S.38 Reeve's Fields Rewetting, Fenn's, Whixall & Bettisfield Mosses NNR.

Works.

1. **Background to Natural England**

   The Authority is Natural England. The Authority's priorities are to secure a healthy natural environment; a sustainable, low-carbon economy; a thriving farming sector and a sustainable, healthy and secure food supply. Further information on the Authority can be found at: www.naturalengland.org.uk

2. **Background to the specific work area relevant to this purchase**

   2.1. Reeves' Fields are situated adjacent to Whixall Moss towards the southeastern perimeter of the internationally important 949 ha Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses Site of Special Scientific Interest (S.S.S.I.), which is also a Special Area of Conservation (SAC) and forms part of the Midlands Meres and Mosses Ramsar Site. The fields to be restored lie within the S.S.S.I and the Fenn's National Nature Reserve (N.N.R.). It is NNR Section 38 on **Annex 1**.

   2.2. The Marches Mosses BogLIFE Project (LIFE15NAT/UK/000786) terminated in March 2023, and now the unfinished works are being tackled using NNR staff and funds from the Nature for Conservation Peatland Grant Scheme (NFCPGS).

   2.3. The BogLIFE Project aimed to allow better control of water levels to enable wetland habitat to be restored on land which has been converted from peatland to peaty fields. The 6.27 ha of Reeves's fields used to be peatland, and originally formed part of the south-eastern edge of the SAC and Ramsar site, significant as the 3rd largest lowland raised bog in the UK. Overall, this Project will rewet at least 2.65 ha of deeper peats in Section 38 plus support water levels in adjacent Whixall Moss to the north.

   2.4. It is anticipated that this contract will be awarded for a period of 4 weeks to end no later than 21/3/25 and is subject to technical approval. Prices

will remain fixed for the duration of the contract award period.

3. **The Project**

3.1. In 2009 the Whixall Manor Drain, which was taking polluted and mineral-rich water up from the Moss Cottages onto and across the Moss, was diverted nearer to the edge of the Moss through sections 46 and 44 to the new culvert under the Roundthorn Bridge track between S44 and 38 (**Annex 1**). The downstream 195m of the Diversion between fields 38.3 and 38.4 was left in the existing channel. In 2024 the Diversion of this section was completed by excavating a 210 m-long new channel farther south near the top of the slope of S.38.4 (**Annex 2**).

3.2. The final 195m of the Drain through the deep peat body between S38.3 and 38.4 was also blocked in 2024 with three dams (D1 to D3 on **Annex 2**). One 300mm I.D.U-pipe was installed in each dam to allow for any future emergencies such as blockages in the new channel.

3.3. **This work** aims to restore the natural flow of water from north to south through Section 38. This will be achieved by using cell bunding, a new feeder ditch, peat dams and long and short balance pipes to raise peat water levels on the bunding areas shown in red on **Annex 2** to bring water levels to within 10 cm of the peat surface for more than 70% of the year, permitting Sphagnum bogmoss or lagg vegetation to establish or spread and to outcompete grassland plants on S.38.

3.4. The work involves rewetting 2.65 ha of peat using small cell bunds, breaking any land drains encountered, and installation of 300mm I.D. U-pipes to take water from one part of the fields to another. (**Annex 3**), Plus short 3m-long 225mm I.D. balance pipes to enable greater control of water levels in each of the 51 cells.

The purpose of the bunding is to make any degraded surface layers impermeable by breaking field drains, peat pipes and bunding surface peats to create water-tight bunds – (2.65 ha 1-15yr root-plates, **Annex 4**). The objective for bunding is to create watertight cells in the three fields, S38.2, 38.3 and 38.4 **(Annex 2)** which will prevent water running through damaged surface peats, pipes, cracks or field drains, so rainwater or imported bog water can be held on the areas to no more than 15cm above the surface. This is achieved by digging trenches in damaged peat, breaking all drainage channels and repacking the trench with solid impermeable peat to create bunds. The bunds need an impermeable core projecting 15cm above “ground” level topped by a protective cap of turf.

Construction of the bunded cells is as described in the Natural England’s Peat Bog Restoration Framework Agreement (22468) Framework documentation Lot 2, **Annex 4.**

Low ground pressure excavators must be used. Bogmats must be used to avoid damaging the peat in wet areas and at pinch points such as gateways.
Unless otherwise specified, bund cores should only be about 150mm above turfed ground level before turf is put back on, unless contours locally dip when higher stretches should be created.

