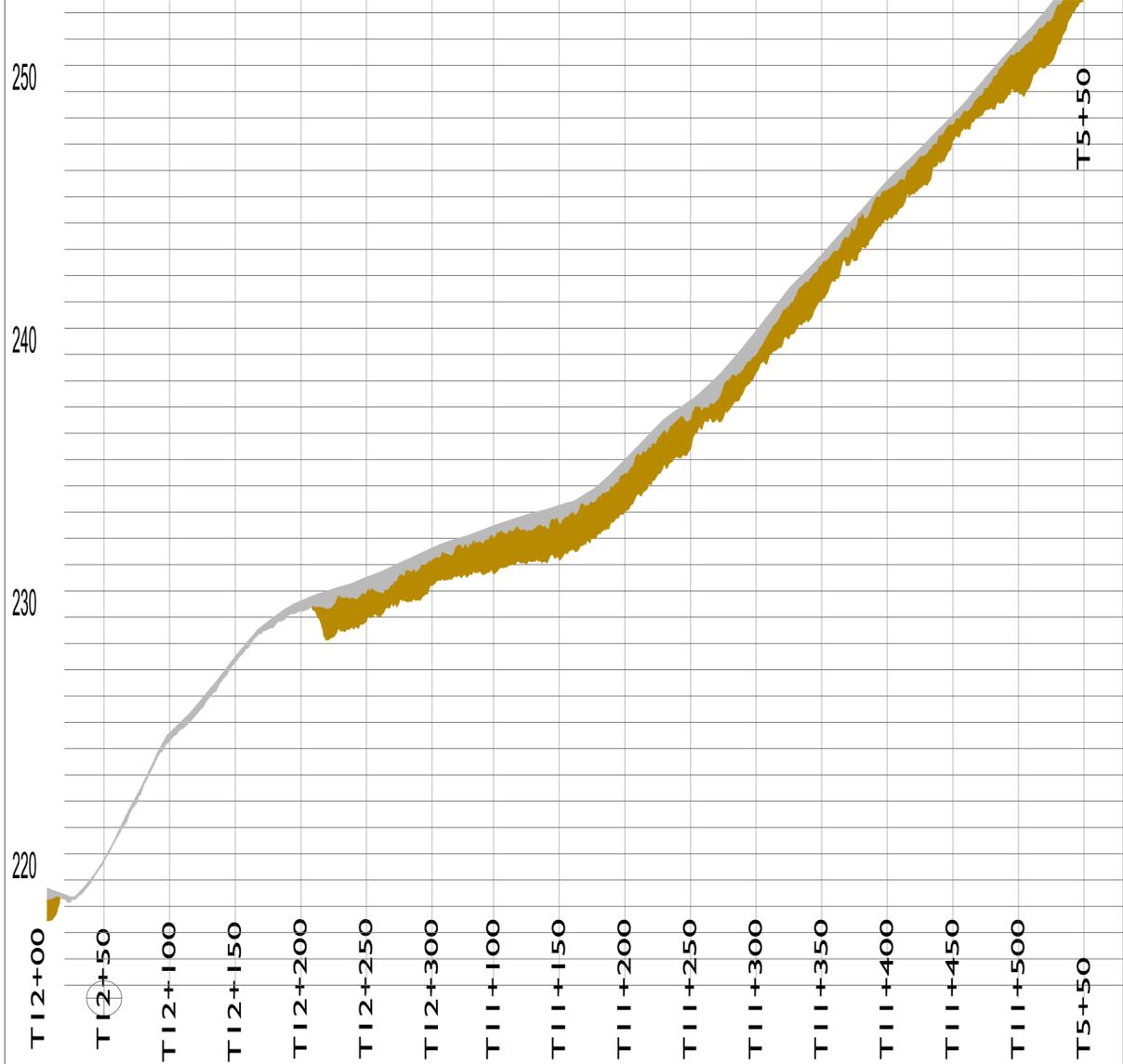
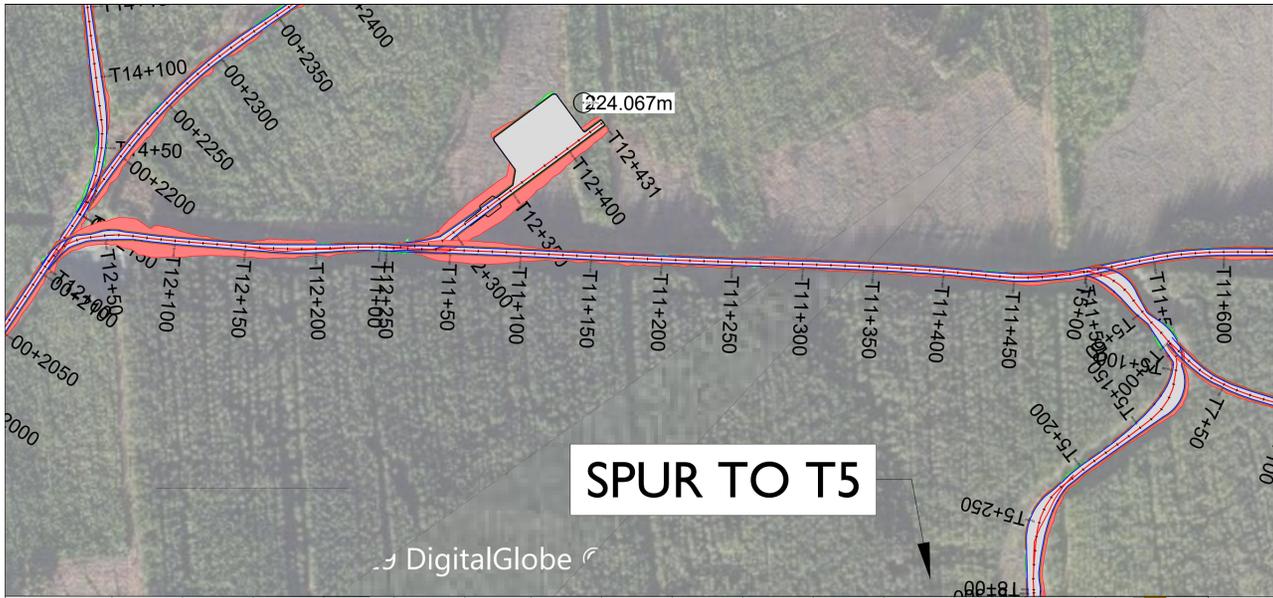
Ordnance Survey Ireland License No. 0051319
© Ordnance Survey Ireland/Government of Ireland

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
B	03/12/2019	BF	COD	REVISED ALIGNMENT
A	29/11/2019	BF	COD	FIRST ISSUE

ENGINEER	CLIENT	PROJECT	
<p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>		MEENBOG WIND FARM	
		TITLE	REVISION
DRAWN BY	DATE	PAPER SIZE	SCALE
M. BROWNE	03/12/2019	A1	1:2,500
CHECKED AND APPROVED	DATE	STATUS	DRAWING NUMBER
C. Ó DUBHTHAIGH	03/12/2019	INFORMATION	MNBG d017.1.2

PROJECT	MEENBOG WIND FARM
TITLE	PEAT DEPTHS SPINE ROADS - SHEET 2
REVISION	B
DRAWING NUMBER	MNBG d017.1.2



Ordnance Survey Ireland License No. EN 0051319
© Ordnance Survey Ireland/Government of Ireland

NOTES

--	--	--	--	--

A	29/11/2019	BF	COD	FIRST ISSUE
REV	DATE	DRAWN BY	CHECKED BY	DETAILS

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18,
D18VC44, Ireland
E: hello@ionicconsulting.ie
T: +353 (0) 1 845 5931
W: www.ionicconsulting.ie
Formerly known as WIND PROSPECT IRELAND

DRAWN BY: M. BROWNE
CHECKED AND APPROVED: C. Ó DUBHTHAIGH

DATE: 03/12/2019
DATE: 03/12/2019

CLIENT

PAPER SIZE: A1
SCALE: 1:2,500

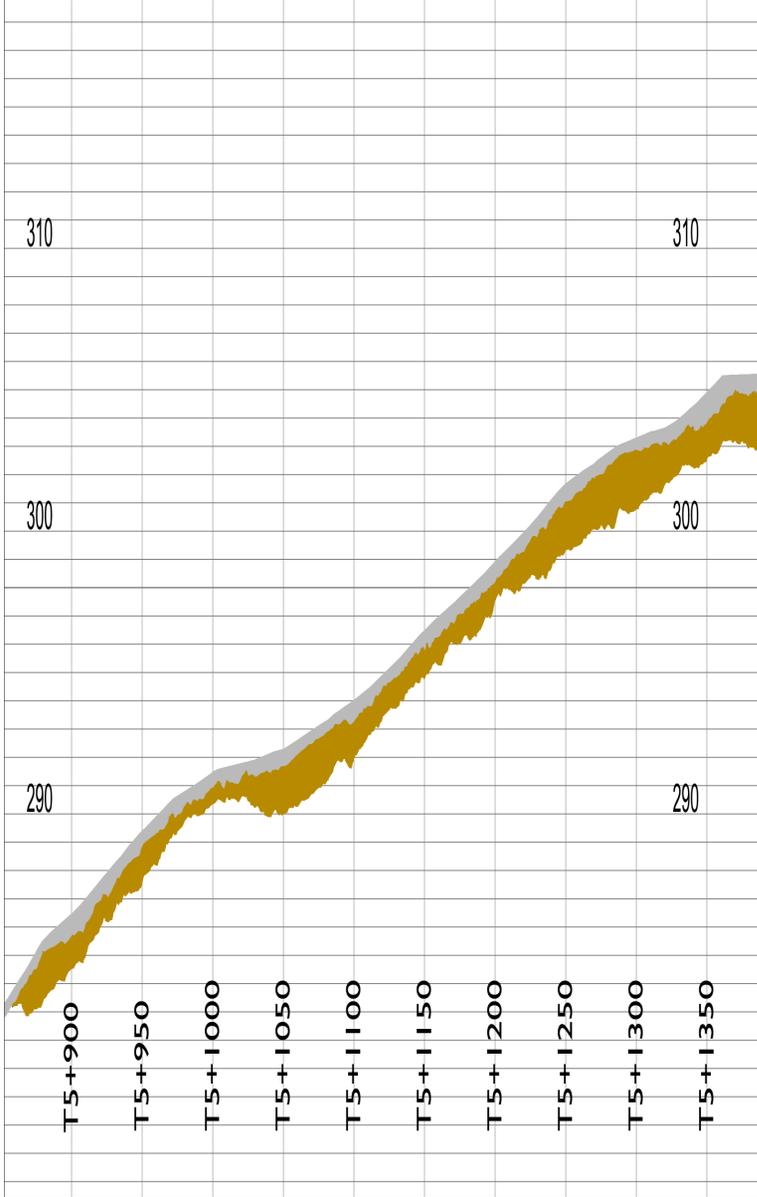
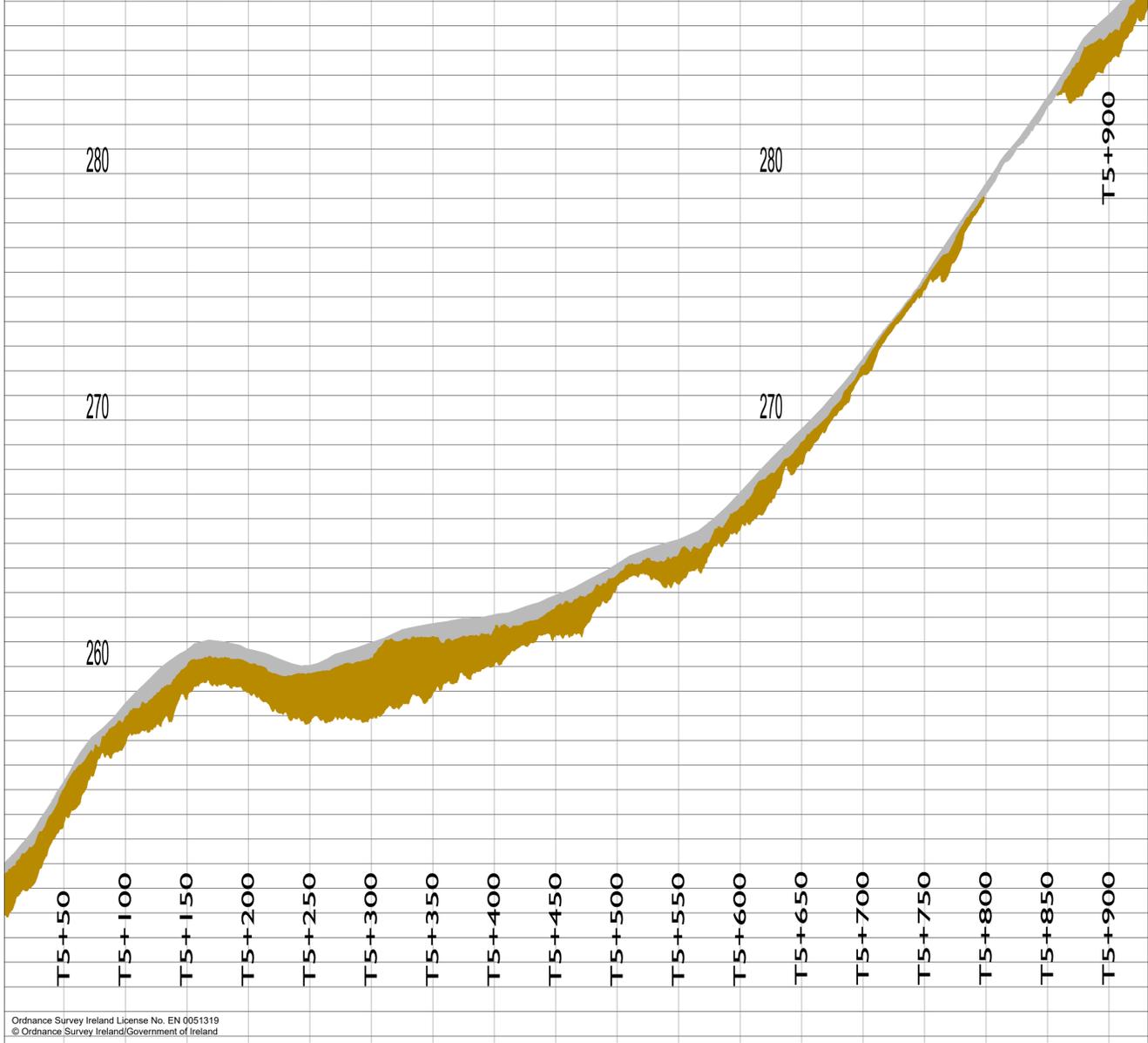
STATUS: INFORMATION

PROJECT: MEENBOG WIND FARM

TITLE: PEAT DEPTHS SPUR TO T11

REVISION: A

DRAWING NUMBER: MNBG d017.2.1



Ordnance Survey Ireland License No. EN 0051319
© Ordnance Survey Ireland/Government of Ireland

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	29/11/2019	BF	COD	FIRST ISSUE

ENGINEER	 <p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5931 W: www.ionicconsulting.ie Formerly known as WIND PROSPECT IRELAND</p>			CLIENT	PROJECT	
DRAWN BY	M. BROWNE	DATE	03/12/2019	PAPER SIZE	AI	
CHECKED AND APPROVED	C. Ó DUBHTHAIGH	DATE	03/12/2019	SCALE	1:2,500	
				STATUS	INFORMATION	
					REVISION	
					A	
					DRAWING NUMBER	
					MNBG d017.2.2	

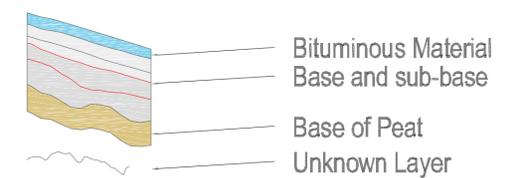
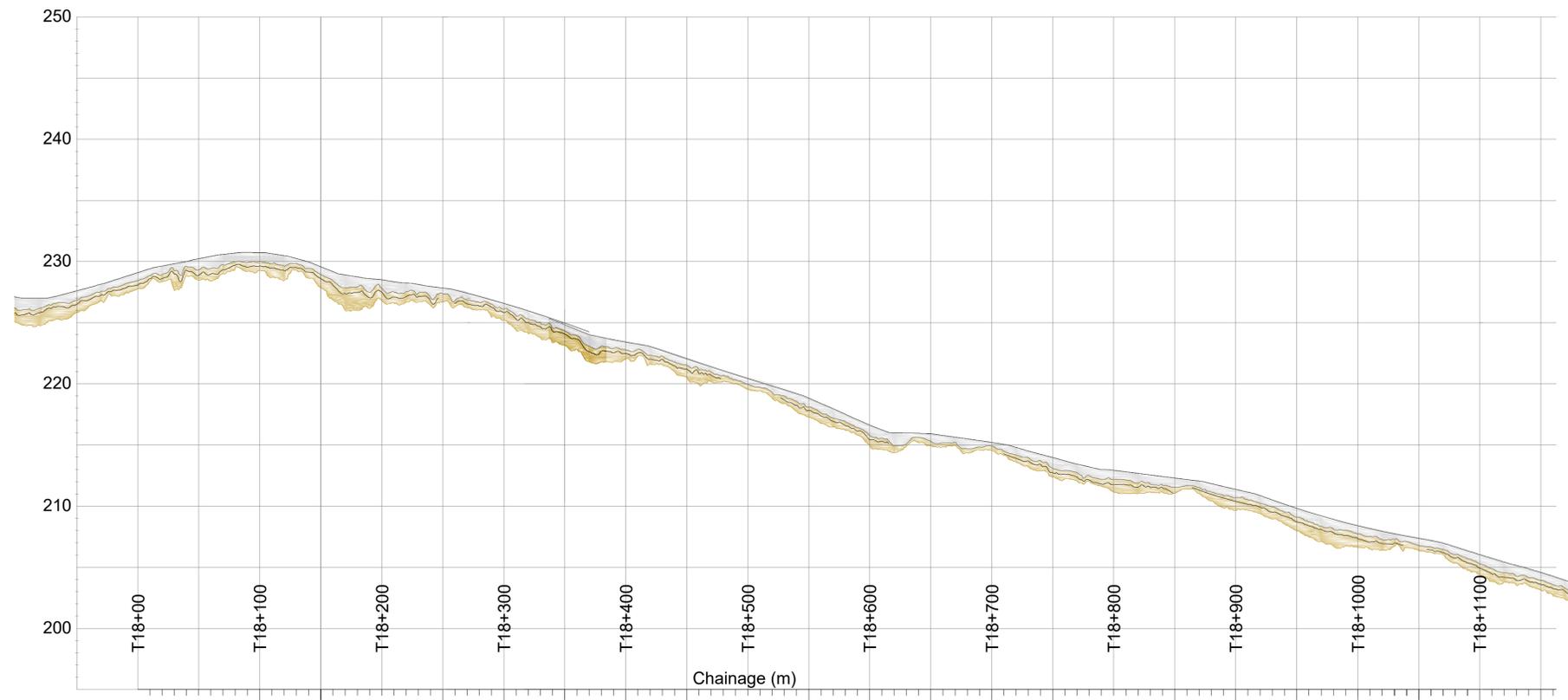
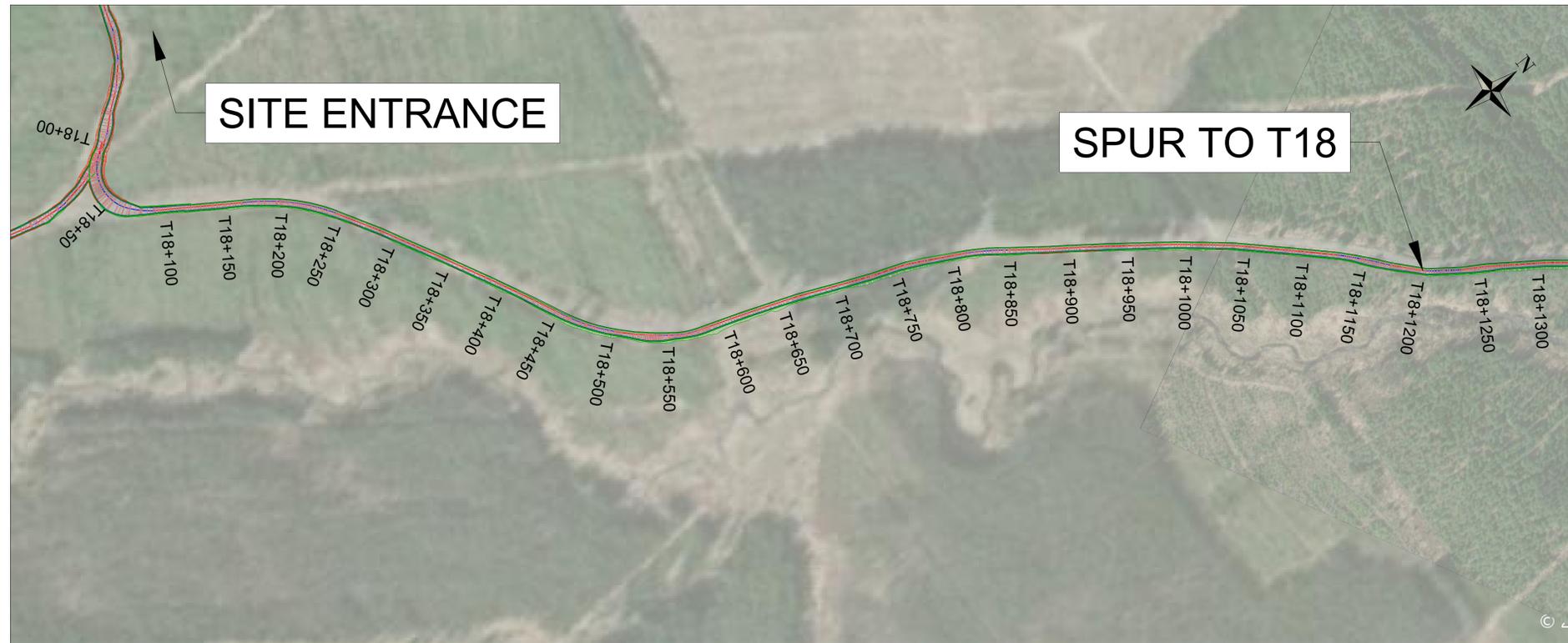
MEENBOG WIND FARM

PEAT DEPTHS SPUR TO T5

REVISION A

DRAWING NUMBER MNBG d017.2.2

Project: Meenbog Wind Farm
Drawing: MNBG d017.2.2
Date: 03/12/2019
Scale: 1:2,500
Status: INFORMATION



NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	29/11/2019	BF	COD	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
 E. hello@ionicconsulting.ie
 T. +353 (0) 1 845 5031
 W. www.ionicconsulting.ie
 Formerly known as WIND PROSPECT IRELAND

