Appendix 9-2- Peat & Spoil Management Plan

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EXECUTIVE SUMMARY

Gavin and Doherty Geosolutions Limited (GDG) was commissioned by Tobin Consulting Engineers (Tobin) to undertake a Peat and Spoil Management Plan (PSMP) for the proposed Derryadd Wind Farm. In accordance with the Draft Revised Wind Energy Development Guidelines compiled by the Department of the Environment, Heritage and Local Government (DoEHLG, 2019), a peat and spoil management plan is required) where peat is present on a proposed wind farm development.

This report provides details on the approximate predicted volumes of peat and spoil to be excavated during construction, the characteristics and types of peat to be excavated, construction methodologies to reduce the volumes of peat and spoil to be excavated, and the guidelines for how and where this excavated peat may be placed, reused and managed. This peat and spoil management plan will be further developed and implemented subsequent to the proposed development receiving consent. Further details and specific plans are to be determined during the detailed design phase and once further confirmatory site investigations have been undertaken. These details will then be included in a detailed peat and spoil management plan (PSMP) as part of the detailed Construction Environment Management Plan (CEMP). The responsibility for the implementation of the PSMP rests with the Principal Contractor. Observations from site investigations indicate that a large proportion of the site consists of cut-over Raised Peat. Peat is found across the site, aside from small areas at the far eastern, southern and western site boundaries. Peat thickness encountered by intrusive investigations across the site varies up to a 6.2m, with an average of 1.38m recorded. In total, 47% of recorded peat thickness were under 1m, and 77% were under 2m. Peat depths in excess of 2m were encountered within the southern part of the site, concentrated around the vicinity of T19, T20 and T22. The deepest areas of peat (depth of 6.2m) were recorded in isolated locations at the east of T01 and T02 at a location where no infrastructure is proposed and at discrete locations east of the proposed internal floated access roads.

New internal site access roads will need to be constructed at the proposed wind farm site. The preliminary outline of road construction types and construction methodologies have been defined, along with methodologies for constructing turbine bases, hardstandings and other infrastructure foundations.

The PSMP has taken into consideration the findings of the associated Peat Stability Risk Assessment (PSRA) (GDG, 2025) which outlines peat instability risks across the proposed wind farm site. The PSRA has outlined areas adjacent to existing peat cuts and drain excavations which may pose a localised instability if the directly adjacent peat material was surcharged. These linear features the areas are not considered to be a landslide or bog burst risk and can be managed by the Contractor by following the mitigations and material handling methodologies as outlined in this report.

Preliminary volumes for the peat and spoil generated during construction are presented in Section 8, along with guidelines for handling and storing excavated peat and recommendations for good construction practices. Peat reinstatement volume estimates and suitable locations are outlined within this report, outlining the Peat Deposition Area and borrow pit requirements. The peat and spoil excavation and reinstatement balance estimates are outlined and suggest that the proposed development provides sufficient capacity to store all peat and spoil generated during construction. Peat and spoil movements will not occur during the operational phase.

1 INTRODUCTION

Gavin and Doherty Geosolutions (GDG) was requested by Tobin Consulting Engineers (Tobin) to prepare a Peat and Spoil Management Plan (PSMP) as part of an application for planning permission for the proposed Derryadd Wind Farm in County Longford. Based on the desk study and ground investigation available information, the proposed wind farm site is underlain by peat. The proposed wind farm site layout and peat depth plan are presented in Appendix A and Appendix B, respectively.

1.1 STATEMENT OF AUTHORITY

Gavin and Doherty Geosolutions Ltd. (GDG) is a specialist geotechnical and civil design consultancy, providing innovative engineering solutions to a broad range of infrastructure problems. Established in 2010, GDG has since grown to more than 150 people. Our aim is to provide an innovative, cost-effective and reliable service tailored to meet and exceed our clients' requirements. We strive to attain the highest possible standards and are consistently looking to pioneer and develop new technologies and techniques while ensuring that all relevant design codes and practices are met.

GDG has been involved in many wind farm developments in both Ireland and the UK at various stages of development, i.e. preliminary feasibility, planning, peat stability assessment, design and construction. The GDG team of engineering geologists, geomorphologists, geotechnical engineers and environmental scientists has developed expertise in the design and construction of developments in peat areas. The GDG staff are intimately familiar with similar projects to the Proposed development, having worked on wind farms at Yellow River, Cloncreen, Mount Lucas and Bruckana set in similar ground conditions.

The members of the GDG team involved in this Peat and Soil Management Plan include:

- Paul Quigley (Project Director). Paul is a Chartered Engineer with 27 years of experience in geotechnical engineering and UK Registered Ground Engineering (RoGEP) Adviser. He has worked on a wide variety of projects for employers, contractors and third parties, gaining a range of experience, including earthworks for major infrastructure schemes in Ireland and overseas, roads, tunnelling projects, flood protection schemes, retaining wall and basement projects, ground investigations and forensic reviews of failures. Paul has published numerous peer-reviewed technical papers and acted as an independent expert for several legal disputes centred on ground-related issues. He is a reviewer for the ICE Geotechnical Engineering Journal, a member of the Eurocode 7 review panel at NSAI and a former Chairman of the Geotechnical Society of Ireland.
- John O'Donovan leads the onshore renewable sector at GDG. He completed his PhD at Imperial College, investigating the use of DEM to model wave propagation techniques to measure small-strain soil stiffness. Following completion of the PhD John spent 2.5 years working with Buro Happold's Ground Engineering Group. He has over ten years' of experience in engineering and seven years in his current role. At GDG John manages onshore wind farm projects and solar farm projects. John specialises in dealing with difficult ground conditions and providing robust designs for projects in peat land areas. John also works on the landfall and onshore aspects of offshore windfarms including cable routing and onshore substation foundation design. John worked on the initial revision of this assessment.
- Andria Loppas is a Chartered Geotechnical Engineer with over nine years of experience working on a variety of infrastructure (highway and railway), utility and onshore renewables projects with a proven ability of leading geotechnical packages and performing geotechnical design. At

GDG Andria leads the geotechnical design of several onshore renewable projects from planning to construction stage.

- Stephen Curtis is a Senior Engineering Geologist. He has over seven years of experience in both site investigation contracting and geotechnical consultancy environments. He is Chartered with the Institute of Geologists of Ireland (IGI) and the European Association of Geographers. Stephen has worked on multiple renewable energy projects, primarily solar and wind farm projects in Ireland and the UK for over four years. He has been involved in the feasibility study, planning, design and construction stages of wind and solar farm developments, focusing on geotechnical risk management and mitigation for construction in upland peat areas and Irish glacial ground conditions. Stephen worked on the initial revision of this assessment.
- Kelly Griffin is a civil engineer with over two years of industry experience. Kelly has completed structural and geotechnical design work on various projects, including temporary works design, retaining wall design, shallow foundation design and earthworks in Ireland and the UK. Kelly worked on the initial revision of this assessment.
- Chris Engleman is a Professional Geologist (PGeo, EuroGeol) with an MGeol from the University of Leeds. He is Chartered with the Institute of Geologists Ireland (IGI) and the European Federation of Geologists. Chris has five years of industry experience within the onshore renewables sector and the field of geological mapping, predominantly working on projects for peat stability and management (including PSRAs), ground investigation, rock and soil logging, GIS mapping and geotechnical design. Chris has experience in peat stability analysis, geological/geomorphological mapping (with a particular focus on Quaternary geology), site investigation, project management and GIS mapping. He has worked on several EIAR projects in Ireland and Scotland, including Peat Stability Risk Assessments, Peat Management Plans, and Soils and Geology Chapters.

1.2 GUIDANCE DOCUMENTS

This PSMP has been prepared in accordance with industry best practices relating to wind farm construction and peatlands. These best practice guidelines include:

- Wind Energy Development Guidelines. Department of Housing, Planning and Local Government (2006);
- Draft Revised Wind Energy Development Guidelines. Department of Housing, Planning and Local Government (2019);
- Good practice during wind farm construction. A joint publication by Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland (2015);
- Scottish Government, Guidance on Developments on Peatland – Site Surveys (2017);
- Scottish Government, Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017);
- Guidance on the Assessment of Peat Volumes, Re-use of Excavated Peat and the Minimisation of Waste, Scottish Renewables and SEPA (2012); and,
- Floating Roads on Peat, Scottish Natural Heritage (2011).

Many of the publications listed above have been developed by the Scottish Regulators, which are considered best practice in Ireland and are therefore appropriate for refer to within this PSMP.

This PSMP and compliance with it will not relieve the developer of its obligations to undertake confirmatory ground investigations or geotechnical design before construction or any obligations relating to other aspects of the environment.

1.3 PROPOSED DEVELOPMENT

The proposed 22 wind turbine development will be located on three bogs within the Mountdillon Bog Group – Derryaroge, Derryadd, and Lough Bannow cutaway bogs. These are located in south County Longford. The proposed windfarm site has a total area of approximately 1900 hectares. The closest settlements to the proposed wind farm are Derraghan village and Lanesborough town located approximately 200 m and 500 m west, respectively. Other nearby settlements to the proposed wind farm include Keenagh 1.6 km east and Killashee 700m north east, while the main urban centre in the region, Longford Town, is located 9 km to the northeast from its nearest point. The surrounding landscape is a mixture of forestry, agricultural land and cutaway peatland, and is predominately flat. The Royal Canal and Lough Ree are located to the east and west respectively, and the River Shannon passes the northern boundary of the propsed windfarm site. A detailed map of the proposed site's administrative limits is provided in Appendix A.

The proposed development infrastructure will comprise the following:

- 22 no. wind turbines with a blade tip height of 190 m, blade rotor diameter of 165 m, hub height of 107.5 m and the associated infrastructure including tower sections, nacelle, hub, and rotor blades and all associated foundations and hard-standing areas in respect of each turbine;
- New internal site access roads, approximately 27,500 m in length including passing bays and associated drainage;
- 2 no. permanent Meteorological Masts, both of which will be 120 m in height, and associated hardstanding areas for both masts, as well as the decommissioning and removal of an existing 100 m Meteorological Mast on site in Lough Barrow Bog;
- 4 no. Borrow pits in Derryadd Bog; All works associated with the opening, gravel and spoil extraction, and decommissioning of the borrow pits;
- 4 no. temporary construction compounds, including material storage, site welfare facilities, and site offices;
- 4 no. temporary security cabins at the main construction site entrances as well as at a number of access points around the proposed wind farm site;
- 1 no. 110 kV electrical substation compound in Derryaroge Bog. The substation will consist of 2 no. control buildings, a 36 m high telecommunications tower, associated electrical plant and equipment, ground water well, wastewater holding tank and welfare facilities.
- All associated underground electrical and communications cabling connecting the turbines and masts to the proposed electrical substation, including road crossing at N63 and associated grid connection via a 110 kV loop-in connection to the existing Lanesborough-Richmond 110 kV overhead line which traverses the proposed wind farm site;
- 1 no. 16 MW battery storage facility;
- 2 no. Peat Deposition Areas, one to the north of the proposed substation compound in Derryaroge Bog and one in Derryadd Bog;
- New site access entrances, temporary improvements and modifications to existing public road infrastructure to facilitate delivery of abnormal loads including locations on N6 Eastbound Slip

Road, N6/N61 Roundabout at Athlone, N61/N63 Roundabout at Roscommon, N63 Roscommon Arts Centre Roundabout and N61/N63 Roundabout, Northeast of Roscommon.

- Hinge 3 No. permanent lighting fixtures in Folio RN40465F in Roscommon town to facilitate the delivery of abnormal loads (i.e. turbine blades);
- Approximately 7,500 m of dedicated amenity access tracks to provide linkages between the proposed wind farm site roads, royal canal greenway (to the east), the Corlea Visitor Centre amenity areas (to the south) and the Midlands Trail Networks project (to the north).;
- 3 no. permanent amenity carparks, one of which is situated in Derryaroge Bog (19 no. car parking spaces in total) and two carparks in Derryadd Bog (19 no. car parking spaces in each carpark);
- All associated site work and ancillary works including new drainage and updating existing drainage, access road, earthworks, site reinstatement and erosion control, which will be aligned with the existing and future site rehabilitation plans; and,
- A 10-year planning permission is being sought with a 30-year operational life from the date of commissioning of the entire wind farm.

Please refer to Chapter 3 (Description of the Proposed development) of the EIAR for a detailed description of the Proposed development.

This report examines the peat and spoil management details at the proposed wind farm site, located within the three bogs as defined in Chapter 3 of the EIAR. The 'proposed wind farm site' or 'site' in this report refers to the Proposed Wind Farm Development.

1.4 SCOPE OF REPORT

This report contains the following:

- A summary of proposed construction activities on-site;
- A review of peat conditions on-site;
- Road construction types;
- Methodologies for the construction of each type of access road and road construction details;
- Methodologies for the excavation of turbine bases, hardstands and compounds,
- Summary of Peat Deposition Areas and typical detail drawings;
- Guidelines for handling and storing excavated peat and spoil; and
- Recommendations for good construction practice.

1.5 SUMMARY OF CONSTRUCTION ACTIVITIES

For the construction phase, the activities that are considered likely to generate peat and spoil are as follows:

- Excavation of aggregate via four on-site borrow pits;
- Construction of access roads to the wind turbines and passing bays;
- Construction of amenity roads;

- Construction of the permanent Peat Deposition (PDA) for the safe deposition of excavated peat material,
- Construction of temporary compounds, including hard stands, construction material storage areas and site offices;
- Construction of temporary security huts; and
- Excavations for turbine bases, hardstands, construction compounds, the substation (including battery storage facility), and minor excavations during Turbine Delivery Route (TDR) works.

1.6 General Principles of Peat and Spoil Management

The general purpose of the Peat and Spoil Management Plan (PSMP) is to outline the safety methodologies of construction, outlining the safety steps required for the safe handling and management of peat and spoil. The methods outlined in the report aim to:

- Ensure the stability of the peat is not compromised by the proposed development,
- Reduce the exposure of bare or excavated peat and spoil material,
- Reduce the potential for the release of sediment into watercourses or groundwater,
- Ensure that the proposed development does not adversely impact the landscape and environment,
- Ensure good site management practices are followed throughout the proposed development's construction, operation, and decommissioning phases.

All peat excavation, placement, and reinstatement, both temporary and permanent, will consider the risks and mitigations identified in the EIAR, and the Peat Stability Risk Assessment (Appendix 9.3).

Placement of any reinstatement of landscape material will be carried out in a fashion which ties in with the existing natural topography and facilitates the reduction of the visual impact on the structures of the proposed development. The reinstatement can be done by landscaping the topography with natural slopes, embedding the proposed infrastructure into the surrounding landscape, promoting natural vegetation growth and allowing for controlled drainage from all structures.

Diligent civil and geotechnical design will be required for all structures, including the reuse of any excavated peat material for reinstatement, if proposed. All reinstatement works will be carried out considering the findings of the associated Peat Stability Risk Assessment Report (PSRA), in Appendix 9.3 of this EIAR (GDG, 2025). Works will be carried out under the supervision of an appropriately experienced geotechnical engineer and Ecological Clerk of Works (ECoW) or Environmental Manager.

2 PEAT CONDITIONS AND STABILITY

2.1 PEAT DEFINITIONS

In respect of developments on peatlands, the Scottish Government (2017) provides guidance as to the definition of peat in their Peat Survey Guidance document '*The Joint Nature Conservation Committee (JNCC) Report 445, Towards an Assessment of the State of UK Peatlands'*. In this document, the following definitions are used:

- Peaty (or organo-mineral) soil: a soil with a surface organic layer less than 0.5m deep;
- Peat: a soil with a surface organic layer greater than 0.5m deep, which has an organic matter content of more than 60%;
- Deep peat: a peat soil with a surface organic layer greater than 1.0m deep.

For the purposes of this report, peat is considered with respect to the two principal types:

- Acrotelm: This upper layer comprises poorly decomposed plant material and living vegetation. It is relatively dry with some tensile strength affording it limited structural properties. For peat classification of peat in this report, the Acrotelm layer will be considered to be inclusive of 'peaty soil'.
- Catotelm: This lower layer is formed by highly decomposed humified peat decaying at a rate of several orders of magnitude slower than the acrotelm. The slow peat formation as this catotelm layer grows represents an important sink for atmospheric CO^2. The structural integrity of this layer is particularly vulnerable to excavation and handling as it tends to disrupt completely on excavation. For classification of peat in this report the Catotelm layer will be considered to be inclusive of 'peat' and 'deep peat' soils.

