

Bramford to Twinstead Reinforcement

Volume 7: Other Documents

Document 7.5.1 (C): CEMP Appendix A – Code of Construction Practice

Final Issue C
February 2024

Planning Inspectorate Reference: EN020002

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(q)



Version History

Date	Issue	Status	Description / Changes
April 2023	A	Final	For DCO submission
October 2023	B	Final	Update in response to Action Point 20 in Action Points from Issue Specific Hearing 14 September 2023 [EV-018] and other updates identified in responses received at Deadline 1 and 2.
February 2024	C	Final	Update in response to comments received at Deadline 7.

Contents

1.	Introduction	1
1.1	Overview	1
1.2	Purpose of the Code of Construction Practice	1
1.3	Good Practice Measures	2

	Table 1.1 – Good Practice Measures	2
--	------------------------------------	---

1. Introduction

1.1 Overview

- 1.1.1 National Grid Electricity Transmission plc (here on referred to as National Grid) has made an application for development consent to reinforce the transmission network between Bramford Substation in Suffolk, and Twinstead Tee in Essex. The Bramford to Twinstead Reinforcement ('the project') will be achieved by the construction and operation of a new electricity transmission line over a distance of approximately 29km comprising of overhead lines, underground cables and grid supply point substation. It also includes the removal of 25km of the existing distribution network and various ancillary works.

1.2 Purpose of the Code of Construction Practice

- 1.2.1 The Code of Construction Practice (CoCP) was first produced and included as an appendix in the Scoping Report (**application document 6.5.2**) submitted to the Planning Inspectorate in May 2021. It was updated for the Statutory Consultation to reflect updates to the design and feedback from engagement with consultees. A CoCP was submitted as Appendix A of the Construction Environmental Management Plan (CEMP) (**application document 7.5**), as part of the application for development consent. Compliance with the CoCP is secured through Requirement 4 of the draft Development Consent Order (DCO) (**application document 3.1**). The CoCP has been updated at Deadline 3 as a part of a review requested by the Examining Authority regarding ambiguous language (Action Point 20 in Action Points from Issue Specific Hearing 14 September 2023 [**EV-018**]) and also to reflect other updates identified in responses received at Deadline 1 and 2.
- 1.2.2 The CoCP sets out the standard good practice measures that will be undertaken during construction of the project if it is granted consent. The project will be delivered in compliance with all relevant legislation, consents and permits. Any statutory requirements listed in this document and industry good practice guidance which has informed each part of the document are not to be seen as exhaustive.
- 1.2.3 As outlined in the CEMP (**application document 7.5**), National Grid will put in place robust procedures to audit and inspect the project, including its supply chain of contractors, to make sure the control measures set out in the CoCP are adopted when constructing the project. The CoCP will apply to all areas of the project delivered pursuant to the DCO, during construction and the contractor(s) will be expected to demonstrate compliance with these measures.

1.3 Good Practice Measures

1.3.1 Good practice measures have been identified that will avoid or reduce impacts from the project on the environment (Table 1.1). Each good practice measure has been assigned a reference number (for example GG01) for ease of cross-reference in other documents. These are generally measures that will typically be implemented on a well-run construction site, but also include a number of good practice measures that have been identified through the environmental assessment process to support a proportionate assessment.

Table 1.1 – Good Practice Measures

Ref	Good Practice Measures
General Project Commitments	
GG01	The project will be delivered and operated in compliance with all relevant legislation, consents and permits.
GG02	The project design will be compliant with the guidelines and policies relating to electromagnetic fields stated in National Policy Statement for Electricity Networks Infrastructure (EN-5) (2011b), including the International Commission on Non-Ionizing Radiation Protection guidelines (1998).
GG03	A Construction Environmental Management Plan (CEMP) (document 7.5), a Landscape and Ecological Management Plan (LEMP) (document 7.8) and a Construction Traffic Management Plan (CTMP) (document 7.6) have been produced. The CEMP includes measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) will undertake inspections to check conformance to the Management Plans.
GG04	A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The Environmental Clerk of Works will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The Environmental Clerk of Works will be supported by appropriate specialists, including ecologists and arboriculturalists depending on the location and potential impacts.
GG05	Construction workers will undergo training to increase their awareness of environmental issues on the project. Topics will include but not be limited to: <ul style="list-style-type: none">• Pollution prevention and pollution incident response;• Dust management and control measures;• Location and protection of sensitive environmental sites and features;• Adherence to protected environmental areas around sensitive features;• Working hours and noise and vibration reduction measures;