DRAWN BY: M. BROWNE
 CHECKED AND APPROVED: C. Ó DUBHTHAIGH

DATE: 16/04/2021

CLIENT

PAPER SIZE: A1
 SCALE: 1:2,500

STATUS: INFORMATION

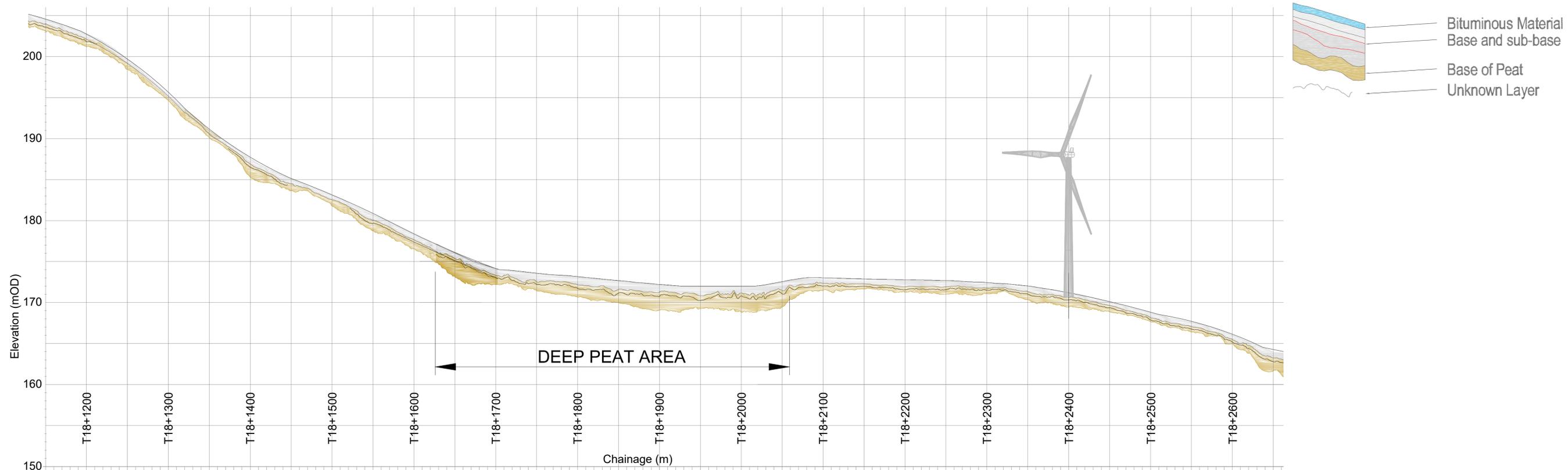
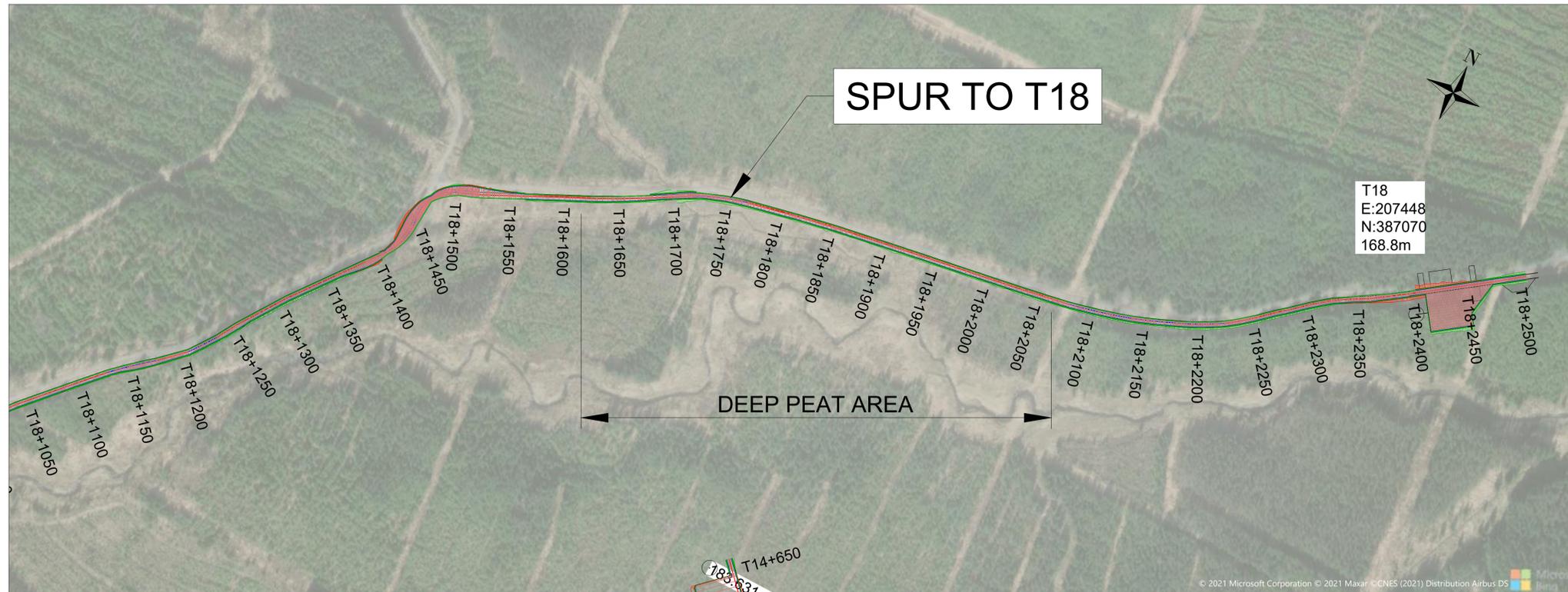
PROJECT: MEENBOG WIND FARM

TITLE: PEAT DEPTHS SPUR TO T18 - SHEET 1

REVISION: A

DRAWING NUMBER: MNBG d017.18.1

Revised: 16/04/2021 14:13:18
 Z:\Projects\Inland\Meenbog\MNBG\Drawings\MNBG D017 Peat Depths\MNBG D017.18 Peat Depths



NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	29/11/2019	BF	COD	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
 E: hello@ionicconsulting.ie
 T: +353 (0) 1 945 5031
 W: www.ionicconsulting.ie
 Formerly known as WIND PROSPECT IRELAND

DRAWN BY: M. BROWNE
 CHECKED AND APPROVED: C. Ó DUBHTHAIGH

DATE: 16/04/2021

CLIENT

PAPER SIZE: A1
 SCALE: 1:2,500

STATUS: INFORMATION

PROJECT: MEENBOG WIND FARM

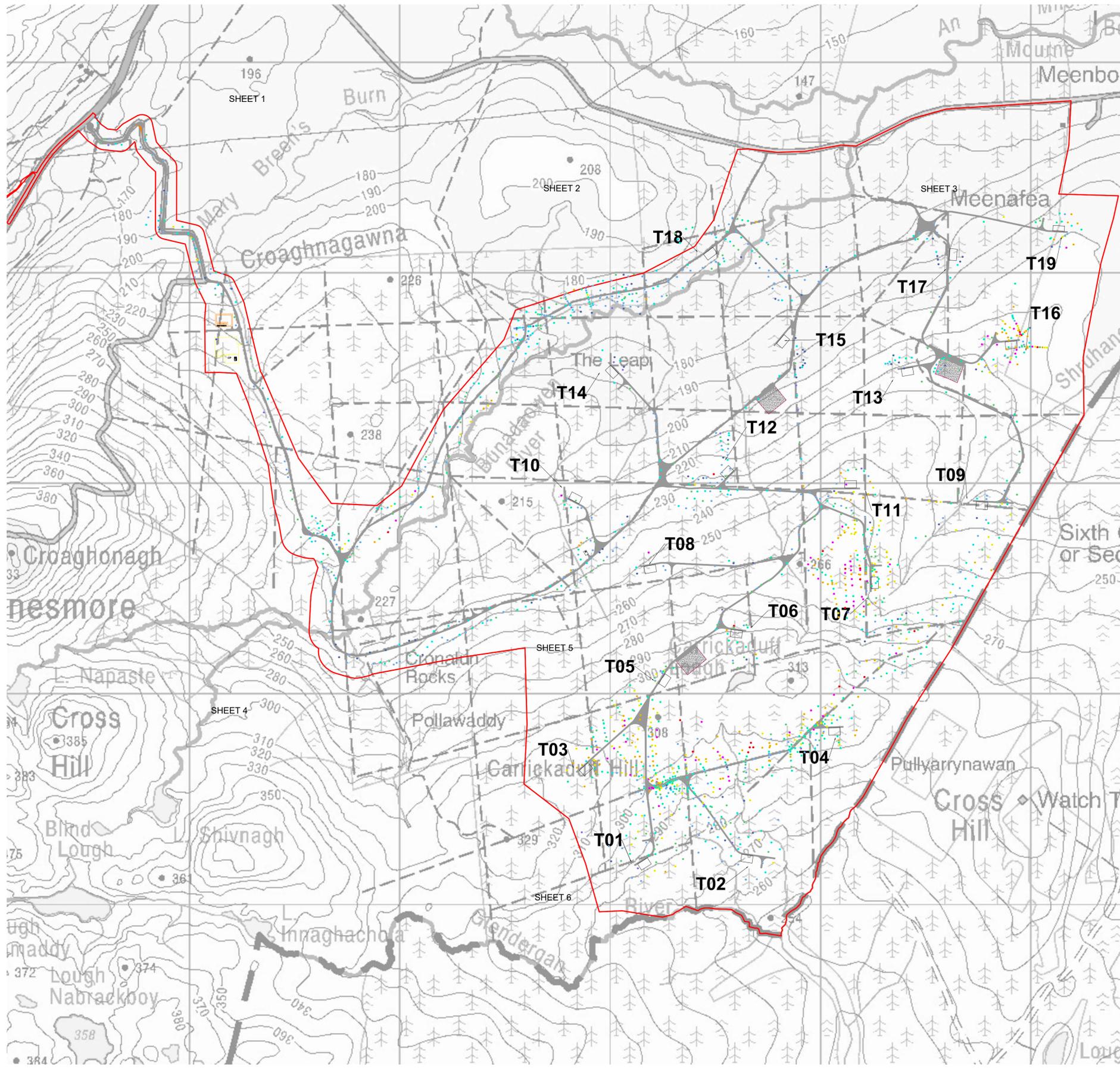
TITLE: PEAT DEPTHS SPUR TO T18 - SHEET 2

REVISION: A

DRAWING NUMBER: MNBG d017.18.2

Revised: 16/04/2021 09:21:09
 Z:\Projects\Inland\Meenbog\MNBG\Drawings\MNBG D017 Peat Depths\MNBG D017.18 Peat Depths

APPENDIX G – Overall Shear Strength Map



PEAT SHEAR STRENGTH VALUES

- 0-3
- 3-4
- 4-5
- 5-6
- 6-8
- 8-10
- 10-14
- 14-20
- 20-26
- 26-32

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	2004/2021	M.B.	J.S.	FIRST ISSUE

ENGINEER <p>The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie</p>		CLIENT MEENBOG WIND FARM	
DRAWN BY M. BROWNE		DATE 05/05/2021	
CHECKED AND APPROVED J. SHANAHAN		SCALE 1:10,000	
STATUS INFORMATION		DRAWING NUMBER MNBG d030.1.0	

PROJECT MEENBOG WIND FARM		REVISION A
TITLE PEAT SHEAR STRENGTH MAP OVERALL SITE		
DRAWING NUMBER MNBG d030.1.0		<small> Model: 21052021 10 0000 C:\Projects\Meenbog\Map\Map\Map.dwg </small>

APPENDIX H – Variable loading verification

Transportplan / Transportation plan

Plan de transport / Piano di trasporto

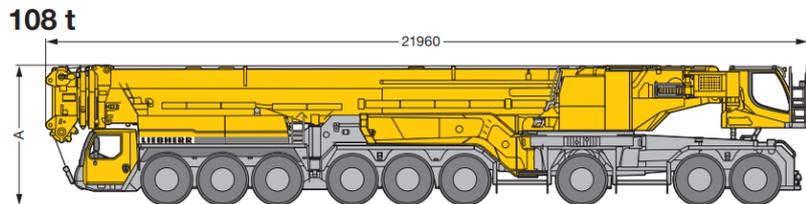
Esquema de transporte / Транспортна

Maße / Dimensions

Encombrement / Dimensioni
Dimensiones / Габариты крана
mm

	A	A
		125 mm*
385/95 R 25 (14.00 R 25)	3950	3825
445/95 R 25 (16.00 R 25)	4000	3875
525/80 R 25 (20.5 R 25)	4000	3875

* abgeseht - lowered - abaissé - abbassato
suspensión abajo - шасси осажено



Crane loading 108t = 1058kN

Loaded area at road level 17 x 3m = 51m²

Loaded area at underside of road level is based upon a 45 degree load spread through the 1.15m deep road build-up (17+2x1.15) x (3+2x1.15) = 102.3m²

Acting pressure on bog = 1058 / 102.3 = **10.3kPa**

12t Axles -> Wheel Load 6t

6t = 58.9kN

Contact area 0.3x0.3m

Load spread 45 degree through 1.15m = 0.3+2x1.15 = 2.6m

Single Wheel applied pressure on bog = 58.9kN/(2.6mx2.6m) = 8.7kPa

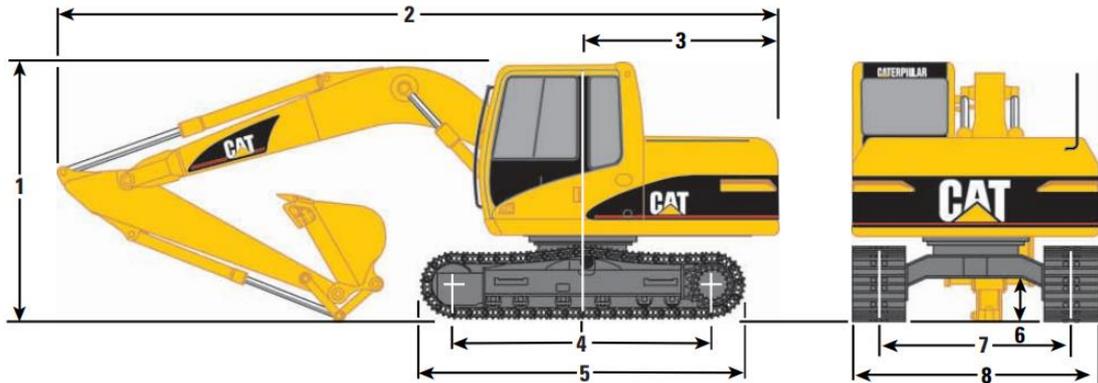
(Note that there would be a degree of overlap, effective block loading will be 10.3kPa as above)

1. Construction Load – Track Machine on Peat

Excavator loading is based upon a wide track CAT 312C L Hydraulic Excavator.

Dimension

All dimensions are approximate.



Operating Weights

Caterpillar designed and built track-type undercarriage.

Track Width	Operating Weight (medium stick)	Operating Weight (long stick)
312C L 500 mm (20") triple grouser	12 840 kg (28,310 lb)	12 910 kg (28,460 lb)
600 mm (24") triple grouser	13 070 kg (28,810 lb)	13 140 kg (28,970 lb)
700 mm (28") triple grouser	13 330 kg (29,390 lb)	13 400 kg (29,540 lb)
770 mm (30") triple grouser	13 460 kg (29,670 lb)	13 540 kg (29,850 lb)
Blade: add	750 kg (1653 lb)	

Wide-track machine used for tracking over peat. Width of each track is 1.4m and length 3.75m.

Excavator loading 14t = 140kN

Loaded area at road level 3.75m x 1.4m x 2 = 10.5m²

Acting pressure on bog = 140 / 10.5 = **13.3 kPa**

14t Excavator Load -> Track Load 7t

7t = 70kN

Contact area 3.75m x 1.4m

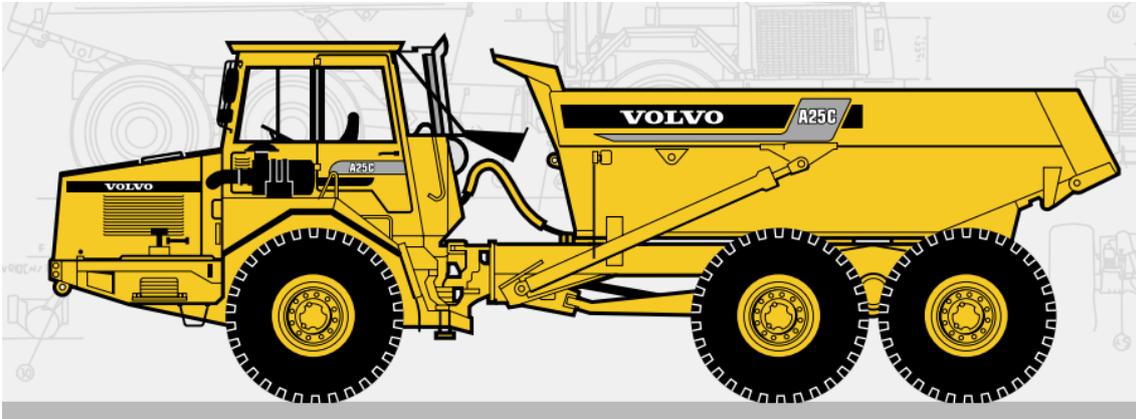
Single Track applied pressure on bog = 70kN/(3.75mx1.4m) = 13.3 kPa

2. Vehicles Previously Driven Over Floating Roads

I. Volvo A25C

Loadings are based upon Volvo BM A25C 6x6, refer to specification provided.

Key extracts provided below:



WEIGHTS

Operating weight includes all fluids and operator.
Standard machine.

Operating weight with 23.5R25 tires:

Front	9040 kg
Rear	8730 kg
Total	17770 kg
Payload	22500 kg
Total weight	
Front	11500 kg
Rear	28770 kg
Total	40270 kg

A25C with 20.5R25 tyres, subtract 200 kg (440 lb) per axle.

Unloaded operating weight of the vehicle is 17.77t and the total vehicle weight is 40.27t.

II. Volvo Articulated Hauler A25D

Loadings are based upon Volvo BM A25D 6x6, refer to the specification provided.

Key extracts provided below:



Weights		
Operating weight includes all fluids and operator.		
	A25D	A30D
Tires	23.5R25	750/65R25
Operating weight unloaded		
Front	12 160 kg	12 500 kg
Rear	9 400 kg	10 560 kg
Total	21 560 kg	23 060 kg
Payload	24 000 kg	28 000 kg
Total weight		
Front	14 140 kg	14 990 kg
Rear	31 420 kg	36 070 kg
Total	45 560 kg	51 060 kg

Unloaded operating weight of the vehicle is 21.56t and the total vehicle weight is 45.56t.

APPENDIX I – Sensitivity Analysis

A sensitivity analysis has been carried out with an elevated requirement of 1.2 instead of 1.0 as required to comply with Eurocode 7 DA1/2. All assessment locations with an ODF (overdesign factor) between 1.0-1.2 are therefore re-assessed and appropriate mitigation measures are outlined.

This can alternatively be considered as an increase in the EC7 partial material factor from 1.4 to 1.68. It is considered that an increase in the partial load factors would not be warranted given the degree of certainty over the permanent loading (>1700 peat depth measurements, defined depths of road build-up), and also for variable loading (specific crane loading defined, limited to 12t axles on floating roads).

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
SUB-28	1.62	1.26	1.09			A	Solid road previously constructed. ODF point is remote from the road and proposed works areas and there are two other ODF assessment points between SUB-52 and the road. These are SUB-26 ODF 1.76 and SUB-27 1.28 ODF. No further testing required.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
SUB-51	1.66	1.24	1.05			A	Solid road previously constructed.	Additional assessment completed closer to the road at this location. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
SUB-52	1.80	1.24	1.01			A	Solid road has previously been constructed. There are an adjacent ODF assessment point closer to the road with ODF value of 5.3.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
SUB-65	1.37	1.15	1.03			B	Solid road previously constructed. ODF point is remote from the road and there are two adjacent ODF assessment points with ODF values of 1.6 and 2.6. On re-inspection, there is actually no peat side-cast at this location, therefore loadcase "I" ODF can be discounted.	Additional assessment completed closer to the road at this location. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-21	2.05		1.19			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-23	1.46		1.04			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-33	1.71		1.08			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-37	1.49		1.11			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-45	1.96		1.03			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T1-47	2.00		1.18			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T2-19	2.17		1.19			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T2-40	2.06		1.13			A	ODF point is beyond the turbine foundation location. An existing ODF of 1.4 (t2-41) was determined between T2-40 and the turbine.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T2-42	3.42	3.42	1.59	1.44	1.05	E	On re-inspection, there is no floating road at this location, therefore loadcase "IV" ODF can be discounted. The remaining ODFs are greater than 1.2.	No action required.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T3-1	1.77		1.13			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-5	2.73	2.73	1.62	1.49	1.16	E	Floating road already constructed. The ODF is <1.2 for load case "III+IV" crane on floating road. Assessment point is not <1.2 when load spread of the construction vehicle through the peat is considered.	Further testing and additional assessment to be completed at this location.
T3-13	1.90		1.14			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-18	1.99		1.18			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-22	1.60		1.07			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-24	1.45		1.07			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-27	1.68		1.14			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-28	1.67		1.12			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-29	2.26	2.26	1.50	1.40	1.13	E	Floating road already constructed. The ODF is <1.2 for load case "III+IV" crane on floating road.	Further testing and an additional assessment to be completed at this location.
T3-31	2.16		1.16			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-36	1.58		1.08			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-37	1.65		1.07			A	Solid road/hardstand has previously been constructed. The ODF is <1.2 for load case "II" tracked machine on peat. There are is an adjacent ODF assessment point with an ODF value of 1.7.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T3-42	1.71		1.11			A	Solid road/hardstand has previously been constructed. The ODF is <1.2 for load case "II" tracked machine on peat. There are is an adjacent ODF assessment point with an ODF value of 1.8.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T3-45	1.41		1.05			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-2	1.39		1.07			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-3	1.48		1.13			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-5	1.53		1.15			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-7	1.80	1.80	1.32	1.26	1.05	D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-8	1.45		1.02			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-10	2.18	2.18	1.38	1.29	1.02	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This section of road is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-12	2.85	2.85	1.53	1.40	1.05	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This section of road is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-13	2.16	2.16	1.37	1.28	1.01	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This section of road is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-27	1.77		1.17			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-33	1.71		1.19			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-41	1.69		1.03			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T4-43	1.71		1.08			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-48	2.27		1.19			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-52	2.36		1.17			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-56	2.10		1.04			C	Floating road already constructed. The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-57	7.23	7.23	1.86	1.62	1.08	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-61	1.71		1.10			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-65	2.65	2.65	1.57	1.45	1.12	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-66	2.13		1.05			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic. Future T4 works to be executed from solid roads.
T4-67	1.72		1.07			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic. Future T4 works to be executed from solid roads.
T4-68	1.71		1.09			D	The ODF is <1.2 for load case "II" tracked machine on peat. This section of road is due to be upgraded to a solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic. Future T4 works to be executed from solid roads.
T4-73	1.72	1.72	1.09	1.02	0.80	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This section of road is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-74	1.50		1.07			C	The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T4-77	2.38		1.18			C	The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

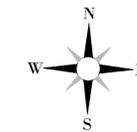
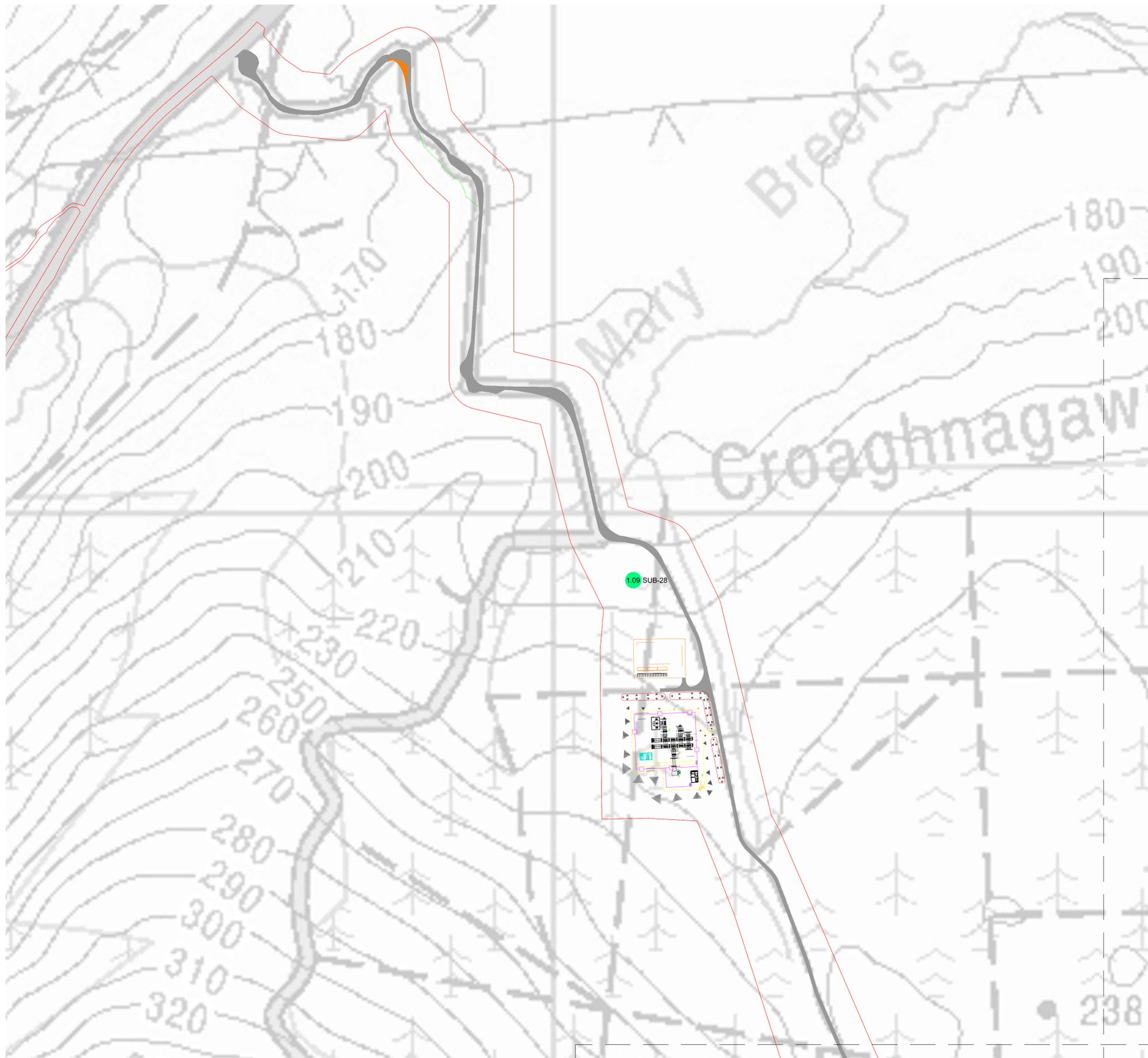
Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T4-78	2.24	2.24	1.41	1.31	1.03	D	This assessment point is located in an area previously identified for works. The ODF is <1.2 for load case "III+IV" crane on floating road. This is to be upgraded to a solid road and therefore this loadcase will not apply.	This section of road is to be reconstructed to solid formation as outlined in Section 5.4 of this report.
T4-80	1.66		1.12			C	The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic. Future T4 works to be executed from solid roads.
T4-109	1.72		1.07			C	The ODF is <1.2 for load case "II" tracked machine on peat.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T5-6	2.26	1.39	1.09			A	Solid road previously constructed.	A supplementary ODF assessment undertaken adjacent to the road in this location. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T6-2	2.43	1.38	1.05			A	Solid road previously constructed.	A supplementary ODF assessment undertaken adjacent to the road in this location. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T6-10	1.96	1.30	1.05			A	Solid hardstand has been previously constructed. ODF point is located ~40m from the works areas.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T6-11	2.24	1.41	1.11			A	Solid road and hardstand are already constructed. Two assessment points with ODF values of 1.3 and 1.7 are located between T6-11 and the road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T6-13	1.74	1.28	1.07			A	Solid hardstand has been previously constructed. ODF point is located ~80m from the works areas.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-16	2.06		1.13			A	The ODF is located ~80m downslope of Wall 3, on which the road to T7 will be located. There is an adjacent ODF of 1.6 and ODFs of 1.5, 3.2 and 2.3 between this point and the road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-27	1.92		1.05			A	This point is located adjacent to the existing Wall 3 on the downslope side. Machinery will only be operating from existing solid construction (wall 3) as the hardstand works progress and will not be required to track across this section of bog.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-29	1.91		1.07			A	This point is located adjacent to the existing Wall 3 on the downslope side. Machinery will only be operating from existing solid construction (wall 3) as the hardstand works progress and will not be required to track across this section of bog.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-34	1.77		1.05			A	This point is surrounded by ODF values of 4.4, 1.9 and 2.3. It is located where the hardstand will be constructed to solid formation.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T7-36	2.64		1.08			A	The ODF is located ~40m downslope of the proposed hardstand. There is an adjacent ODF of 1.3 and 1.8, and it is noted that the peat is shallow at 1.2m depth at this location.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-40	1.03		0.79			F	This point is located in a previously identified no works zone.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-41	1.98		1.06			A	This point is located in a previously identified no works zone.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T7-42	1.82		1.16			A	This point is located in a previously identified no works zone.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T11-6	1.73	1.28	1.08			A	Assessment point is located on the uphill side of the existing solid road.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T11-10	1.73	1.28	1.08			A	Assessment point is relatively remote and located ~50m downhill of the existing solid hardstand. Three assessment points with ODF values of 1.2, 1.4 and 2.5 are adjacent to it. A supplementary assessment should be completed between T11-10 and the hardstand.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T11-12	1.82	1.38	1.17			A	Assessment point is located on the uphill side of the existing solid road/hardstand. Due to the proximity to turbine component storage a further assessment should be completed at this location.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T12-12	2.63	1.38	1.02			A	Peat depth is shallow at 1.1m. The hardstand has already been constructed to solid formation at this turbine. Assessment points with ODF values of 1.2, 2.7, 4.6, 3.0 and 2.0 are located between this assessment point and the solid roads.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-4	1.72	1.30	1.11			A	Solid road previously constructed. There is an adjacent assessment point with an ODF value of 1.4.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-9	1.43	1.19	1.06			B	Assessment point is relatively remote and located ~60m uphill of the hardstand. Assessment points with ODF values of 2.0 and 3.1 are located between it and the hardstand location. On re-inspection there is no side-cast peat in this location and loadcase II can therefore be discounted.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-13	1.77	1.35	1.15			A	4 out of 15 ODFs located to the north of T16 are between 1.0 and 1.2 under loadcase II. Supplementary testing and assessment completed.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-14	1.65	1.26	1.07			A	4 out of 15 ODFs located to the north of T16 are between 1.0 and 1.2 under loadcase II. Supplementary testing and assessment completed.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.

