



**An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhre
Department of Housing,
Local Government and Her**

Wicklow Subsite WK26, Wicklow Mountain SAC

Restoration Works

Phase 1

Civil Engineering Specification



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Rialtais Áitiúil agus Oidhre
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Local Government and Heritage

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General Conditions

1. Scope of Contract

- Under this contract, it is intended for the Contractor to take possession of the development site, WK26A 7.72Ha, WK26B 4.94Ha, WK26C 12.57Ha, WK26D 6.62Ha, WK26E 2.59Ha, WK26F 10.12Ha, WK26G 4.41Ha, WK26H 5.25Ha, WK26I 3.21Ha and WK26J 8.28Ha (as shown on Drawing No NPWS-BBRP-02-02 – Restoration Zones) for the purposes of carrying out bog restoration works. The Works can be summarised as follows:
- Construction of peat dams within existing drains of varying widths and depths.
- Construction of timber Sediment Traps/Leaky dams.
- Construction of stone dams.
- Erection of Warning Signs cautioning of danger due to deep water.
- Use of Bog Mats where required.

The Works are detailed in the following drawings:

- NPWS-BBRP-02-01 Site Location Map (1:50000@A3)
 - NPWS-BBRP-02-02 Restoration Zones (1:7000@A3)
 - NPWS-BBRP-02-03 Drainage Map (1:7000@A3)
 - NPWS-BBRP-02-04 Restoration Plan (1:7000@A3)
 - NPWS-BBRP-02-05 Restoration Plan WK26A (1:1500@A3)
 - NPWS-BBRP-02-06 Restoration Plan WK26B (1:1800@A3)
 - NPWS-BBRP-02-07 Restoration Plan WK26C (1:2000@A3)
 - NPWS-BBRP-02-08 Restoration Plan WK26D (1:1500@A3)
 - NPWS-BBRP-02-09 Restoration Plan WK26E (1:842@A3)
 - NPWS-BBRP-02-10 Restoration Plan WK26F (1:2000@A3)
 - NPWS-BBRP-02-11 Restoration Plan WK26G (1:1200@A3)
 - NPWS-BBRP-02-12 Restoration Plan WK26H (1:1500@A3)
 - NPWS-BBRP-02-13 Restoration Plan WK26I (1:1000@A3)
 - NPWS-BBRP-02-14 Restoration Plan WK26J (1:1700@A3)
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- NPWS-BBRP-02-15 Peat Dam Detail (NTS)
- NPWS-BBRP-02-16 Stone Dam Detail (NTS)
- NPWS-BBRP-02-17 Timber Dam Detail (NTS)

The sites of the proposed works are situated in County Wicklow at Kippure East, Wicklow Mountain SAC. The Contractor shall note that there will be more than one access point as the site is split up into different work areas. As illustrated on drawings NPWS-BBRP-02-01 the site is north for the Regional road R759. The Contractor shall include in their tender for any costs that may be incurred due to maintaining access routes and making good any damage arising due to the Contract Works. The works north of the Regional road R759 should not impact on the public and the road shall be kept open to traffic for the duration of the Works.

The Contractor shall, at their own expense, supply all plant, labour, materials, and all other items necessary for the full performance of the Works as described in this Specification and the accompanying drawings.

The Contractor shall be deemed to have included for all such costs in their tender price, with the exception of the procurement, preparation, and delivery by helicopter of the stone material for use in the construction of Stone dams.

2. Site Location

The Subsite WK26 is situated in Kippure East, Wicklow Mountain SAC, Co. Wicklow. Subsite WK26 site boundary is shown in Figure 1.0 and Drawing NPWS-BBRP-02-01.