3.5. Materials (twin-walled pipes, bends and seals) for the rewetting Project will all be provided by Natural England and **must be collected** by the contractor from Manor House NNR Base**.**

4. SITE INFORMATION
Location, Ground conditions, Substrate, Areas, Peat Depths and Topography

4.1. Mire Location.

The site of the fields in the S.38 Proposals (**Annex 1**) was originally on the edge slope of the dome of Whixall Moss, which had expanded up to the boundary of the Whixall clay moraine which forms the high mineral ridge to the south-east of the peaty fields. A lagg stream carrying a mix of acidic nutrient poor water running off the bog and mineral rich water flowing off the moraine would have flowed around the south and eastern edge of the fields, explaining the curved outline of field S38.4. The recently installed Diversion Completion **(Annex 2)** has replaced this stream.

4.2. Peat

Carr, fen and swamp vegetation growing on edge of the bog formed fen peat progressively as the bog spread outwards overwhelming the wildwood that grew around the bog. Bog rand (edge slope) peat would have formed on top of this fen peat to make the sloping edge of the raised bog. Bunding may uncover some of the trunks of the oaks from the ancient wildwood. If so, these should be set aside at the direction of the Project Officer.
Beard (1992) found the fields to the west of the Track leading north from Roundthorn bridge had loamy sand below the peat.
Peat depths on the Scheme fields are shown on **Annex 2**, (Daniels, 2024). To summarise, the peat on the S.38 fields gets rapidly deeper from south-east to north-west passing from marginal peats into the main peat body of Whixall Moss.
Peat depths range from 25 cm to 50cm in the southernmost field S38.5 over the sandy ridge. Then at the lower level in S38.4, they vary from 25 to 42cm to 170cm getting progressively deeper from east to west. In field S 38.3 they range from 140cm to 320cm, getting shallower towards S38.1 and deeper towards S 38.2. Peat in S.38.2 varies from 200 to 283cm.

Peat in S38.1 varies from 65cm to 300cm generally increasing to the north and east, away from the western Whixall Moss Main Drain.

4.3. **History.**

4.3.1. The Shropshire Union canal was cut through 2 miles of Whixall Moss in 1807. However, the installation of culverts below it at Roundthorn Bridge and Roving Bridge indicated that drainage of the Moss was well underway by this date.

4.3.2. In 1823 an Enclosure Act was passed, and a set of arterial drains were installed in 1826 to drain the Mosses. These Drains and culverts allowed the water levels in the peat and surrounding mineral ground to be lowered, allowing the Enclosures on the Moss edges to be converted into fields The surface peats of the Fields would possibly have been cut off to level them.
The invert of the Roundthorn culvert has thereafter set the minimum water level for the S.38 fields.

4.3.3. There were two "turfbotes" or turf-lined houses on the peaty fields of the Scheme **Annex 2** – Cranberry Castle in the north-west corner of S 38.1 and another in the south-east corner of S. 38**.2**. The second turfbote in the SE corner of S.38.**2** was occupied by Barry Chase's family until the mid-1960s. It was a smallholding with lots of shacks. The base must be avoided during bunding.
In the dry climate of the 1970s and 1980s the fields were good farmland, with hay crops and cattle after-grazing. Since the fields were acquired by NE, in June 1996, they have been managed until recently by grazing with light cattle and hay crops by grazing licensees. Despite the ditches round S38.2 being dammed, this field has remained too dry, so all 3 peaty fields needs bunding.

4.4. <u>Topography</u>

The contours for each field are shown overlain on aerial photographs in **Annex 2.** There is a slope of ca 75cm south-west from the NE corner of S.38.2 at 88.5m AOD to the 88m AOD. contour which runs from the NW corner of S38.2 to the SE corner of S.38.2. The fields slope again to the SW to the 87.5mAOD. contour which runs from the Whixall main drain along the S38.1/38.3 ditch to ca halfway along, then cuts southwest to run along the base of the slope of the sand ridge in S38.5.

4.5. <u>Main drains</u>

The main drains around each block of land are shown on Annex 2. The boundary ditch/ ditches designated as the outlet to the bunded areas must not be blocked unless specified as part of the rewetting scheme.

5. Ecology and Wildlife

5.1. The Ecology Report “280623.PEA - Reeves Field Whixall Moss - PEA Report (August'23) FINAL SEC38 V2 DEC23” has been commissioned by NE from Pearce Environmental Consultants, (document 2.1), which highlighted the value of Reeves’ Fields for water voles, great-crested newts, bats, breeding birds possibly including owls, potentially reptiles - common lizards and adders, otters and insects and made recommendations as to how to carry out the works to mitigate the effects on these species. This report is available on request.