2.2 GROUND INVESTIGATIONS

Site surveys relating to the soil and geological environment and ground investigations were undertaken in several phases between October 2016 to November 2023. These included:

- GDG – 28th of October 2016 to 11th of January 2017. Site walkover to review the ground conditions and assess the topography, geomorphology and requirements for further investigations and 25 no. Trial Pits are presented in Appendix 9.1.1;
- Tobin – April 2017 – 8 no. Trial Pits at potential substation locations presented in Appendix 9.1.2;
- Tobin – December 2017- 35 no. trial pits at proposed borrow pits presented in Appendix 9.1.3;
- Tobin – March-April 2018- 49 no. trial pits at proposed turbine locations, along access tracks and at potential borrow pits presented in Appendix 9.1.4;
- Hand shear vane tests on the material encountered in the trial pits, March 2017 – April 2018 presented in Appendix 9.1.3 and Appendix 9.1.4;
- Irish Drilling Ltd. - June 2017- 5no. Rotary core drillings to assess interconnectivity of the proposed development site with nearby turloughs; (this information informed the subsequent and separate borrow pit assessment) presented in Appendix 9.1.5;
- Irish Drilling Ltd. - April 2017 - 70no. peat probes at proposed turbine locations, along access tracks and at potential borrow pits presented in Appendix 9.1.6;

- Tobin – March 2018- 131 no. peat probes at proposed turbine locations along access tracks presented in Appendix 9.1.7;
- Lab testing from 2017 GDG trial pits, is presented in Appendix 9.1.8.
- Irish Drilling Ltd.- February-May 2021, presented in Appendix 9.1.9. An extensive ground investigation campaign was carried out across the site. These ground investigation locations are related to the previously approved proposed development layout as described in Section 2.3 of Chapter 2 (Background to the Proposed Development) of this EIAR. The ground investigation campaign was composed of the following:
    - 94 no. Cable percussion boreholes,
    - 90 no. Rotary boreholes for recovery of overburden and bedrock cores,
    - 336 no. Trial pits,
    - 343 no. Dynamic probes,
    - A geophysical investigation carried out by Minerex Ltd. composed of the following:
        - Electronic Resistivity Tomography (ERT),
        - Seismic refraction,
        - Multi-channel Analysis of Surface Waves (MASW),
        - Wenner Array.
    - A range of in-situ tests were carried out, including Standard Penetration Testing (SPT) and variable head testing,
    - Geotechnical and geochemical laboratory testing.
- Irish Drilling Ltd. – January-February 2023, presented in Appendix 9.1.10. An extensive ground investigation campaign was carried out across the site. These ground investigation locations are related to the revised turbine and substation layout of the proposed development as part of this planning application and EIAR. The ground investigation campaign was composed of the following:
    - 3no. Rotary core drillings,
    - 34no. trial pits.
    - Logging of the soil layers and sampling of each stratum encountered; and
- GDG - November 2023- 97no. peat probes and site inspections at the updated proposed infrastructure locations presented in Appendix 9.1.11

The findings of these ground investigations are summarised in Chapter 9 (Land, Soils and Geology) of this EIAR and are discussed in relation to peat stability in Appendix 9.3 (PSRA, GDG, 2025).

2.3 SUMMARY OF WALKOVER FINDINGS

GDG carried out several site walkovers of the proposed wind farm site to examine the previous design layout of the windfarm and the current layout:

- Site walkovers, trial pitting, and peat probing between October and December 2016 on the past windfarm layout,
- Several trial pitting visits between April 2017 and March 2018 on the past windfarm layout,

- Site walkover and peat probes in November 2023 on the current wind farm layout.

The walkover indicated that the surface condition of the peat can be described as varied. Peat extraction has occurred across the site and ceased at the site in 2019. There are no plans to recommence industrial peat extraction activities at the site. Some areas of the site are described as having bare peat at the surface, but the vast majority of the site has some vegetation, grassland or heather coverage, including areas of low tree and bush cover, willow saplings and rushes, as shown in Figure 2-1.

During the November 2023 peat probing and site reconnaissance campaign access was not possible to some areas at the northern sections of the site adjacent to Turbine 6 and Turbine 7 locations due to surface water. Access was gained as close as safely possible to these locations and some limited ground investigation information has been gathered in these areas in past site investigations.

Outside of this northern section of the site, the vast majority of the site was well drained, with some isolated surface water and drains full of water during the November 2023 site visit. Hydrology and drainage are considered in detail in Chapter 10 of the EIAR (Hydrology and Hydrogeology).

Figure 2-1: Photo from the northern area of the site showing the varied surface conditions (Areas of bare peat and vegetation)

2.4 GROUND PROFILE SUMMARY

The ground investigations indicate that the ground conditions at the site comprise predominantly of areas of cut-over/cutaway raised peat generally of thicknesses less than 2.0m, but isolated pockets of thicknesses of up to approximately 6.2m were identified. There are also some bodies of Till derived from limestones (TLs) mapped within the proposed wind farm site, forming small, tear-shaped islands within the peat. These pockets of glacial till are mapped underlying the proposed T01, T02, and T03 locations. These are pockets of till located to the south of T04, north of T11, to the west of T16 and T17, and directly south of T20. Trial pit locations suggest that the peat material is sometimes underlain by granular or cohesive material or occasionally on large cobbles and boulders of sandstone and limestone (Figure 2-2).

Peat thickness encountered by intrusive investigations at 773 locations across the site, recording peat thicknesses up to 6.2m, with an average of 1.38m recorded. The frequency of different peat thicknesses is shown in Figure 2-3. In total, 47% of recorded peat thickness were under 1m, and 77% were under 2m. Peat depths in excess of 2m were encountered within the southern part of the site, concentrated around the vicinity of T19, T20 and T22, with peat of over 2m depth also recorded at

the T5 ands T18 locations. The deepest areas of peat (depth 6.2m) were recorded in isolated locations to the east of T01 and T02 at a location where no infrastructure is proposed and at discrete locations east of the proposed internal floated access roads. A summary of the recorded average peat depths at each infrastructure location is illustrated in Table 2-1.

Table 2-1: Average peat depths at infrastructure locations.

Infrastructure Location	Average Peat Depth (m)	Infrastructure Location	Average Peat Depth (m)
Turbine 1	0.26	Turbine 19	0.89
Turbine 2	0.37	Turbine 20	1.21
Turbine 3	0.53	Turbine 21	0.37
Turbine 4	1.25	Turbine 22	1.79
Turbine 5	2.35	Battery Storage compound	0.9
Turbine 6	1.86	Substation	1.7
Turbine 7	1.57	Construction Compound 1	3.1
Turbine 8	0.70	Construction Compound 2	3.4
Turbine 9	0.68	Construction Compound 3	0
Turbine 10	0.29	Construction Compound 4	1.8
Turbine 11	0.41	Met Mast 1 (Derryaroge Bog)	1.9
Turbine 12	0.29	Met Mast 2 (Lough Bannow Bog)	2.9
Turbine 13	0.84	Borrow Pit 01	0.82
Turbine 14	0.46	Borrow Pit 02	0.91
Turbine 15	0.86	Borrow Pit 03	0.6
Turbine 16	1.79	Borrow Pit 04	0.82
Turbine 17	0.62	Peat Deposition Area (Derryaroge Bog)	1.6
Turbine 18	2.63	Peat Deposition Area (Derryadd Bog)	1.5

Figure 2-2: Photo through Trial pit (GDG TP101) near T22 showing peat underlain by cohesive glacial till (Photo Dated November 2016)

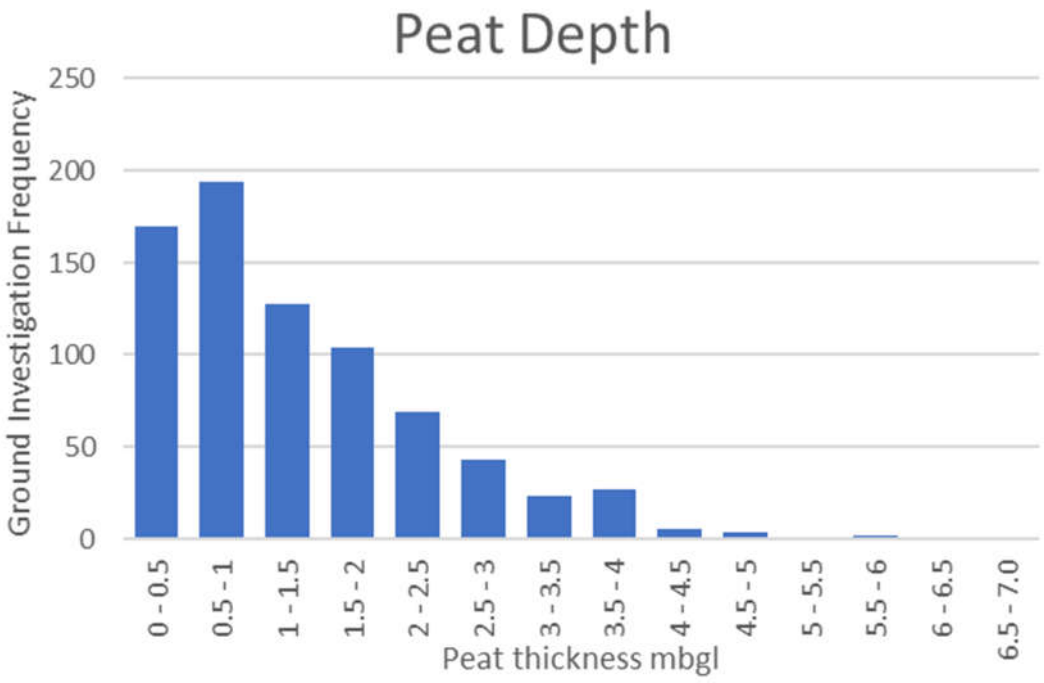

Figure 2-3: Histogram of peat probe thickness results across the site

It is noted that data obtained through peat probing cannot be utilised in classifying the peat material, given that peat probing does not fully distinguish between the different types of peat material and between peat and other soft ground. It is considered that the sampling records from the trial pits provide the most accurate representation of peat depths across the site. However, it is considered that the peat probing data generally compares well with trial pitting data, and so all available data types: peat probe, shear vane and trial pit locations, have been used in the peat thickness assessment. The peat thickness plan for the proposed wind farm site is shown in Figure B-1 to B-3 in Appendix B.

The characteristics and interpreted engineering parameters of the peat material across the site are summarised in the PSRA in Appendix 9.3 (GDG, 2025).

2.5 PEAT STRENGTH ASSESSMENT

Detailed intrusive ground investigation campaigns have been carried out across the site, including borehole drilling, trial pitting and shear strength measurements as outlined in Section 2.2. In general, the peat is described as pseudo fibrous or fibrous with a Von Post measurement (from Hobbs, 1986) varying between H3-H5 (very slightly to moderately decomposed peat), some occasional thin thicknesses (<0.5 m) of strongly decomposed amorphous peat with a Von Post reading >H6 (moderately highly decomposed peat or higher) is recorded. There is little evidence of any trend in the Von Post results in plan, or laterally throughout the site. It was common for the Von Post number to increase with depth, although there was considerable local variation and reversals of this trend were also observed.

Over 600 shear vane tests were varied out during the several site investigation campaigns at locations throughout the proposed wind farm site. The tests were carried out at 0.5m depth intervals through the peat material encountered at the site to best understand any variation within the peat material with depth. A large variation in shear vane results was seen throughout the peat material ranging up to 45 kPa. The weakest peat recorded was a shear strength of 5 kPa was found at scattered locations of the site. These low shear strength results were generally found in the upper part of the ground profile (< 0.5 m). There was no evidence for particularly weak zones being present at depth (>1.5m) within the peat mass. There appeared to be little trend evident between variation in the shear vane result and the Von Post description.

A detailed breakdown of the site observation at each turbine can be found in the Peat Stability Risk Assessment Report (GDG, 2025).

2.6 PEAT STABILITY RISK ASSESSMENT

The Peat Stability Risk Assessment (PSRA) has been carried out in the associated Appendix 9.3, Peat Stability Risk Assessment (GDG, 2025). The findings of the PSRA are outlined in the Appendix 9.3, complete with desk study, factor of safety analysis and risk assessment calculations. The peat stability risk for the proposed infrastructure is considered to be negligible to low.

The results of the associated stability factor of safety analysis considering a 10kPa surcharge, equivalent to a 1m vertical loading of peat material highlights areas of low resulting factor of safety (FoS <1.3) indicting areas which are unstable and unsafe for the placement of peat. These areas are identified along linear areas adjacent to existing drainage and historic peat cutting faces, and existing access road and railway embankments. The linear areas indicating a low factor of safety with the surcharge occur adjacent to and, in limited areas, within the footprint of the proposed development. These areas are considered to not be a significant peat landslide risk but could pose a risk of a localised instability failure within the existing peat cuttings. Figure 2-4 and Figure 2-5 show examples of these isolated areas of low factor of safety results. The existing cutting shown in Figure

2-4 is predominantly within non-peat materials, exposing the underlying glacial till and bedrock materials. The development of suitable offset distances for peat and spoil placement from these existing excavations will be required subject to the Contractor's detailed design. The Contractor will be required to carry out their own stability assessment for any structure, access road or placement of materials near these existing excavations. The area shown in Figure 2-5 is within peat material, showing excavation of linear drains and historic peat extraction cuttings forming steps and vertical peat faces in the photo background. The Contractor may level the ground surroundings these peat workings and reinstate it locally to the suitable natural gradient. However, this will be subject to the drainage design and any other site-specific environmental constraints.

Figure 2-4: Example of existing drainage cutting adjacent to the proposed Turbine 4.

Figure 2-5: Drain in cut-over peat near the proposed Turbine T22

3 HANDLING AND PLACING EXCAVATED PEAT AND SPOIL

3.1 GENERAL CONSTRUCTION PRACTICE

Inappropriate management of excavated peat and spoil and uncontrolled loading of peat material are considered among the leading causes of peat instability and landslide event triggers during the wind farm construction process. Managing and controlling these activities is key to de-risking peat stability at the wind farm site.

The following outlines guidelines for the careful handling and management of peat at the proposed wind farm site:

- Care will be taken during peat excavation to ensure it is segregated from other soil types; therefore, particular care will be taken to review recorded peat depths.
- Peat will be separated and stored by type, namely the acrotelmic and catotelmic layers, where acrotelm is encountered. Given the nature of the historic peat extraction at the site, it is anticipated that nearly all of the peat excavation will consist of catotelmic peat:
    - Acrotelm (defined in Section 2.1) is generally required for landscaping and will be stripped and temporarily stockpiled for re-use as required. Acrotelm stripping will be undertaken before the main excavations,
    - Where possible, the acrotelm will be placed with the vegetation part of the sod facing the right way up to encourage the growth of plants and vegetation,
    - All catotelm peat (defined in Section 2.1) will be transported immediately on excavation to the designated Peat Deposition Area or borrow pit reinstatement area,
    - The careful handling and segregation of peat types will help to optimise the re-use of peat, aiding in the retention of structure and integrity of the excavated peat material,
    - Uncontrolled placement of peat or loading of peat material must be avoided.
- Depending on what vegetation is found on site, more fibrous material may be placed on steeper angles, up to 10%. Unconsolidated peat, generally comprising of catotelmic material, is often not suitable for general dressing, and any unconsolidated peat excavated must only be used for reinstatement where such re-use poses no risk of polluting water courses and evidence can be provided that the required water table at the chosen location can be maintained.
- Construction sequence planning will minimise the time peat is stockpiled before re-use; however, some temporary peat placement may be required to manage spoil and separate spoil horizons before it can be placed in its reinstatement location. The principles on which the temporary placement of excavated peat will be based upon the placement and handling methodologies set out within this section. Temporary placement must be safe as it protects the structure and integrity of the excavated peat subject to prevailing local conditions. The peat will be reinstated during the Construction Phase at the earliest possible opportunity to avoid prolonged placement.
- Any temporary placement locations must be in suitably wet conditions or be irrigated to prevent the peat from desiccating, and precautions will be taken to ensure that turves are not allowed to dry out before reinstatement. The condition of turves will be monitored throughout the duration of placement. Irrigation of peat turves will be agreed upon in advance with the Ecological Clerk of Works (ECoW). Should wetting of turves be required to prevent desiccation, mitigation will be adopted to prevent runoff or discharge to any adjacent watercourses.

- Plant movements and haul distances related to earthworks activity and peat excavation will be kept to a minimum.
- Peat Deposition Areas will not be allowed to substantially erode or become dry.
- Material repositories will be located at least 50m away from watercourses to reduce the potential for sediment to be transferred into the wider hydrological system.
- If possible, excavation will be timed to avoid very wet weather.
- Peat and spoil deposition locations have been selected to limit re-handling as far as reasonably possible.
- Excavated peat and spoil will be placed and re-used as close to the immediate area as possible.
- The disruption of flow pathways will be minimised, and drainage will be designed to limit the risk of changing flow pathways and subsequently increasing peat slide risk.
- All construction requiring cut and fill earthworks requires a robust monitoring and inspection programme. The details of this inspection programme will depend on the purpose and methodologies of the works and the ground conditions.
- A method statement and risk assessment (RAMS), which considers the potential causes and mitigations of peat instabilities and landslides, is required and must be regularly communicated to all site staff. An observational approach by all site staff to the ground conditions and the risks should be promoted, and any changes in the ground or site conditions should be reported and the risk dynamically assessed.
- Regular briefing of all site staff (e.g. toolbox talks) to provide feedback on construction and ground performance and to promote reporting any observed change in ground conditions.
- If peat pipes are encountered in excavations, mitigation works (e.g. backfilling with free-draining fill) will be developed so that lateral groundwater movement is not impeded.
- The Contractor will consult the ECoW to agree on locations for material stockpiles and consider minimising impacting sensitive ecological receptors.
- All works will be supervised by a competent Geotechnical Engineer. The Contractor will consult the site Geotechnical Engineer and review and take into account the Peat Stability Risk Assessment (GDG, 2025) to avoid the risk of peat instability in peat excavations, peat stockpiling and all material stockpiling in areas underlain by peat.
- Runoff from Peat Deposition Areas will be directed through the site drainage system, including silt fences, settlement ponds and other drainage measures as appropriate. These details will be outlined in the Contractor's Construction and Environmental Management Plan.

