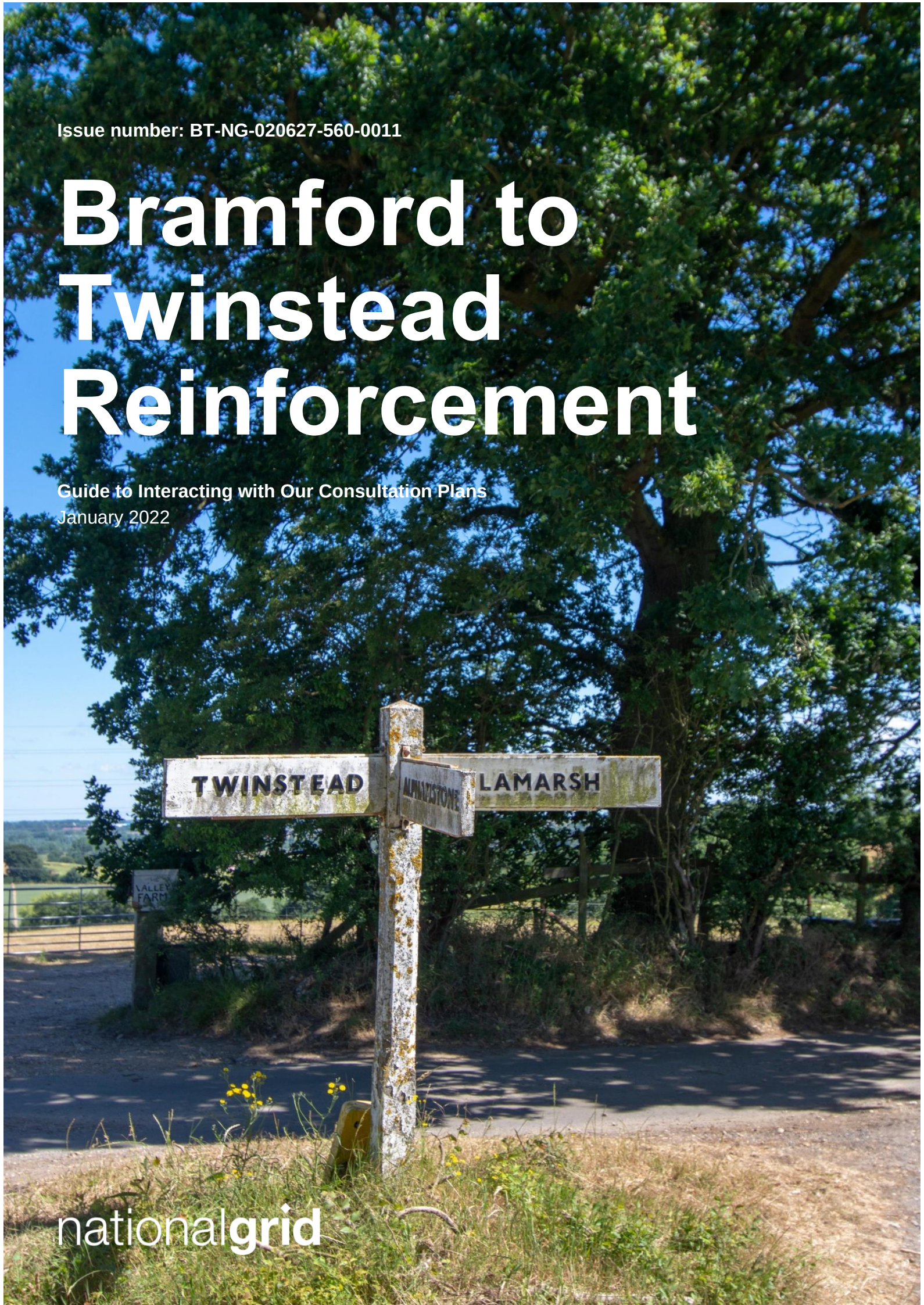
Issue number: BT-NG-020627-560-0011

# Bramford to Twinstead Reinforcement

**Guide to Interacting with Our Consultation Plans**

January 2022




nationalgrid

# Guide to interacting with our consultation plans

## Introduction

This document has been produced by National Grid to provide guidance on interacting with our consultation plans during the statutory consultation on Bramford to Twinstead.

