

Environment Agency NEC4 Engineering and Construction Contract (ECC) Scope

Project / Contract Information

Project Name	Lincoln Washlands MCC Replacement
Project 1B1S Reference	ENV0002436C
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Author	██████████

Revision History

Revision date	Summary of Changes	Version Number
10/01/2020	First issue	V1 - P01
20/02/2020	EA Comments	V2 - P01
30/03/2020	Various Updates	V3 - P01
09/04/2020	Updates and added preface	V4 - C01
23/04/2020	Final issue	V5 - C01

This Scope should be read in conjunction with the version of the Minimum Technical Requirements current at the Contract Date. In the event of conflict, this Scope shall prevail. The works are to be compliant with the following version of the Minimum Technical Requirements:

Document	Document Title	Version No.	Issue Date
412_13_SD01	Minimum Technical Requirements	09	Aug 2018

customer service line
03708 506 506

www.environment-agency.gov.uk

incident hotline
0800 80 70 60

floodline
0845 988 1188

Preface:

To enable a contract to be issued within the current funding approval, the scope of the contract will exclude all works after the Factory Acceptance Test. These excluded works will be instructed and added into the contract once the required funds have been approved. The instruction will need to be issued in time to ensure that all the works can be carried out without delaying or disrupting the works.

The value of the excluded works has already been agreed and are indicated in the activity schedule in contract data part 2, the value of the excluded works will be the value by which the target is increased once the excluded works have been instructed.

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S 100 Description of the Works

S 101 Description of the Works

The Lincoln Washlands MCC Replacement project shall be to replace the four existing Motor Control Centres (MCC)'s currently housed at the Lincoln upstream flood storage reservoirs; Brant Washlands (Brant Washlands & Sand Syke), Witham Washlands, and Till Washlands. The works shall upgrade the electrical control system to Safety Integrity Level (SIL) 3 and provide Programmable Logic Controllers (PLC)'s which will enable the automation of the sites. The project shall provide an electrical design life of 25 years.

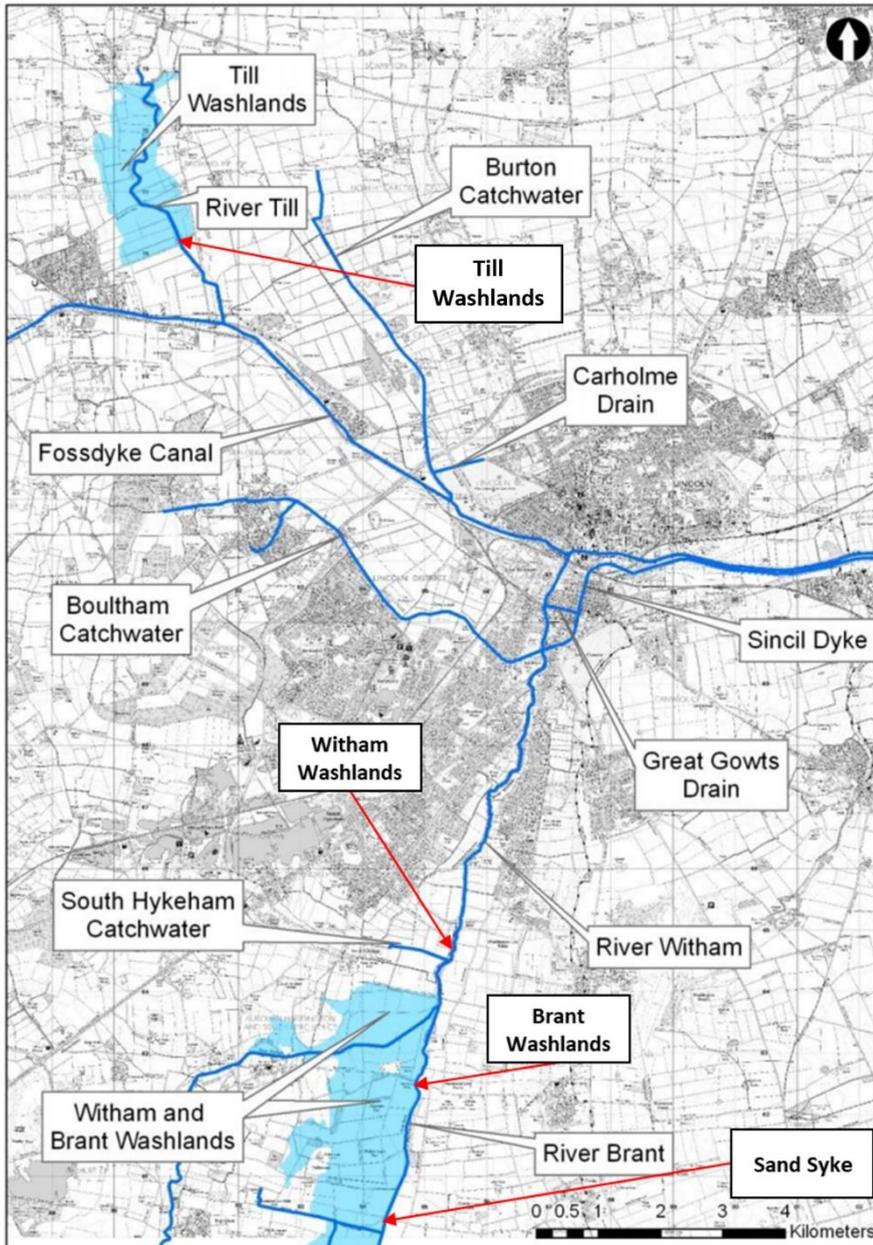


Figure 1– Location of Washlands (Mott MacDonald. This map is reproduced by permission of Ordnance Survey on behalf of The Controller of Her Majesty’s Stationary Office. © Crown Copyright. All rights reserved. Environment Agency 100026380, 2013)

S 102 Purpose of the Works/ Outcome Required

Work is required at each site to replace the Motor Control Centre (MCC) as the existing controls were installed circa 1990 and have now surpassed their safe operational life of 25 years. The MCCs receive the mains power for the whole site and distribute it according to needs (e.g. for pumps, gates, building services and control systems) in self-contained sections. This allows individual isolation of each section for safe working. The existing MCCs do not have accurate “as built” drawings which would make any further maintenance or upgrading unreliable and

potentially dangerous. Due to their age the control gear would need to be screened for asbestos.

The main objective is to ensure the continued safe, reliable operation of the MCCs controlling the Lincoln Washlands (Witham and Till large raised reservoirs) for the next 25 years (the design life of the new MCCs and associated new ancillary components). This will be achieved by upgrading end-of-life equipment, carrying out essential works to comply with current legislation, ensuring that emergency power generation is adequate and improving site security. MCC replacement will provide the necessary hardware for automation/remote site access required to reduce operational attendance on site.

Outcome Required

The *Client's* outcome is to ensure that the site has a reduced risk of asset failure, and that the works are developed to help ensure that the requirements of (*Client* SIL Level 3 – OI21_10)), are met. To achieve this the Client requires the following outcomes:

1. The *Contractor* shall be responsible for the detailed design, obtaining any and all necessary approvals, manufacture, supply, works testing, transport to site, erection, installation, site testing, commissioning, putting to work and operator/maintenance training of the complete installation of the 4 no. MCCs and associated works as further described in this Scope.
2. The scheme will upgrade associated electrical equipment to comply with current safety legislation, fire safety requirements and the relevant *Client* MTRs for SIA (Strategically important asset). Control buildings shall be modified to improve their fire resistance and enhance their security against the vandalism and theft, prevalent in each location.
3. The *Contractor* shall ensure that the final solution/options considered are compliant with all guidance and legislation and seek to minimise long-term asset/land management and maintenance costs.
4. The *Contractor* shall be responsible for ensuring the design is acceptable to the *Client*.
5. The project shall demonstrate the successful integration of environmental design and civil engineering.

Operation of the River control gates at the sites is required to be always available to the *Client*; this will be communicated via emergency procedures provided within the Emergency Contact Arrangements (ECA) Form.

The *Contractor* shall provide a draft contingency plan (ECA form) as part of his *Works Information*. The Contractor will, as part of his ECA, include methods and protocols for acceptance by the *Client* that cover the operation of the assets in response to flood events. The operation of the assets remains the responsibility of the *Client*.

The *Client* shall provide the *Contractor* with the relevant Control Philosophies for both the Witham Washlands site (covering Witham, Brant, and Sand Syke), and Till Washlands (covering only Till Washlands Site) as a separate document, as well as owning the CE ("Conformité Européenne") marking of the site. The *Contractor* shall CE ("Conformité Européenne") marking mark only the items of the site they are responsible for installing / designing.

The scope of works set out below is a summary of the detailed scope of works which is contained the Technical Note for each site (Sand Syke, Brant, Witham, Till) (see section S1700).