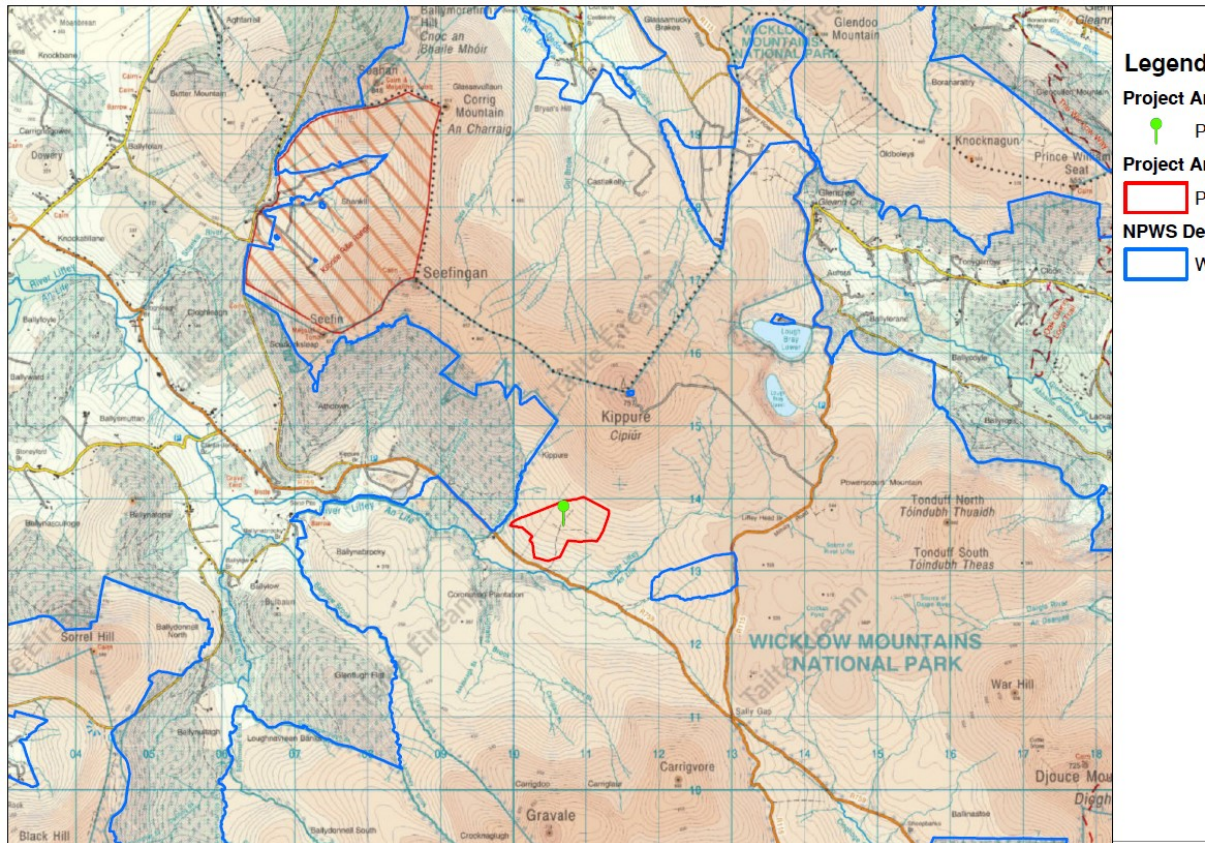


Figure 1.0 – Bog Site Location Map

3. Conditions of Contract

The conditions governing this Contract shall be the “Public Works Short Form of Contract” – subject however to such additions, alterations, or modifications as are set out in this Specification and the Contract Drawings.

4. Definitions

The word “Engineer” or “Employers Representative” shall mean “The Head of Civil Engineering” or such person or persons as they may authorise to act for the purpose of this Contract.

The word “Employer” shall mean “The Minister for Housing, Local Government and Heritage”.

5. Tenders

The most economically advantageous or any tender will not necessarily be accepted by the Employer. The Employer accepts a tender provisionally. Final acceptance is subject to the Contractors Schedule, when opened and inspected, proving satisfactory.

The Contractor shall satisfy themselves as to the location and nature of the site and the means of access thereto and shall make any inspections or tests which they consider necessary in arriving at a tender price.

The Contractor is advised to visit the site prior to submitting their tender. They shall include in their tender for any costs in relation to the location and the nature of the site, including but not limited to any costs associated with the haulage of material into and throughout the site.

6. Construction Schedule and Progress Chart

The Contractor shall submit a preliminary construction schedule with their tender. On award of this Contract and prior to work commencing, the contractor shall review the preliminary schedule with the Engineer, provide such further information and make such revisions as may be required by the Engineer in keeping with the Contract and re-submit the construction schedule for final approval.

The Contractor shall also prepare programme and progress charts in conjunction with the Engineer and shall record progress thereon during the execution of the Works.

A preliminary programme will be required with this tender.

7. Retention

For the duration of the Works, 10% of the contract sum will be deducted from interim valuations. Upon Substantial Completion, retention will be reduced by 5% and upon satisfactory completion of the 12-month maintenance period the remaining 5% will be released.

8. Insurances

The Contractor is required to hold all such insurances as required and outlined in the Tender and Schedule.

9. Plant

The Contractor shall be deemed to have available at the time of signing the articles, the plant, machinery and tools necessary for the carrying out of the Contract. The Contractor must ensure that at least one Excavator has a Ground Bearing Pressure of less than or equal to 0.86psi to carry out the works. As part of the tender process the contractor must include details of all plant proposed to be used on the contract. Details should include but not be limited to the make, model, overall weight of

the machine, the overall dimensions of the tracks, the type of tracks and the ground bearing pressure in psi.