The statutory consultation runs from **Tuesday 25 January** until **Monday 21 March 2022.**

To explain the project, we have prepared a series of documents, including plans and drawings. This guide provides more detail about the plans that are available (Documents 3.1 to 3.3.9) and what is shown on each plan.

## What are the consultation plans?

National Grid has prepared a series of plans and drawings to support the consultation, to help people understand the proposals and how they may be affected.

Whilst the plans illustrate many aspects of the project, they do not explain the rationale for the design. This can be found in the Project Development Options Report which has been published to accompany the consultation. The consultation documents also include the Preliminary Environmental Information Report, which describes the likely significant environmental effects that could result from the project.

**In accordance with normal practice, it should be noted that all plans and drawings published in support of the consultation are based on typical and indicative designs. They have been produced to give respondents to the consultation a general understanding of the project and to help inform feedback. The designs are likely to change prior to application in response to consultation feedback, ongoing design, surveys and environmental assessment. The application for development consent will contain an updated design (and accompanying set of plans), although it should be noted that even at that stage flexibility will be retained through Limits of Deviation (described below).**

## List of plans and drawings

The plans and drawings published to support our consultation are listed below:

| Number | Title | Description |
|---|---|---|
| 3.1 | Location Plan | Allows the user to locate the project and shows the whole proposed draft Order Limits. Also shows section boundaries and local authority boundaries. |
| 3.2 | General Arrangement Plans | These plans provide a detailed overview of the current proposals, divided over 27 sheets at 1:2,500 scale.<br><br>A key plan is also included to help users quickly locate an area or section of interest along the length of the proposed development.<br><br>The plans are ordered from east (existing Bramford Substation) to west (proposed grid supply point (GSP) substation south of Sudbury).<br><br>The plans include the following key features (described more fully in the next section of this document):<br><br>the draft Order Limits;<br><br>parameters known as Limits of Deviation (LoD);<br><br>the Draft Alignment (encompassing indicative locations for pylons, cables, cable sealing end (CSE) compounds and the GSP substation); and<br><br>a range of temporary construction works whilst not shown are also required within the draft Order Limits, including but not limited to; surveys, [environmental mitigation], protective scaffolding, diversion of services, drainage works, storage of material and diversions of public rights of way. |
| 3.3.1a | Typical Design and Layout Plans: Grid Supply Point Substation: Layout | Provides an indication of what the grid supply point substation may look like in layout view. |
| 3.3.1b | Typical Design and Layout Plans: Grid Supply Point Substation: Elevations | Provides an indication of what the grid supply point substation may look like in elevation view, including equipment heights |

| | | |
|---|---|---|
| 3.3.1c | Typical Design and Layout Plans: Grid Supply Point Substation: Single Circuit Cable Sealing End Compound | Provides an indication of what the single circuit cable sealing end compound to the south of the grid supply point substation may look like in layout and elevation view |
| 3.3.1d | Typical Design and Layout Plans: Grid Supply Point Substation: 400kV Temporary Overhead Line Diversion | Provides an indication of what the temporary 400kV overhead line diversion may look like during construction of the grid supply point substation |
| 3.3.2 | Typical Design and Layout Plans: Dedham Vale East Cable Sealing End Compound | Presents an indicative view of the design of the proposed Dedham Vale east cable sealing end compound in layout and elevation |
| 3.3.3 | Typical Design and Layout Plans: Dedham Vale West Cable Sealing End Compound | Presents an indicative view of the design of the proposed Dedham Vale west cable sealing end compound in layout and elevation |
| 3.3.4 | Typical Design and Layout Plans: Stour Valley East Cable Sealing End Compound | Presents an indicative view of the design of the proposed Stour Valley east cable sealing end compound in layout and elevation |
| 3.3.5 | Typical Design and Layout Plans: Stour Valley West Cable Sealing End Compound | Presents an indicative view of the design of the proposed Stour Valley west cable sealing end compound in layout and elevation |
| 3.3.6 | Typical Design and Layout Plans: Cable Working Cross Section | This drawing shows a typical cable working cross section through agricultural land. The 80m working width would lie within the 100m Limits of Deviation shown on the General Arrangement Plans. The actual layout will vary depending on site specific factors. |
| 3.3.7 | Typical Design and Layout Plans: Pylon Design | This drawing shows typical pylon designs used on the existing 132kV overhead line and the proposed 400kV overhead line. The design and height of the pylons used would vary depending on the final design and topography.<br>Please note the proposed 400kV reinforcement requires 400kV overhead line pylons to achieve the required electrical safety clearances. |
| 3.3.8 | Typical Design and Layout Plans: Pylon Working Area | This drawing shows a typical pylon working area. This is the area required to build the pylon, including the limits of deviation. The actual layout would vary depending on site specific factors. |
| 3.3.9 | Typical Design and Layout Plans: Bellmouth | This drawing shows a typical bellmouth. A bellmouth would be required where an access route meets a public road (access point), it allows safe entry and exit to the construction areas. |