5.2. The immediate impacts for species are summarised below;

5.2.1. • Bats – conserve the hedgerow boundary and trees; although they provide a low suitability they provide a suitable area for additional roosting facilities.

5.2.2. • Nesting Birds – NE to provide a scheme to ensure a sensitive re-vegetation programme and suitable grassland management. Works to be carried out outside the bird breeding season. If owls are breeding, works would need to be carried out after the end of August.

5.2.3. • Amphibians and Reptiles – Suitable Risk Avoidance Measures are to be followed

5.2.4. • Badger – Suitable Risk Avoidance Measures are to be followed

5.2.5. • Water Vole – There are water voles in the area and suitable habitats; however, it is considered that there is not a requirement for a licence to displace water voles for development projects from Natural England (NE); provided an avoidance mitigation strategy is adopted and adhered to.

The exact location of the bunds will be set to avoid any water vole burrows. Maintenance strips will assist with this.

6. The S38 Reeves Fields Rewetting Works (Annexes 2 and 3, OS 349779 335919)

6.1. **The Framework work categories (Annex 4) include:.**

CELL BUNDING

Bog Surface (intact - tree scrub removal completed, 1-15 year old tree root plate 7.5m apart) 51 cells, mainly either 20 xa 20 m or 30 x 30 m, total ca 2490 m, varying from 13 to 36m in length**.**

DAMS

Drains (drain damming), 1.5x1.5m

- 5 no**.**

BALANCE PIPES (to be supplied by Natural England)

O/S - installation of long balance pipes 300 mm I.D.

- 11 no. 10m long (UD1-6 and 8 - 12)

- 2 no. 6m long (UD7 UD13)

BALANCE PIPES (to be supplied by Natural England)
O/S - installation of short balance pipes 225 mm I.D.
- 48 no. 3 m long (ud1 - ud48)

FEEDER DRAIN
O/S 1 no, 50m long 0.75m wide by 0.75m deep

TRACKS
Track repair, reinstatement
- Access track maintenance and make good – peat tracks
- As necessary to 50m.

Access track re-instatement – peat tracks
- As instructed to 50m**.**

REPORTING
Work also includes preparation of materials for the H&S file CDM Co-ordinator Including a contractor programme of Works and RAMS and an As- built report and plotting bund/ dam locations, to be supplied electronically**.**

6.2. **Methodology**

6.2.1. **Order of works** should be S38.2 then S38.3 then S 38.4.

6.2.2. **Bunding.** Construction of the bunded cells is as described in the Framework documentation Lot 2, sections 1.3, 2 and 3, **Annex 4.** Please note that unless otherwise specified, bund cores should only be about 150mm above ground level before turf is put back on, unless contours dip when higher stretches should be created. Land drains, grips and cracks should be blocked and bunded through as part of the cell construction.

6.2.3. **Damming ditches.** These vary from 0.5m x 0.5m to 1.5m x 1.5m. Ditches should be blocked using dams as described in the Framework Lot 2 section 4. **Annex 4**.

6.2.4. **Balance pipes (Annex 2).** 6m or 10m-long 300 mm internal diameter U-PVC twin-walled balance pipes to be installed through peat dams or bunds and under tracks in specified locations, fitted with seals and 90 degree bend at U/S end, to conduct water under the above structures to outfall at an appropriate level, with sufficient cover of peat/ soil on tracks to support specified vehicular use.

3m-long 225 mm internal diameter U-PVC twin-walled balance pipes to be installed through cell bunds in specified locations, fitted with

seals and 90 degree bend at U/S end, to conduct water under the bunds to outfall at an appropriate level.

6.2.5. **Feeder drain.**
Ca. 50m long, 0.75 m wide and 0.75 m deep as shown on **Annex 2**, at the west end between S 38.1 and 38.3.

6.2.6. **Track Maintenance and re-instatement.**
Methodology generally for peat tracks as specified in section 6 of **Annex 4.**

6.2.7. **As-built Report and electronic location records**
A brief report of works is required. Electronic data collected during the operations should be provided as a shapefile showing bund, dam, feeder drain and balance pipe locations. Intellectual Property Rights will reside with Natural England.

6.3. Boundaries. See **Annexes 2 and 3** for details.

S 38.2 0.58 ha (grid ref. 349755 336023)
NW NE and SW – 8m off boundary ditches MD2, AD2 and ID1 respectively
SE – 3m off MD3 and 8m off MD3 from crossing point near east end.

Cell Bunding. Use 12no. 20 x 22m-ish cells to rewet section 38.2 (90m E-W, 57m N-S). Fall 0.75m.