Ref	Good Practice Measures
	<ul style="list-style-type: none"> • Working with potentially contaminated materials; • Waste management and storage; • Working in or near water; • Flood risk response actions; and • Agreed traffic routes and access points.
GG06	<p>A full record of condition will be carried out (photographic and descriptive) of the working areas affected by the construction activities. This record will be available for comparison following reinstatement after the works have been completed to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey or as agreed in the LEMP (document 7.8) or if the DCO provides otherwise, then in accordance with the DCO.</p>
GG07	<p>Land used temporarily will be reinstated where practicable (bearing in mind any restrictions on planting and land use) to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, in consultation with the landowner.</p>
GG08	<p>Where sensitive features are to be retained within or immediately adjacent to the Order Limits, an appropriate protective area will be established specific to the feature being protected. The sensitive feature will be demarcated and signed. The demarcation and signage will be inspected, repaired and replaced as necessary, for example if damaged. Sensitive features will be shown on the Vegetation Removal and Retention Plan (document 7.8.1) and the Vegetation Reinstatement Plan (document 7.8.2) contained within the LEMP.</p>
Construction Site Set Up	
GG09	<p>The name and contact details for the project will be displayed at the entrance to all compounds. This will include an emergency number.</p>
GG10	<p>Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or designated ecological sites where practicable.</p>
GG11	<p>Site layout and housekeeping measures will be implemented by the contractor(s) at all construction sites. This will include but not be limited to:</p> <ul style="list-style-type: none"> • Preventing pests and vermin control and treating any infestation promptly, including arrangements for the proper storage and disposal of waste produced on site; • Inspecting and collecting any waste or litter found on site; • Locating or designing site offices and welfare facilities to limit the overlooking of residential properties;

Ref	Good Practice Measures
	<ul style="list-style-type: none"> • Locating designated smoking/vaping areas to avoid nuisance to neighbours; • Managing staff/vehicles entering or leaving site, especially at the beginning and end of the working day; and • Managing potential off-site contractor and visitor parking.
GG12	<p>Plant and vehicles will conform to relevant standards for the vehicle or plant type as follows:</p> <ul style="list-style-type: none"> • Euro 4 (nitrogen oxides (NO_x)) for petrol cars, vans and minibuses; • Euro 6 (NO_x and particulate matter (PM)) for diesel cars, vans and minibuses; • Euro VI (NO_x and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads); and • Stage V (NO_x, PM, hydrocarbons, carbon monoxide (CO) and sulphur dioxide (SO₂)) for non-road engines (static plant and non-road mobile machinery). <p>Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so.</p>
GG13	<p>Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.</p>
GG14	<p>Fuels, oils and chemicals will be stored responsibly, away from sensitive water receptors and in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001. Where practicable, they will be stored >15m from watercourses, ponds and groundwater dependent terrestrial ecosystems. Where it is not practicable to maintain a >15m distance (for example refuelling a water pump adjacent to a watercourse), additional pollution prevention measures will be identified. All refuelling, oiling and greasing of construction plant and equipment will take place above drip trays (or similar) and also away from drains. Vehicles and plant will not be left unattended during refuelling. Spill kits will be made easily accessible for these activities. Potentially hazardous materials used during construction will be safely and securely stored including use of secondary containment where appropriate. Stored flammable liquids such as diesel will be protected either by double walled tanks or stored in a bunded area with a capacity of 110% of the maximum stored volume. Spill kits will be located nearby.</p>
GG15	<p>Runoff across the site will be controlled through a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There will be no intentional discharge of silted or otherwise contaminated site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency). Watercourses near work sites will be inspected daily where work activity is being carried out. Inspections will look for signs of siltation or other forms of pollution for the duration of the period of ground disturbance and work site drainage will be inspected and maintained as required, so that they continue to operate to their design standard, safeguarding surface and groundwater quality.</p>

