Engineering and Construction Short Contract

Contract Data Forms

June 2017
(with amendments January 2023)

Template version history

V1 (as per bidder pack)	Go live template (this document)

NEC4 Engineering and Construction Short Contract

A contract between	**The Environment Agency** **Horizon House** **Deanery Road** **Bristol** **BS1 5AH**
And	**AmcoGiffen Head Office** **Regional Head Office - North** **Whaley Road** **Barugh** **Barnsley** **S75 1HT** [redacted]
For	**Bywell Bank Stabilisation**
	Contract Forms - **Contract Data** - **The *Contractor's* Offer and *Client's* Acceptance** - **Price List** - **Scope** - **Site Information**

Contract Data

The *Client's* Contract Data

	The *Client* is	
Name	Environment Agency	
Address for communications	The Environment Agency, Tyneside House, Skinnerburn Road, Newcastle, NE4 7AR	
Address for electronic communications	[redacted]	
The *works* are	To undertake a ground investigation and the subsequent analysis to determine the cause of the bank slippage that occurred at Bywell gauging station following Storm Desmond in 2015, together with the risk / likelihood of future slippage / movements at the site and the associated impacts on the existing infrastructure and its usage. Develop solutions to address these risks; short term and long term as necessary with the aim of agreeing a preferred option(s).	
The *site* is	Bywell, Northumberland, NE43 7TX NGR: NZ 03912 61684 W3W:///:went.croutons.quote	
The *starting date* is	28/04/2025	
The *completion date* is	17/10/2025	
The *delay damages* are	[redacted]	Per day
The *period* for reply is	[redacted]	weeks
The *defects date* is	[redacted]	weeks after Completion
The *defects correction period* is	[redacted]	weeks

The *assessment day* is	the last working day	of each month
The *retention* is	nil	%
The United Kingdom Housing Grants, Construction and Regeneration Act (1996) **does** apply		
The *Adjudicator* is :		
In the event that a first dispute is referred to adjudication, the referring Party at the same time applies to the Institution of Civil Engineers to appoint an *Adjudicator*. The application to the Institution includes a copy of this definition of the *Adjudicator*. The referring Party pays the administrative charge made by the Institution. The person appointed is also *Adjudicator* for later disputes.		

Contract Data

The *Client's* Contract Data

The interest rate on late payment is		% per complete week of delay.
Insert a rate only if a rate less than 0.5% per week of delay has been agreed.		
For any one event, the liability of the *Contractor* to the *Client* for loss of or damage to the *Client's* property is limited to	The Contract Price	
The *Client* provides this insurance	None	

Insurance Table

Event	**Cover**	**Cover provided until**
Loss of or damage to the *works*	Replacement Cost	The *Client's* certificate of Completion has been issued

Loss of or damage to Equipment, Plant and Materials	Replacement Cost	The defects Certificate has been issued
The *Contractor's* liability for loss of or damage to property (except the works, Plant and Materials and Equipment) and for bodily injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor's* Providing the Works	Minimum £5,000,000 in respect of every claim without limit to the number of claims	
Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law	
Failure of the *Contractor* to use the skill and care normally used by professionals providing works similar to the works	Minimum Contract Price in respect of every claim without limit to the number of claims	6 years following Completion of the whole of the works or earlier termination

The *Adjudicator nominating body* is	The Institution of Civil Engineers
The *tribunal* is	litigation in the courts

The *conditions of contract* are the NEC4 Engineering and Construction Short Contract June 2017 (including 2023 amendments) and the following additional conditions

Only enter details here if additional conditions are required.

Z1.0	Sub-contracting
Z1.1	The *Contractor* submits the name of each proposed subcontractor to the *Client* for acceptance. A reason for not accepting the subcontractor is that their appointment will not allow the *Contractor* to Provide the Works. The *Contractor* does not appoint a proposed subcontractor until the *Client* has accepted them.
Z1.2	Payment to subcontractors and suppliers will be no more than 30 days from receipt of correct invoice.
Z2.0	Environment Agency as a regulatory authority
Z2.1	The Environment Agency's position as a regulatory authority and as *Client* under the contract is separate and distinct. Actions taken in one capacity are deemed not to be taken in the other.
Z2.2	Where statutory consents must be obtained from the Environment Agency in its capacity as a regulatory authority, the *Contractor* is responsible for obtaining these and paying fees (unless stated otherwise in the Scope). The *Client's* acceptance of a tender and the *Client's* instruction or variation of the works does not constitute statutory approval or consent.
Z2.3	An action by the Environment Agency as regulatory authority is not in its capacity as *Client* and is not a compensation event.
Z3.0	Confidentiality & Publicity
Z3.1	The *Contractor* may publicise the works only with the *Client's* written agreement.
Z4.0	Correctness of Site Information
Z4.1	Site Information about the ground, subsoil, ducts, cables, pipes and structures is provided in good faith by the *Client* but is not warranted correct. The *Contractor* checks the correctness of any such Site Information they rely on for the purpose of Providing the Works.
Z5.0	The Contracts (Rights of Third Parties) Act 1999
Z5.1	For the purposes of the Contracts (Rights of Third Parties) Act 1999, nothing in this contract confers or purports to confer on a third party any benefit or any right to enforce a term of this contract.

Z6.0	Design
Z6.1	Where design is undertaken, it is the obligation of the *Contractor* to ensure the use of skill and care normally used by professionals providing similar design services.
Z6.2	The *Contractor* designs the parts of the works which the Scope states they are to design.
Z6.3	The *Contractor* submits the particulars of their design as the Scope requires to the *Client* for acceptance. A reason for not accepting the *Contractor's* design is that it does not comply with either the Scope or the applicable law. The *Contractor* does not proceed with the relevant work until the *Client* has accepted this design.
Z6.4	The *Contractor* may submit their design for acceptance in parts if the design of each part can be assessed fully.
Z7.0	Change to Compensation Events
Z7.1	Delete the text of Clause 60.1(11) and replace by: The *works* are affected by any one of the following events • War, civil war, rebellion revolution, insurrection, military or usurped power • Strikes, riots and civil commotion not confined to the employees of the *Contractor* and sub-contractors • Ionising radiation or radioactive contamination from nuclear fuel or nuclear waste resulting from the combustion of nuclear fuel • Radioactive, toxic, explosive or other hazardous properties of an explosive nuclear device • Natural disaster • Fire and explosion • Impact by aircraft or other device or thing dropped from them
Z8.0	Framework Agreement
Z8.1	The *Contractor* shall ensure at all times during this contract it complies with all the obligations and conditions of the Framework Agreement made with the *Client*.
Z9.0	Termination
Z9.1	Delete the text of Clause 92.3 and replace with: If the *Contractor* terminates for Reason 1 or 6, the amount due on termination also includes 5% of any excess of a forecast of the amount due at Completion had there been no termination over the amount due on termination assessed as for normal payments.
Z10.0	Data Protection
Z10.1	The requirements of the Data Protection Schedule shall be incorporated into this contract
Z11.0	Liabilities and Insurance
Z11.1	Civil data protection claims and regulatory fines for breaches of Data Protection Legislation are excluded from any limit of liability stated.
Z110	Inflation At the Contract Date the total of the Prices does not include a sum to cover inflation. The total of the Prices [at the Contract Date] shall be adjusted by a fixed number of Price Adjustments. The number of Price Adjustments shall be equal to:

