NEC4 Engineering and Construction

Short Contract

FCRM Operational Framework – Central Hub

A contract between	**The Environment Agency** [redacted]
And	**Breheny Civil Engineering Ltd**
For	**Cambs & Beds Asset Inspections Package 2023-24**
	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	[redacted]	
Address for electronic communications	[redacted]	
The *works* are	Delivery of the Cambs & Beds Asset Inspections Package 2023-24	
The *site* is	Multiple sites across the Cams & Beds Great Ouse Catchment Area. Specific NGR locations provided in the Site Information Appendix G	
The *starting date* is	30th March 2023	
The *completion date* is	Inspection Programme 2023-24 *completion* date (year 1) of: 15th March 2024. Full contract *completion* date 31st March 2024.	
The *delay damages* are	Nil	Per day
The *period* for reply is	2	weeks
The *defects date* is	52	weeks after Completion
The *defects correction period* is	4	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.

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	£100,000
The *Client* provides this insurance	None

Insurance Table

Event	**Cover**	**Cover provided until**
Loss of or damage to the *works*	The replacement cost	The *Client's* certificate of Completion has been issued
Loss of or damage to Equipment, Plant and Materials	The 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 £2,000,000 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 and the following additional conditions	
Z1.0	Sub-contracting
Z1.1	The *Contractor* shall submit 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 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.
Z30.0	Material Price Volatility The *Client* recognises the ongoing pricing uncertainty in relation to materials for the period from 1 July 2021 to 30 June 2023 the *Client* shall mitigate this additional cost through this clause. Payment is made per assessment based upon a general average material proportion within assessments, calculated at 40%.
Z30.1	Defined terms a) **The Latest Index (L)** is the latest index as issued by the *Client*. The L, which is at the discretion of the *Client*, is based upon the issued consumer price index ((CPI) based upon the 12-month rate) before the date of assessment of an amount due. b) **The Price Volatility Provision (PVP)** at each date of assessment of an amount due is the total of the Material Factor as defined below multiplied by L for the index linked to it. c) **Material Factor (MF)** 40% is used, based on a general average material proportion across our programme. The volatility provision is only associated with material element. No volatility provision is applicable to any other component of costs.
Z30.2	Price Volatility Provision Through a Compensation Event the *Client* shall pay the PVP. PVP is calculated as: Assessment x MF x L = PVP If an index is changed after it has been used in calculating a PVP, the calculation is not changed and remains based upon the rate issued by the *Client*. The PVP calculated at the last assessment before 30 June 2023 is used for calculating the price increase after that date.
Z30.3	Price Increase Each time the amount due is assessed, an amount for price increase is added to the total of the Prices which is the change in the Price for Work Done to Date for the materials component only (and the corresponding proportion) since the last assessment of the amount due multiplied PVP for the date of the current assessment.
Z30.4	Compensation Events The *Contractor* shall submit a compensation event for the PVP on a monthly basis (where applicable) capturing Defined Cost only for the PWDD increase in month. Forecasted costs should only be considered for the June 2023 period compensation event.

Assessment Date	Defined Cost?	Forecasted Cost?
31st Jul 21	In period costs only	No
31st Aug 21	In period costs only	No
30th Sept 21	In period costs only	No
31st Oct 21	In period costs only	No
30th Nov 21	In period costs only	No
31st Dec 21	In period costs only	No
31st Jan 22	In period costs only	No
28th Feb 22	In period costs only	No
31st Mar 22	In period costs only	No
30th Apr 22	In period costs only	No
31st May 22	In period costs only	No
30th Jun 22	In period costs only	No
31st Jul 22	In period costs only	No
31st Aug 22	In period costs only	No
30th Sept 22	In period costs only	No
31st Oct 22	In period costs only	No
30th Nov 22	In period costs only	No
31st Dec 22	In period costs only	No
31st Jan 23	In period costs only	No
28th Feb 23	In period costs only	No
31st Mar 23	In period costs only	No
30th Apr 23	In period costs only	No
31st May 23	In period costs only	No
30th Jun 23	In period costs only	Forecasted costs for remainder of contract

The Defined Cost for compensation events is assessed using

- the Defined Cost at base date levels for amounts calculated from rates stated in the Contract Data for People and Equipment and

- the Defined Cost current at the date the compensation event was notified, adjusted to the base date by 1+PVP for the last assessment of the amount due before that date, for other amounts.

Contract Data

The *Contractor's* Contract Data

	The *Contractor* is	
Name	Breheny Civil Engineering Ltd	
Address for communications	[redacted]	
Address for electronic communications	[redacted]	
The *fee* percentage is	8	%
The *people rates* are	As per the lot 1 workbook	
category of person	unit	rate
The *published list of Equipment* is		Lot 1 workbook
The *percentage for adjustment for Equipment* is		8%

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	[redacted]
	Enter the total of the Prices from the Price List.