Ref	Good Practice Measures
GG16	Wash down of vehicles and equipment will take place in designated washdown areas within construction compounds and will be contained. Wash water will be prevented from passing untreated into watercourses and groundwater. Washdown water containing detergent must not pass through an interceptor. Appropriate measures will include use of sediment traps.
GG17	Wheel washing or other wheel cleaning systems will be provided at each main compound access point on to the highway where a need has been identified through the design process. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads to prevent excessive dust or mud deposits from construction activities. A plan showing the location of wheel washing facilities will be provided to the relevant Local Highway Authority and the relevant police services for information purposes.
GG18	Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression depending on duration of stockpile and local conditions such as weather and exposure of the site.
GG19	Bonfires and the burning of waste material will be prohibited.
GG20	Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and sensitive habitats.
GG21	A Materials and Waste Management Plan (MWMP) has been developed and contains details about how the contractor(s) will implement and monitor the MWMP throughout the construction phase and oversee that any sub-contractor(s) adhere to the MWMP. The MWMP sets out, in an auditable manner, how waste will be reduced, reused, managed and disposed of in accordance with the waste hierarchy. Dedicated areas will be identified on the construction plans to allow materials and wastes to be segregated at source, reducing the risk of damage or contamination.
GG22	An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned events, including but not limited to site flooding and pollution incidents.
GG23	Stone pads will be installed in areas where heavy equipment, such as cranes and piling rigs, are to be used. The stone pads will provide stable working areas and will reduce disturbance to the ground. The stone pad area will be stripped of the topsoil, which will be stored and reinstated in accordance with the soil management measures contained in the CEMP.

Ref	Good Practice Measures
GG24	Where working areas are fenced the type of fencing installed will take into consideration the level of security required in relation to the surrounding land and public access, rural or urban environment and arable or stock farming. For some locations the fence used may also serve to provide acoustic and visual screening of the work sites and reduce the potential for disturbance of users in the surrounding areas. Fencing will be regularly inspected and maintained and removed as part of the demobilisation unless otherwise specified.
GG25	Members of the community and local businesses will be kept informed regularly of the works through active community liaison, for example notification of noisy activities and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.
GG26	A speed limit for vehicles travelling on temporary access routes will be implemented. This will be a maximum of 15mph on surfaced and 10mph on unsurfaced temporary access routes.
GG27	The Contractor will undertake regular inspections of the temporary access routes and bellmouths to check for potholes or other defects. These will be repaired in a timely manner.
Landscape and Visual (including Trees)	
LV01	The contractor(s) will retain vegetation where practicable and in accordance with LEMP Appendix A - Vegetation Retention and Removal Plan (document 7.8.1). Where vegetation is lost and hedgerows and trees cannot be replaced in situ due to the restrictions associated with operational requirements of planting near the line and/ or safety requirements, replacement vegetation will be planted as close by as practicable and will complement landscape character and be sympathetic to the local habitat type in order to provide a high biodiversity value.
LV02	The contractor(s) will apply the relevant protective principles set out in British Standard 5837:2012: Trees in relation to design, demolition and construction. This will be applied to those trees within the Order Limits which will be preserved through the construction phase, and to trees outside of the Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.
LV03	A five-year aftercare period will be established for all reinstatement and mitigation planting.