	The number of months between the Completion Date included at the *starting date* and the Contract Date. The proportion of Price Adjustment shall be equal to: The total of the Prices at the Contract Date / The number of Price Adjustments Each time the amount due is assessed, the Price Adjustment shall be: The proportion of Price Adjustment x [80% x Construction Output Price Indices (OPIs) New work output prices: Infrastructure Index 1 – month rate] The Construction Output Price Indices (OPIs) New work output prices: Infrastructure Index 1 – month rate shall be the value determined by the Office of National Statistics for the applicable month of the amount due assessment Provided always that the fixed number of Price Adjustments has NOT been exceeded. The Price Adjustment adjusts the total of the Prices. If a compensation event under this contract omits original Scope covered by the total of the Prices at the Contract Date the Price Adjustments made under this clause shall be corrected accordingly.

Contract Data

The *Contractor's* Contract Data

	The *Contractor* is	
Name	Amalgamated Construction LTD	
Address for communications	Whaley Road | Barnsley | S75 1HT	
Address for electronic communications	[redacted]	
The *fee* percentage is	[redacted]	%
The *people rates* are		
category of person	unit	rate
The *published list of Equipment* is		
The *percentage for adjustment for Equipment* is		

Contract Data

The *Contractor's* Offer and *Client's* Acceptance

The *Contractor* offers to Provide the Works in accordance with these *conditions of contract* for an amount to be determined in accordance with these *conditions of contract*.	
The offered total of the Prices is	£87,614.70
	Enter the total of the Prices from the Price List.
Signed on behalf of the *Contractor*	
Name	[redacted]
Position	[redacted]
Signature	[redacted]
Date	25/04/2025
The *Client* accepts the *Contractor's* Offer to Provide the Works	
Signed on behalf of the *Client*	
Name	[redacted]
Position	[redacted]
Signature	[redacted]
Date	3.6.25

Price List

Entries in the first four columns in this Price List are made either by the *Client* or the tenderer.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tenderer enters the amount in the Price Column only: the Unit, Quantity and rate columns being left blank.

If the *Contractor* is to be paid an amount for the item of work which is the rate for the work multiplied by the quantity completed, the tenderer enters the rate which is then multiplied by the expected quantity to produce the Price, which is also entered.

In addition to completing the Price List below, the Contractor is to submit a detailed price breakdown that includes all of the elements that make up each Item in the Price List below.

Item Number	Description	Unit	Quantity	Rate	Price
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]

[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
[redacted]	[redacted]	[redacted]			[redacted]
				The total of the Prices	£87,614.70

The method and rules used to compile the Price List are

Civil Engineering Standard Method of Measurement 4th edition (CESMM4) as per the Framework Price Workbook.

Scope

The Scope should be a complete and precise statement of the *Client's* requirements. If it is incomplete or imprecise there is a risk that the *Contractor* will interpret it differently from the *Client's* intention.

The Environment Agency (EA) Programme and Contract Management (PCM) team for the North-East Hub is seeking to appoint a *Contractor* through Lot 1 of the Asset Operation, Maintenance and Response (AOMR) Framework to deliver the ECI phase for investigating the riverbank slippage adjacent to Bywell Gauging Station.

1. Description of the *works*

Give a detailed description of what the *Contractor* is required to do and of any work the *Contractor* is to design.

1.01 Location

1.01.1 Bywell, Northumberland, NE43 7TX, NGR: NZ 03912 61684, What3Words: went.croutons.quote

1.01.2 Bywell gauging station is located on the northern (left) bank of the River Tyne to the west of Bywell village, Northumberland, as shown in Figures 1 and 2 below.

Figure 1: Site Location

Figure 2: Bywell gauging station - View from opposite (right) bank

1.02 The Site

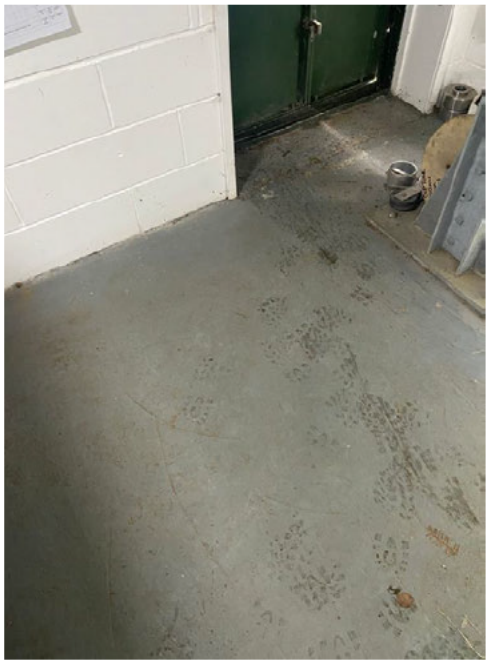
1.02.1 The gauging station comprises a recorder hut building with concrete path and steps leading down to the River Tyne. The building provides access to the telemetry outstation and shaft encoders recording accurate river level measurements, cableway equipment used for gauging the flow of the river, plus the stilling well which connects to an inlet pipe beneath the site to stabilise the water level to create more accurate data. The site is an open channel with no control structure or weir. Refer to the photos in Figures 3 to 6 below, and also Appendices A and H.

Figure 3: Bywell gauging station

Figure 4: Steps leading to the River Tyne

Figure 5: Access path

Figure 6: Inside the gauging station



1.02.2 The gauging station at Bywell is used to measure the river level at the site. By doing regular check gaugings it also allows the EA to confidently calculate the flows coming down the River Tyne. This information is then used for a variety of reasons, including river regulation, return periods, flood forecasts, flood reporting, dry weather events, data requests (internal and external), situation reporting etc. Currently, the site is visited every 2 months for data collection, checking there's no issues on site or that the well doesn't need flushing. If flushing is required, this is done with a 2-inch pump. The use of the cableway is currently red-carded. Previously, when not red-carded, the site would be visited 10 times per year, with the site also used as a meeting point for EA staff to exchange equipment. Typically, when collecting data from the site the EA staff would just have a laptop bag (rather than any bulky equipment) and either enter the building or, if doing gauging, set up underneath the cableway and attach to it.