The following particular recommendations/best practice guidelines for the placement of peat with respect to specific aspects of the wind farm will be considered and taken into account during construction. Excavated peat will be managed and placed in the following locations only:

- Sidecasting/reinstatement alongside access tracks and other infrastructure (Section 3.2);
- One permanent Peat Deposition Area (1) (Section 3.3);
- One temporary Peat Deposition Area (2) is to be used while BP1 is being excavated (Section 7); and
- Reinstatement of borrow pits (Section 6).

3.2 ACCESS ROADS, HARDSTANDS AND OTHER INFRASTRUCTURE

- Controlled quantities of peat and spoil will be side-cast adjacent to access roads and other infrastructure only where it can be placed in a stable formation, i.e. where the topography and ground conditions allow.
- Side cast peat material will consist of the acrotelm (upper layer) only, and it will be landscaped and shaped to aid in reinstating the construction into the surrounding environment.
- Peat and spoil will only be cast to safe heights and slope angles, considering the topography and the ground conditions. This height will be no more than 1m, and the slopes will be not greater than 1 (V): 3 (H) unless a site-specific assessment during detailed design indicates a greater height and angle is safe.
- The effect of drainage or water runoff will be considered when placing landscaping rising adjacent to access roads. Landscaping material will not interfere with drainage, risk blocking of drainage systems or runoff into drainage systems.

3.3 PERMANENT PEAT DEPOSITION AREA

- The permanent Peat Deposition Area (1) location has been designed by Tobin (Appendix D). The proposed location has been identified in an area where the topography (slope angle <5°), peat depth, resulting stability assessment (FoS of >1.3 for 1.0m peat surcharge) and other environmental constraints (including 50m buffer from all watercourses) have allowed. The area is free of existing peat and drainage cuttings within the internal structure and is designated for the permanent placement of up to 1m of peat material. However, the Contractor will be required to conduct their own local and global stability assessment considering the influence of the existing drainage excavations outside of the stricture and any influence these could have on the proposed construction.
- A cell berm will be constructed similarly to the Peat Deposition Area details outlined in Appendix D. This cell berm will help to prevent the flow of saturated peat material. The stone berm will be constructed with a sufficiently coarse granular material or rock to enable the drainage of the placed peat material and prevent any instabilities within the Peat Deposition Area.
- The stone cell berm will require a geotextile separator. The stone cell berm should be constructed using low-ground pressure machinery working from bog mats where necessary. A competent engineer should inspect and approve the founding stratum for each stone buttress.
- The height of the cell berm constructed will be greater than the height of the placed peat & spoil to prevent any surface peat runoff. Berms up to 1.25m in height will be required, subject to detailed design.
- The cell berm is subject to the detail designer's specification; however, some peat excavation or installation of a shear key may be required to prevent global instabilities within the stored material. The shear key will comprise an excavation below existing ground level beneath the cell berm to provide resistance against lateral forces.
- Where possible, the surface of the placed peat and spoil will be shaped to allow efficient runoff of surface water from the peat and spoil deposition areas.
- Silting ponds will be required at the lower side/outfall location of the Peat Deposition Areas (see drainage drawing 20852-NOD-01-XX-DR-C-080).

- Intermediate berms or buttresses of spoil material may be installed within the Peat Deposition Area to aid in the placement and stability of the peat material. These berms will be shaped to align with the contours of the deposition area.
- The Contractor will make every reasonable effort to promote growth in the Peat Deposition Areas following the placement of peat and completion of construction stage activities. Upper acrotelm layers will be placed on the surface the right way up to promote vegetation growth. This growth will aid in stabilising the placed peat material and help in preventing it from becoming saturated following heavy periods of rain.

4 ROAD CONSTRUCTION TYPES

New access roads will need to be constructed at the proposed wind farm site. The following factors are considered in the preliminary proposals for road construction types:

- Constructability;
- Serviceability requirements for construction and wind turbine delivery and maintenance vehicles;
- Peat depth;
- Horizontal longitudinal and cross-fall gradient of the roads;
- Minimisation of excavation arisings; and
- The requirement to minimise disruption to peat hydrology.

The above key principles are used to determine the road type and will be finalised with regard to the prevailing ground conditions encountered during the confirmatory site investigation stages.

Floating roads minimise the impact on the peat, particularly peat hydrology. As there is no excavation required no peat arisings are generated. However, a founded-type access road is more suitable if the underlying peat has an insufficient bearing capacity or due to topographic restrictions or stability concerns.

Founded road construction is also required where the proposed access road layout is directly adjacent to a founded structure or excavation, such as a turbine hardstand or borrow pit.

The preliminary road construction details proposed for the proposed wind farm site are summarised in Table 4-1. The details of the road construction types are included in Appendix C.

Table 4-1: Road construction types

Construction method	Appendix C Detail reference	Construction type
Construction of new roads	A	Founded
	B	Floating

The design criteria for the suitability of floated access roads used for the proposed wind farm site align with the Scottish Executives Best Practice guidelines document (2017). Some sections of the proposed access roads are considered suitable for floated construction when the following criteria are met:

- Maximum slope in any direction is less than 5%,
- Peat depths are greater than 1m,
- The resulting drained and undrained slope stability assessment factor of safety results are greater than 1.3, without and with a 10kPa surcharge.

The main restricting criteria for floating roads at the proposed wind farm site are:

- Construction directly adjacent to founded infrastructure locations (including turbine hardstands and foundations);
- the peat depth; and
- slope angle.

Deep areas of peat along spans of the access roadways, can cause difficulties in creating adequate transition zones between founded and floated roads.

It is proposed that most of the roads will be a floated construction type (Detail B in Appendix C), where the gradient and stability analysis results will allow, with some sections of founded road suggested adjacent to founded structures and areas of shallow peat.

General construction methodologies are presented in the following sections. The methodologies aim to minimise impacts on the stability of the peat and will be informed by detailed design following site investigation. The methodology is not intended to cover all aspects of construction, such as drainage and environmental considerations. Inspection and monitoring plans for each method will be implemented during construction to monitor peat stability.

4.1 CONSTRUCTION METHODOLOGY FOR NEW ROADS

The general methodology to construct new founded roads (i.e. see Detail A of the road construction detail drawings in Appendix C) is presented below:

1) Excavation of the new access road to competent strata (see Section 3 for guidance on handling and storing the different peat layers). Maximum excavation side slopes will be 1(V):1.5(H).
    a) Drainage will be installed to divert surface and groundwater from the construction areas.
2) A layer of geogrid/geotextile may be required at the base of the excavation. To be confirmed at detailed design.
3) Placement of granular fill-in layers following the designer's specification. The fill thickness will be determined by the thickness required to backfill the excavation to a suitable competent strata and the required finished level often determined by the extreme flood level assessment and at least 200mm above the existing ground level.
4) Access roads are to be finished with a granular running surface across the full width of the road.

The general methodology to construct new floating roads (i.e. See Detail B of the road construction detail drawings presented in Appendix C) is as follows:

1) Placement of a geotextile-geogrid composite layer directly onto the peat surface following the designer's specification.
5) Placement of granular fill up to 800mm high and placing reinforcing geogrids in layers following the designer's specification, with due regard to any settlement and deformation of peat anticipated at the access track. A regulating layer of fill may be required over uneven surfaces before the placement of reinforcing geogrids which should be laid flat to allow the development of restoring tensile forces in the geogrids.
6) Cross-drains will be installed within the road to divert surface and groundwater from upslope to downslope.
7) Stone delivered to the floating road construction area will be end-tipped onto the constructed floating road in a manner that will avoid excessive impact loading on the peat due to concentrated end-tipping. Direct tipping of stone onto the peat will not be carried out.
8) Stone will be spread and placed from the constructed floating road onto the peat surface using a bulldozer.
9) Access roads are to be finished with a granular running surface across the full width of the road.

No excavations (e.g., drainage, peat cuttings) will be carried out within 5m of a completed floated access road edge or at a distance determined following a site inspection by a Competent Geotechnical Engineer.

The presence of excavations can destabilise the road. Where required, for example for the installation of internal cabling offset from the footprint of the floated road, temporary excavations will be excavated in short lengths and backfilled as soon as practicable. These works will be designed and supervised by a Competent Geotechnical Engineer.

Spoil materials can be used for landscaping along the edge of access road sections to aid with the restoration of the peatland areas and embed the access roads into the surrounding environment where slope and ground conditions allow, limiting their ecological and environmental impact. Consideration needs to be given to the placement of excavated materials in areas of potential instability or additional mitigation requirements, as highlighted in the PSRA (GDG, 2025). Where permissible, excavated materials will be placed to a maximum height of 1m and stockpile widths of a minimum of 2 to 3m unless site-specific detail designs allow larger volumes to be placed. Large stockpiles of materials will not be placed on or adjacent to floated access roads to avoid bearing failure of the underlying peat.

As highlighted in the PSRA (GDG, 2025), peat material will not be placed directly adjacent to existing open excavations such as peat cutting or drainage excavations. Should infrastructure and placement locations encounter an existing peat cutting the face may be reinstated to a natural slope subject to the detail designer's stability analysis and approval by the ECOW.

5 EXCAVATION OF TURBINE BASES, HARDSTANDINGS, AND INFRASTRUCTURE FOUNDATIONS

An assessment of the ground conditions encountered in the ground investigations has determined that the ground surface conditions at the site are generally flat cut over/cutaway raised peat bog, with some areas of glacial till outcropping at surface. The average peat thicknesses identified at the proposed turbine and hardstand areas are generally less than 1m. However, isolated pockets of peat depths exceeding 2m were observed at the T05 and T18 locations. Where peat is present, the material encountered beneath it is generally a layer of sandy gravelly clay or a silty sand and occasionally there are cobbles and boulders of limestone and sandstone. Generally, for constructing any structure or platform foundation, such as a turbine base, hardstand or substation, removing all soft material is required to a depth where a suitable bearing material is encountered. The material excavated is required to be properly managed and will be re-used in other elements of the proposed wind farm design if deemed suitable based on design criteria for the materials.

During turbine construction, peat will be excavated to a competent stratum to make room for the concrete turbine foundation and a small working area surrounding the foundation footprint. Breaking and excavation of bedrock may be required if it is encountered at shallow depths to achieve the reduced foundation level and level surface required by design. However, it is not expected that shallow bedrock will be encountered at this site.

The design of the turbine base foundations is subject to confirmatory ground investigation and assessment. Each wind turbine will require piled foundations or a gravity foundation of reinforced concrete (RC) foundation comprising a base slab bearing onto rock or other competent substrata with a central upstand to support the tower. The foundations for each turbine will be designed by the appointed Civil Designer. Piled foundation bases are generally 24-26 m in diameter and gravity foundation bases are typically 24-26 m in diameter with detailed foundation design being dictated by the local ground conditions.

Three main foundation solutions have been identified:

- Gravity Foundations;
- Concrete driven piles; and
- Bored piles

The material encountered in the trial pits excavated at each turbine location was generally soft to very soft and not capable of supporting the applied loads from a wind turbine (**Error! Reference source not found.** in Chapter 9 of the EIAR). Deeper excavations to more competent material will be required to construct the turbine foundations. It should be noted that, although it is anticipated that most foundations will be required to be piled, it is likely that some turbines could utilise gravity foundations. Additional GI is required prior to detailed design in order to confirm the foundation types. Where foundations are not piled, additional fill material will be needed to upfill the excavation to the levels required for the wind turbine foundations. A maximum excavation of 3.6 - 4 m bgl is anticipated at each turbine foundation. Gravity, bored pile and driven pile details are shown on Planning Drawings 11399-2042 to 2044.

For the piled turbine foundations, the piling type and configuration, as shown on Planning Drawing 11399-2044, could be up to 50 – 70 no. 300 mm x 300 mm square concrete driven piles or up to 16 no. 1200 – 1600 diameter bore piles. While final piling depths will depend on localised ground conditions, the drawings details a piling depth of 15 m – 18 m for indicative purposes. For gravity

type turbine foundations, unsuitable material will be excavated and replaced by granular fill (Class 6 in accordance with Specification for Road Works published by Transport Infrastructure Ireland) and excavated material will be placed in the peat deposition areas or utilised near the proposed turbines.

Similarly, all turbine hardstands will be founded on a suitable bearing material requiring the excavation of all peat and other soft ground materials, where present. The platform will be constructed in the excavated area using a suitable specified engineered stone fill. Following the placement of the platform, the excavated peat can be re-used to batter the platform edges and landscape the platform back into the existing topography.

The average peat depths collected from the ground investigations have been used by Tobin to calculate the estimated peat volumes at each structure foundation location. This is outlined further in Section 8.

6 BORROW PITS

Four borrow areas are proposed for the development as shown in the layout in Appendix A and standard details through each Borrow Pit are shown in Appendix E. The borrow pit areas have been developed in areas where the preliminary ground investigations have shown low thicknesses of peat and spoil material and shallow occurrences of material suitable for use as engineered fill. The borrow pit details are subject to further investigation at the detailed design stage. Consideration was also given to the environmental constraints and buffer areas such as watercourses, ecologically sensitive areas, peat stability and reduction of the required felling areas.

The ground investigations at the borrow pit areas comprise of peat probes, trial pits and borehole locations. The trial pit and borehole locations are indicative of peat material overlying predominantly gravelly sandy SILT or silty sandy GRAVEL material, overlying a limestone sandy GRAVEL and/or weathered and competent limestone bedrock. Bedrock at the borrow pit areas is encountered at variable levels across the borrow pits varying between 1.9 and >8.6mbgl. Preliminary analysis of the Particle size distribution (PSD) testing carried out on samples recovered from the boreholes and trial pits suggests that the gravelly sandy SILT material may not be directly suitable for reuse during the construction of the wind farm. However, it may be suitable for processing and screening for development into a Class 1A or Class 2C material as defined in Table 6/1 of Series 600 (TII, 2013). In the interest of a conservative assessment of material reusability and volume assessments in this report this material has not been considered reusable. Further ground investigation and analysis of the feasibility of the borrow pits and the material reusability will need to be conducted at the detail design stage.

At this stage, as a conservative estimate, it is assumed that the gravelly sandy SILT material is not suitable for reuse on the site. As a result, gravelly SILT material has been designated as spoil in the depths outlined in Table 6-1, and associated volumes outlined in Table 6-2 and the balance assessment in Section 8. The identified GRAVEL, weathered bedrock and bedrock material have been considered suitable for reuse with some processing, estimating a conservative 80% productivity of the bedrock following extraction and processing, i.e. loss of 20% of stone volume. Further assessment of this will be required by the Contractor's detail designer.

The peat and spoil depths within the development footprints of the borrow pits are outlined in Table 6-1.

Table 6-1: Average peat thicknesses at the borrow pits

Borrow pit ID	Average thickness of peat (m)	Average thickness of spoil (m)
BP-01	0.85	1.4
BP-02	0.2	1.5
BP-03	0.5	1.0
BP-04	0.6	3.0

A summary of the borrow pit excavation volumes is outlined in Table 6-2. The total excavation volume assessment outlined in Table 6-2 is the sum of the peat and spoil overburden generated in CIVIL3D by GDG and the total borrow pit excavated stone volumes required for the proposed development as estimated by Tobin (2025).

Table 6-2: Summary of borrow pit volumes

Borrow Pit	Area	Excavation		Volume of required stone*	Total excavation volume***
		Peat	Spoil		
	m^2	m^3	m^3	m^3	m^3
BP01	112,514	88,772	202,381	318,169	1,062,882
BP02	50,881	25,182	61,039		
BP03	46,009	11,412	54,819		
BP04	13,745	4,739	31,081		

*Volume of required stone assumes that a conservative estimate of 70% of the excavated rock will be usable. The total volume of rock required to be excavated based on this assumption is 454,530m^3. The 30% unrecovered material is included in the borrow pit generated spoil quantities.

**The excavation volumes assume a caried side slope depending on the material encountered:

- Peat – 1(V):3(H)
- Soft Mark and cohesive material – 1(V):2(H)
- GRAVEL– 1(V):1.5(H)
- Bedrock– 3(V):1(H)

***Total excavated volume assumes that overburden has been removed from all proposed borrow pits areas and only the required stone has been excavated.

Using the average borrow pit depth of 5.5m bgl, the available volume of useable material is 648,379m^3, including sand, gravel, and fill. Presently, the estimated total volume of compacted material required for construction is 445,367m^3.

As not all stone material can be sourced from the on-site borrow pits (due to suitability requirements for use as selected granular fill), importing fill from licensed external quarries will be required. Stone material estimated to be required for import from local quarries include stone fill directly below the turbine foundation, the surface capping layer on the running surface of the proposed access tracks and hardstand, and all elements of the enabling works package including the substation and battery storage hardstand. An estimated 90,195m^3 of imported stone fill will be required, of which 66,799m^3 is required for the construction of enabling works and 23,396m^3 is required for the construction of permanent works.

Any rock within each proposed borrow pit footprint will be removed by breaking. Rock blasting will not be required. The excavated rock from the borrow pits will be used in the construction of the infrastructure elements (turbine bases, roads, hardstands, etc.) at the wind farm. Borrow pit standard details designed by Tobin are shown in Appendix E.

Slopes within the excavated rock formed around the perimeter of the borrow pits should be formed at stable inclinations to suit local in-situ overburden and rock conditions. An interceptor drain should also be installed upslope of the borrow pit, where necessary. This drain will divert any surface water away from the borrow pit and hence, prevent water from ponding and lodging on the re-instated borrow pit area.

Upon removal of the overburden and rock from the borrow pit, it is proposed to reinstate the borrow pit using surplus excavated peat and spoil. The Contractor excavating the rock will be required to develop the borrow pits in a way which will allow the excavated peat and spoil to be placed safely. The final profile of the peat and spoil will vary across the base of the borrow pit.