Ref	Good Practice Measures
------------	-------------------------------

Biodiversity	
---------------------	--

- | | |
|-----|---|
| B01 | The contractor(s) will comply with relevant protected species legislation. Licences will be obtained where required from Natural England for all works affecting protected species as identified by the Environmental Statement and through pre-construction surveys. All applicable works will be undertaken in accordance with the relevant requirements and conditions set out in those licences. |
| B02 | Vegetation with the potential to support breeding birds will be programmed to be removed outside of breeding bird season (March to August inclusive) where practicable. If any vegetation clearance is required during the breeding bird season, vegetation will be checked by an ecologist for nesting birds prior to removal. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the ecologist. |
| B03 | Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight. |
| B04 | To control the spread of invasive species in accordance with the Wildlife and Countryside Act 1981, any plant or machinery that has been used in areas with invasive species (both terrestrial and aquatic), such as Japanese knotweed or invasive aquatic fauna, will be thoroughly cleaned. Water used to clean plant or machinery will be controlled to prevent the spread of the plant (through direct transfer or of seeds, rhizomes, fragments, etc.). The area will be cordoned off to prevent any inadvertent spreading. |
| B05 | All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October (with consideration of other protected and notable species potentially present). Firstly, vegetation will be cut to approximately 150mm (with the arisings removed) under the supervision of an ecologist and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level under the supervision of an ecologist. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided. |
| B06 | Alternative roost structures (bat boxes) will be provided on retained trees within the Order Limits or areas outside of the Order Limits agreed with landowners. Two artificial bat boxes will be deployed on retained trees to every one tree with high or moderate bat roosting potential felled. Where high potential roosting features are present, the project will soft fell these. The limbs will be attached to retained trees where practicable. |
-

Ref	Good Practice Measures
B07	Where the works require the crossing or removal of hedgerows, the gap will be reduced to a width required for safe working. Where hedge removals are necessary and the hedgerow is identified as having value for bats, dormouse or other relevant species, then 'dead hedging' would be used where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as hazel hurdles, willow screening panels or Heras fencing covered in camouflage netting.
B08	As an important habitat for terrestrial invertebrates, decaying and dead wood within the Order Limits, in consultation with the landowner, will be retained and protected during construction. Further details can be found in the LEMP (document 7.8).
B09	Where watercourses are to be crossed by a culvert, this will be appropriately sized to maintain natural riverine connectivity throughout the year, at both high and low flows. Culverts will be designed to maintain natural slope/water velocities and have buried inlet/outlets.
B10	Removal of existing pylons which includes 'felling' will be directional and away from woodland, hedgerows and field boundaries.
B11	Badger setts within the Order Limits that are confirmed as disused will either be left in-situ with the entrance holes 'hard stopped' (e.g. with wooden stakes) or destroyed under the supervision of an ecologist to prevent badgers from taking residence in them during the construction period. Evidence will be recorded of the survey and/or monitoring activity that was undertaken to conclude that there were no signs of use by badger. Hard-stopped entrances will be re-opened on completion of construction works at that location. A licence will not be required for these activities.
B12	All works will be undertaken in accordance with the Natural England Great Crested Newt (GCN) District Level Licence (DLL). If a GCN is located during construction, an ecologist will be consulted to advise as to the way forward. Measures may include a Natural England GCN licensed ecologist handling and relocating GCN to outside the working area.
B13	Where pre-construction surveys have identified a likely fish presence and opencut crossings are proposed and over pumping will be used. The pump will be screened to prevent entrainment or impingement of fish or fish friendly pumps will be used to facilitate the downstream passage of fish through the pumps. The use of pumps to move water will require 2mm screening to avoid the impingement of fish and juvenile eels.
Historic Environment	
H01	Locations of known archaeological interest/value where archaeological work is planned or where preservation 'in situ' is proposed, will be annotated on plans within the Outline Written Scheme of Investigation (OWSI) and signposted/fenced off to avoid unintentional damage.