1.02.3 Bywell is one of the EA's most important sites in the north-east and is the main gauging station on the River Tyne used to ensure compliance of the Kielder Dam impoundment licence and associated minimum

maintained flow (MMF). Within the Kielder Operating Agreement (KOA) there is a specific clause relating to accuracy of flow measurements (see clause 2.4.1.3 extract below) hence the importance of site maintenance.

> 2.4.1.3 Where gauging facilities are owned by the Environment Agency (Reaverhill with respect to Barrasford and Bywell with respect to Riding Mill) they will be maintained by the Environment Agency to adequate standards for such purposes. This shall include sufficient current meter gauging to ensure accuracy of low flow measurement within ± 5%. The Environment Agency may also carry out current meter gauging at Undertaker owned stations.

1.02.4 Following Storm Desmond in December 2015 signs of slope instability appeared in the riverbank adjacent to the gauging station. Whilst there has been no obvious continuation of movement since then at the surface, the EA is keen to understand the risk around any potential ongoing / future instability and associated impacts on the existing infrastructure and its usage.

1.02.5 As such the EA has undertaken a range of monitoring and investigations to date, the details of which are described in Section 1.03 below.

1.03 Background Information

1.03.1 A timeline of the history of the site, including photographs, showing how it has developed through the years, is included in Appendix A.

1.03.2 Historic drawings, photos and bed profiles can be found in Appendix B. Please note the changes that have occurred at the site as indicated on the timeline in Appendix A. As such these drawings do not accurately represent current infrastructure on site but are included for information.

1.03.3 In 2016 the EA prepared a report focused on the hydrology of the December 2015 flood event. Later that year JBA undertook a hydrological assessment of the River Tyne Recovery Study Both reports contain information about Bywell (peak flows, return periods) as well as other sites. The data could be useful for comparison in the future. The event still stands as the largest on the gauged record at Bywell. However, as mentioned in the reports there was a flood in the 1700s that was predicted to have been greater. These reports can be found in Appendix C.

1.03.4 In 2017 a Newcastle University PhD student prepared a dissertation to assess the bank stability at the site. This included drilling a borehole, and undertaking some modelling, the results of which can be found in Appendix D.

1.03.5 In February 2022 Arup prepared a Bank Stability Report, which can be found in Appendix E. This stated that further work would be required to confirm the exact mechanism of failure and recommended further monitoring of the site.

1.03.6 In February 2023 two permanent concrete survey pillars were constructed at the gauging station site; one on each bank. Topographical survey monitoring of the area in front of, and adjacent to, the gauging station was subsequently undertaken between February 2023 and March 2024, the results of which can be found in Appendix F.

1.03.7 Similarly, in December 2022 crack monitoring kits were installed on the gauging station and readings taken intermittently through to July 2024, the results of which can be found in Appendix G. It is noted that there are no cracks evident inside the building on the floor slab.

1.03.8 In July 2023 a site visit was undertaken by the EA to review the evidence on site of any movements. A summary of what was found can be seen on the annotated images included within Appendix H. It is noted that the images may not be exhaustive of all potential issues at the site and provide a snapshot of observations at a point in time. The *Contractor* would need to verify the current conditions on site.

1.03.9 During the July 2023 site visit it was identified that there is an extensive rabbit warren on the bank which could influence the stability of the slope. Some initial internal discussions regarding rabbit proofing were held, the outcomes of which can be found in Appendix I. These are provided for information only.

1.03.10 In December 2022 a bathymetric survey was undertaken which was used to develop CFD modelling at the site. The survey report and data are included within Appendix J. Part of the project was to model shear stress predictions to inform understanding of bank erosion issues and mitigation measures. The Report (August 2023) can be found in Appendix K, with a summary of the findings given below:

- *"the vegetation upstream and downstream of the gauging station which leads to the low bank-side velocities observed in the ACDP data, is thereby probably also providing some erosion protection to the bank*
- *there is no evidence of high shear stresses predicted at the bank toe, suggesting that oversteepening is not a likely failure mechanism*
- *there is some evidence that for the very high flows experienced in Storm Desmond, some localised bank scour could be possible, but this is indicated further up the bank and therefore unlikely to contribute to the observed slip failures*
- *we therefore consider that, of the suggestions presented in Arup's 2022 Report, the most likely cause of the instability issues are saturation of the slope materials during these high water levels and subsequent drawdown effects"*

1.04 Purpose of the Works

1.04.1 The purpose of the works is to determine:

- the cause of the bank slippage that occurred following Storm Desmond in 2015
- the risk and likelihood of future slippage / movements at the site under both normal and high (significant storm event) flow conditions, and the associated impacts on the existing infrastructure and its usage
- solutions to address these risks, ensuring that access in and around the gauging station is safe for EA personnel. This could be both short-term and / or long-term solutions depending on the findings of the investigation.

1.04.2 As such the *Contractor* shall:

- Attend a project startup site meeting, to be organised by the Project Manager. The Designer, Client Rep, Field Team Rep., and FBG Rep. are all to attend.
- Attend fortnightly Progress Meetings, once the FRAP has been approved, through to Completion. The *Client* chairs and records these meetings.
- Review the background information listed in Section 1.03 and advise the *Client* if any further information is required.
- Design and carry out a ground investigation (GI) as necessary to provide sufficient information to address the points noted in 1.04.1 above. The GI is to be in accordance with the Specification for Ground Investigation, and EA Minimum Technical Requirements. Any site investigation must take the stilling pipe location into account.
- Undertake vegetation / tree clearance works as required in advance of the GI, to be agreed with EA FBG in advance.
- Undertake appropriate geotechnical analysis using the findings from the site investigation and background information review to address the points noted in 1.04.1 above.
- Consider whether the installation of geotechnical instrumentation (e.g. inclinometer / extensometer) should be undertaken as a risk mitigation measure.
- Review and assess the impacts that temporary / permanent damage to any of the existing assets at the site (as a result of ground movements) would have on data capture and / or quality.
- Include an allowance for engaging a surveyor to undertake further monitoring of the site levels. Include a price per visit, with an allowance of 3 visits included.
- A tree survey and potential roost feature (PRF) assessment is being undertaken in advance of the GI, outside of this contract, to inform the location of any boreholes and trial pits. If any potential solutions will impact existing trees on site that have not already been assessed by this initial survey / assessment, then the *Contractor* will need to appoint a suitable qualified arboriculturist to carry out an additional tree survey to BS5837 for trees within the Zone of Influence (ZoI) that may be affected by the proposed works. The additional tree survey should be sufficient to inform an Arboricultural Impact Assessment (AIA). This would

need to be accompanied by appointing a Suitably Qualified Ecologist (SQE) to undertake a further PRF assessment, which would need to be in accordance with Bat Surveys for Professional Ecologists, 2023.