It may be necessary to construct cells/rock buttresses or leave upstands of intact bedrock within the borrow pits to help contain the reinstated peat and overburden. This will allow for the safe placement and grading of the materials using dumper trucks and excavators.

A geogrid or geotextile material may be used to aid in the strengthening of the upper surface of the deposited material within the borrow pit and to aid in the promotion of growth and rehabilitation of the borrow pit area. A 2.4m high security fence is proposed around the perimeter of each borrow pit.

7 SEQUENCING OF WORKS

Suitable consideration needs to be given to the sequencing of works for the feasibility of construction activities in a peat environment. Careful consideration needs to be given to the availability of safe reinstatement areas for peat material volumes generated during excavation works. The Contractor will need to outline this within their method statements for the construction stage activities. It is important to outline these activities at the planning stage to ensure the safe constructability of the proposed development.

The key constraints that need to be considered in terms of works sequencing:

1. Generation of peat volumes during the early stages of the development where peat reinstatement availability is limited, such as:
    a. Generation of peat volumes at founded access tracks and other structures during the initial stages of the proposed development,
    b. Stripping of peat and spoil to gain access to suitable material at borrow pit areas,
    c. Initial excavation of peat during construction of the Peat Deposition Areas,
    d. Availability of reinstatement volumes at borrow pit locations as not all borrow pits will be open at the same time.

These constraints have been considered during the development of the proposed Wind farm layout. The following solutions have been considered:

- At the time of reporting a separate enabling works phase of the works is proposed for the construction of the substation and battery storage platforms. These works will be commenced initially ahead of the full wind farm construction. The use of the enabling works phase will aid in the construction sequence relating to peat and spoil management through the following:
    - The Peat Deposition Area has been proposed adjacent to these structures to enable the safe reinstatement of the generated peat and spoil materials adjacent to the excavation areas. The Peat Deposition Area will be available from the very beginning of the proposed development and has been developed to have sufficient volume to cater for the excavation required for these initial works. This will reduce on transport of the excavated material within the site and enable better handling of the excavated materials to promotion of peat growth and reinstatement.
    - Stone required for the construction of the substation and battery storage compounds will be imported from quarries outside of the proposed development area removing the necessity for a borrow pit area to be stripped, generating peat and spoil volumes, before the initial construction can begin.
- The Proposed development construction methodologies outlined for access road design propose a floated road construction. This will allow for access of the excavation plant to the borrow pit areas without the generation of excavated peat and spoil volumes.
- The initial excavation of the first borrow pit area (BP1) will generate volumes of excavated peat and spoil materials. The safe temporary storage of this generated peat and spoil material will be required during the development of the borrow pit. The Contractor will be responsible for the design of this temporary deposition solution and will design a suitable sequence of works for the development of borrow pit areas to ensure the lowest impact and smallest footprint of works possible.

- As part of this report a sensitivity and feasibility study has been carried out examining a proposed methodology for the development of borrow pit BP01 and outlined in Section 7.1. This examines the estimated generated peat and spoil volumes at the borrow pit and the areas of ground available for its reinstatement.
- Once the initial borrow pit has been opened, the peat and spoil materials generated from subsequent borrow pits will be used in the reinstatement of the previous borrow pits or can be stored temporarily at other borrow pit areas before being used for the permanent reinstatement of the borrow pit on completion of the excavation,
- Temporary stockpiling of peat will then only be done when there is no other option. The Contractor will determine the placement of the peat and spoil stockpiles, taking into consideration the results of the stability assessment outlined in the associated Peat Stability Risk Assessment (PSRA) (GDG, 2025), in addition to the water buffers, ecological and environmental constraints.
- A suitable contingency has been accounted for in the peat balance calculations and sensitivity outlined in Sections 8.2, 8.3 and 8.4. These outline an allowance for any restrictions in the availability of reinstatement areas from the borrow pit locations due to sequencing and the full borrow pit volume not being available at the same time.

7.1 CONSTRUCTION SEQUENCING AT BORROW PIT BP01

In an exercise to outline the constructability and sequencing of the initial borrow pit excavation, the peat and spoil excavation volumes, temporary deposition options and permanent reinstatement capacity of the borrow pit area are considered. Borrow pit BP01 has been used as an example for this study, and the Contractor will need to carry out their own assessment as part of their detailed design. The Contractor will outline the proposed construction sequence as part of their preconstruction documentation showing consideration to the sequencing of work and minimising the peat and spoil generation volumes and impacted footprint required. The calculated volumes are based on Civil 3D model calculations and are subject to the accuracy of the surveys.

The preliminary assessed construction sequence at the proposed borrow pit BP01 area is outlined below:

1. Construction is commenced from the southern side of BP01, with the removal of 50% of the total peat and spoil volumes.
2. The excavation of 50% of the borrow pit area generates approximately 145,577m^3 of peat and spoil material, which if stored at a maximum 1m height will require 151,257m^3 of available deposition area. This material can be stored within the available borrow pit footprint and within the temporary deposition area to the east of the borrow pit area identified in the site layout plan in Appendix A and Figure 7-1.
3. The temporary Peat Deposition Area will be subject to the Contractor's detail design and will ensure that the material will remain stable throughout the timeline of the borrow pit excavation with consideration to the changing weather conditions. Slopes of a maximum of 1(H):3(V) will be used in peat material and 1(H):2(V) in spoil material. Peat and spoil materials will be stored separately but spoil material can be used in cell berms to contain excavated peat material however suitable drainage will be required. All groundwater management, drainage and stability design will be required by the Contractor at detail design stage and will be subject to review and approval by the Client.
4. As the borrow pit is developed further the peat and spoil material will be rotated throughout the borrow pit area to enable further excavation throughout the proposed borrow pit area.

5. Upon completion of the borrow pit area, the excavated peat and spoil material will be reinstated as outlined in the Detail Sections drawing in Appendix E. The peat and spoil material generated in subsequent borrow pits will be transported and reinstated within the borrow pit area, without the need for temporary deposition of this material elsewhere on the site.

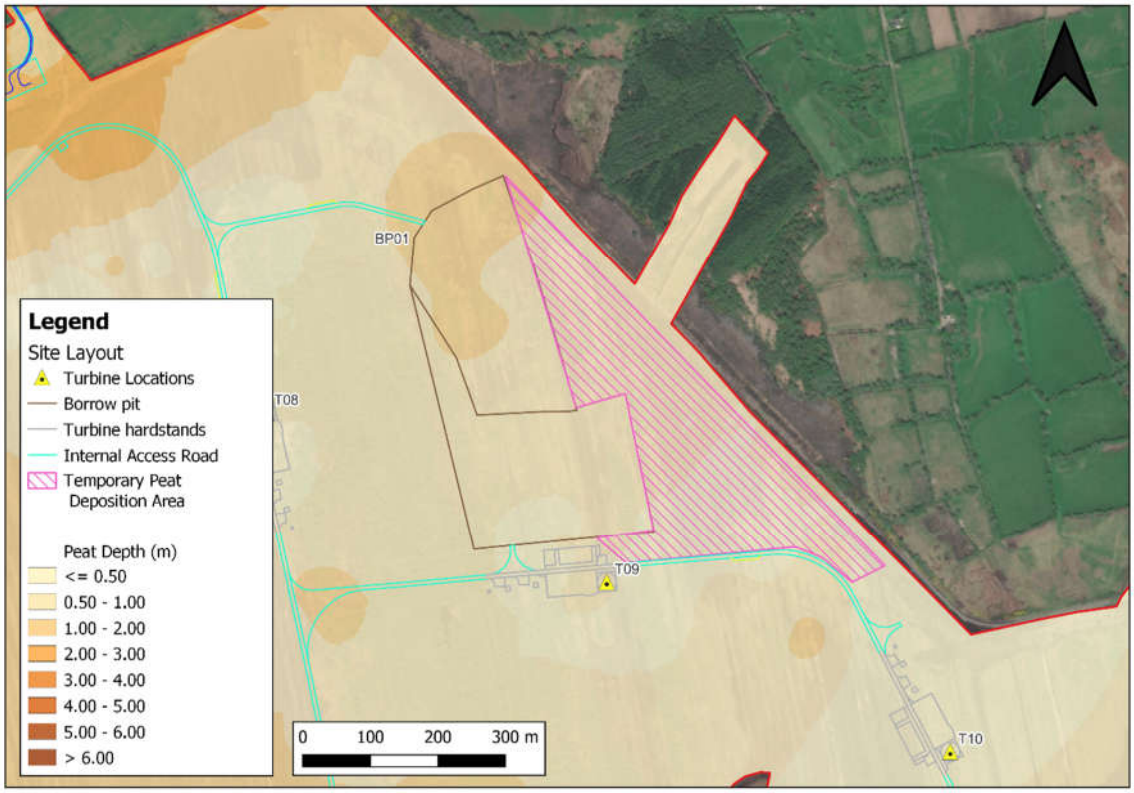

Figure 7-1: Borrow pit BP01 with proposed temporary Peat Deposition Area

The sequencing and constructability assessment of the proposed development suggests that the proposed development is safely constructible and, provided that the Contractor gives careful consideration to the works methodology, at no point in the proposed development timeline should there be an occurrence of peat volumes being generated have no available reinstatement space. The Contractor will be required to outline a proposed sequence of works and prove that they have given adequate consideration to the implications the sequence can have on the safe construction of the proposed development.

8 PRELIMINARY PEAT AND SPOIL VOLUMES

The ground investigation and design layout drawings have been reviewed to inform this section of the PMSP. Peat volumes can be estimated based on the results of the intrusive investigations and the proposed design. Non-peat overburden (spoil) was identified in trial pit and borehole locations, namely cohesive glacial till material. Where this material has an insufficient bearing capacity, excavation has been recommended. It is expected that peat and spoil excavation will be required for the following elements of the proposed development:

1) Founded access roads;
10) Turbine foundations and hardstands;
11) Construction compounds;
12) Borrow Pits;
13) Substation;
14) Met masts;
15) Security huts;
16) Amenity car park; and
17) Battery Storage Facility.

A preliminary estimate of the approximate volumes of excavation needed to construct the development was carried out. This was produced using typical limits to road and hardstand gradients and road and hard-standing thickness typical to the wind farm ground conditions.

Excavation volumes for the following wind farm elements were carried out by the Client, Tobin and are outlined in Chapter 3 of the EIAR:

1) Turbines foundations and associated hardstand;
18) Construction compounds;
19) Substation compound;
20) Met masts; and
21) Cable route and grid connections

Estimation of the peat and spoil volumes at the following wind farm elements has been carried out by GDG:

- Access roads;
- Peat Deposition Areas; and
- Borrow pits.

The average peat depths at each structure were incorporated into a model to estimate the volume of peat expected to be excavated. In the absence of detailed foundation designs, the following conservative assumptions pertaining to excavations at the various proposed infrastructure locations:

- **Turbine foundations:** it was assumed that the turbine foundations will have a base diameter of 24 – 26 m, with an estimated excavation of 4.5m. Temporary slopes resulting from excavation was assumed to be 1V:2H. The average peat depth at each location was separately considered in the calculations.

- **Crane hardstands:** The base dimensions of the founded areas of the crane hardstands are as shown on Planning Drawing 11399-2031. The excavation depth was taken as the average peat depth at each location and an additional 300mm of spoil material excavation. The temporary slopes resulting from excavations taken as 1V:2H. The average peat depth at each location was separately considered in the calculations. Floated construction and localised levelling of the insitu peat is assumed for the construction of the associated blade finger and crane boom assembly.
- **Borrow pits:** information pertaining to each of the four borrow pits (total excavation, suitable construction material, spoil material in borrow pit etc.) is outlined in Section 6.
- **Substation compound**: The substation location is a founded hardstanding area. The excavation depth was taken as the average peat across the platform area and an additional 300mm of spoil material excavation. Temporary slopes resulting from excavations taken as 1V:2H
- **Site compound:** Founded construction is assumed for the four contractor compound areas. The excavation depth was taken as the average peat across the platform area and an additional 300mm of spoil material excavation. Temporary slopes resulting from excavations taken as 1V:2H.
- **Founded roads:** Access roads at the proposed wind farm site are primarily assumed to be of floated construction. An assumed 2000m of access road has been assumed to be founded due to site constraints and access roads adjacent to founded hardstand platforms. It was assumed that all the peat within the footprint of the new roads will be excavated, and the new roads will be constructed on competent strata directly underlying the peat. The width of the road was taken as 6m, while permanent side-slopes of the road, as well as temporary slopes resulting from excavations was taken as 1V:2H.
- **Met Mast:** Founded construction is assumed for the two met masts and the associated hardstand areas. The excavation depth was taken as the average peat across the met mast and hardstand areas and an additional 300mm of spoil material excavation. Temporary slopes resulting from excavations taken as 1V:2H.

8.1 PRELIMINARY PEAT AND SPOIL EXCAVATION VOLUMES

The peat depths within the footprint of the Proposed development were reviewed at each turbine location, hardstands, substation, battery storage compound and access tracks. The average peat depths at each structure were incorporated into the model along with the turbine and hardstand layout, access roads alignment and other associated infrastructures to estimate the volume of peat expected to be excavated. A breakdown of the estimated peat excavation volumes is summarised in Table 8-1.

Table 8-1: Summary of preliminary excavation volumes

Infrastructure Item	Excavated peat volume (m^3)	Peat Volume (m3) Factored for Bulking (20% total)	Excavated spoil volume (m^3)	Spoil Volume (m3) Factored for Bulking (20% total)
Founded Roads	3,200	3,840	0	
Floated Roads	0	0	0	0
Turbine Foundations (22nr)	14,446	17,335	96,931	116,317
Crane Hardstands (22nr.)	44,123	52,948	22,078	26,494
Compound 1	0	0	0	0
Compound 2	0	0	0	0
Compound 3	0	0	0	0
Compound 4	0	0	0	0
Borrow pit BP-01	88,772	106,526	202,381	242,857
Borrow pit BP-02	25,182	30,218	61,039	73,247
Borrow pit BP-03	11,412	13,694	54,819	65,783
Borrow pit BP-04	4,739	5,687	31,081	37,297
Peat Deposition Area	0	0	0	0
Battery storage	3,535	4,242	1,515	1,818
Substation	41,321	49,585	4,575	5,490
Ducting cable route	10,080	12,096	0	0
Met Mast 1	1,190	1,428	210	252
Met Mast 2	1,750	2,100	210	252
Security Hut 1	0	0	60	72
Security Hut 2	200	240	60	72
Security Hut 3	0	0	0	0
Security Hut 4	0	0	0	0
Derryaroge West Amenity Car Park	0	0	0	0
Total	249,950	299,940	474,959	569,951

Notes:

- Peat and spoil excavation volumes were provided to GDG by Tobin. GDG has carried out a review of the volumes provided.
- All excavation volumes include excavated side slopes of 1(V):2(H),
- The volume of peat material excavated has been estimated using the average peat depth calculated across the footprint of the structure to define the basal surface of the peat.
- Excavation depth has been assessed by Tobin, considering the depth to bearing strata at hardstand based on the existing GI at the locations. An average excavation depth of 4.5mbgl was assumed at all turbine foundations.

8.2 PEAT REINSTATEMENT VOLUMES

Peat generated during construction can be re-used or reinstated across the development. Peat may be re-used for landscaping on edges of constructed infrastructure (including road verges, around hardstand area and turbine foundations) and will be placed as soon as reasonably practical after construction. This will act as part of the landscaping restoration and tie-in with surrounding topography, reducing visual impacts and restoring the existing habitat.

Several considerations have been made in the estimation of reinstatement volumes:

- One permanent Peat Deposition Area has been identified for the permanent placement of peat and spoil material,
- Estimated 2000m of founded road has been assumed for roads adjacent to founded hardstand areas,
- A conservative reinstatement volume of 2m^3 per lin.m of access road (1m^3 on each side of the trackway) has been used. This can often be increase to up to 4m^3 per lin.m following the detail design stage and the appropriate stability design considerations,
- An estimated reinstatement capacity of 2m^3 per external lin.m perimeter of hardstand areas such as the crane hardstands and substation,
- Peat material will be used to dress/ landscape around the turbine foundation footprint with an assumed thickness of 0.5m,
- Much of the generated spoil and peat materials at the site are sourced from the excavation of the borrow pit locations. At the detailed design stage the Contractor should conduct a detailed borrow pit appraisal to identify the most efficient locations for the excavation of suitable stone material. This exercise could greatly reduce the required footprint and volume of peat and spoil generated at the borrow pit locations,
- Outside of the use for the reinstatement of the borrow pits:
    - A conservative reinstatement volumes of have been considered available for side casting and re-use across the site adjacent to hardstanding and access road structures to aid with the rebedding of the proposed structures and promotion of vegetation growth.
    - A conservative estimate of 5% of the total spoil volumes has been considered as available for re-use in the construction of safety berms across the site.
- Potential peat re-use/reinstatement volumes have been estimated and are also presented in Table 8-2 and Table 8-3.