# What do the plans show?

## Sections

The project has been subdivided into seven sections:

- Section AB – Bramford Substation/Hintlesham;
- Section C – Brett Valley;
- Section D – Polstead;
- Section E – Dedham Vale AONB;
- Section F – Leavenheath/Assington;
- Section G – Stour Valley; and
- Section H – GSP Substation.

## The Draft Order Limits:

The draft Order Limits form the boundary of the entire area within which the project could take place, including temporary and permanent works as well as the works to the existing infrastructure.

The draft Order Limits are shown as a solid red line on all consultation plans.

## Limits of Deviation (LoD):

Within the draft Order Limits, parameters known as Limits of Deviation (LoD) are set out.

LoD are a common feature of linear infrastructure projects. They provide the necessary flexibility when constructing the authorised development, reducing the risk that the project as approved cannot later be implemented due to unforeseen engineering or environmental reasons. For example, previously unidentified poor ground conditions may require a pylon to be moved slightly for geotechnical reasons, such as ground stability.

The horizontal LoD will set specific parameters to moving infrastructure on the ground. Vertical LoD (which limit the maximum vertical height of any new infrastructure) will be specified in the draft Development Consent Order.

Horizontal LoD are shown on the General Arrangement plans as a yellow dotted line, In some areas the LoD and draft Order Limits overlap. Where this is the case, only the draft Order Limits are shown.

## The Draft Alignment:

Certain consultation plans use the term ‘Draft Alignment’ when describing the route.

The Draft Alignment is a concept used to help communicate the potential route of the reinforcement and has been developed as a result of consultation feedback, ongoing engineering design, environmental assessment work to date and landowner discussions. It encompasses indicative locations for pylons, cables, cable sealing end (CSE) compounds and the GSP substation.

However, noting what is said above regarding the purpose and effect of the LoD. National Grid will not be seeking approval for a specific alignment (including pylon locations).

This is to ensure an appropriate and necessary degree of flexibility during detailed design and construction to take account of unforeseen circumstances, such as unsuitable ground conditions or ecological constraints.

### Modification, Removal & Realignment Works:

The consultation plans and drawings also show the areas in which National Grid is proposing to modify, remove or realign existing infrastructure, including the location of:

- Existing pylons to be modified or removed;
- Existing overhead lines to be replaced, modified or removed; and.
- Existing gantries to be modified or removed

Modification works refer to the changing or restoring of an existing asset whilst it remains in its current location. An example of modification works will be changing the arms of existing pylons (which will remain in situ) to accommodate angle changes and new overhead line deviations.

Removal works refers to the dismantling and disposal of existing equipment that will no longer be required at the end of the project.

Realignment works refer to the changing or restoring of existing assets which will be relocated to a different position. An example of realignment works will be the relocation of the existing 400kV overhead line into the existing Bramford Substation.

### Other Key Features:

Other key features shown on the consultation plans and drawings are summarised in the following tables:

| Permanent Key Features | Overview |
|---|---|
| Permanent Works Area | The area required to host the relevant infrastructure (which includes sufficient land for long term operation and maintenance). |
| Temporary Construction Area | The additional temporary construction space required to construct the project in a particular area, but which will not be required once construction has taken place. |
| Cable sealing end (CSE) compound | Electrical infrastructure used as the transition point where a circuit goes underground. A compound on the ground acts as the principal transition point. |
| Full line tension gantries | Types of gantries used to enter a substation or cable sealing end compound where the distance from the next nearest pylon is large. |