- Submit details of any proposed surveys or investigations to the *Client* for review prior to them being undertaken. Details should include a plan(s) showing the extents of works together with method statements, and indications of lead-in times and duration of works.
- Obtain inputs from structural engineers as appropriate.
- Confirm the findings of any site investigation findings, and initial thoughts on potential options to the EA at a Progress Meeting, prior to developing the options in earnest. It is noted that both short-term and long-term options may be appropriate e.g. could a quick short-term solution buy time in the event a more complex long-term solution is warranted? The design life of each option should also be considered.
- Any option suggested must allow for continued safe use and operation of the gauging building, instruments, telemetry etc throughout any design, investigation and construction period.
- Examples of options for consideration are: do nothing, ongoing monitoring, use of a geotextile type material to act as a rabbit deterrent, addition of rainwater management to the building, replacement of the concrete steps with steel ones, stabilising the bank, or relocating the gauging station. Note this is not an exhaustive list.
- Present the outline options to the Project Manager, Client Representative, Field Team Representative, and FBG for agreement at a workshop. The options are to be presented in the form of Drawings with an associated options assessment matrix as a minimum. The number of options will be site dependent. Comments to be returned by the EA within 2 weeks of submission, unless otherwise agreed.
- If any potential solutions will impact existing trees on site, the *Contractor* will need to commission a suitable qualified arboriculturist to undertake an AIA on the outline design options submitted, to inform option selection.
- Provide high level costs and programmes for each option. The costs are to be indicative whole life costs i.e. including any regular maintenance, specialist inspections, ongoing monitoring etc. as applicable in addition to Detailed Design and Construction costs.
- If the relocation of the gauging station is determined to be an option, the *Contractor* will need to include for applying for planning permission and undertaking a Biodiversity Net Gain assessment within the programme for that option.
- Produce outline design drawings for the agreed option(s) and confirm the high-level costs, and programme.
- Submit all completed documentation to the *Client*. The documentation will be reviewed with comments returned within 2 weeks of submission, unless otherwise agreed.
- Submit Carbon reporting and deliverables in accordance with the requirements of the AOMR framework.
- Undertake 3 No. bat roost characterisation (emergence) surveys. These must be completed between mid-May and the end of August and adhere to survey guidelines from the Bat Conservation Trust (Collins 2023). At least 3 weeks must be allowed between surveys.
- Apply for all the relevant permits and permissions for the work. They will be arranged in advance of the works starting by the *Contractor*. It is noted that the Flood Risk Activity Permit (FRAP) is being applied for through a different contract for expediency. The FRAP must be in place prior to any works commencing on site.

1.04.3 For the GI the *Contractor* shall:

- Protect the public throughout the site investigation, for example using signage and other means to segregate the public from the works.
- Arrange for any vegetation clearance as necessary to enable the site investigation to take place, ensuring no damage to the existing topographical monitoring points established on the site.
- Ensure that the operation of all Environment Agency assets on the site are not hampered during work and provide adequate protection to safeguard the existing installations from the proposed works.

- Provide necessary onsite welfare facilities as required.
- Take into account the area is considered part of the local flood plain.
- Reinstate the site to current condition (or better) following any works.
- Make best efforts to resolve any issues encountered on site, such as, but not limited to, access issues or local distress. The *Contractor* must inform the *Client* of any problems which cannot be resolved on site as soon as possible.
- Provide a programme for the works and keep the *Client* updated on a start date. A minimum of two weeks' notice to the *Client* is required before works start on site.
- Produce safe work plans, detailed work instructions and emergency evacuation plans for all the activities involved as part of the works.
- Ensure good biosecurity procedures are always followed. Please refer to Section 1.06.6 of this document for further requirements.
- Work in accordance with the EA's SHEW CoP and update all CDM documentation throughout the works as appropriate.
- Include an allowance for any on-site ecological supervision / mitigation required before and / or during the works. Pre-works checks will be required by a Suitably Qualified Ecologist (SQE) for otter, badger, nesting birds, red squirrels, reptiles, toads (and hedgehogs, should disturbance to habitat piles be required for storage of materials or parking of vehicles). The SQE will also need to be on site during the works in case vibrations cause bats to be disturbed from the gauging station. Refer to Section 1.06 for more details of FBG requirements.
- As per Framework Standards, refer to the following general documents for executing the works in a safe manner:
    - Environment Agency's SHEW CoP
    - Environment Agency's FCRM Minimum Technical Requirements V12
    - Environment Agency's LIT16405 Safely Managing Work at Height
    - Environment Agency's LIT12226 Work Restraint, Fall Arrest and Rope Access Equipment
    - HSE L23 Guidance: Manual Handling Operations Regulations
    - UKCA MARK
    - PAS2080 Standard for Managing Infrastructure for Carbon

1.05 What the EA Will Do

- Stakeholder engagement in advance of work to make them aware of any planned works and dates; and obtain any specific requirements from any third-party stakeholder. Key stakeholders are listed below:
    - Landowner (Allendale Estates)
    - Fishing Proprietor (Bywell Salmon Fishing Syndicate)
    - NCC Planning (if required)
- Issue Notice of Entry to the landowner and occupier at least 1 week prior to gaining access to site.
- Provide utilities details (refer to Appendix O).

1.06 FBG

1.06.01 A Preliminary Ecological Appraisal has been prepared by the EA and is included as Appendix N.

Species:

<u>1.06.1 Fish</u>

Impact Assessment - Fish

1.06.1.1 Whilst the GI works will be on terrestrial habitats, there is the potential for them to cause an impact to fish through damage to bankside vegetation which offers shelter and shade for fish and a risk of water pollution and sedimentation, through use of machinery in close proximity to the watercourse. Noise and vibration from the

use of percussive techniques associated with the drilling and digging works, could also impact both resident and migrating fish.

Mitigation – Fish

1.06.1.2 It is recommended that there is avoidance of carrying out the percussive drilling work during periods of elevated flows when fish (salmon and sea trout) are more likely to be migrating (migration season is February to November inclusive). There should also be significant breaks in drilling activity to allow fish to pass by the works area, particularly if it is not possible to schedule the works outside of the migration season. Mitigation is also to include: pollution and sediment prevention, biosecurity and INNS measures, being in place and implemented.