10. Notice to Start Work

On receiving notice to start work the Contractor shall commence the Work within one week and they shall make provision for and supply everything necessary for the continuous performance of the Contract until its completion.

11. Health and Safety

The Contractor shall comply with all the requirements of the Safety and Health at Work Act 2005 and any subsequent regulations or amendments. They shall include in their tender for all costs associated with complying with this legislation including the provision of washing and toilet facilities for their employees.

The Contractor shall be appointed as Project Supervisor Construction Stage as set out in the Safety, Health and Welfare at Work (Construction) Regulations 2005a any subsequent amendments and any other relevant Health and Safety legislation. The Contractor shall include in their tender for all costs associated with complying with this legislation. All staff on site must hold a current Safepass card and relevant CSCS card. All tenderers must demonstrate their suitability to act as PSCS and will be required to demonstrate this prior to their appointment. All Works shall be carried out in a safe manner and in accordance with the above legislation and any other guidance notes issued by the Health and Safety Authority. In particular, all excavation works shall be carried out in accordance with the HSA publication *A Guide to Safety in Excavations (2007)*.

A Preliminary Health and Safety Plan has been prepared for this project, and the Contractor shall take this into account in their tender. The Contractor must consider the risk of engulfment and prepare a comprehensive recovery plan as part of their Method Statement.

The Contractor is responsible for the recovery of any plant from engulfment. Should any of the Contractor's plant become engulfed, the Contractor must immediately notify the Engineer. No attempt to remove plant is permitted without prior written agreement from NPWS on the method to be used.

Welfare facilities shall satisfy the requirements of Part 14 of the Safety, Health and Welfare at Work (Construction) Regulations (2005a). The Contractor shall provide for basic welfare facilities to visiting parties including the Employer and the Employers Representative (or employees of these parties). This shall include toilet and hand-washing facilities as a minimum. These facilities are not permitted to be located inside the SAC boundary as outlined in red on drawing NPWS-BBRP-02-01 or in areas which may cause disruption to sensitive habitats or species. The location on site of all Welfare facilities should be agreed with NPWS prior to delivery.

12. Overhead Power and Telephone Cables

There are no overhead power, or telephone cables located in Subsite WK26 project area.

13. Traffic and Transportation

In order to minimise the impact of the Works on residents and on the general environment within the study area, the following mitigations measures will be adhered to:

- Routes for delivery of material to site will be routed away from busy town centres or schools or sensitive routes.
- Ensure construction traffic occurs outside of the peak periods.
- The Contractor shall provide appropriate signage which must satisfy the requirements of Chapter 8 of the Traffic Signs Manual.

13.1. Helicopter Lifting operations

The Works will involve helicopter operations for the delivery and placement of stone in areas of restricted access. The client will be responsible for the procurement, coordination and all elements of Health and Safety around the Helicopter Lifting Operation.

14. Materials

All materials to be used or fixed on the Works shall be in accordance with this Specification and free from all defects. They shall comply with the Irish or European or (where none exist) the British Standard Specification applicable to them. They shall pass any tests required by the Engineer and meet their complete approval.

The Engineer shall have the power to order the removal of defective or improper materials from the site and if the Contractor fails to comply, Clause 3.10 of the Conditions shall be enforced.

The Contractor shall keep a record on the site of all materials for the Contract showing the dates of arrival and issue, the name of the supplier and (if possible) the prime cost. The record shall be available for Inspection by the Engineer.

The Contractor shall have sole charge of all unfixed materials on the site whether such materials are their own property, or the Employers and they shall be responsible for all losses, breakages and defects resulting from the weather, improper handling, storing, sheltering, stacking or any other cause which is in their control to prevent.

14.1 Timber Dams

Untreated timber planks should be used (suggested dimensions of 25cm wide, 3.75 cm thick). Ideally, these should be Western Red Cedar, Elm, Oak, Alder or Larch from FSC certified sources.

14.2 Plastic Dams

There are no plastic dams planned for these subsites.

14.3 Stone Sediment Trap/Leaky Dams

Stone used in the construction of stone dams for blanket bog restoration shall comprise durable, naturally occurring granite, angular to sub-angular in shape, sourced from local quarries. Material supplied by **Wicklow Granite Ltd.** or an equivalent approved by the Engineer shall be used.

The stone shall be of sufficient size and weight to resist displacement under anticipated peak flow conditions, with a typical grading of **150–300 mm**, unless otherwise directed by the Engineer. All material shall be:

- Free from fines, organic matter, clay, peat, or other deleterious substances.
- Free from friable, weathered, or laminated fragments liable to degradation.
- Of sound durability to maintain structural integrity in saturated and freeze–thaw environments.

Stone shall be placed to form a stable, permeable structure designed to attenuate and slow surface water flows while allowing controlled seepage through the dam.