| | |
|---|---|
| Gantries | An overhead bridge-like structure supporting electrical equipment. A transition point from Overhead line equipment to equipment in a compound. |
| Grid Supply Point (GSP) Substation | They are also used to change (or transform) the voltage from a higher to lower voltage to allow it to be transmitted to local homes and businesses. In this case it provides a alternative supply to the Distribution Network Operator, UKPN to allow the existing 132kV line to be removed. |
| Overhead lines | Conductors (wires) carrying electric current, strung from pylon to pylon. |
| Substation | Substations are used to control the flow of power through the electricity system. They are also used to change (or transform) the voltage from a higher to lower voltage to allow it to be transmitted to local homes and businesses. |
| Pylons | Transmission line supports. |
| Underground cabling | An insulated conductor carrying electric current designed for underground installation. Underground cables link together two cable sealing end compounds. |
| Environmental Areas | These are preliminary locations identified for biodiversity net gain and/or wider environmental gains. |

| Temporary Key Features | Overview |
|---|---|
| Bellmouth | A flared vehicular access/egress point connecting a construction site to the public highway, designed to accommodate turning movements by large vehicles. |
| Cable working cross sections | Working area required to construct the underground cable systems including; haul road, soil storage and installation of cables. |
| Construction compounds | Temporary compounds installed during the construction phase of the project. Each compound is likely to contain storage areas including laydown areas, soils storage and areas for equipment and fuel, drainage, generators, car parking and offices and welfare areas (portacabins). |
| Haul/Access routes and points from the public highway | Haul/Access routes to construction working areas implemented prior to any works commencing to provide suitable access for construction plant and traffic. This includes points from the public highway that can be used to access these areas. |

| | |
|---|---|
| Temporary overhead line diversions and pylons | Temporary diversions of existing overhead line to ensure electricity flows are maintained at all times during construction of the project, and limit the disruption to the electricity network<br><br>These typically comprise a short section of overhead line with temporary structures or pylons which electricity flows are diverted along. |
| Visibility splays | Areas of tree/vegetation removing, typically where access points are to enable a driver to see down the road and know when the road is clear. |
| Stringing positions | Areas used for stringing/installing new electrical equipment, such as wires and conductors on pylons. |