1.06.1.3 No drilling is to be done at night or at dawn / dusk. This is particularly important when flows are low.

1.06.1.4 A log of drilling activity is to be recorded.

1.06.2 Bats / Trees

1.06.2.1 There are bat roosts associated with the gauging station building. As such the *Contractor* must ensure that the bats are not disturbed by any works (including vibration) on the site.

1.06.2.2 Gauging Station: Works could proceed if the following are addressed:

- No drilling within 5 m of the building
- When drilling >5m from the building:
    - Apply a soft start e.g. ramp up slower and start works later in the day to reduce impact to bats
    - Consider use of a silent rig

1.06.2.3 If possible, any drilling for the GI should be rotary rather than percussive, to minimise noise and vibration.

1.06.2.4 No night-time working is expected on site for the GI works and therefore no temporary lighting installation is required. However, should attendance at Site during darkness be required, there must be no direct illumination of the gauging station or trees without consultation with Biodiversity.

1.06.2.5 Should bats be sighted around the work site during the day, works must stop immediately, and advice sought from the Biodiversity Technical Officer, Biodiversity Advisor or SQE.

1.06.2.6 The EA has undertaken an eDNA screening from bat droppings on the building (collected 22/10/24) to determine the species present. The results were received 07/11/24 as follows:

- East face wall, outside – inconclusive
- South face wall, outside – Soprano pipistrelle Pipistrellus pygmaeus
- Inside building beneath loft hatch – Soprano pipistrelle Pipistrellus pygmaeus

1.06.2.7 Three bat roost characterisation (emergence) surveys are required. These must be completed between mid-May and the end of August and adhere to survey guidelines from the Bat Conservation Trust (Collins 2023). At least 3 weeks must be allowed between surveys.

1.06.2.8 The trees that had previously been highlighted as being dangerous and needing removal / partial removal (tree numbers 1, 13 & 20 within the Tree Assessment Report in Appendix M) were removed by the EA on Friday 14th February 2025. No other trees are believed to pose a hazard to health at the time of writing.

1.06.2.9 If there are changes to conditions of trees and others are assessed as needing to be removed / have branches removed, FBG will need to undertake Ground Level Tree Assessments on these ahead of any works.

1.06.2.10 If GI or other larger scale works need to be within a tree root protection zone, and this is agreed by an arboriculturalist, a potential roost feature (PRF) assessment of the trees should be caried out first. Refer to Section 1.06.11 for further information.

1.06.3 Otter

1.06.3.1 Otter are known to be present within the area, and have been observed accessing the right bank (opposite the building), although no holts were identified on the left bank at the site itself. FBG undertook an otter survey in

October 2024 and the results are provided as part of the PEA, which is included as Appendix N. A further otter survey will be undertaken by FBG in March 2025.

1.06.3.2 Pre-work checks will need to be undertaken ahead of GI works by a SQE. The pre-work check should include viewing with use of binoculars from the opposite bank, to address the constraints of access not being possible to the toe of the bank on the gauging station side.

- No loud percussive works should occur within 1 hour of dusk and dawn.
- Any excavations created during the works should be fitted with a ramp to allow animals to escape, or excavations should be covered at the end of each day.
- No night-time working is expected on site for the GI works and therefore no temporary lighting installation is required. However, should attendance at Site during darkness be required, there must be no direct illumination of the Stonyverge Burn and River Tyne without consultation with Biodiversity.
- Should otter be seen passing in the water, works must stop immediately to allow the otter to pass. When the otter move away from the site, work can commence.
- Should otters be sighted around the work site on terrestrial land, works must stop immediately, and advice sought from the Biodiversity Technical Officer, Biodiversity Advisor or SQE.
- Should the otter appear distressed, advice must be sought from a Biodiversity Technical Officer, Biodiversity Advisor or SQE before works can proceed.
- Rotary drilling is recommended in preference to percussive. If this is not possible, then contractors must follow a "soft start" approach.
- If inactive for more than 5 minutes, plant should be turned off to prevent disturbance from unnecessary idling.

1.06.4 Badger

1.06.4.1 No evidence of badger has been found on the Site to date, but there is potential for transient / foraging badger to use the site, or for badger to establish setts between the time that the PEA survey was undertaken and when works commence. A pre-work check should be undertaken by a suitably qualified ecologist (SQE).

1.06.4.2 The following points should be implemented to avoid impacts from the works:

- Any excavations created during the works should be fitted with a ramp to allow animals to escape, or excavations should be covered at the end of each day.
- No night-time working is expected on site for the GI works and therefore no temporary lighting installation is required. However, should attendance at Site during darkness be required, lighting should be for as short a time as possible to reduce impact to any foraging badgers.
- Should a badger be sighted during works, works must stop immediately, and the advice of a Biodiversity Technical Officer, Biodiversity Advisor or SQE must be sought.

1.06.5 Nesting Birds

1.06.5.1 Habitats on site provide suitable nesting opportunities for birds. GI vegetation clearance works should be timed to avoid the nesting bird season which runs from March to August inclusive. If this time cannot be avoided, pre-work nesting bird checks must be carried out by a SQE. Active bird nests are protected irrespective of time of year of species. Should an active nest be found, direction on how to proceed will be given and mitigation may involve a stand-off distance at the discretion of the ecologist (which will vary with species), or suspension of works until the nest is finished being used.

1.06.6 Red squirrel

1.06.6.1 Pre-works check by SQE should be undertaken of trees on Site ahead of GI works. If works are in the non-breeding season (October – January inclusive), the distance required for checks can be reduced as appropriate.

1.06.7 Reptiles

1.06.7.1 Mitigation to include a plan for designated storage areas for vehicles, equipment and materials which avoids tree root protection areas and other locations with crevices where reptiles may be resting or hibernating. Pre-work checks are required by a SQE prior to the breaking of the ground for the GI works if mounds of rocks or crevices are present.

1.06.8 Other Notable Species

Hedgehog

1.06.8.1 Mitigation to include a plan for designated storage areas for vehicles, equipment and materials which avoids tree root protection areas and other locations where hedgehogs may be resting or hibernating. Pre-work checks are required by a SQE should disturbance to any habitat piles be required.

Toad

1.06.8.2 Mitigation to include a plan for designated storage areas for vehicles, equipment and materials which avoids tree root protection areas and other locations where toads and other amphibians may be resting or hibernating. Pre-work checks are required by a SQE prior to the breaking of the ground for the GI works.

Habitats:

1.06.9 Tyne River, Corbridge – Stocksfield Local Wildlife Site

1.06.9.1 Part of the site is within the Local Wildlife Site. There is the potential for direct damage to the grassland from digger/borehole machine. Indirect impacts to habitats include from pollution, sedimentation and introduction of Invasive Non-Native Species (INNS). Mitigation includes pollution and sediment prevention plans being in place and followed, biosecurity measures being implemented and ensuring that the method statement includes the known INNS and their location on site, with details of soil movement and mitigation to prevent transfer around site or off site.