Signed on behalf of the *Contractor*

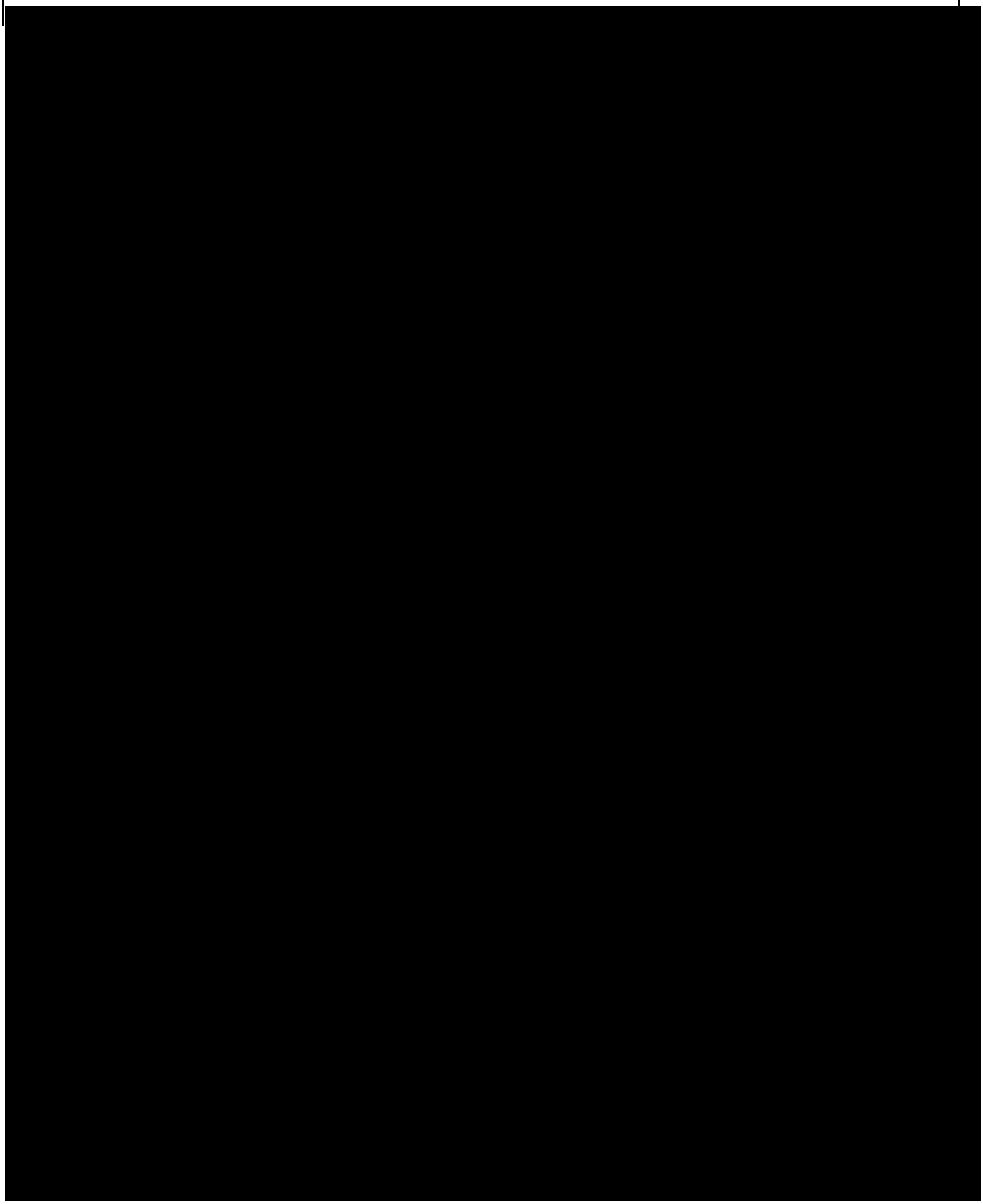
Name	[redacted]
Position	[redacted]
Signature	[redacted]
Date	[redacted]

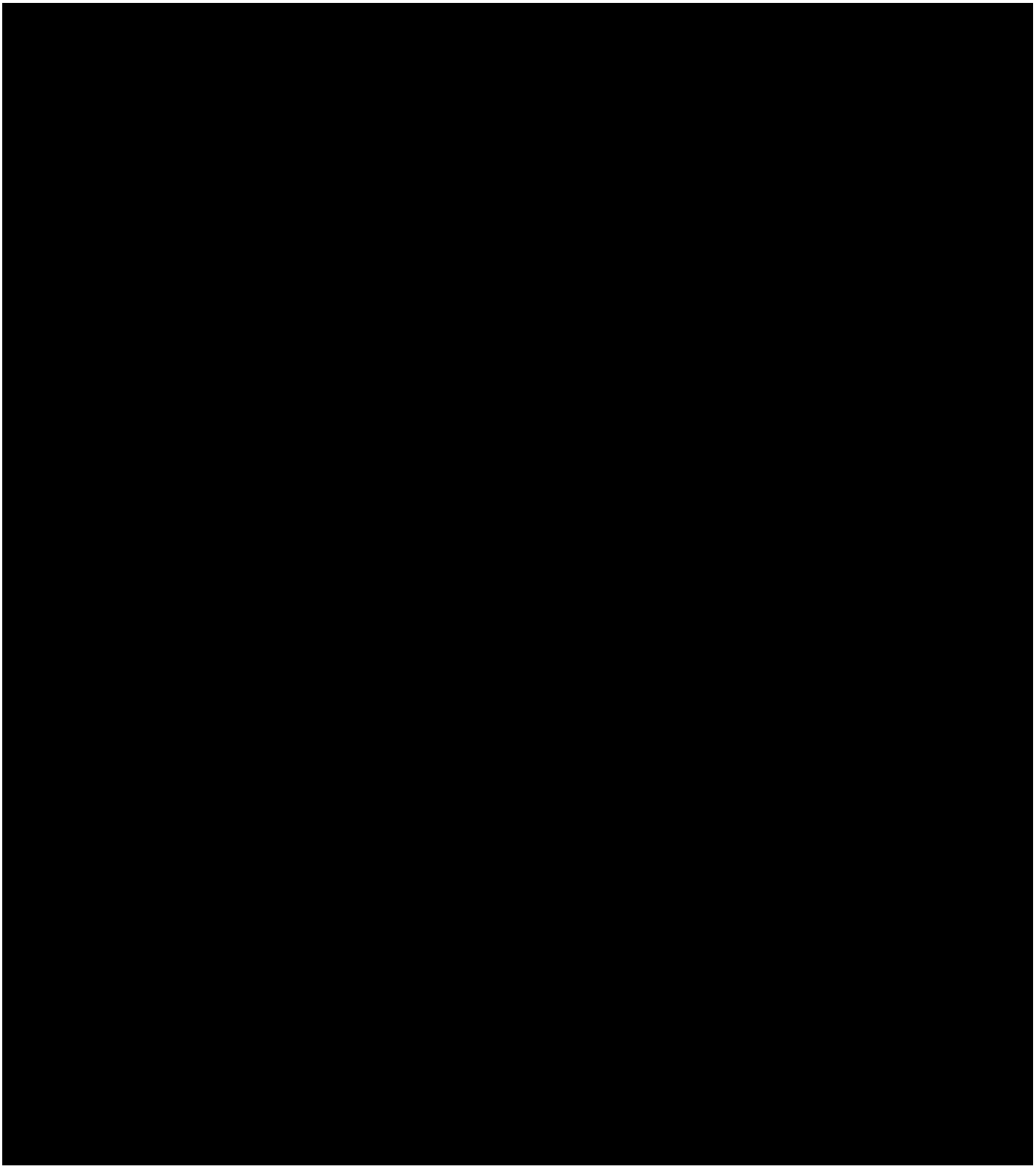
The *Client* accepts the *Contractor's* Offer to Provide the Works