The summary scope of the works is described below for each site:

S 102.1 Sand Syke Scope

See Technical note: Sand Syke Pumping Station MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_18_00-SP-E-0001-New_SandSyke_MCC

See Sand Syke GA Drawing: IMAN002794-JBAB-VP-5_3042_18_00-DR-Z-1101

General Scope of Work

The General scope of work shall comprise the following:

Environmental screening requirements as determined from the initial scoping walk overs as detailed within the site information environmental documentation.

Carry out required design and planning work for the project.

Obtain all relevant consents & permissions.

Mobilise on site and set up site compound and provide temporary welfare.

Carry out installation complete witnessed, Site Acceptance Test (SAT), and Field Team Training

Demobilise from site.

Electrical Scope of Work

The Electrical scope of work shall comprise the following:

Contractor shall liaise with Distribution Network Operative (DNO) to install a mains 4 pole Isolator mounted if possible between the existing DNO cut-out cubicle and the new MCC, to allow for future isolation of the MCC without contacting the DNO, making sure the cabinet is completely enclosed and IP54 rated, when separated from the MCC.

Isolation of the existing MCC and the complete identification and then disconnection of all incoming and out-going cables.

Removal and then disposal of the existing MCC, under Waste Electrical and Electronic Equipment (WEEE) regulations.

Pull back all cables and install new racking in the trench under the MCC for cable management.

Design, supply, Installation and testing of the new MCC which will control all aspects of the existing site field equipment, including 3 No pumps, instrumentation, telemetry, security and building services.

Install 1 No generator incomer for powering the whole site, including the 3 No pumps through a mains/generator changeover switch.

MCC will control existing pumps using 2 No of the Flygt My Connect Pump Controller & HMI. One is to be used for the EA 75kW pump and the 2nd to control the 2 No IDB pumps. (Details below)

Soft starts are to be installed for all pumps.

Provide new Level Sensors and Probes.

Carry out a design review of the current earth system. Carry out alterations as necessary to bring the earth system up to BS 7671 standards.

Carry out complete witnessed Factory Acceptance Test (FAT), commissioning of the new MCC.

Civil Scope of Works

The Civil scope of works shall comprise the following

Minor civils works to the access as detailed in the technical notes and S1700

Install new ducting with draw-pits for new washland level instrumentation cabling

Install new level instrumentation base.

Control building rainwater downpipes install spiked collars

S 102.2 Brant Washlands Scope

See Technical Note: Brant Washlands MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_17_00-SP-E-0001

See Brant Washlands GA Drawing: IMAN002794 JBAB-VP-5_3042_17_00 DR Z 1100

General Scope of Work

The General scope of works shall comprise the following

Environmental screening requirements as determined from the initial scoping walk overs as detailed within the site information environmental documentation.

Carry out required design and planning work for the project.

Obtain all relevant consents & permissions.

Mobilise on site and set up site compound and provide temporary welfare.

Carry out installations, complete witnessed Site Acceptance Test (SAT) and Field Team Training

Demobilise from site.

Develop an environmental technical note for management of suppression and the environment. This shall be considered during the design.

Electrical Scope of Work

The Electrical scope of works shall comprise the following

Liaise with Distribution Network Operative (DNO) to install a mains 4 pole Isolator (supplied by DNO) mounted if possible between the existing DNO cut-out cubicle and the new MCC, to allow for future isolation of the MCC without contacting the DNO, making sure the cabinet is completely enclosed and IP54 rated, when separated from the MCC.

Isolation of the existing MCC and the complete identification and then disconnection of all incoming and out-going cables.

Removal and then disposal of the existing MCC, under Waste Electrical and Electronic Equipment (WEEE) regulations.

Pull back all cables and install new racking in the trench under the MCC for cable management.

Design supply and install an MCC which will provide power and control all aspects of the existing site field equipment, including 2 No EA Pumps, 3 No In/Out Gates, instrumentation, telemetry, security and building services. The 2 No IDB pumps to be controlled by the Flygt MyConnect system.

Provide 2 No generator incomers; one for the new permanent generator (to be free issue by the *Client* from Short Ferry Depot) providing permanent back up power for the gates and control system through a mains/changeover switch, the second to power the pumps only through a pump change/over switch and socket incomer. (Generator power requirements to be determined by the Contractor)

As agreed with EA Catchment Engineer, top entry for the control panels are not a requirement. Bottom entry shall now be used as the bottom of the MCC is above the 1000yr flood level.

Installation and testing of the new MCC.

Soft starts are to be installed for all pumps.

Installation and reconnection of all cables, including scotch-cast joints or marshalling junction boxes where required to extend existing cables to the new MCC.

All new cables with be LSF.

Ducts to be sealed with fire retardant foam and topped with 'Rise' Sealant (water and gas tight).

The cables within the MCC shall be protected by the fire detection and suppression system. Provide new Level Sensors and Probes.

Supply and install lighting system.

Install PIR detection for external automatic light switching.

Carry out a design review of the current earth system. Carry out alterations as necessary to bring the earth system up to BS 7671 standards.

Carry out complete witnessed Factory Acceptance Test (FAT), commissioning of the new MCC.

Installation of fire detection and suppression system, note a Fire Risk Assessment has been undertaken previously.

Install free issued Permanent Generator. Provide all field cabling and earthing for the generator. No further allowance shall be made for the permanent generator.

Provide a hardstanding for the permanent and a temporary generator, along with suitable security measures.

Provide a Control System which meets SIL Level 3 to the Client's current guidance OI21_10.

Provide one project engineer for 1No. day to assist the *Client* with development of the *Client's* Cyber Contingency Plan.

Civil Scope of Works

The Civil scope of works shall comprise the following:

Replacement of the MCC building access door and door frame with a single SR3 security door with single lock. Barrel lock to be provided by the Client.

Minor civils works to control building access – As detailed in the Technical Note

Design and install new permanent generator base.

Design and install new temporary generator base.

Install new ducting with draw-pits for lighting system

Install new ducting with draw-pits for new level sensor cabling

Install new level instrumentation bases and lighting column bases.

Down pipes to be fitted with pole collars, shrouds or other climb prevention devices.

Supply and install parking bollards to gate side of generator

Supply and install new palisade style fence to enclose both generator bases along with Palisade style 2 leaf gates, to enable lorry access to remove and service the generators.

Supply and install single 1No. leaf access swing vehicle gate on access point.

Alterations to the existing site access gate to prevent snagging on the curb.

S 102.3 Witham Washlands Scope

See Technical Note: Witham Washlands MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_20_00-SP-E-0001

See Witham Washlands GA Drawing: IMAN0027494-JBAB-VP-5_3042_20_00-DR-Z-1103

General Scope of Work

The General scope of work shall comprise the following:

Develop an environmental technical note for management of suppression and the environment.

Environmental screening requirements as determined from the initial scoping walk overs as detailed within the site information environmental documentation.

Carry out required design and planning work for the project.

Obtain all relevant consents & permissions.

Mobilise on site and set up site compound and provide temporary welfare.

Carry out witnessed Site Acceptance Test (SAT) and Field Team Training

Demobilise from site.

Electrical Scope of Work

The Electrical Scope of works shall comprise the following

Liaise with Distribution Network Operative (DNO) to install a mains 4 pole Isolator (supplied by DNO) mounted if possible between the existing DNO cut-out cubicle and the new MCC, to allow for future isolation of the MCC without contacting the DNO, making sure the cabinet is completely enclosed and IP54 rated, when separated from the MCC.

Isolation of the existing MCC and the complete identification and then disconnection of all incoming and out-going cables.

Removal and then disposal of the existing MCC, under Waste Electrical and Electronic Equipment (WEEE) regulations.

Pull back all cables and install new racking in the trench under the MCC for cable management.

As agreed with EA Catchment Engineer, top entry for the control panels are not a requirement. Bottom entry shall now be used as the bottom of the MCC is above the 1000yr flood level.

Design supply and install an MCC which will provide power and control all aspects of the existing site field equipment, including 2 No pumps, 1 No penstock, 3 No control gates, 2 No In/Out Gates, instrumentation, telemetry, security and building services.

Install 2 No generator incomers; one for the existing onsite generator (to be retained) providing permanent back up power for the gates and control system through a mains/changeover switch, the second to power the pumps only through a pump change/over switch and socket incomer. (Generator power requirements to be determined by the Contractor)

Installation and testing of the new MCC.

Soft starts are to be installed for all pumps.

Installation and reconnection of all cables, including scotch-cast joints or marshalling junction boxes where required to extend existing cables to the new MCC.

All new cables will be LSF.

Ducts to be sealed with fire retardant foam and topped with 'Rise' Sealant (water and gas tight).

The cables within the MCC shall be protected by the fire detection and suppression system.

Provide new Level Sensors and Probes.

Supply and install lighting system.

Install PIR detection for external automatic light switching.

Carry out a design review of the current earth system. Carry out alterations as necessary to bring the earth system up to BS 7671 standards.