1.06.10 Modified and Other Neutral Grassland

1.06.10.1 Mitigation should be in place to minimise impacts from the works and should include a plan for storage of materials and vehicles on site to prevent soil compaction.

1.06.10.2 INNS known to be on site, including their location, should be included in a method statement. This should detail soil management during works and address how INNS will be prevented from being transferred around Site or off Site. Biosecurity measures should also be in place.

1.06.10.3 The turves required to be removed in-front of the borehole, should be stored and replaced after works are finished. Should there be need for grassland/wildflower species mix to be sown, native species of a local provenance should be used.

1.06.11 Other Woodland (mixed, mainly broadleaved)

1.06.11.1 Mitigation should be in place to minimise impacts from the works (soil compaction and damaging roots), which could have adverse effects on tree health. To prevent damage to trees within the zone of influence of the GI works, an arboriculturist should be appointed to complete a tree survey to BS5837 and determine appropriate RPZ (root protection zones) for each tree. A report should subsequently be developed, which identifies a suitable location for the borehole and slip trench (taking into consideration the need for the borehole to be at least 5m from the gauging station building), as well as the location for the storage of vehicles, equipment

and materials. The works should be at least 5 m away from the gauging station building and at least 5 m away from adjacent trees, or outside of the RPZ (whichever is the greater).

1.06.11.2 If the RPZ is less than 5 m, works closer to the trees may be possible subject to a potential roost feature (PRF) assessment being undertaken by a SQE, in accordance with survey guidelines from the Bat Conservation Trust (Collins 2023), which confirms no PRF's are present.

1.06.11.3 If GI or other larger scale works need to be near trees, a potential roost feature (PRF) assessment of the trees should be carried out first.

1.06.11.4 INNS known to be on site, including their location, should be included in a method statement. This should detail soil management during works and address how INNS will be prevented from being transferred around Site or off Site. Biosecurity measures should also be in place.

1.06.12 Stonyverge Burn and the River Tyne

1.06.12.1 Mitigation should be in place to minimise impacts from the works and should include pollution prevention and sediment control methods. INNS known to be on site, including their location, should be included in a method statement. This should detail soil management during works and address how INNS will be prevented from being transferred around Site or off Site. Biosecurity measures should also be in place.

1.06.13 Biosecurity and Invasive Non-Native Species (INNS)

1.06.13.1 Himalayan Balsam and Snowberry have been identified on site. Biosecurity and INNS protocol shall be followed for all equipment, personnel and PPE arriving to, and leaving, site to limit the spread of harmful pathogens, live organisms, seeds or other plant material.

1.06.13.2 The site manager should inspect plant arriving to site and, anything arriving unclean should not be off-loaded and should be sent back to the supplier. Equipment/PPE should be clean and free of mud before being sprayed with Virkon.

1.06.13.3 Snowberry is not a schedule 9 species but is invasive due to its vigorous suckering habit which causes it to spread from its original planting; it then produces dense thickets which outcompete other less vigorous plants.

1.06.13.4 If any proposed works impact the Snowberry, it is recommended that it is removed outside of bird nesting season, by digging it out of ground due to its suckering nature and then chipped as it could re-sprout if it's left on the ground. Chippings will be able to be left on site.

1.06.13.5 The Check, Clean and Dry campaign should be followed; check your equipment and clothing for live organisms, particularly in areas that are damp or hard to inspect; clean and wash all equipment, footwear and clothing thoroughly. Items should be left to dry for a minimum of 48 hours. Further information on biosecurity can be found here:https://www.nonnativespecies.org/what-can-i-do/check-clean-dry/

1.06.13.6 Risk of channel pollution due to materials being washed away in the channel. All works should adhere to the Pollution Prevention Guidance for Businesses provided by the Department for Environment, Food and Rural Affairs and Environment Agency, in particular the section 'Construction, inspection and maintenance' that includes 'Work in, over or near a river, stream, lake or pond'. https://www.gov.uk/guidance/pollution-prevention-for-businesses.

1.2 *Contractor's D*esign

1.2.1 The *Contractor* designs all temporary works to complete the *works*. This may include any designs needed to ensure the GI does not result in failure of the bank, and / or designs to address a bank failure should it occur as a result of the GI.

1.3 Accommodation

1.3.1 The *Contractor* shall provide accommodation, services and facilities as is necessary to complete the *works*, as quantified and priced in the Framework Pricing Workbook.

1.4 Access to the Site

1.4.1 Prior to first entry to the *site* to undertake physical *works*, the *Contractor* shall record the condition of the *site* and accesses to the *site* through photographs and videos (to include as a minimum; accesses, adjacent land, storage and compounds). These are submitted to the *Client* for record keeping. The *Contractor* shall leave the *site* and accesses to the *site* in as good a condition as prior to first entry.

1.4.2 If access to a site has deteriorated (e.g. due to heavy rainfall) making it difficult or impossible for the *Contractor* to access, the *Contractor* shall immediately contact the *Client*. The *Contractor* shall inform the *Client* of their intention to continue work at this site or submit a request to the *Client* that they may postpone the work. If the C*ontractor* decides to continue at the site, this will be at his own risk.

1.4.3 The *Contractor* shall take all reasonable steps to avoid damage and disruption to the surrounding land, the designated sites and associated access routes. Such land may be privately owned, commercially managed for industrial, agricultural use, or part of the local social amenities etc. Any problems with access should be reported directly to the *Client*.

1.5 Sharing the Site with the *Client* and Others

1.5.1 The *Client* will notify the landowner and fishing tenant of the planned works. The *Contractor* is to liaise with these parties as necessary in advance of, and during the works.

1.6 Management of the W*orks*

1.6.1 The *Client* and *Contractor* administer the contract using the *Client's* contract management tools. This is currently FastDraft but may be transferred to similar systems from time to time.

1.6.2 The *Contractor* shall produce a progress report and submit this with their updated programme a minimum of 2 working days ahead of the monthly progress meeting. This report:

- highlights the progress achieved since the last programme submission.
- explains any deviation from the previous programme in terms of progress and/or changes to the planned activities,
- explains what actions are being implemented to mitigate any delay,
- states the expected date when the *Contractor* forecasts to complete the *works* compared to the contract Completion Date,
- details any lost days due to weather,
- summarises the latest commercial position with detail of the original Prices, the value of implemented Compensation Events, the forecast of unimplemented Compensation Events, the forecast of the Prices,
- includes site photos of progress achieved since the previous progress report.