Signed on behalf of the *Client*

Name	[redacted]
Position	[redacted]
Signature	[redacted]
Date	[redacted]

Price List





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

***Scoped* works comprising 50% of package value as follows:**

Cambs & Beds Asset Inspections 2023-24

As per description of works and constraints below.

Contractor to provide monthly programme updates, cost updates and to attend monthly package progress meetings.

Un-scoped works comprising 50% of package value as follows:

Un-scoped projects to follow subject to C*ontractor* performance, it is anticipated that un-scoped projects will be required for completion by 15th March 2024, further un-scoped projects may follow to the end of contract. The *Contractor* shall be required to work in parallel on multiple sites to enable the delivery of scoped and un-scoped elements of the package. Constraints as detailed below and in any follow-on information.

Un-scoped projects will not be limited to inspections and may comprise of maintenance or refurbishment works to other assets.

1. Description of the *works*

Contents:

1.1 Overview

The works consist of undertaking detailed inspections on EA assets (including river control structures, flood defence structures, culverts and bridges) and written reporting on their overall, operational and structural condition and identification of defects. This supports EA decision making for future maintenance requirements.

Prior to undertaking the inspection, the *Contractor* shall undertake scoping for each asset (Stage 1) to understand *Client* requirements, identify any site specific constraints and plan the inspection accordingly. Depending on the asset and type of inspection required, this could be either desk based or require a site visit.

Following *Client* approval of the stage 1 scoping report, the *Contractor* is to plan and undertake the inspection (Stage 2). Depending on the asset and the scope agreed at stage 1, this will entail carrying out a Detailed Asset Inspection, CCTV Inspection, Diving Inspection, Asbestos Survey or Bridge Inspection. Requirements of these inspections are detailed in the subsequent sections of the Description of the *works*.

Any inspection/survey type may be specifically required as a standalone inspection (for example, Bridge Inspection); any combination of inspection/survey types may be required if identified as part of the Stage 1 Scoping Inspection (for example, a Detailed Asset Inspection of a Sluice which includes Diving and CCTV).

1.2 Stage 1 Scoping

The *Contractor* shall undertake Stage 1 Scoping for each asset prior to carrying out any asset inspection or survey. This shall be done in collaboration with the *Client* where required. Stage 1 scoping is applicable to all asset inspections.

It is envisaged that a typical scoping visit would require around 1 hour on site and be attended by the *Contractor*, sub-contractor, sub consultant and *Client* where required. Multiple sites in a geographical area could be visited on the same day.

As part of the Stage 1 Scoping the *Contractor* shall:

- Review list of assets to be inspected and programme scoping visits with *Client* and sub-Contractor's representatives, as appropriate, in accordance with the *Client's* priority status.
- Determine principal components of the asset: Obtain any drawings and other information that may be available.
- Prepare risk assessment and method statement for Stage 1 inspection.
- Undertake a scoping site visit to each asset to:
- identify and communicate to the *Client* any further constraints and access requirements including necessary traffic management operations;
- Collect additional site information;
- assess Health & Safety and welfare provisions;
- determine/agree the scope of the Stage 2 inspection;
- Prepare and submit Stage 1 Scoping Report for each asset for approval by the *Client*;
- Identify isolation requirements for the Stage 2 Inspection.

1.3 Stage 2 Inspections

Stage 2 must not proceed until the *Client* has advised that the Stage 1 Scoping Report is approved.

Prior to undertaking the Stage 2 inspection, the *Contractor* shall:

- Review output from Stage 1 Scoping Inspection;
- Work with the *Client* to determine the most favourable time to undertake the inspection and obtain any required permits to work and isolations. This will include providing a suitably competent person for electrical isolation should the *Client* be unable to;
- Contact the *Client's* site operative by phone to obtain a working overview of the normal operation of the site, a description of any recent problems or issues and an indication of recent repairs and maintenance work carried out;
- Ensure access to the site has been approved;
- Prepare a method statement and risk assessment for the Stage 2 Inspection. This should consider where applicable, any potentially hazardous areas or confined spaces entry and prepare suitable safe working practices and method statements accordingly;
- Ensure safe access to all elements of the structure required in the inspection. This may include, but will not be limited to, providing temporary ladders to access high level gantries, scaffolding, harnesses or mobile elevated working platform.
- Provide welfare if deemed necessary.
- *Contractor* shall provide any traffic management identified at stage 1.