14.3.1 Procurement, Handling, and Delivery

Stone will be procured, bagged, and prepared for helicopter lifting by **National Parks and Wildlife Service (NPWS)** staff.

The helicopter contractor will be engaged directly by NPWS and shall be solely responsible for all aspects of the lifting operations, including transport and safe delivery.

Stone shall be transported to each dam location in **1-tonne helicopter bags** and deposited at a safe distance from the drain to avoid ground disturbance or instability.

14.3.2 Contractor Responsibilities (Post-Delivery)

Following appointment, the Contractor shall be responsible for:

1. Manually removing stone from the helicopter bags.
2. Hand-placing the stone within the drain to construct the dam in accordance with the drawings and Engineer's instructions.
3. Ensuring careful placement to avoid segregation and to achieve a tightly keyed, stable structure.
4. Collecting, removing, and legally disposing of all empty helicopter bags and associated materials from site.

Mechanical plant may be used as an aid to construct the stone dams.

15. Labour and Sub-Contractor

The Contractor is advised to make themselves familiar with the local labour conditions, the rates of pay or minimum standard wage and all time and living allowances, transport costs, prerequisites and all other expenses which they shall provide for either in their "Schedule" or in the percentage allowance on extra works.

All work persons employed by the Contractor as skilled labour must be fully qualified in their respective trades and capable of carrying out the work to the Engineers satisfaction.

Piece work or sub-letting of work is forbidden except where written permission is given by the Engineer.

In the event of approved sub-letting, the Contractor shall be responsible for the observance of the conditions of Contract by the Sub-Contractor and there shall be a written agreement which binds the Sub-Contractor to these conditions. A signed copy of such an agreement shall be lodged with the Engineer.

16. Methods of Construction

The Contractor is responsible for ensuring that the Works are carried out in accordance with the Contract Drawings and Specification and that good standards of work are observed and that all standard precautionary measures in the preparation and aftercare of the work are observed.

The construction method shall be in accordance with the methodology outlined in Section 5.2 and the Best Practise in Raised Bog Restoration in Ireland (2017), where applicable. Construction methods should also be in accordance with the methodology outlined in the following list of Guidance documents, Yorkshire Peat Partnership Technical Specification 1, Moors for the Future Partnership Facts sheets. Prior to the commencement of work the Contractor shall provide the Engineer with a detailed Construction Method Statement and construction sequence, this must be approved by the Engineer prior to commencement of any Contract Works.

The site is in Mountain Blanket bog-land and the Contractor should take this into account in his methodology for carrying out excavation and compaction works. The Contractor shall also take account in their tender for interruptions to their programme and any other difficulties that may be encountered due to the impact of the weather on construction in bog-land.

The Engineer shall have the power to order the Contractors representative to suspend any work, giving their reason for so doing and they shall confirm their instruction in writing. The reason for such a suspension shall be a breach of this clause or of any real or implied condition of the Contract.

The Contractor shall, at their own expense, renew or make good any work which is found by the Engineer to be defective or on which good standards of workmanship have not been employed.

17. Defects and Faults

The Contractor shall be responsible for any defects or faults and shall make good any defects or faults in their work.

In the event that such defects or faults are either (a) in the Engineer's opinion, not capable of remedy by the Contractor or (b) that the Contractor shall declare their inability to remedy same in accordance with the contract plans – then the Contractor shall be liable to the Employer for all damages, expenses and costs arising there from.

18. Site Work

The Contractor shall provide and erect or construct, at their own expense, all temporary works, things or services which are necessary for the execution of the Works set out in the Contract. The Contractor shall be responsible for the dismantling, removal and making good after such works, prior to completion of the Contract to the Engineers satisfaction. These Works shall include, but are not limited to, the following:

- Temporary welfare facilities for the Contractors staff and workers.
- Everything necessary for the proper storage of materials including sheds, fencing, racks etc.
- All tanks and sheds for the storage of fuel.
- Temporary Work Access Platforms
- Temporary Machine Access such as Bog mats

19. Protection of Works

All protection or safety of the works shall be the Contractors sole responsibility from the beginning of work to the end of the maintenance period and they shall take all the reasonable precautions which are usual against the weather or damage from floods or storm and they shall, at their own expense, repair or renew all work which is damaged due to neglect of such precautions.

20. Damage to Property

The Contractor shall be responsible for and shall make good any damage caused to property, roads, fences, bridges etc., in the carrying out of the Works under this Contract and shall indemnify the Employer against all claims and expenses arising there from.

21. Resident Engineer

The Contractor shall make available a competent Resident Engineer or works Foreman who shall receive instructions for the Contractor.

The Resident Engineer, or works Foreman shall keep copies of Drawings, Details, Specifications, letters and other instructions from the Engineer in their possession for the duration of the Works.