Carry out complete witnessed Factory Acceptance Test (FAT), commissioning of the new MCC.

Installation of fire detection and suppression system, note a Fire Risk Assessment has been undertaken

This site has on site Permanent generator already. Provide all field cabling and earthing for the generator like-for-like. No further allowance shall be made for the permanent generator.

Provide a hardstanding for the permanent and a temporary generator, along with suitable security measures.

Provide a Control System which meets SIL Level 3.

Provide one project engineer for 1No. day to assist the *Client* with development of the *Client's* Cyber Contingency Plan.

Mechanical Scope of Work

The Mechanical scope of works shall comprise the following

Existing Penstock actuator to be change for a new actuator of similar duty.

The new actuator to be automated from the main MCC

Civil Scope of Works

Scope of works shall comprise the following

Replacement of the MCC building access door and door frame with a single SR3 security door with single lock. Barrel lock to be provided by the Client. Replacement of the MCC building access door and door frame with a security door. A single SR3 steel security door shall be provided with a single lock (Lock type to be specified by *Client*).

Minor civils works to the control building access. – As detailed in the Technical Note

Design and install new temporary generator base.

Remove existing permanent generator fencing.

Install new ducting with draw-pits for lighting system.

Install new ducting with draw-pits for 1 penstock actuator cabling.

Install new level instrumentation bases and lighting column bases.

Down pipes to be fitted with pole collars, shrouds or other climbing prevention devices.

De-silt a 500m linear length upstream of the in/out gates assuming all material is able to be deposited on adjacent land.

Pollard 2 no. willow trees on the upstream embankment.

Supply and install parking bollards to gate side of generator

Supply and install new palisade style fence to enclose both generator bases along with Palisade style 2 leaf gates, to enable lorry access to remove and service the generators.

Supply and install single 1No. leaf access swing vehicle gate on access point.

S 102.4 Till Washlands Scope

See technical note: Till Washlands MCC Replacement - Document Ref: IMAN002794 JBAB EZ-5_3042_19_00 SP-E 0001
See Till Washlands GA Drawing: IMAN002794-JBAB-VP-5_3042_19_00-DR-Z-1102

General Scope of Work

The General scope of work shall comprise the following:

Environmental screening requirements as determined from the initial scoping walk overs as detailed within the site information environmental documentation.

Carry out required design and planning work for the project.

Obtain all relevant consents and permissions.

Mobilise on site and set up site compound and provide temporary welfare.

Carry out complete witnessed Site Acceptance Test (SAT) and Field Team Training

Demobilise from site.

Develop an environmental technical note for management of suppression and the environment.

Electrical Scope of Work

The Electrical scope of work shall comprise of the following:

Isolation of the existing MCC and the complete identification and then disconnection of all incoming and out-going cables.

Liaise with Distribution Network Operative (DNO) to install a mains 4 pole Isolator (supplied by DNO) mounted if possible between the existing DNO cut-out cubicle and the new MCC, to allow for future isolation of the MCC without contacting the DNO, making sure the cabinet is completely enclosed and IP54 rated, when separated from the MCC.

Removal and then disposal of the existing MCC, under Waste Electrical and Electronic Equipment (WEEE) regulations.

Pull back all cables and install new racking in the trench under the MCC for cable management.

Design supply and install an MCC which will provide power and control to all aspects of the existing site field equipment, including 2 No pumps, 2 No penstocks, 3 No. control gates, 2 No In/Out Gates, instrumentation, telemetry, security and building services.

Install 2 No generator incomers. One for the new permanent generator (to be free issue by the Client from Short Ferry Depot) providing permanent back up power for the building, gates and control system through a mains/changeover switch. The second to power the pumps only through a pump change/over switch and socket incomer. Generator power requirements to be Determined by the Contractor.

As agreed with EA Catchment Engineer, top entry for the control panels are not a requirement. Bottom entry shall now be used as the bottom of the MCC is above the 1000yr flood level.

Installation and testing of the new MCC.

Soft starts are to be installed for all pumps.

Installation and reconnection of all cables, including scotch-cast joints or marshalling junction boxes where required to extend existing cables to the new MCC.

All new cables with be LSF.

Ducts to be sealed with fire retardant foam and topped with 'Rise' Sealant (water and gas tight).

The cables within the MCC shall be protected by the fire detection and suppression system.

Provide new Level Sensors and Probes.

Supply and install lighting system.

Install PIR detection for external automatic light switching.

No further internal lighting is required.

Carry out a design review of the current earth system. Carry out alterations as necessary to bring the earth system up to BS 7671 standards.

Carry out complete witnessed Factory Acceptance Test (FAT), commissioning of the new MCC.

Installation of fire detection and suppression system, note a Fire Risk Assessment has been undertaken previously

Install free issued Permanent Generator. Provide all field cabling and earthing for the generator like-for-like. No further allowance shall be made for the permanent generator.

Provide a hardstanding for the permanent and a temporary generator, along with suitable security measures.

Provide a Control System which meets SIL Level 3.

Provide one project engineer for 1No. day to assist the *Client* with development of the *Client's* Cyber Contingency Plan.

Civil Scope of Works

The Civil scope of works shall comprise the following

Replacement of the MCC building access door and door frame with a single SR3 security door with single lock. Barrel lock to be provided by the Client.

Minor civils works to control building the access

Design and install new permanent generator base

Design and install new temporary generator base

Install new ducting with draw-pits for level instrumentation

Install new ducting with draw-pits for new lighting cabling

Install new ducting with draw-pits for penstock actuator cabling

Install new level instrumentation bases and lighting column bases.

Down pipes to be fitted with pole collars, shrouds or other climb prevention devices.

Supply and install parking bollards to gate side of generator.

Supply and install new palisade style fence to enclose both generator bases along with Palisade style 2 leaf gates, to enable lorry access to remove and service the generators.

Supply and install single 1 No leaf access swing vehicle gate on access point.

S 200 General Constraints on How the Contractor Provides the Works.

S 201 General Constraints

- The works should be programmed to minimise the period of time that the on site pumps / operational gates are to be taken out of service.
- The Lincoln Washlands Gates shall remain operable throughout the works. The *Contractor* shall ensure the necessary connections are in place to enable the *Client* field team are able to operate the gates using only the actuator local control switches, and on-site gauge boards. The *Client* Shall be responsible for monitoring the water levels and operating the site if required. The *Contractor* works shall not be affected by the *Client's* operation of the site. A separate and segregated access shall be provided to permit safe access for the *Client* at all times, in addition the *Contractor* shall provide space for the *Client* to park at least three vehicles on site.

Periods of isolation of mains power, to complete the switching or commissioning of the gates shall be completed in the smallest period of time possible (less than 24 hours) and the Client shall be given at least 14 days' notice of these operations to assess the operational risks of these activities. During these periods the *Contractor* shall make available if instructed a suitable device for operating the gates.

- The on-site pumps are not required for the duration of the works
- The Sesys cameras will also be offline however the *Client* may install temporary cameras to monitor the gates only.
- The disturbance of the nesting owl at Sand Syke shall be mitigated by working outside bird nesting season as far as possible (June-September), and seeking guidance from an Ecologist if work will encroach on this time period. *Contractor* shall follow the guidelines within the Environmental Action Plan (EAP Doc ref ENV0002436C-JBA-00-XX_XX-PL-EN-0100)
- There is 'low probability' of Bats within the roof spaces at the sites. The *Contractor* shall ensure that no works are conducted within the roof space at all sites. The *Contractor* shall follow the guidelines within the Environmental Action Plan (EAP Doc ref ENV0002436C JBA 00 XX_XX PL EN 0100). Should this stop works, then a CE is applicable.
- The *Contractor* shall ensure that all de silting work within the channel at Witham shall follow the guidelines within the Environmental Action Plan (EAP Doc ref ENV0002436C-JBA-00-XX_XX-PL-EN-0100). Should this stop works, then a CE is applicable.
- There is asbestos recorded at Sand Syke and Brant Washlands, the *Contractor* shall ensure that no work is carried out within the roof space where asbestos has been recorded.
- The site security shall not be reduced for the duration of the works. The site shall be secured at the end of the working day.
- Work shall be completed during normal working hours. (however, overtime may be discussed with the *Client*).
- The maximum hours of work permitted are:
 - Monday To Friday 8:00am to 6:00pm

- Saturday 8:00am to 1:00pm
- Sunday And Bank Holidays No work allowed

Any operations outside these hours shall not be undertaken without prior approval of the *Project Manager*.