Table 8-2: Summary of preliminary peat reinstatement volumes

Infrastructure Item	Peat Reinstatement Capacity Volume (m^3)	Comment
Founded Roads	4,000	Peat reinstatement at road edges for landscaping and vegetation growth promotion
Floated Roads	51,000	
Turbine Foundations	10,362	Peat reinstatement at turbine surface and hardstand edges for landscaping and vegetation growth promotion
Crane Hardstands	19,320	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Compound 1	360	
Compound 2	600	
Compound 3	600	
Compound 4	360	
Borrow pit BP-01	1,062,882	Full borrow pit area volume. Volume estimation is peat volume, unsuitable spoil volume and volume of required borrow stone material
Borrow pit BP-02		
Borrow pit BP-03		
Borrow pit BP-04		

Infrastructure Item	Peat Reinstatement Capacity Volume (m^3)	Comment
Permanent Peat Deposition Area	46,286	Peat Deposition Area with max 1m peat
Battery storage	600	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Substation	1,040	
Ducting cable route	10,080	It is considered that all peat material excavated at the cable route will be used in the backfill of the cable trench
Met Mast 1	100	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Met Mast 2	100	
Security Hut 1	100	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Security Hut 2	100	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Security Hut 3	100	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Security Hut 4	100	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Derryaroge West Amenity Car Park	500	Peat reinstatement at hardstand edges for landscaping and vegetation growth promotion
Total	1,208,590	

Table 8-3: Summary of preliminary spoil reinstatement volumes

Infrastructure Item	Spoil Reinstatement Capacity Volume (m^3)	Comment
Founded Roads	0	
Floated Roads	0	
Turbine Foundations	37,004	Spoil material used for backfill above the turbine foundation
Crane Hardstands	4,000	Spoil material used for safety berms
Compound 1	100	
Compound 2	100	
Compound 3	100	
Compound 4	100	
Borrow pit BP-01	1,062,882	Full borrow pit area volume. Volume estimation is peat volume, unsuitable spoil volume and volume of required borrow stone material
Borrow pit BP-02		
Borrow pit BP-03		
Borrow pit BP-04		
Permanent Peat Deposition Area	3,028	Spoil material used for PDA bund material
Battery storage	150	Spoil material used for safety berms
Substation	250	Spoil material used for safety berms
Ducting cable route	0	
Met Mast 1	0	
Met Mast 2	0	
Security Hut 1	100	Spoil material used for safety berms
Security Hut 2	100	Spoil material used for safety berms
Security Hut 3	100	Spoil material used for safety berms
Security Hut 4	100	Spoil material used for safety berms
Derryaroge West Amenity Car Park	100	Spoil material used for safety berms
Safety Berms	23,750	5% of excavated spoil material used for safety berms throughout the development
Total	1,131,964	

Notes:

- Peat and spoil reinstatement volumes at the turbines were provided to GDG by Tobin. GDG has carried out a review of the volumes provided. It assumes that the backfill above the turbine will be predominantly formed using spoil material with a peat layer for surface landscaping.
- Hardstand locations have considered the use of spoil material for safety berms at the perimeter of the hardstands.
- The borrow pit reinstatement volume has considered the full volume of the borrow pit. Borrow pit volume was estimated as the excavated peat and spoil volumes + the estimated volume of borrow pit won material for the proposed development.
- The volume of peat material excavated has been estimated using the average peat depth calculated across the footprint of the structure to define the basal surface of the peat.

The volumes estimates in Table 8-2 and Table 8-3 reflect normal earthworks practice where volumes of cut and fill are evaluated on a $1m^3$ cut to $1m^3$ filled basis. It is acknowledged that bulking can occur where placed soils occupy a greater volume due to a reduction in density. For the cohesive spoil material it is considered that bulking will be offset to a considerable degree by the compaction of soils during placement and subsequent settlement to achieve the volumes outlined. Peat has a high water content, high compressibility and low strength meaning it can remould and therefore

bulking is negligible and has not been primarily considered for the purposes of this report. However, a contingency of 20% bulking on excavated peat and spoil volumes has been considered in the peat and spoil balance calculation for unexpected peat depths and bulking as outlined in Section 8.3.

A preliminary assessment has been undertaken to assess the placement and reinstatement of peat and spoil material. The preliminary assessment indicates that stability is acceptable. A detailed assessment will need to be undertaken as part of the detail design when locations are confirmed, and additional GI information becomes available.

A confirmatory construction stage peat stability risk assessment will be conducted by the Contractor to investigate the peat stability and landslide risks arising from variations to the layout which may occur during the detail design and/or construction stage.

The excavated cohesive overburden material has been considered unsuitable for re-use as fill, as it consists largely of cohesive glacial till. This is based on information from trial pits and boreholes undertaken to date. It is recommended that this be reassessed as part of detailed design, when additional GI becomes available.

8.3 PEAT AND SPOIL BALANCE

The volume balance of excavated and reinstated peat and spoil is outlined in Table 8-4. This table summarises the estimated volumes of peat and spoil excavation and the reinstatement volumes outlined in Sections 8.1 and 8.2.

The peat balance analysis examines the volume of peat excavated versus the volume of available reinstatement space. The balance analysis needs to examine both peat and overburden separately, as they are suitable for reinstatement at different wind farm infrastructure, as well as a combined volume for the overall constructability analysis. The resulting peat, spoil, and combined peat and spoil balance will either be a surplus (excessive peat and spoil versus reinstatement volume) or a deficit (less peat and spoil than available reinstatement volume)

Table 8-4: Peat and spoil balance assessment

ITEM	PEAT			Spoil			COMBINED
	SUPPLY	DEMAND	BALANCE	SUPPLY	DEMAND	BALANCE	BALANCE
	Peat Excavation Volume (m^3)	Reinstatement Requirement (m^3)	Surplus (+) or Deficit (-) (m^3)	Spoil Excavation Volume (m^3)	Reinstatement Requirement (m^3)	Surplus (+) or Deficit (-) (m^3)	Surplus (+) or Deficit (-) (m^3)
Founded Roads	3,200	4,000	-800	0	0	0	-800
Floated Roads	0	51,000	-51,000	0	0	0	-51,000
Turbine Foundations	14,446	10,362	4,084	96,931	37,004	59,927	64,011
Crane Hardstands	44,123	19,320	24,803	22,078	4,000	18,078	42,881
Compound 1	0	360	-360	0	100	-100	-460
Compound 2	0	600	-600	0	100	-100	-700
Compound 3	0	600	-600	0	100	-100	-700
Compound 4	0	360	-360	0	100	-100	-460
Borrow pit BP-01	130,105	1,062,882	-932,776	349,320	1,062,882	-578,918	-448,812
Borrow pit BP-02							
Borrow pit BP-03							
Borrow pit BP-04							
Permanent Peat Deposition Area	0	46,286	-46,286	0	3,028	-3,028	-49,314
Battery storage	3,535	600	2,935	1,515	150	1,365	4,300
Substation	41,321	1,040	40,281	4,575	250	4,325	44,606
Ducting cable route	10,080	10,080	0	0	0	0	0
Met Mast 1	1,190	100	1,090	210	0	210	1,300
Met Mast 2	1,750	100	1,650	210	0	210	1,860
Security Hut 1	0	100	-100	60	100	-40	-60
Security Hut 2	200	100	100	60	100	-40	140

Security Hut 3	0	100	-100	0	100	-100	-200
Security Hut 4	0	100	-100	0	100	-100	-200
Derryaroge West Amenity Car Park	0	500	-500	0	100	-100	400
Safety Berms	0	0	0	0	23,750	-23,997	-23,997
TOTAL	249,950	1,208,590	-958,640	474,959	1,131,964	-657,005	-552,763
+20% excavation contingency	299,940	1,208,590	-908,650	569,951	1,131,964	-562013	-407,781

The preliminary earthwork volume summary indicates that the development's peat and spoil placement capacity is greater than the volume of peat excavated for the various infrastructures.

8.4 SENSITIVITY ANALYSIS

Sensitivity analysis calculations indicate a workable peat deposition capacity of the proposed development. This analysis considers a construction sequence utilising only 70% of the total borrow pit capacity in the final calculations, assuming the 20% peat and spoil contingency values. In this instance the total borrow pit capacity is reduced to 744,017m^3 and total deposition capacity reduced from 11,208,890m^3 to 890,025m^3.

Table 8-5: Peat volume sensitivity analysis

Borrow pit reinstatement condition	Associated Borrow pit reinstatement volume (m^3)	Total adjusted achievable Reinstatement (m^3)	Total material balance Surplus (+) or Deficit (-) (m^3)
70% of excavated borrow pit volume	744,017	890,025	-20,135

The sensitivity analyses suggest that should not all borrow pits be available for reinstatement at the same time the Contractor would still be able to accommodate the excavated peat within the proposed development. It should be emphasised that temporary deposition of peat and spoil will be required during construction due to the volumes being handled and the availability of borrow pits as outlined in Section 7.1. The use of the Peat Deposition Area and borrow pits for both temporary and permanent deposition of peat may be required.

9 GUIDELINES FOR GOOD CONSTRUCTION PRACTICE

9.1 GENERAL

Inappropriate handling and management of excavated peat and overburden, as well as uncontrolled loading of peat material, is considered one of the leading causes of peat instability and landslide event triggers during the wind farm construction process. Managing and controlling these activities is key to de-risking peat stability at the wind farm site. It is required that the construction method statements for the proposed development t also take into account, but not be limited to, the guidance documents listed in Section 1 and the recommendations and requirements outlined throughout this document.

The general requirements for the management of peat and spoil materials and the mitigation of peat instability at the site will be:

- A Project Geotechnical Engineer will be appointed for the construction stage to oversee peat excavation and management.
- Placement of peat and spoil material, including temporary and side casting, be carried out in the permitted areas only,
- Excavated peat and spoil will not be stored on-site and will be immediately moved to the designated Peat Deposition Area or borrow pit areas with the exception of the deposition required for the opening of the initial borrow pit as outlined in Section 7.1. Acrotelm (upper) peat material will be used as landscaping material where topography allows, and the detail designer has assessed the stability risk,
- Peat and spoil will only be placed in the proposed deposition areas or re-used for landscaping purposes. The velocity of water flows within drainage systems will be controlled using check damns, and the uncontrolled release of water onto slopes can create a landslide risk and must be avoided,
- All construction requiring cut and fill earthworks requires a robust monitoring and inspection programme. The details of this inspection programme will depend on the purpose and methodologies of the works and the ground conditions,
- A method statement and risk assessment (RAMS), which considers the potential causes and mitigations of peat instabilities and landslides, is required and must be regularly communicated to all site staff. An observational approach by all site staff to the ground conditions and the risks will be promoted, and any changes in the ground or site conditions will be reported and the risk dynamically assessed.
- Regular briefing of all site staff (e.g. toolbox talks) to provide feedback on construction and ground performance and to promote reporting any observed change in ground conditions.

9.2 MONITORING

Installing movement monitoring posts is recommended for areas where works occur on or adjacent to identified peat depths greater than 2m and existing slope angles exceeding 5°. At those locations, monitoring posts are recommended to be installed upslope and downslope of the works areas.

Movement monitoring posts will be observed at least once daily during construction, with more frequent inspections where adjacent works are ongoing. Should movements be recorded, the frequency of these inspections is to be increased. A record of all monitor post inspections will be kept with reference to date, time and relative movement between posts, if any. Any movement

identified in the posts will be recorded with reference to the post numbering system. The monitoring regime will be further developed and assessed during the detailed design phase.

The Contractor will also develop a routine inspection of all areas surrounding work in peat, not just exclusively on the monitoring posts. These inspections will include an assessment of ground stability and drainage conditions. These inspections will identify any cracking or deformation on the peat surface, an excessive settlement on structures, drain blockages or springs, etc.

10 GEOTECHNICAL RISK REGISTER

Table 10-1: Geotechnical Risk Register

Ref.	Risk	Contributing Factor	Mitigation
1	Excavation of larger quantities of peat than expected	Increase in peat depth encountered	This report outlines the calculations carried out in the peat balance exercise. The report outlines the volumes of peat excavation required for the construction of the proposed development and the capacity for the development for peat placement or rehabilitation, concluding that the peat balance is satisfactory for the construction of the proposed wind farm development. The peat depths used are developed from the ground investigations carried out at the site, including peat probes, trial pits and hand shear vanes. Satellite imagery and on-site inspection are used to prove the presence of glacial till and areas of peat material. Peat material can vary largely locally, and the risk of missing a local deep area of peat can exist at the site. An increased density of ground investigation was carried out in the areas of the proposed infrastructure. Further GI will be required across the proposed development during the detail and construction stage to assess peat depths and strengths. This will be carried out by the detailed designer and Contractor's team. The design team will develop their own peat balance calculation to satisfy and de-risk the possibility of larger peat excavation volumes being encountered at these locations.
2	Inadequate deposition space for excavated peat	Inadequate peat reinstatement volumes	The peat balance calculation has considered only 70% of the borrow pit volume capacity for the deposition of excavated peat and spoil material. Contingencies estimating an additional 20% peat and spoil material excavation have been considered in the balance assessment. The separate Peat Deposition Area can be used for the deposition of initial peat excavations and for peat material excavated from the borrow pit areas.

Ref.	Risk	Contributing Factor	Mitigation
			The report outlines several contingency estimations for the peat volume and deposition volume assessments. It is assumed that a suitable construction methodology and project timeline can be developed by the construction stage contractor and design team effectively manage peat excavations and deposition areas.
3	Peat slippage from side casting of peat material	Overloading of in situ peat by side casting	The peat stability risk assessment (PSRA) report (GDG, 2025) examines the stability of the peat in several conditions, including the inclusion of a 1m peat deposition surcharge. This report outlines the methodologies to safely construct the proposed development, including the restriction for the deposition of peat at some key infrastructure locations. Peat side casting and deposition will not exceed 1m in any location. The construction phase design and contractor team will need to construct the wind farm using these mitigation measures. Further GI will be required across the full site including at the identified hazard areas, during the detail and construction phase to assess peat depths and strengths. This will be carried out by the detailed designer and Contractor's team. The design team will develop their own testing criteria to satisfy and derisk the possibility of instability and peat failure. It is assumed that the works will be undertaken by a competent contractor experienced in working in peat and soft ground conditions in upland areas and will have carried out the appropriate due diligence and assessment relating to peat stability and appropriate Peat Deposition.

11 CONCLUSION

This PSMP has been prepared to outline a peat management strategy to ensure the workable and sustainable management of peat during the construction of the proposed development.

It is concluded that this PSMP demonstrates that the majority of material excavated will comprise peaty soil and acrotelmic peat. However, it is noted that excavations of catotelmic peat will be required. Volumes of catotelmic peat generated will be fully utilised in the restoration of borrow pits and are not considered to represent waste material.

For the purposes of the peat balance assessment completed herein, volumes of peaty soil have been included to facilitate an assessment of the surficial material required for restoration and infrastructure dressing at the proposed development.

The peat balance calculations and sensitivity analysis represent the most likely scenario at the proposed development, and as such it is concluded that all of the peat material excavated can be reused safely on-site during construction. Should any further refinement of the detailed infrastructure design be undertaken, the assessment completed herein should be revisited.

REFERENCES

Department of Housing, Planning and Local Government (December 2019) *Draft Revised Wind Energy Development Guidelines*. DHPLG, Dublin.

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Scottish Renewables and SEPA (2012) *Guidance on the Assessment of Peat Volumes, re-use of Excavated Peat and Minimisation of Waste*

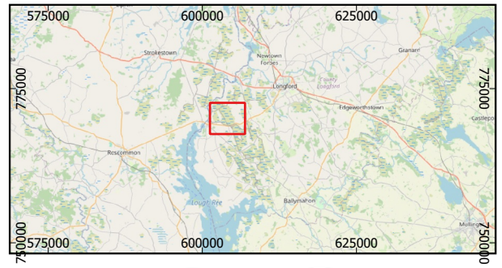
Appendix A SITE LAYOUT

602700
604750
606800
770800
768750

T01
T02
T03
T04
T05
T06
T07
T08
T09
T10
CC1
CC2
BP01

Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial Balance of Plant) Compound
- Passing Bay
- Amenity Carpark
- Amenity Track
- Construction Compound
- Internal Access Road
- Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Borrow pit
- Met Mast



GDG
GAVIN & DOHERTY GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

N

Derryadd Wind Farm Site Layout

Map Ref: 22268-GDG-SL-001 (Map 1 of 3)

Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

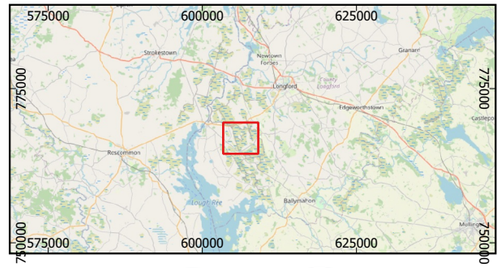
604750 606800 608850

768750 766700 764650

CC2 CC1 BP01 T08 T09 T10 T13 BP03 T11 BP02 BP04 T12 T14 T15 CC3 CC4 T17

Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial Balance of Plant) Compound
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road
- Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Borrow pit
- Met Mast



GDG GAVIN & DOHERTY GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

N

Derryadd Wind Farm Site Layout

Map Ref: 22268-GDG-SL-001 (Map 2 of 3)

Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

606800

608850

766700

766700

764650

764650

762600

606800

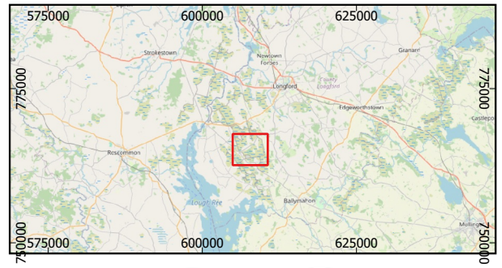
608850

762600

T13
BP03
T11
BP02
BP04
T12
T14
T15
CC3
CC4
T17
T16
T18
T19
T21
T20
T22

Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road
- Borrow pit
- Met Mast