Balance Pipes. 3 no. UD1- UD3 to redistribute water from section 23 and the Roundthorn Bridge track west drain AD2 into section 38 and 1 UD4 to convey excess water to S38.3.
11 no. 3m-long pipes through bunds to re-distribute water through this section. Details for these short pipes (grid refs, orientations and which end the collars should be on are given in **Annex 3**.

No.	Grid ref	Length and details
Inflow		
UD1	349784 336073	length ca.10m, from AD2, under maintenance track and fence into cell, collar on northeast at 88.5mAOD.
UD 2	at 349728 336052	ca.10m long, from MD2, under track and fence into cell, collar on northwest.
UD 3	349689 336026	ca.10m long, from ID1, under track into cell with collar on west.
Outflow		
UD 4	349746 335975	?ca.10m long, through the dam in MD3 from cell to cell, with collar on north.

Dam.
Dm3 at 349798 336063 to part-block north-south drain AD2 and push water through UD1 into S 38.

Turfing Dipwell.
There is one turfing dipwell D2 near ud5 at 349775 336024 which must be avoided during bunding.

S 38.3 - 1.23 ha (OS. 349796 335951)
SE NE and SW – 8m off boundary ditches MD4, AD1 and AD2 respectively
NW –8m off MD3 against S.38,1 and from the Roundthorn track to the crossing point near east end. 3m off MD3 from the SE corner of S38.1 to the crossing point. Fall 0.75m mainly in the Eastern two-thirds of the section (OS. 349793 335950) which has a fall of 0.6m, compared to the 0.2m fall in the western third of this section (Grid ref. 349714 335894).

Feeder Drain. 1no.
1m wide,0.75m deep, ca. 50 m long, parallel to MD3, to take water from S.38.1 into 2 no. U shaped 30 x30-ish cells in S 38.3

Cell Bunding. Use ca 18 no. 20 x 20m-ish cells to rewet section the higher eastern two-thirds of the S.38.3. I row of 2no. U-shaped cells next to the 50m-long feeder drain against S38.1 and the SW end of MD3and 1 row of 2no. 30m x 30m cells.

Balance Pipes. 5 no. UD5 to UD9 to redistribute water from section 38.1 and section 38.2 into section 38.3 and I no. UD10 to allow water out at the bottom end of the section back into the recently dammed Whixall Moss Main Drain MD4.

No.	Grid ref	Size and details
Inflow		
UD 5	349725 335954	10m long, from MD3 under the track and into the cell, collar on N
UD 6	349679 335923	10m long, from MD3 under the track and into the cell, collar on N
UD7	349789 335992	6m long from MD3 into cell, collar on N
UD 8	349830 336015	10m long from AD2 under track and fence and into cell, collar on NE
UD 9	349862 335973	10m long from AD2 under track and fence and into cell, collar on NE
Outflow		
UD10	349699 335865	10m long, from SW cell under track and fence to AD1 collar on NE

There are 21no. 3m long balance pipes through bunds to re-distribute

water through this section. Details for these short pipes (grid refs, orientations and which end the collars should be on are given in **Annex 3**.

Dams.4no.
Dm1 at 349660 335910 to block MD3 and force water through UD6 u-pipe into the feeder drain and hence into the lower area on S38.3
Dm2 at 349714 335946in MD3 to force water through UD5 u-pipe into the central area on S38.3
Dm4 at 349838 336006 in AD2 to push water through UD 8 into the high NE corner area of S.38.3 above the 88m AOD contour.
Dm5 at 349867 335967 in AD2 to push water through UD 9 into the SE corner area of S.38.3 below the 88m AOD contour.

Turfing Dipwell.
There is one turfing dipwell D1 near ud19 at 349812 335960 which must be avoided during bunding.

S 38.4 - 0.84 ha (Grid ref. 349790 335874)
NW– 3m off boundary ditches MD4.
SW –8m off AD1
NE – 8m from the crossing point (D1) on MD4 following the Diversion
SE – 8m north of the Diversion

Cell Bunding. (a triangle, 180m E-W by 75 m to 12m N-S with a higher eastern two-thirds).
Use 2 no. 30x 30m cells in the northwestern corner, ca 9 no. 20 x 20m-ish and 1 southern row of 6 no.- 20 x 10 m plus 2 no 36 x 25 m U-shaped cells to rewet section 38.4 **(Annex 2).**
Bund round the large tree, being careful not to damage its roots.
The southernmost row of cells should be U-shaped, open to the SE, keyed into the bank. The eastern end should be fitted with whatever size cells makes sense, depending on the substrate.