1.6.3 Compensation will be agreed and paid by the *Client* (via its appointed land agents) to affected landowners based on the *Contractor's* programme, proposed access routes and method statements. Compensation claims incurred due to the *Contractor's* failure to comply with its programme, access routes and/or method statements will be passed on to the *Contractor*.

1.7 Weather Measurements

1.7.1 The place where weather is to be recorded is: Nearest Met Office Weather Station to the *site.*

1.7.2 The weather measurements are to be supplied by: Met Office.

1.8 Quality Management

N/A

1.9 Consents, Permits and Licenses

1.9.1 The *Contractor* shall obtain the necessary consents, permits, licenses and / or agreements from third parties for the permanent works.

1.9.2 The *Contractor* shall obtain the necessary consents, permits, licenses and / or agreements from third parties for any temporary works.

1.9.3 The *Contractor* shall be responsible for obtaining and / or registering for any necessary waste exemptions.

1.10 Health, Safety & Environment

1.10.1 The *Client's* SHEW CoP is applicable to the *Contractor* in providing the *works*.

1.10.2 The Considerate Constructors Scheme is applicable as per the *Client's* SHEW CoP. If required, the *Contractor* is responsible for registering the project unless otherwise instructed by the *Client*.

1.10.3 The Construction, Design & Management (CDM) Regulations are applicable to the *works*. The *Contractor* acts as *Principa*l Contractor and Designer under the Regulations.

1.10.4 The *Contractor* shall produce project specific risk assessments and method statements (RAMS) detailing how they will provide the *works* and submit these to the *Client* for acceptance. The *Contractor* does not commence activities until the relevant RAMS have been accepted by the *Client*. The *Client* has the *period of reply* to respond to the RAMS.

1.10.5 Details of access routes must be included within the method statements.

1.10.6 The work is to be carried out adjacent to a live channel which can pose a significant risk due to working near water. High water table and significant channel flows may delay the programme of works.

1.10.7 It is noted that, due to the slippage, the ground has the potential to be unstable, particularly for vehicles / plant traversing the bank area on the approach to the Gauging Station.

1.11 Procurement of subcontractors

1.11.1 In accordance with Schedule 7 Clause 2.1.3, the *Contractor* shall use sustainability, quality and price criteria when selecting *subcontractors*, evidence of how this was undertaken to be retained and made available to the *Client* if required.

1.11.2 In accordance with Schedule 7 Clause 2.1.6, the *Contractor* shall ensure that supply chain opportunities are inclusive and accessible to small and medium-sized Enterprises; Voluntary, Community and Social Enterprise organisations and under-represented groups of suppliers.

1.11.3 In accordance with Schedule 7 Clause 2.1.1, the *Contractor* shall use the Contracts Finder website to advertise any sub-contracting opportunities to encourage a diverse and inclusive supply base. Within ninety (90) calendar days of awarding a sub-contract to a sub-contractor, the Delivery Partner updates the notice on Contracts Finder with details of the successful *subcontractor*.

1.12 Title

N/A

1.13 Completion

1.13.1 Completion is achieved and certified only when the Contractor has done all the work which the Scope states is to be done by the Completion Date.

1.14 Accounts and Records

1.14.1 The *Contractor*'s application for payment shall be submitted on FastDraft and supported by a breakdown of the *works* for which payment is due in the format provided in the Price List, including any implemented Compensation Events.

1.14.2 The *Contractor* shall issue invoices to the following two (2) email addresses and shall quote "Asset OMR, the relevant Framework Hub / Area, and PO number" in the email subject line.

- [redacted]
- [redacted]

1.15 Communications

1.15.1 In accordance with Clause 14.5 of the contract, all the *Client*'s actions under the contract are delegated to the *Project Manager*. The *Contractor* shall only act upon instructions received from the *Client*'s delegate.

1.15.2 All communications from the *Contractor* to the *Client* shall be sent to the *Project Manager*.

1.15.3 Ten (10) working days' notice of commencement of works shall be given to the *Client*.

1.15.4 All accidents, near misses, dangerous occurrences and environmental incidents shall be notified to the *Client*, or their representative.

1.16 Plant & Equipment

1.16.1 The *Contractor* shall choose the most appropriate plant to complete the works.

1.16.2 The *Contractor* ensures that all plant is maintained.

2. Drawings

List the drawings that apply to the contract.

Drawing Number	Revision	Title
N/A – Project is in the ECI Stage. No Design Drawings to include. Refer to Site Information for any as-built record drawings.		

3. Specifications

List the specifications which apply to the contract.

Title	Date or Revision	Tick if publicly available
Lot 1 - Spec supplementary clauses - General	07/2024	yes
UK Specification of Ground Investigation, Third Edition	2022	yes

4. Constraints on how the *Contractor* Provides the Works

State any constraints on the sequence and timing of work and on the methods and conduct of work including the requirements for any work by the *Client*.

4.1 Protection Against Damage

4.1.1 The *Contractor* shall ensure that the *site* is not damaged by their activities. The *site* is to be fully reinstated to the satisfaction of the *Client* and the landowner/occupier within 1 week of completion of the *works*.

4.2 Health and Safety

4.2.1 The *Contractor* shall not commence any work on the site until the *Client*, or their representative, has accepted the Construction Phase Plan, including method statements and risk assessments. Acceptance will be by way of a written communication from the *Client* confirming the *Contractor* may take possession of the site from the agreed starting date.

4.2.2 The *Contractor* must allow a minimum of 2 weeks to allow the Principal Designer to review Construction Phase Plan.

4.3 Access

4.3.1 The *Client* has the contractual right to access the *site*. The *Contractor* shall be required to determine the suitability of the access and agree any alternative routes with the *Client* and landowner should the identified routes be unsuitable.

4.3.2 Where necessary the *Contractor* shall include for the removal and replacement of any gates, fences or hedges or any other measures necessary such as installing temporary tracks or crossings to facilitate access. The *Contractor* shall be responsible for reinstating access tracks/routes to the same conditions as encountered on arrival at the site.

4.3.3 A key, which must be returned on completion of the works, will be provided as necessary to allow access through the *Client*'s gates.

4.3.4 The *Contractor* must note that the site and surrounds are used extensively during fishing season (March to October) and so the *Contractor* must give at least 2 weeks' notice of the planned date of the works to allow the *Client* to discuss with the landowner and fishing tenant.

4.4 Mud / Debris

4.4.1 No mud or other debris to be deposited on any tarmac areas outside the site access gate, any such material to be removed immediately.

4.5 Services

4.5.1 The *Contractor* shall ensure that any service diversions and protection measures required during the works have been arranged and agreed with the relevant Statutory Authority in advance of commencing the works.