Ref	Good Practice Measures
H02	In the event that an as yet unknown heritage asset with archaeological interest is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, works in that area will be halted. The project will inform the relevant planning authority archaeologist, and Historic England where relevant, and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.
H03	In the event that finds of human remains, or 'treasure' as defined by the Treasure Act, 1996 (as amended), the contractor(s) will comply with the requirements of the relevant legislation and best practice guidance.
H04	Any designated heritage assets that lie within or immediately adjacent to the Order Limits will be annotated on plans within the OWSI and signed on site, if needed, to ensure that the assets are preserved and to avoid any unintentional damage.
H05	A topographic survey will be undertaken in advance of construction of each Protected Lane (Essex) and Historic Lane (Suffolk) within the Order Limits where likely to be affected by physical works. The survey will include mapping of any historic earthwork features associated with the lane, including banks and ditches. During construction, the contractor will seek to limit the working area to the narrowest section of lane that is practicable for the specific works. Any historic features associated with the lane will be reinstated at the end of construction to the pre-work condition, including the replanting of hedgerows and reinstatement of historic earthworks.
H06	The extent of intrusive archaeological investigations and mitigation shall not extend beyond the Order Limits as shown on the Work Plans [APP-010].
Water Environment	
W01	All works within main rivers or ordinary watercourses will be in accordance with a method approved under environmental permits issued under the Environmental Permitting Regulations (2016) and the Land Drainage Act (1991), or the protective provisions of the DCO for the benefit of the Environment Agency and the Lead Local Flood Authorities.
W02	<p>For opencut watercourse crossings and installation of vehicle crossing points, good practice measures will include but not be limited to:</p> <ul style="list-style-type: none"> • Reducing the working width for opencut crossings of a main or ordinary watercourse whilst still providing safe working; • Installation of a pollution boom downstream of opencut works; • The use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required; • Have spill kits, straw bales or other appropriate measures readily available for downstream emergency use in the event of a pollution incident; • The use of all static plant such as pumps in appropriately sized spill trays; • Prevent refuelling of any plant or vehicle within 15m of a watercourse (except for machinery associated with over-pumping);

Ref	Good Practice Measures
	<ul style="list-style-type: none"> • Prevent storing of soil stockpiles within 15m of a main river; • Inspect all plant prior to work for leaks of fuel or hydraulic fluids; and • Reinstating the riparian vegetation and natural bed of the watercourse, using the material removed where appropriate, on completion of the works and compacting as necessary based on the type of material. If additional material is required, appropriately sized material of similar composition will be used.
W03	Riverbank, ponds and in-channel vegetation will be retained and protected where not directly affected by installation works. Natural substrate will be provided through temporary watercourse crossings culverts.
W04	Where watercourses are to be crossed by construction traffic using a culvert method, the area above the culvert will be backfilled to permit the passage of plant, equipment, materials and people. The culvert will be sized to reflect the channel width and the estimated flow characteristics of the watercourse under peak flow conditions and kept free from debris. These installation works will be timed to avoid flood flow conditions where practicable, or if periods of work were necessary when higher flow conditions could be expected, suitable pumping provision will be put in place, with standby pumps also made available.
W05	The contractor(s) will comply with all relevant consent conditions or DCO provisions regarding de-watering and discharge activities. This will particularly be with regard to discharge volumes, rates and locations, and will include discharges to land, water bodies or third-party drains/sewers.
W06	There will be no permanent land raising undertaken in locations identified as Flood Zone 3.
W07	Where new or additional surfacing is required on any access tracks and compound areas, these will be permeable surfaces where ground conditions allow or will be designed to achieve green field rates. The project will incorporate surface water drainage measures into its final design for the temporary access routes so that they do not lead to a significant increase in flood risk. Temporary access routes within Flood Zone 3 and areas of high and medium risk of flooding from surface water will be removed at the end of the construction phase and the ground surface will be reinstated to pre-project levels. Construction materials or stockpiles of soils/arising will not be stored within Flood Zone 3 and areas of high and medium risk of flooding from surface water. Where this cannot be avoided, stockpiles would be aligned to avoid creating continuous barriers to floodplain flows (other measures have been included in the CEMP). All construction compounds will be located in Flood Zone 1. Where this is not practicable, additional measures will be identified within a flood risk action plan.
W08	The contractor(s) will subscribe to the Environment Agency's Floodline service, which provides advance warning of potential local flooding events, and subscribe to the Met Office's Weather Warnings email alerts system and any other relevant flood warning information. The contractor(s) will implement a suitable flood risk action plan, which will include evacuation procedures should a flood occur or be forecast.