Meenbog Wind Farm Sensitivity Analysis - Assessment of ODF values <1.2

Location Ref.	ODF Existing (Self-weight Peat Only) 0	ODF Permanent Surcharge Peat 0+I	ODF Variable Load Construction 0+II	ODF Permanent Surcharge Floating Road 0+III	ODF Variable Load Crane 0+III+IV	Scenario	Assessment/Comments	Action
T16-20	1.69	1.24	1.04			A	Assessment point is relatively remote and located ~60m uphill of the hardstand. Assessment points with ODF values of 2.0 and 3.1 are located between it and the hardstand location.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-24	1.47	1.22	1.09			A	4 out of 15 ODFs located to the north of T16 are between 1.0 and 1.2 under loadcase II. Supplementary testing and assessment completed.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T16-26	1.47	1.22	1.09			A	4 out of 15 ODFs located to the north of T16 are between 1.0 and 1.2 under loadcase II. Supplementary testing and assessment completed.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T18-19	2.63	1.44	1.08			A	Assessment point is located on the upslope side of an existing floating road which is to be upgraded as part of the wind farm works. A further assessment should be completed with testing points closer to the existing road and works area.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T18-24	2.67	1.56	1.19			A	Assessment point is located on the upslope side of an existing floating road which is to be upgraded as part of the wind farm works. A further assessment should be completed with testing points closer to the existing road and works area.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T18-37	2.44	1.46	1.13			A	ODF point is ~50m downslope of an existing road. There is an adjacent ODF assessment point with values of 1.3. Three assessment points are located upslope of T18-18 adjacent to the road and have ODF values of 5.6, 2.3 and 5.7.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T18-50	2.45	1.47	1.14			A	ODF point is ~40m upslope of an existing road. There are two adjacent ODF assessment points with values of 3.0 and 4.0. Another assessment point is located downslope of T18-50 adjacent to the road and has an ODF value of 3.6.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T19-6	1.62	1.20	1.01			A	Adjacent solid hardstand already constructed.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T19-11	1.51	1.20	1.04			B	Assessment point is located >50m away from the turbine area. Assessment points with ODF values of 4.4 and 1.5 are located between it and the hardstand location. On re-inspection there is no side-cast peat in this location and loadcase II can therefore be discounted.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T19-13	1.91	1.29	1.05			A	Assessment point is located >50m away from the turbine area. Assessment points with ODF values of 3.0 and 2.6 are located between it and the hardstand location.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
T19-16	2.16	1.42	1.13			A	Assessment point is relatively remote and located >50m away from the turbine.	No vehicles are to track off the existing road without a prior assessment being completed by Ionic.
MM-3	2.23	1.34	1.04			A	ODF point is somewhat removed from the proposed works areas and therefore further testing and assessment completed closer to the works location.	Further testing and assessment completed. No vehicles are to track off the existing road without a prior assessment being completed by Ionic.



LEGEND

- SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD
- SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE
- SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)
- SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS
- SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING
- SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA

1.09 SUB-28

238

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	10/08/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER

IONIC CONSULTING

The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland
 E: hello@ionicconsulting.ie
 T: +353 (0) 1 845 5031
 W: www.ionicconsulting.ie

DRAWN BY: E. ANDRADE
 CHECKED AND APPROVED: J. SHANAHAN

DATE: 10/08/2021

CLIENT

PAPER SIZE: A1
 SCALE: NTS

STATUS: INFORMATION

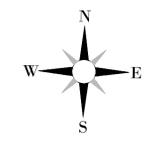
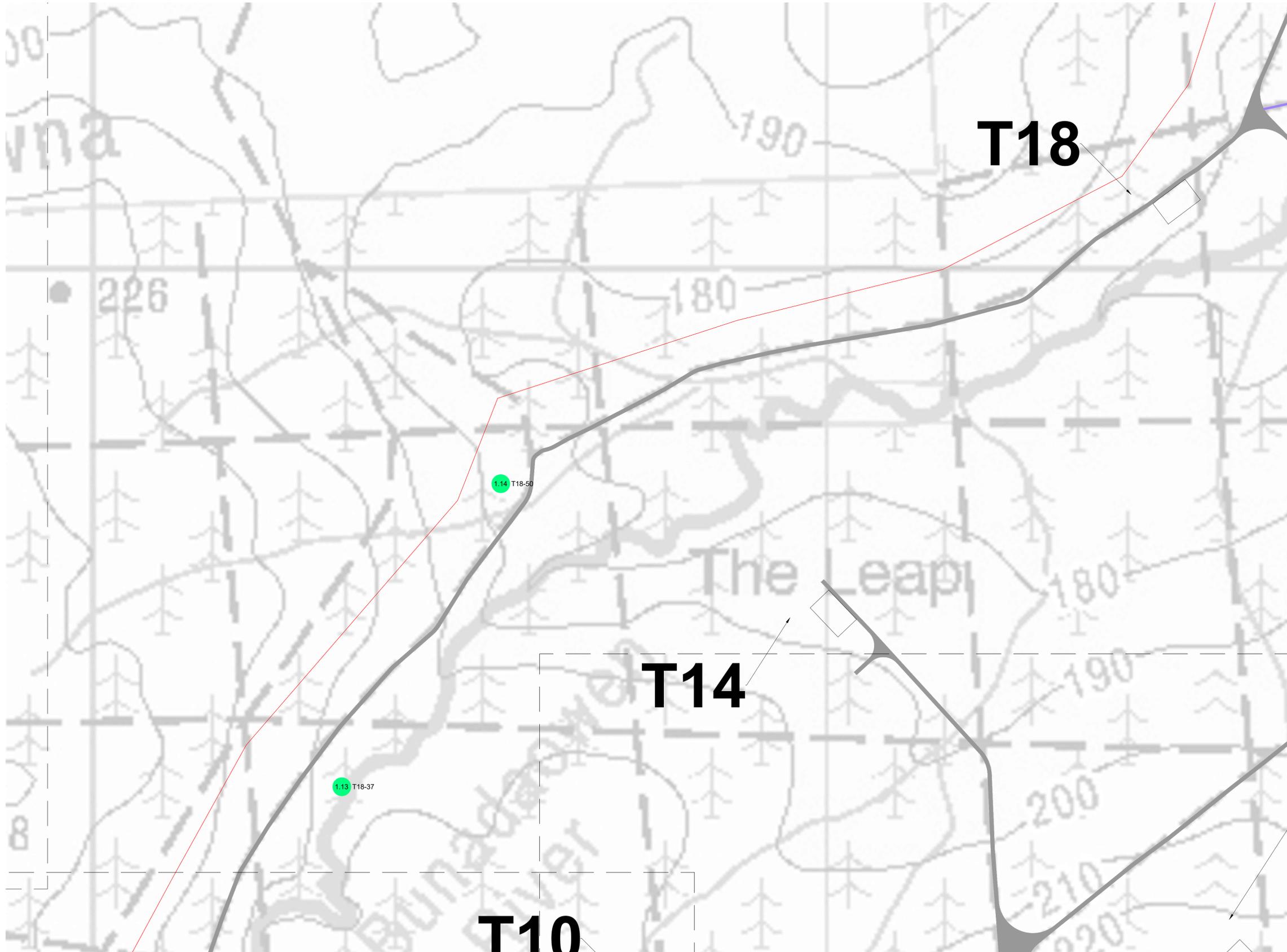
PROJECT: MEENBOG WIND FARM

TITLE: ODF SENSITIVITY ANALYSIS MAP SHEET 1

DRAWING NUMBER: MNBG d029.2.1

REVISION: A

© 2021 IONIC CONSULTING. ALL RIGHTS RESERVED. THIS DOCUMENT IS THE PROPERTY OF IONIC CONSULTING AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM IONIC CONSULTING.



LEGEND

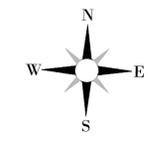
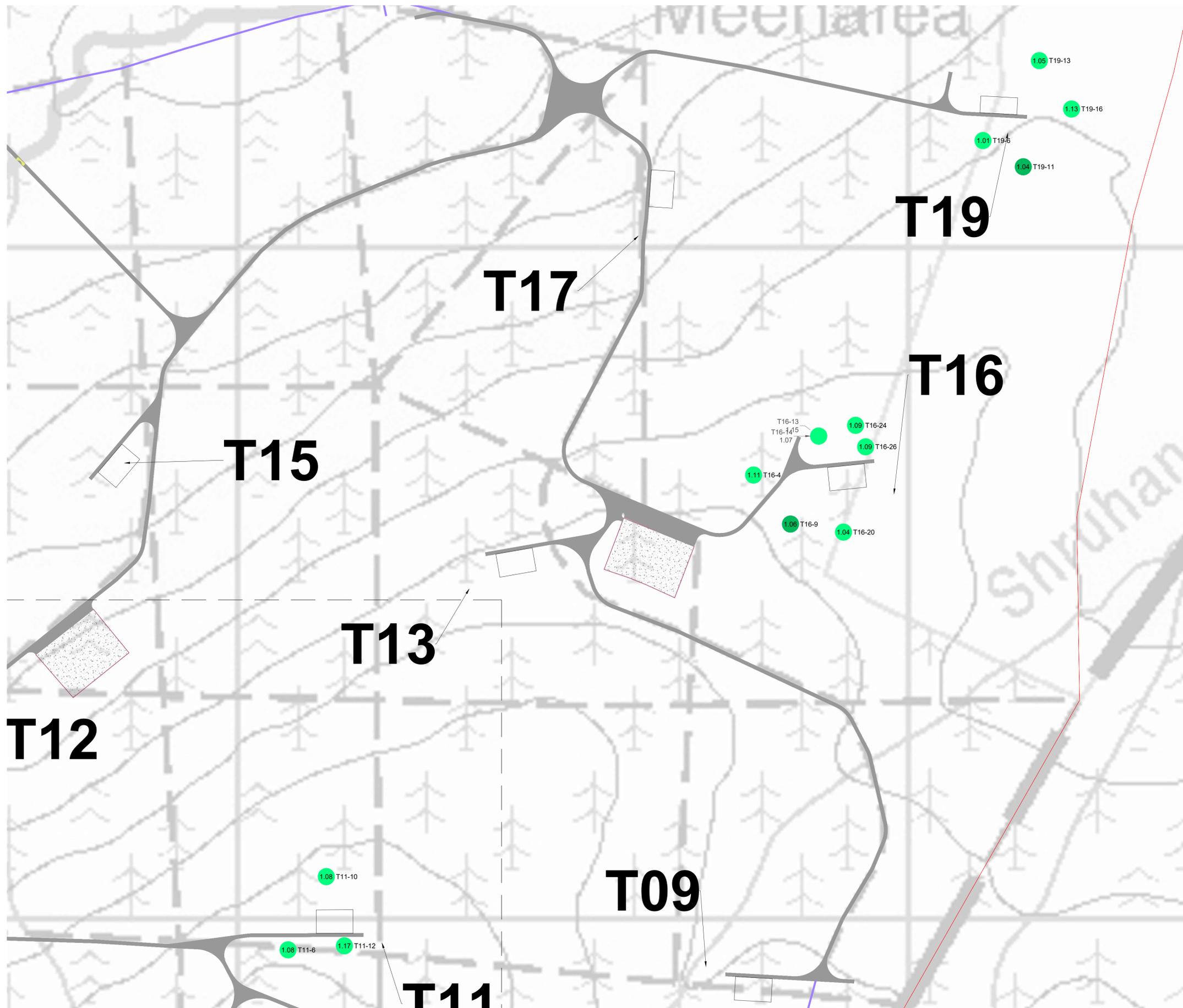
- SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD
- SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE
- SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)
- SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS
- SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING
- SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	10/08/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER  The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		CLIENT MEENBOG WIND FARM	
DRAWN BY E. ANDRADE	DATE 10/08/2021	PAPER SIZE A1	SCALE NTS
CHECKED AND APPROVED J. SHANAHAN	DATE 10/08/2021	STATUS INFORMATION	

PROJECT MEENBOG WIND FARM		REVISION A
TITLE ODF SENSITIVITY ANALYSIS MAP SHEET 2		
DRAWING NUMBER MNBG d029.2.2		<small> P:\04 - 10/08/2021 10:14:42 \\P:\04\APP\Projects\Wind\Meenbog\MNBG\Drawings\MNBG d029.2.2\ODF Analysis Map </small>



LEGEND

- SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD
- SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE
- SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)
- SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS
- SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING
- SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA

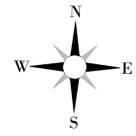
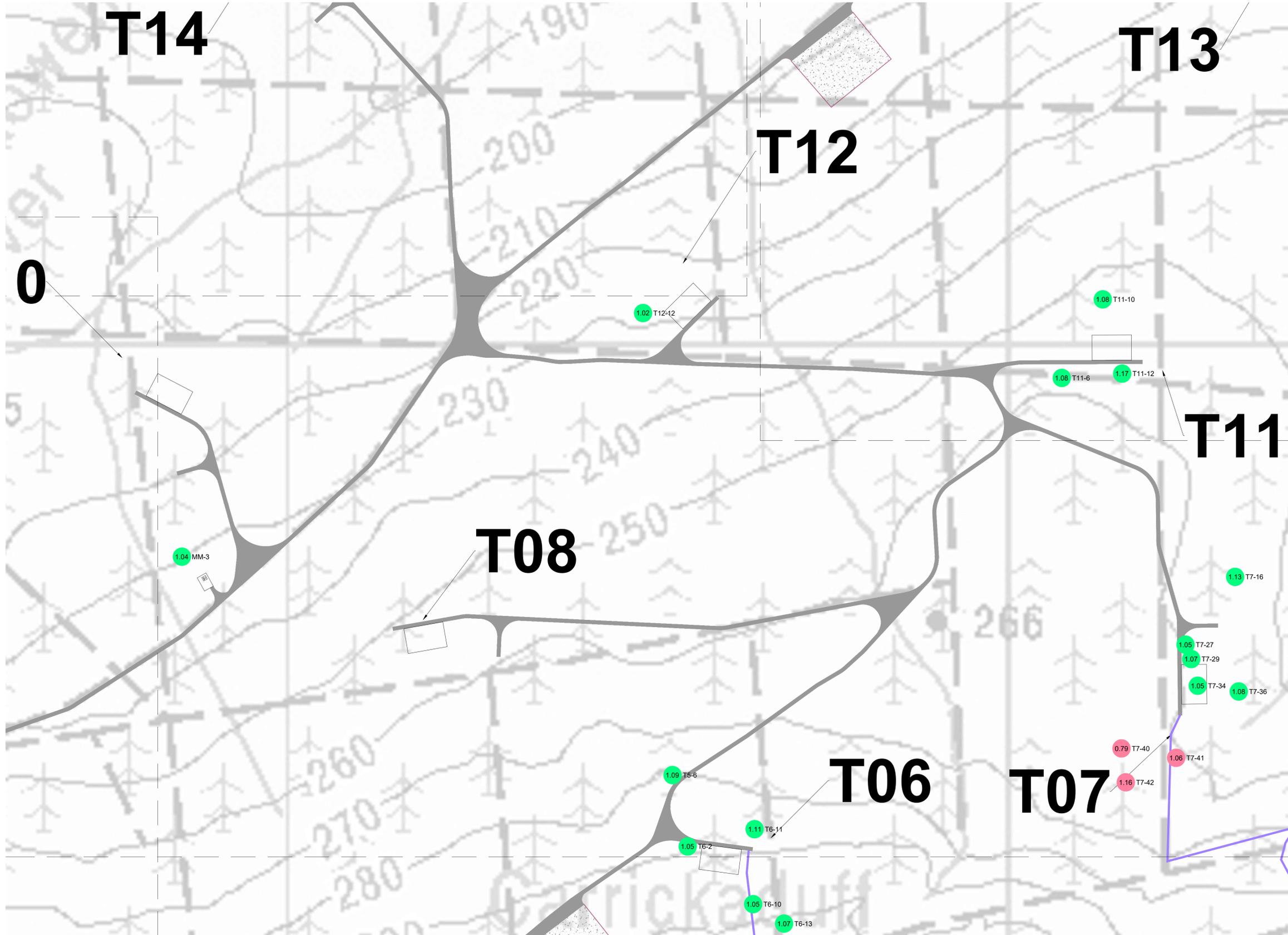
NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	10/08/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER		CLIENT		PROJECT	
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		MEENBOG WIND FARM		TITLE	
		ODF SENSITIVITY ANALYSIS MAP		REVISION	
DRAWN BY		PAPER SIZE		SCALE	
E. ANDRADE		A1		NTS	
CHECKED AND APPROVED		DATE		STATUS	
J. SHANAHAN		10/08/2021		INFORMATION	
				DRAWING NUMBER	
				MNBG d029.2.3	

ENGINEER		CLIENT		PROJECT	
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		MEENBOG WIND FARM		TITLE	
		ODF SENSITIVITY ANALYSIS MAP		REVISION	
DRAWN BY		PAPER SIZE		SCALE	
E. ANDRADE		A1		NTS	
CHECKED AND APPROVED		DATE		STATUS	
J. SHANAHAN		10/08/2021		INFORMATION	
				DRAWING NUMBER	
				MNBG d029.2.3	

ENGINEER		CLIENT		PROJECT	
 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		MEENBOG WIND FARM		TITLE	
		ODF SENSITIVITY ANALYSIS MAP		REVISION	
DRAWN BY		PAPER SIZE		SCALE	
E. ANDRADE		A1		NTS	
CHECKED AND APPROVED		DATE		STATUS	
J. SHANAHAN		10/08/2021		INFORMATION	
				DRAWING NUMBER	
				MNBG d029.2.3	



LEGEND

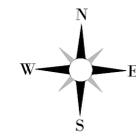
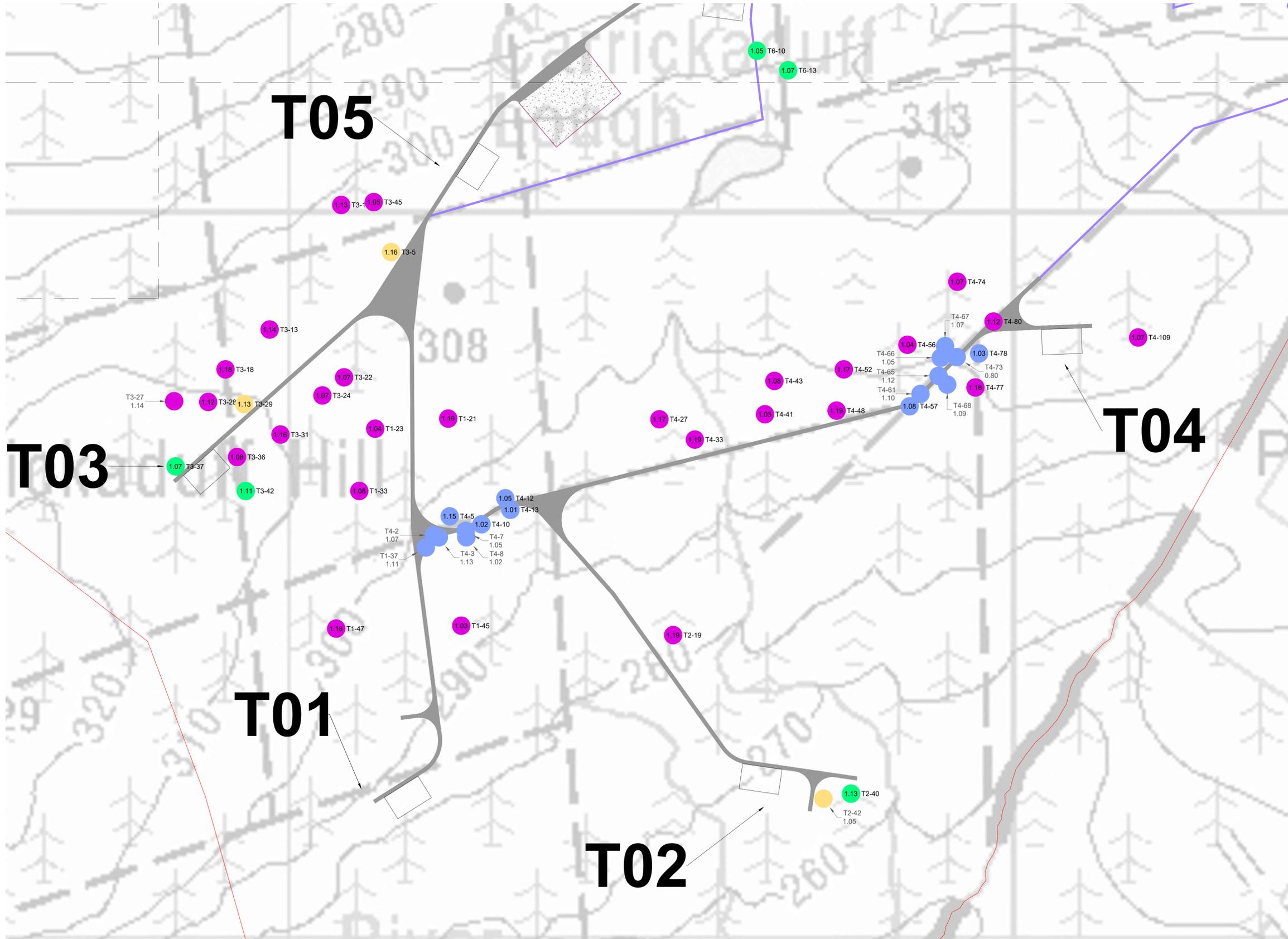
- SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD
- SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE
- SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)
- SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS
- SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING
- SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	10/08/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		CLIENT MEENBOG WIND FARM	
DRAWN BY E. ANDRADE	DATE 10/08/2021	PAPER SIZE A1	SCALE NTS
CHECKED AND APPROVED J. SHANAHAN	DATE 10/08/2021	STATUS INFORMATION	

PROJECT MEENBOG WIND FARM		REVISION A
TITLE ODF SENSITIVITY ANALYSIS MAP SHEET 5		
DRAWING NUMBER MNBG d029.2.5		

© 2021 IONIC CONSULTING. All rights reserved. This drawing is the property of IONIC CONSULTING and is not to be used, copied, or reproduced in any form without the written permission of IONIC CONSULTING.