Balance Pipes. 3 no. long balance pipes to redistribute water from the dammed Whixall Manor Drain into section 38.4 and to allow any excess water to return into the recently dammed Whixall Moss Drain MD4 near D3.
No. Grid ref Size and Details
Inflow
UD 12 at 349625 335985, ca.10m long, from MD4, NE of D2 into cell
UD 13 at 349839 335933, ca. 6m long, from MD4 S of D1 into cell.
Outflow
UD11 at 349715 335844, ca.10m long, from NW cell of S 38.4 under track under fence and into MD4, collar on northeast.

There are 16 no. 3m long balance pipes through bunds to re-distribute water through this section. Details for these short pipes (grid refs, orientations and which end the collars should be on are given in **Annex 3**.

7. Access and Highways

7.1. The site is accessed by 4x4 by driving west along the south side of the canal from Platt Lane Bridge to Roundthorn Bridge, Whixall, as shown on **Annex 1**, then crossing Roundthorn bridge and parking in the layby north-east of it. Machinery will be driven from Manor House across the Moss **(Annex 5).** It will then be tracked down the track and in through the gate in the south-east corner of section 38.3. To get into S38.2 there is a crossing point and to get into S38.4 cross D1, taking care because of protruding trench sheets.

7.2. Existing field gates will be used during the scheme construction phase.

7.3. Disruption to the users of the unadopted stretch of the Track leading north from Roundthorn Bridge during the construction phase must be avoided where possible. This track is part of the NNR Mosses Trail so is intermittently used by NNR visitors.
Contractor's vehicles will park in section 38.5 (**Annex 1** and **Annex 5**), south of the construction site or in the Natural England layby car park at OS350103 335732 or in the small car park in the South-east corner of section 38.5 at OS349951 335842, 180 m north of Roundthorn Bridge. Machinery, which is likely to comprise one tracked excavator and one tracked dumper, will need to be dropped off at Manor House NNR Base at SJ505366 and tracked across the Moss as shown in **Annex 5**. Any welfare unit will be taken along Canalside, south of the canal to the Roundthorn Bridge layby as it cannot be tracked across the Moss and can be placed in the field in the south-east corner of Section 38.5.
Welfare facilities will be confirmed on the site visit.

8. **Timing**
   The work is planned to be carried out between January and before mid-March 2025 and no later than 20th March.

9. **Site Visit**
   It is compulsory to have visited the Site with Nathan Brake, NE's Reserve Manager on **9th December 2024** at 9:00 am. Submissions where the Contractor has not visited with the Reserve Manager will be automatically disqualified.

10. Work Requirement and Method of the Construction Works

10.1. Duties under CDM Regulations

a) review Pre-Construction Information

b) Prepare a Construction Phase Plan (CPP)

c) Ensure that the CPP and RAMS are approved before commencement of the Work.

d) Supervise work in terms of accuracy and workmanship.

e) Hold twice-weekly meetings with NE and the Principal Designer when on-site, to update on progress, and by other communication means as necessary.

f) Alert NE as to any major required variations and agree costed written modifications with the Principal Designer and NE's Reserve Manager.

g) Provide "As built" information to Principal Designer.

h) The Contractor will be responsible for immediately reporting any accidents involving either their personnel or the public to the Natural England's Senior Reserve Manager. All incidents involving the public, however minor, are reportable under RIDDOR.

REVIEW COMPLETION DATES*.

Site visit for Construction Tenderers – Monday 9th December 2024 9:00am

Clarification of questions - Wednesday 11th December 2024 10:00am

Deadline for submissions - Monday 16th December 2024 9:00am

The Construction Contractor is to be appointed by December 18th 2024.
Preconstruction and CDM meeting - Tbc
Works to be completed by 20th March 2025.

DRAWING SET (8 NO.)

Drawings in showing residual risks will be given to the successful contractor.
Residual risks are shown on **Annex 6 and 7** in compliance with CDM requirements.