Ref	Good Practice Measures
W09	Active private water supplies will be identified with landowners through the landowner discussions. Appropriate measures will be considered during construction. In the event of a landowner or tenant reporting that installation activities have affected their private water supplies, an initial response will be provided within 24 hours. Where the installation works have affected a private water supply, an alternative water supply will be provided.
W10	In the event of a significant spill of a polluting substance during construction that could affect a private water supply, an assessment of the potential impact on private water supplies will be undertaken, and where a private water supply is judged likely to be affected, the relevant landowners/tenants will be contacted within 24 hours and an alternative water supply will be provided.
W11	Where the River Stour and River Box are crossed by a trenchless crossing, the cables will be laid at least 1m below the hard bed level of the river and will remain at or below this level for a distance of not less than 3m from the edge of the riverbank. Marker posts will also be positioned on each bank of the river to indicate the location of the under-crossing and the nature of the works.
W12	Where new, permanent areas of impermeable land cover are created, the drainage design will be in accordance with the requirements of the Essex County Council Sustainable Drainage System (SuDS) Design Guide (2020) and the Suffolk County Council SuDS Palette (2021) and will include allowances for climate change in accordance with current (May 2022) Environment Agency requirements. The drainage infrastructure will provide the storage necessary to achieve discharges at greenfield rates and will not significantly alter groundwater recharge patterns by transferring a significant recharge quantity from one catchment to another. A specialised drainage contractor will review the designs and will provide advice to National Grid and its contractor during relevant construction and reinstatement activities.
W13	Wastewater generated from construction compound welfare facilities will be discharged to sewer, subject to the agreements with the utility providers, or in locations where a sewer connection is not reasonably practicable, collected and tankered off site for disposal at a licensed treatment facility.
W14	Pylons will not be constructed within 8m of the top of bank of main rivers (Belstead Brook and River Brett), in accordance with requirements for regulated activities set out in the guidance for environmental permits for flood risk activities (Environment Agency and Defra, 2019). New 400kV pylons will also not be located within 3m of an ordinary watercourse. This will also reduce disturbance to river channels, banks and riparian corridors. National Grid will seek to avoid situating pylons within Environment Agency Flood Zones 2 or 3. Where this is not practicable, a Flood Risk Activity Permit application would be submitted to the Environment Agency.
W15	All main rivers and ordinary watercourses crossed by an open-cut methodology will be designed to allow continued downstream flow during construction to reduce flood risk. The works will be timed to avoid flood flow conditions or additional measures will be required.

Ref	Good Practice Measures
W16	Where appropriate, pre-construction field drainage will be installed within the working area to help prevent possible water-logging of the working area and therefore the need for temporary dewatering during construction. This will also enable current drainage systems to continue working throughout the period of construction. Landowners will be consulted on the design of the land drainage proposals. The design will pay particular attention to the need to reduce the risk so that the drains do not act as pathways for contamination or cause flooding off-site, consulting with the Lead Local Flood Authorities where necessary. A specialised drainage contractor will review the designs and provide advice to National Grid and its contractor during relevant construction and reinstatement activities.
W17	Temporary clear span bridge crossings (e.g. bailey bridge) will be used for the temporary access route crossing at the River Stour, River Box and the River Brett. These will be designed with soffits that are raised 600mm above the flood level in accordance with Environment Agency requirements and will be set back 8m (or distance otherwise agreed with the Environment Agency) from the river's edge. Appropriate flood levels will be agreed with the Environment Agency and specified in the Flood Risk Activity Permit applications for these structures. The temporary bridges will be designed specifically to consider the span length and the weight and size of plant and equipment that will cross the bridge. The bridge designs will include measures to reduce the risk of material falling into the watercourses. These installation works would be timed to avoid flood flow conditions where practicable, or if periods of work were necessary when higher flow conditions could be expected, suitable pumping provision would be put in place, with standby pumps also made available. In addition, the temporary bridge at the River Stour will be of sufficient size and design to allow existing navigation of the river by non-motorised vessels to continue during construction.
W18	The temporary access route and underground cables will cross a flood defence embankment on the River Stour located off Bures Road (Grid reference TL 89599 36718). The crossing designs will avoid impacts on the defence foundations and construction works will be undertaken using methods that limit ground movement/settlement to reduce the potential to compromise the condition and stability of the embankment. In addition, in line with the requirements of the Environment Agency, should the potential for an impact to the flood defences be identified at the detailed design stage, then the flood defence would be monitored to establish a pre-construction baseline and for a period after completion of works to construct the crossings to enable detection of any effects on the structural integrity/condition of the assets during construction. The requirement for any such monitoring will be discussed with the Environment Agency as part of the application for a Flood Risk Activity Permit.