LEGEND

- SCENARIO A: SOLID ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING ON PEAT OUTSIDE ROAD
- SCENARIO B: SOLID ROADS WITH ODF 1.0-1.2 UNDER 1m PEAT SURCHARGE LOADCASE & TRACK MACHINE
- SCENARIO C: FLOATING ROADS WITH ODF 1.0-1.2 UNDER TRACK MACHINE LOADING (ADJACENT TO ROAD)
- SCENARIO D: AREAS PREVIOUSLY EARMARKED FOR UPGRADE WORKS
- SCENARIO E: FLOATING ROADS WITH ODF 1.0-1.2 UNDER CRANE LOADING
- SCENARIO F: PREVIOUSLY IDENTIFIED NO WORKS AREA

NOTES

REV	DATE	DRAWN BY	CHECKED BY	DETAILS
A	10/08/2021	E.A.	J.S.	FIRST ISSUE

ENGINEER	 The Hyde Building, The Park, Carrickmines, Dublin 18, D18VC44, Ireland E: hello@ionicconsulting.ie T: +353 (0) 1 845 5031 W: www.ionicconsulting.ie		
DRAWN BY	E. ANDRADE	DATE	10/08/2021
CHECKED AND APPROVED	J. SHANAHAN	DATE	10/08/2021

CLIENT	MEENBOG WIND FARM		
PAPER SIZE	A1	SCALE	NTS
STATUS	INFORMATION		

PROJECT	MEENBOG WIND FARM	
TITLE	ODF SENSITIVITY ANALYSIS MAP SHEET 6	
REVISION	A	
DRAWING NUMBER	MNBG d029.2.6	

APPENDIX J – EC7 DAI Combination 1 & 2 comparison

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
SUB-1	204562	387715	1.4	16	7.4	10	13.3	0.0	0.0	6.39	3.25	2.86			6.63	3.87	3.22			2.86	3.22	+0.36
SUB-2	204794	387658	1.7	8.5	2.8	10	13.3	0.0	0.0	7.32	4.08	3.63			7.59	4.78	4.06			3.63	4.06	+0.43
SUB-3	204575	387621	1.2	9	5.4	10	13.3	0.0	0.0	5.72	2.69	2.34			5.93	3.23	2.66			2.34	2.66	+0.31
SUB-4	204648	387616	1.4	14	7.5	10	13.3	0.0	0.0	5.52	2.81	2.47			5.72	3.34	2.78			2.47	2.78	+0.32
SUB-5	204823	387564	1.0	12	4.1	10	13.3	0.0	0.0	12.02	5.11	4.40			12.46	6.23	5.03			4.40	5.03	+0.63
SUB-6	204875	387533	2.2	13.5	1.5	10	13.3	0.0	0.0	16.75	10.38	9.38			17.37	11.94	10.39			9.38	10.39	+1.01
SUB-7	204889	387381	2.2	11	3.7	10	13.3	0.0	0.0	5.55	3.44	3.11			5.75	3.95	3.44			3.11	3.44	+0.33
SUB-8	204866	387302	2.3	14	3.4	10	13.3	0.0	0.0	7.34	4.63	4.19			7.62	5.31	4.64			4.19	4.64	+0.44
SUB-9	204922	387222	4.2	5	2.3	10	13.3	0.0	0.0	2.12	1.60	1.50			2.20	1.78	1.63			1.50	1.63	+0.12
SUB-10	204966	387221	5.0	6	1.5	10	13.3	0.0	0.0	3.28	2.58	2.43			3.40	2.83	2.62			2.43	2.62	+0.19
SUB-11	204852	387220	2.0	13.5	2.4	10	13.3	0.0	0.0	11.52	6.88	6.18			11.95	7.97	6.87			6.18	6.87	+0.69
SUB-12	205006	387169	2.5	5	3.9	10	13.3	0.0	0.0	2.11	1.37	1.24			2.18	1.56	1.37			1.24	1.37	+0.13
SUB-13	205023	387130	1.8	10	4.8	10	13.3	0.0	0.0	4.76	2.72	2.43			4.94	3.17	2.71			2.43	2.71	+0.28
SUB-14	205034	387065	0.8	5.5	2.4	10	13.3	0.0	0.0	11.74	4.37	3.71			12.17	5.41	4.28			3.71	4.28	+0.56
SUB-15	205048	387054	1.5	17	2.4	10	13.3	0.0	0.0	19.35	10.18	8.99			20.07	12.04	10.11			8.99	10.11	+1.12
SUB-16	205101	387021	2.5	8.5	4.8	10	13.3	0.0	0.0	2.91	1.89	1.72			3.02	2.16	1.90			1.72	1.90	+0.18
SUB-17	205033	387010	1.4	10.5	6.5	10	13.3	0.0	0.0	4.76	2.42	2.13			4.94	2.88	2.40			2.13	2.40	+0.27
SUB-18	205125	387004	1.2	6	4.2	10	13.3	0.0	0.0	4.89	2.30	2.00			5.07	2.77	2.27			2.00	2.27	+0.27
SUB-19	205155	386999	0.9	11	4.1	10	13.3	0.0	0.0	12.24	4.90	4.19			12.70	6.01	4.81			4.19	4.81	+0.61
SUB-20	205098	386998	2.6	11	3.1	10	13.3	0.0	0.0	5.60	3.68	3.36			5.80	4.19	3.70			3.36	3.70	+0.34
SUB-21	205023	386982	2.0	7	2.9	10	13.3	0.0	0.0	4.95	2.95	2.65			5.13	3.42	2.95			2.65	2.95	+0.3
SUB-22	205177	386963	1.7	8	7.4	10	13.3	0.0	0.0	2.63	1.47	1.30			2.73	1.72	1.46			1.30	1.46	+0.16
SUB-23	205121	386928	2.1	10.5	4.4	10	13.3	0.0	0.0	4.67	2.84	2.56			4.84	3.28	2.84			2.56	2.84	+0.28
SUB-24	205195	386928	0.7	11.5	4.8	10	13.3	0.0	0.0	14.07	4.81	4.06			14.59	6.01	4.69			4.06	4.69	+0.64
SUB-25	205045	386924	1.7	12	3.8	10	13.3	0.0	0.0	7.62	4.25	3.78			7.91	4.98	4.23			3.78	4.23	+0.45
SUB-26	205151	386903	2.7	11	5.8	10	13.3	0.0	0.0	2.89	1.93	1.76			3.00	2.19	1.94			1.76	1.94	+0.18
SUB-27	205156	386900	3.0	8.5	5.8	10	13.3	0.0	0.0	2.01	1.39	1.28			2.09	1.57	1.40			1.28	1.40	+0.12
SUB-28	205123	386898	3.5	6.5	4.7	10	13.3	0.0	0.0	1.62	1.17	1.09			1.68	1.31	1.18			1.09	1.18	+0.1
SUB-29	205220	386864	1.4	14.5	9.4	10	13.3	0.0	0.0	4.59	2.34	2.05			4.76	2.78	2.32			2.05	2.32	+0.26
SUB-30	205018	386852	2.0	7	2.8	10	13.3	0.0	0.0	5.12	3.06	2.75			5.31	3.54	3.06			2.75	3.06	+0.31
SUB-31	205213	386792	1.5	9.5	5.7	10	13.3	0.0	0.0	4.58	2.41	2.13			4.75	2.85	2.39			2.13	2.39	+0.26
SUB-32	205220	386753	2.5	12	4.9	10	13.3	0.0	0.0	4.03	2.62	2.38			4.18	2.98	2.63			2.38	2.63	+0.24
SUB-33	205273	386672	0.8	10	7.9	10	13.3	0.0	0.0	6.56	2.44	2.07			6.80	3.02	2.39			2.07	2.39	+0.31
SUB-34	205291	386582	1.5	9	4.5	10	13.3	0.0	0.0	5.48	2.88	2.55			5.68	3.41	2.86			2.55	2.86	+0.32
SUB-35	205348	386454	3.0	11.5	7.1	10	13.3	0.0	0.0	2.23	1.54	1.42			2.32	1.74	1.55			1.42	1.55	+0.13
SUB-36	205372	386404	1.1	17	5.2	10	13.3	0.0	0.0	12.23	5.49	4.76			12.68	6.64	5.41			4.76	5.41	+0.66
SUB-37	205353	386340	0.3	28	7.4	10	13.3	0.0	0.0	52.20	9.49	7.72			54.13	12.49	9.13			7.72	9.13	+1.42
SUB-38	205379	386293	1.0	9	5.2	10	13.3	0.0	0.0	7.12	3.03	2.61			7.39	3.69	2.98			2.61	2.98	+0.37
SUB-39	205384	386271	0.9	8	8.9	10	13.3	0.0	0.0	4.15	1.66	1.42			4.31	2.04	1.63			1.42	1.63	+0.21
SUB-40	205440	386223	0.8	18	8.4	10	13.3	0.0	0.0	11.12	4.14	3.52			11.53	5.13	4.05			3.52	4.05	+0.53
SUB-41	205473	386167	0.9	10	5.8	10	13.3	0.0	0.0	7.89	3.16	2.70			8.19	3.88	3.10			2.70	3.10	+0.4
SUB-42	205452	386107	1.7	11	6.5	10	13.3	0.0	0.0	4.11	2.29	2.04			4.26	2.68	2.28			2.04	2.28	+0.24
SUB-43	205461	386068	2.0	11	3.4	10	13.3	0.0	0.0	6.64	3.96	3.56			6.88	4.59	3.96			3.56	3.96	+0.4
SUB-44	205468	386032	1.4	10	2.8	10	13.3	0.0	0.0	10.46	5.32	4.68			10.84	6.33	5.28			4.68	5.28	+0.6
SUB-45	205481	385968	1.3	8	5.6	10	13.3	0.0	0.0	4.53	2.22	1.94			4.69	2.65	2.20			1.94	2.20	+0.25
SUB-46	205488	385927	5.0	8.5	2.5	10	13.3	0.0	0.0	2.79	2.19	2.07			2.89	2.41	2.23			2.07	2.23	+0.16
SUB-47	205582	385846	1.8	7	2.9	10	13.3	0.0	0.0	5.50	3.14	2.80			5.70	3.66	3.13			2.80	3.13	+0.33
SUB-48	205514	385831	2.4	9.5	3.8	10	13.3	0.0	0.0	4.28	2.74	2.49			4.43	3.13	2.74			2.49	2.74	+0.26
SUB-49	205622	385822	2.5	9	2.9	10	13.3	0.0	0.0	5.09	3.30	3.01			5.28	3.77	3.32			3.01	3.32	+0.31

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
SUB-50	205632	385801	2.0	7.5	4.6	10	13.3	0.0	0.0	3.35	2.00	1.80			3.47	2.32	2.00			1.80	2.00	+0.2
SUB-51	205566	385791	3.0	4	3.3	10	13.3	0.0	0.0	1.66	1.14	1.05			1.72	1.29	1.15			1.05	1.15	+0.1
SUB-52	205647	385781	2.2	3	3.1	10	13.3	0.0	0.0	1.80	1.12	1.01			1.87	1.29	1.12			1.01	1.12	+0.11
SUB-53	205590	385766	2.9	8	5.2	10	13.3	0.0	0.0	2.18	1.49	1.37			2.26	1.68	1.50			1.37	1.50	+0.13
SUB-54	205572	385762	1.0	13	6.1	10	13.3	0.0	0.0	8.79	3.74	3.22			9.11	4.56	3.68			3.22	3.68	+0.46
SUB-55	205632	385760	1.7	16	3.6	10	13.3	0.0	0.0	10.73	5.98	5.32			11.13	7.00	5.95			5.32	5.95	+0.63
SUB-56	205689	385758	2.3	6	2.8	10	13.3	0.0	0.0	3.90	2.44	2.21			4.05	2.80	2.44			2.21	2.44	+0.24
SUB-57	205529	385747	4.2	7	3.7	10	13.3	0.0	0.0	1.85	1.40	1.31			1.92	1.55	1.42			1.31	1.42	+0.11
SUB-58	205572	385742	1.4	14	6.2	10	13.3	0.0	0.0	6.65	3.39	2.98			6.90	4.02	3.36			2.98	3.36	+0.38
SUB-59	205689	385733	2.7	11	2.6	10	13.3	0.0	0.0	6.42	4.28	3.91			6.66	4.86	4.30			3.91	4.30	+0.39
SUB-60	205581	385726	1.9	8	4.6	10	13.3	0.0	0.0	3.76	2.20	1.97			3.90	2.56	2.19			1.97	2.19	+0.22
SUB-61	205636	385692	2.3	8	3.5	10	13.3	0.0	0.0	4.08	2.57	2.33			4.23	2.95	2.57			2.33	2.57	+0.25
SUB-62	205709	385681	2.2	7.5	4.4	10	13.3	0.0	0.0	3.18	1.97	1.78			3.30	2.27	1.97			1.78	1.97	+0.19
SUB-63	205635	385668	5.1	7.5	3.3	10	13.3	0.0	0.0	1.83	1.45	1.37			1.90	1.58	1.47			1.37	1.47	+0.1
SUB-64	205657	385663	2.7	9	3.2	10	13.3	0.0	0.0	4.27	2.85	2.60			4.43	3.23	2.86			2.60	2.86	+0.26
SUB-65	205627	385630	5.3	6	3.4	10	13.3	0.0	0.0	1.37	1.09	1.03			1.42	1.19	1.11			1.03	1.11	+0.08
SUB-66	205639	385604	3.5	9	4.4	10	13.3	0.0	0.0	2.40	1.73	1.61			2.49	1.94	1.75			1.61	1.75	+0.14
SUB-67	205660	385592	4.2	9	4.3	10	13.3	0.0	0.0	2.05	1.55	1.45			2.12	1.71	1.57			1.45	1.57	+0.12
SUB-68	205675	385582	3.0	9	4.3	10	13.3	0.0	0.0	2.87	1.98	1.82			2.97	2.23	1.99			1.82	1.99	+0.17
SUB-69	205687	385566	1.8	7	4.1	10	13.3	0.0	0.0	3.90	2.23	1.99			4.04	2.60	2.22			1.99	2.22	+0.23
SR-1	205668	385347	1.0	14	4.8	10	13.3	0.0	0.0	11.99	5.10	4.39			12.44	6.22	5.02			4.39	5.02	+0.62
SR-2	205668	385392	0.5	13	5.7	10	13.3	0.0	0.0	18.79	5.08	4.22			19.49	6.50	4.93			4.22	4.93	+0.71
SR-3	205669	385295	0.5	12	7.4	10	13.3	0.0	0.0	13.42	3.63	3.01			13.92	4.64	3.52			3.01	3.52	+0.51
SR-4	205671	385444	1.7	17	6.3	10	13.3	0.0	0.0	6.55	3.65	3.25			6.79	4.28	3.63			3.25	3.63	+0.39
SR-5	205690	385486	0.8	12	4.4	10	13.3	0.0	0.0	14.94	5.34	4.52			15.49	6.64	5.22			4.52	5.22	+0.7
SR-6	205695	385552	1.0	14	2.3	10	13.3	0.0	0.0	24.94	10.61	9.14			25.86	12.93	10.44			9.14	10.44	+1.3
SR-7	205695	385237	0.5	20	4.9	10	13.3	0.0	0.0	33.57	9.07	7.53			34.82	11.61	8.80			7.53	8.80	+1.27
SR-8	205748	385151	0.8	12	6.9	10	13.3	0.0	0.0	8.98	3.34	2.84			9.32	4.14	3.27			2.84	3.27	+0.43
SR-9	205757	385189	1.7	13	4.9	10	13.3	0.0	0.0	6.42	3.58	3.18			6.66	4.19	3.56			3.18	3.56	+0.38
SR-10	205797	385171	1.8	25	6.1	10	13.3	0.0	0.0	9.39	5.37	4.79			9.74	6.26	5.35			4.79	5.35	+0.56
SR-11	205875	385146	1.2	13	5.2	10	13.3	0.0	0.0	8.57	4.03	3.51			8.89	4.85	3.98			3.51	3.98	+0.47
SR-12	205998	385237	0.50	14	4.4	10	13.3	0.0	0.0	26.15	7.07	5.87			27.11	9.04	6.85			5.87	6.85	+0.99
SR-13	206000	385156	1.00	12	5.7	10	13.3	0.0	0.0	8.67	3.69	3.18			8.99	4.50	3.63			3.18	3.63	+0.45
SR-14	206074	385259	1.0	20	2.9	10	13.3	0.0	0.0	28.27	12.03	10.36			29.32	14.66	11.83			10.36	11.83	+1.47
SR-15	206085	385185	1.0	7	3.8	10	13.3	0.0	0.0	7.56	3.22	2.77			7.84	3.92	3.16			2.77	3.16	+0.39
SR-16	206163	385301	2.0	14	6.6	10	13.3	0.0	0.0	4.38	2.61	2.35			4.54	3.03	2.61			2.35	2.61	+0.26
SR-17	206227	385258	1.5	8	7.1	10	13.3	0.0	0.0	3.11	1.63	1.44			3.22	1.93	1.62			1.44	1.62	+0.18
SR-18	206284	385284	1.0	14	5.3	10	13.3	0.0	0.0	10.87	4.63	3.98			11.28	5.64	4.55			3.98	4.55	+0.57
SR-19	206326	385352	1.0	17.5	5.8	10	13.3	0.0	0.0	12.43	5.29	4.56			12.89	6.45	5.20			4.56	5.20	+0.65
SR-20	206428	385410	0.3	14	7.4	10	13.3	0.0	0.0	31.32	4.89	3.96			32.48	6.50	4.70			3.96	4.70	+0.74
SR-21	206434	385354	1.0	7	5.7	10	13.3	0.0	0.0	5.06	2.15	1.85			5.25	2.62	2.12			1.85	2.12	+0.26
SR-22	206493	385392	1.0	10	5.8	10	13.3	0.0	0.0	7.10	3.02	2.60			7.37	3.68	2.97			2.60	2.97	+0.37
SR-23	206559	385402	0.6	7	5.9	10	13.3	0.0	0.0	8.15	2.51	2.10			8.45	3.17	2.44			2.10	2.44	+0.34
SR-24	206634	385471	0.75	17.5	9.6	10	13.3	0.0	0.0	10.14	3.62	3.07			10.51	4.50	3.54			3.07	3.54	+0.47
SR-25	206715	385514	0.9	15	7.4	10	13.3	0.0	0.0	9.32	3.73	3.19			9.67	4.58	3.66			3.19	3.66	+0.47
SR-26	206825	385591	0.6	12	4.4	10	13.3	0.0	0.0	18.68	5.75	4.81			19.37	7.26	5.59			4.81	5.59	+0.78
SR-27	206840	385515	1.1	8.5	5.2	10	13.3	0.0	0.0	6.12	2.75	2.38			6.34	3.32	2.71			2.38	2.71	+0.33
SR-28	206889	385624	0.8	16	5.1	10	13.3	0.0	0.0	17.21	6.15	5.21			17.85	7.65	6.01			5.21	6.01	+0.8
SR-29	206914	385588	1.1	8	3.3	10	13.3	0.0	0.0	9.04	4.06	3.51			9.37	4.91	4.00			3.51	4.00	+0.49

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
SR-30	206965	385691	0.8	20	8	10	13.3	0.0	0.0	13.82	4.94	4.18			14.33	6.14	4.83			4.18	4.83	+0.64
SR-31	206986	385653	1.2	11	6.1	10	13.3	0.0	0.0	6.20	2.92	2.54			6.43	3.51	2.88			2.54	2.88	+0.34
SR-32	207058	385808	0.8	15	7.4	10	13.3	0.0	0.0	11.18	3.99	3.38			11.60	4.97	3.90			3.38	3.90	+0.52
SR-33	207066	385745	1.7	10.5	3.3	10	13.3	0.0	0.0	7.68	4.28	3.81			7.96	5.01	4.26			3.81	4.26	+0.45
SR-34	207083	385845	1.0	23	3.9	10	13.3	0.0	0.0	24.21	10.30	8.87			25.11	12.55	10.13			8.87	10.13	+1.26
SR-35	207238	386030	1.5	15	6.2	10	13.3	0.0	0.0	6.65	3.50	3.09			6.90	4.14	3.48			3.09	3.48	+0.38
SR-36	207302	386099	0.7	9	5.7	10	13.3	0.0	0.0	9.29	3.17	2.68			9.64	3.97	3.10			2.68	3.10	+0.42
SR-37	207505	386242	0.8	10	9.1	10	13.3	0.0	0.0	5.72	2.13	1.81			5.93	2.64	2.08			1.81	2.08	+0.27
SR-38	207647	386361	0.8	17	6.2	10	13.3	0.0	0.0	14.14	5.26	4.47			14.66	6.52	5.15			4.47	5.15	+0.68
SR-39	207802	386873	1.1	10	3.6	10	13.3	0.0	0.0	10.36	4.65	4.03			10.75	5.63	4.59			4.03	4.59	+0.56
SR-40	207806	386513	0.6	16	4.5	10	13.3	0.0	0.0	24.35	7.49	6.27			25.25	9.47	7.29			6.27	7.29	+1.02
SR-41	207865	386871	0.5	16	3.1	20	13.3	0.0	0.0	42.33	6.61	9.49			43.90	8.78	11.10			6.61	8.78	+2.17
SR-42	207880	386544	1.2	19	3.6	10	13.3	0.0	0.0	18.05	8.49	7.39			18.72	10.21	8.39			7.39	8.39	+0.99
SR-43	207883	386693	1.00	22	4.1	10	13.3	0.0	0.0	22.04	9.38	8.07			22.85	11.43	9.22			8.07	9.22	+1.15
SR-44	207913	386897	0.8	22	4.8	20	13.3	0.0	0.0	23.56	5.38	7.45			24.43	6.98	8.58			5.38	6.98	+1.6
SR-45	207918	386637	1.0	25	7.2	10	13.3	0.0	0.0	14.36	6.11	5.26			14.89	7.45	6.01			5.26	6.01	+0.75
SR-46	207927	386969	0.6	10	4.8	10	13.3	0.0	0.0	14.28	4.39	3.68			14.81	5.55	4.28			3.68	4.28	+0.6
SR-47	208003	386958	1.8	9	5.2	10	13.3	0.0	0.0	3.96	2.26	2.02			4.10	2.64	2.25			2.02	2.25	+0.24
SR-48	208034	387015	1.7	15	4.9	10	13.3	0.0	0.0	7.41	4.13	3.67			7.68	4.84	4.11			3.67	4.11	+0.44
SR-49	208166	387085	0.6	15	6.5	10	13.3	0.0	0.0	15.88	4.89	4.09			16.46	6.17	4.75			4.09	4.75	+0.66
SR-50	208445	387178	2.8	17	2.7	10	13.3	0.0	0.0	9.22	6.22	5.70			9.56	7.04	6.26			5.70	6.26	+0.56
SR-51	208465	387163	1.7	8.5	3.3	15	13.3	0.0	0.0	6.21	2.84	3.08			6.44	3.42	3.45			2.84	3.42	+0.59
T1-1	207202	384974	3.3	6	1.5	10	13.3	20.7	10.3	4.96		3.26			5.15		3.55			3.26	3.55	+0.3
T1-2	207240	384964	4.1	6	1.6	10	13.3	20.7	10.3	3.75		2.63			3.88		2.85			2.63	2.85	+0.22
T1-3	207207	384932	2.6	4	1.8	10	13.3	20.7	10.3	3.50		2.10			3.63		2.31			2.10	2.31	+0.21
T1-4	207226	384913	2.5	4	1.4	10	13.3	20.7	10.3	4.68		2.77			4.85		3.05			2.77	3.05	+0.28
T1-5	207191	384890	3.0	5	1.9	10	13.3	20.7	10.3	3.59	2.48	2.28	1.86	1.68	3.73	2.79	2.50	2.20	1.80	1.68	1.80	+0.12
T1-6	207195	384867	2.4	5	1.7	10	13.3	20.7	10.3	5.02		2.92			5.20		3.22			2.92	3.22	+0.3
T1-7	207197	384841	1.9	4.5	1.7	10	13.3	20.7	10.3	5.71		2.99			5.92		3.33			2.99	3.33	+0.34
T1-8	207136	384836	2.4	4	1.9	10	13.3	20.7	10.3	3.59		2.09			3.73		2.31			2.09	2.31	+0.22
T1-9	207224	384831	3.7	3	1.5	10	13.3	20.7	10.3	2.21		1.51			2.30		1.64			1.51	1.64	+0.13
T1-10	207201	384810	3.5	4	1.5	10	13.3	20.7	10.3	3.12		2.09			3.24		2.27			2.09	2.27	+0.19
T1-11	207110	384804	3.0	4	2	10	13.3	20.7	10.3	2.73		1.73			2.83		1.90			1.73	1.90	+0.16
T1-12	207185	384800	3.0	14	1.7	10	13.3	20.7	10.3	11.24	7.75	7.13	5.82	5.26	11.66	8.74	7.81	6.90	5.63	5.26	5.63	+0.37
T1-13	207223	384797	4.9	3	1.5	10	13.3	20.7	10.3	1.67		1.24			1.73		1.33			1.24	1.33	+0.1
T1-14	207132	384787	4.5	4	2.1	10	13.3	20.7	10.3	1.73		1.25			1.80		1.35			1.25	1.35	+0.1
T1-15	207202	384785	4.4	4	1.5	10	13.3	20.7	10.3	2.48		1.78			2.57		1.93			1.78	1.93	+0.14
T1-16	207106	384771	3.0	4	1.9	10	13.3	20.7	10.3	2.87		1.82			2.98		2.00			1.82	2.00	+0.17
T1-17	207200	384758	4.9	5	1.6	10	13.3	20.7	10.3	2.61		1.93			2.71		2.08			1.93	2.08	+0.15
T1-18	207216	384756	3.0	5	1.7	10	13.3	20.7	10.3	4.01		2.55			4.16		2.79			2.55	2.79	+0.24
T1-19	207122	384751	3.0	3	1.8	10	13.3	20.7	10.3	2.28		1.44			2.36		1.58			1.44	1.58	+0.14
T1-20	207202	384732	3.2	4.5	2.9	10	13.3	20.7	10.3	1.99		1.29			2.06		1.41			1.29	1.41	+0.12
T1-21	207220	384718	2.4	3	2.5	10	13.3	20.7	10.3	2.05		1.19			2.12		1.32			1.19	1.32	+0.12
T1-22	207204	384707	3.5	6	2.5	10	13.3	20.7	10.3	2.81		1.88			2.91		2.05			1.88	2.05	+0.17
T1-23	207119	384704	4.2	3	2	10	13.3	20.7	10.3	1.46		1.04			1.52		1.12			1.04	1.12	+0.09
T1-24	207182	384703	3.0	11	2	10	13.3	20.7	10.3	7.51	5.18	4.76	3.89	3.51	7.79	5.84	5.22	4.61	3.76	3.51	3.76	+0.24
T1-25	207205	384683	3.4	4	2.6	10	13.3	20.7	10.3	1.85		1.23			1.92		1.34			1.23	1.34	+0.11
T1-26	207082	384676	3.3	4.5	2.3	10	13.3	20.7	10.3	2.43		1.59			2.52		1.74			1.59	1.74	+0.15
T1-27	207125	384663	5.0	6	2.5	10	13.3	20.7	10.3	1.97		1.46			2.04		1.57			1.46	1.57	+0.11