22. Cleaning Site

The Contractor shall leave the site and approach roads clean and tidy during construction and on completion. The Contractor shall exercise every care to preserve the amenities of the site and site works.

23. Contingencies

Not included.

24. Removal of Contractors

The Employer reserves the right to order the removal of or themselves ban from the site any of the Contractors employees whose behaviour is improper or who is guilty of an offence at Common Law. The Engineer shall act for the Employer in this matter and at their own discretion.

The Employer reserves the right to order the removal, from the site, the Contractor or any of their supervisory staff who consistently fails to co-operate with the Engineer in the full observance of the terms and obligations of this Contract and of the instructions they may give from time to time concerning the methods of construction and the materials to be used thereon.

The Employer shall have the right, in addition to any other rights which it has at law, to terminate this contract immediately and without liability for compensation or damages in circumstances where it becomes aware that the Contractor has engaged in the extraction of turf or associated activities in a raised bog Special Area of Conservation contrary to the European Communities (Birds and Natural Habitats) Regulations 2011 or a raised bog Natural Heritage Area.

25. Certificates of Payment

These shall be in accordance with the Conditions of Contract named above and certificates shall be payable at intervals and subject to retentions.

26. Setting Out

Prior to commencement on site, co-ordinates of all dam locations will be issued to the Contractor. Locations of these dams will be marked out by the Employers Representative using a spray-painted stake. This stake should remain at each location after the dam has been constructed to facility the as-built survey.

A site survey of the as-built construction works will be carried out by the Employers Representative. This is to be facilitated by the Contractor in terms of providing safe access to the works and in assisting with queries raised by the Employers Representative at this time.

27. Earthworks

This specification covers the requirements for earthworks including site clearance; excavation of borrow pits, peat dam construction, installation of plastic dams and construction of Timber dams in drains where required.

27.1 Definitions

Topsoil shall be soil which by its nutrient content can support the growth of vegetation.

Obstructions shall mean rock, concrete, reinforced concrete, solid brickwork, sheet piles and the like met within the excavations. This excludes those met on the surface of the ground.

Formation shall mean the surface of the ground after the completion of any excavation or filling operation.

27.2 General

The Contractor shall carry out all excavations required for the permanent works in whatever material may be encountered. The Contractor shall provide all labour and plant, including all necessary excavating, lifting, haulage and transport equipment to deal with every class of material.

27.3 Clearance of Site

The Contractor shall carry out clearance of the site where necessary prior to undertaking the construction of the peat dams. Existing vegetation shall be removed, temporarily stored onsite and re-used as part of the final backfill layer to the dams. Any excess vegetation, not re-used, shall be disposed of onsite.

27.4 Classification of Excavation

Common Excavation

For the purpose of measurement, common excavation shall mean clay, silt, gravel, sand, chalk, loam, peat, filled material, broken rock and all other similar materials which can be excavated by mechanical excavator or by hand without preliminary drilling, wedging, ripping, or equivalent preparation prior to excavation.

Rock

Rock shall mean any natural hard material or artificial material requiring the use of ripping or pneumatic tools for its removal but excluding individual masses less than 0.2m³ in volume.

If, during the course of excavation, the Contractor encounters what is in their opinion is rock, they shall notify the Engineer immediately so that an examination is carried out. Should the Engineer agree that the material is rock as defined above, all necessary levels and dimensions shall be recorded and agreed before its removal is commenced.

27.5 Extent and Sequence of Excavation

All excavations shall be carried out to the widths, lengths and depths shown on the Contract drawings. The sequencing and extent of all excavation and filling work must be agreed in advance with the Engineer.

27.6 Excavation Methods

Explosives

Explosives shall not be used.

Excavating Plant

Any excavating or earth moving plant and machines used in the duration of these Works will be in accordance with specification criteria set out in this specification. All excavating and earth moving plant and machines shall be of a type fit for the purpose, shall be agreed with the Engineer and shall be maintained in good working order throughout the Contract. The Contractor shall only use plant which is suited to the soils to be handled. They shall not at any time use any plant which damages or reduces the natural strength of the soil either in its in-situ state or during handling and placing or in its final compacted state.

Method Statement

Prior to the commencement of work the Contractor shall provide the Engineer with a detailed Construction Method Statement and construction sequence, this must be approved by the Engineer prior to commencement of any Contract Works.