A typical Stage 2 Inspection will take 1 day on site. Smaller assets will typically take a few hours. Stage 2 Inspections will be attended by the *Contractor,* sub-contractor(s), sub consultant, *Client*, EA Field Team/EA MEICA representatives as required.

1.4 Detailed Asset Inspections

The purpose of the detailed asset inspections (DAI) is to determine the condition, age, functionality and remaining life of each asset.

The asset may consist of a number of different components and the associated inspections may include, but are not limited to:

- Civil/structural inspections,
- MEICA inspections,
- CCTV surveys,
- Diving inspections,
- Ground investigations,
- Embankment stability analysis,
- Sheet piling surveys,
- Asbestos surveys.

The assets may comprise, but are not limited to:

- mechanical and electrical plant;
- penstocks, instrumentation controls;
- site access including paths, walkways, handrails and guard rails;
- training walls, wing walls and channels;
- weirs and aprons;
- stop log guides and stop logs;
- sluice gates, flood gates, lock gates and sea gates;
- siphons and culverts;
- pumps, pipes, valves and controls;
- protective treatment; and
- associated buildings and their foundations, drainage systems, retaining walls and free standing walls.

An inspection report is to be produced for each asset combining all inspections undertaken on that asset.

The *Contractor* shall undertake inspection of each asset identified by the *Client* to determine the condition, operability and defects of the asset and its principal components. The inspection shall include all accessible elements (including underwater) which may require specialist access such as diving, confined space entry, boats, pontoons, work platforms, crane with man riding basket.

1.4.1 Detailed Asset Inspection Scoping

Scoping for Detailed Asset Inspections is to be undertaken as described in Section 1.2

1.4.2 Detailed Asset Inspection Stage 2

The Stage 2 inspections may comprise, but are not limited to, a Detailed Asset Inspection comprising:

- Review of record drawings and existing information. e.g. original construction drawings with any later subsequent modifications/improvements to the site, O & M manuals, maintenance records;
- Visual evaluation of civil & MEICA elements of the asset; this is a visual condition report of the item indicating any corrosion, wear, damage, missing components and is to be supplemented with photographs;
- Assessment of any spalling to structural concrete, check cover to reinforcement if feasible;
- Assessment of structural steelwork including thickness testing to determine loss of section where appropriate
- Assessment of any displacement to steel sheet piling, look for depression to rear of wall/signs of movement to front and around base;
- Photographic records;
- Confirm conclusions drawn from knowledge received with operative if they are available and focuses on these items initially.
- Check general tidiness of site;
- Check for appropriate signage and site-specific safety equipment;
- Examination of local environment e.g. saltwater, near to housing, site of special scientific interest, security;
- Check for Health and Safety issues noted by operators and note any specific issues observed;
- Check accuracy and completeness of information collected.
- Data collection – this is the information that is present on nameplates or tags, it will be serial numbers, model/type, manufacturer, date of manufacture, rating.
- Operability – this is confirmation that the component functions as intended. Is it operating, does it start/stop or work, does it operate through its range, is it still within its intended duty, is excessive effort required to operate? Where possible and permissible check the operation of the equipment, otherwise obtain feedback from operating staff and maintenance logs.
- Safety – Check access to and egress from elements, are guards/covers in place, are all fixings in place, is it secure, are joints and connections properly made. Are there clear operating instructions and signage in place?
- Confirm whether or not the MEICA elements of the assets inspected conform to the latest revision of all relevant statutory regulations, including: Provision and Use of Work equipment

Regulations 1998 (PUWER); Lifting Operations Lifting equipment Regulations 1998 (LOLER; Electricity at Work Regulations 1989 (EWR); Pressure Systems Safety Regulations 2000 (PSSR).

The *Contractor* shall undertake any intrusive testing (i.e. trial holes, breakouts.), specialist access (boats, working platforms, diving) and pre-survey/enabling works as identified in Stage 1 Scoping.

On completion of the inspection, the *Contractor* shall remove any rubbish/debris created during the inspection and leave the site tidy and secure.

1.4.3 Reporting Requirements for Detailed Asset Inspections

Upon completion of the Stage 2 inspection the *Contractor* shall collate all the information and findings into a comprehensive report for each asset, including all findings from other inspections undertaken i.e. MEICA, CCTV, diving.

The report shall include the following elements:

- Asset Inspection Summary and condition rating – a brief summary on the findings and condition of the asset including general photographs and site layout and the purpose/objective of the inspection;
- List of Principal Asset Components;
- Introduction – who carried out the inspections, when and how, the site conditions and reference to any previous inspection reports/existing information;
- General Description – a brief description of site location including any specific references and of what equipment it comprises;
- Non-Accessible Areas Register – a list of all non-accessed or limited access areas;
- Detailed Asset Inspections – a more detailed report for each element of the inspection grouped by inspection type. including;
    - A detailed description of the findings for each element of the inspection;
    - Details of site inspection/surveys undertaken;
    - Assigned risk evaluations;
    - Recommendations for remedial works and timescales for completion of those works;
    - Any Health and Safety issues;
- Conclusions and Works Recommendations – a brief section of the repair/improvement works required either to meet statutory regulations or maintain the equipment residual life including assessment of estimated costs. Use tabular format to record:
    - condition summary and estimated residual life;
    - recommendations;
    - component/structure replacement costs;
- Appendices (e.g. sub-Consultant's reports.).
- Photos, drawings and calculations where applicable.
- Data Analysis Sheets – breakdown of risk analysis;

1.5 CCTV Surveys

There are a number of structures which form part of the *Client's* flood risk management systems, particularly culverts, where it is not possible for a visual inspection to be made. In these instances CCTV is used to inspect the culvert or siphon.