- *Client's* SHEW CoP shall be complied with.
- The *Contractor* shall aim to reduce lifetime carbon by 40% over the duration of the project
- The works shall be executed in a manner such that the disruption to local residents, landowners, businesses and the general public is kept to a minimum.
- Generally, the *Contractor* shall ensure that:
 - Noise levels and vibration are kept to a minimum and that the specific requirements as defined in within this Scope are adhered to;
 - Traffic management is appropriate, well maintained and adhered to by the *Contractor*
 - throughout the works;
 - The Site is generally kept clean tidy and presents a professional appearance;
 - Traffic leaving Site is clear of debris and that regular and effective road cleaning is carried out to avoid contamination or complaints by the Highways authority or the public.
- The *Contractor* completes his operations in accordance with guidance issued by the Construction Industry Council relating to site operations during the COVID-19 pandemic (23rd March 2020 Guidance at time of Tender). If *Others* are not available due to the pandemic restrictions the *Contractor* shall seek instruction from the *Project Manager* on how proceed.

S 202 Confidentiality

Due to the strategic importance of the site, the *Contractor* does not disclose information in connection with the *works* except when necessary to carry out their duties under the contract or their obligations under the contract

The *Contractor* may publicise the services only with the *Client's* written permission.

The *Contractor* shall assist the *Client* with any requests for information that fall within the ambit of the Freedom of Information Act 2000 or the Environmental Information regulations 2004, providing a response within 5 days of any request by the *Client*.

S 203 Security and Protection on the Site

Due to the strategic importance of the site, the *Contractor* shall ensure the Site remains at the existing security level for the duration of the project (see Technical Notes for details). Increases to security ratings are detailed in S102.

The *Contractor* shall take due account of the locality, potential anti-social behaviour problems and other associated risks and make appropriate security and safety

provisions to protect the Site, *works* and all Equipment, Plant and Materials from damage and vandalism.

The *Contractor* shall secure the compound and Working Area against trespass and other unauthorised access.

S 204 Security and Identification of People

The *Contractor* shall make arrangements for the control of people working and visiting the Site.

The *Contractor* shall ensure that all persons working on or visiting the Site hold a valid and current Construction Skills Certification Scheme (CSCS) card. Persons without this card shall be escorted at all times by a member of the site team.

A visitors' book shall be maintained by the *Contractor* in which the date, the time in, the time out, evidence of a specific Health and Safety induction, CSCS number, and the name and company of the person visiting shall be noted.

The *Contractor* shall ensure that the construction works do not compromise the security of properties within or adjacent to the Site.

The *Contractor* is wholly responsible for the security of the Site, passage of vehicles, personnel / pedestrians and security of neighbouring properties as far as their security is affected by the works, including personnel, plant, equipment and materials used in the delivery of the works.

The *Contractor* shall establish an identity card system to provide easy identification of people authorised to be on the site. The system shall be subject to the acceptance of the Project Manager.

First Aiders shall additionally be clearly identifiable either through the use of coloured safety helmets, tabards or similar and identified across the Site noticeboards. The *Contractor's* staff, workpeople and subcontractor's workpeople shall wear clearly identifiable Identification Badges including the *Contractor's* company name at all times whilst on the Site.

The existing Sesys cameras shall not be available to provide any form of security monitoring.

S 205 Protection of Existing Structures and Services

The Washlands sites are flood reservoirs and thus fall under the Reservoirs Act 1975. The *Contractor* shall ensure that any work does not impact the stability of retaining embankments.

The *Contractor* shall take all necessary steps to protect the existing structures, apparatus, services, roads, access ways, footpaths, trees, fences, gates, etc. except where modification or demolition of the existing structure or existing item is part of the *Contractor's* design to deliver the works. In all cases the *Contractor* shall repair and restore any areas of the existing structures, apparatus, roads, access ways, footpaths, fences gates etc that are damaged during the works, howsoever caused.

The *Contractor* shall ensure that the ongoing functional operation of existing apparatus is not affected by the works other than as agreed by the *Client* in order to facilitate the delivery of the works.

Existing services shall be protected from damage (unless being upgraded under the scope of works).

Wherever excavations are being undertaken or where works may adversely affect services both in the permanent or temporary case, the *Contractor* shall hand dig in the vicinity of any services to confirm their exact location and to minimise the risk of damaging them.

The *Contractor* is responsible for maintaining the existing services within the Site and shall arrange for the relocation of any services to allow satisfactory completion of the works at the *Client's* expense.

All existing services, including water, electricity, telephone, drainage and other services shall be maintained with minimal interruption during the *works* that will be agreed with the *Project Manager*.

Services shall not be interfered with in any way, except insofar as may be specified in the Scope or otherwise be agreed by the *Project Manager* as the works progress.

The *Contractor* shall comply fully with the requirements of the relevant statutory authority when working in the vicinity of their apparatus, both for the permanent and temporary works, including any accesses off the public highway.

S 206 Protection of the Works

The *Contractor* shall take all reasonable care and precautions not to damage the *works* and shall keep such areas clean of debris, dirt, dust, etc. arising from his operations.

The Contractor shall be responsible for the repair of any damage to the *works* arising as a result of his actions to the satisfaction of the *Project Manager*.

S 207 Cleanliness of the Roads

The *Contractor* shall prevent vehicles entering and leaving the Site depositing mud or other debris on the surface of adjacent roads, pavements or footpaths, and shall remove promptly any materials deposited.

The wheels of construction vehicles shall be cleaned before exiting the Site when required in order to ensure that debris is not carried onto the highway.

The *Contractor* shall undertake regular and effective road cleaning on public and private roads as applicable to the stage of the *works* to avoid contamination or complaints by the Highways authority or the public.

Compliance with these requirements will not relieve *Contractor* of any responsibility for complying with the requirements of any Highway Authority in respect of keeping roads clean.

S 208 Traffic Management

No further Scope information under this heading.

S 209 Condition Survey

In addition to the specific scope requirements.

Structural Surveys

Condition surveys of the properties which may be affected by the works will be undertaken by the *Client* and provided to the *Contractor* prior to works commencing.

As identified in WI 201 the *Supervisor* and *Contractor* are to review the surveys and are to agree the any points of the works which will require additional vibration monitoring.

Should vibration or monitoring of existing structures be required, the *Contractor* shall provide the *Project Manager* with a minimum of 14 days notice of his intention to undertake monitoring vibration surveys in properties outside the site. The *Project Manager*, in conjunction with the Site Liaison Officer shall then arrange for all permissions for entering such property for the purposes requested. The *Contractor* shall abide by any requirements such as appointments, timing and notification periods and protocol associated with these permissions.

Pre-Start Condition Survey

Prior to any work commencing on site, the *Contractor* shall undertake a condition survey with the *Supervisor* and agree and record the condition of the existing land, access routes and works areas including features such as trees and planting, which may be affected by *Contractor's* operations. The *Contractor* shall include in his survey the following features to the outside the boundaries of the site:

- All access roads from the public highway, including the public highway to the site.
- Any additional land used for access to the site.
- Land including trees or boundaries.
- Areas used for storage or site compounds.
- Any pipes, services, culverts or other below ground or above ground feature.

The results of each survey shall be recorded in a separate report for each area of the site. The surveys shall include photographic/video record. Where appropriate the Site Liaison manager, in consultation with the *Project Manager* will then arrange for the owner/occupier to acknowledge their agreement to the report.

During any condition surveys on public highways or in the public parks the *Contractor* shall invite a representative of the Highways Authority to attend the survey.

The surveys shall be undertaken by a competent and suitably experienced surveyor.

Post-completion Condition Survey

The *Contractor* shall undertake similar surveys to those identified above and report within 2 weeks of completion to demonstrate the condition of the reinstated site on hand over.

The surveys shall be undertaken by a competent and suitably experienced surveyor.

S 210 Consideration of Others

The *works* shall be executed in a manner such that the disruption to local residents, landowners, businesses and the general public is kept to a minimum.

Generally, the *Contractor* shall ensure that:

- Noise levels and vibration are kept to a minimum and that the specific requirements as defined in within this Scope are adhered to;
- Traffic management is appropriate, well maintained and adhered to by the *Contractor* throughout the works;
- The sites are generally kept clean, tidy and present a professional appearance;
- Traffic leaving sites is clear of debris and that regular and effective road cleaning is carried out to avoid contamination or complaints by the Highways authority or the public.

S 211 Control of Site Personnel

The site shall be controlled by the *Contractor* from Mobilisation (Acceptance of permission to work form received from Short Ferry Field team) to Hand-over of the site.

The *Client* has the option to retake control of the site if required to maintain flood management, however the ECA shall allocated duties in such an event.

The Contractor ensures that none of his staff, employees and workpeople and any subcontractor's workpeople make any remarks, noises, gestures, movements or other actions that could be considered to be racially or sexually offensive.

S 212 Site Cleanliness

The *Contractor* shall ensure that Public Rights of Way (PRoW)'s is maintained clear, or diverted for the duration of the works.

S 213 Waste Materials

Removal and then disposal of the existing MCC shall comply with Waste Electrical and Electronic Equipment (WEEE) regulations. Any components which may be utilised as spares by the *Client* shall be identified prior to electrical handover, these shall be provided to the *Client* after removal of the system.