27.7 Excavation of borrow pits and peat dams

Remove scraw from either side of drain at proposed location of the peat dam. Place material close-by for replacement later. Cut key in the drain approximately 0.5m deep and ensure that it is wider than the actual drain. Remove 0.5m peat from bottom of drain also and place behind the machine for replacement later. Remove scraw from area behind machine to be used as borrow pit. If more peat than usual is required to fill the drain, make sure to widen the borrow hole not deepen it as the best peat for damming is nearest ground level due to its fibre content. Dig out peat from the borrow pit and place into the drain compacting in layers of 3-4 buckets per layer depending on size of drain and machine used. Please reference drawing number NPWS-BBRP-02-15 for the full peat dam construction method and refer to guidance document,

All peat used for dam construction shall be locally sourced, and placed in compacted layers to achieve a stable, watertight structure. Where available scraw should be placed on top of the peat dam similar to machine installed peat dams.

27.8 Installation of Plastic Dams in drains

There are no plastic dams planned for these subsites.

27.9 Installation of Timber Dams (Timber Sediment traps) in drains

Timber dams will require minimal excavation and may be installed in drains within the Machinery Inclusion Zones as detailed on the Restoration plans. The methodology to be used for installation of these Timber dams are shown on drawing number NPWS-BBRP-02-17. The timber dam must be driven at least 5cm below the base of the drain and must extend out past both sides of the drains to form a key. For a more detailed description of these works see drawing number NPWS-BBRP-02-17 and refer to guidance document.

27.10 Installation of Stone Dams

Stone dams will require minimal excavation and may be installed in drains as detailed on the Restoration Plans. The methodology to be used for installation of these stone dams are shown on drawing number NPWS-BBRP-02-16.

Stone dams function as leaky dams and are intended to capture and stabilise suspended peat sediment behind the structure, allowing vegetation to establish over time and thereby further stabilising both the gully base and the dam.

The delivery of stone to dam locations will typically require helicopter lifting due to access constraints. Stone shall be placed by hand to form a stable interlocking structure. All helicopter lifting operations shall be supervised by a trained and competent banksman in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291/2013) and applicable site safety rules.

Following helicopter placement, stones shall be arranged by hand to ensure they are properly interlocked and stable. Stones shall not be stacked to a height greater than 1.0 m and shall be spread across the full width of the drain. The dam profile shall be formed with stones higher at the sides and lower at the centre to prevent erosion of the peat.

Dams shall require approximately 1 m³ of stone per 1 m width of dam. A single helicopter load shall consist of approximately 750–800 kg of stone. Stone sizes shall generally be in the range of 150–400 mm diameter. Smaller cobbles will produce a more watertight dam but may be subject to increased movement, whereas larger cobbles will result in a leakier dam.

28. Filling

This specification covers the requirements for the placement and consolidation of fill.

28.1 Filling Existing Watercourses / Ditches

The original channels shall be carefully filled in with suitable material as specified on the drawings. The materials shall be compacted in accordance with the requirements on Drawings NPWS-BBRP-02-15.

28.2 Compaction

Compaction should be completed in layers as described in drawings NPWS-BBRP-02-15.

29. Environmental Management

Any works carried out on site will be carried out in accordance with the following best practice construction measures and hold as a priority the environmental protection of the site.

29.1 Protection of the SAC

The Contractor must develop a programme of Works to minimise any impact on the Special Area of Conservation. The programme of works shall be approved by NPWS prior to works commencing.

A pre-construction walk over survey will be carried out by the local NPWS Ranger. This survey will identify any nesting birds within the SAC. The Contractor will be given the locations of any nests present and the restrictions associated. The Contractor will incorporate these locations and restrictions into their finalised and approved Method Statement and their planned machine track routes.

The Contractor must plan their access routes onto the bog in advance to cause the least amount of disruption to the SAC. The Construction Method Statement should include the selection of machine track routes to minimize the number of machine passes across this protected habitat, avoid sensitive habitats or species, including nesting birds and avoid very soft ground. The Contractor shall strictly adhere to the machinery exclusion/ machinery inclusion zones as detailed on the Restoration Plans.

Where repeated machine passes or trafficking over soft or sensitive bog are unavoidable, suitable bog mats shall be provided and used to protect the underlying bog and vegetation to prevent rutting, compaction, or disturbance. Bog mats shall be of adequate size, thickness, and load-bearing capacity to safely distribute imposed loads from plant and shall be designed and installed in a manner that ensures continuous support and stability while protecting vegetation and reducing compaction of on the bog. Details should be submitted to and approved by the Employer's Representative in advance of installation. The contractor shall maintain the mats in good condition for the duration of their use, repositioning or supplementing them as necessary to prevent ground damage, ponding, or loss of

access. On completion of the works, the mats shall be carefully removed, and any disturbed areas shall be reinstated to the satisfaction of the Employer's Representative.

The Contractor shall identify any existing access routes on the bog in advance of the Works commencing and these routes should be utilised where possible to access the works and minimize any impact on the SAC.