CCTV surveys will be required if identified as part of the Stage 1 Detailed Asset Inspection or is specifically required as a standalone inspection.

1.5.1 CCTV Surveys Stage 1 Scoping

Stage 1 scoping for CCTV surveys will be undertaken as described in Section 1.2.

In addition, Stage 1 Scoping for CCTV surveys will include:

- The Stage 1 Scoping Inspection site visit must identify any enabling works required immediately prior to the CCTV survey (including, but not limited to, desilting, silt sampling, dewatering, over-pumping, vegetation clearance, traffic management).
- The *Contractor* shall liaise with the *Client* to determine the level of risk of siltation in each culvert/siphon: Stage 2 Inspection Reports must not be returned with "no information due to silt."

1.5.2 CCTV Surveys Stage 2

Prior to the CCTV sub-contractor carrying out the survey, the *Contractor* shall:

- Ensure that access arrangements have been made to the site;
- Undertake pre-survey works as identified in the Stage 1 Scoping Report. These may consist of, but are not limited to:
    - Vegetation clearance;
    - Desitling;
    - Dewatering;
    - Overpumping.

The *Contractor* shall:

- Supervise the CCTV Sub-Contractor on site;
- Survey the location of the culverts/siphons and provide Easting and Northing locations (based on an Environment Agency GPS grid) of the centre of the manholes at the US and DS end of the culvert (+/- 0.1m accuracy);
- Measure the cover level and invert level at all manhole locations as well as at the inlet and outlet. This is to be shown in the survey report under manhole survey information. Indicate the distance between ground level and the soffit level at inlet and outlet and attach relevant photographs;
- Provide accurate invert levels, pipe diameters, soffit levels for all incoming and outgoing pipes. Clearly identify the main culvert and give identifiers to all pipes at manhole locations;
- Provide a general visual description of the channel;
- Comply with the *Client's* National Standard Contract and Specification for Surveying Contracts for all surveying;
- If identified at Stage 1 Scoping, detailed topographical surveys should be extended 10m either side of the channel for 15m upstream of the culvert and 5m downstream of the culvert.

1.5.3 Reporting Requirements for CCTV inspections

Upon completion of the Stage 2 inspection the *Contractor* shall collate all the information and findings into a comprehensive report. This report shall be combined into a Detailed Asset Inspection Report or shall be presented as a stand-alone report, depending on the requirements in the Stage 1 Scoping Report.

The report shall include the following:

- Executive Summary - a brief summary on the findings and condition of the equipment including objectives, location, specific access information, inspection overview, recommendations and remaining life;
- Observations and Recommendations – a more detailed description of the findings, conclusions and recommendations;
- Grade Defect Report:
    - An Inspection Overview is needed for any failing assets along with the current condition grade. In this section, please provide key asset parameters, description of the defects and justification of the current condition grade awarded;
- Asset Location Details – including maps, local area plan, manhole locations and route of culvert plans;
- Photographs showing the internal condition, including:
    - any defects/intrusions/debris/blockages;
    - manholes showing all incoming/outgoing pipes;
- Manhole survey information with accurate invert levels, pipe diameters and soffit levels for all incoming and outgoing pipes;
- CCTV WinCan report:
    - Showing chainage from inlet or outlet (whichever is more convenient). Chainage measurements are not to start at each manhole but are to form a continuous record from the inlet or outlet, where possible.
    - Where information is found as part of this investigation on construction types, materials used, design loadings and similar this is to be provided or at least referenced in the culvert report.
    - The CCTV footage should be compiled in a digital form which is compatible with Windows Media Player and indexed by AIMS reference number (asset numbers provided) followed by corresponding manhole numbers. The CCTV footage is to be provided to the *Client* for storage and reference alongside CCTV survey reports.

The *Contractor* shall:

- Make a condition assessment of the culvert from the CCTV footage, according to the *Client's* Culvert Inspections: Guidance for Risk Based Internal inspection frequency OI 50_13_SD02.
- Prepare a detailed plan showing the culvert alignment and manhole locations with labels indicating manhole numbers and their NGR. Indicate surveyed sections of the culvert in red and un-surveyed in blue on the plan and label them accordingly. The plan is to form part of the CCTV survey report along the culvert location map.
- Notify the *Client* of any culverts with overall condition grade 4 or 5 within 5 working days of drafting the report.

1.6 Diving Inspections

To be used either as part of the Detailed Asset Inspection or as a standalone scope.

The purpose is to undertake a condition and/or scour survey of the submerged parts of the asset.

The inspection should include an appraisal of the asset substructure scour condition and identify factors that may affect the safe operation of the asset and/or the load carrying capacity of the asset.

The *Contractor* shall comply with the requirements for compressed air diving in the Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (CoP).

1.6.1 Diving Inspection Stage 1 Scoping

Stage 1 scoping shall be undertaken as detailed in Section 1.2.

1.6.2 Stage 2 Inspection

Prior to the diving sub-contractor carrying out the survey, the *Contractor* shall:

- Ensure that access arrangements have been made to the site;

The *Contractor* shall be responsible for procuring suitable sub-contractors and for supervising the diving inspections.

1.6.3 Reporting Requirements for Diving Inspections

One digital video on a DVD of the diving survey in Windows media player format.