## Hintlesham Woods Options

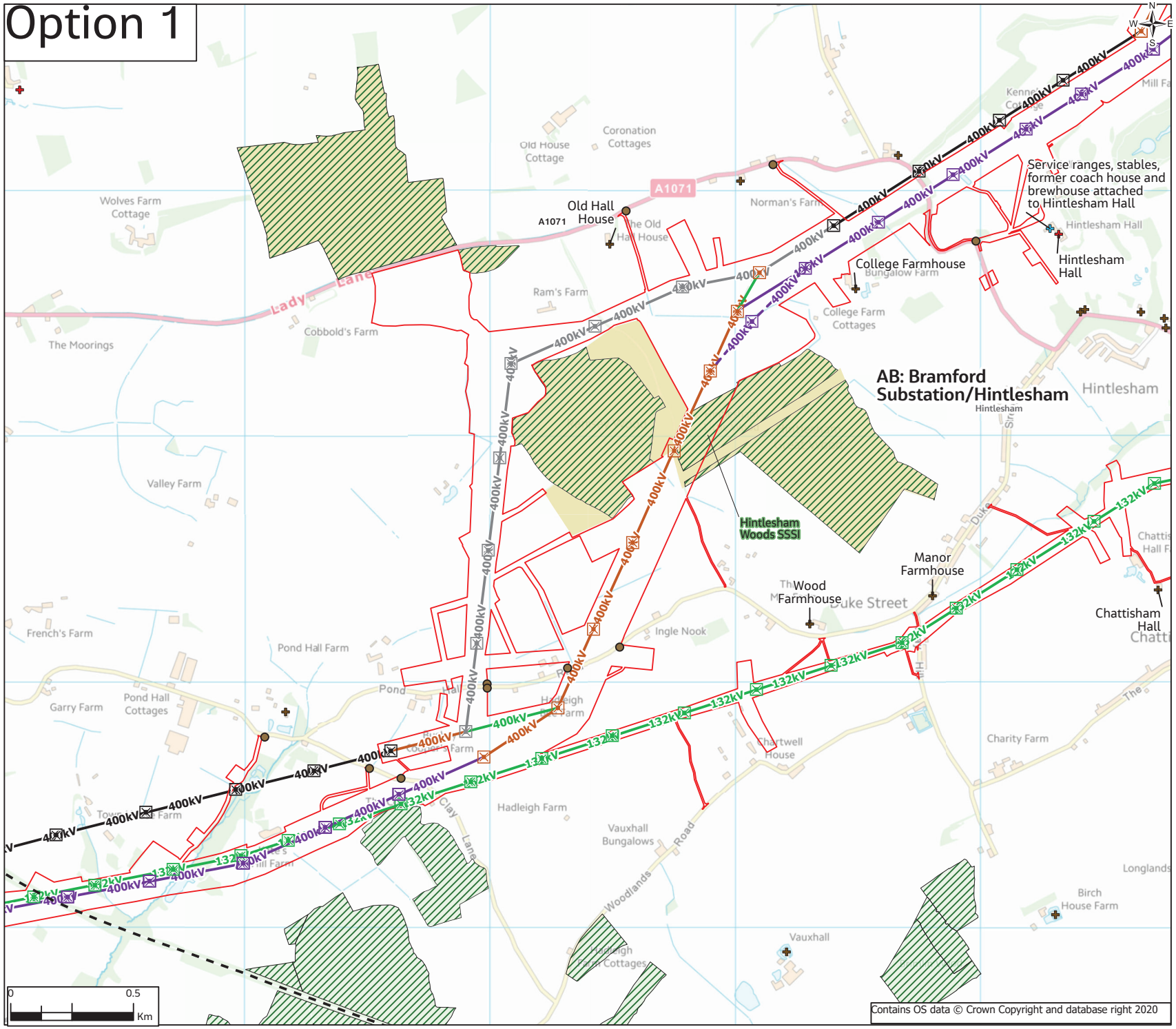
National Grid is consulting on two options at Hintlesham Woods. The draft Order Limits encompass the working area required for both options. Once a preferred option is selected, the draft Order Limits will be refined, and the Order Limits will be presented within the application for development consent. The two options being considered are:

- Hintlesham Woods Option 1: The proposed 400kV overhead line would use the alignment and pylons of the existing 400kV overhead line through the woods, and the existing 400kV overhead line would be re-routed around to the north and west of the woods on newly constructed pylons.
- Hintlesham Woods Option 2: The proposed 400kV overhead line would parallel the existing 400kV overhead line to the south, with new pylons located outside of the woodland and the conductors oversailing the woods.

Further details on each of the options is provided in Section 4.3 of the Preliminary Environmental Information Report and are shown in Figure 4.1 below.

Within the 3.2 General Arrangement Plans, the two options are shown in the area around Hintlesham Woods. For clarity, two drawings have been produced for each sheet in this area where there are differences between the two options. These are sheets 2, 3, 6, 8 and 9.

# Option 1




## FIGURE 4.1

Legend

- Section Boundaries
- Existing overhead line

Overhead lines and Cables

- New overhead line
- New underground cables
- Temporary 400kV overhead line during construction
- Modifications to the existing overhead line
- Realignment of the existing overhead line
- Removal of the existing overhead line

Pylons

- Proposed Pylon
- Modification to Existing Pylon
- Existing Pylon
- Realignment of Existing Pylon
- Pylon Removal

Temporary Works

- Draft Order Limits
- Access Points

Listed Buildings within 100m of the Draft Order Limits

- Grade I Listed Buildings
- Grade II* Listed Buildings
- Grade II Listed Buildings
- Ancient Woodland Inventory Site
- Site of Special Scientific Interest (SSSI)

This figure shows the combined draft Order Limits for both options. The draft Order Limits would be refined down once a preferred option was selected following the statutory consultation

Listed Buildings only labelled where within 100m of the draft Order Limits


| Rev. | Date | Purpose of revision | Drawn | Check'd | Rev'd | Appr'd |
|---|---|---|---|---|---|---|
| 1 | 12/2021 | Final | PM | TC | TC | CW |