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T1-28	207207	384662	2.7	3.5	2.7	10	13.3	20.7	10.3	1.97		1.20			2.04		1.32			1.20	1.32	+0.12
T1-29	207109	384655	4.2	4	1.8	10	13.3	20.7	10.3	2.17		1.53			2.25		1.66			1.53	1.66	+0.13
T1-30	207130	384632	4.7	5	2.4	10	13.3	20.7	10.3	1.82		1.33			1.88		1.43			1.33	1.43	+0.11
T1-31	207218	384626	2.9	6	2.1	10	13.3	20.7	10.3	4.04		2.53			4.19		2.77			2.53	2.77	+0.24
T1-32	207219	384619	3.0	5	2.2	10	13.3	20.7	10.3	3.10		1.97			3.22		2.16			1.97	2.16	+0.19
T1-33	207097	384618	3.0	3	2.4	10	13.3	20.7	10.3	1.71		1.08			1.77		1.19			1.08	1.19	+0.1
T1-34	207151	384616	3.3	5	3.3	10	13.3	20.7	10.3	1.88		1.24			1.95		1.35			1.24	1.35	+0.11
T1-35	207199	384588	4.0	5	1.8	10	13.3	20.7	10.3	2.84	2.13	1.99	1.67	1.54	2.95	2.36	2.15	1.94	1.64	1.54	1.64	+0.1
T1-36	207187	384555	4.5	3	1.5	10	13.3	20.7	10.3	1.82		1.31			1.89		1.42			1.31	1.42	+0.11
T1-37	207189	384540	5.0	4	2.2	10	13.3	20.7	10.3	1.49		1.11			1.54		1.19			1.11	1.19	+0.09
T1-38	207220	384537	2.9	7.5	5.2	10	13.3	20.7	10.3	2.05		1.28			2.12		1.41			1.28	1.41	+0.12
T1-39	207149	384527	1.1	12	3	10	13.3	20.7	10.3	14.91		5.80			15.46		6.60			5.80	6.60	+0.8
T1-40	207219	384527	1.8	11	7.9	10	13.3	20.7	10.3	3.21		1.64			3.33		1.83			1.64	1.83	+0.19
T1-41	207228	384512	1.3	9	9.2	10	13.3	20.7	10.3	3.13		1.34			3.25		1.52			3.13	1.52	+0.18
T1-42	207157	384491	0.8	11	5	10	13.3	20.7	10.3	11.31	5.89	3.58	2.52	2.15	11.73	5.21	4.12	3.27	2.34	2.15	2.34	+0.19
T1-43	207251	384480	3.0	6	2.3	10	13.3	20.7	10.3	3.56		2.26			3.69		2.48			2.26	2.48	+0.22
T1-44	207233	384470	2.0	3	2.1	10	13.3	20.7	10.3	2.93		1.57			3.03		1.74			1.57	1.74	+0.18
T1-45	207238	384432	1.9	3	3.3	10	13.3	20.7	10.3	1.96		1.03			2.04		1.14			1.03	1.14	+0.12
T1-46	207123	384429	3.1	7	4	10	13.3	20.7	10.3	2.32		1.49			2.40		1.63			1.49	1.63	+0.14
T1-47	207065	384428	2.5	5	4.1	10	13.3	20.7	10.3	2.00		1.18			2.08		1.31			1.18	1.31	+0.12
T1-48	207153	384424	1.8	4	2.4	10	13.3	20.7	10.3	3.79	2.17	1.94	1.49	1.31	3.93	2.53	2.16	1.83	1.41	1.31	1.41	+0.1
T1-49	207291	384421	2.5	3	2.2	10	13.3	20.7	10.3	2.23		1.32			2.32		1.46			2.23	1.46	+0.14
T1-50	207209	384406	2.1	8	2.7	10	13.3	20.7	10.3	5.78		3.17			6.00		3.52			3.17	3.52	+0.35
T1-51	207098	384384	3.0	7	2.7	10	13.3	20.7	10.3	3.54		2.25			3.67		2.46			2.25	2.46	+0.21
T1-52	207172	384374	2.0	9	2.5	10	13.3	20.7	10.3	7.38	4.40	3.96	3.08	2.73	7.65	5.10	4.40	3.76	2.93	2.73	2.93	+0.21
T1-53	207242	384374	2.8	7	2.9	10	13.3	20.7	10.3	3.53		2.18			3.66		2.40			2.18	2.40	+0.21
T1-54	207134	384349	1.7	5	3.6	10	13.3	20.7	10.3	3.35		1.66			3.48		1.86			1.66	1.86	+0.2
T1-55	207312	384345	3.0	10.5	3.8	10	13.3	20.7	10.3	3.78		2.40			3.92		2.63			2.40	2.63	+0.23
T1-56	207171	384338	1.2	9	4	10	13.3	20.7	10.3	7.70	3.11	3.15	2.31	2.00	7.98	4.35	3.58	2.93	2.17	2.00	2.17	+0.17
T1-57	207078	384329	1.5	6	3.3	10	13.3	20.7	10.3	4.97		2.31			5.16		2.60			2.31	2.60	+0.29
T1-58	207247	384317	2.0	5	4.2	10	13.3	20.7	10.3	2.44		1.31			2.54		1.46			1.31	1.46	+0.15
T1-59	207103	384288	0.8	5	4.2	10	13.3	20.7	10.3	6.11		1.93			6.34		2.23			1.93	2.23	+0.29
T1-60	207225	384287	1.6	5	2.3	10	13.3	20.7	10.3	5.57		2.68			5.77		3.00			2.68	3.00	+0.33
T1-61	207316	384260	2.5	9	3	10	13.3	20.7	10.3	4.92		2.91			5.10		3.21			2.91	3.21	+0.3
T1-62	207095	384243	1.9	7	3.5	10	13.3	20.7	10.3	4.32		2.26			4.48		2.52			2.26	2.52	+0.26
T1-63	207183	384236	1.8	7	3.7	10	13.3	20.7	10.3	4.31	2.46	2.20	1.69	1.49	4.47	2.88	2.46	2.08	1.61	1.49	1.61	+0.12
T1-64	207183	384236	1.8	7	3.7	10	13.3	20.7	10.3	4.31	2.46	2.20	1.69	1.49	4.47	2.88	2.46	2.08	1.61	1.49	1.61	+0.12
T1-65	207348	384218	3.3	8	1.7	10	13.3	20.7	10.3	5.84		3.83			6.06		4.18			3.83	4.18	+0.35
T1-66	207053	384209	1.0	9	3.3	10	13.3	20.7	10.3	11.19		4.10			11.60		4.68			4.10	4.68	+0.58
T1-67	207312	384183	4.4	5	1.5	10	13.3	20.7	10.3	3.10		2.23			3.22		2.41			2.23	2.41	+0.18
T1-68	207213	384163	4.0	5	1.8	10	13.3	20.7	10.3	2.84		1.99			2.95		2.15			1.99	2.15	+0.17
T1-69	207264	384158	5.0	4.5	0.7	10	13.3	20.7	10.3	5.26		3.91			5.46		4.21			3.91	4.21	+0.3
T1-70	207179	384135	3.4	4	2.1	10	13.3	20.7	10.3	2.29		1.52			2.38		1.66			1.52	1.66	+0.14
T1-71	207148	384114	3.9	10	2.7	10	13.3	20.7	10.3	3.89		2.70			4.04		2.93			2.70	2.93	+0.23
T2-1	207290	384664	2.0	4	2.8	10	13.3	20.7	10.3	2.93		1.57			3.04		1.75			1.57	1.75	+0.18
T2-2	207482	384581	2.5	6	2.7	10	13.3	20.7	10.3	3.64		2.15			3.78		2.37			2.15	2.37	+0.22
T2-3	207369	384581	1.7	5	3.2	0	13.3	20.7	10.3	3.77	3.77	1.87	1.43	1.25	3.91	3.91	2.09	1.76	1.35	1.25	1.35	+0.1
T2-4	207383	384570	0.7	15	7.6	0	13.3	20.7	10.3	11.68	11.68	3.36	2.34	1.99	12.11	12.11	3.89	3.06	2.17	1.99	2.17	+0.18
T2-5	207493	384559	2.7	4.5	1.5	10	13.3	20.7	10.3	4.55		2.77			4.72		3.05			2.77	3.05	+0.28

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T2-6	207370	384556	1.5	14	5.2	0	13.3	20.7	10.3	7.39	7.39	3.43	2.58	2.26	7.66	7.66	3.86	3.22	2.44	2.26	2.44	+0.18
T2-7	207353	384553	2.0	8.5	4.7	10	13.3	20.7	10.3	3.72		1.99			3.86		2.22			1.99	2.22	+0.22
T2-8	207523	384551	3.0	2.5	1.8	10	13.3	20.7	10.3	1.90		1.20			1.97		1.32			1.20	1.32	+0.11
T2-9	207371	384539	1.9	5	3.3	10	13.3	20.7	10.3	3.27		1.71			3.39		1.91			1.71	1.91	+0.2
T2-10	207398	384535	1.1	7	3.8	0	13.3	20.7	10.3	6.87	6.87	2.67	1.94	1.68	7.13	7.13	3.04	2.47	1.82	1.68	1.82	+0.14
T2-11	207343	384531	2.3	5	3.8	10	13.3	20.7	10.3	2.35		1.34			2.44		1.48			1.34	1.48	+0.14
T2-12	207451	384515	2.1	4	3.5	10	13.3	20.7	10.3	2.23		1.22			2.32		1.36			1.22	1.36	+0.13
T2-13	207372	384511	2.5	6	3.1	10	13.3	20.7	10.3	3.17		1.88			3.29		2.07			1.88	2.07	+0.19
T2-14	207555	384473	1.8	7	3.8	10	13.3	20.7	10.3	4.20		2.14			4.36		2.39			2.14	2.39	+0.25
T2-15	207406	384470	2.2	6	3.1	10	13.3	20.7	10.3	3.61		2.02			3.74		2.24			2.02	2.24	+0.22
T2-16	207444	384468	2.4	11	2.4	0	13.3	20.7	10.3	7.82	7.82	4.55	3.62	3.23	8.11	8.11	5.02	4.36	3.47	3.23	3.47	+0.24
T2-17	207478	384468	1.4	6	3.5	10	13.3	20.7	10.3	5.02		2.25			5.21		2.53			2.25	2.53	+0.29
T2-18	207431	384430	1.7	7	4	10	13.3	20.7	10.3	4.23		2.10			4.38		2.34			2.10	2.34	+0.25
T2-19	207531	384419	2.1	5	4.5	10	13.3	20.7	10.3	2.17		1.19			2.25		1.32			1.19	1.32	+0.13
T2-20	207363	384416	2.2	10	2.6	10	13.3	20.7	10.3	7.16		4.01			7.43		4.44			4.01	4.44	+0.43
T2-21	207497	384412	2.6	11	5.2	0	13.3	20.7	10.3	3.35	3.35	2.01	1.61	1.45	3.47	3.47	2.21	1.93	1.55	1.45	1.55	+0.1
T2-22	207640	384394	1.6	6.5	4.8	10	13.3	20.7	10.3	3.48		1.67			3.61		1.88			1.67	1.88	+0.2
T2-23	207470	384390	2.0	11	4.4	10	13.3	20.7	10.3	5.14		2.75			5.33		3.06			2.75	3.06	+0.31
T2-24	207574	384390	1.1	9	3.7	10	13.3	20.7	10.3	9.08		3.53			9.41		4.02			3.53	4.02	+0.49
T2-25	207495	384380	2.7	15	5.2	10	13.3	20.7	10.3	4.40	2.93	2.68	2.16	1.94	4.56	3.33	2.95	2.58	2.08	1.94	2.08	+0.14
T2-26	207392	384375	1.7	10	4.1	10	13.3	20.7	10.3	5.89		2.92			6.11		3.27			2.92	3.27	+0.35
T2-27	207543	384367	0.9	8	5.2	0	13.3	20.7	10.3	7.03	7.03	2.41	1.71	1.47	7.29	7.29	2.76	2.21	1.60	1.47	1.60	+0.13
T2-28	207659	384323	1.5	6	2.1	10	13.3	20.7	10.3	7.80		3.62			8.09		4.08			3.62	4.08	+0.45
T2-29	207512.9	384322	1.3	15	2.7	10	13.3	20.7	10.3	17.52		7.52			18.16		8.50			7.52	8.50	+0.98
T2-30	207614	384320	2.2	11	2.6	10	13.3	20.7	10.3	7.88		4.41			8.17		4.89			4.41	4.89	+0.48
T2-31	207710	384311	2.8	5	2.8	10	13.3	20.7	10.3	2.61		1.62			2.71		1.77			1.62	1.77	+0.16
T2-32	207547	384307	3.0	22	4.6	0	13.3	20.7	10.3	6.55	6.55	4.16	3.39	3.07	6.80	6.80	4.55	4.02	3.28	3.07	3.28	+0.21
T2-33	207455	384302	2.3	13	1.9	10	13.3	20.7	10.3	12.18		6.96			12.63		7.69			6.96	7.69	+0.74
T2-34	207488	384267	2.3	10.5	1.6	10	13.3	20.7	10.3	11.68		6.67			12.12		7.38			6.67	7.38	+0.71
T2-35	207610	384265	1.0	15	4.4	0	13.3	20.7	10.3	14.01	14.01	5.13	3.69	3.18	14.53	14.53	5.86	4.73	3.45	3.18	3.45	+0.27
T2-36	207809	384265	1.7	8	2.5	10	13.3	20.7	10.3	7.71		3.82			8.00		4.28			3.82	4.28	+0.46
T2-37	207754	384252	0.6	8	5	0	13.3	20.7	10.3	10.97	10.97	2.83	1.94	1.64	11.38	11.38	3.28	2.56	1.79	1.64	1.79	+0.15
T2-38	207754	384252	0.6	8	3.1	10	13.3	20.7	10.3	17.64		4.54			18.29		5.28			4.54	5.28	+0.74
T2-39	207421	384249	1.7	7.5	2.6	10	13.3	20.7	10.3	6.95		3.45			7.21		3.86			3.45	3.86	+0.41
T2-40	207777	384200	2.1	4	3.8	10	13.3	20.7	10.3	2.06		1.13			2.13		1.25			1.13	1.25	+0.12
T2-41	207726	384198	1.5	5	4.4	10	13.3	20.7	10.3	3.11		1.45			3.23		1.63			1.45	1.63	+0.18
T2-42	207739	384193	1.5	5	4	0	13.3	20.7	10.3	3.42	3.42	1.59	1.20	1.05	3.55	3.55	1.79	1.49	1.13	1.05	1.13	+0.08
T2-43	207610	384192	0.9	11	3.7	10	13.3	20.7	10.3	13.56		4.64			14.06		5.32			4.64	5.32	+0.68
T2-44	207699	384122	0.5	11	4.8	10	13.3	20.7	10.3	18.85		4.23			19.54		4.94			4.23	4.94	+0.71
T2-45	207647	384120	1.4	10	4	0	13.3	20.7	10.3	7.33	7.33	3.28	2.45	2.13	7.60	7.60	3.70	3.07	2.31	2.13	2.31	+0.17
T2-46	207647	384120	1.4	10	3.8	10	13.3	20.7	10.3	7.72		3.45			8.00		3.89			3.45	3.89	+0.44
T3-1	207072	385013	3.1	6	4.5	10	13.3	20.7	10.3	1.77		1.13			1.83		1.24			1.13	1.24	+0.11
T3-2	207179	384986	3.7	6	1.8	0	13.3	20.7	10.3	3.69	3.69	2.51	2.10	1.92	3.83	3.83	2.73	2.45	2.05	1.92	2.05	+0.13
T3-3	207010	384971	2.8	7	5.1	10	13.3	20.7	10.3	2.02		1.25			2.09		1.37			1.25	1.37	+0.12
T3-4	207024	384950	2.1	5	3.8	10	13.3	20.7	10.3	2.57		1.41			2.67		1.57			1.41	1.57	+0.15
T3-5	207141	384948	2.5	4.5	2.7	0	13.3	20.7	10.3	2.73	2.73	1.62	1.29	1.16	2.83	2.83	1.78	1.55	1.24	1.16	1.24	+0.08
T3-6	207108	384926	3.1	7	2.1	0	13.3	20.7	10.3	4.40	4.40	2.83	2.32	2.10	4.57	4.57	3.09	2.74	2.24	2.10	2.24	+0.14
T3-7	207145	384902	3.3	4	1.5	0	13.3	20.7	10.3	3.31	3.31	2.17	1.79	1.63	3.43	3.43	2.37	2.11	1.74	1.63	1.74	+0.11
T3-8	207065	384898	3.0	4.5	1.7	10	13.3	20.7	10.3	3.61		2.29			3.75		2.51			2.29	2.51	+0.22

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T3-9	207005	384892	5.0	5	2.1	10	13.3	20.7	10.3	1.95		1.45			2.02		1.56			1.45	1.56	+0.11
T3-10	207100	384886	3.6	5	1.7	0	13.3	20.7	10.3	3.35	3.35	2.26	1.88	1.72	3.47	3.47	2.46	2.20	1.83	1.72	1.83	+0.11
T3-11	206970	384863	2.7	6	2.5	10	13.3	20.7	10.3	3.64		2.22			3.78		2.44			2.22	2.44	+0.22
T3-12	207061	384849	2.7	4	1.7	0	13.3	20.7	10.3	3.57	3.57	2.18	1.75	1.58	3.70	3.70	2.39	2.09	1.69	1.58	1.69	+0.11
T3-13	206973	384841	2.6	3.5	2.9	10	13.3	20.7	10.3	1.90		1.14			1.97		1.26			1.14	1.26	+0.12
T3-14	206936	384829	2.4	8	4.4	10	13.3	20.7	10.3	3.11		1.81			3.23		2.00			1.81	2.00	+0.19
T3-15	206918	384821	1.8	5.5	2.9	10	13.3	20.7	10.3	4.32		2.20			4.48		2.46			2.20	2.46	+0.26
T3-16	207066	384807	3.8	5	1.5	0	13.3	20.7	10.3	3.59	3.59	2.47	2.07	1.89	3.72	3.72	2.68	2.41	2.02	1.89	2.02	+0.12
T3-17	206921	384798	2.4	5.5	2.7	10	13.3	20.7	10.3	3.48		2.02			3.61		2.23			2.02	2.23	+0.21
T3-18	206912	384786	2.5	4	3.3	10	13.3	20.7	10.3	1.99		1.18			2.06		1.30			1.18	1.30	+0.12
T3-19	206977	384780	3.0	9	2.1	0	13.3	20.7	10.3	5.85	5.85	3.71	3.03	2.74	6.07	6.07	4.07	3.59	2.93	2.74	2.93	+0.19
T3-20	206987	384778	3.0	5.5	2.1	0	13.3	20.7	10.3	3.58	3.58	2.27	1.85	1.67	3.71	3.71	2.48	2.19	1.79	1.67	1.79	+0.12
T3-21	206932	384777	3.4	5	2.3	10	13.3	20.7	10.3	2.62		1.74			2.72		1.89			1.74	1.89	+0.16
T3-22	207076	384775	3.5	3	2.2	10	13.3	20.7	10.3	1.60		1.07			1.66		1.16			1.07	1.16	+0.1
T3-23	206912	384751	3.2	7.4	1.8	10	13.3	20.7	10.3	5.26		3.42			5.46		3.73			3.42	3.73	+0.32
T3-24	207046	384750	5.0	3	1.7	10	13.3	20.7	10.3	1.45		1.07			1.50		1.16			1.07	1.16	+0.08
T3-25	206939	384749	3.0	4	1.6	10	13.3	20.7	10.3	3.41		2.16			3.54		2.37			2.16	2.37	+0.21
T3-26	207020	384744	4.5	3.5	1.9	10	13.3	20.7	10.3	1.68		1.21			1.74		1.31			1.21	1.31	+0.1
T3-27	206841	384742	3.7	5	3.3	10	13.3	20.7	10.3	1.68		1.14			1.74		1.24			1.14	1.24	+0.1
T3-28	206888	384741	3.5	4	2.8	10	13.3	20.7	10.3	1.67		1.12			1.74		1.22			1.12	1.22	+0.1
T3-29	206938	384738	3.4	3	1.6	0	13.3	20.7	10.3	2.26	2.26	1.50	1.24	1.13	2.34	2.34	1.63	1.46	1.20	1.13	1.20	+0.08
T3-30	206898	384700	4.0	3.5	1.4	0	13.3	20.7	10.3	2.56	2.56	1.79	1.51	1.38	2.65	2.65	1.94	1.75	1.47	1.38	1.47	+0.09
T3-31	206988	384696	2.0	2	1.9	10	13.3	20.7	10.3	2.16		1.16			2.24		1.29			1.16	1.29	+0.13
T3-32	206933	384684	3.8	4	1.9	10	13.3	20.7	10.3	2.27		1.56			2.35		1.69			1.56	1.69	+0.13
T3-33	207150	384679	4.0	4	1.7	0	13.3	20.7	10.3	2.41	2.41	1.68	1.42	1.30	2.50	2.50	1.82	1.65	1.39	1.30	1.39	+0.08
T3-34	206825	384674	2.0	4	2.6	10	13.3	20.7	10.3	3.15		1.69			3.27		1.88			1.69	1.88	+0.19
T3-35	206951	384669	3.1	4	2.4	10	13.3	20.7	10.3	2.20		1.41			2.28		1.55			1.41	1.55	+0.13
T3-36	206928	384665	3.7	3	2.1	10	13.3	20.7	10.3	1.58		1.08			1.64		1.17			1.08	1.17	+0.09
T3-37	206843	384652	3.2	4	3.1	10	13.3	20.7	10.3	1.65		1.07			1.71		1.17			1.07	1.17	+0.1
T3-38	206927	384649	2.4	5.5	2.1	10	13.3	20.7	10.3	4.47		2.60			4.64		2.87			2.60	2.87	+0.27
T3-39	206794	384640	5.0	5	2.2	10	13.3	20.7	10.3	1.86		1.38			1.93		1.49			1.38	1.49	+0.11
T3-40	206963	384633	3.1	6	2.3	10	13.3	20.7	10.3	3.45		2.21			3.58		2.42			2.21	2.42	+0.21
T3-41	206934	384632	2.6	4	2.1	10	13.3	20.7	10.3	3.00		1.80			3.11		1.98			1.80	1.98	+0.18
T3-42	206940	384618	3.2	4	3	10	13.3	20.7	10.3	1.71		1.11			1.77		1.21			1.11	1.21	+0.1
T3-43	206780	384586	4.2	5	2.3	10	13.3	20.7	10.3	2.12		1.50			2.20		1.63			1.50	1.63	+0.12
T3-44	206879	384563	4.5	4	1.7	10	13.3	20.7	10.3	2.14		1.55			2.22		1.67			1.55	1.67	+0.12
T3-45	207117	385017	5.0	5.5	3.2	10	13.3	20.7	10.3	1.41		1.05			1.46		1.13			1.05	1.13	+0.08
T4-1	207187	384554	4.5	3	1.2	10	13.3	20.7	10.3	2.27		1.64			2.36		1.78			1.64	1.78	+0.13
T4-2	207200	384557	5.9	2	1	10	13.3	20.7	10.3	1.39		1.07			1.44		1.15			1.07	1.15	+0.08
T4-3	207207	384554	5.7	3.5	1.7	10	13.3	20.7	10.3	1.48		1.13			1.53		1.22			1.13	1.22	+0.08
T4-4	207216	384557	7.3	5.5	1.7	0	13.3	20.7	10.3	1.81	1.81	1.47	1.31	1.24	1.88	1.88	1.57	1.47	1.31	1.24	1.31	+0.07
T4-5	207222	384583	5.2	3.5	1.8	10	13.3	20.7	10.3	1.53		1.15			1.59		1.24			1.15	1.24	+0.09
T4-6	207224	384560	5.0	6	2	0	13.3	20.7	10.3	2.46	2.46	1.83	1.58	1.46	2.55	2.55	1.97	1.80	1.55	1.46	1.55	+0.09
T4-7	207244	384563	4.8	4	1.9	0	13.3	20.7	10.3	1.80	1.80	1.32	1.14	1.05	1.86	1.86	1.42	1.30	1.12	1.05	1.12	+0.07
T4-8	207245	384554	4.1	4.5	3.1	10	13.3	20.7	10.3	1.45		1.02			1.51		1.11			1.02	1.11	+0.09
T4-9	207264	384590	3.0	7	3.2	0	13.3	20.7	10.3	2.99	2.99	1.90	1.55	1.40	3.10	3.10	2.08	1.83	1.50	1.40	1.50	+0.1
T4-10	207266	384572	3.0	7	4.4	0	13.3	20.7	10.3	2.18	2.18	1.38	1.13	1.02	2.26	2.26	1.51	1.34	1.09	1.02	1.09	+0.07
T4-11	207286	384580	2.2	7	3.8	0	13.3	20.7	10.3	3.44	3.44	1.92	1.51	1.35	3.56	3.56	2.13	1.84	1.45	1.35	1.45	+0.1
T4-12	207299	384608	2.0	5	3.6	0	13.3	20.7	10.3	2.85	2.85	1.53	1.19	1.05	2.96	2.96	1.70	1.45	1.13	1.05	1.13	+0.08