Annex Number	Title	Availability
Annex 1	Location Plan – NNR Section 38 – NNR Sections and Subsections	pdf
Annex 2	S.38 Bunding – 2.65 ha with 1new Drain, 5 dams and 13 long Balance-/U-pipes and 48 short Balance-/Upipes	pdf
Annex 3	Cell Bunding, Balance-/U- pipe and dam statistics	pdf
Annex 4	Extract from Cumbrian BogLIFE Framework	pdf
Annex 5	Access to site for tracked and untracked vehicles	pdf
Annex 6	Whixall S.38 rewetting services alerts	pdf
Annex 7	S. 38 rewetting services residual risk alerts	pdf
Annex 8	Water supplies meters troughs stoptaps	pdf

General

- The works are all **permanent works associated with the rewetting of the S.38 Reeves's Fields Restoration Scheme.**
- The Employer is **Natural England,** Fenn's, Whixall & Bettisfield Mosses National Nature Reserve, Manor House, Moss Lane, Whixall, Whitchurch, Shropshire, SY13 2PD.
- Natural England Contract Project Officer is Dr Joan Daniels.
- The Principal Designer is X **of Y Ltd.**
- A site meeting at the start of works will be held between the contractor, an NE representative, and the Principal Designer on a date tbc.

Outputs

Key Deliverables

a.	**Bunding of Section 38.2, 38.3 and 38.4** as shown on Annex 2 and in Annex 3	Complete by 19th March 2025 unless otherwise agreed by the Reserve Manager
b.	**Installation of 13 longer U-pipes, 48 short U-pipes and 5 dams and 1 feeder drain** as shown on Annex 2 and in Annex 3	Complete 19th March 2025 unless otherwise agreed by the Reserve Manager
c.	**Peat track maintenance and repair 50 +50 m = 100m**	Complete 21st March 2025 unless otherwise agreed by the Reserve Manager
d	**As-built Report and electronic location records**	Complete 20th March 2025 unless otherwise agreed by the Project Officer and give to the Supervising Engineer

SITE ACCOMMODATION AND WELFARE AND MATERIALS

If required a works welfare unit can be sited in the Roundthorn Bridge layby car park or in the south-east corner of section 38.5. See **Annex 1**.

All materials are to be supplied by Natural England (Client) Unless otherwise agreed the Contractor will be required to collect and transport the materials from the Fenn's, Whixall & Bettisfield Mosses National Nature Reserve Base, Manor House, Moss Lane, Whixall, Whitchurch, Shropshire, SY13 2PD to designated temporary stockpile areas on the site, as agreed with the Reserve Manager**.**

Staff at NE are to be notified in advance of any materials that are to be collected from the NNR Base. Contact Nathan Brake Nathan.Brake@naturalengland.org.uk 07880 462288 or Pete Bowyer peter.bowyer@naturalengland.org.uk 07974 784795 to arrange collection.

Permitted Site Access routes

During the course of the works a maximum speed limit of 15 mph will be imposed on the unsurfaced lengths of Moss Lane and leading to Mountain View at

Roundthorn Bridge, which the Contractor's plant and transport will adhere to, and they must give way to vehicles of local residents.

The Contractor shall be allowed access to the site as detailed in **Annex 5** and at such times as may be considered necessary by the Supervising Engineer. A key to locked gates will be provided to the successful contractor and Supervising Engineer.

The Contractor shall carry out whatever temporary works and erect such signs that are necessary to construct and maintain access for the use of vehicles during the Contract period and shall reinstate the accesses to their original condition, unless otherwise directed by the Engineer, on completion of the Works.

The Contractor shall allow for the making good of any surfaces damaged because of their access requirements to the site.

Underground and overhead Services

The location of underground and above ground services, are based on receipt of information returned by the Statutory Undertakers, included Statutory Undertaker and Utility Survey Plans of this Contract in **Annex 6** to **8.** Residual Risks Alerts, and information from local land owners for private supplies**.** All services will need to be confirmed by the Contractor on site prior to commencing construction works,

Site investigations

The site is owned by Natural England (**Annex 1**). The names of relevant adjoining properties referred to below are shown on this map.

Annex 2 indicates the presence of peat throughout the site, see paragraph 4.2 above.

Weather conditions need to be constantly monitored, and items of work planned in accordance with predicted forecasts. In addition, the choice of tracked plant with low bearing pressure is essential when working in deeper peat areas to avoid becoming "bogged down" and the need for rescue of equipment which is expensive and also can be extremely damaging to the peat body.

Utilities and Apparatus

Prior to commencing works on site, it shall be the responsibility of the Contractor to satisfy themselves that all utilities on site have been located, identified, disconnected, and diverted as required, prior to commencing work in the area. For further details refer to **Annex 6** to **8.**

Notable utilities and services identified within the general vicinity of the site work area are as follows:

- Scottish Power Energy Network – underground high and low voltage
- BT Open Reach – overhead and underground
- Severn Trent - underground

Other below ground or overhead services may be present within the extents of the works. It is the Contractor's responsibility to locate all services and utilities prior to commencing any excavation.