The *Contractor* shall dispose of Waste materials away from Site without any contamination of waterways or surrounding land. Disposal is in accordance with the Site Waste Management Plan and by a licenced waste disposal contractor with procedures to provide an audit trail.

The *Contractor* shall determine volumes of waste to be disposed of offsite and apply for the appropriate licences from the Environment Agency.

Where Materials arising from or required for the works constitute 'Controlled Waste' under the Environmental Protection Act 1990, the *Contractor* shall provide the Supervisor with a copy of the carrier's licence to transport the Materials and copies of all Waste transfer notes.

Any desilting works shall comply with appropriate 'waste carrier' and 'waste duty of care' obligations. However, the Contractor shall assume that silt may be stored on adjacent embankment.

S 214 Deleterious and Hazardous Materials

Hazardous Substances

The *Contractor* advises the *Project Manager* in writing of any substances that he proposes to bring on the Site that fall within the 'Control of Substances Hazardous to Health' Regulations, or otherwise require special precautions to be taken. Such advice is to include copies of all relevant COSHH assessment sheets.

Hazardous substances shall not be brought onto the Site, used for any purposes or incorporated into the *works* without the prior written consent of the Site owner, unless specified in the Contract.

Asbestos

The *Contractor* shall take all necessary precautions for safe handling, removal and disposal of identified asbestos from Site. Reference should be made to the Site Information for known records of asbestos on site.

Lead

Sections of painted metalwork on the site and handrail fixings should be assumed to contain lead paint or portions of lead. The *Contractor* should take a precautionary approach unless otherwise proved by his testing.

Explosives

Explosives shall not be used on the Site. The *Contractor* should refer to the Unexploded Ordnance Desk study included in the Site Information.

Temporary Storage

All petroleum and inflammable materials shall be stored in fireproof buildings.

No petroleum spirit within the meaning of the Petroleum (Consolidated) Act 1928 as amended by DSEAR and the Petroleum (Transfer of Licences) Act 1936 shall be stored on the Site until the acceptance of the *Project Manager* and the necessary licences under the Act have been obtained.

S 214 Reinstatement of the Site

On completion of the Contract, the *Contractor* shall return the working areas, accesses and roads and any other affected areas to a condition not inferior to that pertaining at the commencement of the Contract. The *Contractor* shall obtain approval from the *Project Manager* for the scope and standard of restoration.

On completion of the works, the full extent of all working areas whether affected by the permanent works or by temporary works and accesses shall be reinstated as soon as possible after completion of the works with land restored to at least as good a condition as that prior to the start of works.

The *Contractor* shall remove any materials, temporary fencing or temporary surfacing not incorporated in the permanent works.

Private property boundaries disturbed during the works shall be made good to the satisfaction of the resident and *Project Manager*.

The reinstatement of any road openings associated with the works shall be in accordance with the HAUC specification.

S 214 Contractors Buildings and Compounds

The Contractor shall proposed a location for site / satellite compounds adjacent to or within the boundaries of the site.

The main site compound shall contain the *Contractor's* facilities and accommodation for the *Project Manager's* staff.

No other compound may be formed without the *Contractor* obtaining the written consent of the *Project Manager*. For alternative arrangements, it shall be the *Contractor's* responsibility to negotiate, arrange, pay for and reinstate the areas.

The compound area shall be clearly defined using temporary fencing or similar, and site access from the highway shall be clearly signed.

Before any temporary buildings are erected the *Contractor* shall submit to the *Project Manager* for approval a plan showing the proposed layout of the site compound, the position of offices, conveniences, services (electricity, phone, water), materials storage area, etc.

On Completion of the Works, the *Contractor* shall remove all temporary buildings, and the site compound area shall be made good and returned to its original condition.

The *Contractor* shall be responsible for the safe storage and insurance against damage and theft of all materials and equipment.

Site Compounds and temporary buildings shall be maintained in a clean, safe and secure manner at all times.

The *Contractor* shall obtain all necessary approvals, comply with the relevant utility authority's requirements, provide and pay for all temporary services he may require.

Upon completion of the Works, the *Contractor* shall remove all temporary services and reinstate the area to its original condition.

The *Contractor* shall make is own arrangement for the provision of services.

S 300 Contractor's Design

S 301 Design Responsibility

The *Contractor* shall provide a Detailed Design for the Electrical, Mechanical, and Civil requirements of the scope stated in section S102. This shall include Documentation, Drawings, and Calculations (as applicable). This shall be submitted to the *Client* for acceptance prior to manufacture.

S 302 Design Submission Procedures

All documentation submitted to the *Client*, *Project Manager* or CDM Advisor throughout the duration of the project shall comply with the *Client's* MEICA Standard Specification 369_13_SD21_Documentation.

Whenever documentation, drawings, calculations, images or any other material are available in electronic format, a copy of the electronic information must be provided to the *Client* or the *Project Manager*.

All technical submissions, such as specifications, sketches, method statements for preparation & application and technical literature must be provided in both the original file format (.dwg/.dxf /.doc /etc) and pdf format at the correct/original scale.

Model sizes shall not exceed 300Mb and other files shall not exceed 100Mb in order to manage information transfer and opening times.

Any information shared between the *Client* and other parties shall not be shared with external parties without prior consent.

During the development of the design the *Contractor* shall produce the following documentation:

Stage 1 – Design Submission, Design Philosophy Statement, Functional Design Specification.

1. Within 4 weeks of the start date the Contractor shall provide a Design Philosophy Statement and outline commissioning and installation plan, this should as a minimum include consideration of the following:
 - a. Approach to design of the new MCC.
 - b. Approach to how the subcontractor will complete surveys to verify any site information on which he relies on for his design.
 - c. Methods of achieving design verification.
 - d. Methods used for construction, included proposals for any pedestrian and/or traffic management.
 - e. How key health and risks will be managed, e.g. confined space working and lifting operations.
 - f. Sub-contractor(s) shall input into the Contractor's H&S Document.
 - g. Agreed acceptance criteria, and commissioning process

Stage 2 – Design Submission, Detailed Design

1. The complete detail design submission will include the following:
2. General arrangement drawings of the works
3. Plans, sections and elevations drawings of the works
4. Standard details drawings
5. Specifications of sub-contractor 's proposals
6. Single Line Diagram & Cable Calculations
7. Material COSHH data sheets
8. Designer's Risk Assessments
9. Buildability Statements
10. Any additional technical specifications to support the detailed design
11. Maintenance requirements.

For any of the design drawings and/or calculation, the Contractor shall provide one hard copy set and one electronic copy.

The detail design will only be considered as being complete when accompanied by a signed check certificate and accompanied by all documents / calculations / drawings necessary to enable a design review to take place. Once accepted by the Project Manager it will be passed on to the *Client* for review, only complete design package submissions will be reviewed.

The *Contractor* shall not commence construction without prior written approval that the design is accepted.

At least four weeks before the site acceptance testing; the *Contractor* will submit to the Project Manager a completed operation and maintenance manual for their elements of the works in draft format.

The manual shall comply with the format stated in *Client's* MEICA Standard Specification 369_13_SD21 Documentation. The *Contractor* shall complete sections 1, 2 & 3 to cover their elements of the works.

The manual shall be written in plain English for a non-technical user/operator.

The manual will remain in draft format until the satisfactory completion of site acceptance testing, commissioning and training has been agreed, at which point the operation and maintenance manuals can be finalised.

If any errors are discovered in the final version of the manual, or if it is necessary to make any modifications to the plant or equipment during the maintenance period, the manual must be amended accordingly by the *Contractor* with a replacement set of each of the pages and drawings concerned within two weeks of the modifications being complete.

S 303 Design Approval from Others

Where necessary the Contractor shall seek design approval for the works from the affected respective landowner and statutory approving authorities prior to commencing works on site.

S 304 Client's Requirements

The *Client's* requirements for the parts of the works to be designed by the *Contractor* are as follows:

- Specifications, Design standards, Technical Notes and codes of practice are set out in section S1700
- The new MCC shall be sized to enable it to sit on the existing MCC plinth, and to fit through the existing door.
- The new design shall be sized to be suitable for the electrical load requirements of the site (with the exception of any generators which shall be free issued)
- The design life of the electrical installation is as per the MEICA standards (20 years), however the Contractor shall provide a spares list and O&M Manual to ensure the longevity of the site.
- Carbon Tool outputs shall be used to inform design selection and methodology

S 305 Design Co-ordination

The *Contractor* shall manage the design co-ordination from specialist subcontractors. A team organogram illustrating roles and responsibilities shall be provided to the *Client* and External CDM Adviser, for information, within 2 weeks of Contract award.

The *Contractor* shall also manage co-ordination with the *Client's* Asset owner, maintainers and operators.