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T4-13	207306	384592	3.0	6	3.8	0	13.3	20.7	10.3	2.16	2.16	1.37	1.12	1.01	2.24	2.24	1.50	1.33	1.08	1.01	1.08	+0.07
T4-14	207337	384609	3.0	8	3	0	13.3	20.7	10.3	3.64	3.64	2.31	1.89	1.71	3.78	3.78	2.53	2.24	1.82	1.71	1.82	+0.12
T4-15	207358	384695	4.9	3.5	1.5	10	13.3	20.7	10.3	1.95		1.44			2.02		1.55			1.44	1.55	+0.11
T4-16	207363	384670	3.6	4	2	10	13.3	20.7	10.3	2.28		1.54			2.36		1.67			1.54	1.67	+0.14
T4-17	207366	384625	1.0	9	3	0	13.3	20.7	10.3	12.30	12.30	4.51	3.24	2.79	12.76	12.76	5.15	4.15	3.03	2.79	3.03	+0.24
T4-18	207395	384623	0.7	15	2.2	0	13.3	20.7	10.3	39.90	39.90	11.50	7.99	6.80	41.38	41.38	13.30	10.46	7.40	6.80	7.40	+0.6
T4-19	207408	384688	4.0	3	1.5	10	13.3	20.7	10.3	2.05		1.43			2.12		1.55			1.43	1.55	+0.12
T4-20	207431	384669	1.1	7	2.3	10	13.3	20.7	10.3	11.34		4.41			11.76		5.02			4.41	5.02	+0.61
T4-21	207444	384652	1.6	5	3.0	10	13.3	20.7	10.3	4.27		2.05			4.43		2.30			2.05	2.30	+0.25
T4-22	207454	384629	1.4	9	3.0	10	13.3	20.7	10.3	8.79	4.47	3.93	2.93	2.56	9.11	5.31	4.43	3.68	2.76	2.56	2.76	+0.21
T4-23	207457	384693	3.5	4	2.2	10	13.3	20.7	10.3	2.13		1.42			2.21		1.55			1.42	1.55	+0.13
T4-24	207459	384614	1.8	5	3	10	13.3	20.7	10.3	3.80		1.94			3.94		2.16			1.94	2.16	+0.23
T4-25	207492	384744	4.3	4	1.8	10	13.3	20.7	10.3	2.12		1.51			2.19		1.63			1.51	1.63	+0.12
T4-26	207510	384651	2.8	12	3	0	13.3	20.7	10.3	5.86	5.86	3.62	2.93	2.64	6.07	6.07	3.98	3.49	2.83	2.64	2.83	+0.19
T4-27	207512	384717	3.4	2.5	1.7	10	13.3	20.7	10.3	1.77		1.17			1.84		1.28			1.17	1.28	+0.11
T4-28	207523	384550	3.0	2.5	1.4	10	13.3	20.7	10.3	2.44		1.55			2.53		1.69			1.55	1.69	+0.15
T4-29	207527	384694	3.6	4.5	2.4	10	13.3	20.7	10.3	2.13		1.44			2.21		1.57			1.44	1.57	+0.13
T4-30	207537	384701	4.1	3.5	1.7	10	13.3	20.7	10.3	2.06		1.45			2.13		1.57			1.45	1.57	+0.12
T4-31	207550	384677	1.9	4	3	10	13.3	20.7	10.3	2.88		1.51			2.98		1.68			1.51	1.68	+0.17
T4-32	207560	384642	1.5	7	5.7	10	13.3	20.7	10.3	3.37		1.57			3.50		1.76			1.57	1.76	+0.2
T4-33	207561	384689	4.0	4	2.4	10	13.3	20.7	10.3	1.71		1.19			1.77		1.29			1.19	1.29	+0.1
T4-34	207564	384610	3.3	3.5	2.3	10	13.3	20.7	10.3	1.89		1.24			1.96		1.35			1.24	1.35	+0.11
T4-35	207568	384589	3.3	3.5	1.9	10	13.3	20.7	10.3	2.29		1.50			2.37		1.64			1.50	1.64	+0.14
T4-36	207600	384619	0.8	8	3.9	10	13.3	20.7	10.3	10.53		3.33			10.92		3.83			3.33	3.83	+0.5
T4-37	207616	384718	3.6	6	3.4	10	13.3	20.7	10.3	2.01		1.36			2.09		1.48			1.36	1.48	+0.12
T4-38	207630	384735	2.3	4	2.5	10	13.3	20.7	10.3	2.85		1.63			2.96		1.80			1.63	1.80	+0.17
T4-39	207636	384681	1.4	9	3.5	0	13.3	20.7	10.3	7.54	7.54	3.37	2.52	2.19	7.81	7.81	3.80	3.15	2.37	2.19	2.37	+0.18
T4-40	207644	384666	1.7	5	3.8	10	13.3	20.7	10.3	3.18		1.58			3.29		1.76			1.58	1.76	+0.19
T4-41	207658	384724	2.7	2	1.8	10	13.3	20.7	10.3	1.69		1.03			1.75		1.13			1.03	1.13	+0.1
T4-42	207665	384748	3.7	2	1.1	10	13.3	20.7	10.3	2.01		1.37			2.09		1.49			1.37	1.49	+0.12
T4-43	207671	384770	3.0	1.5	1.2	10	13.3	20.7	10.3	1.71		1.08			1.77		1.19			1.08	1.19	+0.1
T4-44	207684	384693	1.5	11	4.6	0	13.3	20.7	10.3	6.55	6.55	3.04	2.29	2.00	6.80	6.80	3.42	2.86	2.16	2.00	2.16	+0.16
T4-45	207725	384747	2.9	3.5	1.9	10	13.3	20.7	10.3	2.60		1.63			2.70		1.79			1.63	1.79	+0.16
T4-46	207726	384654	2.7	6	3.9	10	13.3	20.7	10.3	2.34		1.43			2.43		1.57			1.43	1.57	+0.14
T4-47	207756	384686	2.3	4.5	3	10	13.3	20.7	10.3	2.67		1.53			2.77		1.69			1.53	1.69	+0.16
T4-48	207757	384729	1.9	4	3.8	10	13.3	20.7	10.3	2.27		1.19			2.36		1.33			1.19	1.33	+0.14
T4-49	207759	384749	2.3	4	2.7	10	13.3	20.7	10.3	2.64		1.51			2.74		1.67			1.51	1.67	+0.16
T4-50	207764	384711	1.5	11	5.7	0	13.3	20.7	10.3	5.30	5.30	2.46	1.85	1.62	5.50	5.50	2.77	2.31	1.75	1.62	1.75	+0.13
T4-51	207766	384811	1.8	4.5	4.1	10	13.3	20.7	10.3	2.50		1.28			2.60		1.43			1.28	1.43	+0.15
T4-52	207767	384786	1.7	4	4.1	10	13.3	20.7	10.3	2.36		1.17			2.44		1.31			1.17	1.31	+0.14
T4-53	207792	384764	2.9	4	2.9	10	13.3	20.7	10.3	1.95		1.22			2.02		1.34			1.22	1.34	+0.12
T4-54	207829	384789	2.2	6	3.75	10	13.3	20.7	10.3	2.98		1.67			3.10		1.85			1.67	1.85	+0.18
T4-55	207837	384857	1.8	6	3.8	10	13.3	20.7	10.3	3.60		1.84			3.73		2.05			1.84	2.05	+0.21
T4-56	207855	384820	1.7	2	2.3	10	13.3	20.7	10.3	2.10		1.04			2.17		1.16			1.04	1.16	+0.12
T4-57	207858	384735	0.6	6	5.7	0	13.3	20.7	10.3	7.23	7.23	1.86	1.28	1.08	7.50	7.50	2.16	1.68	1.18	1.08	1.18	+0.1
T4-58	207861	384686	1.9	4	3.2	10	13.3	20.7	10.3	2.70		1.41			2.80		1.57			1.41	1.57	+0.16
T4-59	207862	384715	1.9	4	3	10	13.3	20.7	10.3	2.88		1.51			2.98		1.68			1.51	1.68	+0.17
T4-60	207864	384761	1.5	6	4.8	10	13.3	20.7	10.3	3.43		1.59			3.55		1.79			1.59	1.79	+0.2
T4-61	207873	384752	3.1	4	3.1	10	13.3	20.7	10.3	1.71		1.10			1.77		1.20			1.10	1.20	+0.1

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T4-62	207880	384784	2.0	5	3.5	10	13.3	20.7	10.3	2.93		1.57			3.04		1.75			1.57	1.75	+0.18
T4-63	207881	384744	2.5	7	4	10	13.3	20.7	10.3	2.87		1.70			2.98		1.87			1.70	1.87	+0.17
T4-64	207893	384726	3.0	6	3.8	10	13.3	20.7	10.3	2.16		1.37			2.24		1.50			1.37	1.50	+0.13
T4-65	207898	384777	2.5	9	5.6	0	13.3	20.7	10.3	2.65	2.65	1.57	1.25	1.12	2.75	2.75	1.73	1.50	1.20	1.12	1.20	+0.08
T4-66	207901	384802	1.7	5	5.7	10	13.3	20.7	10.3	2.13		1.05			2.20		1.18			1.05	1.18	+0.13
T4-67	207907	384818	2.8	4	3.4	10	13.3	20.7	10.3	1.72		1.07			1.79		1.17			1.07	1.17	+0.1
T4-68	207910	384765	3.0	5	4	10	13.3	20.7	10.3	1.71		1.09			1.77		1.19			1.09	1.19	+0.1
T4-69	207911	384787	3.0	9	4.8	0	13.3	20.7	10.3	2.57	2.57	1.63	1.33	1.20	2.67	2.67	1.79	1.58	1.29	1.20	1.29	+0.08
T4-70	207913	384841	2.3	9	3.6	10	13.3	20.7	10.3	4.46		2.55			4.63		2.82			2.55	2.82	+0.27
T4-71	207919	384859	2.6	5.5	3.4	10	13.3	20.7	10.3	2.55		1.53			2.65		1.69			1.53	1.69	+0.15
T4-72	207921	384881	3.7	3.5	1.9	10	13.3	20.7	10.3	2.04		1.39			2.11		1.51			1.39	1.51	+0.12
T4-73	207923	384803	3.0	7	5.6	0	13.3	20.7	10.3	1.72	1.72	1.09	0.89	0.80	1.78	1.78	1.19	1.05	0.86	0.80	0.86	+0.06
T4-74	207924	384907	4.3	3	1.9	10	13.3	20.7	10.3	1.50		1.07			1.56		1.16			1.07	1.16	+0.09
T4-75	207939	384840	3.3	5	3.4	10	13.3	20.7	10.3	1.83		1.20			1.90		1.31			1.20	1.31	+0.11
T4-76	207944	384828	2.8	7	3.8	0	13.3	20.7	10.3	2.70	2.70	1.67	1.35	1.22	2.80	2.80	1.83	1.61	1.30	1.22	1.30	+0.09
T4-77	207949	384761	1.7	8	8.2	10	13.3	20.7	10.3	2.38		1.18			2.47		1.32			1.18	1.32	+0.14
T4-78	207954	384808	2.9	9	5.7	0	13.3	20.7	10.3	2.24	2.24	1.41	1.14	1.03	2.33	2.33	1.54	1.36	1.10	1.03	1.10	+0.07
T4-79	207960	384880	3.9	4	1.7	10	13.3	20.7	10.3	2.47		1.71			2.56		1.86			1.71	1.86	+0.15
T4-80	207974	384852	3.6	3.5	2.4	10	13.3	20.7	10.3	1.66		1.12			1.72		1.22			1.12	1.22	+0.1
T4-81	207979	384783	2.1	8	5.2	10	13.3	20.7	10.3	3.01		1.65			3.13		1.84			1.65	1.84	+0.18
T4-82	207984	384813	2.0	6	3	0	13.3	20.7	10.3	4.10	4.10	2.20	1.71	1.52	4.25	4.25	2.45	2.09	1.63	1.52	1.63	+0.11
T4-83	207986	384866	4.8	3.5	1.7	10	13.3	20.7	10.3	1.76		1.29			1.82		1.39			1.29	1.39	+0.1
T4-84	207987	384759	1.9	7	5	10	13.3	20.7	10.3	3.03		1.59			3.14		1.77			1.59	1.77	+0.18
T4-85	207988	384855	3.2	5	2.4	10	13.3	20.7	10.3	2.67		1.73			2.77		1.89			1.73	1.89	+0.16
T4-86	207996	384782	2.0	7	3.4	10	13.3	20.7	10.3	4.22		2.26			4.38		2.52			2.26	2.52	+0.25
T4-87	208005	384864	2.9	5.5	1.6	0	13.3	20.7	10.3	4.85	4.85	3.04	2.47	2.23	5.03	5.03	3.33	2.94	2.39	2.23	2.39	+0.16
T4-88	208010	384805	2.1	7	4.3	10	13.3	20.7	10.3	3.18		1.75			3.30		1.94			1.75	1.94	+0.19
T4-89	208013	384897	4.1	3.5	1.9	10	13.3	20.7	10.3	1.84		1.29			1.91		1.40			1.29	1.40	+0.11
T4-90	208013	384870	2.7	3.5	1.6	10	13.3	20.7	10.3	3.32		2.02			3.44		2.22			2.02	2.22	+0.2
T4-91	208014	384816	2.3	3.5	2.1	10	13.3	20.7	10.3	2.97		1.69			3.08		1.87			1.69	1.87	+0.18
T4-92	208020	384790	2.4	5	2.1	10	13.3	20.7	10.3	4.06		2.36			4.21		2.61			2.36	2.61	+0.25
T4-93	208022	384859	2.2	7.5	1.7	10	13.3	20.7	10.3	8.21		4.60			8.52		5.09			4.60	5.09	+0.5
T4-94	208025	384880	2.0	6	3.5	10	13.3	20.7	10.3	3.52		1.89			3.65		2.10			1.89	2.10	+0.21
T4-95	208032	384848	2.0	5	1.7	10	13.3	20.7	10.3	6.02		3.23			6.25		3.59			3.23	3.59	+0.36
T4-96	208035	384899	2.2	6	1.7	10	13.3	20.7	10.3	6.57		3.68			6.81		4.08			3.68	4.08	+0.4
T4-97	208054	384879	1.9	5	1.6	10	13.3	20.7	10.3	6.73		3.53			6.98		3.93			3.53	3.93	+0.4
T4-98	208056	384864	1.7	6.5	2.1	0	13.3	20.7	10.3	7.46	7.46	3.70	2.82	2.48	7.73	7.73	4.14	3.49	2.68	2.48	2.68	+0.19
T4-99	208064	384901	2.1	7	2.3	10	13.3	20.7	10.3	5.94		3.26			6.16		3.61			3.26	3.61	+0.36
T4-100	208082	384800	2.0	5.5	3.0	10	13.3	20.7	10.3	3.76		2.02			3.90		2.24			2.02	2.24	+0.23
T4-101	208088	384878	1.9	10	3	10	13.3	20.7	10.3	7.19		3.77			7.46		4.20			3.77	4.20	+0.43
T4-102	208089	384782	3.3	4.5	3	10	13.3	20.7	10.3	1.86		1.22			1.93		1.33			1.22	1.33	+0.11
T4-103	208089	384772	2.4	5	3.8	10	13.3	20.7	10.3	2.25		1.31			2.33		1.44			1.31	1.44	+0.14
T4-104	208092	384762	2.3	5	3.8	10	13.3	20.7	10.3	2.35		1.34			2.44		1.48			1.34	1.48	+0.14
T4-105	208096	384746	2.0	5	4.4	10	13.3	20.7	10.3	2.33		1.25			2.42		1.39			1.25	1.39	+0.14
T4-106	208097	384890	0.7	7	3.2	10	13.3	20.7	10.3	12.82		3.69			13.29		4.27			3.69	4.27	+0.58
T4-107	208150	384887	1.6	16	2.1	10	13.3	20.7	10.3	19.51		9.37			20.23		10.52			9.37	10.52	+1.14
T4-108	208167	384806	2.2	4	3	10	13.3	20.7	10.3	2.48		1.39			2.58		1.54			1.39	1.54	+0.15
T4-109	208174	384830	2.8	4	3.4	10	13.3	20.7	10.3	1.72		1.07			1.79		1.17			1.07	1.17	+0.1
T5-1	207980	385935	1.5	12	3.8	10	13.3	0.0	0.0	8.64	4.55	4.01			8.96	5.38	4.51			4.01	4.51	+0.5

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T5-2	207974	385832	2.0	9	3.8	10	13.3	0.0	0.0	4.86	2.90	2.61			5.04	3.36	2.90			2.61	2.90	+0.29
T5-3	207899	385731	1.7	9	2.5	10	13.3	0.0	0.0	8.68	4.84	4.30			9.00	5.67	4.81			4.30	4.81	+0.51
T5-4	207844	385623	1.5	9	5.2	10	13.3	0.0	0.0	4.75	2.50	2.21			4.92	2.95	2.48			2.21	2.48	+0.27
T5-5	207720	385520	2.1	9	6	10	13.3	0.0	0.0	2.94	1.79	1.62			3.05	2.07	1.79			1.62	1.79	+0.18
T5-6	207535	385405	1.6	5	5.7	10	13.3	0.0	0.0	2.26	1.23	1.09			2.34	1.44	1.22			1.09	1.22	+0.13
T5-7	207511	385330	2.4	8	6	10	13.3	0.0	0.0	2.29	1.47	1.33			2.38	1.68	1.47			1.33	1.47	+0.14
T5-8	207397	385258	1.2	20	8.7	10	13.3	0.0	0.0	7.96	3.75	3.26			8.26	4.50	3.70			3.26	3.70	+0.44
T5-9	207356	385232	2.2	8	4.8	10	13.3	0.0	0.0	3.11	1.93	1.74			3.23	2.22	1.93			1.74	1.93	+0.19
T5-10	207266	385133	2.0	9.5	5.44	10	13.3	0.0	0.0	3.60	2.15	1.93			3.73	2.49	2.14			1.93	2.14	+0.22
T6-1	207699	385172	1.0	8	2.6	10	13.3	0.0	0.0	12.61	5.37	4.62			13.08	6.54	5.28			4.62	5.28	+0.66
T6-2	207556	385306	1.3	4	5.2	10	13.3	0.0	0.0	2.43	1.19	1.05			2.53	1.43	1.18			1.05	1.18	+0.14
T6-3	207560	385288	2.0	5	4.4	10	13.3	0.0	0.0	2.33	1.39	1.25			2.42	1.61	1.39			1.25	1.39	+0.14
T6-4	207566	385256	2.3	6.5	3.8	10	13.3	0.0	0.0	3.05	1.92	1.74			3.17	2.21	1.93			1.74	1.93	+0.18
T6-5	207586	385149	2.5	9	3.5	10	13.3	0.0	0.0	4.22	2.74	2.49			4.38	3.13	2.75			2.49	2.75	+0.26
T6-6	207589	385318	1.7	7	4.8	10	13.3	0.0	0.0	3.53	1.97	1.75			3.66	2.30	1.96			1.75	1.96	+0.21
T6-7	207606	385248	2.3	7	5.7	10	13.3	0.0	0.0	2.20	1.39	1.26			2.28	1.59	1.39			1.26	1.39	+0.13
T6-8	207609	385127	1.8	5	1.5	10	13.3	0.0	0.0	7.58	4.33	3.87			7.86	5.05	4.32			3.87	4.32	+0.45
T6-9	207637	385328	2.0	9	7.6	10	13.3	0.0	0.0	2.45	1.46	1.32			2.54	1.70	1.46			1.32	1.46	+0.15
T6-10	207647	385226	2.0	4	4.2	10	13.3	0.0	0.0	1.96	1.17	1.05			2.03	1.35	1.17			1.05	1.17	+0.12
T6-11	207649	385330	1.7	7	7.6	10	13.3	0.0	0.0	2.24	1.25	1.11			2.33	1.46	1.24			1.11	1.24	+0.13
T6-12	207655	385318	0.5	7	7.6	10	13.3	0.0	0.0	7.63	2.06	1.71			7.91	2.64	2.00			1.71	2.00	+0.29
T6-13	207690	385199	2.8	4.5	3.8	10	13.3	0.0	0.0	1.74	1.17	1.07			1.80	1.33	1.18			1.07	1.18	+0.11
T7-1	208035	385919	1.2	7	4.7	10	13.3	0.0	0.0	5.10		2.09			5.29		2.37			2.09	2.37	+0.28
T7-2	208064	385893	2.4	7	2.9	10	13.3	0.0	0.0	4.12		2.40			4.28		2.65			2.40	2.65	+0.25
T7-3	208150	385874	2.1	13	2.1	10	13.3	0.0	0.0	12.08		6.62			12.52		7.35			6.62	7.35	+0.73
T7-4	208100	385856	2.9	8	1.9	0	13.3	20.7	10.3	5.95	5.95	3.73	3.03	2.73	6.17	6.17	4.08	3.60	2.92	2.73	2.92	+0.19
T7-5	208214	385844	2.0	10	3.5	10	13.3	0.0	0.0	5.86		3.14			6.08		3.50			3.14	3.50	+0.35
T7-6	208175	385825	2.8	8	2.4	0	13.3	20.7	10.3	4.88	4.88	3.02	2.44	2.20	5.06	5.06	3.31	2.91	2.35	2.20	2.35	+0.16
T7-7	208288	385825	1.0	5	3.5	10	13.3	0.0	0.0	5.86		2.15			6.08		2.45			2.15	2.45	+0.31
T7-8	208166	385808	3.5	5	2.8	10	13.3	0.0	0.0	2.09		1.40			2.17		1.52			1.40	1.52	+0.13
T7-9	208250	385793	2.4	4.5	3.5	10	13.3	0.0	0.0	2.20		1.28			2.28		1.41			1.28	1.41	+0.13
T7-10	208226	385784	2.9	7	2.4	10	13.3	0.0	0.0	4.12		2.58			4.27		2.83			2.58	2.83	+0.25
T7-11	208281	385781	2.0	6	4.1	10	13.3	0.0	0.0	3.00		1.61			3.12		1.79			1.61	1.79	+0.18
T7-12	208244	385763	1.8	5	4.1	10	13.3	0.0	0.0	2.78		1.42			2.89		1.58			1.42	1.58	+0.17
T7-13	208261	385702	2.0	5.5	4	10	13.3	0.0	0.0	2.82		1.51			2.93		1.68			1.51	1.68	+0.17
T7-14	208213	385692	3.4	7	3.2	10	13.3	0.0	0.0	2.64		1.75			2.74		1.91			1.75	1.91	+0.16
T7-15	208171	385683	3.5	5	2.6	10	13.3	0.0	0.0	2.25		1.51			2.34		1.64			1.51	1.64	+0.13
T7-16	208317	385680	2.1	4	3.8	10	13.3	0.0	0.0	2.06		1.13			2.13		1.25			1.13	1.25	+0.12
T7-17	208262	385677	1.2	9	4	10	13.3	0.0	0.0	7.70		3.15			7.98		3.58			3.15	3.58	+0.42
T7-18	208244	385654	2.0	8	3.9	10	13.3	0.0	0.0	4.21		2.26			4.37		2.51			2.26	2.51	+0.25
T7-19	208318	385653	2.2	4	2.7	10	13.3	0.0	0.0	2.76		1.55			2.86		1.71			1.55	1.71	+0.17
T7-20	208278	385637	1.6	7	3.3	10	13.3	0.0	0.0	5.44		2.61			5.64		2.93			2.61	2.93	+0.32
T7-21	208323	385627	2.5	5.5	2.3	10	13.3	0.0	0.0	3.92		2.32			4.06		2.55			2.32	2.55	+0.24
T7-22	208248	385623	2.0	4.5	2.7	10	13.3	0.0	0.0	3.42		1.83			3.54		2.04			1.83	2.04	+0.21
T7-23	208324	385608	1.7	5	4.1	10	13.3	0.0	0.0	2.95		1.46			3.05		1.63			1.46	1.63	+0.17
T7-24	208247	385599	1.5	6	4.8	10	13.3	0.0	0.0	3.43		1.59			3.55		1.79			1.59	1.79	+0.2
T7-25	208120	385597	4.8	3	1.1	10	13.3	0.0	0.0	2.33		1.71			2.41		1.84			1.71	1.84	+0.13
T7-26	208218	385592	3.0	9	4.9	10	13.3	0.0	0.0	2.52		1.60			2.61		1.75			1.60	1.75	+0.15
T7-27	208248	385586	2.1	5	5.1	10	13.3	0.0	0.0	1.92		1.05			1.99		1.17			1.05	1.17	+0.12