The report shall include the following:

- Executive Summary;
- Description of Asset Location including a General and a Detailed Location Plan;
- Brief Description of the Asset including a Form of Construction sketch;
- Details of the recent Maintenance History of the asset – where this information has been supplied by the *Client* or is obvious from the inspection;
- Summary of Defects observed during the previous inspection – in those cases where the *Contractor* has been supplied with the previous report;
- Inspection Details, i.e. names of inspecting engineers, date of inspection, weather conditions and any special access measures;
- Inspection Findings including description of the observed findings, appraisal of the condition of existing structure defects, evidence and likelihood of scour, record of the existing bed profiles;
- Discussion on the cause of the defects;
- Recommendations including recommendations for future asset management and remedial works, plus a suggested date for the next inspection;
- Appendices – including annotated inspection photographs; site notes; *Client* supplied drawings. – where applicable.

1.7 Asbestos Surveys

The Control of Asbestos Regulations 2012 places an explicit duty on the owners and occupiers to assess and manage the risks from the presence of asbestos.

Asbestos management surveys are required to identify the amount and condition of any asbestos containing materials (ACMs).

The *Client* owns/operates a number of assets where asbestos is, or may be, present.

1.7.1 Asbestos Surveys Stage 1 Scoping

The *Contractor* shall work collaboratively with the *Client* to scope the asbestos surveys and any testing required as part of Stage1 Scoping.

1.7.2 Asbestos Surveys Stage 2 Inspection

The *Contractor* shall be responsible for procuring and managing asbestos management surveys to positively identify ACMs where ACMs are suspected to be present or have been previously identified as present.

All surveys, testing and reporting shall be in line with the HSE's Asbestos: The survey guide, Second Edition 2012.

1.7.3 Reporting Requirements for Asbestos Surveys

Upon completion of the Stage 2 inspection the *Contractor* shall collate all the information and findings into a comprehensive report. Reporting requirements are set out in the HSEs guide.

Reporting requirements are set out in the HSEs guide.

1.8 Bridge Inspections

This commission typically comprises those bridges which are used by *Client*'s staff in connection with flood defence work. Most of the bridges do not carry a public highway and are owned either by the *Client* or by the adjacent landowners. Most of the bridges are relatively simple comprising a single simply supported span, although there are a few that are more complex. The bridges are to be subject to a Principal Inspection with frequencies varying depending in which of the *Client's* operational areas the asset is located.

The bridges to be inspected shall fall into one of the following categories:

- *Client* owned bridges on *Client* owned land
- *Client* owned, or maintained bridges, on privately owned land;
- Privately owned bridges carrying a public right of way;
- Privately owned bridges with no public right of way but over which the *Client* has permitted access.

1.8.1 Bridge Inspections Stage 1 Scoping

As part of the Stage 1 Scoping the *Contractor* shall prepare a Stage 1 Scoping Report to be submitted to the *Client*, containing the following information:

- Type of bridge;
- Review of record information;
- Bridge photographs;
- Specialist access recommendations;
- Assessment recommendations (including reason for assessment);
- Intrusive investigation requirements for Level 3 assessment where insufficient record information is available for Level 1 assessment;

Additional requirements for Stage 1 Scoping Inspection for Principal Bridge Inspections are as follows:

- Where requested by the *Client*, the *Contractor* shall contact the owners of privately-owned bridges and provide advance notice of the scoping visit. If the owner raises any objection to the inspection taking place, it shall be abandoned and the *Client* advised accordingly;
- Review available records to determine the need for assessment and testing.

The *Contractor* should also consider the appropriateness of undertaking a CS451 (formerly BD101) review, to be agreed with the *Client.*

The *Contractor* shall scope the extent of any intrusive testing required as part of Stage1 Scoping. In the event that an assessment can be undertaken using conservative material properties from CS 4-54 and still return adequate capacities (e.g. 40 tonnes wheeled, 40 tonnes tracked vehicles in all categories), this shall be admissible in lieu of testing.

1.8.2 Bridge Inspections Stage 2 Principal Inspection

Stage 2 must not proceed until the *Client* has advised that the Stage 1 Scoping Report is approved.

Where requested by the *Client*, the *Contractor* shall contact the owners of privately-owned bridges and provide advance notice of the inspection. If the owner raises any objection to the inspection taking place, it shall be abandoned and the *Client* advised accordingly;

This may include, but shall not be limited to, the following:

- The *Contractor* shall produce risk assessments and method statements (RAMS) for each inspection and submit them for acceptance by the *Client* and/or Principal Designer prior to carrying out the inspection;
- The *Contractor* shall provide any specialist access equipment as necessary. (e.g. boats, mobile elevating working platforms and access to confined spaces);
- Inspections/testing shall be undertaken during normal working hours (according to the Minimum Technical Requirements) and not at weekends;
- Inspection teams shall comprise at least two people. Lone working is not permitted;
- A record shall be made of any publicly or privately-owned service that may be observed;
- Urgent safety related defects shall be notified to the *Client* immediately.
- Intrusive inspection and testing identified in the Stage 1 Scoping

The results of the inspection, testing and/or assessment shall be submitted in a single report.

1.8.3 Reporting Requirements

The Principal Inspection Report shall compromise, as a minimum, the following elements:

- Cover page providing asset register details, carriageway width and load capacity;
- Asset Inspection Summary to include asset register details, location, brief bridge description, names of inspecting engineers, date of inspection, weather conditions, any special access measures, an overall condition rating, Bridge Condition Indicator (BCI) scores and the a recommended date for the next Principal Inspection using a 'risk-based approach' as agreed with the *Client*.
- Executive Summary to include;
    - Summary of routine, short-term, medium-term and long-term maintenance requirements for each element with a timescale for performance;
    - General photographs of the bridge;
    - Bridge location including 'General' and 'Detailed' Location Plans, and;
    - Brief description of the bridge including a 'Form of Construction' sketch;
- Details of the recent maintenance history of the bridge where this information has been supplied by the *Client* or is obvious from the inspection;
- Summary of defects observed during the previous Principal Inspection where the previous report has been provided by the *Client*;
- Summary of previous testing where testing reports or findings have been provided by the *Client;*
- A review of the validity of the previous assessment where the previous assessment has been provided by the *Client*;
- A Health and Safety risk assessment for any hazards identified that may affect the public, the workforce/operators or private users;
- Findings of the inspection broken down by element and equivalent element with comments including the significance of the defects observed, recommendations for remedial action, timescale, severity and extent codes and annotated photographs. Elements, equivalent elements, severity codes and extent codes are as defined in the Inspection Manual for Highway Structures Volume 1;
- Material Testing and Test Results, where undertaken in connection with this inspection;
- Details of assessment, where undertaken in connection with this inspection;
- Calculation of bridge condition indicator (BCI) scores;