Public access

The Contractor shall ensure that unambiguous signage of all pedestrian routes and access points on or adjacent to the works are clearly defined at all times. The track leading **north** from Roundthorn Bridge forms part of the NNR Mosses Trail.

Interface with other contractors

No other Contractors are known at this time.

Pre-construction health and safety information

The employer places great emphasis on the application of the Construction (Design and Management) Regulations 2015 (CDM 2015) to this project. As part of the award process, the tenderer will be required to provide information to Natural England containing evidence of the competency to conform to CDM 2015. The pre-construction Health and Safety Information will be supplied to the successful contractor by the Principal Designer prior to the commencement of the works.

Provide an Outline Construction Phase Health and Safety Plan.

Limitations of the Plan.

The Health and Safety Plan prepared by the Principal Designer is based initially on the information provided by the Employer and the Project Manager.

A hazard identification has been prepared and incorporated into the Health and Safety Plan and is based on design assumptions and methods of construction foreseen.

This hazard identification will be provided in the pre-construction Health and Safety plan provided to the successful contractor.

Additional hazards may be identified by the Contractor, and these should be included in a construction phase Health and Safety Plan

Health and Safety Files.

A Health and Safety file available relating to these works will be required to be produced by the Principal Designer.

Hazards.

Hazards identified in the design and which cannot be avoided are identified on drawings which will be supplied to the successful contractor - **Annex 6 to 8.** **Annex 6** shows hazards on the route to the Works site and nearby.

All necessary precautions are to be taken to ensure the safety of the general public and the protection of adjacent boundaries during the construction works in respect of:

- Access and egress to the working area along line of footways/footpaths
- Overhead and underground services;
- Works adjacent to the public highway;
- Works adjacent to boundary/ retaining walls;
- Site clearance;
- Street lighting columns;
- Restrictive working width;
- Noise/ vibration restrictions;
- Materials;
- Use of generators and electrically operated plant;
- Electrical works;
- Weather.

It is anticipated that the Contractor's management will co-operate with the Principal Designer in identifying and resolving any problem with the design, and in value engineering and risk management, to ensure the safe and efficient conduct of the works.

Excavation

The Contractor's Health and Safety Plan should include details of how excavation work will be undertaken.

The Contractor shall designate earthmoving areas and require all personnel to wear high visibility clothing in those areas.

Plant

All operators of plant and vehicles shall have been appropriately trained and the Contractor shall provide the Client with such certification or other evidence of such training as part of the quotation.

The Contractor shall supply the Client with documentary evidence to demonstrate that all statutory requirements for certification of plant, machinery and equipment have been implemented. Certification shall be provided for all lifting machines (including excavation) and lifting tackle.

The Contractor will include in their Health and Safety Plan details of their preventative maintenance procedures.

The Contractor must use tracked plant with low ground bearing pressure in recognition of the poor ground conditions within the bog.

Vehicular Movement and Pedestrian Safety

The Contractor shall include in their Health and Safety Plan details of the protective and preventative measures to be adopted to ensure that plant and vehicle movements can be safely undertaken.

Temporary Site Welfare Units.

The successful Contractor will be responsible for the location, security and safe storage of all temporary site welfare units and well-stocked first aid arrangements.

The successful Contractor shall develop and maintain systems for monitoring visitors to the works, and providing for issue of safety helmets, jackets and the like to visitors, and provide written proposals concerning the general Health and Safety Management of the site.

Health and Safety Legislation.

The Contractor and any works subcontractors are required to implement the requirements of all current health and safety legislation.

Employer Health and Safety Requirements and Site Rules.

The successful Contractor shall comply with the requirements of the Principal Designer as set out in this document and at all times diligently observe and apply the provisions of the Health and Safety Plan.
The Client's and Principal Designer and their Safety Officer may visit the site at any time and shall be afforded unrestricted access to the works.

Copies of the Contractor's Safety Officer's inspection reports are to be provided for the Engineer at each site progress meeting.

If the Contractor fails to take appropriate remedial action to failures or defaults in site operations or methods of site organisation noted verbally or in writing by the Safety Officers or the Supervising Engineer; the matter may be reported to the Health and Safety Executive.

The Contractor is to:

- submit names of sub-contractors for approval,
- issue written instructions for sub-contractors to commence works,
- ensure compliance, by any sub-contractor working on the site, with the requirements of the Health and safety plan.

None of the matters will relieve the Contractors of their statutory duties or obligations.

Risk Assessment.

Risk assessments will be carried out in accordance with current legislation requirements and will be required to substantiate safety method statements.

Method Statements.