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T7-28	208334	385583	2.4	3.5	2.4	10	13.3	0.0	0.0	2.49		1.45			2.58		1.60			1.45	1.60	+0.15
T7-29	208256	385566	2.2	4	3.9	10	13.3	0.0	0.0	1.91		1.07			1.98		1.19			1.07	1.19	+0.12
T7-30	208273	385556	1.6	9	4.1	10	13.3	0.0	0.0	5.63		2.71			5.84		3.04			2.71	3.04	+0.33
T7-31	208325	385547	1.4	5	3.7	10	13.3	0.0	0.0	3.96		1.77			4.11		2.00			1.77	2.00	+0.23
T7-32	208272	385537	2.2	16	3.8	10	13.3	0.0	0.0	7.86		4.40			8.15		4.87			4.40	4.87	+0.47
T7-33	208355	385537	0.5	5	3.1	10	13.3	0.0	0.0	13.23		2.97			13.72		3.47			2.97	3.47	+0.5
T7-34	208265	385529	2.5	4	3.7	10	13.3	0.0	0.0	1.77		1.05			1.84		1.16			1.05	1.16	+0.11
T7-35	208332	385521	1.2	4	4.2	10	13.3	0.0	0.0	3.26		1.34			3.38		1.51			1.34	1.51	+0.18
T7-36	208322	385521	1.2	4	5.2	10	13.3	0.0	0.0	2.64		1.08			2.74		1.23			1.08	1.23	+0.15
T7-37	208153	385518	3.5	3.5	1.7	10	13.3	0.0	0.0	2.41		1.61			2.50		1.76			1.61	1.76	+0.14
T7-38	208246	385515	3.0	7	2.6	10	13.3	0.0	0.0	3.68		2.33			3.81		2.56			2.33	2.56	+0.22
T7-39	208284	385509	1.5	5	3.3	10	13.3	0.0	0.0	4.14		1.92			4.30		2.16			1.92	2.16	+0.24
T7-40	208159	385442	5.5	2.5	1.8	10	13.3	0.0	0.0	1.03		0.79			1.07		0.85			0.79	0.85	+0.06
T7-41	208235	385429	2.0	3	3.1	10	13.3	0.0	0.0	1.98		1.06			2.06		1.18			1.06	1.18	+0.12
T7-42	208165	385395	3.0	4	3	10	13.3	0.0	0.0	1.82		1.16			1.89		1.27			1.16	1.27	+0.11
T8-1	207767	385652	2.7	6.5	1.3	10	13.3	0.0	0.0	7.58	5.05	4.62			7.86	5.74	5.08			4.62	5.08	+0.46
T8-2	207681	385625	0.9	23	5.8	10	13.3	0.0	0.0	18.16	7.26	6.22			18.83	8.92	7.13			6.22	7.13	+0.91
T8-3	207589	385627	3.0	6	3.3	10	13.3	0.0	0.0	2.49	1.71	1.58			2.58	1.93	1.73			1.58	1.73	+0.15
T8-4	207499	385610	1.8	11	3.1	10	13.3	0.0	0.0	8.08	4.62	4.12			8.38	5.39	4.60			4.12	4.60	+0.48
T8-5	207264	385591	1.7	10	5.7	10	13.3	0.0	0.0	4.25	2.37	2.11			4.41	2.78	2.36			2.11	2.36	+0.25
T8-6	207254	385610.4	0.6	11	5.2	10	13.3	0.0	0.0	14.51	4.46	3.74			15.05	5.64	4.34			3.74	4.34	+0.61
T8-7	207129	385573.6	1.2	21	6.8	10	13.3	0.0	0.0	10.63	5.00	4.36			11.03	6.01	4.94			4.36	4.94	+0.59
T8-8	207125	385603	1.0	16	6.7	10	13.3	0.0	0.0	9.86	4.20	3.61			10.23	5.11	4.13			3.61	4.13	+0.51
T9-1	208541	386533	1.0	7	6.3	10	13.3	0.0	0.0	4.58	1.95	1.68			4.75	2.38	1.92			1.68	1.92	+0.24
T9-2	208600	386435	1.0	7	6.4	10	13.3	0.0	0.0	4.51	1.92	1.65			4.68	2.34	1.89			1.65	1.89	+0.24
T9-3	208710	386424	1.4	6	3.8	10	13.3	0.0	0.0	4.63	2.36	2.07			4.80	2.80	2.34			2.07	2.34	+0.26
T9-4	208746	385837.5	0.8	20	2.7	10	13.3	0.0	0.0	37.95	14.12	12.00			39.36	17.49	13.82			12.00	13.82	+1.82
T9-5	208792	385928	1.0	12	3.3	10	13.3	0.0	0.0	14.91	6.35	5.47			15.47	7.73	6.24			5.47	6.24	+0.78
T9-6	208826	386375	0.9	8	2.4	10	13.3	0.0	0.0	15.18	6.07	5.20			15.74	7.45	5.96			5.20	5.96	+0.76
T9-7	208853	385891	1.9	6.5	2.7	10	13.3	0.0	0.0	5.19	3.04	2.72			5.39	3.53	3.03			2.72	3.03	+0.31
T9-8	208878	385968.5	0.9	10	2.9	10	13.3	0.0	0.0	15.71	6.28	5.38			16.29	7.72	6.17			5.38	6.17	+0.79
T9-9	208888	385927	2.4	10	2.9	10	13.3	0.0	0.0	5.89	3.77	3.42			6.11	4.31	3.78			3.42	3.78	+0.36
T9-10	208889	386015	1.8	7	1.5	10	13.3	0.0	0.0	10.62	6.07	5.41			11.01	7.08	6.05			5.41	6.05	+0.63
T9-11	208936	386295	1.0	7	6.4	10	13.3	0.0	0.0	4.51	1.92	1.65			4.68	2.34	1.89			1.65	1.89	+0.24
T9-12	208937	385949	1.8	8.5	3.7	10	13.3	0.0	0.0	5.24	2.99	2.67			5.43	3.49	2.98			2.67	2.98	+0.31
T9-13	208947	386094	1.9	8	3.3	10	13.3	0.0	0.0	5.23	3.06	2.74			5.43	3.56	3.05			2.74	3.05	+0.31
T9-14	208949	386154	2.1	6	3.1	10	13.3	0.0	0.0	3.78	2.30	2.07			3.92	2.66	2.30			2.07	2.30	+0.23
T9-15	208949	386054	1.7	6	3.3	10	13.3	0.0	0.0	4.39	2.45	2.17			4.55	2.86	2.43			2.17	2.43	+0.26
T10-1	206779	385519	1.7	3	2.4	10	13.3	0.0	0.0	3.01	1.68	1.49			3.12	1.97	1.67			1.49	1.67	+0.18
T10-2	206950	385674	1.8	9	2.9	10	13.3	0.0	0.0	7.07	4.04	3.61			7.33	4.71	4.03			3.61	4.03	+0.42
T10-3	206908	385730	1.2	11	4.1	15	13.3	0.0	0.0	9.18	3.42	3.76			9.52	4.23	4.27			3.42	4.23	+0.82
T10-4	206912	385839	1.2	12	5	15	13.3	0.0	0.0	8.23	3.06	3.37			8.53	3.79	3.82			3.06	3.79	+0.73
T10-5	206847	385888	1.8	3	1.9	15	13.3	0.0	0.0	3.59	1.69	1.83			3.73	2.03	2.05			1.69	2.03	+0.34
T10-6	206815	385888	1.9	3	2.1	15	13.3	0.0	0.0	3.08	1.49	1.61			3.19	1.78	1.80			1.49	1.78	+0.29
T10-7	206837	385920	1.9	9	3.2	10	13.3	0.0	0.0	6.07	3.55	3.18			6.30	4.12	3.54			3.18	3.54	+0.36
T10-8	206769	385945	2.0	2	1.7	15	13.3	0.0	0.0	2.41	1.20	1.29			2.50	1.43	1.44			1.20	1.43	+0.23
T11-1	207485	385986	1.9	9	3.8	10	13.3	0.0	0.0	5.12	2.99	2.68			5.31	3.48	2.98			2.68	2.98	+0.31
T11-2	207574	385947	1.9	12	5.2	10	13.3	0.0	0.0	5.00	2.92	2.62			5.18	3.40	2.92			2.62	2.92	+0.3
T11-3	207651	385972	1.8	11	2.6	10	13.3	0.0	0.0	9.63	5.50	4.91			9.99	6.42	5.49			4.91	5.49	+0.57

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T11-4	207748	385968	1.5	14	2.6	10	13.3	0.0	0.0	14.71	7.74	6.83			15.26	9.15	7.69			6.83	7.69	+0.85
T11-5	207872	385962	1.5	10	2.6	10	13.3	0.0	0.0	10.51	5.53	4.88			10.90	6.54	5.49			4.88	5.49	+0.61
T11-6	208076	385956	2.9	5	4.1	10	13.3	0.0	0.0	1.73	1.18	1.08			1.79	1.33	1.19			1.08	1.19	+0.1
T11-7	208099	386052	2.1	3.5	3.1	10	13.3	0.0	0.0	2.20	1.34	1.21			2.29	1.55	1.34			1.21	1.34	+0.13
T11-8	208117	385930	3.4	4	2.4	10	13.3	0.0	0.0	2.01	1.44	1.33			2.08	1.61	1.45			1.33	1.45	+0.12
T11-9	208121	386025	2.5	5	3.6	10	13.3	0.0	0.0	2.28	1.48	1.35			2.36	1.69	1.49			1.35	1.49	+0.14
T11-10	208133	386065	2.9	5	4.1	10	13.3	0.0	0.0	1.73	1.18	1.08			1.79	1.33	1.19			1.08	1.19	+0.1
T11-11	208146	385924	4.0	3.5	1.5	10	13.3	0.0	0.0	2.39	1.79	1.67			2.48	1.98	1.81			1.67	1.81	+0.14
T11-12	208160	385962	3.1	5.5	4	10	13.3	0.0	0.0	1.82	1.27	1.17			1.89	1.43	1.28			1.17	1.28	+0.11
T11-13	208172	386069	1.7	6	2.9	10	13.3	0.0	0.0	4.99	2.78	2.47			5.17	3.26	2.77			2.47	2.77	+0.29
T11-14	208205	385935	2.7	4	2.6	10	13.3	0.0	0.0	2.34	1.56	1.42			2.42	1.77	1.57			1.42	1.57	+0.14
T11-15	208209	386061	2.6	6	3	10	13.3	0.0	0.0	3.15	2.08	1.89			3.27	2.36	2.09			1.89	2.09	+0.19
T11-16	208229	385951	3.2	4	2.6	10	13.3	0.0	0.0	1.97	1.39	1.28			2.04	1.56	1.40			1.28	1.40	+0.12
T11-17	208230	386037	2.0	6	3.8	10	13.3	0.0	0.0	3.24	1.93	1.74			3.36	2.24	1.93			1.74	1.93	+0.19
T11-18	208238	386010	2.3	4	3.1	10	13.3	0.0	0.0	2.30	1.45	1.31			2.39	1.66	1.45			1.31	1.45	+0.14
T11-19	208253	385982	3.7	5	2.1	10	13.3	0.0	0.0	2.64	1.93	1.80			2.73	2.15	1.95			1.80	1.95	+0.16
T12-1	207486	385987	1.9	9	4.6	10	13.3	0.0	0.0	4.23	2.47	2.22			4.39	2.88	2.47			2.22	2.47	+0.25
T12-2	207405	385997	1.0	5	5.7	10	13.3	0.0	0.0	3.61	1.54	1.32			3.75	1.87	1.51			1.32	1.51	+0.19
T12-3	207511	386005	1.4	13	3.7	10	13.3	0.0	0.0	10.30	5.24	4.61			10.68	6.23	5.20			4.61	5.20	+0.59
T12-4	207477	386005	2.2	5.5	4.8	10	13.3	0.0	0.0	2.14	1.33	1.20			2.22	1.53	1.33			1.20	1.33	+0.13
T12-5	207560	386008	0.9	10.5	5.8	10	13.3	0.0	0.0	8.29	3.32	2.84			8.60	4.07	3.25			2.84	3.25	+0.42
T12-6	207533	386021	1.9	13	4.9	10	13.3	0.0	0.0	5.74	3.36	3.01			5.96	3.90	3.35			3.01	3.35	+0.34
T12-7	207421	386021	1.7	8.5	4.1	10	13.3	0.0	0.0	5.01	2.79	2.48			5.19	3.27	2.78			2.48	2.78	+0.3
T12-8	207394	386026	1.6	6	4.1	10	13.3	0.0	0.0	3.76	2.04	1.81			3.90	2.40	2.02			1.81	2.02	+0.22
T12-9	207459	386027	0.8	11	3.8	10	13.3	0.0	0.0	14.85	5.53	4.70			15.40	6.85	5.41			4.70	5.41	+0.71
T12-10	207551	386036	1.5	8	5.1	10	13.3	0.0	0.0	4.30	2.26	2.00			4.46	2.68	2.25			2.00	2.25	+0.25
T12-11	207372	386036	0.5	20	7.9	10	13.3	0.0	0.0	20.99	5.67	4.71			21.76	7.25	5.50			4.71	5.50	+0.79
T12-12	207494	386046	1.1	2.4	3.4	10	13.3	0.0	0.0	2.63	1.18	1.02			2.73	1.43	1.16			1.02	1.16	+0.14
T12-13	207532	386090	1.8	6	3.9	10	13.3	0.0	0.0	3.51	2.00	1.79			3.64	2.34	2.00			1.79	2.00	+0.21
T12-14	207560	386114	1.9	11.5	7.4	10	13.3	0.0	0.0	3.38	1.98	1.77			3.51	2.30	1.97			1.77	1.97	+0.2
T12-15	207539	386125	1.1	22	5.8	10	13.3	0.0	0.0	14.21	6.38	5.52			14.74	7.72	6.29			5.52	6.29	+0.76
T12-16	207560	386137	1.4	5	4.7	10	13.3	0.0	0.0	3.12	1.59	1.40			3.24	1.89	1.58			1.40	1.58	+0.18
T12-17	207535	386162	1.4	7	5.7	10	13.3	0.0	0.0	3.61	1.84	1.62			3.75	2.19	1.82			1.62	1.82	+0.21
T12-18	207562	386167	1.6	5	4.8	10	13.3	0.0	0.0	2.68	1.45	1.29			2.78	1.71	1.44			1.29	1.44	+0.16
T12-19	207531	386181	2.0	8	4.6	10	13.3	0.0	0.0	3.57	2.13	1.92			3.71	2.47	2.13			1.92	2.13	+0.21
T12-20	207563	386189	1.8	7	3.1	10	13.3	0.0	0.0	5.14	2.94	2.62			5.33	3.43	2.93			2.62	2.93	+0.31
T12-21	207527	386204	1.9	4.5	3.6	10	13.3	0.0	0.0	2.70	1.58	1.41			2.80	1.83	1.57			1.41	1.57	+0.16
T12-22	207562	386209	0.7	24	3.8	10	13.3	0.0	0.0	37.03	12.65	10.67			38.41	15.81	12.34			10.67	12.34	+1.67
T12-23	207526	386222	2.1	6	3.8	10	13.3	0.0	0.0	3.09	1.88	1.69			3.20	2.17	1.88			1.69	1.88	+0.19
T12-24	207567	386230	1.1	19	4.4	10	13.3	0.0	0.0	16.13	7.24	6.27			16.73	8.76	7.14			6.27	7.14	+0.87
T12-25	207525	386240	1.0	30	11.3	10	13.3	0.0	0.0	11.15	4.75	4.09			11.57	5.78	4.67			4.09	4.67	+0.58
T12-26	207566	386241	0.4	18	7.8	10	13.3	0.0	0.0	23.91	5.46	4.49			24.79	7.08	5.28			4.49	5.28	+0.79
T13-1	208620	386979	2.0	18	4.4	10	13.3	0.0	0.0	8.40	5.02	4.51			8.72	5.81	5.01			4.51	5.01	+0.5
T13-2	208568	386889	1.0	10	3.8	15	13.3	0.0	0.0	10.80	3.57	3.96			11.20	4.48	4.52			3.57	4.48	+0.91
T13-3	208528	386816	1.6	8	5	15	13.3	0.0	0.0	4.11	1.82	1.98			4.27	2.20	2.22			1.82	2.20	+0.39
T13-4	208512	386645	0.5	8	7.8	10	13.3	0.0	0.0	8.50	2.30	1.91			8.81	2.94	2.23			1.91	2.23	+0.32
T13-5	208349	386610	0.8	16	3.2	10	13.3	0.0	0.0	25.63	9.54	8.11			26.58	11.81	9.34			8.11	9.34	+1.23
T13-6	208408	386596	0.9	7.5	3.8	10	13.3	0.0	0.0	9.00	3.60	3.08			9.33	4.42	3.53			3.08	3.53	+0.45
T13-7	208568	386579	1.2	9	2.2	10	13.3	0.0	0.0	13.97	6.57	5.72			14.48	7.90	6.49			5.72	6.49	+0.77

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T13-8	208322	386572	1.1	10	3.3	10	13.3	0.0	0.0	11.30	5.07	4.39			11.72	6.14	5.00			4.39	5.00	+0.61
T13-9	208547	386549	1.3	7	4.8	10	13.3	0.0	0.0	4.61	2.26	1.98			4.78	2.70	2.24			1.98	2.24	+0.26
T13-10	208399	386548	0.8	25	5	10	13.3	0.0	0.0	27.42	9.79	8.30			28.44	12.19	9.57			8.30	9.57	+1.28
T14-1	207243	386066	1.6	14	5.6	10	13.3	0.0	0.0	6.44	3.49	3.09			6.67	4.11	3.47			3.09	3.47	+0.38
T14-2	207230	386158	2.0	9	3.5	10	13.3	0.0	0.0	5.27	3.15	2.83			5.47	3.65	3.15			2.83	3.15	+0.32
T14-3	207224	386249	1.0	12	7.7	10	13.3	0.0	0.0	6.46	2.75	2.37			6.69	3.35	2.70			2.37	2.70	+0.34
T14-4	207207	386335	2.7	13	2.9	10	13.3	0.0	0.0	6.81	4.54	4.15			7.06	5.15	4.56			4.15	4.56	+0.41
T14-5	207095	386453	1.6	8.5	2.3	10	13.3	0.0	0.0	9.46	5.13	4.55			9.81	6.04	5.10			4.55	5.10	+0.55
T14-6	207020	386480	0.8	16	4.1	10	13.3	0.0	0.0	20.03	7.45	6.34			20.77	9.23	7.30			6.34	7.30	+0.96
T14-7	207066	386556	1.5	21	2.6	10	13.3	0.0	0.0	22.07	11.61	10.25			22.88	13.73	11.53			10.25	11.53	+1.28
T14-8	207018	386578	1.1	26	4	10	13.3	0.0	0.0	24.26	10.89	9.43			25.16	13.18	10.74			9.43	10.74	+1.3
T14-9	206957	386590	1.2	16	3.5	10	13.3	0.0	0.0	15.63	7.36	6.40			16.21	8.84	7.26			6.40	7.26	+0.86
T15-1	207810	386587	0.5	22	3.8	10	13.3	0.0	0.0	47.53	12.85	10.66			49.29	16.43	12.46			10.66	12.46	+1.8
T15-2	207839	386701	0.8	21	2	10	13.3	0.0	0.0	53.76	20.00	17.01			55.75	24.78	19.58			17.01	19.58	+2.57
T16-1	208580	386594	1.0	7	4.3	10	13.3	0.0	0.0	6.69	2.85	2.45			6.94	3.47	2.80			2.45	2.80	+0.35
T16-2	208617	386607	1.6	6.5	3.7	10	13.3	0.0	0.0	4.51	2.44	2.17			4.67	2.88	2.43			2.17	2.43	+0.26
T16-3	208672	386583	2.6	6	4.4	10	13.3	0.0	0.0	2.15	1.42	1.29			2.23	1.61	1.42			1.29	1.42	+0.13
T16-4	208770	386663	3.1	3	2.3	10	13.3	0.0	0.0	1.72	1.20	1.11			1.79	1.35	1.21			1.11	1.21	+0.1
T16-5	208780	386687	3.0	5	3	10	13.3	0.0	0.0	2.28	1.57	1.45			2.36	1.77	1.58			1.45	1.58	+0.14
T16-6	208790	386562	2.5	4	2	10	13.3	0.0	0.0	3.28	2.13	1.94			3.40	2.43	2.14			1.94	2.14	+0.2
T16-7	208798	386702	3.0	3.5	2.5	10	13.3	0.0	0.0	1.91	1.32	1.21			1.98	1.49	1.33			1.21	1.33	+0.12
T16-8	208807	386530	3.8	6	2	10	13.3	0.0	0.0	3.23	2.39	2.22			3.35	2.65	2.41			2.22	2.41	+0.19
T16-9	208825	386590	5.0	4	2.3	10	13.3	0.0	0.0	1.43	1.12	1.06			1.48	1.23	1.14			1.06	1.14	+0.08
T16-10	208837	386559	5.1	5	1.3	10	13.3	0.0	0.0	3.09	2.44	2.31			3.20	2.68	2.48			2.31	2.48	+0.18
T16-11	208842	386661	1.4	3.5	2.2	10	13.3	0.0	0.0	4.66	2.37	2.08			4.83	2.82	2.35			2.08	2.35	+0.27
T16-12	208843	386713	1.8	4	3.4	10	13.3	0.0	0.0	2.68	1.53	1.37			2.78	1.79	1.53			1.37	1.53	+0.16
T16-13	208867	386721	3.2	4	2.9	10	13.3	0.0	0.0	1.77	1.24	1.15			1.83	1.40	1.25			1.15	1.25	+0.11
T16-14	208867	386721	3.2	4	3.1	10	13.3	0.0	0.0	1.65	1.16	1.07			1.71	1.31	1.17			1.07	1.17	+0.1
T16-15	208878	386731	2.7	5	2.5	10	13.3	0.0	0.0	3.04	2.02	1.85			3.15	2.30	2.03			1.85	2.03	+0.18
T16-16	208880	386611	2.0	5	2.7	10	13.3	0.0	0.0	3.80	2.27	2.04			3.94	2.62	2.26			2.04	2.26	+0.23
T16-17	208881	386760	3.3	3.5	2.3	10	13.3	0.0	0.0	1.89	1.34	1.24			1.96	1.50	1.35			1.24	1.35	+0.11
T16-18	208898	386692	4.0	4.5	2.4	10	13.3	0.0	0.0	1.92	1.44	1.34			1.99	1.59	1.45			1.34	1.45	+0.11
T16-19	208903	386743	5.1	5	1.8	10	13.3	0.0	0.0	2.23	1.76	1.67			2.31	1.93	1.79			1.67	1.79	+0.13
T16-20	208904	386578	2.8	3	2.6	10	13.3	0.0	0.0	1.69	1.14	1.04			1.75	1.29	1.15			1.04	1.15	+0.1
T16-21	208909	386595	1.6	5	2	10	13.3	0.0	0.0	6.40	3.47	3.08			6.64	4.08	3.45			3.08	3.45	+0.37
T16-22	208910	386693	5.2	5	2.4	10	13.3	0.0	0.0	1.64	1.30	1.23			1.70	1.43	1.33			1.23	1.33	+0.09
T16-23	208919	386786	2.2	5	3	10	13.3	0.0	0.0	3.11	1.92	1.74			3.22	2.21	1.93			1.74	1.93	+0.19
T16-24	208922	386737	4.9	3	1.7	10	13.3	0.0	0.0	1.47	1.16	1.09			1.53	1.27	1.18			1.09	1.18	+0.08
T16-25	208926	386775	1.8	4	3	10	13.3	0.0	0.0	3.04	1.74	1.55			3.15	2.02	1.73			1.55	1.73	+0.18
T16-26	208937	386705	4.9	3	1.7	10	13.3	0.0	0.0	1.47	1.16	1.09			1.53	1.27	1.18			1.09	1.18	+0.08
T16-27	208939	386750	1.6	5	2.5	10	13.3	0.0	0.0	5.12	2.78	2.46			5.31	3.27	2.76			2.46	2.76	+0.3
T16-28	208950	386721	2.6	2	1.5	10	13.3	0.0	0.0	2.10	1.38	1.26			2.18	1.57	1.39			1.26	1.39	+0.13
T16-29	208952	386711	3.0	3	1.9	10	13.3	0.0	0.0	2.16	1.49	1.37			2.24	1.68	1.50			1.37	1.50	+0.13
T16-30	208965	386712	2.1	5	2.2	10	13.3	0.0	0.0	4.43	2.70	2.43			4.60	3.11	2.70			2.43	2.70	+0.27
T16-31	208981	386727	1.8	4.5	1.5	10	13.3	0.0	0.0	6.82	3.90	3.48			7.08	4.55	3.89			3.48	3.89	+0.41
T16-32	208987	386646	2.9	4	2.3	10	13.3	0.0	0.0	2.46	1.68	1.54			2.55	1.89	1.69			1.54	1.69	+0.15
T17-1	208557	387194	1.7	13	5.7	20	13.3	0.0	0.0	5.53	2.14	2.74			5.73	2.63	3.07			2.14	2.63	+0.5
T17-2	208553	387102	1.2	19	4.1	10	13.3	0.0	0.0	15.86	7.46	6.50			16.45	8.97	7.37			6.50	7.37	+0.87
T17-3	208558	387082	1.0	23	5.7	10	13.3	0.0	0.0	16.62	7.07	6.09			17.24	8.62	6.96			6.09	6.96	+0.87