Ref	Good Practice Measures
-----	------------------------

Geology and Hydrogeology

- | | |
|------|--|
| GH01 | For areas where potential contamination is known (excluding Layham quarry), or anticipated to be present, ground investigation will be undertaken to identify the specific ground conditions and obtain samples for laboratory testing to determine the presence and level of any contamination. This will inform the assessment of the risks to receptors, and good practice measures and working methods to control those risks will be developed. The results will be discussed with the Environment Agency and/or relevant planning authority, as appropriate. Made ground and/or materials known or strongly suspected of being contaminated will be segregated from natural and uncontaminated materials and will be sampled and tested to determine the presence and level of any contamination. Material deemed unsuitable for reuse within the project will be removed from site and either disposed of to appropriate landfill or treated at a soil treatment centre to facilitate re-use. |
| GH02 | Excavation materials identified as being unsuitable for reuse within the project will be segregated from other material and transported off-site in suitable vehicles for testing and subsequent disposal to a suitable type of landfill. Vehicles will contain and cover the materials to prevent loss of leachate, dust or other material during transport. |
| GH03 | Where the project passes through areas where there are active Environmental Permits (for example authorised landfill sites), the contractor(s) will work with the permit holder to comply with the permit requirements. |
| GH04 | The contractor(s) will be responsible for assessing the risk of encountering unexploded ordnance. The contractor(s) will implement any recommendations for further works or further measures advised by the risk assessment. |
| GH05 | Measures related to discharge of water from dewatering activities and management of any contaminated soils have been described in the CEMP (document 7.5). |
| GH06 | A Foundation Works Risk Assessment will be undertaken by the Contractor at pylons, the CSE compounds, GSP substation and temporary bridges where piled foundations are proposed. The Foundation Works Risk Assessment will assess the risk of the piling creating new contamination pathways and will identify any additional measures required to protect groundwater and prevent aquifer mixing. This will be prepared in accordance with 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination' (Environment Agency, 2001). Pylon foundations will also be designed with suitable corrosion and pH resistant concrete formulas to reduce the risk of leaching harmful compound into soil and groundwater. |
-

Ref	Good Practice Measures
-----	------------------------

GH07	A hydrogeological risk assessment will be undertaken once the trenchless crossing method has been confirmed. This will assess the risks on groundwater or surface water quality associated with the construction method including considering the potential for breakout during drilling and the use of bentonite or other agents proposed. Where the assessment identifies an unacceptable risk to groundwater or surface water quality, mitigation measures will be identified and/or alternative methods and/or additives shall be proposed, assessed and used. The hydrogeological risk assessment will be submitted to the Environment Agency for approval prior to construction. At the same time, the Applicant will submit the hydrogeological risk assessment to Natural England, along with the contact details for the Environment Agency. Natural England will be responsible for submitting any comments it has on the hydrogeological risk assessment to the Environment Agency for its consideration as part of the approval process. The Environment Agency will have up to 21 working days to respond on the hydrogeological risk assessment and their comments will be considered as part of finalising the risk assessment. This can be supported by a pre-submission draft to reduce the risk of any delays.
------	--