The successful Contractor and any appointed subcontractors will prepare detailed and specific method statements (RAMS) where required and before commencing work.

Safety Training.

All persons employed on the project must, irrespective of their status, attend a safety training induction course co-ordinated by the Contractor. All contractors will ensure that all personnel are appropriately trained for their allotted tasks.

First Aid.

The Contractor will ensure that appropriately stocked first aid facilities together with trained first-aiders are available at the site of the Works in accordance with Health and Safety (First Aid) Regulations 1991. Copies of the First Aid certification are to be provided by the successful contractor.

Health and Safety Management.

The successful Contractor will develop and operate a health and safety management system. Details of the system will be submitted to the Supervising Engineer and Project Officer.

The information submitted will contain at least the following:

- The methods of monitoring and controlling health and safety;
- A list of health and safety procedures to be included in the Health and Safety Plan;
- Information as detailed in this document;
- An organisation chart showing key health and safety personnel;
- The names and key qualifications of key personnel;
- Duties of key personnel;
- Details of how the requirements of SD 10/95 and SD 11/95 of Volume 6 of the Manual of Contract Document for Highway Works are to be met;
- Emergency procedures i.e. name of first aider, location and telephone number of local doctor and hospital.

Personal Protective Equipment.

Hearing protection must be provided by the Contractor as required by the Noise at Work Regulations 1989.

High visibility garments to BS EN ISO 20471 are to be worn by all personnel on-site.

The whole of the site will be designated a hard-hat site and head protection will be provided by the contractor.

Footwear will have steel toecaps and steel midsoles (steel side studs are not allowed). Protection for eyes, ears and respiration will be provided by the Contractor, where there is a risk of injury or damage to health.

The contractor is to provide a comprehensive store of Personal Protective Equipment (PPE) that will be maintained at suitable levels and will be readily available to all site staff at all times, for the duration of the works contract.

Pollution.

Disposal of waste on site will not be permitted. It is the Contractor's responsibility to dispose of waste to locations licensed for the specific purpose and will be transported by licensed carriers.

Special care must be taken to avoid pollution of any Watercourse. Contractor to provide Emergency spill kits, including a boom, and use biodegradable hydraulic oils in plant where possible.

Emergency Procedures.

The successful Contractor is to develop emergency procedures. All contractors will ensure that all personnel are appropriately trained for their allocated tasks.

The successful Contractor shall ensure that a 24 hour emergency contact service is provided and signed / advertised throughout the works.

A list of local medical and emergency services shall be provided by the Contractor and should include but not limited to the following;

Accident and Emergency facilities.

Doctors surgeries

Police Station.

Ambulance Station.

Fire Station

Other Restrictions.

The successful Contractor shall ensure the works are executed in a safe and proper manner and that the needs for access are fully provided for in the Contractor's methods of working. The Contractor is to report to the Engineer and Project Manager his proposals for dealing with them.

Sustainability

Natural England protects and improves the environment and is committed to reducing the sustainability impacts of its activities directly and through its supply chains. We expect the Contractor to share this commitment and adopt a sound, proactive sustainable approach in keeping with the 25 yr environmental plan/our commitments compliant with all applicable legislation. This includes understanding and reducing direct and indirect sustainability impacts and realising opportunities, including but not restricted to; resilience to climate change, reducing greenhouse gas emissions, water use and quality, biosecurity, resource efficiency and waste, reducing the risk of pollution, biodiversity, modern slavery and equality, diversity & inclusion, negative community impacts.

As a delivery partner, the successful contractor is expected to pursue sustainability in their operations, thereby ensuring the Contracting Authority is not contracting with a supplier whose operational outputs run contrary to the Contracting Authority's objectives. The successful contractor will need to approach the project with a focus on the entire life cycle of the project

Project Management

TBC at 10:00 am– Start up meeting between Reserve Manager Nathan Brake, the Principal Designer and the Contractor

Site meetings as agreed between Principal Designer, NE and the appointed contractor, as appropriate. Maximum of 2 per week.

W/C March 17th 2025- Wash up meeting

Annexes 1 – 8

Annex 1 NNR Sections and Subsections.pdf

Annex 2 S38 bunding plan V5.pdf

Annex 3 Cell Bunding, U -pipe and

Annex 4 Extract from Cumbrian BogLIFE Framework.pdf

Annex 5 Whixall S38 Access to site.pdf

Annex 6 Whixall S38 rewetting services alerts.pdf

Annex 7 S38 Rewetting Services Residual Risks Alerts.pdf

Annex 8 Water supplies meters troughs stoptaps.pdf