FIVE ESTUARIES OFFSHORE WIND FARM

9.21: CODE OF CONSTRUCTION PRACTICE (CLEAN)

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate, up to date and complete for purpose.

Revision	Date	Status/Reason for Issue	Originator	Checked	Approved
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F	August 2025	Decision Period	VE OWFL	VE OWFL	VE OWFL

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DEFINITION OF ACRONYMS

Term	Definition
AILs	Abnormal Indivisible Loads
ALO	Agricultural Liaison Officer
BioRA	Biosecurity Risk Assessment
CDM	Construction Design and Management
CLO	Community Liaison Officer
CL:AIRE DoWCoP	CL:AIRE Definition of Waste Code of Practice
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
DPFs	Diesel Particulate Filters
ECC	Export Cable Corridor
ECoW	Ecological Clerk of Works
EOC	Explosive Ordnance Clearance
EPSL	European Protected Species Licence
ERP	Emergency Response Procedure
FRA	Flood Risk Assessment
GCN	Great Crested Newt
GPS	Global Positioning System
H&SP	Health and Safety Plans
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
INNS	Invasive Non-Native Species
IAQM	Institute of Air Quality Management
LEMP	Landscape and Ecological Management Plan
MW	Megawatts
NGET	National Grid Electricity Transmission
NRMM	Non-Road Mobile Machinery
NSIP	Nationally Significant Infrastructure Project
NSR	Noise Sensitive Receptor
OLEMP	Outline Landscape and Ecological Management Plan
OnSS	Onshore Substation

Term	Definition
OWF	Offshore Wind Farm
PAMP	Public Access Management Plan
PIR	Passive Infrared Sensor
PPE	Personal Protective Equipment
RPAs	Root Protection Areas
SMP	Soil Management Plan
SIC	Standard Industrial Classification
SoS	Secretary of State
SSSI	Sites of Special Scientific Interest
SuDS	Sustainable Drainage Systems
TCC	Temporary Construction Compound
VE	Five Estuaries Offshore Wind Farm
VE OWFL	Five Estuaries Offshore Wind Farm Ltd
UXO	Unexploded Ordnance
WSI	Written Scheme of Investigation
WTGs	Wind Turbine Generators
WTP	Workforce Travel Plan

GLOSSARY OF TERMS

Term	Definition
Archaeological curators	Local Planning Authority archaeological advisor and Historic England regional scientific advisor
Blue Light Services	Means collectively Essex Police, Essex County Fire and Rescue and East of England Ambulance Service Trust (EEAST)
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) .
Duty of Care	Ensuring that waste will be stored, transported and disposed of in a way that protects human health and the environment.
Export Cable Corridor (ECC)	The area(s) where the export cables will be located. The ECC is the wider cable corridor within which the preferred cable route is located. The Onshore ECC is typically approximately 90m wide, however some areas require a wider corridor (such as where trenchless crossing may take place)
Frac-out	Unintentional or inadvertent loss of drilling fluid from the borehole to the ground surface
Order Limits	The extent of development including all works, access routes, TCCs, visibility splays and discharge points.
Outline plan	An early version of a management plan produced to secure principles, which the final approved management plan will adhere to.
Principal Contractor	The appointed contractor that will carry out the construction works associated with the onshore works. There may be multiple dependant on the approach to delivery of the works.
Temporary Construction Compounds (TCCs)	Temporary Construction Compounds (TCC) associated with onshore cable works.
The Applicant	The company Five Estuaries Offshore Wind Farm Ltd.
Tool Box Talks	Toolbox talks are a means of disseminating information related to work activities. Contractors are obligated to deliver toolbox talks to all on-site personnel when required, and records of attendees must be maintained for potential inspection during audits.
Waste Transfer Note	Document that records the movement of waste from one place to another
Works Site	The site at which construction will occur within the Order Limits

1 INTRODUCTION

1.1 THE PROJECT

1.1.1 Five Estuaries Offshore Wind Farm Limited (VE OWFL or The Applicant) has submitted an application to the Planning Inspectorate on behalf of the Secretary of State (SoS), for a Development Consent Order (DCO) for the Five Estuaries Offshore Wind Farm (herein referred to as VE) under Section 37 of the Planning Act 2008.

1.1.2 VE is the proposed extension to the operational Galloper Offshore Wind Farm. The project includes provision for the construction, operation, maintenance and decommissioning of an offshore wind farm located approximately 37 kilometres off the coast of Suffolk at its closest point in the southern North Sea; including up to 79 wind turbine generators and associated infrastructure making landfall at Sandy Point between Frinton-on-Sea and Holland-on-Sea, the installation of underground cables, and the construction of an electrical substation and associated infrastructure near to the existing Lawford Substation to the west of Little Bromley in order to connect the development to National Grid's proposed East Anglia Connection Node substation, which would be located nearby. All onshore connection infrastructure would be located in the administrative area of Tendring District Council, within Essex County Council. VE will have an overall capacity of greater than 100 Megawatts (MW) and therefore constitutes a Nationally Significant Infrastructure Project (NSIP) under Section 15 (3) of the Planning Act 2008.

1.2 PURPOSE AND SCOPE

PURPOSE OF THIS CODE OF CONSTRUCTION PRACTICE

1.2.1 The Code of Construction Practice (CoCP) has been developed to reduce and mitigate the effects of VE during onshore construction. It sets out a series of good practice measures, standards of work and monitoring, which will be applied throughout the construction period to:

- Provide effective planning, management and control during construction to manage and mitigate potential impacts on people, businesses and the natural and historic environments
- Provide a framework for engaging with the local community and its representatives throughout the construction period.

1.2.2 The CoCP takes account of feedback provided by statutory bodies and communities throughout our statutory consultation and examination processes.

SCOPE OF THIS COCP

1.2.3 For the avoidance of doubt, this CoCP relates to the construction of the onshore electrical infrastructure elements of VE only (i.e. landward of Mean High Water Springs). This includes the following construction works:

- Landfall;
- Export Cable Corridor (ECC);
- Temporary Construction Compound (TCC) and Site Accesses;
- Onshore Substation (OnSS); and

- Works by VE to connect to and within the National Grid Electricity Transmission (NGET) East Anglia Connection Node (EACN) Substation, and associated underground connection works from the OnSS.

STRUCTURE OF THIS COCP

1.2.4 This CoCP sets out measures that are applicable to VE, including site-specific controls that will be implemented by the Principal Contractor.

1.2.5 This document also references other management plans that will be secured through the DCO. Those specific management plans are detailed in Table 1 below, and versions of those documents have been prepared to support the DCO application.

Table 1.1: Management Plans.

Name	Description
Archaeological Mitigation Strategy (AMS)	Sets out the scope and mitigation principles for the planning and implementation of further archaeological and geoarchaeological investigations. It also includes planned phases of works, and the approach to mitigation measures during construction.
Landscape and Ecological Management Plan (LEMP)	Sets out the principles that will be followed when finalising landscape and ecological mitigation, compensation and enhancement measures for VE. An Outline LEMP has been provided as part of the DCO Application.
Soil Management Plan (SMP)	Sets out the approach that will be taken to manage the potential impacts to soils. This will be produced at the time of construction and builds upon the principles set out within this CoCP to retain soil condition and quality and effective re-instatement.
Construction Traffic Management Plan (CTMP)	Sets out the approach that will be taken to manage the potential impacts of construction traffic. An Outline CTMP has been provided as part of the DCO application.
Public Access Management Plan (PAMP)	Sets out the approach that will be taken to manage the potential impacts upon Public Rights of Way. An Outline PAMP has been provided as part of the DCO Application.
Workforce Travel Plan (WTP)	Provides a framework for promoting and encouraging a reduction in private vehicles. An Outline WTP has been provided as part of the DCO Application.
Communications and Public Relations Procedure	Sets out the communication measures which may be implemented during the construction of the onshore works and supporting programme of activity.

COCP IN THE DEVELOPMENT CONSENT ORDER

1.2.6 The Project Development Consent Order (DCO) secures this CoCP through Requirement 6. During construction the Applicant may seek to amend this CoCP through submission of a revised version to the discharging authority.

ONSHORE SITE PREPARATION WORKS

1.2.7 The DCO allows the project to undertake site preparation works in advance of main construction, prior to approval of detailed requirements. Some of this work is necessary to inform the detailed design and therefore needs to be carried out ahead of the design being completed and approved. Other activities are not development but rather activities to prepare for development, which can be carried out in advance to prevent delay in commencing development or ensure that seasonally constrained actions are carried out in the correct season. Site preparation works include:

- surveying or investigatory works including archaeological investigations, environmental surveys, investigations for the purpose of assessing ground conditions; remediation of contamination;
- preparatory works to existing infrastructure and diversion and laying of utilities and services;
- creation of any temporary means of access;
- site clearance including vegetation clearance; and
- erection of screening and fencing, site security works, creation of temporary hard standing, or the temporary display of site notices or advertisements.

1.2.8 The following will be adhered to in undertaking the onshore site preparation works:

- Good Health, Safety and Environmental Practice;
- The working hours listed in 3.2 of this CoCP, with the exception of any ecological surveys which may need to be carried out at night time;
- The Good Housekeeping Practices, listed in 3.3 of the CoCP will be implemented where appropriate to the works being undertaken;
- Standard good practice measures for noise, air quality and lighting listed in the CoCP will be implemented where appropriate/relevant;
- Standard good practice measures for managing waste will be implemented;
- Soil management controls, where appropriate/relevant;
- Depending on the site preparation activity, archaeological or ecological measures may be required, further details on these are included in the Outline Landscape Ecological Management Plan and Archaeological Mitigation Strategy; and
- Any remediation of contamination will be carried out in accordance with 3.17 of this CoCP.

2 GENERAL PRINCIPLES

2.1 INTRODUCTION

2.1.1 The general management of the construction site is important in managing environmental impacts from construction activities. This section sets out the over-arching principles being proposed for the implementation of this CoCP to be used during construction.

2.2 CONSTRUCTION PRINCIPLES

2.2.1 VE will meet the requirements of all relevant legislation and where reasonably practicable, be in accordance with current best practices for minimising the adverse effects of construction on the environment and the local community.

2.2.2 The Principal Contractor(s) and subcontractors (or contractors) employed by VE OWFL to carry out the works will be required to comply with the requirements of the CoCP.

2.2.3 The Principal Contractor(s) will be required to have strategies in place that reduce resource consumption and associated GHG emissions over the life cycle of the project following management measures recommended as best practice.

2.3 HEALTH AND SAFETY PRINCIPLES

2.3.1 Appropriate industry standards will be adopted and implemented for the health, safety and welfare of the construction staff while onsite and arrangements will be in place for the discharge of duties under the Construction (Design and Management) Regulations 2015 (or updated as appropriate).

2.3.2 The Principal Contractor for the onshore works will develop a Construction Phase Plan which will address the safety of construction workers, visitors to the site and the general public. The Construction Phase Plan will set out how all health and safety risks are identified and managed and set out standards for all contractors in accordance with legal requirements and current best practice for each stage of the onshore works.

2.3.3 Appropriate Personal Protective Equipment (PPE) will be worn by all construction workers

2.4 COMMUNITY LIAISON

2.4.1 VE OWFL, supported by the Principal Contractor and any subcontractors as necessary, will manage public relations with the local community who may be affected by traffic, noise or other aspects of disruption caused by the onshore construction works.

2.4.2 A Community Liaison Officer (CLO) will support construction activities. The role will be an active part of the construction team, implementing a proactive communications approach and ensuring that appropriate notification of works activity is provided.

2.4.3 The CLO will manage and respond to any questions and complaints and keep a robust record of all correspondence. A system for dealing with enquiries or complaints will be established by VE OWFL and the Principal Contractor.

2.4.4 A Communications and Public Relations Procedure will be developed and implemented throughout construction to ensure that local residents, parish and town councils, businesses, local authorities and 'blue light services' are kept informed of work activities. This includes providing the local community and key stakeholders information about types and timings of works, details of PRoW diversions, transport routes, TCC locations, likely hours of traffic movements and traffic management measures that will be carried out, planned road closures, timing and movements of abnormal load movements. Paying particular attention to potential work outside of standard hours and where activities occur in close proximity to residential properties.

2.4.5 All enquiries relating to onshore works should be directed to the CLO initially who will then respond or escalate as needed. A dedicated Project email address will be available as well as details on how to contact the CLO directly.

2.4.6 The CLO will assess, redirect and respond to the enquiries and complaints, in coordination with other members of the on-site team as appropriate - with the action dependent on the nature of the complaint.

2.4.7 The CLO will engage with key stakeholders and the local community to keep informed of any planned community events, such as Rally Events like the Corbeau Seats Rally, so that the Project can avoid these wherever practicable when scheduling any construction activities that may cause disruption and AIL deliveries.

2.4.8 At relevant milestones, information on the program of works and associated activity will be communicated through a variety of methods to ensure people are informed on what they can expect to see and experience throughout the construction. These might include newsletters, website updates and information events.

2.5 CO-ORDINATION WITH NORTH FALLS

2.5.1 VE and North Falls OWF have been allocated the same connection point (the EACN Substation) to the national electricity transmission network. Following the consultations carried out by both projects, and in response to updated policy in the NPS's on co-ordination and feedback identifying the need for closer coordination, the two projects have worked together to develop a shared export cable corridor, landfall location, and single site for both onshore substations.

2.5.2 The shared design keeps the potential impacts from the projects to a single swathe of land and enables coordination during construction, which has the potential to significantly reduce the impacts associated with the construction phase.

2.5.3 During construction a number of build options exist which are governed by the Development Consent Order. Depending on which build option is undertaken there is an expectation that both projects construction contractors will co-ordinate to minimise impacts to local communities and avoid duplication of effort.

2.6 CO-ORDINATION WITH NATIONAL GRID

2.6.1 VE and the EACN Substation, associated with the National Grid Norwich to Tilbury Reinforcement Project are planned to be constructed in adjacent locations, developed in parallel and planned to be operational by 2030.

2.6.2 During construction the two projects' site teams will need to co-ordinate and liaise to minimise impacts to the local communities.

3 GENERAL SITE OPERATIONS

3.1 INTRODUCTION

3.1.1 This section sets out the general requirements for the major stages of the onshore construction works with respect to working hours, general site layout and appearance, and security.

3.2 WORKING HOURS

3.2.1 Core working hours for construction of the onshore components for VE are as follows:

- 07:00 to 19:00 hours Monday to Saturday; On Saturdays between 13:00 and 19:00 no high impact works (e.g. piling/breaking out) shall take place, unless required by the circumstances in 3.2.2.

3.2.2 No activity where noise is audible beyond the Order limits will take place outside of these hours including Sundays, public holidays or bank holidays apart from under the following circumstances:

- Where continuous periods of construction work are required, such as concrete pouring or directional drilling.
- For the delivery of abnormal loads to the connection works, which may cause congestion on the local road network, where the relevant highway authority has been notified prior to such works 72 hours in advance;
- Where works are being carried out in the marine environment and may be tidally restricted;
- For internal fitting out works associated with the onshore substation;
- The testing or commissioning of any electrical plant installed as part of the onshore infrastructure;
- Security monitoring; and
- Activity necessary in the instance of an emergency where there is a risk to persons, the environment, delivery of electricity or property,

as otherwise agreed in writing with the discharging authority.