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T17-4	208678	387078	1.5	20	5.2	15	13.3	0.0	0.0	10.55	4.49	4.90			10.94	5.47	5.51			4.49	5.47	+0.98
T17-5	208560	387065	1.4	22	7.6	10	13.3	0.0	0.0	8.56	4.36	3.83			8.88	5.18	4.32			3.83	4.32	+0.49
T18-1	205739	385716	1.2	4	3.8	10	13.3	0.0	0.0	3.60	1.69	1.48			3.73	2.04	1.67			1.48	1.67	+0.2
T18-2	205756	385730	2.0	6	3.4	10	13.3	0.0	0.0	3.62	2.16	1.94			3.75	2.50	2.16			1.94	2.16	+0.22
T18-3	205756	385763	1.2	8	4.9	10	13.3	0.0	0.0	5.60	2.63	2.29			5.80	3.17	2.60			2.29	2.60	+0.31
T18-4	205778	385670	1.2	8	3.2	10	13.3	0.0	0.0	8.54	4.02	3.50			8.86	4.83	3.97			3.50	3.97	+0.47
T18-5	205797	385702	2.0	12	2.7	10	13.3	0.0	0.0	9.11	5.44	4.88			9.45	6.30	5.43			4.88	5.43	+0.55
T18-6	205812	385723	3.0	13	3.1	10	13.3	0.0	0.0	5.73	3.95	3.64			5.94	4.46	3.98			3.64	3.98	+0.35
T18-7	205812	385723	3.0	13	2.5	10	13.3	0.0	0.0	7.10	4.90	4.51			7.37	5.52	4.93			4.51	4.93	+0.43
T18-8	205880	385724	1.4	4.5	2.8	10	13.3	0.0	0.0	4.71	2.40	2.11			4.88	2.85	2.37			2.11	2.37	+0.27
T18-9	205903	385739	2.5	5	2.9	10	13.3	0.0	0.0	2.83	1.84	1.67			2.93	2.09	1.84			1.67	1.84	+0.17
T18-10	205913	385882	1.0	6	5.2	10	13.3	0.0	0.0	4.75	2.02	1.74			4.92	2.46	1.99			1.74	1.99	+0.25
T18-11	205944	385771	1.2	2.5	2.2	10	13.3	0.0	0.0	3.88	1.83	1.59			4.02	2.19	1.80			1.59	1.80	+0.21
T18-12	205952	385792	1.2	4	3	10	13.3	0.0	0.0	4.56	2.14	1.87			4.72	2.58	2.12			1.87	2.12	+0.25
T18-13	205959	385895	1.0	5	5.2	10	13.3	0.0	0.0	3.96	1.68	1.45			4.10	2.05	1.66			1.45	1.66	+0.21
T18-14	205976	385905	1.5	6	4.1	10	13.3	0.0	0.0	4.01	2.11	1.86			4.15	2.49	2.09			1.86	2.09	+0.23
T18-15	205981	385826	1.4	3	3	10	13.3	0.0	0.0	2.93	1.49	1.31			3.04	1.77	1.48			1.31	1.48	+0.17
T18-16	206002	385938	1.4	7.5	4.2	10	13.3	0.0	0.0	5.24	2.67	2.34			5.43	3.17	2.64			2.34	2.64	+0.3
T18-17	206056	385906	1.5	12	4.9	10	13.3	0.0	0.0	6.71	3.53	3.12			6.96	4.18	3.51			3.12	3.51	+0.39
T18-18	206060	385948	1.2	5	4.3	10	13.3	0.0	0.0	3.98	1.87	1.63			4.13	2.25	1.85			1.63	1.85	+0.22
T18-19	206073	385966	1.2	3	3.9	10	13.3	0.0	0.0	2.63	1.24	1.08			2.73	1.49	1.22			1.08	1.22	+0.14
T18-20	206097	386062	1.0	13	2.9	10	13.3	0.0	0.0	18.38	7.82	6.73			19.06	9.53	7.69			6.73	7.69	+0.96
T18-21	206100	385890	2.5	4	2	10	13.3	0.0	0.0	3.28	2.13	1.94			3.40	2.43	2.14			1.94	2.14	+0.2
T18-22	206125	386128	1.0	8	4.4	10	13.3	0.0	0.0	7.47	3.18	2.74			7.75	3.87	3.13			2.74	3.13	+0.39
T18-23	206143	386198	0.8	9	5.6	10	13.3	0.0	0.0	8.27	3.08	2.62			8.58	3.81	3.01			2.62	3.01	+0.4
T18-24	206156	385939	1.4	4	4.4	10	13.3	0.0	0.0	2.67	1.36	1.19			2.77	1.61	1.35			1.19	1.35	+0.15
T18-25	206171	386108	1.3	12	6.4	10	13.3	0.0	0.0	5.95	2.92	2.55			6.17	3.49	2.89			2.55	2.89	+0.33
T18-26	206172	386241	0.7	10	4.8	10	13.3	0.0	0.0	12.24	4.18	3.53			12.69	5.23	4.08			3.53	4.08	+0.55
T18-27	206192	385988	2.2	8	4.1	10	13.3	0.0	0.0	3.64	2.26	2.04			3.78	2.60	2.26			2.04	2.26	+0.22
T18-28	206223	386102	1.3	6	5.7	10	13.3	0.0	0.0	3.34	1.64	1.43			3.46	1.96	1.62			1.43	1.62	+0.19
T18-29	206233	386128	1.0	9	4.2	10	13.3	0.0	0.0	8.80	3.75	3.23			9.13	4.56	3.68			3.23	3.68	+0.46
T18-30	206275	386270	1.5	11	2.5	10	13.3	0.0	0.0	12.02	6.33	5.58			12.47	7.48	6.28			5.58	6.28	+0.7
T18-31	206283	386196	3.1	4	1.9	10	13.3	0.0	0.0	2.78	1.94	1.79			2.88	2.18	1.95			1.79	1.95	+0.17
T18-32	206287	386314	1.0	14	3.7	10	13.3	0.0	0.0	15.53	6.61	5.69			16.10	8.05	6.50			5.69	6.50	+0.81
T18-33	206288	386236	1.3	5	3.2	10	13.3	0.0	0.0	4.93	2.42	2.12			5.11	2.89	2.39			2.12	2.39	+0.28
T18-34	206289	386293	1.9	6	3	10	13.3	0.0	0.0	4.32	2.52	2.26			4.48	2.93	2.52			2.26	2.52	+0.26
T18-35	206318	386434	1.0	9	8.1	10	13.3	0.0	0.0	4.61	1.96	1.69			4.78	2.39	1.93			1.69	1.93	+0.24
T18-36	206338	386457	1.8	12	4.1	10	13.3	0.0	0.0	6.68	3.82	3.41			6.92	4.45	3.80			3.41	3.80	+0.4
T18-37	206338	386296	1.5	5.5	6.2	10	13.3	0.0	0.0	2.44	1.28	1.13			2.53	1.52	1.27			1.13	1.27	+0.14
T18-38	206340	386317	1.6	8	7.6	10	13.3	0.0	0.0	2.72	1.48	1.31			2.83	1.74	1.47			1.31	1.47	+0.16
T18-39	206352	386478	1.0	16	7.6	10	13.3	0.0	0.0	8.72	3.71	3.19			9.04	4.52	3.65			3.19	3.65	+0.45
T18-40	206368	386345	1.4	7	5.2	10	13.3	0.0	0.0	3.96	2.01	1.77			4.10	2.39	2.00			1.77	2.00	+0.23
T18-41	206384	386412	1.9	15	3	10	13.3	0.0	0.0	10.79	6.31	5.65			11.19	7.33	6.29			5.65	6.29	+0.64
T18-42	206399	386358	1.4	4.5	2.3	10	13.3	0.0	0.0	5.73	2.91	2.56			5.94	3.46	2.89			2.56	2.89	+0.33
T18-43	206420	386372	1.9	5	3.7	10	13.3	0.0	0.0	2.92	1.71	1.53			3.03	1.98	1.70			1.53	1.70	+0.17
T18-44	206436	386396	3.0	3	1.8	10	13.3	0.0	0.0	2.28	1.57	1.44			2.36	1.77	1.58			1.44	1.58	+0.14
T18-45	206443	386532	1.6	8	4.3	10	13.3	0.0	0.0	4.78	2.59	2.30			4.95	3.05	2.58			2.30	2.58	+0.28
T18-46	206461	386434	1.2	9	4.8	10	13.3	0.0	0.0	6.42	3.02	2.63			6.66	3.63	2.99			2.63	2.99	+0.35
T18-47	206467	386510	1.6	9	4.6	10	13.3	0.0	0.0	5.03	2.73	2.42			5.21	3.21	2.71			2.42	2.71	+0.29

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T18-48	206488	386544	1.0	12	5.1	10	13.3	0.0	0.0	9.68	4.12	3.55			10.04	5.02	4.05			3.55	4.05	+0.5
T18-49	206538	386696	0.6	11	4.8	10	13.3	0.0	0.0	15.70	4.83	4.05			16.29	6.11	4.70			4.05	4.70	+0.66
T18-50	206555	386709	1.5	5	5.6	10	13.3	0.0	0.0	2.45	1.29	1.14			2.54	1.53	1.28			1.14	1.28	+0.14
T18-51	206556	386733	1.4	10	4.4	10	13.3	0.0	0.0	6.67	3.40	2.98			6.92	4.03	3.37			2.98	3.37	+0.38
T18-52	206565	386648	1.5	16	4.7	10	13.3	0.0	0.0	9.33	4.91	4.33			9.68	5.81	4.87			4.33	4.87	+0.54
T18-53	206590	386732	1.5	13	4.6	10	13.3	0.0	0.0	7.74	4.08	3.60			8.03	4.82	4.05			3.60	4.05	+0.45
T18-54	206590	386743	2.4	10	4.3	10	13.3	0.0	0.0	3.98	2.55	2.31			4.13	2.91	2.55			2.31	2.55	+0.24
T18-55	206603	386673	1.5	10	4.9	10	13.3	0.0	0.0	5.60	2.94	2.60			5.80	3.48	2.92			2.60	2.92	+0.32
T18-56	206613	386652	0.8	14	3.7	10	13.3	0.0	0.0	19.41	7.22	6.14			20.13	8.95	7.07			6.14	7.07	+0.93
T18-57	206654	386666	1.8	16	5.9	10	13.3	0.0	0.0	6.39	3.61	3.21			6.62	4.22	3.59			3.21	3.59	+0.38
T18-58	206657	386806	1.6	6	3.3	10	13.3	0.0	0.0	4.66	2.53	2.24			4.83	2.97	2.51			2.24	2.51	+0.27
T18-59	206667	386804	2.7	5	3.3	10	13.3	0.0	0.0	2.30	1.53	1.40			2.39	1.74	1.54			1.40	1.54	+0.14
T18-60	206672	386737	1.5	8	4.8	10	13.3	0.0	0.0	4.57	2.40	2.12			4.74	2.84	2.39			2.12	2.39	+0.26
T18-61	206678	386833	1.7	7	3.2	10	13.3	0.0	0.0	5.28	2.94	2.62			5.47	3.45	2.93			2.62	2.93	+0.31
T18-62	206693	386751	1.3	7	3	10	13.3	0.0	0.0	7.36	3.61	3.16			7.63	4.31	3.57			3.16	3.57	+0.41
T18-63	206709	386797	2.4	7	3.2	10	13.3	0.0	0.0	3.74	2.39	2.17			3.88	2.74	2.40			2.17	2.40	+0.23
T18-64	206710	386837	2.5	7	2.9	10	13.3	0.0	0.0	3.96	2.57	2.34			4.10	2.93	2.58			2.34	2.58	+0.24
T18-65	206745	386854	1.8	8	4.4	10	13.3	0.0	0.0	4.15	2.37	2.12			4.30	2.77	2.36			2.12	2.36	+0.25
T18-66	206767	386882	2.0	7	3.5	10	13.3	0.0	0.0	4.10	2.45	2.20			4.25	2.84	2.45			2.20	2.45	+0.25
T18-67	206775	386790	2.0	6.5	2.3	10	13.3	0.0	0.0	5.79	3.46	3.10			6.00	4.00	3.45			3.10	3.45	+0.35
T18-68	206788	386887	2.8	9.5	3	10	13.3	0.0	0.0	4.64	3.13	2.87			4.81	3.54	3.15			2.87	3.15	+0.28
T18-69	206790	386848	1.7	15	3.2	10	13.3	0.0	0.0	11.31	6.30	5.61			11.73	7.38	6.27			5.61	6.27	+0.67
T18-70	206793	386906	2.4	7	2.4	10	13.3	0.0	0.0	4.98	3.19	2.89			5.16	3.65	3.20			2.89	3.20	+0.3
T18-71	206798	386868	2.0	9.5	2.5	10	13.3	0.0	0.0	7.79	4.65	4.18			8.07	5.38	4.64			4.18	4.64	+0.47
T18-72	206801	386765	1.80	9	2.2	10	13.3	0.0	0.0	9.31	5.32	4.75			9.66	6.21	5.30			4.75	5.30	+0.55
T18-73	206803	386859	1.5	9	4.8	10	13.3	0.0	0.0	5.14	2.71	2.39			5.33	3.20	2.68			2.39	2.68	+0.3
T18-74	206814	386800	2.5	6	2.2	10	13.3	0.0	0.0	4.47	2.90	2.64			4.63	3.31	2.91			2.64	2.91	+0.27
T18-75	206830	386818	1.5	8	3.8	10	13.3	0.0	0.0	5.76	3.03	2.68			5.97	3.58	3.01			2.68	3.01	+0.33
T18-76	206858	386839	1.2	10	1.7	10	13.3	0.0	0.0	20.07	9.45	8.22			20.82	11.35	9.33			8.22	9.33	+1.1
T18-77	206861	386818	1.8	10	3.8	10	13.3	0.0	0.0	6.00	3.43	3.06			6.22	4.00	3.42			3.06	3.42	+0.36
T18-78	206865	386924	1.2	7	2.6	10	13.3	0.0	0.0	9.19	4.33	3.77			9.54	5.20	4.27			3.77	4.27	+0.51
T18-79	206885	386929	1.9	7	3.1	10	13.3	0.0	0.0	4.87	2.85	2.55			5.05	3.31	2.84			2.55	2.84	+0.29
T18-80	206890	386908	3.4	7	2.7	10	13.3	0.0	0.0	3.13	2.24	2.07			3.24	2.50	2.26			2.07	2.26	+0.19
T18-81	206892	386898	2.5	4.5	2.9	10	13.3	0.0	0.0	2.54	1.65	1.50			2.64	1.88	1.66			1.50	1.66	+0.15
T18-82	206899	386875	3.1	8	2.9	10	13.3	0.0	0.0	3.65	2.54	2.34			3.78	2.86	2.56			2.34	2.56	+0.22
T18-83	206944	386963	1.8	6	3.3	10	13.3	0.0	0.0	4.14	2.37	2.11			4.30	2.76	2.36			2.11	2.36	+0.25
T18-84	206953	386883	2.1	13	2.6	10	13.3	0.0	0.0	9.76	5.94	5.35			10.12	6.85	5.94			5.35	5.94	+0.59
T18-85	206979	386845	2.7	11	1.9	10	13.3	0.0	0.0	8.78	5.85	5.35			9.11	6.65	5.89			5.35	5.89	+0.53
T18-86	206986	386887	2.0	13	2	10	13.3	0.0	0.0	13.31	7.95	7.14			13.80	9.20	7.94			7.14	7.94	+0.8
T18-87	207007	386966	0.6	11	2.5	10	13.3	0.0	0.0	30.05	9.25	7.74			31.16	11.69	9.00			7.74	9.00	+1.26
T18-88	207018	386930	2.4	5	3.3	10	13.3	0.0	0.0	2.59	1.66	1.51			2.69	1.90	1.66			1.51	1.66	+0.16
T18-89	207035	386865	3.2	10.5	5.2	10	13.3	0.0	0.0	2.60	1.83	1.69			2.69	2.05	1.84			1.69	1.84	+0.16
T18-90	207043	386890	3.5	10	1.8	10	13.3	0.0	0.0	6.50	4.69	4.35			6.74	5.24	4.74			4.35	4.74	+0.39
T18-91	207058	386936	2.9	6	1.8	10	13.3	0.0	0.0	4.71	3.21	2.95			4.88	3.63	3.23			2.95	3.23	+0.28
T18-92	207065	386863	5.0	19	4.2	10	13.3	0.0	0.0	3.72	2.93	2.76			3.85	3.21	2.97			2.76	2.97	+0.21
T18-93	207072	386887	4.0	8	2.1	10	13.3	0.0	0.0	3.90	2.92	2.72			4.05	3.24	2.95			2.72	2.95	+0.23
T18-94	207087	386986	0.6	13	3	10	13.3	0.0	0.0	29.61	9.11	7.63			30.71	11.52	8.87			7.63	8.87	+1.24
T18-95	207092	386901	3.0	7	3	10	13.3	0.0	0.0	3.19	2.20	2.02			3.31	2.48	2.22			2.02	2.22	+0.19
T18-96	207098	386842	3.7	10	4.6	10	13.3	0.0	0.0	2.41	1.77	1.65			2.50	1.97	1.79			1.65	1.79	+0.14

MEENBOG WIND FARM - PEAT ASSESSMENT TO EUROCODE 7 - ODF (overdesign factor)																						
LOCATION			DATA			LOADING				ANALYSIS DA1/2 (governing case)					ANALYSIS DA1/1 (not governing)					Comparison DA1/1 vs DA1/2		
Location	Easting	Northing	Peat	Undrained	Slope	Permanent I	Variable Load II	Permanent III	Variable Load IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	ODF 0	ODF 0+I	ODF 0+II	ODF 0+III	ODF 0+III+IV	Min ODF DA1/2	Min ODF DA1/1	DA1/1 vs DA1/2
T18-97	207106	386870	4.4	5	2.3	10	13.3	0.0	0.0	2.02	1.55	1.45			2.10	1.71	1.57			1.45	1.57	+0.12
T18-98	207107	386902	3.7	13	2.9	10	13.3	0.0	0.0	4.97	3.64	3.39			5.15	4.05	3.68			3.39	3.68	+0.3
T18-99	207130	386866	3.1	8	2.1	10	13.3	0.0	0.0	5.03	3.51	3.23			5.22	3.95	3.54			3.23	3.54	+0.3
T18-100	207144	386807	3.0	21	2.6	10	13.3	0.0	0.0	11.03	7.61	7.00			11.44	8.58	7.67			7.00	7.67	+0.67
T18-101	207165	386924	1.2	11	1.5	10	13.3	0.0	0.0	25.02	11.77	10.25			25.95	14.15	11.63			10.25	11.63	+1.38
T18-102	207171	386967	1.2	10	3.1	10	13.3	0.0	0.0	11.02	5.19	4.52			11.43	6.24	5.12			4.52	5.12	+0.61
T18-103	207172	386911	2.3	13	1.5	10	13.3	0.0	0.0	15.43	9.72	8.81			16.00	11.15	9.74			8.81	9.74	+0.93
T18-104	207210	386856	2.1	8	3.5	10	13.3	0.0	0.0	4.47	2.72	2.45			4.63	3.14	2.72			2.45	2.72	+0.27
T18-105	207247	386891	1.8	8	2.7	10	13.3	0.0	0.0	6.75	3.86	3.44			7.00	4.50	3.84			3.44	3.84	+0.4
T18-106	207270	386895	1.7	6	3.1	10	13.3	0.0	0.0	4.67	2.60	2.31			4.84	3.05	2.59			2.31	2.59	+0.28
T18-107	207347	386931	2.0	14	2.6	10	13.3	0.0	0.0	11.03	6.59	5.92			11.44	7.63	6.58			5.92	6.58	+0.66
T18-108	207370	387040	1.5	16	3.4	10	13.3	0.0	0.0	12.87	6.77	5.98			13.35	8.01	6.72			5.98	6.72	+0.74
T18-109	207383	387013	2.0	12	3.1	10	13.3	0.0	0.0	7.94	4.74	4.26			8.23	5.49	4.73			4.26	4.73	+0.48
T18-110	207393	387218	1.5	7	4.7	10	13.3	0.0	0.0	4.08	2.15	1.90			4.23	2.54	2.13			1.90	2.13	+0.24
T18-111	207441	387026	1.5	13	4	10	13.3	0.0	0.0	8.90	4.68	4.13			9.23	5.54	4.65			4.13	4.65	+0.51
T18-112	207481	387052	2.0	11	3.6	10	13.3	0.0	0.0	6.27	3.74	3.36			6.50	4.33	3.74			3.36	3.74	+0.38
T18-113	207484	387187	0.7	12	3.9	10	13.3	0.0	0.0	18.04	6.16	5.20			18.71	7.71	6.01			5.20	6.01	+0.81
T18-114	207522	387043	2.0	6	2.7	10	13.3	0.0	0.0	4.55	2.72	2.44			4.72	3.15	2.72			2.44	2.72	+0.27
T18-115	207536	387086	1.6	7	2.1	10	13.3	0.0	0.0	8.53	4.63	4.10			8.85	5.45	4.60			4.10	4.60	+0.5
T18-116	207540	387071	1.3	8	2.3	10	13.3	0.0	0.0	10.96	5.38	4.70			11.37	6.43	5.32			4.70	5.32	+0.62
T18-117	207558	387198	2.0	4.5	3.5	10	13.3	0.0	0.0	2.64	1.57	1.41			2.74	1.82	1.57			1.41	1.57	+0.16
T18-118	207589	387131	1.9	6	1.8	10	13.3	0.0	0.0	7.18	4.20	3.76			7.45	4.88	4.19			3.76	4.19	+0.43
T19-1	208542	387239	2.2	12	2	10	13.3	0.0	0.0	11.17	6.92	6.25			11.58	7.96	6.93			6.25	6.93	+0.67
T19-2	208779	387245	1.2	7.5	4.4	15	13.3	0.0	0.0	5.84	2.17	2.39			6.05	2.69	2.71			2.17	2.69	+0.52
T19-3	208874	387268	1.8	5.5	3.6	15	13.3	0.0	0.0	3.48	1.64	1.78			3.61	1.97	1.98			1.64	1.97	+0.33
T19-4	209059	387236	1.7	9	3.8	10	13.3	0.0	0.0	5.72	3.19	2.84			5.93	3.73	3.17			2.84	3.17	+0.34
T19-5	209103	387126	0.5	21	3.8	10	13.3	0.0	0.0	45.37	12.26	10.18			47.05	15.68	11.89			10.18	11.89	+1.72
T19-6	209112	387161	2.9	4	3.5	10	13.3	0.0	0.0	1.62	1.10	1.01			1.68	1.25	1.11			1.01	1.11	+0.1
T19-7	209126	387242	1.9	6.5	2.7	10	13.3	0.0	0.0	5.19	3.04	2.72			5.39	3.53	3.03			2.72	3.03	+0.31
T19-8	209140	387285	1.8	4	3.1	10	13.3	0.0	0.0	2.94	1.68	1.50			3.05	1.96	1.67			1.50	1.67	+0.17
T19-9	209140	387126	1.0	10	3.4	10	13.3	0.0	0.0	12.07	5.13	4.42			12.51	6.26	5.05			4.42	5.05	+0.63
T19-10	209165	387281	2.0	8	2.9	10	13.3	0.0	0.0	5.65	3.38	3.03			5.86	3.91	3.37			3.03	3.37	+0.34
T19-11	209172	387122	3.8	3.5	2.5	10	13.3	0.0	0.0	1.51	1.11	1.04			1.57	1.24	1.13			1.04	1.13	+0.09
T19-12	209179	387242	1.5	4.5	2.2	10	13.3	0.0	0.0	5.59	2.94	2.60			5.79	3.48	2.92			2.60	2.92	+0.32
T19-13	209196	387280	2.1	4	4.1	10	13.3	0.0	0.0	1.91	1.16	1.05			1.98	1.34	1.16			1.05	1.16	+0.11
T19-14	209206	387137	3.5	4	2.1	10	13.3	0.0	0.0	2.23	1.61	1.49			2.31	1.80	1.63			1.49	1.63	+0.13
T19-15	209225	387237	3.4	3	1.6	10	13.3	0.0	0.0	2.26	1.62	1.50			2.34	1.81	1.63			1.50	1.63	+0.14
T19-16	209244	387208	1.9	4	4	10	13.3	0.0	0.0	2.16	1.26	1.13			2.24	1.47	1.26			1.13	1.26	+0.13
MM-1	206918	385685	1.5	11	4.5	10	13.3	0.0	0.0	6.70	3.52	3.11			6.94	4.17	3.50			3.11	3.50	+0.39
MM-2	206891	385743	0.7	9	4.1	10	13.3	0.0	0.0	12.88	4.40	3.71			13.35	5.50	4.29			3.71	4.29	+0.58
MM-3	206853	385708	1.5	3.5	4.3	10	13.3	0.0	0.0	2.23	1.17	1.04			2.31	1.39	1.16			1.04	1.16	+0.13
MM-4	206861	385641	1.0	7	4	10	13.3	0.0	0.0	7.19	3.06	2.63			7.45	3.73	3.01			2.63	3.01	+0.37
MM-5	206815	385590	1.8	4.5	4.3	10	13.3	0.0	0.0	2.39	1.36	1.22			2.48	1.59	1.36			1.22	1.36	+0.14

FACTOR OF SAFETY LEGEND
FOS < 1.0 Unstable (Red)
FOS >= 1.0 Acceptable (Green)