29.2 Biosecurity Measures

The Contractor must ensure that any excavating or earth moving plant and machines used for the duration of the Works arrives to site clean from all dirt and debris collected from outside the SAC. This will prevent contamination of the site with invasive species collected from outside the SAC.

If the Contractor's plant must leave the site and return during the Works, on its return it must again be presented clean from all dirt and debris from outside the SAC.

The Contractor shall outline their intended biosecurity measures in their Construction Method Statement and comply with Transport infrastructure Ireland's guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010) and the Environmental Agency's guidelines, The Knotweed code of Practice: Managing Japanese Knotweed on development Sites (2005a).

29.3 Material Storage

As shown on the Contract drawings the Contractor compound must be located outside the SAC boundary. No materials are permitted to be stored on the high bog. All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction.

Cabins, containers, workshops, plant, materials storage, and storage tanks shall not be located within 50m of any surface water channels or on the high bog.

No storage of hydrocarbons or any polluting chemicals will be permitted within the SAC boundary which is marked on drawing NPWS-BBRP-02-01 and no storage of same will occur within 50m of watercourses or surface water features. Any diesel or fuel oils stored on site will be banded to 110% of the capacity of the storage tank. The onsite location of all Storage facilities should be agreed with NPWS prior to delivery.

29.4 Re-fuelling

Prior to commencement a suitable location should be identified for machine checks, refueling and storage which need to be approved by a member of NPWS or their representatives before works commence onsite. The Contractor must identify appropriate machine tracking routes for refueling, to

minimize impact to the SAC. All tracking routes should be approved by a member of NPWS or their representatives before work commences onsite.

~~Re-fuelling of plant will not occur within the SAC boundary which is marked on drawing NPWS-BBRP-02-01 or within 50m of any watercourse or surface water feature and only in bunded refueling areas.~~ Design and installation of any fuel tanks to be in accordance with best practice guidelines BPGCS005, oil storage guidelines. Drip trays and spill kits will be kept available on site.

Only emergency breakdown maintenance will be carried out on site. Any proposed emergency procedure should be detailed in the Contractors Method Statement and be adhered to. The Contractor must ensure that all his staff are familiar with the emergency procedures and have spillage kits available to them.

Appropriate containment facilities will be provided to ensure that any spills from the vehicle are contained and removed off site. Adequate stocks of absorbent materials, such as sand or commercially available spill kits shall be available. The onsite location of all Storage and re-fuelling facilities should be agreed with NPWS prior to any deliveries or works commencing.

29.5 Flood Conditions

Works shall not be carried out during flood conditions and all on site works shall be ceased until flood conditions have abated.

No plant access is permitted to areas of very wet ground during the Works, areas of wet ground have been identified through ecotope survey and highlighted on the Contract Drawings. Consideration must be given to the risk of engulfment of plant and personnel and loss of sediment into water courses.

The Contractor shall ensure that all personnel working on site are trained in pollution incident control response. A daily review of weather forecasts is required and if heavy rainfall is forecast the Contractor is required to prepare a contingency plan for before and after such events.

29.6 Management of Surface Water during Construction

Due to the nature of the site, there will be surface water present, and the Contractor should take this into account in their methodology for excavating and placing the fill material when compiling their Construction Method Statement. The Contractor is not permitted to drain, divert, or pump surface water.

29.7 Noise & Vibration - General

The Contractor's particular attention is drawn to the need to minimise the noise generated by the Works. The noise shall comply with BS 5228-1: 2009 Code of practice for Noise Vibration Control on Construction and Open Sites: Noise; BS 5228-2: 2009 Code of Practice for Noise and Vibration

control on Construction and Open Sites: Vibration; Environmental Protection Agency Act 1992 Sections 106-108, Local Authority's specific requirements depending on the location of the site, and Safety, Health and Welfare at Work (Control of Noise at Work) Regulations 2006 SI 371 (2006).

In the absence of more onerous limits arising from these Clauses, the limits as noted in Table 1.0 shall apply.

Table 1.0 Maximum permissible noise levels at the facade of dwellings during construction

Days and Times	Noise Levels (dB)	
	L _{Aeq} (1 hr) - Continuous	L _{pA} (max) - Maximum
Monday to Friday 07.00hrs to 19.00hrs	70	80
Monday to Friday 19.00hrs to 22.00hrs	60*	65*
Saturdays 08.00hrs to 16.30hrs	65	75
Sundays and Bank Holidays 08.00hrs to 16.30hrs	60*	65*

* Construction activity at these times, other than that required in respect of emergency works, will normally require the explicit permission of the relevant Local Authority (BS 5228:2009 Code of Practice for noise and vibration control on construction and open site). Any contradiction between this table and any planning application documents, the contractor is to work to the most onerous time/noise limits.