GDG
GAVIN & DOHERTY
GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

N

Derryadd Wind Farm Site Layout

Map Ref: 22268-GDG-SL-001 (Map 3 of 3)

Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

Appendix B PEAT DEPTH PLAN

602700
604750
606800
770800
768750

T01
T02
T03
T04
T05
T06
T07
T08
T09
T10
BP01
CC1
CC2

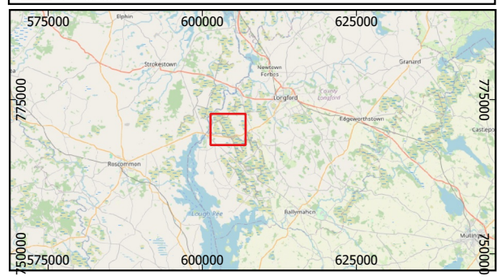
Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial Balance of Plant) Compound
- Passing Bay
- Amenity Carpark
- Amenity Track
- Construction Compound
- Internal Access Road
- Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Borrow pit
- Met Mast

Peat Depth Interpolation

Interpolated Peat Depth(m)

- <= 0.50
- 0.50 - 1.00
- 1.00 - 2.00
- 2.00 - 3.00
- 3.00 - 4.00
- 4.00 - 5.00
- 5.00 - 6.00
- > 6.00



GDG GAVIN & DOHERTY GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

N

Peat Depth (GDG,2023)

Map Ref: 22268-GDG-SL-020 (Map 1 of 3)

Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

604750

606800

768750

766700

T02
T01
CC2
CC1
BP01
T08
T09
T10
T13
BP03
T11
BP02
BP04
T12
T14
T15

Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial Balance of Plant) Compound
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road
- Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Borrow pit
- Met Mast

Peat Depth Interpolation

Interpolated Peat Depth(m)

- <= 0.50
- 0.50 - 1.00
- 1.00 - 2.00
- 2.00 - 3.00
- 3.00 - 4.00
- 4.00 - 5.00
- 5.00 - 6.00
- > 6.00

GDG
GAVIN & DOHERTY GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

N

Peat Depth (GDG,2023)

Map Ref: 22268-GDG-SL-020 (Map 2 of 3)

Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

606800
608850
766700
764650
T13
BP03
T11
BP02
BP04
T12
T14
T15
CC3
CC4
T17
T16
T18
T19
T20
T21
T22
606800
608850

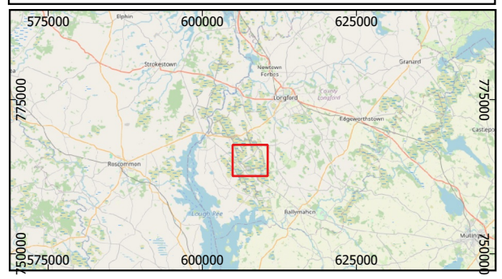
Legend

- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road
- Borrow pit
- Met Mast

Peat Depth Interpolation

Interpolated Peat Depth(m)

- <= 0.50
- 0.50 - 1.00
- 1.00 - 2.00
- 2.00 - 3.00
- 3.00 - 4.00
- 4.00 - 5.00
- 5.00 - 6.00
- > 6.00



GDG
GAVIN & DOHERTY
GEOSOLUTIONS

Bord na Móna

0 500 1,000 m

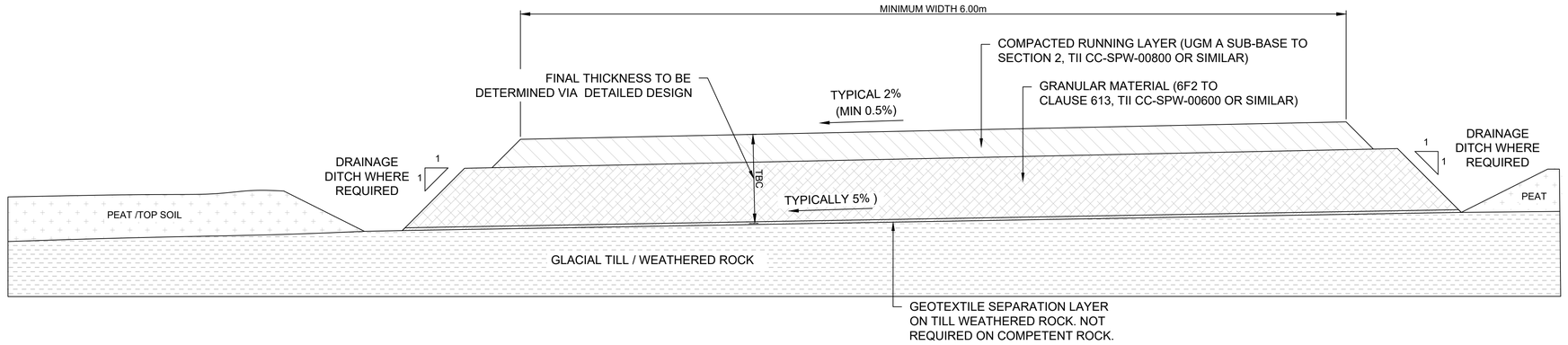
N

Peat Depth (GDG,2023)

Map Ref: 22268-GDG-SL-020 (Map 3 of 3)

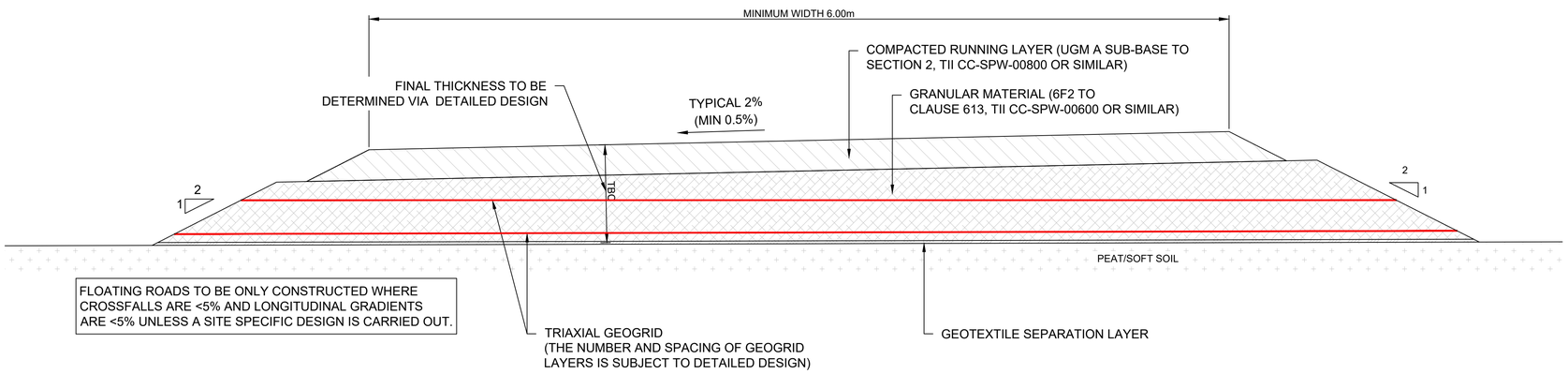
Revision	Date	Remarks	Drawn	Checked	Approved
00	19/12/2023	First Issue	KG	SC	JOD
01	26/11/2024	Revision based on Client Comments	SRG	CE	AL
02	25/02/2025	Revision based on Client Comments	SRG	CE	AL
03	14/04/2025	Revision based on Client Comments	SRG	CE	AL
Plot Size A3	Datum IRENET95	Transverse Mercator	Scale:1:18,000		

Appendix C Road Construction Details



STANDARD DETAIL A - SECTION THROUGH NEW FOUNDED ACCESS TRACK

SCALE 1:20



STANDARD DETAIL B - SECTION THROUGH NEW FLOATED ACCESS TRACK

SCALE 1:20

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. DO NOT SCALE FROM THIS DRAWING.
3. THE STRENGTH OF THE SUBFORMATION SOILS TO BE ASSESSED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION / PLACEMENT OF FILL.
4. DRAINAGE TO BE PROVIDED IN-LINE WITH DRAINAGE STRATEGY.
5. DRAWING REPRESENTS INDICATIVE DESIGN FOR PLANNING ONLY, **NOT FOR CONSTRUCTION**.

REV: S2-P01	DATE: 23/11/23	DRAWN BY: J.M.G.	CHECKED BY: SC
DESCRIPTION:	FOR INFORMATION		

GDG GAVIN & DOHERTY GEOSOLUTIONS

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E info@gdgeo.com
www.gdgeo.com

ISSUED AS: FOR INFORMATION

CLIENT: TOBIN CONSULTING ENGINEERS

PROJECT TITLE: DERRYADD WIND FARM

DRAWING No: 22268-GDG-ZZ-XX-DR-C-1000

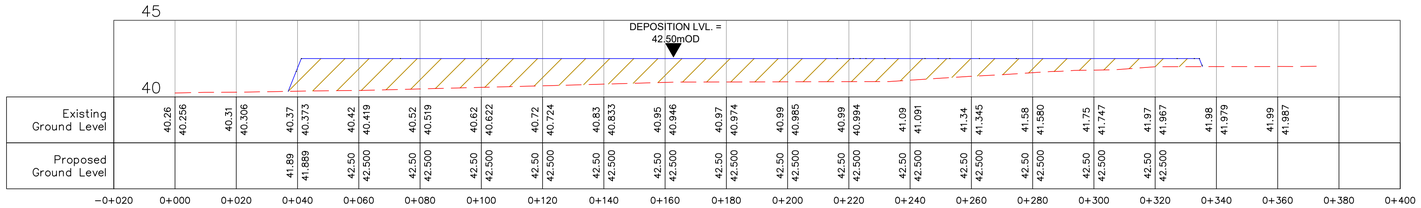
Revision: -S2-P01

DRAWING TITLE: CROSS SECTION THROUGH GENERAL ACCESS TRACK DETAILS

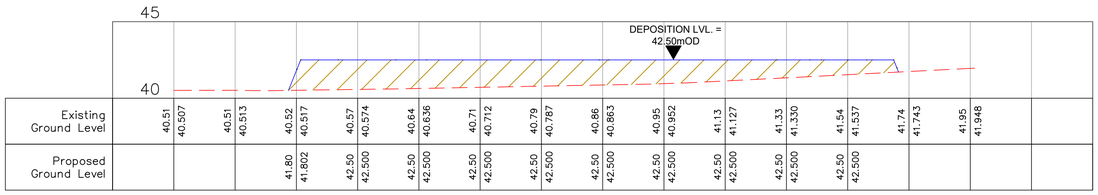
SCALE: 1:20	SHEET SIZE: A1	DATE: 23/11/2023
DRAWN BY: J.M.G.	CHECKED BY: S.C.	APPROVED BY: JOD

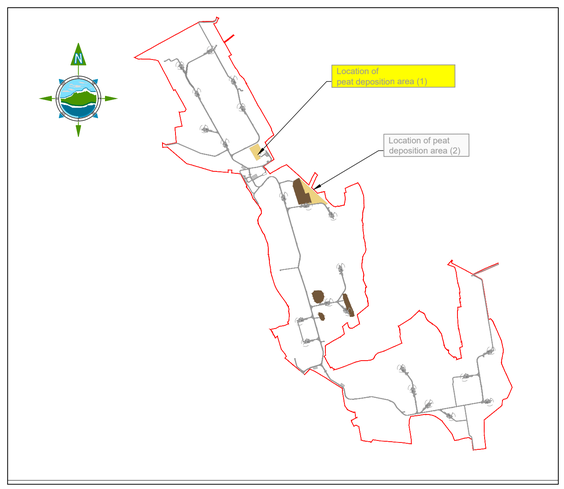
Appendix D Peat Deposition Area

SECTION THROUGH PEAT DEPOSITION AREA
Scale H- 1:1,000 / V- 1:200

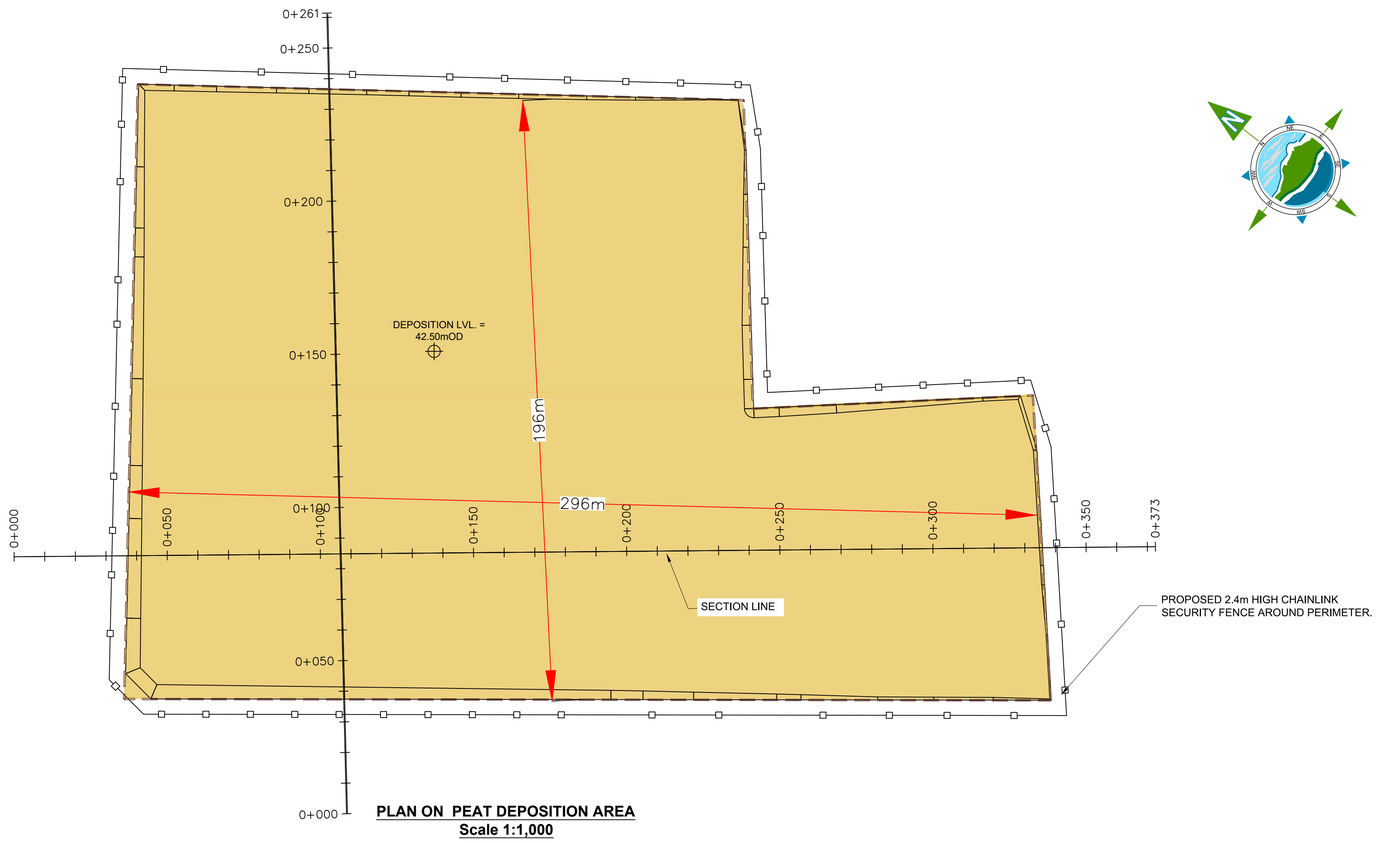


SECTION THROUGH PEAT DEPOSITION AREA
Scale H- 1:1,000 / V- 1:200





KEYPLAN
NTS



PLAN ON PEAT DEPOSITION AREA
Scale 1:1,000

GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

EXISTING GROUND PROFILE

PROPOSED PEAT DEPOSITION LEVEL

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client: Bord na Móna

Project: DERRYADD WIND FARM

Title: PEAT DEPOSITION AREA (1) PLAN & SECTIONS

Scale @ A1: As Shown

Prepared by: M. Nolan
Checked by: J. Staunton
Date: December '24

Drawing Status: Planning

TOBIN CONSULTING ENGINEERS
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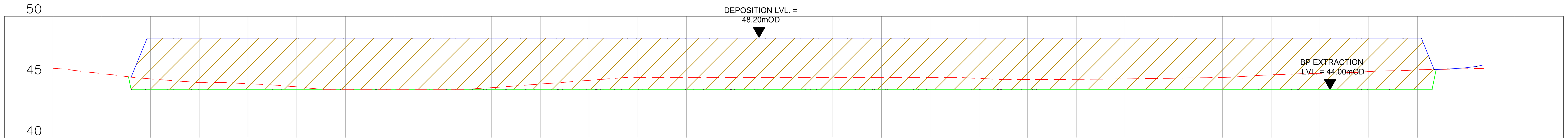
www.tobin.ie