S 306 Requirements of Others

The *Contractor* shall be responsible for liaising with, and managing, permitting authorities, and applying for any required licences or consents/approvals.

S 307 Copyright / Licence

No further Scope information under this heading.

S 308 Access to Information Following Completion

The *Contractor* shall retain information for 6 years.

S 309 Site Investigations

No further Scope information under this heading.

S 400 Completion

S 401 Completion Definition

The following are absolute requirement for Completion to be certified, without these items the *Client* is unable to use the *works*:

- Accepted SAT test at all sites.
- Completed Snagging List
- All Health and Safety Files, Operating and Maintenance Manuals, and As Built drawings submitted.
- Certificate of Conformity to be issued
- Population of the *Client's* latest version of the Project Cost and Carbon Tool, or its successor
- Transfer to the *Client* databases of BIM data
- Delivery of the Final Carbon Report

Use, in part or in whole, of any part of the *works* as a flood defence shall not constitute takeover of the *works* by the *Client* prior to completion.

S 402 Sectional Completion Definition

Each site shall be deemed to be sectionally complete once the items below are completed.

The following are absolute requirement for Sectional Completion to be certified, without these items the *Client* is unable to use the *works*:

- Accepted SAT test at the site
- Staff are trained at the site
- 1 hard copy of the updated site Health and Safety File and one electronic version for each site
- Certificate of Conformity to be issued
- 1 hard copy of Operating and Maintenance Manuals and one electronic version for each site
- 1 hard copy of As Built drawings and one electronic version for each site
- Transfer design submission on to the Client databases of BIM data

See S408 Take Over

S 403 Training

Training on the new MCC shall be provided before or during the Site Acceptance Test.

The *Client* shall provide the *Contractor* with a list of attendees and organise a date for the attendees to meet with the *Contractor* on site for training.

S 404 Final Clean

The site shall be returned to the *Client* in the same condition as it was provided to the *Contractor*.

All new Plant, especially electrical plant, shall be cleaned to ensure that no dust or deleterious material remains from the construction activities.

All work areas, access routes, laydown areas, etc., are cleared of all construction equipment, waste and left in a clean condition.

S 405 Security

After the SAT test, the *Client* shall take over security arrangements for the site.

S 406 Correcting Defects

During the SAT tests if a piece of existing equipment fails to operate the *Contractor* shall demonstrate that he has taken reasonable steps (without intrusive investigations) to ensure that the new MCC's are compatible with the existing plant and equipment on site. If a fault is found during the SAT tests that results in the plant and equipment not operating the *Contractor* shall demonstrate that the correct signals or power are being sent to the plant and equipment. The *Project Manager* shall then provide an instruction on how to proceed.

Any Defects found by either the *Project Manager*, *Clients* staff or the *Contractor* are to be reported to the *Supervisor* within 24 hours of any such Defect being found. The *Supervisor* will notify the *Contractor* of the Defect and confirm whether the Defect is considered to be critical and requires emergency correction within 24 hours.

During the Defects period the *Contractor* will be required to liaise with the *Project Manager* and arrange when work is to be undertaken.

S 407 Pre-Completion Arrangements

Prior to any works being offered for takeover or Completion the *Contractor* shall arrange a joint inspection with the *Supervisor*, *Project Manager*, *Client* (scheme Project Manager) and Senior User. The initial inspection shall take place a minimum of three weeks in advance of the planned takeover or Completion.

S 408 Take Over

Each site may be operated in the event of a flood warning, in line with the arrangements within the ECA form. Areas may include the Gates and Pumps. This does not mean the site has been Taken Over by the *Client*.

Pursuant to contract clause 35.2, use of the *works* for flood risk management activities during the execution of the *works* does not constitute taking over the *works* in part or as a whole.

The site Take Over shall occur once the items above are completed, with the exception of producing As Built drawings, which shall be finalised within 1 month of Take Over (Clause 35.3). The *Contractor* shall instruct the *Project Manager* of the proposed takeover date as shown on the Program.

S 500 Programme

S 501 Programme Requirements

The programme complies with the requirements of Clause 31.2 and includes alignment and submission of the BEP and Master Information Delivery Plan (MIDP).

S 502 Programme Arrangement

No further scope requirement under this heading.

S 503 Methodology Statement

The *Contractor* provides a Design Philosophy and Buildability Statement outlining the thought processes behind the design for each site and designer's methodology for undertaking the works. This Document shall also include buildability linking with the ECA arrangements. For example, any stages of work which must be completed prior to starting the next stage.

Method statements which will require a 4 week period of reply as they will include the need for the acceptance of *Others* are to include but are not limited to the following matters:

- Temporary flood control measures.

The *Contractor* shall demonstrate his proposals to minimise environmental impacts and to comply with environmental best practice principally through the content of, and adherence to, the Method Statements.

S 504 Work of the *Client* and Others

The order and timing of the work of the *Client* and Others shall be included in the programme as a separate activity, and information to be provided. Refer as necessary to section S900.

S 505 Information Required

No further scope requirement under this heading.

S 506 Revised Programme

The *Contractor* shall include an explanation of changes affecting the critical path and any specific requirements for the submission of revised programmes.

S 600 Quality Management

S 601 Samples

No further scope requirement under this heading.

S 602 Quality Statement

The *Contractor* shall submit with the Operation and Maintenance manuals a Certificate of Compliance as well as CE marking of any new installations.

S 603 Quality Management System

The *Contractor* shall comply with all standards detailed within the S102 and S1700

WI 603.1 Quality management

The *Contractor* operates a Quality Management System complying with BS EN ISO 9002.

The *Contractor* describes the Quality Management System in a Quality Plan, which is provided to the Project Manager for acceptance within 14 calendar days of the Contract Date.

The quality of the works is self-certified by the *Contractor* as set out in the Quality Plan which is accepted by the *Project Manager*.

WI 603.2 Quality control

The *Contractor's* Quality Control manager certifies that activities have been carried out in accordance with the Works Information when:

- an experienced and qualified surveyor has checked and certified that the work is in its correct position, level and alignment
- a works checker has checked and certified that Materials, workmanship cleanliness and other matters not checked by the surveyor are correct
- a testing technician has certified materials tests.

Copies of relevant supporting certificates relied on by the Quality Control manager are attached to their certificate.

The *Project Manager* and or the *Supervisor* may at any time audit the quality control process and for this purpose is given assistance and access by the *Contractor* to:

- documents used in connection with the certification process, including but not limited to Site diaries, calibration certificates, memos; and to
- interview persons involved in providing the works

S 604 BIM Requirements

The *Contractor* shall ensure that:

- a) Final deliverables supplied such as reports, drawings and works information shall be subject to a suitable form of version control in

accordance with BIM protocols. For example, this might include incremental changes in reference numbers for reports etc.

- b) Draft reporting is in native format (e.g. .doc/docx).
- c) Project deliverables such as model files, survey data or anything of a personal nature such as questionnaires or address data shall be sent to the Employer in an encrypted format using 7 Zip 128 bit encryption.
- d) Model sizes shall not exceed 300Mb and other files shall not exceed 100Mb in order to manage information transfer and opening times.
- e) Any information shared between the Environment Agency and other parties shall not be shared with external parties without prior consent.
- f) All documentation submitted to the Environment Agency or Principal Designer throughout to the duration of the project shall comply with the Environment Agency MEICA Standard Specification 369_13_SD21 Documentation.
- g) Whenever documentation, drawings, calculations, images or any other material are available in electronic format, a copy of the electronic information must be provided to the Environment Agency or the Principal Designer.
- h) All technical submissions, such as specifications, sketches, method statements for preparation and application and technical literature must be provided in both the original file format (.dwg/.dxf /.doc /etc) and pdf format at the correct/original scale. Once final, reporting shall be provided in .PDF format.

The BIM Information Manager is the *Client's* scheme project manager.

S 700 Tests and Inspections

S 701 Tests and Inspections

The *Contractor* shall submit an Inspection and Test plan for the FAT and SAT to the *Client* for acceptance prior to design approval. This document shall detail:

- a) Objective, procedure and standards to be used
- b) When they are to be done
- c) Where they are to be done
- d) Who does the tests, and who is in attendance?
- e) Testing and inspection method
- f) The Equipment required and who provides it?
- g) Access arrangements
- h) Information or instructions required to be provided
- i) Materials, facilities and samples to be provided
- j) Acceptable results and deviations
- k) Signatories and sign off, of the testing.
- l) Test environment
- m) Documents to be provided before and after the test
- n) Whether or not authorisation to proceed to the next stage of the work depends on the test results

The Contractor shall allow for the Client to attend a Factory Acceptance Test (FAT) of the new MCC and control system.

The operation and maintenance manuals shall be submitted in draft format prior to the site acceptance test as per section S 302

Each individual element of works shall be tested, commissioned and demonstrated to the Client, personnel prior to formal handover, including a training session for the Client staff and IDB teams. The Contractor shall allow to fully test and provide commissioning support to the commissioning team. The mechanical installation shall be tested in accordance with security industry recognised standards and the test results recorded and placed within the O&M documentation.