3.3 CONSTRUCTION SITE LAYOUT AND GOOD HOUSEKEEPING

3.3.1 A Good Housekeeping policy will be applied to the construction areas and TCCs at all times. As far as reasonably practicable the following principles will be applied:

- Working areas will be kept in a clean and tidy condition;
- The site will be secured to prevent unauthorised access and measures implemented to minimise theft of equipment and antisocial behaviour;
- Open fires and the burning of rubbish will be prohibited at all times;
- All necessary measures will be taken to minimise the risk of fire and the contractor will comply with the requirements of the local fire authority;
- Adequate welfare facilities will be provided for construction staff;
- Appropriate handling of chemicals, lubricants and fuels will be conducted, and designated protected storage areas will be used for supplies and waste;
- Waste from the construction areas will be stored securely to prevent wind blow;
- Waste will be appropriately segregated and removed at frequent intervals;

- The site will be equipped with appropriate emergency equipment i.e Defibrillators;
- All reasonable steps will be taken to ensure mud, water and other loose material does not encroach onto the public highway, and if it does steps will be taken to a timely manner to address the concern; and
- Where used, wheel washing facilities will be cleaned frequently.

3.3.2 TCCs will be required for the storage of materials and equipment, assembly of large items and parking of mobile plant and vehicles. Within these areas material and plant storage will be located to limit adverse environmental effects where possible.

3.4 SITE INDUCTION

3.4.1 The Principal Contractor will ensure that personnel working on and accessing the Onshore Works are made aware of the content of this CoCP and any topic specific management plans relevant to their work via a site induction on any personnel's first visit to the Works Site. This will include an introduction to all health and safety measures applicable on site, as well as any relevant environmental considerations. As a minimum, the following information will be provided to all inductees:

- Site rules e.g. speed limits;
- Health and Safety Procedures and locations of available emergency equipment;
- Expected standards of behaviour;
- Identification of environmental risks associated with the Onshore Works specific to the activities being undertaken by the inductee. For example:
  - Species and / or habitat protection requirements relating to breeding birds, bats and reptiles;
  - Protocol for unexpected archaeological discoveries;
  - Watercourse crossing works;
  - Measures for minimising the risk of spreading invasive species; and farm animal & bird diseases;
  - Noise and dust control measures;
- Pollution prevention and spill response (e.g. silt mitigation and protection of the water environment);
- Storage and use of chemicals hazardous to health;
- Refuelling practices;
- Waste management practices; and
- Emergency Response Procedure (ERP) (See Section 6 for detail).

3.5 TRAINING AND TOOLBOX TALKS

3.5.1 During construction, in order to provide on-going reinforcement and awareness training, Toolbox Talks are given on health, safety, security and environmental issues. Toolbox Talks and training are arranged by the Principal Contractor or relevant Contractor and delivered by specialist personnel on site as required, in advance of the issue being encountered or in response to the findings of an inspection. The 'blue light services' should be approached by the Principal Contractor(s) to provide support these, e.g. through the provision of information.

3.6 SITE INSPECTIONS

3.6.1 Environmental site inspections will be undertaken by the Principal contractor throughout construction as appropriate to the construction activity underway at the time. These will highlight evidence of good practices and recommend remedial actions where issues are identified.

3.7 SCREENING AND FENCING

3.7.1 Temporary fencing will be installed around the TCCs, when in use, and will also be provided for sections of the onshore export cable route as appropriate with allowances for private land access, livestock crossing and relevant ecological constraints.

3.7.2 The type of fencing will be selected to suit the location and purpose. All boundary fences/screening will be installed at the commencement of works in that location and maintained in a tidy condition and fit for purpose.

3.7.3 All temporary screening and fencing will be removed as soon as reasonably practicable after completion of the works.

3.8 UTILITIES

3.8.1 Where the construction works will be in close proximity to existing utilities, or any works affecting existing drains, sewers or chambers works will be undertaken in agreement with the relevant statutory undertaker, in line with the relevant protective provisions in the DCO.

3.9 CONSTRUCTION SITE LIGHTING

3.9.1 External lighting of the construction site will be designed and positioned to:

- Provide the necessary levels for safe working;
- Minimise light spillage or pollution;
- Avoid disturbance to nearby residents and occupiers; and
- Consider the 2023 guidance 'Bats and Artificial Lighting at Night' developed by the Institution of Lighting Professionals (ILP) and Bat Conservation Trust (BCT), or later iterations.[1]

3.9.2 No permanent/fixed lighting will be used along the onshore Export Cable Corridor (ECC) during construction.

[1] Guidance Note 8 Bats and Artificial Lighting | Institution of Lighting Professionals (theilp.org.uk)

3.9.3 At TCC's and on the onshore ECC, temporary lighting may be required in the winter months when natural daylight is not sufficient, to enable safe working.

3.9.4 Construction works will typically not require night time working. However, in winter, some illuminations may be required in the early morning and evening. Illuminations may also be needed for occasional activities which require continuous working during night time. This may occur where continuous working is necessary for matters such as concrete pours and Horizontal Directional Drilling (HDD) works (or other trenchless crossing techniques). Low level security lighting may also be required at night throughout the construction period within some TCC's.

3.9.5 The following methods will be adhered to where temporary lighting is used during the construction phase:

- Site lighting is to be angled and facing into the work or welfare areas to reduce light pollution as much as possible with the use of hoods and cowl;
- Light intensity will be as low as is safely permissible and appropriately located/directed in order to minimise lighting disturbance for bats, birds and invertebrate species;
- Lighting spillage will be avoided or minimised to reduce impacts on ecological resources, including nocturnal species. It will be designed such that there will be no significant increase in illumination levels above current levels outside of the working area, in particular for works adjacent to Holland Haven Marshes Sites of Special Scientific interest (SSSI);
- Construction lighting shall be positioned and directed to minimise nuisance to footpath users, residents, distractions to passing drivers on adjoining public highways and to minimise skyglow, so far as is reasonably practicable; and
- Low energy LED type bulbs will be used which can be automatically switched, i.e. via dawn to dusk sensor, timer or passive infrared sensor (PIR).

3.9.6 So far as is practicable, all power to temporary lighting shall be taken from mains supplies, solar powered or use hydrogen fuel cells rather than from portable generators. Where portable generators are used, industry best practice will be followed to minimise noise and air pollution from generators.

3.10 CONSTRUCTION TRAFFIC

3.10.1 Construction traffic will be managed according to the measures set out in the final Construction Traffic Management Plan (CTMP) that will be developed post DCO. An outline CTMP has been prepared as part of this DCO which provides preliminary details of management measures related to the mitigation and management of traffic flows.

3.10.2 The CTMP(s) must be in accordance with the Outline CTMP and include:

- Measures to ensure that all delivery contractors and construction staff will be instructed to use the agreed construction access routes, a number of measures will be implemented to ensure compliance with routeing, including Data from Heavy Goods Vehicles (HGV) that are fitted with monitoring devices (such as Global Positioning System (GPS) tracking) to record the routes, timing, speed of vehicles when making deliveries, will be available to assist in auditing and complaint investigation. The Principal Contractor is required to ensure a high proportion of HGVs are fitted with GPS so that route compliance can be checked;
- Details on movement of AILs, including notifications; and

- Information on other control measures to be implemented, such as speed restrictions and temporary signage / traffic controls.

3.10.3 In addition to the CTMP, a Workforce Travel Plan (WTP), which will be in accordance with the outline WTP, will be developed post DCO which will set out a framework for promoting sustainable travel and encouraging a reduction in private car use during construction.

3.10.4 The WTP(s) will include a number of measures, such as:

- Appointment of a Travel Plan Coordinator (TPC) to the measures within the WTP; and
- The TPC will encourage use of public transport as a mode of travel to work by implementing the following initiatives.

3.11 SECURITY

3.11.1 Appropriate security will be implemented at the TCCs to minimise the opportunity for unauthorised entry, protect the public, and prevent theft. Site gates will be secured when there is no site activity and appropriate security measures will be implemented. Where possible, access to construction areas will be limited to specified entry points and all personnel entries/exits will be recorded for security and health and safety purposes.

3.12 PEST CONTROL

3.12.1 The risk of pest/vermin infestation will be reduced by ensuring any perishable waste is stored appropriately and regularly collected from construction areas, and implementing effective preventative pest control measures. Any pest infestation will be dealt with promptly.

3.13 WASTE

3.13.1 All waste arising during the construction of VE will be stored in designated waste areas located away from sensitive environmental receptors. Where appropriate, waste will be stored in secure containers to prevent the escape of waste and wind blow.

3.13.2 Waste material produced as a result of the construction works will be handled where appropriate in accordance with CL:AIRE Definition of Waste Code of Practice (DoW CoP).

3.13.3 Hazardous wastes will be stored separately from other wastes. All waste will be handled and managed in accordance with the Duty of Care requirements.

3.13.4 Each transport of waste from the site will be accompanied by a Waste Transfer Note which includes:

- A description of the waste (including an industry Standard Industrial Classification code);
- Quantity, and details of any pre-treatment undertaken;
- Specific handling requirements (where appropriate);
- The name and permit reference of the facility to where the waste is being taken; and
- The waste carrier details.

3.14 WELFARE

3.14.1 The TCCs shall be serviced by temporary construction offices and necessary welfare facilities, in compliance with the Construction (Design and Management) Regulations 2015 (CDM 2015) as amended. Welfare facilities shall also be provided for mobile construction teams where required.

3.15 CLEARANCE OF SITE ON COMPLETION

3.15.1 TCCs and accesses will be cleared when they are no longer required to support the construction. On completion of construction work all plant, temporary buildings and vehicles will be removed. Following completion of works in a particular area it will be reinstated in line with the Landscape and Ecological Management Plan (LEMP).

3.16 GENERAL POLLUTION PREVENTION MEASURES

3.16.1 Toolbox talks will be undertaken on pollution prevention and spill procedures, including training and drills;

3.16.2 Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will be bunded and carefully sited to minimise the risk of hazardous substances entering drainage systems or local watercourses. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage/spillage. Bunds used to store fuel, oil etc. will have a 110% capacity.

3.16.3 All fuel and chemical storage will comply with relevant storage regulations. Any refuelling of machinery or washout of concrete transportation vehicles will be undertaken within designated areas. Concrete and cement mixing and wash out areas will be located minimum of 10 m from nearest surface water features, where spillages can be easily contained. Where practical, these areas will incorporate settlement and recirculation systems to allow water to be re-used. All wash out of equipment would take place in a contained area and the water either treated or collected for disposal off-site.

3.16.4 The following measures will be implemented on site for the storage of materials:

- All oil and diesel storage facilities will be at least 30 m from any watercourse and at least 50 m from any borehole or well, where practicable, if not, a risk assessment should be undertaken to identify if any additional mitigation measures are required;
- A spill procedure will be documented and suitably sized spill kits, relevant to the chemicals being stored or used, will be kept in the vicinity of potentially hazardous materials storage areas;
- Hazardous chemicals (COSHH) to be stored appropriately, using methods such as bunding, locked labelled cabinets, labelled containers, etc.
- Spill kits and drip trays will be well stocked and provided for all equipment and at locations where any liquids are stored and dispensed;
- Storage facilities will be provided for solid materials to prevent deterioration of the materials and their escape;
- Storage facilities will be kept secure to prevent acts of vandalism that could result in leaks or spills; and

- All containers of any size will be correctly labelled indicating their contents and any hazard warning signs.

3.16.5 Where fuel is delivered through a pipe permanently attached to a tank or bowser the pipe will be fitted with a manually operated pump or a valve at the delivery end which closes automatically when not in use. The following management controls will also be implemented:

- The pump or valve will be fitted with a lock;
- The pipe will be fitted with a lockable valve at the end where it leaves the tank or bowser;
- The pipework will pass over and not through bund walls;
- Tanks and bunds will be protected from vehicle impact damage; and
- Tanks will be labelled with contents and capacity information.

3.16.6 For deliveries and dispensing activities it will be ensured that:

- Site-specific procedures are in place for bulk deliveries;
- Delivery points and vehicle routes are clearly marked;
- Emergency procedures are displayed and a suitably sized spill kit is available at all delivery points, and staff are trained in these procedures and the use of spill kits;
- Suitable facilities (for example, drip trays, drum trolleys, funnels) meet the sites specific dispensing needs and are maintained and used;
- Tank capacities and current contents levels are checked prior to accepting a delivery to ensure that they are not overfilled;
- All deliveries are supervised throughout the delivery operation;
- Spill prevention equipment is used during dispensing activities; and
- All spillages occurring during dispensing and handling activities are cleared up and reported via the appropriate site manager/agent.

3.16.7 All flammable and hazardous substances will be kept in a secure bunded cupboard, cabinet or tank constructed of materials which are chemically resistant to its contents and suitably ventilated.

3.16.8 The use of vehicles and plant poses similar risks to those posed by storage of liquids. Fuel and oil may leak from such equipment which may enter drains and/or watercourses, as well as contaminating the ground itself. Vehicle checks will be conducted on a regular basis to ensure fuel storage and engine conditions are satisfactory and that no fuel or chemical release will occur during site operations.

3.16.9 The following measures will be implemented to minimise the risk of pollution through release of silts and sediments:

- Stockpiling of excavated materials during earthworks will be temporary and will only be permitted in designated areas. Designated stockpile areas will be located a minimum of 10 m from any open watercourse features where practicable, if not, a risk assessment should be undertaken to identify if any additional mitigation measures are required;
- Disturbance to areas close to watercourses will be reduced to the minimum necessary for the work;

- Excavated material will be placed in such a way as to avoid any disturbance of areas close to the banks of watercourses and to prevent spillage into water features;
- Use of sediment fences along watercourses when working in close proximity to prevent sediment being washed into watercourses;
- Covers will be used by lorries transporting materials to/ from site to prevent releases of dust/ sediment to watercourses or drains; and
- If applicable, storage of stockpiled materials should be on an impermeable surface to prevent leaching of contaminants and covered when not in use to prevent materials being dispersed by wind or rainfall runoff.

3.16.10 The potential for release of drilling fluids as a result of frac-out will be reduced by:

- Undertaking appropriate ground investigation/desk study to inform drilling parameters such as drilling pressures;
- Monitoring of drilling fluid properties (i.e. mud weight, viscosity, gel strength, volume and pressure) during drilling to prevent frac-outs;
- Stopping drilling if unexpected variations or trends are observed and investigating the cause;
- Having frac-out contingency plans and response equipment such as sand bags and clean-up equipment in place, and detailed in the activity Risk Assessments and Method Statement; and
- Regular inspections should also be conducted along the drill path during pilot hole drilling.

3.16.11 Where working near watercourses the following measures should be undertaken by the contractor:

- Works will be thoroughly planned and controlled in order to minimise the risk of pollution, for example, the contractor should consider whether the activity could be undertaken further away from the watercourse;
- In areas where there is likely to be large quantities of silt generated, straw bales or sediment traps will be placed in the watercourse downstream to help filter out any silts;
- If there is a requirement for dewatering of excavations, water will be pumped out and passed through a suitable filtration system which may include a settlement tank or lagoon to allow suspended solids to settle out before being discharged to an appropriate location;
- Appropriate treatment methods will be adopted prior to discharge of the water from any land drains uncovered during the construction phase; and
- Regular clearing of debris from culverts along ordinary watercourses within the working area will need to be undertaken to ensure that no blockages are present during construction.

3.17 UNEXPECTED CONTAMINATION

3.17.1 Any visual/ olfactory signs of contamination encountered during excavation will be reported to the Principal Contractor and investigated.

3.17.2 Areas where unexpected contamination is encountered or suspected will be photographed and annotated on a site drawing. Necessary works at the location where signs of contamination are suspected/encountered will cease until the contamination has been assessed by a suitably qualified Environmental Consultant in accordance with the Contaminated Land (England) Regulations 2006.

3.17.3 Soil (vapour/ groundwater) samples will be collected and analysed. The risks associated with contamination will be assessed. When required, a remediation strategy will be designed and agreed with the Relevant Authorities before implementation.