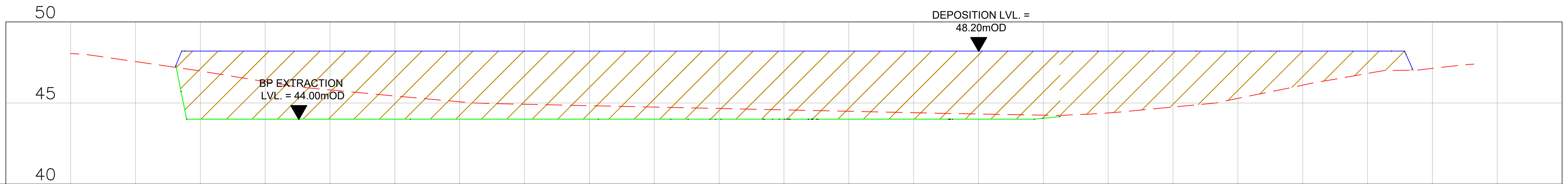
Drawing No.: 11399-2065

Revision: A



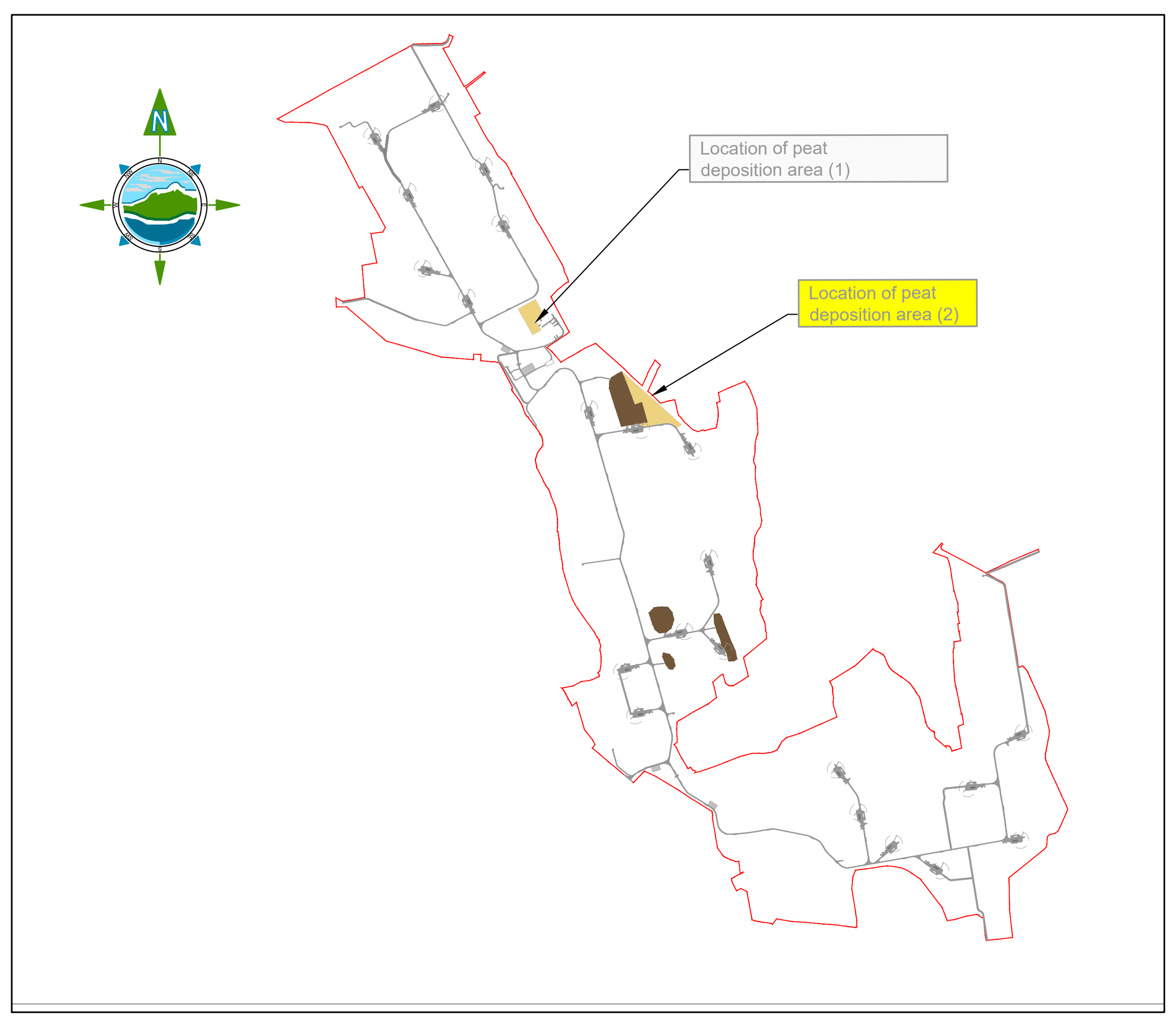
Existing Ground Level	45.72 45.725	45.29 45.289	44.85 44.851	44.57 44.570	44.45 44.454	44.20 44.197	44.00 43.999	44.00 43.998	44.00 43.999	44.13 44.128	44.43 44.428	44.73 44.732	44.98 44.982	44.98 44.977	44.97 44.974	44.97 44.973	44.97 44.974	44.98 44.977	44.98 44.979	44.89 44.890	44.80 44.799	44.82 44.817	44.85 44.851	44.91 44.908	44.98 44.977	45.19 45.188	45.31 45.314	45.45 45.451	45.60 45.597	45.68 45.680	
Proposed Ground Level			48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	45.77 45.772	

SECTION THROUGH PEAT DEPOSITION AREA
Scale H- 1:1,000 / V- 1:200



Existing Ground Level			44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.06 44.056							
Proposed Ground Level			48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200	48.20 48.200		

SECTION THROUGH PEAT DEPOSITION AREA
Scale H- 1:1,000 / V- 1:200



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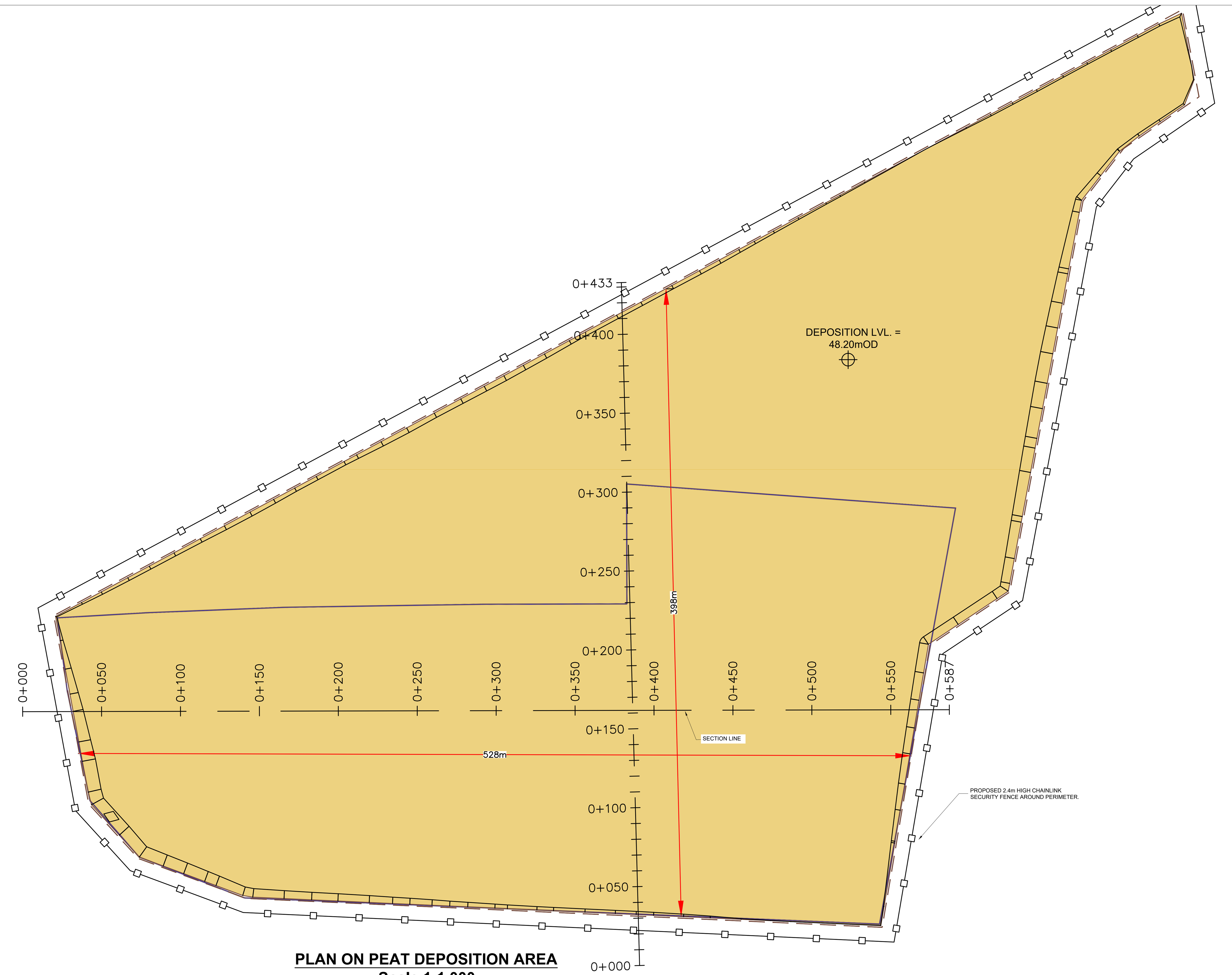
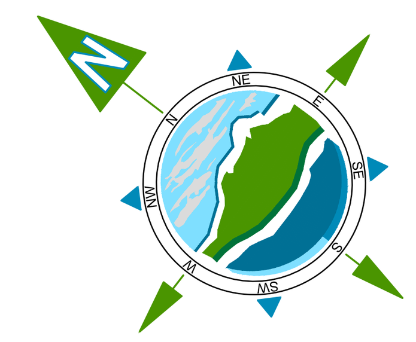
NTS



PLAN ON PEAT DEPOSITION AREA
Scale 1:1,000



GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

EXISTING GROUND PROFILE

PROPOSED PEAT DEPOSITION LEVEL

BORROW PIT EXTRACTION LEVEL

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client:
Bord na Móna

Project:
DERRYADD
WIND FARM

Title:
PEAT DEPOSITION AREA (2)
PLAN & SECTIONS

Scale @ A1: As Shown

Prepared by: M. Nolan
Checked by: J. Staunton
Date: December '24

Drawing Status: Planning

TOBIN
CONSULTING ENGINEERS
Tel: +353 (0)91 565 211
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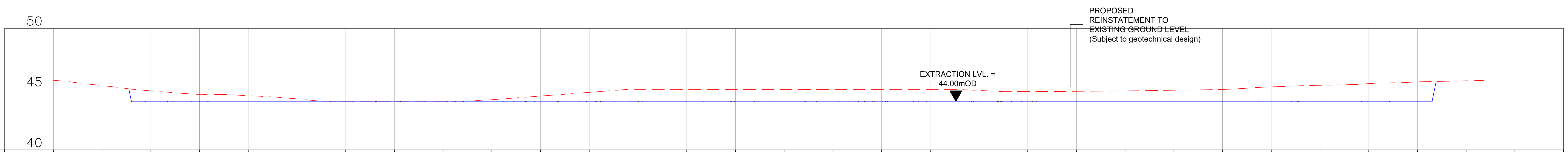
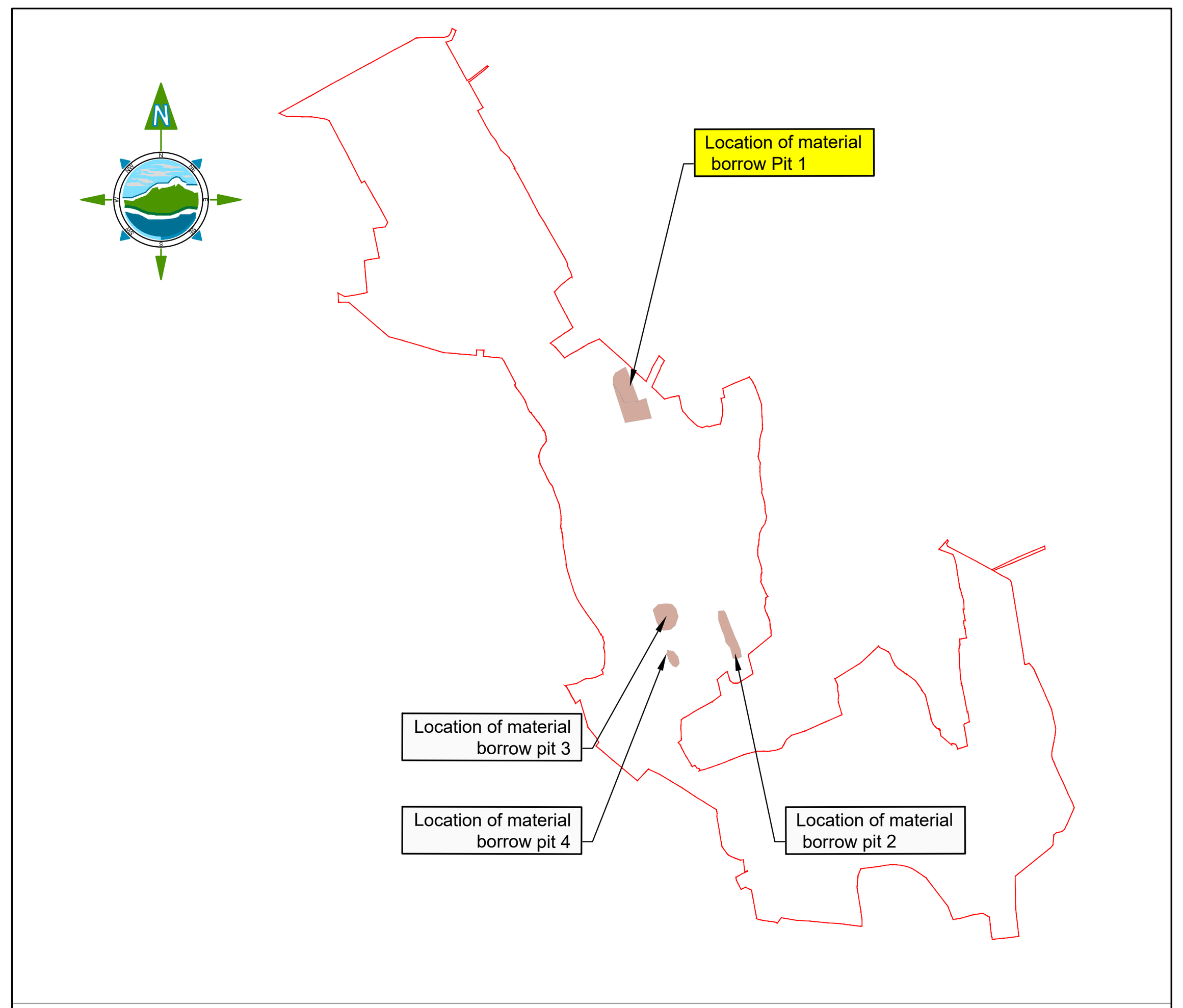
Drawing No.: 11399-2066
Revision: A

Appendix E BORROW PITS



Existing Ground Level	45.72 45.725	45.29 45.289	44.85 44.851	44.57 44.570	44.45 44.454	44.20 44.197	44.00 43.999	44.00 43.998	44.00 43.999	44.13 44.128	44.43 44.428	44.73 44.732	44.98 44.982	44.98 44.977	44.97 44.974	44.97 44.973	44.97 44.974	44.98 44.977	44.98 44.979	44.89 44.890	44.80 44.799	44.82 44.817	44.85 44.851	44.91 44.908	44.98 44.977	45.19 45.188	45.31 45.314	45.45 45.451	45.60 45.597	45.68 45.680
Proposed Ground Level			44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	44.00 44.000	

SECTION THROUGH BORROW PIT
Scale H- 1:1,000 / V- 1:200



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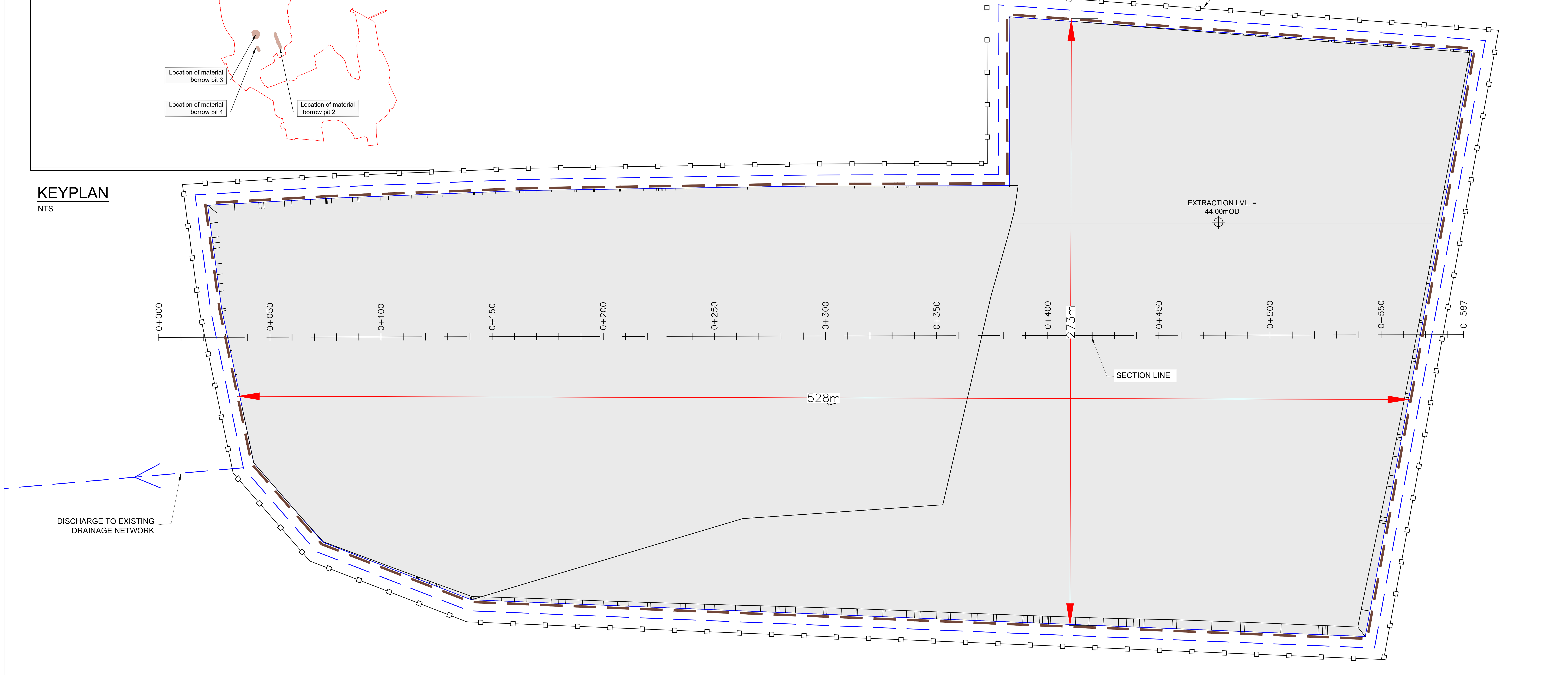