The limits outlined in Table 2.0 shall only be modified with the express written agreement of the Employer's Representative. All compressors, percussion tools and vehicles shall be fitted with effective silencers of a type recommended by their manufacturers. Noise should be minimised, as far as practicable, by the selection of appropriate methods and equipment, and by the use of silencing devices wherever necessary.

The Contractor shall not permit employees to use radios or other audio equipment in ways or at times which may cause nuisance and cause a Health and Safety risk. Measures shall be taken to minimise noise during periods where it will have the greatest effect on neighbouring buildings.

The Contractor shall carry out their works such that the effect of vibration on the adjoining buildings and surroundings is minimised and does not cause any damage. The Contractor is to refer to this specification or tender / Contract documentation for vibration limits. In the absence of more onerous values the limits set out in table below shall apply. These values shall only be modified with the express written agreement of the Employer's Representative.

Table 2.0 Allowable Vibration levels

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration at a frequency of		
Less than 10 Hz	10 to 50Hz	50 to 100Hz (and above)
3mm/s	3 to 8mm/s	8 to 10mm/s

29.8 Dust - General

The Contractor shall provide, use, maintain and keep available plant and equipment necessary to minimise the formation and accumulation of dust arising from the works, normally in dry weather conditions. If any road becomes soiled by construction traffic from the site, these roads shall be cleaned immediately. In dry weather periods dust emissions from the site shall be prevented from occurring by the dampening down of access road, public road, stockpiles, waste piles and plant leaving the site.

30. Pre-Condition Site Surveys

The Contractor shall complete a Pre-Condition Site Survey of the access road into the site. The Contractor shall be required to produce a full photographic record of the condition of this road. The Contractor shall also include for producing a full photographic record of the condition of existing structures on site and on neighbouring and adjacent sites. All existing defects noted during the pre-condition survey, shall be described, and photographed within the report. The report shall provide a clear and unambiguous record of the condition prior to works commencing. All surveys shall be completed by a Chartered Engineer. The Contractor shall be required to submit 1 paper copy, in colour, of the survey reports to the Employer and to the Employer's Representative. Digital copies of all reports shall be issued to the Employer and the Employer's Representative. All surveys and reports shall be completed and issued to the Employer's Representative at least 2 weeks in advance of the Contractor commencing works on site.

31. Site Security

The Contractor is responsible for the security of the site. They must adequately safeguard the site, the works, products, materials arising, plant and any existing buildings affected by the Works from damage, theft and trespass. The Contractor must take all reasonable precautions to prevent unauthorised access to the site, the works and adjoining property.

The Contractor, prior to construction must agree with NPWS the location of all access routes to be used and allow for all necessary restrictions and costs that may be incurred through the requirements of any statutory undertaking or Statutory Regulations. The Contractor will provide, maintain and alter

from time to time, as may be required all necessary temporary structures and facilities for access to the site and the works and clear away when no longer required and pay all charges.

No fences or hoarding may be used for advertising purposes, and the Contractor must keep any fences or hoarding clear from advertisements unless otherwise instructed by the Employer's Representative.

The Contractor shall make the site safe on completion.

32. Archaeology

The following procedures for the protection of archaeological discoveries are to be adopted by the Contractor. All Contractor personnel must be made aware of these requirements through toolbox talks prior and throughout the Works.

- Be vigilant at all times - objects or traces of structures can be found on the field surfaces, in the drain faces, on the bog margins or caught within the mechanics of machinery.
- If an object is found leave it in place, if it is safe to do so, note its position and immediately contact the Employers Representative who will in turn contact the archaeological liaison officer who will assess the situation and contact the Duty Officer of the National Museum of Ireland. Resist the temptation to investigate the find spot as this may disturb fragile archaeological deposits.
- If the object is already dislodged or is in imminent danger, remove it carefully, mark it's find spot and report it immediately to the Employer's Representative.
- Objects made of wood, leather, or textiles, which are removed from peat, should be kept in conditions similar to those in which they are found. This can be done by packing them in peat or, if waterlogged, placing them in a clean basin of water and sealing the container. Resist the temptation to clean or remove peat from the object.
- If timbers or other materials, such as gravel or stones, which could be part of a man-made structure, are noted on the bog, mark the location and report it immediately to the Employers Representative who will in turn report to the Archaeological Liaison Officer. If you suspect the find is of archaeological importance, resist the temptation to expose it any further as this could result in damage to the structure.
- Report anything that looks unnatural in the bog – to the Employers Representative who will in turn report to the Archaeological Liaison Officer who will decide whether it should be referred to the appropriate authorities.

33. Delay Events

The Contractor may make a claim for additional time to the Employers Representative on the basis of a delay to the substantial completion of the Works caused by any of the following.

- The events defined under Clause 2.7 of The Conditions
- An item of archaeological interest or human remains are found at the site.