3.18 MANAGING RISK TO WORKERS ARISING FROM EXISTING CONTAMINATION

3.18.1 Potential risks to construction and maintenance workers arising from contamination within soil and groundwater during the construction phase(s) of the proposed development will be controlled through:

- The CDM Regulations 2015 as amended;
- The requirement to work in accordance with best practice and statutory guidance; and
- The requirement for personal protective equipment (PPE), as standard working practice.

3.18.2 PPE requirements will be defined by risk assessment, and may include nitrile gloves, protective overalls, safety goggles and face masks especially by those workers who are likely to be coming into contact with soil or water, such as those carrying out hand digging activities.

3.19 UNEXPLODED ORDNANCE

3.19.1 Safety and awareness briefings in relation to UXO encounters are to be provided to construction workers prior to works commencement as part of the site inductions carried out by the Principal Contractor.

3.19.2 In areas with a moderate UXO hazard level and above, a detailed UXO desk study will be undertaken prior to construction to identify where additional mitigation such as non-intrusive geophysical clearance or supervision by an Explosive Ordnance Clearance (EOC) operative is required.

3.19.3 If an unplanned encounter with an Unexploded Ordnance (UXO) were to occur along any section of the route the Operational UXO ERP is to be followed. (See Section 6 for more detail on ERP).

4 TOPIC SPECIFIC CONTROLS

4.1 SOIL MANAGEMENT

4.1.1 A Soil Management Plan (SMP), secured as a requirement in the DCO, will be developed by the Principal Contractor. The SMP will provide details of mitigation measures and best practice handling techniques to safeguard soil resources by ensuring their protection, conservation and appropriate reinstatement during the construction of the onshore works.

4.1.2 Prior to construction, the Principal Contractor will ensure that information on existing agricultural management and soil/land conditions is obtained, recorded and verified by way of detailed pre-construction soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles. The surveys will be undertaken by specialist soil surveyors (professional members of the British Society of Soil Science) according to best practice (typically one intrusive investigation per 100 m for linear routes or 1 per hectare elsewhere).

4.1.3 On completion of construction, the Principal Contractor will ensure that information on soil/land conditions is obtained and verified through a detailed post-construction soil condition survey. In discussion with landowners the contractor will remedy any loss of nutrients according to best practice guidance at the time of works completion.

4.1.4 All soil handling, placing, compaction and management will be undertaken in accordance with best practice (DEFRA, 2009[2]) and CL:AIRE DoW CoP, where applicable. Measures included in the SMP will comprise the following:

- Topsoil from areas currently in agricultural use will be stripped at the start of main construction works within the relevant section/stage;
- Soils of different types (as identified by the detailed pre-construction soil survey) will be stockpiled/stored accordingly;
- Soils will be replaced within the same field as excavated;
- Soils suitable for reuse as part of wider mitigation associated with the OnSS (e.g. planting areas) to be reused in a broadly similar location to their origin, and stored for the shortest amount of time permissible;
- Any surplus soils from the OnSS works to be re-used for landscaping, or disposed of in an appropriate manner following the waste hierarchy; and
- Vehicle movements will be restricted on waterlogged soils and will be subject to an assessment of ground conditions which will be undertaken on a site by-site basis to avoid compaction and damage.

4.1.5 The following measures will be used to protect stored soils:

- No trafficking of vehicles/plant or storage of materials to take place outside designated working areas. Heavy plant and vehicles to be restricted to specific routes;
- No trafficking of vehicles or plant on stockpiled or reinstated soils (topsoil or subsoil);

[2] Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (publishing.service.gov.uk)

- Stripping areas are to be protected from in flow of water and ponding. Wet areas will be drained in advance of stripping;
- Soils will only be moved when they are in a dry and friable condition, based on field assessment of the soils' wetness in relation to its lower plastic limit;
- Designated stockpile areas at a minimum of 10 m from any open watercourse features;
- Where practical, where soil is to be stored for over 6 months it will be covered to minimise erosion, sprayed to prevent weed growth or allowed to re-vegetate naturally; and
- No mixing of topsoil with subsoil, or of soil with other materials.

4.1.6 Details of the soil management works will be recorded as part of the daily record/site diary, and these records will by checked on a weekly basis for compliance with these controls, and details recorded.

4.1.7 All site operatives who will be involved in the excavation or movement of soils will be briefed on these controls as part of the initial site induction process, and each site operative will sign copies of the appropriate method statements held within the site register to confirm acknowledgement of this information.

4.1.8 This information will be refreshed throughout VE as part of the daily toolbox talks, and key works relating to these controls will be recorded in the daily record/site diary maintained by the site manager (e.g. material movements/stockpiling, soil sampling/testing, etc).

4.1.9 Communication and understanding of the information relating to these controls will be assessed as part of weekly reviews and regular site audits.

4.1.10 Before commencing work on site, where soils are to be disturbed, the Contractor will be required to ensure that the construction plant being proposed is appropriate to the size of the site, the volume of soil and haul distances. The selection of appropriate equipment and work practices is important as mishandling of soil can have an adverse effect on its fertility, permeability, ecological diversity, and the performance and visual quality of vegetated areas. Mishandling can also increase the risk of flooding and off-site discharges. Multiple handling of soil materials will be minimised.

4.2 AGRICULTURAL OPERATIONS

4.2.1 VE OWFL or the Principal Contractor will appoint an Agricultural Liaison Officer (ALO) to provide a point of contact for landowners and occupiers during construction. The ALO will be available to discuss any practical issues that might arise.

4.2.2 The ALO will be responsible for the following:

- Coordinating drainage surveys and assisting in sharing landowner feedback on drainage scheme designs with the Principal Contractor;
- Undertake and prepare Records of Condition, which will include photographs, prior to commencement of the construction works (and prior to undertaking intrusive pre-commencement works as necessary), this will include:
  - details of existing crop regimes and type of agricultural use taking place;

- the position and condition of existing field boundaries that may be directly impacted by the works, including details of any fence lines, hedgerows and other features that need to be removed and replaced;
- the condition of access routes;
- the location and type of existing private water supplies where these are known;
- comment on the condition of crops (if at a stage this can be assessed) and/or the quality of grazing land;
- comment on the existing weed burden;
- record of the weather conditions, date of survey and grid reference; and
- a general commentary on the present and historical condition of the land

- Advise the Principal Contractor on risks relating to the translocation of soil diseases where necessary and assist in ensuring appropriate biosecurity provisions are implemented;
- Undertake pre-construction liaison with landowners and occupiers to minimise disruption to existing farming practices where possible;
- Undertake site inspections during construction to monitor working practices, including implementation of soil handling methodologies and ensure the reasonable requirements of landowners' and occupiers' are fulfilled;
- Ensure landowners and occupiers are consulted in respect of accommodation works to access land parcels;
- Discuss the location, grouping and demarcation of any inspection chambers with landowners and occupiers as necessary; and
- The ALO will also liaise between the Principal Contractor and landowners and occupiers on reinstatement measures following completion of the works.

4.2.3 In relation to temporary land take requirements VE OWFL will seek to liaise with landowners to negotiate commercial terms including loss of ongoing payments or penalties relating to agri-environmental stewardship schemes.

4.2.4 Where reasonably required, crossing points will be used in suitable places in order that livestock and vehicles can cross the working width.

4.2.5 VE OWFL will install cable ducts with a minimum soil cover of 0.9m above warning tape, and will endeavour to reach a depth of burial of 1.2m to the top of the cable ducts, where practicable. Installation to this depth is designed to minimise any restrictions on typical agricultural operations, such as cultivation or drainage maintenance, that may be required to protect the cables from accidental exposure and damage. VE OWFL will make available to landowners and occupiers along the onshore ECC details of the locations and depths after reinstatement. This includes where depth to top of the ducts (excluding the warning tape) would be less than 1.2 metres below ground level after reinstatement.

4.3 NOISE AND VIBRATION

4.3.1 Construction works will be undertaken in accordance with the best practicable means (as defined in Section 72 of the Control of Pollution Act 1974) to minimise noise and vibration effects. Noise control measures will be consistent with the recommendations of the current version of BS 5228 - Part 1: Noise and Part 2: Vibration. Construction contractors will carry out the works in a manner which seeks to minimise noise and vibration wherever feasible, taking account of statutory requirements and legislation. These measures include:

- There will be a preference for the use of plant fitted with effective silencers and noise insulation;
- The number of plant items in use at any one time will be minimised, where practicable;
- Plant maintenance operations will be undertaken as far away from noise-sensitive receptors as is practicable;
- Any compressors brought on to site will be silenced or sound reduced models fitted with acoustic enclosures;
- The speed of vehicle movements on site will be limited to below 15 mph on surfaced and 10 mph on unsurfaced haul roads;
- Operations will be designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors where practicable;
- The use of pink noise reversing alarms that produce a "static" sound as opposed to a beep will be used to reduce the noise generated by reversing beepers on site vehicles;
- Construction plant will be regularly serviced and maintained and operated in accordance with manufacturer's instructions - plant that is intermittently used should be shut down in the intervening periods between work or throttled down to a minimum;
- The use of local noise screening or site hoardings to reduce noise where necessary, will be considered;
- The appointment of a site contact to whom complaints/ queries about construction activity can be directed - any complaints will be investigated, and action taken where appropriate;
- Local residents will be kept informed of construction activities, including any extended working hours;
- All reasonable steps will be taken to limit the number of vehicles waiting to deliver materials to the proposed development;
- Construction which would be closest to nearby residential receptors will be undertaken as efficiently and quickly as reasonably possible;
- With the exception of generators, pumps and electric plant, all plant and equipment would be expected to be shut down when not in use;
- The entry and / or exit pit associated with any trenchless crossing will not be located within 25m of any dwelling, unless additional modelling is undertaken and mitigation considered.
- Construction contractors will adhere to the codes of practice for construction working set out in BS 5228 'Code of Practice for noise and vibration control on construction and open sites' insofar as these are best practicable means and applicable to the construction works; and
- Construction staff training will include advice on:

- The proper use and maintenance of tools and equipment;
- The positioning of machinery on site to reduce noise emissions to neighbouring residents; and
- The avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment.

4.3.2 Additional noise mitigation to those listed above (including any proposed monitoring) have been identified and will be complied with in relation to specific sections of the onshore route and is provided in Appendix F of this CoCP. Full details of the measures, any proposed noise monitoring and details of the approach for any reactive noise and/or vibration monitoring in the event of complaints will be discussed with the discharging authority.

4.3.3 The need for noise monitoring during construction, or for a specific construction activity, including type and frequency of reporting shall be in accordance with British Standard 5228. It shall be identified and agreed with the discharging authority prior to the start of construction in each stage as defined under the DCO Requirement – Stages of Construction.

4.3.4 Noise monitoring, carried out either through pre-agreed schemes of monitoring or in response to complaints will be undertaken using the following:

- Noise monitoring, where required, will be conducted in accordance with the methodology described in Annex G of BS 5228-1 (BSI, 2014).
- During the activity working hours, noise levels will be measured at either free-field or façade positions of the most affected façade of any occupied dwelling or other building used for residential purposes. If the location is facade, then the levels will be corrected to free-field by the subtraction of 3 dB.
- The total ambient noise level, $L_{Aeq,T}$ from all sources when measured between 1.2 m and 1.5 m above the ground at the monitoring locations will not exceed the appropriate level assessed or agreed with through the Section 61 process.
- The Contractor(s) should identify remedial actions, including review of mitigation, should trigger levels be reached.

4.3.5 The location of noise monitoring and length of monitoring should be determined by:

- If the dwelling is close to construction activity or is representative of the sound level at nearby dwellings;
- Where the program of construction shows the greatest noise impact and is likely to exceed the construction thresholds stated in Appendix F;
- If the dwelling is close to construction activity or is representative of the sound level at nearby dwellings; and
- Where the program of construction shows the greatest noise impact and is likely to exceed the construction thresholds stated in Appendix F;

4.3.6 Contractors may consider it is appropriate for night time works (or other high impact “noisy” works), to apply for consent under section 61 of the Control of Pollution Act (CoPA) 1974. Where this is considered appropriate, prior to the commencement of the relevant works, meetings would be sought with the local authority to discuss the construction activities to be included in the Section 61 application and any potential mitigation. The Contractor(s) will be responsible for submission of any applications to the local authority for Section 61 consents, variations and dispensations under CoPA 1974.

4.4 AIR QUALITY

4.4.1 This section includes the overarching strategies for managing air quality during the construction of the onshore elements of VE. It details control measures for construction dust and non-road mobile machinery (NRMM) emissions, based on the air quality assessment outcomes in the ES.

CONSTRUCTION DUST MITIGATION MEASURES

4.4.2 Site-specific control/mitigation measures have been divided into general measures applicable to all site works, and measures specific to demolition, earthworks, construction and the movement of dust and dirt from a construction/demolition site onto the public road network (referred to as trackout) as recommended by the Institute of Air Quality Management (IAQM, 2023).

4.4.3 These measures derive from the Institute of Air Quality Management (IAQM) guidance but have been adapted to reflect the proposed construction activities, logistics and feasibility, ensuring they are project specific.

GENERAL

4.4.4 When undertaking general works the following measures will be implemented:

- No bonfires or burning of waste material;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty construction activities where there is a sensitive receptor within 350m, and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below;
- Cover, seed or fence stockpiles where practical to prevent wind whipping;
- Avoid scabbling (roughening of concrete surfaces) if possible;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

EARTHWORKS

4.4.5 When undertaking earthworks and other works potentially creating dust the following will be implemented, and included in the SMP where appropriate:

- Damping down all dusty activities and surfaces, especially during dry, windy weather;
- During stockpiling of loose materials, stockpiles shall exist for the shortest possible time;
- Material stockpiles will be low mounds without steep sides or sharp changes in shape;
- Daily visual inspections will be undertaken to assess need for use of water bowsers;
- Sealing and re-vegetation of earthworks and other exposed areas, as appropriate, to stabilise surfaces as soon as practicable, where it is not possible hessian or mulches will be implemented;
- Where works are being conducted, removal of any secure covers will be undertaken in small areas during work;
- Excavation and earthworks areas will be stripped as required in order to minimise exposed areas;
- During excavation works, drop heights from buckets will be minimised to control the fall of materials reducing dust escape;
- Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the agreement of the discharging authority, where appropriate);
- All cutting/ grinding equipment will be fitted with dust extraction systems, where practical;
- Debris netting around dust sources will also be implemented as appropriate; and
- Ensure large quantities of sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

TRACKOUT

4.4.6 To prevent the transportation of dust and dirt from the construction site onto the public road network, the following will be implemented:

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of the on-site haul routes and any subsequent action in a site logbook;
- Implement a wheel washing system/area at all construction access points (which may include rumble grids to dislodge accumulated dust and mud prior to leaving the unsurfaced haul routes or site where reasonably practicable and appropriate);

- Ensure there is an adequate area of hard surfaced road between the wheel wash area and the site exit, wherever site size and layout permits; and
- Access gates to be located at least 10m from receptors where possible.

SITE MAINTENANCE, MANAGEMENT AND MONITORING

4.4.7 The following measures and monitoring will be implemented throughout construction of VE:

- Record all dust and air quality complaints, identify cause(s), take appropriate mitigation measures, and record the measures taken in the site log. Make the complaints log available to the Relevant Authorities if requested;
- Record any exceptional incidents that cause dust and/or air emissions, either on-site or off-site, and the action taken to resolve the situation in the site log;
- Undertake regular liaison with other large construction sites within 500m of the construction works area, to ensure plans are co-ordinated and dust minimised;
- Undertake regular on-site and off-site inspection, where residential receptors are adjacent to the site, to monitor dust, record inspection results, and make the log available to the local authority when asked;
- Carry out regular site inspections to monitor compliance with air quality and dust control measures;
- Increase the frequency of site inspections on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and,
- Where relevant, conduct dust deposition, dust flux and/or real-time PM_{10} monitoring. The need for monitoring, along with its type, scope, location and duration (including any baseline monitoring, typically three months in advance), will be agreed with the discharging authority in line with the IAQM guidance. This will take into account the nature and duration of proposed activities, and the number and proximity of sensitive receptors (e.g. residential). It will be agreed with the discharging authority prior to the start of construction in each stage as defined under the DCO Requirement – Stages of Construction.