Handover shall not be achieved until the satisfactory completion of a previously agreed testing schedule and training. The proposed testing schedule shall be submitted to the Client two weeks prior to handover. The testing schedule shall take the form of a list of inspection and performance items and include defined acceptance criteria for each item.

Handover shall not be achieved until the satisfactory completion of an agreed testing schedule and training.

S 702 Management of Tests and Inspections

See Section S701

S 703 Covering up Completed Work

No further scope requirement under this heading.

S 704 Supervisor's Procedures for Inspections and Watching Tests

See Section S701

S 705 Reduction of Carbon against the Original Solution Carbon Budget

The carbon budget is the limit set for the project and shall be applied to the appraisal contract, by which the *Contractor* is required to reduce their carbon on a project level bases.

The *Contractor* shall aim to reduce their carbon on a project level basis by 40% of the original carbon budget. The measure for this carbon reduction shall be calculated using the Environment Agency carbon tool (inclusive of calculation and associated reports).

Reporting updates shall be provided at the end of the project.

S800 Management of the Works

S 801 Project Team – Others

The *Client* will appoint a CDM Advisor, who will report via the *Client*.

An Environmental Clerk of Works (ECW) will report (if required) via *Client's* scheme project manager.

A site supervisor will be provided by the *Client*, this person shall take the role of the ITA.

S 802 Communications

The *Contractor* shall ensure the following communication items are complied with:

- a) The *Client* shall specify a Common Data Environment which shall be used for the duration of the project to share information
- b) A communication organogram shall be produced within 2 weeks of Contract issue
- c) Meetings, attendees, meeting records, and action list shall be shared with the project team within 2 working days of meetings
- d) A list of common terminology and abbreviations shall be issued and updated within the shared environment.
- e) Weekly progress teleconferences shall be attended by the *Contractor's* project manager as a minimum.
- f) Monthly progress meetings shall be attended by the *Contractor's* project manager and planner as a minimum.
- g) The *Contractor* shall provide a written progress report at least 1 working day before attending the weekly progress teleconference. The report will be appropriate for the scale and risk of the relevant works.
- h) The *Client's* standard forms are used to manage the procedures of the contract unless otherwise agreed by the Parties
- i) During construction site weekly reports shall be issued to the *Client* detailing progress and SHEW information

The *Contractor* seeks opportunities to provide the works more efficiently and discusses these opportunities with the *Project Manager* and the *Client*. Any such opportunities realised are recorded on the efficiency register which is updated monthly at progress meetings.

S 803 Monthly Progress Reporting

Monthly progress reports shall be provided in the format included in the Contract Management System. In addition to reporting on progress of activities on the programme and description of risks, Early Warnings and Compensation Events the *Contractor* shall include financial and carbon updates and forecasts to meet *Client's* deadlines together with the production of checkpoint reports, end stage reports, exception reports (as required), end project report, daily log and other management products in accordance with PRINCE2.

S 900 Working with the Client and Others

S 901 Sharing the Working Areas with the *Client* and Others

The *Contractor* co-operates with Others including landowners and tenants and obtains the necessary permits from them in accordance with their Site safety procedures prior to commencing any work on their land.

S 902 Co-operation

The *Contractor* shall liaise with Others including landowners and tenants for the co-ordination of the works and access on the Working Areas. These drawings are referenced in S1702.

The contractor shall assume they will have available access to the site and sole use of the control building for the duration of the project. The *Contractor* shall not be required to provide access to the site for the *Client* or Others for the duration of the works.

S 903 Co-ordination

The *Contractor* shall liaise with the *Client* and Others to ensure the Scope within Section S102 and this Scope Document can be completed.

S 904 Authorities and Utilities Providers

The *Client* shall be responsible for liaising with and making any necessary arrangements with:

- Openreach (if required)
- The IDB - for ongoing arrangements between the EA and the IDB, including in agreement of control philosophies.
- Any other Utility provider for any permanent alteration.

The *Contractor* shall be responsible for liaising and making any necessary arrangements with:

- CLH Pipeline Protection Company (any temporary works required directly related to managing)
- The DNO operator
- The IDB under the IDB consenting procedure to undertake work on or around IDB assets.
- The Environment Agencies Environmental Permit (EP) / Flood Risk Assessment Permit (FRAP).

No other interface is foreseen under this Scope.

The *Contractor* shall liaise with the *Client* and Others to ensure the Scope within Section S102 and this Scope Document can be completed.

S 905 Diversity and Working with the Client, Others and the Public

Public Relations shall be co-ordinated by the *Client*.

The *Contractor* shall notify all press and media enquiries to the *Client*.

The *Contractor* shall notify the *Client* of any requests for meetings from third parties so that the *Client* has the option to attend or send a representative.

The *Contractor* shall ensure processes are in place to ensure an inclusive environment for our project team, and to support diverse workforces where possible.

S 1000 Services and other things to be provided

S 1001 Services and other things for the use of the *Client*, *Project Manager* or *Others* to be provided by the *Contractor*.

The *Contractor* shall provide adequate welfare for his staff and others in accordance with the Employer's Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (CoP) version 3, May 2018.

The *Contractor* shall ensure:

- a) Security on site is maintained to the existing standard for the duration of the works, a security guard shall be provided if existing security measures are temporarily reduced.
- b) Sign boards and other signage is installed (to be designed by the *Client*). The *Contractor* shall not erect any signboards without the written consent of the *Project Manager*

S 1002 Services and other things to be provided by the *Client*

The *Client* shall provide:

- a) Access to the Site
- b) Site information
 - o Existing O&M manuals for all sites
 - o Existing as built drawings for the sites
- c) The Generators to be installed from short Ferry Depot shall be provided free issue. No works to these generators by the *Client* is included within this scope of works.

The principal designer prepares the Health and Safety File in accordance with the requirements of the 'Safety, health and environment (SHE) handbook for managing capital projects' (Operational Instruction 300_10) and the Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (CoP) (May, 2018). The Health and Safety File is submitted to the *Client* for acceptance a minimum of 20 working days prior to planned Completion Date. Specific H&S Files for each site will be prepared by the Principal Designer for each Compartment as appropriate.

The *Contractor* shall provide information and data relevant to the works to enable the CDM Advisor to comply with their duties including assessment of competence.

S 1101.6 Health and Safety Officer and Site audits

The *Contractor* provides on the Site a competent Health and Safety Officer whilst any work is carried out on the Working Areas.

The *Contractor's* health and safety officer carries out regular audits of the Site works and submits copies of audit reports and proposed remedial actions to the *Supervisor* prior to the end of the following week.

The *Client* may carry out Site audits. The *Contractor* assists in these audits and complies with any recommendations made during such audits.

S 1101.7 Occupational health

The Contractor provides an occupational health programme for their staff and is registered with "Constructing Better Health".

S 1101.10 Emergency arrangements

Refer to section 1 of CESWI 7 and the additional clauses included in Minimum Technical Requirements (412_13_SD01) Emergency Arrangements. In case of any conflict, the Works Information in this document prevails over CESWI 7 and the Minimum Technical Requirements.

The *Contractor* maintains arrangements whereby he can call out within 3 hours, labour, Equipment, and Materials outside normal working hours to carry out any work needed for an emergency associated with the works. The *Contractor* provides the *Project Manager* at all times with the names and telephone numbers of at least two senior members of the *Contractor's* Site team who are responsible for organising emergency work. These people are included on the *Client's* 'Emergency contact arrangements for construction Sites'.

The *Contractor* acquaints himself and their employees with any relevant emergency arrangements including those of the *Client* and any landowners or tenants.

The *Contractor* provides emergency vehicle access to properties at all times and gives reasonable access to members of the emergency services who may inspect the Site.

The *Contractor* provides access to all parts of the Site for the *Client's* Operations staff to undertake emergency inspections or repairs to hydrometric equipment or flood defences.

S 1102 Method Statements

See Section S503.

The *Contractor* shall be responsible for specifying where method statements are required, and for checking and approving them under their internal quality control system.

S 1103 Legal Requirements

The *Contractor* shall carry out any legal duties required under their works.

S 1104 Inspections

The *Project Manager* is entitled to inspect all registers, reports and certificates, which the *Contractor* is required by law to keep and issue in respect of safety matters and accidents.

S1200 Sub-Contracting

S1201 Restrictions or Requirements for Sub-contracting

The *Contractor* complies with the requirements for a Project Bank Account and associated payment of Subcontractors (including sub-consultants and suppliers).

S1202 Acceptance Procedures

The *Contractor* shall submit any subcontractor designs to the *Client* in line with the Contract check and review process.

The *Contractor* shall submit any subcontract that requires a collateral warranty between the proposed Subcontractor and the *Client*, or a third party, to the *Project Manager* for acceptance.