PLAN ON BORROW PIT
Scale 1:1,000

GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

PROPOSED INTERCEPTOR DRAIN

NOTE:

1. DRAINAGE SHOWN FOR INDICATIVE PURPOSES. REFER TO DRAINAGE DRAWINGS FOR FULL DRAINAGE DETAILS.

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client:
Bord na Móna

Project:
DERRYADD
WIND FARM

Title:
BORROW PIT 1
PLAN & SECTIONS

Scale @ A1: As Shown

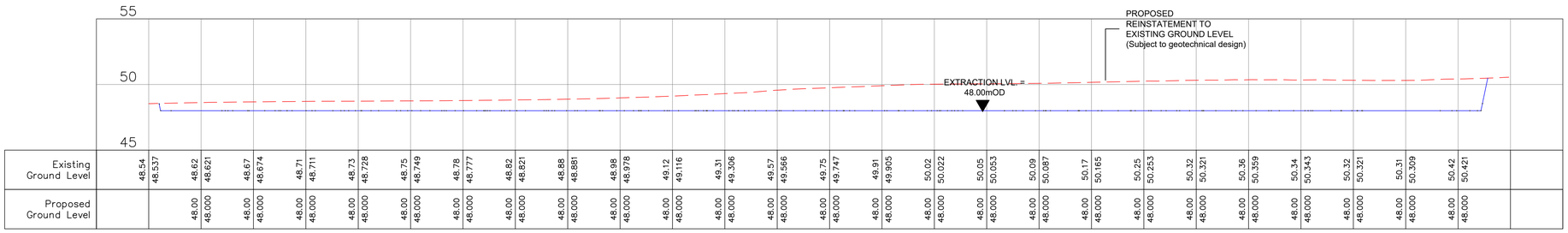
Prepared by: M. Nolan
Checked by: J. Staunton
Date: December '24

Drawing Status: Planning

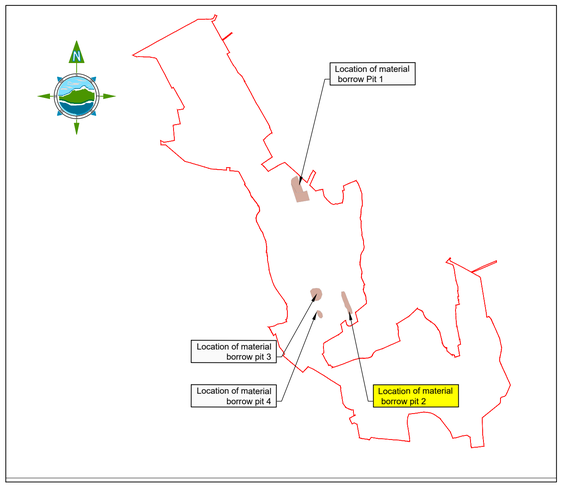
TOBIN
CONSULTING ENGINEERS

Tel: +353 (0)91 565 211
Email: info@tobin.ie
www.tobin.ie

Drawing No.: 11399-2060
Revision: A



SECTION THROUGH BORROW PIT
Scale H- 1:1,000 / V- 1:200



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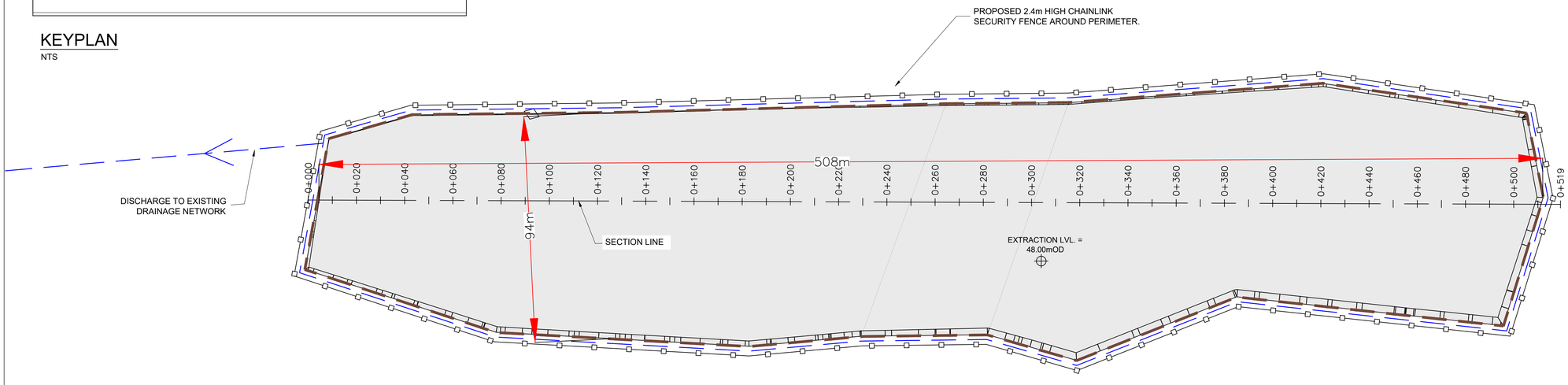

PLAN ON BORROW PIT
Scale 1:1,000

GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

PROPOSED INTERCEPTOR DRAIN

NOTE:

1. DRAINAGE SHOWN FOR INDICATIVE PURPOSES. REFER TO DRAINAGE DRAWINGS FOR FULL DRAINAGE DETAILS.

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client:
Bord na Móna

Project:
DERRYADD
WIND FARM

Title:
BORROW PIT 2
PLAN & SECTIONS

Scale @ A1: As Shown

Prepared by: M. Nolan
Checked by: J. Staunton
Date: December '24

Drawing Status: Planning

TOBIN
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Tel: +353 (0)91 565 211
Email: info@tobin.ie
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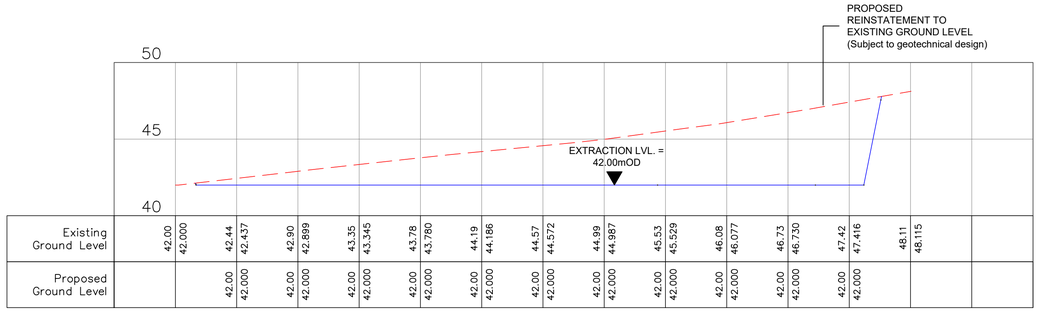
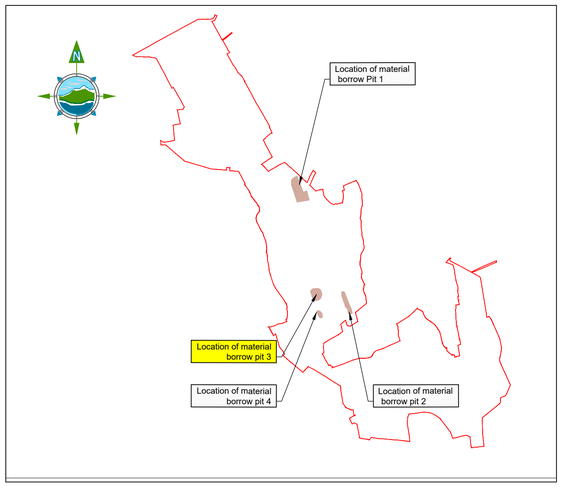
Drawing No.: 11399-2061
Revision: A



SECTION THROUGH BORROW PIT
Scale H- 1:1,000 / V- 1:200



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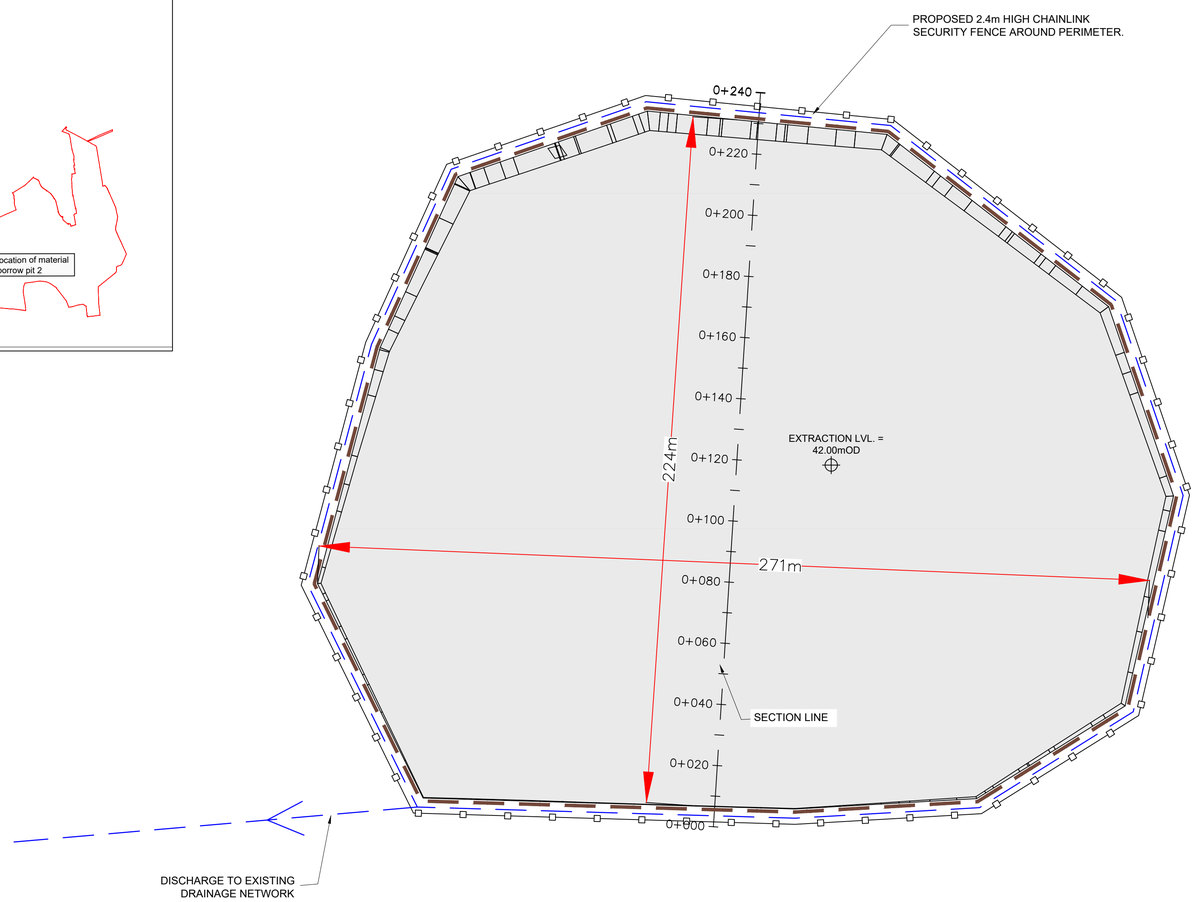

PLAN ON BORROW PIT
Scale 1:1,000

GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

PROPOSED INTERCEPTOR DRAIN

NOTE:

1. DRAINAGE SHOWN FOR INDICATIVE PURPOSES. REFER TO DRAINAGE DRAWINGS FOR FULL DRAINAGE DETAILS.

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client: Bord na Móna

Project: DERRYADD WIND FARM

Title: BORROW PIT 3 PLAN & SECTIONS

Scale @ A1: As Shown

Prepared by: M. Nolan | Checked by: J. Staunton | Date: December '24

Drawing Status: Planning

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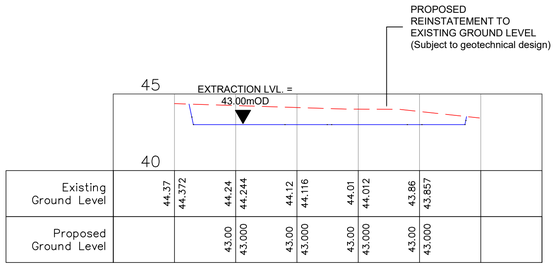
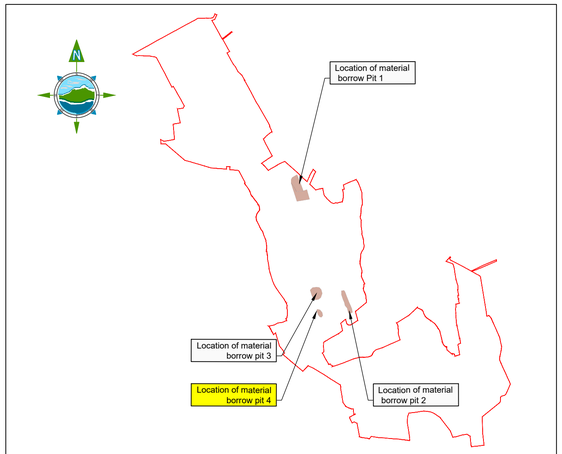
Email: info@tobin.ie
www.tobin.ie

Drawing No.: 11399-2062

Revision: A



SECTION THROUGH BORROW PIT
Scale H- 1:1,000 / V- 1:200



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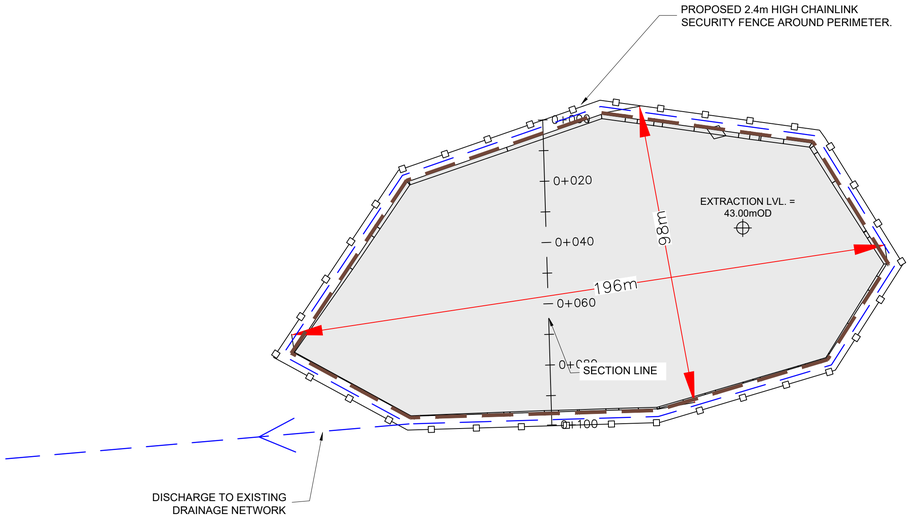

PLAN ON BORROW PIT
Scale 1:1,000

GENERAL LEGEND

PROPOSED BORROW PIT EXTENTS

PROPOSED CHAINLINK SECURITY FENCE

PROPOSED INTERCEPTOR DRAIN

NOTE:

1. DRAINAGE SHOWN FOR INDICATIVE PURPOSES. REFER TO DRAINAGE DRAWINGS FOR FULL DRAINAGE DETAILS.

Rev	Date	Description	By	Chkd.
A	08.01.25	ISSUED FOR PLANNING	MN	JS

Client: Bord na Móna

Project: DERRYADD WIND FARM

Title: BORROW PIT 4 PLAN & SECTIONS

Scale @ A1: As Shown

Prepared by: M. Nolan | Checked by: J. Staunton | Date: December '24

Drawing Status: Planning

TOBIN CONSULTING ENGINEERS
Tel: +353 (0)91 565 211
Email: info@tobin.ie
www.tobin.ie

Drawing No.: 11399-2063

Revision: A

TOBIN
CONSULTING ENGINEERS

GDG
GAVIN & DOHERTY
GEOSOLUTIONS

GLOBAL PROJECT REACH

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