NON-ROAD MOBILE MACHINERY (NRMM)

4.4.8 NRMM will be used to facilitate construction. The following controls will be implemented to minimise NRMM emissions:

- Plan site layout so that NRMM are located away from receptors, as far as is possible;
- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable;
- Ensure all equipment complies with appropriate NRMM regulations (compliance with Stage IV/V emission standards preferred); and
- Where feasible, ensure further abatement plant is installed on NRMM equipment that does not meet Stage IV/V, e.g. Diesel Particulate Filters (DPFs).

4.5 ONSHORE ECOLOGY, NATURE CONSERVATION, LANDSCAPE, HEDGEROWS AND TREES

4.5.1 A number of sensitive onshore ecological features have the potential to be adversely affected by VE. These features require specific and detailed mitigation in order to provide the necessary safeguards, and will be addressed within the Landscape and Ecological Management Plan(s) (LEMP), an Outline LEMP is provided as part of the DCO Application. The Outline LEMP sets out the principles that will be followed when producing the landscape and ecological mitigation, compensation and enhancement measures for VE. These will include:

- A suitably qualified ECoW will be employed to oversee construction work and minimise risks to important ecological features, including undertaking toolbox talks on key species;
- Micrositing of project elements will be used to avoid important ecological features, where possible;
- Working areas will be demarcated with temporary fencing to avoid inadvertent damage to adjacent habitats;
- All retained trees within the working area will be protected by Root Protection Areas (RPAs) within the order limits during construction. The final micro-siting and maintenance of fencing locations shall be as instructed by the ECoW; All habitats will be reinstated as soon as possible after construction. Hedgerows along the onshore ECC will be reinstated using a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost;
- Removal of potential nesting bird habitat will take place outside of the breeding season (March - August inclusive), where possible, to avoid damage to, or destruction of active nests. Where this is not possible, a check for the presence of nesting birds by the ECoW will take place in advance of work. Where active nests are located the relevant areas of vegetation will be retained until such time as young fledge or the relevant nesting attempt has ended;
- Checks for the presence of GCN, dormice, badger setts, reptiles, hedgehogs, harvest mice, hares or other protected or notable species will be carried out by the ECoW prior to vegetation clearance. Additional reasonable avoidance measures will be implemented/ mitigation licences applied for as necessary;

4.5.2 A minimum of 10m buffer of undisturbed habitat retained between the construction footprint and Holland Haven Marshes SSSI;

4.5.3 To minimise hedgerow removal at crossings the following measures will be applied:

- For hedgerows where open trench crossing is used, stockpiles will not be continued through the hedgerow, meaning the expected width of hedgerow removed would be approximately 30m, including 10m width of haul road; and
- For hedgerows where HDD is used, the haul road may need to pass through the hedgerow, which would mean a hedgerow width of approximately 10m would be removed. The haul road would also seek to target existing gaps, where practical.

4.5.4 A European Protected Species Licence (EPSL) from Natural England will be required for temporary works affecting terrestrial habitat used by Great Crested Newts (GCN) along the route. The project proposes to enter the District Level Licensing (DLL) scheme, based on current survey data and available scheme details. Mitigation details would be included in the final LEMP(s) and would need to be followed on site as instructed by the ECoW.

4.5.5 Based on current information, the construction phase will not directly impact any badger setts, however potential impacts shall be reviewed following completion of the pre-construction surveys and if necessary a Badger Species Protection Plan (BSPP) shall be prepared and implemented. Measures may include:

- micrositing certain elements;
- installing protective fencing to minimise disturbance to retained setts;
- ensuring excavations remain closed overnight or contain ramps such that badgers cannot become trapped;
- ensuring stockpiled soil is fenced or regularly disturbed so as to deter badger sett creation within it

4.5.6 To reduce disturbance to important populations of non-breeding birds at the landfall, the following measures will be applied:

- Piling (if required at the landfall) will either take place outside the winter period (October to March) or will utilise less noisy, vibro-piling or push piling technology;
- Fencing/ hoarding would be used during the winter months to provide visual and acoustic screening of the landfall compound. Where practical, similar measures would also be employed in other areas where disturbance to significant numbers of non-breeding waterbirds is likely. Full details of proposed fencing would be provided in the final LEMP(s), post consent but prior to construction commencing, once detailed construction designs and programmes are available; and
- If necessary, works at the landfall will be suspended during periods of very cold weather (seven consecutive days on which the ground has frozen) Suspension of works will last for a minimum of seven days thereafter and any lifting of the suspension will take into consideration the need for a period of recovery for waterbirds. Any cold weather suspension of works, if required, would only apply at the landfall as non-breeding waterbirds are likely to move to the coast during such conditions (as the inland fields would be frozen).

4.5.7 To reduce risks of disturbance to non-breeding birds along the ECC and at the OnSS the following measures will be applied:

- Where practical, in areas where disturbance to significant numbers of non-breeding waterbirds is likely, measures such as fencing/ hoarding would be used during the winter months to provide visual and acoustic screening of active working areas. The requirement for such measures would be determined by the ECoW, considering the nature and timing of the works and relevant bird data, including previous survey data and observations made during the construction period. Full details of proposed fencing would be provided in the final LEMP(s), post consent but prior to construction commencing, once detailed construction designs and programmes are available.

4.5.8 Impacts to commuting and foraging bats will be reduced by:

- Filling temporary hedgerow gaps overnight during construction (and thereafter) with a “dead hedge” during the bat active season (April to October) until such time as reinstated vegetation has established and is at least 1 m tall. These locations shall be identified in the Final LEMP(s), and will be based upon pre-commencement/ pre-construction survey data plus final scheme design details. During the day the dead hedge will be either left in-situ (if the hedgerow gap is not needed for access/ construction) or carefully placed in a nearby location that is not within the active working area. The location would be agreed with the ECoW and is anticipated to be different for each hedgerow; and

- During construction the “dead hedge” will comprise Heras fencing (or similar, to enable sections to be manoeuvred into/ out of position) with brash attached to a height of at least 1.2m. During construction the ECoW will regularly monitor each section of dead hedge and additional brash will be added to each section of Heras fencing if considered needed.

4.5.9 If otters are identified on site at any time and it is not possible to microsite the route to avoid their habitat the following measures maybe required, and would be confirmed in the final LEMP(s):

- scheduling of work to avoid sensitive periods of the otter life cycle;
- deterrence of otter from areas where there is risk of injury or death in advance, such as by installation of otter-proof fencing;
- minimising disturbance from light and human presence via temporary screening and potentially amending working hours; and
- reinstatement of bankside habitats immediately after work, to include sowing with species rich locally appropriate sward and fencing to prevent stock access.
- An EPSL may be necessary from Natural England if a holt may be impacted.

4.5.10 Where there is the potential to impact water voles and it is not possible to microsite the route to avoid significantly affecting their habitat the following measures maybe required, and would be confirmed in the final LEMP(s):

- Micro-siting to avoid water vole burrows (if present).
- Scheduling of work to avoid sensitive periods of the water vole life cycle.
- Removing vegetation back to bare earth in spring and autumn.
- Carrying out a destructive search of water vole burrows, after an appropriate monitoring period, after removing vegetation.
- Creation of temporary compensation/ mitigation habitats for use by water vole in immediately adjacent areas (such as provision of nest boxes or feeding stations, sympathetic management of bankside habitats) for the construction plus vegetation re-establishment period.
- Reinstatement of bankside habitats immediately after work, to include sowing with species-rich locally appropriate sward and fencing to prevent stock access.
- A licence may be necessary from Natural England if water voles or their burrows are to be affected

4.5.11 Where there is potential to impact dormouse, it may be necessary to schedule certain work to avoid sensitive periods of the dormouse life cycle; standard practice would be followed i.e., a two-stage removal. Top growth of the hedgerow would be removed in the winter months (November - February) when dormouse are hibernating, avoiding ground disturbance. Clearance of stumps, roots and other vegetation would be undertaken from May - September thereafter. This would be confirmed in the final LEMP(s).

4.5.12 Where landscape and ecological mitigation measures are used on a construction site, such as tree protection fencing, this will be appropriately marked using signage and briefed to contractors using toolbox talks.

CONTROL MEASURES AND MONITORING DURING WORKS UNDER SSSI

4.5.13 Ahead of commencing any drilling works that has the potential to cause breakout of drilling fluid into the Holland Haven SSSI the Applicant will prepare a detailed environmental risk assessment, which will be developed in liaison with Natural England and the Environment Agency. The risk assessment will:

- be informed by local ground investigation data
- consider the likelihood of breakout into the SSSI
- consider the potential impacts to the features of the SSSI (such as its aquatic and terrestrial invertebrates); and
- propose any necessary mitigation or control measures to minimize such impacts, such as a minimum distance for the entry / exit pits to be away from the SSSI (e.g. 30 m).

4.5.14 As a minimum the risk assessment will include the standard control measures listed in 3.16.10 and specifically the following:

- During landfall drilling activities, the downhole fluid pressures will be continuously monitored to ensure the downhole pressure does not exceed the anticipated overburden pressure at any point along the drilled profile. Any sudden losses in downhole pressure will be investigated as a potential break-out.
- Regular walkovers will be undertaken to check for visible leakage of drilling fluid along the line of the drilled profile.
- Actions to be undertaken in the event of a large breakout, such as:
  - Ceasing drilling when it is safe to do so
  - Contain the flow of drilling fluid using a combination of materials, such as straw bales, Sedimats and Terram
  - Clean up drilling fluid and remove from site

4.5.15 It will include steps to be undertaken to assess the potential causes and identify remediation measures, such as:

- Pumping of a loss control additive to seal the area of breakout
- Grouting of the bore and re-drilling

4.5.16 In some cases, it may be more harmful to clean up a small release than it would be to leave it in situ. This is particularly true where mechanical equipment is needed as the movement of the machinery could cause more damage to the environment than the drilling fluid itself. A decision tree shown in Appendix G shows the indicative process to assess whether removal of the released material is the best option.

4.5.17 Any breakouts in the SSSI will be investigated to determine if clean-up will be beneficial, and where considered necessary, ensure the most appropriate method of clean-up is selected. This will be based upon the location of the breakout and the quantity of material released. ‘Manual clean-up’ refers to clean-up by hand, where an individual operative or operatives use handheld tools (e.g. a spade and wheelbarrow or bucket) to remove the material.

4.6 BIOSECURITY AND INVASIVE NON-NATIVE SPECIES

4.6.1 Invasive Non-Native Species (INNS) including species listed on Schedule 9 of the Wildlife and Countryside Act 1981, are known to occur locally. The primary ways the project could increase the spread of INNS is via:

- disturbance to existing INNS populations within the construction footprint;
- inadvertently importing INNS from elsewhere, primarily on vehicles, but also other equipment or personnel; and
- via seeds, planting stock or planting substrate.

4.6.2 A pre-construction survey will be undertaken to establish the location and extent of any INNS that could be disturbed or mobilised by construction work for VE. The survey will target all plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 and/ or Part 2 of Schedule 2 of The Invasive Alien Species (Enforcement and Permitting) Order 2019. The survey will take place during the summer prior to construction commencing for a particular phase, when invasive non-native plant species are most likely to be evident.

4.6.3 Following the pre-construction INNS survey, and prior to construction, a Biosecurity Risk Assessment (BioRA) will be produced. The purpose of the risk assessment will be to inform the selection of control measures to prevent or reduce the risks of spreading INNS during construction.

4.6.4 The ECoW will take primary responsibility for reviewing and updating the BioRA at the start of construction. Updates will be required if, for example, previously unrecorded individuals or populations of INNS are discovered or working methods change such that new pathways for potential contamination are formed.

4.6.5 The final suite of measures will be confirmed following the site specific pre-construction survey and the BioRA and will include species specific measures, as appropriate. It will recommend if any species-specific management plans are required. These should be developed with input from suitably qualified professionals who may be required to undertake surveys, provide management advice, and to implement management actions.

4.6.6 The following measures will be considered on the site where INSS has been identified:

- All staff should be aware of INNS and what their responsibilities. Awareness training should be undertaken in the form of Tool Box Talks covering INNS;
- Where possible to do so, construction works areas will be micro-sited to avoid areas of identified INNS;
- The ECoW, will oversee the implementation of control measures in respect of INNS on site;
- All areas containing INNS not within the physical working areas to be demarcated to ensure no accidental spread;
- All vehicles and footwear entering working area are to be clean on arrival;
- Where cross-contamination is possible (i.e. from one part of the site to another or between sites), the contractor should designate vehicles or machinery to specific sites where possible to prevent spread. If this is not possible vehicles should be thoroughly inspected and appropriately cleaned in a designated area before being used for other work;

- The most appropriate methods of cleaning should be determined by a suitably qualified contractor following a visual inspection. The cleaning should pay particular attention to tyre treads, wheel arches and any other areas that might retain rhizomes or seeds;
- The designated cleaning area must be within an area of hard standing or covered by a root barrier membrane that can contain and collect the material washed off. The cleaning area must be located so as not to allow material to contaminate drains, ditches or watercourses;
- The material left within the designated area after vehicles have been cleaned must be contained, collected and disposed of along with other contaminated material;
- Site workers and the ECoW will remain vigilant for the new growth of INNS within and in close proximity to the works, and the control measures will be updated accordingly if new areas of growth are identified;
- If soil is imported to the site for landscaping, infilling or embankments, the contractor shall gain documentation from suppliers confirming that it is free from invasive species; and
- The contractor should follow current relevant DEFRA guidance in relation to active avian influenza strains.

4.7 ARCHAEOLOGY

4.7.1 All Onshore Works will be carried out in accordance with the 10.47 Archaeological Mitigation Strategy (AMS), which includes the Outline Onshore Written Scheme of Investigation. These will include details of specifically identified measures to mitigate the impact to known heritage assets and will also include a range of generic mitigation measures which would be applied to currently unknown heritage assets that could be physically damaged by construction. The mitigation required will be confirmed as further information from archaeological evaluation becomes available, and set out within the associated detailed WSIs. The OWSI and AMS set out the scope for the more detailed WSIs to be prepared.

4.7.2 During construction the Principal Contractor(s) and the archaeological contractor will need to work together to ensure the archaeological programme of works to be defined and implemented. The Principal Contractor(s) will manage the construction process to allow for safe access for archaeological works to be carried out by the archaeological team as agreed with the relevant statutory consultees.

4.7.3 The Principal Contractor(s) will make sure staff are aware of what to do in the event of an unexpected archaeological discovery, information on the protocol is included in the AMS . This is to be covered in the site induction as set out in section 3.5.

4.7.4 The Principal Contractor in accordance with the approved WSI(s) will ensure the following measures where appropriate for protecting the Historic Environment will be followed where required, but not limited to:

- Protective measures such as temporary support, hoardings, barriers, screening and buffer zones around heritage assets and archaeological to be preserved in situ within and adjacent to worksites;
- Advance consideration to inform the types of plant and working methods for use where archaeology is within / close to worksites; and

- Security procedures to prevent unauthorised access to heritage assets and archaeological investigations and damage to or theft from them, including the use of metal detectors.

4.7.5 Archaeological curators will be afforded access to the archaeological mitigation sites to monitor the evaluation and mitigation works and sign-off completed archaeological work in accordance with the OWSI and AMS. The detailed WSIs shall set out the arrangements and responsibilities for implementing, monitoring and sign off of the archaeological mitigation measures.