S1300 Title

S1301 Marking

Within the Working Areas, the *Contractor* prepares each item of Equipment and Plant and/or Materials for marking by the *Supervisor* by:

- a) preparing the item as detailed in the technical specification
- b) completing the tests and inspections as per Section S 701
- c) providing to the *Project Manager*,
 - a. evidence that the *Contractor* has the right to pass title to the *Client*; and
 - b. a signed and dated certificate passing ownership of the item to the *Client*.

S1302 Materials from Excavation and Demolition

The *Contractor* shall remove and dispose of any waste electrical items under Waste Electrical and Electronic Equipment 2019 (WEEE).

Waste material from excavations shall be dealt with by the *Contractor* and disposed of, or spread, responsibly.

S1400 Acceptance or Procurement Procedure (Options C)

S1401 Procurement Procedures

The *Contractor* sets up a procedure for vesting of items not yet delivered to the Site in the *Client* prior to payment being made for such undelivered items.

The *Client* has specified the 'Flygt MyConnect' system. If the Flygt system does not allow connectivity via PLC or VPN, the Contractor shall agree alternative arrangements with the *Client* under a CE.

S1402 VAT Certificate

Immediately upon receipt of payment, the *Contractor* issues to the *Client* a VAT receipt. The *Client* may retain further payments due to the *Contractor* if the *Contractor* does not provide a VAT receipt until the receipt is provided and any other consequential requirements of the VAT regulations are satisfied.

S1500 Accounts and Records (Options C and E)

S1501 Additional Records

No further scope requirement under this heading.

S1600 Parent Company Guarantee (Option X4)

No further scope requirement under this heading.

S1700 *Client's Work Specifications and Drawings*

S1701 *Client's Work Specification*

In addition to those mentioned previously, the following standards shall be complied with.

The MEICA technical specifications for the project are described in:

- Environment Agency MEICA Standard Specifications
- Environment Agency SHEW Code of Practice 2018
- Environment Agency Electrical Code of Practice
- EA Minimum Technical Requirements for Critically Important Assets (SD 17_17_02, 03, 04 & 05) – (Only those as specified within this document)
- Screening Register Extract – Final dated 14/02/2020
- Technical Notes:
 - Brant Washlands MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_17_00-SP-E-0001
 - Sand Syke Pumping Station MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_18_00-SP-E-0001
 - Till Washlands MCC Replacement - Document Ref: IMAN002794-JBAB-EZ 5_3042_19_00-SP-E-0001
 - Witham Washlands MCC Replacement - Document Ref: IMAN002794-JBAB-EZ-5_3042_20_00-SP-E-0001

Should any conflicts or inconsistencies occur the following order should be used: The technical notes, Minimum Technical Requirements for Critically Important Assets, MEICA Standard Specifications, other specifications. The *Project Manager* shall confirm which documents are to be used

Civil Specification:

The technical specification for the civil works is the 'Civil Engineering Specification for the Water Industry, 7th Edition', (CESWI 7) published by UK Water Industry Research Ltd in March 2011, augmented by the Supplementary Environment Agency's Minimum Technical Requirement Clauses

In so far as any Supplementary Environment Agency's Minimum Technical Requirement Clause conflicts, or is inconsistent, with any provision of CESWI 7 the Supplementary Environment Agency's Minimum Technical Requirement Clause always prevails.

Terminology:

The conditions of contract for this contract are the NEC Engineering and Construction Contract (ECC). As a consequence, some of the terms used in the Specification need to be re-defined as they assume the use of other standard conditions (principally ICE5, ICE6 or ICE7). This preamble applies to the standard specification and to any special clauses written to extend or amend the standard specification.

(a) Engineer or Contract Administrator

The principal area of difference between the ECC and ICE5 or ICE6 is in respect of the functions performed by those administering and supervising the contract. In the ECC, these functions are performed not by the Engineer or Contract Administrator but by the *Project Manager* and the *Supervisor*.

The *Project Manager* is responsible for managing the contract on behalf of the *Client*, and he deals with time, money, and changes to the contract.

The *Supervisor's* duty is to ensure that the Contractor Provides the Works in accordance with the contract documents in particular, the Works Information (the specifications and drawings).

It follows that in the majority of cases, the duties and functions of the Engineer or Contract Administrator in the standard specification will be undertaken by the *Project Manager* on this contract.

References in the specification to the Engineer or Contract Administrator should be read as references to the *Supervisor* or the *Project Manager*, as appropriate.

If the *Contractor* is in any doubt as to whether a matter should be raised with the *Project Manager* or the *Supervisor*, he asks the *Project Manager* to decide the issue.

(b) Approval

Under the ECC, the *Contractor* makes submissions for acceptance rather than for approval. References in the specification to "submission for approval" or to "approval" is read as "submission for acceptance" or "acceptance" respectively.

(c) Plant and Equipment

If the *Contractor* is in any doubt as to the interpretation on Plant and Equipment the matter should be raised with the Project Manager who decides the issue.

Contingency Plans

The *Contractor* shall provide a contingency plan (ECA form). The Contractor will, as part of his ECA, include methods and protocols for acceptance by the *Client* that cover the operation of the assets in response to flood events. Any requirement for over pumping shall be a CE.

S1702 Drawings

- The Drawings are to be read in conjunction with the Contract Data, Scope, and Site Information and matters referred to, shown, or described in one are not necessarily repeated in the others.
- Drawings and separate views within a drawing are to be read in conjunction with each other. Descriptions, details, dimensions etc. given in one place are not necessarily repeated in others.
- Where written dimensions differ from scaled dimensions the written dimensions shall be taken as correct.
- In all references to drawings, it shall be taken that the latest revision applies.
- The expressions "confirmed on site", "agreed on site", "directed on site", etc. mean as confirmed, agreed, directed, etc. by the *Client* during the course of the contract on site unless otherwise stated.

The *Contractor* shall use the following drawings for informing the scope only, **NOT FOR CONSTRUCTION.**

Title	BIM Name
Brant Washlands	
General_Arrangement	IMAN002794-JBAB-VP-5_3042_17_00-DR-Z-1100
Location_Plan	IMAN002794-JBAB-00-5_3042_17_00-DR-Z-1000
Landowner_Plan	IMAN002794-JBAB-00-5_3042_17_00-DR-Z-1010
Sand Syke	
General_Arrangement	IMAN002794-JBAB-VP-5_3042_18_00-DR-Z-1101
Location_Plan	IMAN002794-JBAB-00-5_3042_18_00-DR-Z-1000
Landowner_Plan	IMAN002794-JBAB-00-5_3042_18_00-DR-Z-1010
Till Washland	
General_Arrangement	IMAN002794-JBAB-VP-5_3042_19_00-DR-Z-1102
Location_Plan	IMAN002794-JBAB-00-5_3042_19_00-DR-Z-1000
Landowner_Plan	IMAN002794-JBAB-00-5_3042_19_00-DR-Z-1010
Witham Washland	
General_Arrangement	IMAN0027494-JBAB-VP-5_3042_20_00-DR-Z-1103
Desilting_Works	IMAN0027494-JBAB-00-5_3042_20_00-DR-Z-1200
Location_Plan	IMAN0027494-JBAB-00-5_3042_20_00-DR-Z-1000
Landowner_Plan	IMAN0027494-JBAB-00-5_3042_20_00-DR-Z-1010

S1703 Standards the *Contractor* will Comply With

- The Health and Safety at Work etc. Act 1974
- The Electricity at Work Regulations 1989
- The Electricity Safety, Quality and Continuity Regulations 2002
- Health & Safety (Safety Signs & Signals) Regulations 1996
- Electromagnetic Compatibility Regulations 2006
- Electrical Equipment (Safety) regulations 1994
- IET Wiring Regulations BS7671
- Current WIMES standards
- British Standards Specifications.
- British Standards Codes of Practice
- Confined Spaces Regulations
- Working at Height Regulations 2005
- Construction (Design and Management) Regulations 2015
- DIN 19704-1 Hydraulic Steel Structures – Part 1 Criteria for Design and Calculation
- BS1192 & PAS1192
- Project BIM Execution Plan
- Project Cost and Carbon Tool
- 300_10 SHE handbook for managing capital projects
- 300_10_SD27 SHE Code of Practice

In the event of there being differences between standards, regulations etc. it shall be raised with the EA PM at the earliest opportunity for clarification to be provided.

Where practicable, each item of equipment shall be clearly and indelibly marked to indicate the Standard with which it complies. Alternatively, a Certificate of Compliance shall be provided.

Appendix 1 BIM Protocol – Information Production and Delivery Table

All Client issued information referenced within the Information Delivery Plan remains within the Site Information unless it is referenced elsewhere within the Scope

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You need google chrome for this link to work. Once the table is completed it should be printed for issue in the tender document, so that the correct baseline position can be seen by suppliers