- Inspection frequency risk assessment in undertaken in accordance with CS 450 or other method agreed with the *Client*;
- *Client* supplied drawings – where applicable;
- Approval in Principle and assessment certification– where applicable;
- CS 470 documentation for sub-standard structures – where applicable.

1.8.4 Standards to be used during inspections

Generally, the inspection, testing and assessment of bridges shall be undertaken in accordance with Highways England's suit of standards contained in the Design Manual for Roads and Bridges (DMRB) and any applicable Interim Advice Notes (IANs). Highways England is currently in the process of updating and replacing all the DMRB documents and IANs. Any reference to a standard shall be deemed to refer to its successor standard once published by Highways England. An assessment of Health & Safety should be conducted for the bridge (i.e. parapet heights, correct safety signage).

The assessments shall be performed using the Highways England's suite of assessment codes which are contained in the Design Manual for Roads and Bridges. However, to reflect the special circumstances that pertain to the *Client's* bridges, several amendments shall be made with respect to the vehicular loading requirements of CS 454:

- Even where a bridge has enough trafficable width to accommodate multiple lanes of traffic, the 'convoy' wheeled vehicle capacity shall be derived with respect to a single lane of traffic only;
- Where the 'convoy' traffic situation requires a weight restriction to be imposed, the assessment shall be extended to determine the corresponding capacity in respect of a 'single vehicle' loading scenario;
- Where a single vehicle loading scenario indicates the need for a weight restriction, then the possible benefit of imposing a 5mph speed limit shall be considered – this being deemed ample justification to reduce the 'critical axle impact factor' from 1.8 to 1.3.

Tracked plant loading is not covered by CS 454. However, assessed capacities shall be derived on the following basis:

- The tracked vehicles to be considered are those that are included in the *Client*'s 'Tracked Plant Schedule' and the accompanying definition of the four "Tracked Plant Classes';
- Tracked vehicles shall only be assessed in a 'single vehicle' loading scenario;
- Where vehicle speeds are unrestricted, a critical track impact factor of 1.3 shall be assumed. This shall be reduced to 1.1 where a 5mph speed limit is to be enforced;
- For initial assessment, the partial load factor of 1.5 shall be applied in accordance with CS 454. Where this results in restricted capacity, a reduced factor of 1.3 shall be considered to reflect the likelihood of tracked plant being overloaded, in a similar manner to the partial load factor for HB loading. This will require the *Client* to exert control on the loading of tracked plant such that overloading is very unlikely.

Table 1: Tracked Plant Class

Classification	Range of Track Length (m)	Range of Track Widths (m)	Representative Track Length (m)	Representative Track Width (m)	Typical vehicles included in grouping
A	1.5 to 2.49	0.33	1.5	0.33	D31S
B	2.5 to 3.49	0.45	2.5	0.45	A9007
C	3.5 to 4.49	0.66 to 0.7	3.5	0.66	SHE, RB22, JS210, JS220, JS200, JS 160
D	4.5 to 5.5	0.8 to 0.915	4.5	0.8	LHE, RB30

Table 2: Tracked Plant Schedule

Vehicle Type	Gross Weight (tonnes)	Length (metres)	Width (metres)	Track Width (metres)	Weight / Track (kN)	Load Intensity / Track (kN/m^2)	Strip Load / Track (kN/m)
Large Hydraulic Excavator (LHE)	26.25	4.64	3.39	0.8	128.8	34.7	27.8
Small Hydraulic Excavator (SHE)	17.5	3.9	2.86	0.7	85.8	31.4	22.0
RB 30	35.0	4.88	3.66	0.915	171.7	38.4	35.2
RB 21 ICD	23.7	3.91	2.87	0.66	116.2	45.0	29.7
JCB JS210	22.0	3.66	2.87	0.7	107.9	42.1	29.5
JCB JS220	24.0	3.66	3.09	0.7	117.7	45.9	32.2
JCB JS200	21.5	3.64	3.0	0.7	105.5	41.4	29.0
JCB JS160	17.0	3.94	2.49	0.7	83.4	30.2	21.2
CASE A9007	9.0	2.68	2.6	0.45	44.1	36.6	16.5
KOMATSU D31S	11.0	2.0	1.8	0.33	54.0	81.8	27.0

The bridge inspection team shall comprise at least one member who is certified with the Bridge Inspector Certification Scheme (BICS) or can demonstrate experience equivalent to that required for BICS 'Inspector' level qualification.

1.9 Deliverables

The *Contractor* shall produce the following documents for each asset:

- Stage 1 Scoping Report
- Stage 2 Asset Inspection Report

These reports shall vary depending on the asset type and inspection(s) undertaken and further details of the requirements of each are contained in the preceding sections.

A draft version of each report shall be submitted to the *Client* within two weeks of the scoping site visit (stage 1) or within 4 weeks of the inspection (stage 2). The final version of each report shall be submitted no more than two weeks after receiving the *Client's* comments/approval of draft report.