4.8 FLOOD MANAGEMENT AND RESPONSE

4.8.1 Any works in a floodplain will incorporate measures to minimise possible obstruction or deviation of floodwater. For example, this will include leaving gaps in soil stockpiles, minimising the height of possible raised structures (e.g. access tracks and working areas).

4.8.2 The contractor will implement measures to manage runoff, particularly to limit runoff directly to roads. These control measures for managing runoff and minimising risk of water pollution in line with the Guidance for Consultants and Contractors CIRIA (C532) (CIRIA 2001), include, but not limited to:

- The Principal Contractor will sign up to the Environment Agency Flood Alerts and 'Floodline' flood warning services, this is particular important for works at and near to the landfall;
- Visual checks on flood defences, watercourses and drainage culverts will be carried out following a flood event within the working area will be undertaken after any significant weather event. Any signs of degradation reported to the EA and relevant landowner immediately;
- Debris on site will be safely contained, reducing the risk of large items entering the flood flow;
- Monitoring of construction drainage sediment traps (visual inspection) with increased monitoring during inclement weather. If required these traps can be pumped via settling tanks to remove sediment, based on a pre-defined level / depth of sediment; and
- Machinery will be stored or returned to areas of hard standings, preferably remote from flood waters, or where this is not possible, sufficiently constrained so as not to wash away.

4.8.3 Flood response awareness and procedures will be included in the principal contractors ERP where there are works near to a flood zone or residual risk existing from coastal flood defence failure. As set out in 5.3.1 Flood Risk Assessment – Export Cable Corridor this is specifically relevant to works at the landfall which are in flood zone 3 and at risk of tidal flooding from a defence failure and particularly any activities on the seaward side of coastal defences during the construction phase. A site specific emergency response plan should be developed once the construction methodology is known and in the unlikely event of a flood emergency the Principal Contractor will follow its site specific flood warning and evacuation plans.

4.9 SITE DRAINAGE

4.9.1 Prior to appointing the Principal Contractor, a drainage consultant will be appointed to conduct surveys of existing drainage system on land that will be affected by the construction works and temporary construction compounds, identifying where practicable all ordinary watercourses, agricultural ditches and land drains to be intercepted by the construction works.

4.9.2 Prior to starting main construction in an area the Principal Contractor(s) will develop and implement a temporary surface water drainage strategy for pre-construction. The Principal Contractor(s) will also develop a post-construction drainage strategy which will ensure that any pre-existing drainage features are restored to their pre-construction condition. The Principal Contractor will liaise with the Lead Local Flood Authority during the development of these and provide copies of the strategies.

4.9.3 The pre and post construction drainage strategies will take into consideration information supplied by landowners and occupiers. The strategies developed by the Principal Contractor(s) will set out how surface water will be managed, looking to minimise water within the working areas, ensure ongoing drainage of surrounding land and that there is no increase in surface water flood risk. This will assess the current and proposed runoff rates, volume of storage required and the proposed approach for discharge of water from each location.

4.9.4 Both the pre and post construction drainage will be installed at the appropriate time to ensure there is no increased risk of flooding. Similarly the Principal Contractor shall maintain the drainage systems during the construction works and demonstrate the functionality of the post construction drainage prior to the site being handed over.

4.9.5 The design of the onshore ECC, construction haul roads and TCCs will be designed to minimise land take and to avoid, where possible, impacts on existing drainage networks and features. The design of the strategies will consider existing agricultural land drains. Pre-construction and post-construction drainage designs will be discussed with landowners to ensure that the reinstated field-drainage system is at least as effective as the previous condition.

4.9.6 The temporary surface water drainage strategy will be developed according to the principles of the Sustainable Drainage Systems (SuDS) discharge hierarchy and best practice guidance from CIRIA- SuDS Manual (C753) (CIRIA, 2015b), and consider the Essex Design Guide 2018, where appropriate, ensuring the relevant pollution controls are identified. Generally, the aim will be to discharge surface water runoff as high up the following hierarchy of drainage options as reasonably practicable:

- Into the ground (infiltration);
- To a surface water body;
- To a surface water sewer, highway drain or another drainage system; or
- To a combined sewer.

4.10 WATERCOURSE CROSSINGS

4.10.1 Whilst trenchless crossings of the majority of the watercourses are committed to by the project there are a number of minor watercourses where the option to open trench is retained. The temporary haul road may also need to be installed over main rivers and watercourses. A number of outline design options for crossings have been proposed and are included in Appendix A-E. These should be followed by the contractor in designing any watercourses crossings.

4.10.2 In order to mitigate the potential impacts to water quality where crossing the following principles will be applied:

- Entry into water will be avoided where possible;
- All cables will be installed beneath the active channel bed;
- Temporary crossings will be appropriately sized to maintain flow patterns and sediment conveyance, and avoid unnecessary changes to the hydromorphology of the watercourses;
- Clear span bailey bridges (or similar) or suitable sized culverts will be used to avoid impacts to the hydromorphology of the watercourses. Adherence to best practices and guidance to ensure the risk of pollution is minimised;
- A temporary haul road bridge, culvert or other temporary measure may be constructed if repeated crossings are required;
- Entry and exit pits for trenchless crossings will be located 10m from any open watercourse; and
- Where the water flow is high, water will be over pumped during construction to prevent flooding upstream.

4.10.3 Temporary access track crossings over main rivers will where practical be designed as clear span bridges (i.e. they will span the entire watercourse from bank top to bank top) to minimise disturbance of the channel and maintain water flowing along the watercourse.

4.10.4 Cables may be installed under smaller watercourses or ditches using open-cut techniques. Such smaller watercourses or ditches may be temporarily flumed, dammed-up and over-pumped or diverted to allow installation to take place. Trench support may be required to temporarily hold open the excavated trenches either side of the ditch. Trench support will be removed prior to reinstatement, including reinstatement of the watercourse or ditch. In the event watercourses are considered to support fish populations by the ECoW and pumps are to be used, 2mm screens will be installed to prevent the entrapment/entrainment of fish.

4.11 WATER RESOURCES

4.11.1 Good environmental practice shall be followed during the construction phase of the VE in accordance with the Environment Agency's now revoked PPG (PPG1, PPG5, PPG6, PPG8, PPG21 and PPG22) and current good industry practice guidelines. The PPG notes are no longer statutory guidance in England and have been updated as Guidance for Pollution Prevention (GPP notes) for use as environmental regulatory guidance in Scotland, Wales and Northern Ireland (NetRegs, 2022). They remain a good source of best practice guidance for the whole of the UK.

4.11.2 A Ground Water Risk Assessment has been carried out VE including a review of the geology and hydrogeology along the proposed VE onshore ECC and OnSS. This has identified any specific ongoing monitoring or mitigation which needs to be in place during construction.

4.11.3 Where trenchless crossings are proposed within any Source Protection Zones, the Groundwater Protection Guides Covering: Requirements, Permissions, Risk Assessments and Controls (Environment Agency 2017) will be followed, which may include detailed hydrogeological risk assessments;

4.11.4 A piling risk assessment will be undertaken if piles are to be used as part of the foundations for the OnSS, in line with the Environment Agency's Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (Environment Agency, 2001).

4.11.5 During the construction of VE it is anticipated that a supply of water (either from ground or surface water courses) will be required to support works. The Principal Contractor(s) will ensure that this will comply with Schedule 5 of the Water Abstraction and Impounding (Exemptions) Regulations 2017. For example the Principal Contractor(s) may seek to source water through a hybrid of abstraction from local water source(s) if available of up to 20m^3 per day and tankering in any additional water over and above this. If this method is not viable the Principal Contractor will only use tankered water. This approach will therefore not require an abstraction licence, however if Abstraction Licences are required the Principal Contractor will obtain and adhere to the relevant licences.

4.12 PUBLIC RIGHTS OF WAY

4.12.1 The construction of VE is anticipated to interact with a number of walking, cycling and horse rider routes within the onshore ECC. These routes are all footpaths, which are all formally designated as Public Rights of Way (PRoW) by Essex County Council. The contractor will be required to produce and follow a Public Access Management Plan(s) (PAMP), which should be in accordance with the measures in the outline PAMP (9.25: Outline Public Access Management Plan).

4.12.2 These measures proposed to minimise the temporary disruptions to the users of the PRoW include:

- Appropriately fenced (unmanned) crossing points;
- Manned crossing points; and
- Temporary closures with diversions.

4.12.3 The contractor shall implement safety measures at any PRoW crossed by haul roads, other construction related activities, or where the PRoW is adjacent to a construction access. Depending on the frequency of use of the PRoW and the nature of construction activities being undertaken, the following control measures should be considered:

- Provision of warning signage to raise awareness of the PRoW to approaching construction vehicles and informing PRoW users approaching a construction interface of the associated hazards;

- Heavy Plant Crossing' signs to warn users of construction vehicles;
- Information for users of the paths, especially at entry points to the Site, with contact details of the Community Liaison Officer;
- A regular review of ground condition, to ensure the surface is safe for walkers and other users, whilst the paths remain open;
- A short section of boundary fencing may be provided on each PRoW as it approaches the onshore development area to ensure a clear point of entering/ exiting the onshore development area is established; and
- Whilst there is a presumption in favour of not gating PRoW where they cross a working area, there may be occasions when a gate arrangement is necessary to be in place periodically for the protection of PRoW users.
- Use of banksman where PRoW cross, or are adjacent to, construction accesses which are in use.

5 ENVIRONMENTAL INSPECTIONS AND COMPLIANCE

5.1.1 The Principal Contractor(s) should appoint a responsible person to ensure the measures within the CoCP are enforced and complied with. This would typically include the development of plans, procedures and internal audits at regular intervals to ensure compliance. The Principal Contractor(s) is responsible for sharing that information with and for reporting any breaches to VE OWFL. They will also be responsible for the performance of their subcontractors.

5.1.2 VE OWFL may undertake its own audits, which could be undertaken by third party representatives or consultants.

5.1.3 A public hotline will be made available to members of the public so that the general public can raise queries or complaints to a representative of VE OWFL.

6 EMERGENCY RESPONSE PROCEDURES AND CONTACTS

6.1.1 Prior to construction a ERP will be developed by the Principal Contractor(s) giving details for dealing with emergencies which may arise during the onshore works, the Principal Contractor should liaise with the 'blue light services' and Tendring District Council Emergency Planning team in developing the procedures. All contractors and subcontractors will work in accordance with this plan.

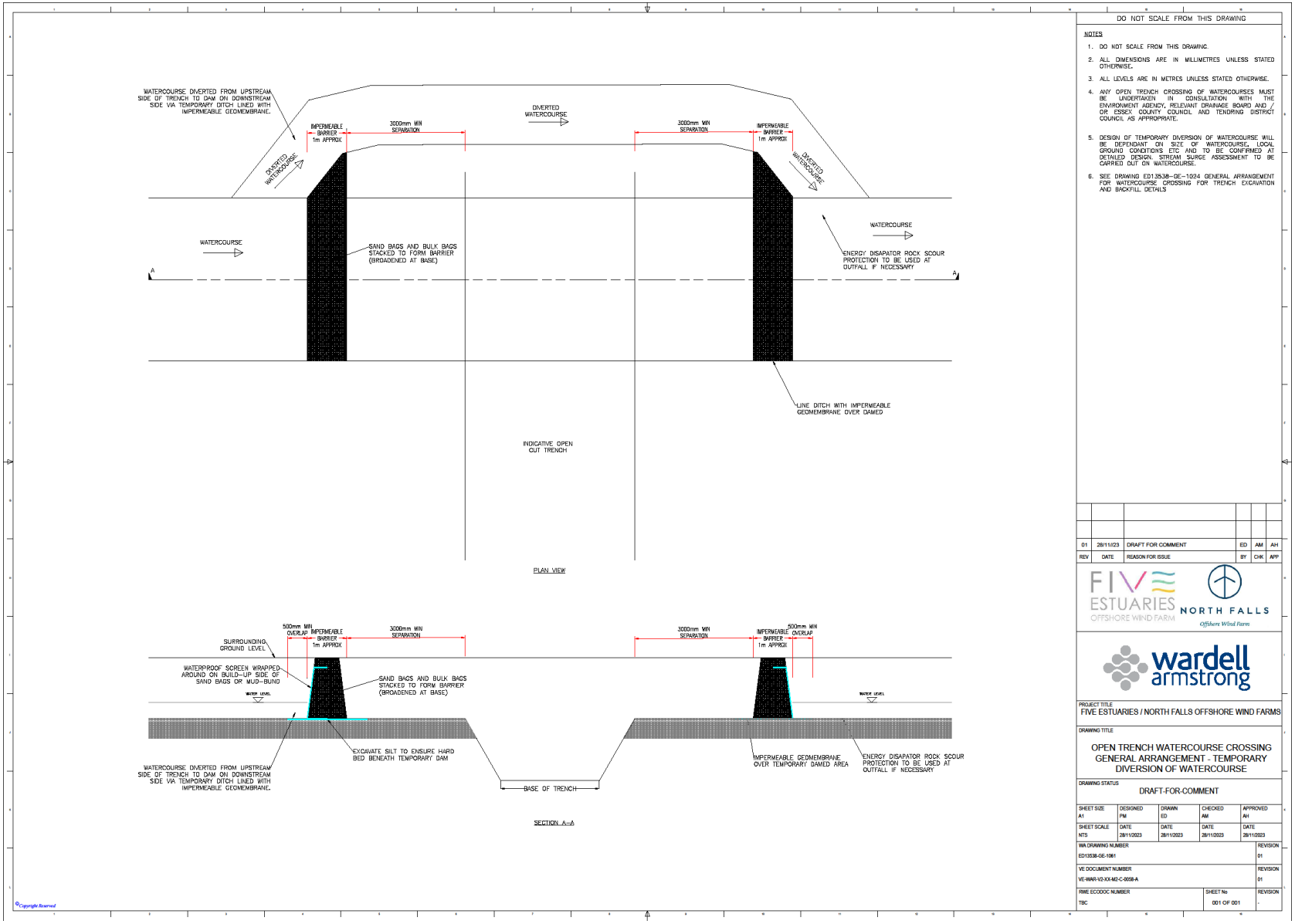
6.1.2 The ERP(s) will include Emergency procedures for the onshore works taking into account the anticipated hazards and the conditions at each work site. The ERP will include the following:

- Emergency pollution control measures based on Environment Agency guidelines;
- Emergency access to site(s) for 'blue light services'
- Fire safety;
- Site evacuation;
- Spill prevention, location of spill kits and control procedures
- Severe weather events and flood response awareness and emergency procedures (to include flood warning and evacuation plans where applicable).; and
- Location of first aid facilities.
- UXO
- Community Protests
- Breakout in Holland Haven Marshes SSSI

6.1.3 Specifically, an Operational UXO ERP will be developed prior to construction in accordance with 'Unexploded ordnance, A guide for the construction industry CIRIA C681'.

6.1.4 The ERP will contain emergency contact details of relevant local and statutory authorities, 'blue light services' and include any notification requirements. The procedures will be displayed at the work sites and all site staff will be required to follow them.