Agriculture and Soils

AS01	<p>Soil management measures have been included within the CEMP (document 7.5). Measures include but are not limited to the following:</p> <ul style="list-style-type: none">• How the different topsoil and subsoil resources present will be stripped and stockpiled;• Suitable conditions for when handling soil will be undertaken, for example avoiding handling of waterlogged soil;• Indicative soil storage locations;• How soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil;• Specific measures for managing sensitive soils, such as heavy-textured soils or those supporting valuable habitats;• Suitable protective surfacing (such as Trackway or similar products) where soil stripping can be avoided, based on sensitivity of the environment and proposed works;• Approach to reinstating soil that has been compacted; and• Details of measures required for soil restoration.
------	--

AS02	Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2m (or the maximum natural soil depth if this is shallower) except over buried cables where the reinstated soil depth will be approximately 0.9m.
------	---

Ref	Good Practice Measures
AS03	Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through the landowner discussions. The latter may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties in advance of any change being implemented.
AS04	Existing water supplies for livestock will be identified pre-construction. Where supplies will be lost or compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
AS05	Consultation with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing land drainage system and to assist in maintaining the integrity of the working area during construction. The project may include a system of 'cut-off' drains which feed into a new header drain, and the project will also take into account surface water runoff measures.
AS06	Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease in this area, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
AS07	All movement of plant and vehicles between fields will cease in the event of a notification by the Department for Environment, Food and Rural Affairs (Defra) of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
AS08	Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.
AS09	Soil excavated from the project will be reused on site through the backfilling of trenches and for landscaping where practicable and where soil is suitable for reuse (for example, not contaminated and giving consideration to land holdings and applicable biosecurity measures). It is intended that all soil will be reused on site, however if it arises that excess spoil cannot be reused on site, this soil will be taken off site in accordance with measures outlined within the Materials and Waste Management Plan.
AS10	Pre-construction soil surveys will be undertaken in areas of underground cable at suitable spacings where soil stripping is proposed, and no existing soil survey data is available. This would support the development of detailed soil management measures and will provide soil information to inform the handling, movement and reinstatement of soil during construction.

Ref	Good Practice Measures
-----	------------------------

Traffic and Transport

- | | |
|------|---|
| TT01 | The CTMP (document 7.6) sets out measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It also provides suitable control for the means of access and egress to the public highway. The plan also identifies access for emergency vehicles. It also sets out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads. |
| TT02 | The Main Works Contractor will implement a monitoring and reporting system to check compliance with the measures set out within the CTMP (document 7.6). This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles owned and operated by the Main Works Contractor to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the routing of construction vehicles between the site and the strategic road network. Deviations from the authorised routes will require discussion of the need for additional mitigation measures with highways authorities. |
| TT03 | All designated PRow crossing the working area will be managed with access only closed for short periods while construction activities occur. Any required temporary diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion and a contact number for any concerns. |
| TT04 | Where construction works require the temporary or permanent relocation or removal of street furniture, the approach will be discussed with the LHA to agree the nature of proposals, timing and planned approach to reinstatement prior to works being undertaken. Where street furniture is affected by the routing of abnormal indivisible loads vehicles, the effects on street furniture will be agreed through the Special Types General Orders (STGO) process. Where street furniture is affected by the construction of bellmouths, this will be discussed and agreed as part of agreements on the detailed design of the accesses specified in Requirement 11 of the development consent order. |
| TT05 | Where practicable, deliveries of construction materials will be timed to fall outside of traditional peak traffic period. A booking system will be used to manage, where practicable, the spread of deliveries across the whole day to further reduce the impact of HGV traffic during the peak periods. |

Air Quality

- | | |
|------|---|
| AQ01 | Construction traffic will not be routed through Sudbury Air Quality Management Area (AQMA). |
|------|---|

Noise and Vibration

- | | |
|------|--|
| NV01 | Construction working will be undertaken within the agreed working hours set out within the DCO. Examples of best practicable means to reduce construction noise are set out within the CEMP (document 7.5). |
|------|--|
-

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com