All reports produced by the *Contractor* shall be subject to final check and approval of a Chartered Engineer (CEng MICE) prior to issue to the *Client*.

All reports shall be submitted to the *Client* electronically in pdf format.

Contractor to develop Stage 1 and 2 report templates which shall be agreed with client.

The following example reports are provided:

- Example Stage 1 Scoping Report DAI (Appendix A)
- Example Stage 1 Scoping Report Bridge (Appendix B)
- Example Stage 2 Inspection Report DAI (Appendix C)
- Example Stage 2 Inspection Report Bridge (Appendix D)
- Example Stage 2 Asbestos Report (Appendix E)

- Example Stage 2 CCTV Report (Appendix F)

1.10 Cost Forecasting

The *Contractor* is to produce an updated cost forecast which shall be provided to the *Client* on the 1st of each month. This shall profile the forecasted monthly costs to the full contract *completion* date.

2. Drawings

[redacted]

Drawing Number	Revision	Title

3. Specifications

Title	Date or Revision	Tick if publicly available
Minimum Technical Requirements - Operational instruction 412_13_SD01	18/03/2020	Yes
Civil Engineering Specification for the Water Industry (CESWI).	7th Edition	Yes
Provision and Use of Work equipment Regulations 1998 (PUWER)	1998	Yes
Lifting Operations Lifting equipment Regulations 1998 (LOLER)	1998	Yes
Electricity at Work Regulations 1989 (EWR)	1989	Yes
Pressure Systems Safety Regulations 2000 (PSSR)	2000	Yes
National Standard Contract and Specification for Surveying Contracts	March 2021	No
EA Culvert Inspections: Guidance for Risk Based Internal inspection frequency LIT 1315	September 2022	No
The Control of Asbestos Regulations 2012	2012	Yes
HSE's Asbestos: The survey guide, Second Edition 2012.	2012	Yes
Design Manual for Roads and Bridges	Latest revision	Yes
Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (CoP)	June 2022	No

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

The *Client* shall aim provide access to each site for the *Contractor* within 4 weeks of the request from the *Contractor* to carry out the scoping visit/inspection, subject to satisfactory method statements, risk assessments and site/weather conditions.

The *Contractor* shall maintain access to sites for the *Client*'s use at all times.

The *Contractor* shall obtain any necessary consents and permits to undertake the surveys and inspections.

The following consents, permits to work and approvals may be required (this list is not exhaustive). An indicative:

- Production of Environmental Permit (formerly called Flood Defence Consents) and issue to the Environment Agency under the Water Resources Act 1991 for the permanent and temporary works.
- A Marine Licence under the Marine and Coastal Access Act 2009 (MCAA) maybe required for the works within the tidal zones
- Waste Management consents and approvals.
- Water Transfer licenses.
- Water Abstraction license for water used in construction.
- Obtaining traffic management consents/permissions required for temporary closures or diversions of highways, roads or footpaths.
- Diving permits
- Providing all information for each location where a Notice of Entry is required to gain access over and / or to non-Environment Agency owned land. Information is to be provided in a pre-populated Notice of Entry for Environment Agency Estates to process.

The *Contractor* shall be responsible for all costs associated with permit applications.

The *Contractor* shall obtain pre and post work condition photos of any access routes that are expected to be used. This shall be made available to the *Clients* Project Manager upon request

CEs and un-scoped works will, in the first instance, be priced in line with the rates indicated in the *Contractor's* Framework Lot 1 Workbook submissions, where available. Variations from these rates will be identified and substantiated by the *Contractor* during the submission of a CE.

Un-scoped or additional projects shall be added to the package upon acceptance of the relevant CE's and revised programmes depending on *Contractor* performance.

Where requested by the *Client*, the *Contractor* shall contact the owners of privately-owned assets and provide advance notice of the scoping visit/Inspection. If the owner raises any objection to the inspection taking place, it shall be abandoned and the *Client* advised accordingly.

The *Contractor* is responsible for identifying suitable launch/access points for boats, pontoons, diving and making necessary arrangements with landowners if required.

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

The following constraints will also apply to any un-scoped civils works added to the package:

The *Contractor* is to prepare, for the *Client's* acceptance, the Construction Phase Plan (CPP) and Risk Assessment Method Statements prior to starting the works.

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 (RAMS). 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. A minimum review period of 2 weeks is required.

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

A waste management plan is to be produced by the *Contractor* and the *Contractor* shall be responsible for obtaining and/or registering for any necessary waste exemptions.

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

2 working days' notice must be given to the *Client* in advance of demobilisation from the work site.

The *Contractor* is required to submit a CPP and RAMS to the Principal Designer allowing a minimum 3 week review period before intended mobilisation date.

5. Requirements for the programme

The *Contractor* submits his programme with the *Contractor's* Offer for acceptance. The *Contractor* shows on each programme which he 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) 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.

(e) Completion date

A suggested schedule for inspections and reporting is as follows:

[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 *Contractor* shall consider matters which may reduce the effectiveness or increase the cost of the inspection such as high flows, high water level or heavy summer vegetation. Diving/wading/in-channel inspections are unadvisable in the winter months (November to March) due to the likelihood of high flow conditions.

The *Contractor* shall propose a programme of inspections to the *Client* for acceptance. It shall include as a minimum the dates of inspections and for submission of draft and final reports.

The *Contractor* shall proceed in accordance with the accepted programme.

The *Contractor* shall update and issue the programme monthly showing progress achieved and any changes agreed by the *Client*.

The *Contractor* including key sub-contractors shall attend and provide updates at monthly progress meetings where requested by the *Client.*

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

N/A

Item	**Date by which it will be provided**

Site Information

Site Information is provided in Appendix G

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:	