APPENDIX A. CROSSING OPTIONS - HAUL ROAD WATERCOURSE CROSSING - BAILEY BRIDGE



DO NOT SCALE FROM THIS DRAWING

NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
3. ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
4. ANY OPEN TRENCH CROSSING OF WATERCOURSES MUST BE UNDERTAKEN IN CONSULTATION WITH THE ENVIRONMENT AGENCY, RELEVANT DRAINAGE BOARD AND / OR ESSEX COUNTY COUNCIL AND TENDRING DISTRICT COUNCIL AS APPROPRIATE.
5. DESIGN OF TEMPORARY DIVERSION OF WATERCOURSE WILL BE DEPENDANT ON SIZE OF WATERCOURSE, LOCAL GROUND CONDITIONS ETC AND TO BE CONFIRMED AT DETAILED DESIGN. STREAM SURGE ASSESSMENT TO BE CARRIED OUT ON WATERCOURSE.
6. SEE DRAWING ED13538-GE-1024 GENERAL ARRANGEMENT FOR WATERCOURSE CROSSING FOR TRENCH EXCAVATION AND BACKFILL DETAILS

REV	DATE	REASON FOR ISSUE	BY	CHK	APP
01	28/11/23	DRAFT FOR COMMENT	ED	AM	AH

FIVE ESTUARIES OFFSHORE WIND FARM
NORTH FALLS Offshore Wind Farm
wardell armstrong

PROJECT TITLE
FIVE ESTUARIES / NORTH FALLS OFFSHORE WIND FARMS

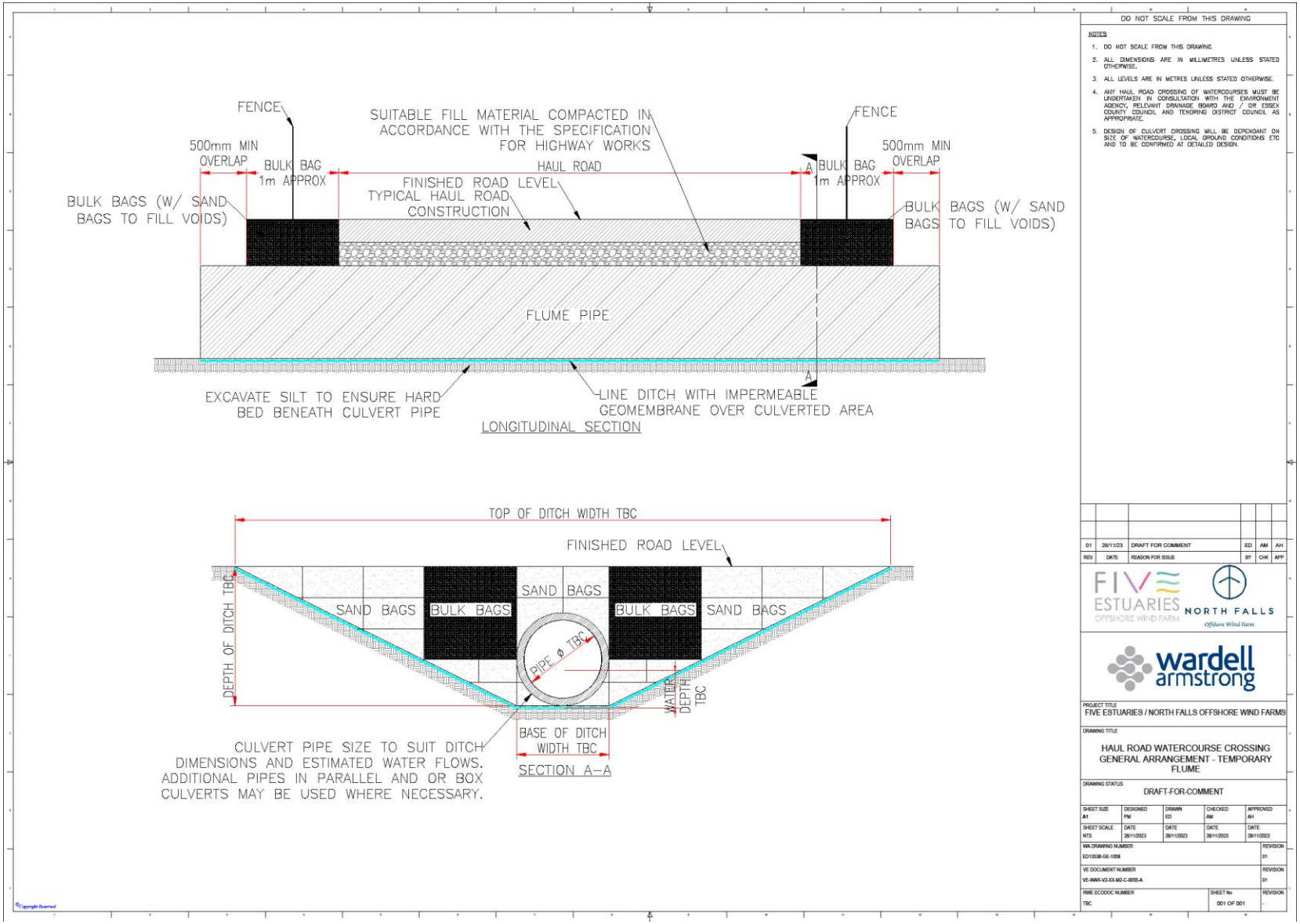
DRAWING TITLE
OPEN TRENCH WATERCOURSE CROSSING GENERAL ARRANGEMENT - TEMPORARY DIVERSION OF WATERCOURSE

DRAWING STATUS
DRAFT-FOR-COMMENT

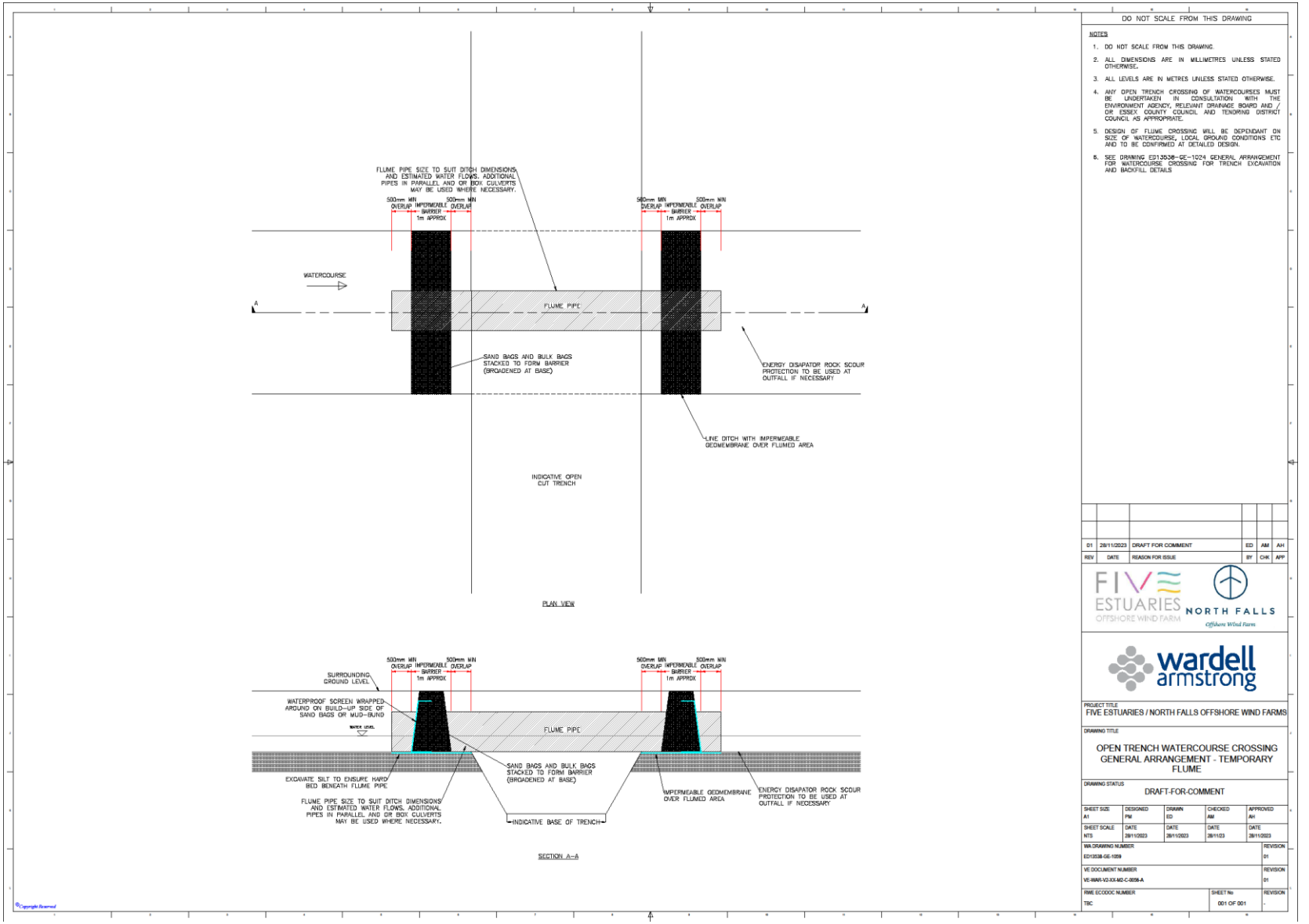
SHEET SIZE	DESIGNED	DRAWN	CHECKED	APPROVED
A1	PM	ED	AM	AH
SHEET SCALE	DATE	DATE	DATE	DATE
NTS	28/11/2023	28/11/2023	28/11/2023	28/11/2023

WA DRAWING NUMBER	REVISION
ED13538-GE-1061	01
VE DOCUMENT NUMBER	REVISION
VE-WAR-V2-XX-M2-C-0058-A	01
RWE ECODOC NUMBER	SHEET No / REVISION
TBC	001 OF 001 / -

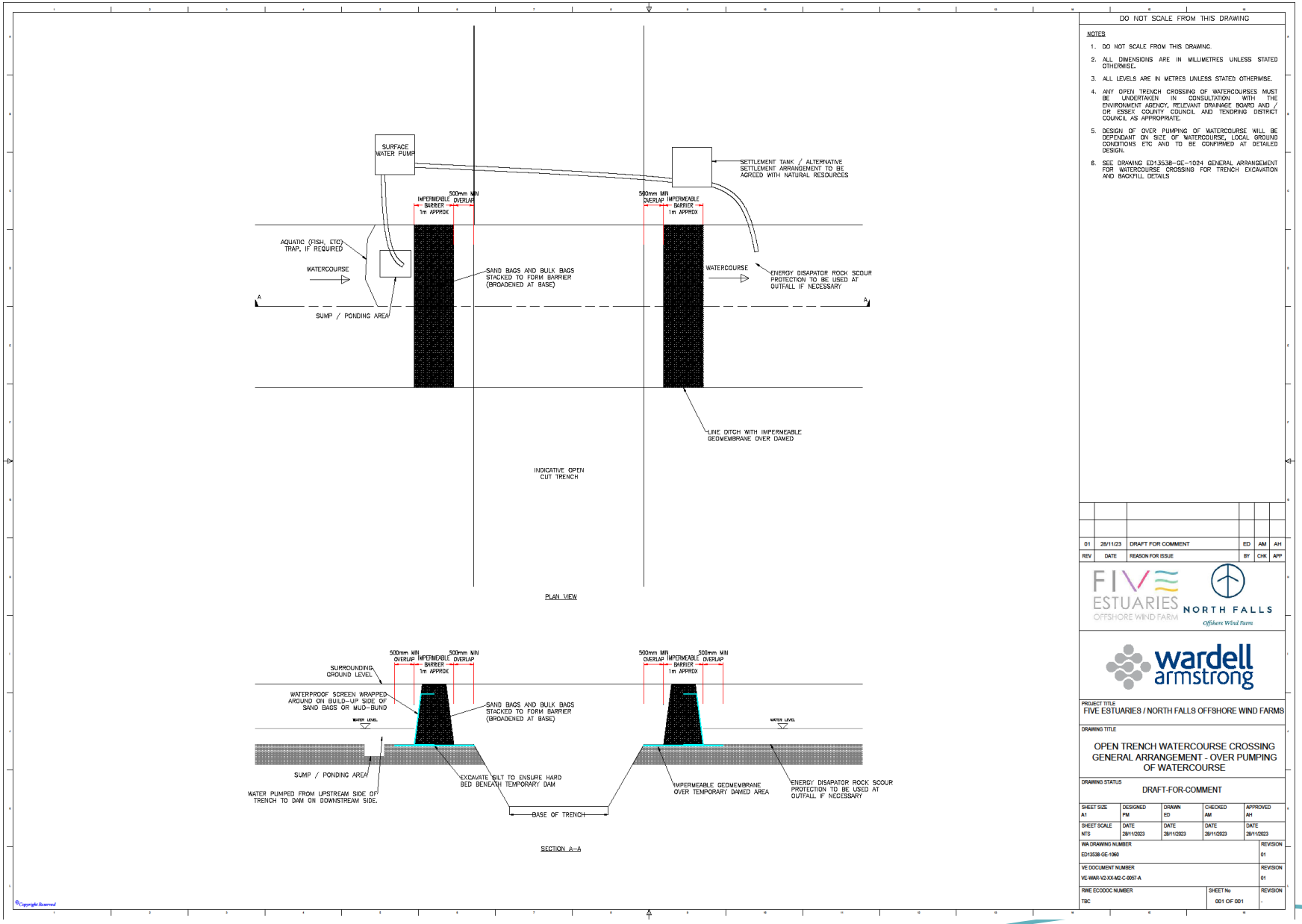
APPENDIX B. CROSSING OPTIONS -HAUL ROAD WATERCOURSE CROSSING - FLUME



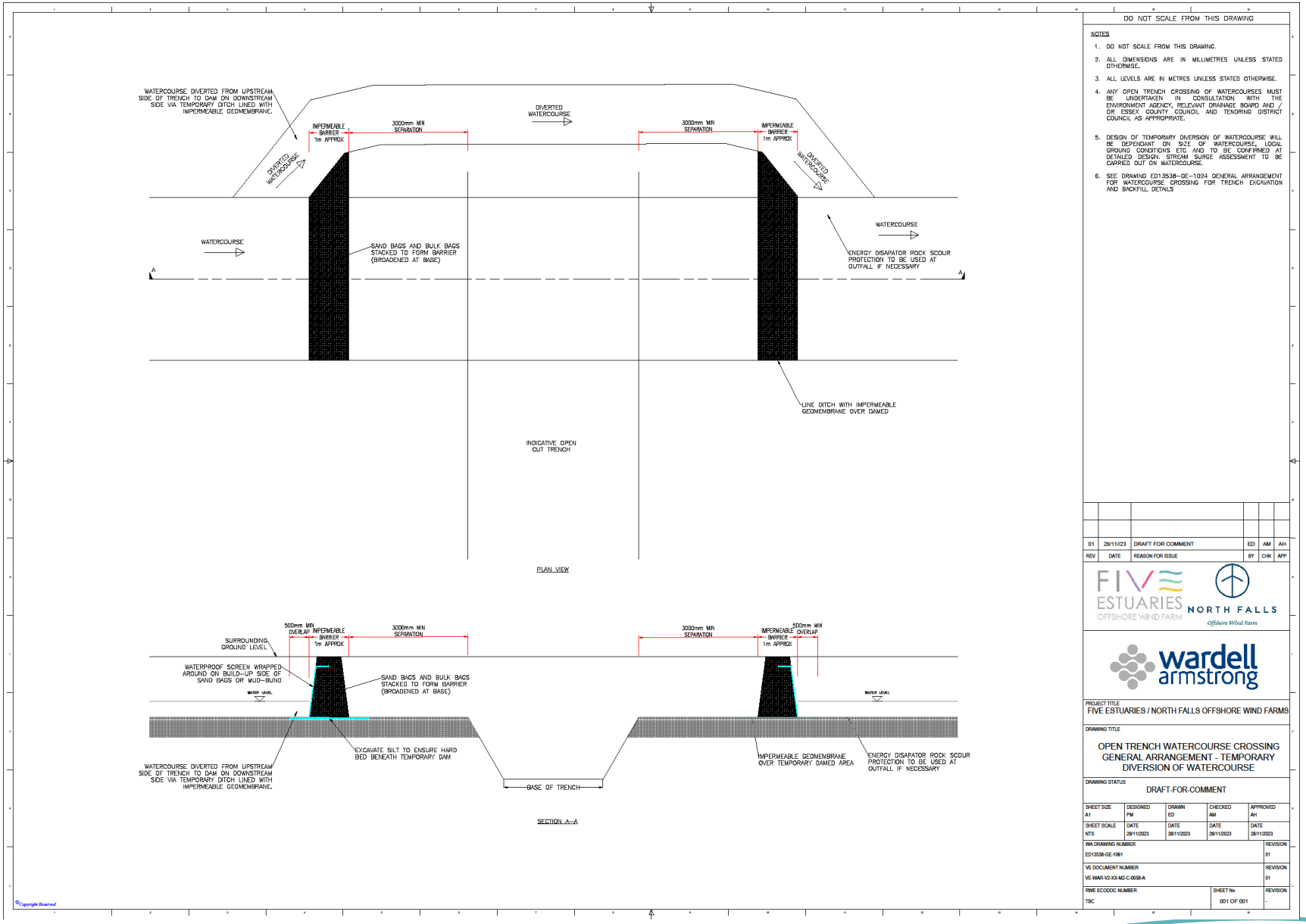
APPENDIX C. CROSSING OPTIONS - OPEN TRENCH WATERCOURSE CROSSING – FLUME



APPENDIX D. CROSSING OPTIONS - OPEN TRENCH WATERCOURSE CROSSING - OVER PUMPING



APPENDIX E. CROSSING OPTIONS- OPEN TRENCH WATERCOURSE CROSSING - TEMPORARY DIVERSION



6.1.5 Further modelling by the Project/Principal Contractor may be undertaken once greater clarity on the scope of the works, plant and site activities is understood. This may alter the requirement for the mitigation below.