4.6 Fires

4.6.1 No fires may be lit on site unless expressly authorised by the *Client.*

4.7 Choice of Equipment

4.7.1 All Equipment with hydraulic systems shall use biodegradable hydraulic oil.

4.7.2 All plant traversing under overhead cables shall be fitted with a Prolec or other height limiting device.

4.8 Permits

4.8.1 The *works* are to be undertaken in accordance with the requirements of the approved Flood Risk Activity Permit for the *site*.

4.9 Working times

4.9.1 The *Contractor* will be permitted to work between 7.30am and 6.00pm on weekdays (Monday to Friday).

5. Requirements for the programme

State whether a programme is required and, if it is, state what form it is to be in, what information is to be shown on it, when it is to be submitted and when it is to be updated.

State what the use of the *works* is intended to be at their Completion as defined in clause 11.2(1).

5.1 The *Contractor* submits his programme with the *Contractor's* Offer for acceptance.

5.2 The *Contractor* shall submit the programme in Adobe PDF and Microsoft Project formats.

5.3 The *Contractor* shows on each programme which they submits for acceptance (in form of Gantt chart showing the critical path, proposed order and timing to undertake the works and proposed plant and labour resources) the following:

(a) Period required for mobilisation / planning & post contract award

(b) Starting date

(c) Each of the activities listed within the Price List

(d) The critical path

(e) The dates when the *Contractor* forecasts to need first access to the Site to undertake physical works

(f) The order and timing of the operations which the *Contractor* plans to do in order to provide the works

(g) Any key third party interfaces: lead in periods for materials and sub-contractors; time required to obtain consents/waste permits; stated constraints; *Contractor's* risks.

(h) The order and timing of the work of the *Client* and others required for the *Contractor* to provide the works

(i) Provisions for float, time risk allowance, mobilisation, project planning and procedures set out in the contract

(j) Completion date

5.4 Within two (2) weeks of the *Contractor* submitting a programme for acceptance, the *Client* notifies the *Contractor* of the acceptance of the programme or the reasons for not accepting it. A reason for not accepting a programme is that:

- The *Contractor's* plans which it shows are not practicable
- It does not represent the *Contractor's* plans realistically or
- It does not comply with the Scope

5.5 If the *Client* does not notify acceptance or non-acceptance within the time allowed, the *Contractor* may notify the *Client* of that failure. If the failure continues for a further one (1) week after the *Contractor's* notification, it is treated as acceptance by the *Client* of the programme.

5.6 The *Contractor* shall show on each revised programme:

- The actual progress achieved on each operation and its effect upon the timing of the remaining work
- How the *Contractor* plans to deal with any delays and to correct notified Defects and
- Any other changes which the *Contractor* proposed to make to the Accepted Programme.

5.7 The *Contractor* shall submit a revised programme to the *Client* for acceptance:

- Within the *period for reply* after the *Client* has instructed the *Contractor* to
- When the *Contractor* chooses to and, in any case,

- At least monthly.

6. Services and other things provided by the *Client*

Describe what the *Client* will provide, such as services (including water and electricity) and "free issue" Plant and Materials and equipment.

Item	**Date by which it will be provided**
Fastdraft Access	Within 2 weeks of contract award
Access keys (if required) for the *site*, to be returned once the *works* is completed.	A week prior to access date (where applicable)

Site Information

Timeline – refer to Appendix A
Historic Data – refer to Appendix B
Hydrological Reports – refer to Appendix C
Dissertation – refer to Appendix D
Bank Stability Report - refer to Appendix E
Topographical Monitoring - refer to Appendix F
Crack Monitoring - refer to Appendix G
Site Visit - refer to Appendix H
Rabbit Proofing - refer to Appendix I
Bathymetric Survey - refer to Appendix J
CFD Modelling - refer to Appendix K
PSRA - refer to Appendix L
Tree Survey - refer to Appendix M
Preliminary Ecological Assessment – refer to Appendix N
Pre-Construction Information, including utilities and asbestos survey – refer to Appendix O

Proposed sub-contractors

	Name and address of proposed subcontractor	Nature and extent of work
1.	Form of Contract:	
2.	Form of Contract:	
3.	Form of Contract:	
4.	Form of Contract:	

Appendices:

Appendix A

- Bywell Timeline with images_Rev2.pdf
- Bywell Timeline.pdf

Appendix B

- 031117 – GA Drawing – CDH.pdf
- 040301 – Bywell Job Sheet – CDH.pdf
- Bed Profile_Bywell 05-08-05.xls
- Bed Profile_Bywell 26-11-08.xls
- Bed Profile_Bywell 27-08-03.xls
- Bed Profile_Bywell 30-07-98.xls
- Bywell Gauging Station Cross Section Under Cableway.pdf, dated May 1969
- Bywell Gauging Station Flood Peak.pdf, dated 17/10/67
- Bywell Gauging Station Recorder Hut new Floatwell.pdf, dated 09/07/64, Dwg No. GS.52/27B
- River South Tyne – Bywell.pdf
- WISKI_CrossSections.xlsx

Appendix C

- River Tyne Recovery Studies: Volume 1 Hydrology Report, dated November 2016, by JBA Consulting
- Hydrology of the 4th to 6th December 2015 Flood (Storm Desmond) in the Northumberland, Durham and Tees Area, dated April 2016

Appendix D

- Stability Analysis of a Riverbank, Bywell, MSc Dissertation

Appendix E

- Bywell Gauge Station Bank Stability Report, dated 9 February 2022, Ref BYW-ARP-XX-00-RP-CG-0001, by Arup
- Presentation on Findings – 070921.pdf

Appendix F

- Bywell Gauging Station Monitoring Survey, version V12, dated 28/03/24
- "Esh – EA Bywell Monitoring 240328.xlsx

Appendix G

- Bywell Crack Monitoring Kit.pdf
- Bywell – Crack monitoring.pdf

Appendix H

- Photo Summary of Path Movements.pdf

Appendix I

- Rabbit Proofing Options.docx

Appendix J

- 023001B_Bywell_EABM_Location_Report.pdf
- A00259_FCR_TOPO XYZ.csv
- A00259_RPT_Bywell Survey Report.pdf

Appendix K

- Bywell CFD Modelling Final Report, version 3, dated August 2023, by JBA Consulting

Appendix L

- PSRA Assessment Bywell, dated 04/04/2022

Appendix M

- LIT 17189 – Basic Tree Inspection Form – Bywell WLB.pdf, dated 18/06/24
- LIT 17190 – Tree Sites By Usage Zone – Bywell WLB.pdf, dated 18/06/24

Appendix N

- Preliminary Ecological Appraisal, Bywell Gauging station GI Works, version 1.2, dated 18/12/2024

Appendix O

- Bywell Gauging Station PCI_Rev 3_Final, dated 18/12/2024