LANDFALL

6.1.6 If a beach works TCC is constructed in the area of land adjacent to the promenade at the eastern end of Manor Way noise mitigation will be required during its construction and removal. These measures include, but are not limited to, one or a combination of the following:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the Noise Sensitive Receptors (NSR);
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.
- In addition to the above noise mitigation, the following vibration mitigation measures will be undertaken during the construction and the removal of the beach works TCC:
- vibratory compaction roller will not be used within 38m of Sluice Cottages for a period of more than 10 days in any 15 consecutive days; and
- start-up and run-down of the vibro-roller will not take place within 48m of Sluice Cottages, ideally at least 123m away.

6.1.7 No additional mitigation will be necessary during the use of the beach works TCC.

ECC

TCC CONSTRUCTION AND REMOVAL

6.1.8 Additional mitigation measures will be employed during the construction and removal of the following TCCs, as discussed in more detail below:

- TCC1;
- TCC2,
- TCC4;
- TCC5;
- TCC6;
- TCC8; and
- TCC11.

6.1.9 No additional mitigation will be necessary during the use of any TCC.

TCC1

6.1.10 A noise barrier / site hoarding will be installed on the western perimeter of the TCC construction site. In addition, one or more of the following mitigation measures will be carried out:

- locating TCC1 as far as possible from Great Holland Lodge and Lodge Farm residential properties;

- relocating noisier plant as far as practicable from the above two dwellings; or
- localised acoustic screening around noisy plant and the use of an enclosure.

TCC2

6.1.11 TCC2 will be constructed as far west as possible within the TCC construction site. In addition, one or a combination of the following mitigation measures will be employed:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the NSRs;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

TCC4

6.1.12 Additional mitigation will only be necessary if construction works for TCC4 takes place in the far north-western or south-eastern tip of the available land. Where practicable, TCC 4 will be located at least 156m from Cyprus Cottage, Tendring Road and Barkers Cottages, Thorpe Road; in which case, no further mitigation will be necessary. Any works taking place within 155m of these dwellings will be limited to a period of no more than 9 or more days in any 15 consecutive days, and a total number of days not exceeding 40 in any 6 consecutive months.

TCC5

6.1.13 Additional mitigation will only be necessary if construction works for TCC5 takes within 155m from Barkers Cottages, Thorpe Road. Any works taking place within 155m of these dwellings will include, but are not limited to, one or a combination of the following mitigation measures:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from Barkers Cottages;
- the use of a noise barrier around the perimeter of the works for the section between the works and Barkers Cottages; or
- localised acoustic screening around noisy plant and the use of an enclosure.

TCC6

6.1.14 Mitigation will only be necessary if TCC6 is constructed within 155m of New House Farm, Clacton Road or Abbotts Hall Cottages off Clacton Road. No construction work take place within 55m of these dwellings. For any construction activities taking place at a distance of between 55m and 155m of these dwellings one or a combination of the following mitigation measures will be employed:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the NSRs;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

TCC8

6.1.15 Additional mitigation will only be necessary if TCC8 is constructed within 155m of New Hall Cottages, Clacton Road. Any works taking place within 155m of these dwellings will include, but are not limited to, one or a combination of the following mitigation measures:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from New Hall Cottages;
- the use of a noise barrier around the perimeter of the works for the section between the works and New Hall Cottages; or
- localised acoustic screening around noisy plant and the use of an enclosure.

TCC11

6.1.16 Additional mitigation will only be necessary if TCC11 is constructed within 155m of Hawkins Farm Cottages, Paynes Lane. Any works taking place within 155m of these dwellings will include, but are not limited to, one or a combination of the following mitigation measures:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from Hawkins Farm Cottages;
- the use of a noise barrier around the perimeter of the works for the section between the works and Hawkins Farm Cottages; or
- localised acoustic screening around noisy plant and the use of an enclosure.

HAUL ROAD CONSTRUCTION WORKS

6.1.17 Additional mitigation of noise associated with the construction and removal of haul roads will only be necessary if it takes place within 155m of a dwelling. Any works taking place within this area will include, but are not limited to, one or a combination of the following mitigation measures:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from nearby dwellings;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

ECC DUCT INSTALLATION WORKS

6.1.18 Figure 1.1 identifies the locations along the ECC where additional noise mitigation is required during the duct installation works if multiple activities are being undertaken at the same time. Two levels of mitigation are shown: standard and enhanced.

ECC DUCT INSTALLATION WORKS STANDARD MITIGATION AREAS

6.1.19 Standard mitigation measures include, but are not limited to, one or a combination of the following:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the NSRs;
- the use of a noise barrier around the perimeter of the works; or

- localised acoustic screening around noisy plant and the use of an enclosure.

ECC DUCT INSTALLATION WORKS ENHANCED MITIGATION AREAS

6.1.20 Areas highlighted in Figure 1.1 to require enhanced mitigation include, but are not limited to, at least two of the following:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the NSRs;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

ECC TRENCHLESS CROSSING DURING EVENING AND NIGHT-TIME

6.1.21 Five onshore ECC crossings may undertake regular evening and night-time drilling, as listed below:

- TX-12 crossing the railway line;
- TX-23 crossing Swan Road north west of Thorpe-le-Soken;
- TX-24 crossing B1035 Thorpe Road / Tendring Road north west of Thorpe-le-Soken;
- TX-26 crossing Tendring Brook and Lodge Lane east of Goose Green; and
- TX-31 crossing the A120 east of Horsley Cross.

6.1.22 For nighttime work an appropriate level of mitigation would be required to lower the noise level to a maximum of 48 dB at the nearest NSR. This mitigation can be achieved by the combination of more than one of the following:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from nearby dwellings;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

BENTLEY ROAD AND A120 JUNCTION IMPROVEMENT WORKS

6.1.23 Any construction works associated with the Bentley Road and A120 junction highway improvements taking place within 100m of a dwelling will be require additional mitigation to control construction noise. The mitigation will include, but are not limited to, one or a combination of the following:

- the selection of quieter equipment;
- relocating noisier plant at greater distances from the dwellings;
- the use of a noise barrier around the perimeter of the works; or
- localised acoustic screening around noisy plant and the use of an enclosure.

6.1.24 In addition to the above noise mitigation measures, vibration mitigation will be employed when using the vibratory roller immediately outside of the following dwellings situated on Bentley Road:

- Orchard Cottage;
- Jasmine Cottage; and

- Pellens Cottage.

6.1.25 Where practicable, the distance between the vibration compaction works and the above dwellings will be increased to be at least 8 m. In cases where this is not possible, the vibration compactor used shall have one or more of the following:

- a single drum;
- a drum amplitude of less than 0.5mm;
- a drum with a width of at least 2m; or
- the use of an alternative method of ground compaction works that results in vibration levels inside any dwelling of less than 10 mm/s (Peak Particulate Velocity) for a period not exceeding nine days.

NOISE MONITORING

6.1.26 Where construction noise monitoring is agreed to be necessary with the discharging authority it will not be required for dwellings situated at a distance greater than 200m from construction works. It will not be necessary to measure noise outside every dwelling. If compliance can be demonstrated at the nearest dwelling to the works, then it shall be determined that all other dwellings situated at a greater distance, and in the same general direction of that dwelling, will also comply with the noise limit. It may be necessary to measure construction noise at multiple dwellings to ensure that all potential directions of propagation are accounted for.

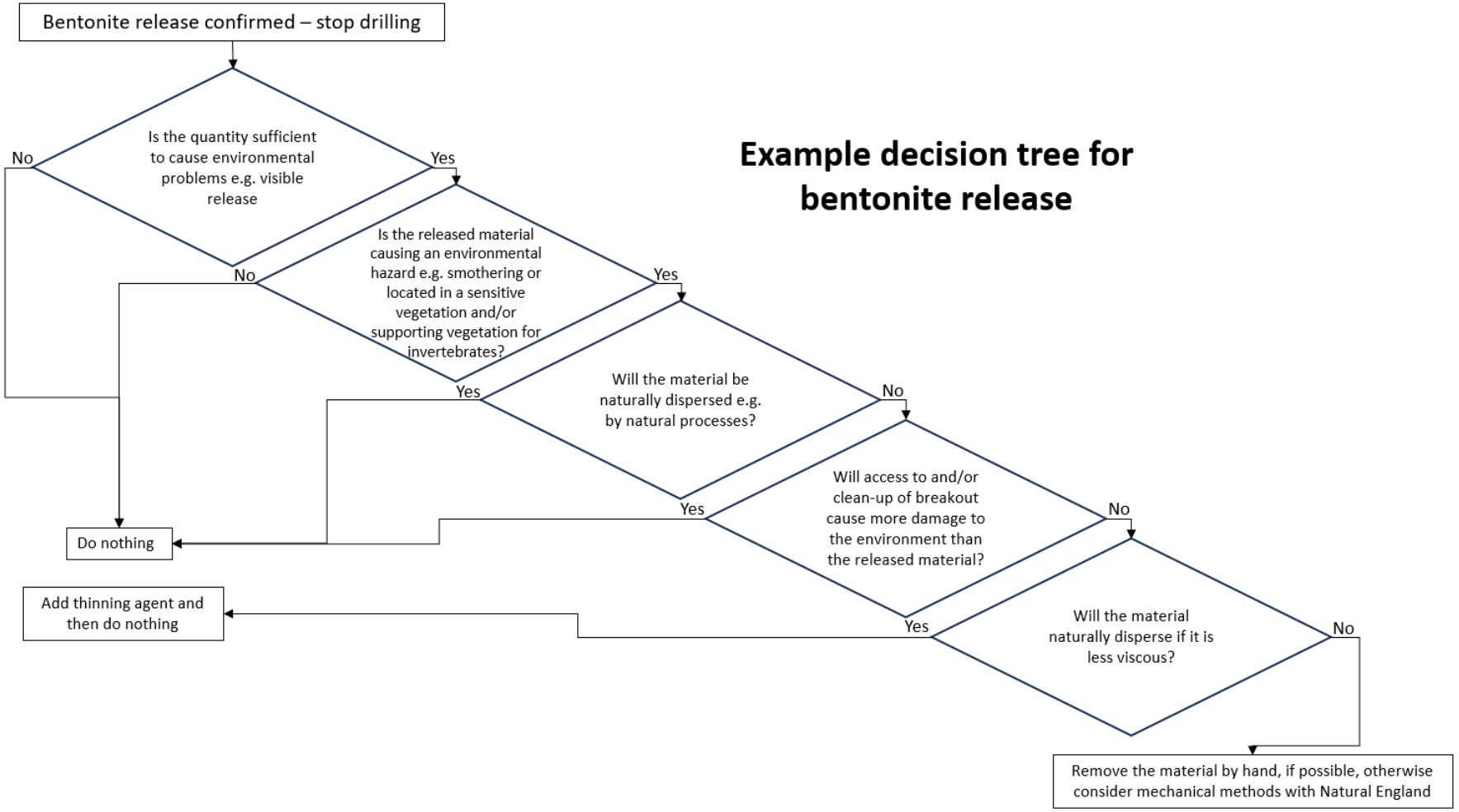
6.1.27 If the construction noise level does not exceed the threshold value for the appropriate time of day, given by Table 1.2, by more than 3 dB, then the level of construction noise will be deemed to comply with the appropriate noise limit. Further noise sampling will be considered in response to complaints received, but this would be agreed with the discharging authority.

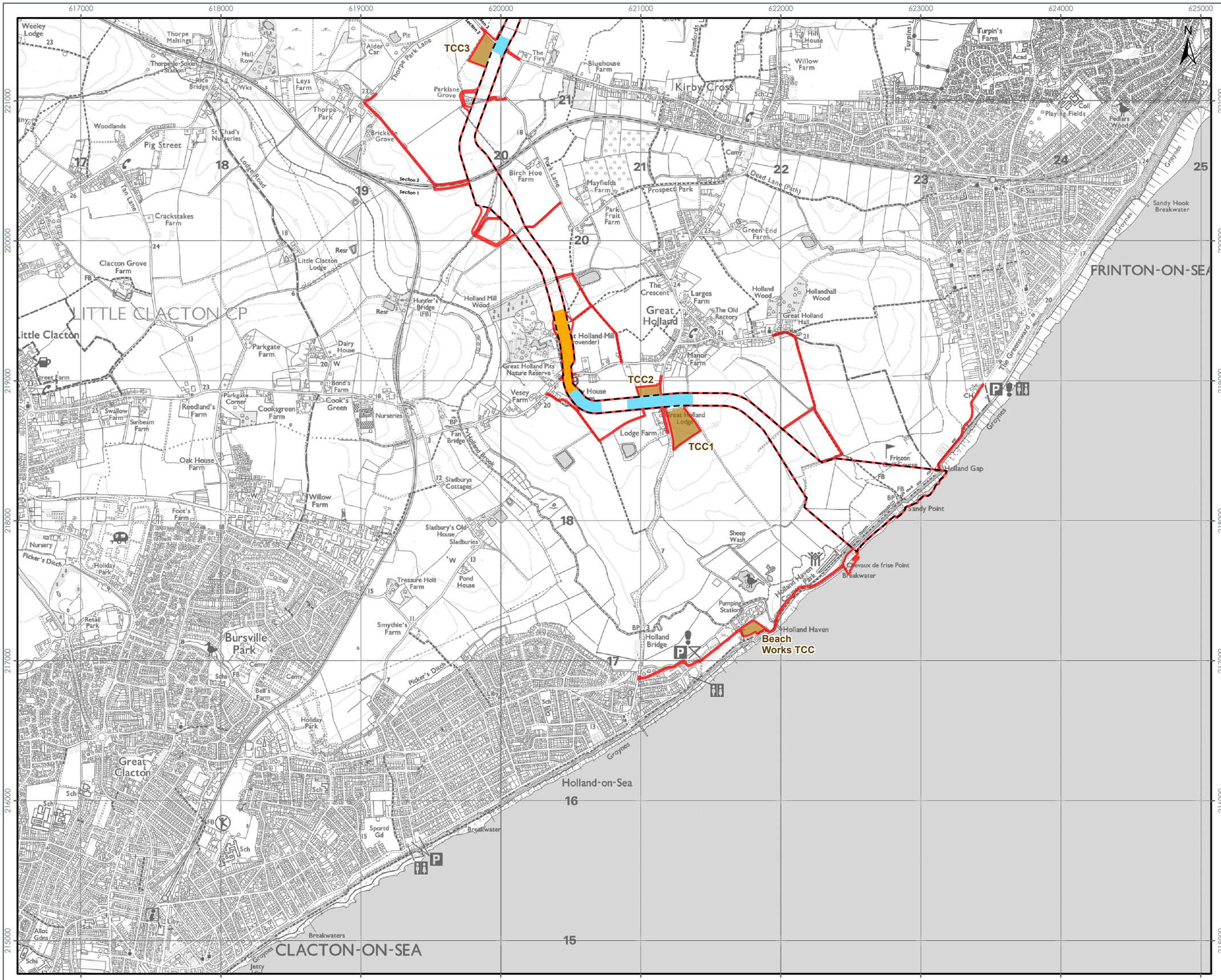
Table 1.2: Construction Noise Threshold Values.

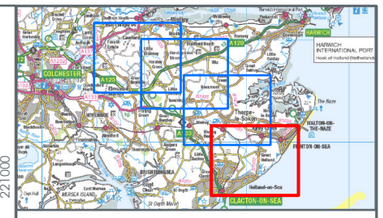
Period	Threshold Value, dB L_{Aeq}
Nighttime, any day (23.00 – 07.00)	45
Weekday daytime (07.00 – 19.00) and Saturday morning (07.00 – 13.00)	65
All other periods	55

APPENDIX G. EXAMPLE BENTONITE RELEASE DECISION TREE

A decision tree shown below shows the indicative process to assess whether removal of the released material is the best option.







LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor
- Temporary Construction Compound (TCC)
- Enhanced Noise Mitigation Area
- Standard Noise Mitigation Area

0 0.25 0.5 1
Kilometres

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CODE OF CONSTRUCTION PRACTICE – ADDITIONAL NOISE MITIGATION

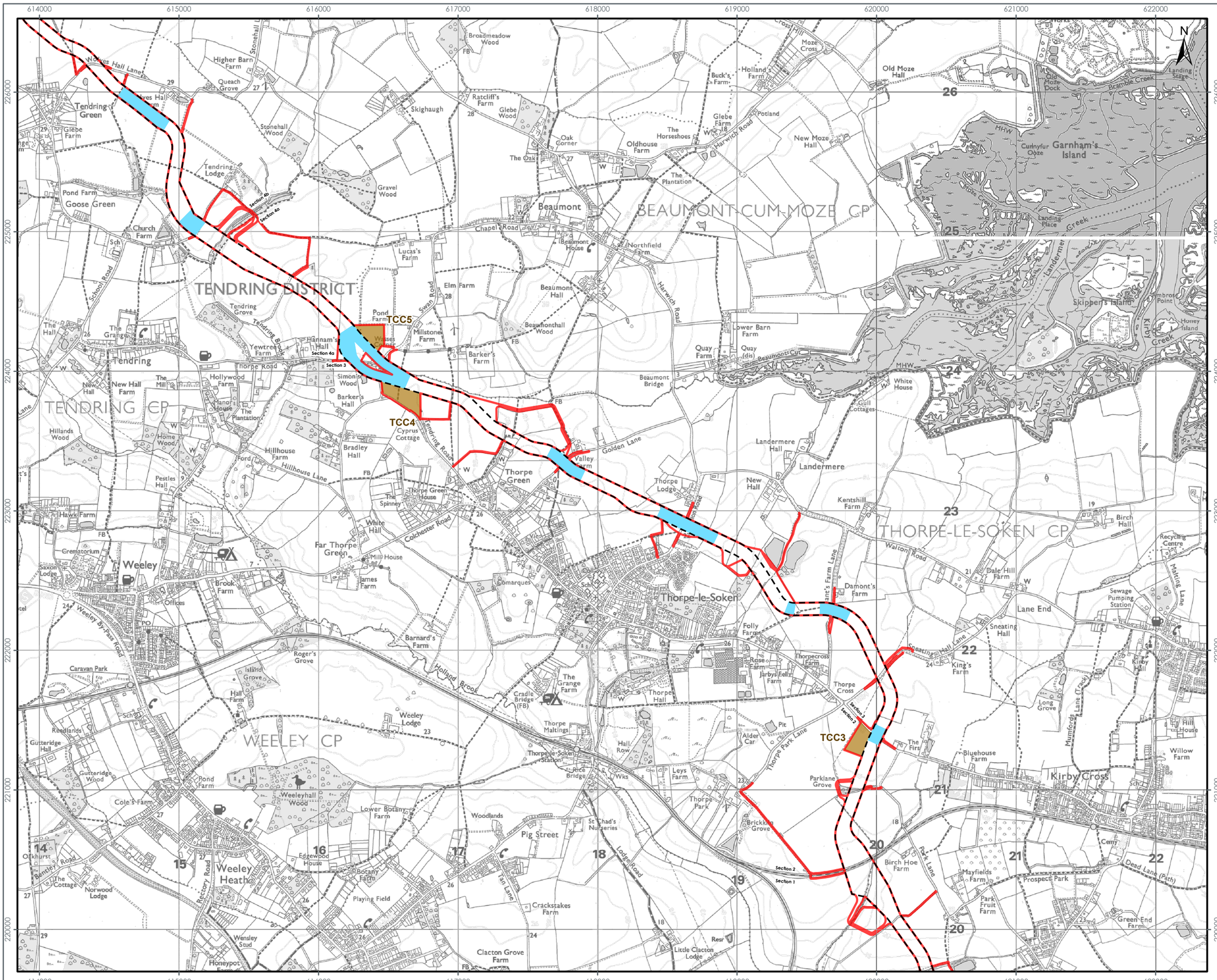
VER	DATE	REMARKS	Drawn	Checked
1	21/03/2024	ES Submission	DB	JRS
2	10/02/2025	Deadline 6 Submission	JO	JRS

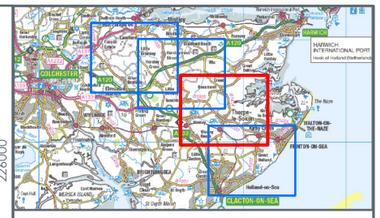
DRAWING NUMBER: 1.1

Sheet No: 1 of 4

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:25,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM





LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor
- Temporary Construction Compound (TCC)
- Standard Noise Mitigation Area

0 0.25 0.5 1

Kilometres

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CODE OF CONSTRUCTION PRACTICE – ADDITIONAL NOISE MITIGATION

VER	DATE	REMARKS	Drawn	Checked
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2	10/02/2025	Deadline 6 Submission	JO	JRS

DRAWING NUMBER: 1.1

Sheet No: 2 of 4

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
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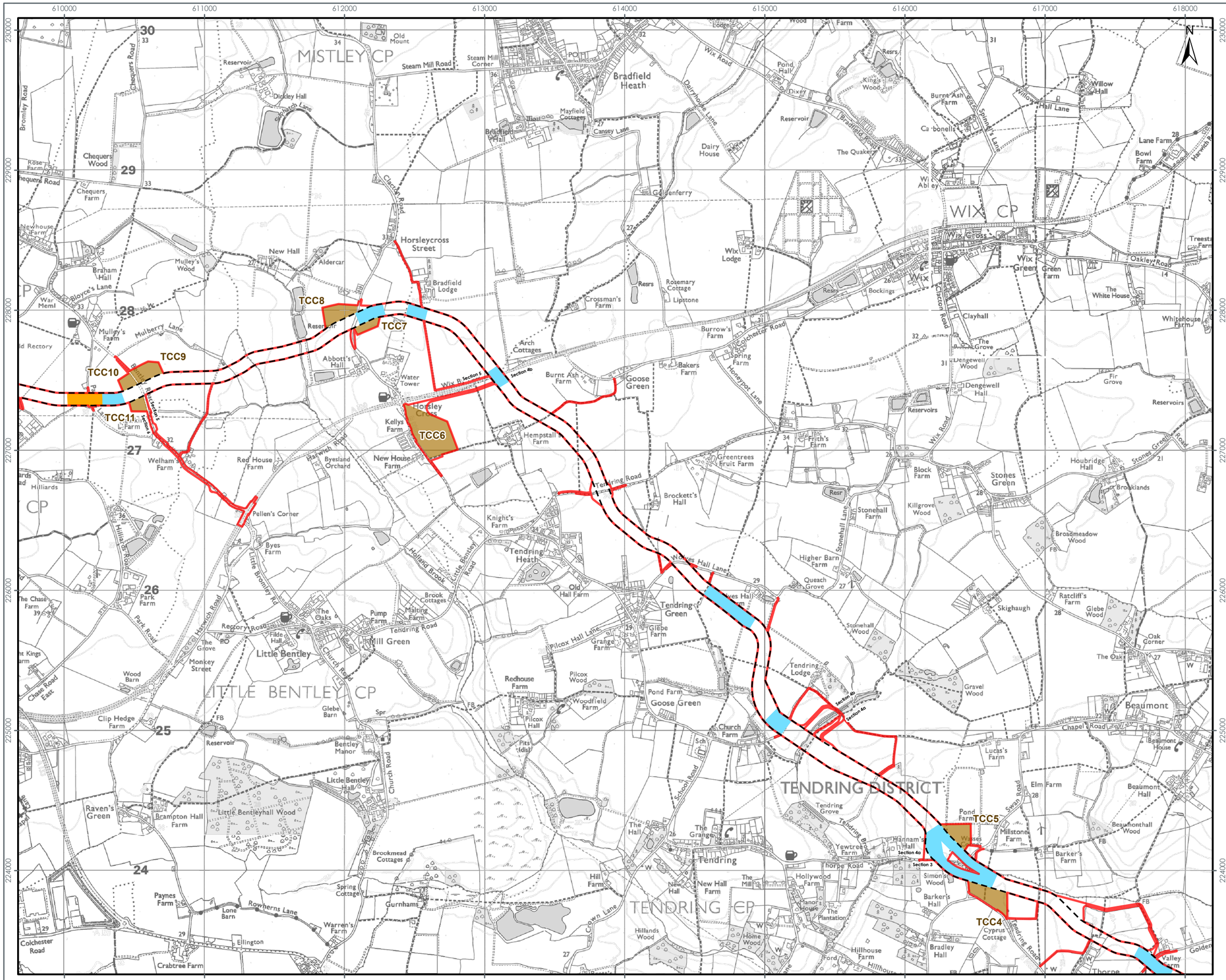
FIVE ESTUARIES
OFFSHORE WIND FARM



LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor
- Temporary Construction Compound (TCC)
- Enhanced Noise Mitigation Area
- Standard Noise Mitigation Area

0 0.25 0.5 1

Kilometres

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CODE OF CONSTRUCTION PRACTICE – ADDITIONAL NOISE MITIGATION

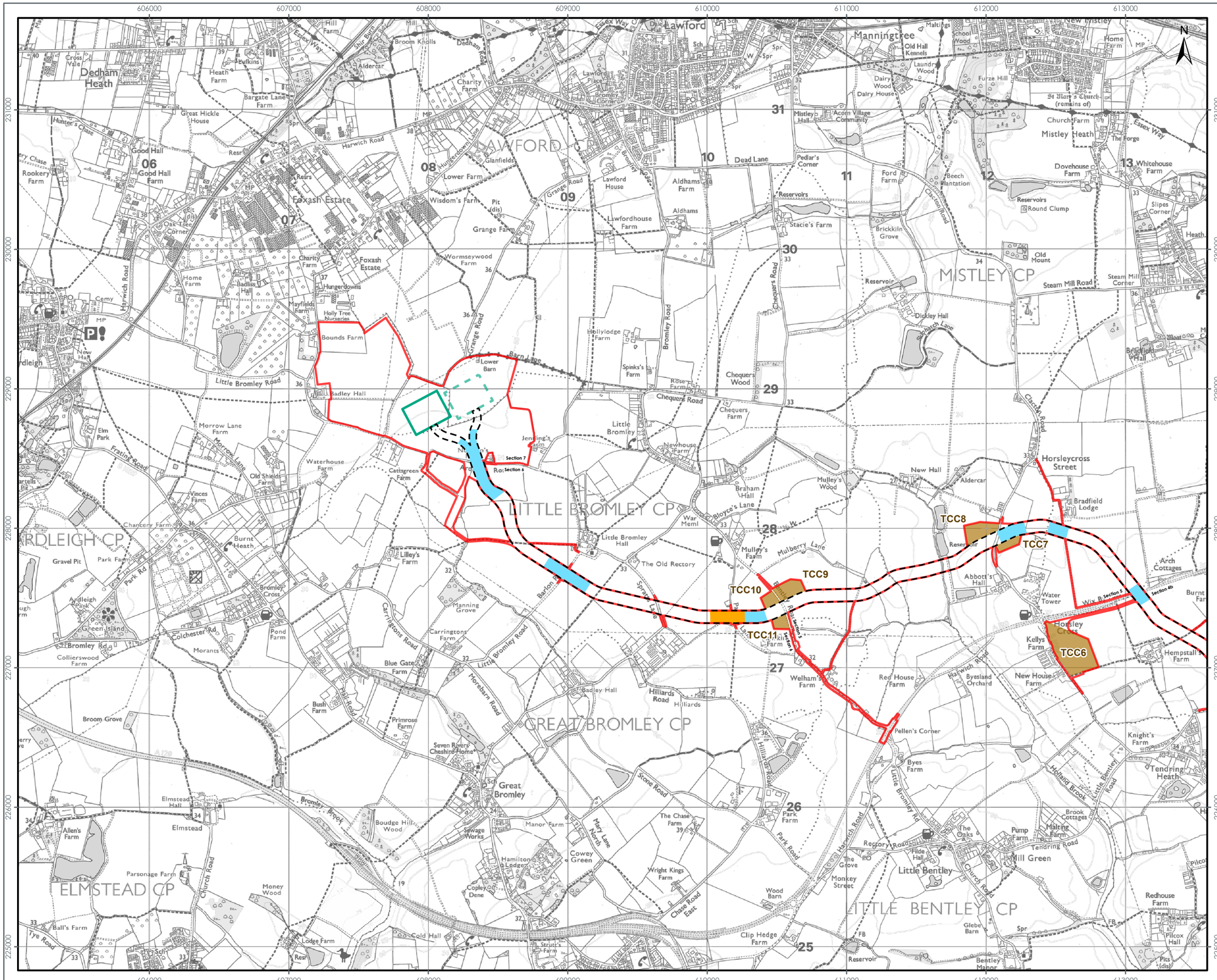
VER	DATE	REMARKS	Drawn	Checked
1	21/03/2024	ES Submission	DB	JRS
2	10/02/2025	Deadline 6 Submission	JO	JRS

DRAWING NUMBER: 1.1

Sheet No: 3 of 4

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:25,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM



LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor
- Temporary Construction Compound (TCC)
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Enhanced Noise Mitigation Area
- Standard Noise Mitigation Area

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CODE OF CONSTRUCTION PRACTICE – ADDITIONAL NOISE MITIGATION

VER	DATE	REMARKS	Drawn	Checked
1	21/03/2024	ES Submission	DB	JRS
2	10/02/2025	Deadline 6 Submission	JO	JRS

DRAWING NUMBER: 1.1

Sheet No: 4 of 4

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:25,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

FIVE ESTUARIES
OFFSHORE WIND FARM

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