Jacobs

160 Dundee St, Edinburgh, EH11 1DQ, UK.
Tel: +44(0)131 659 1500
www.jacobs.com


Client: nationalgrid

Project: BRAMFORD TO TWINSTEAD

Drawing Title: Hintlesham Woods Options - Option 1

Page 1 of 2

Drawing Status: Final

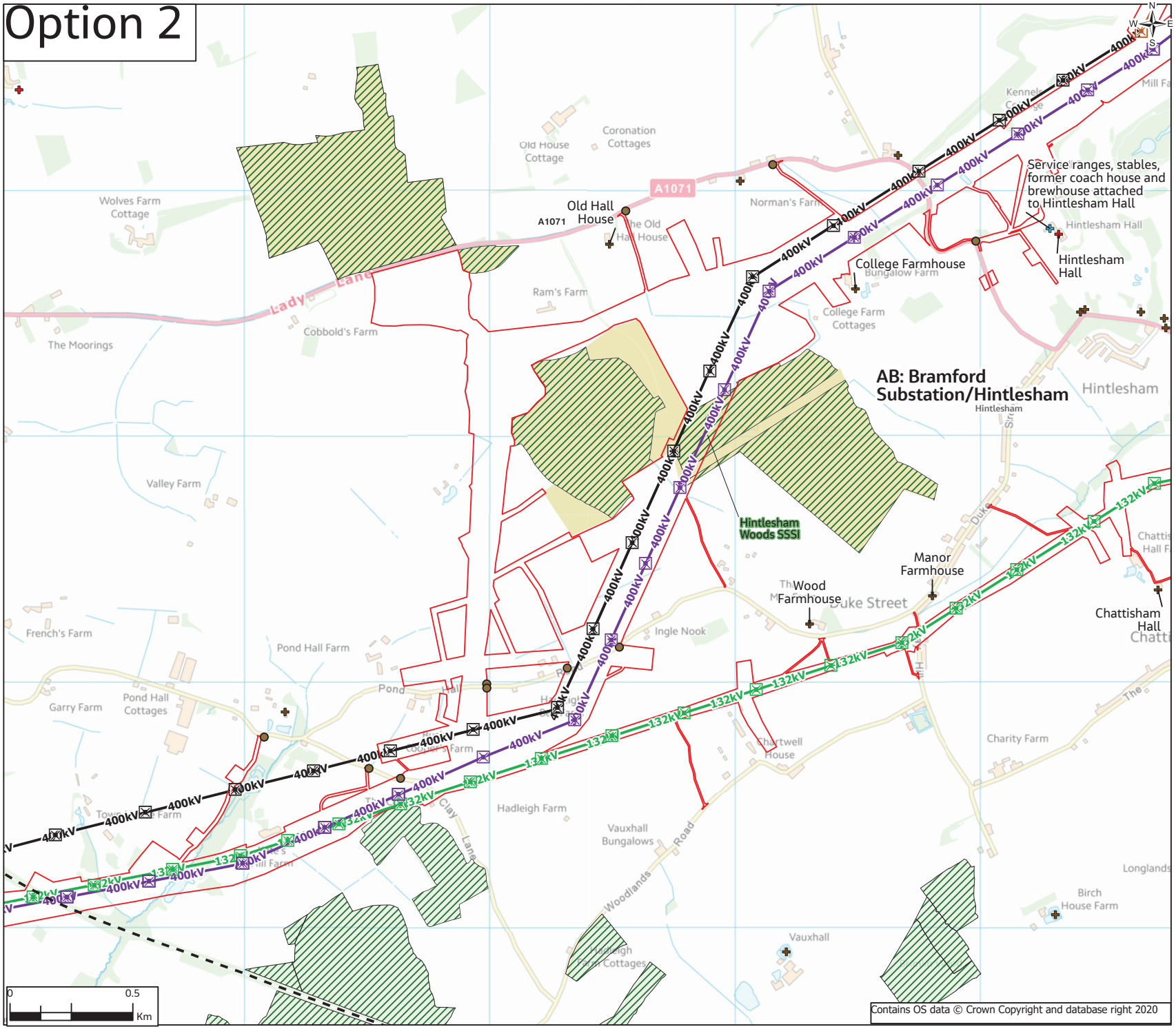
| | | |
|---|---|---|
| Scale @ A3 | 1:15,000 | DO NOT SCALE |
| Jacobs No. | B2416601 | |
| Client No. | | |

Drawing No.: AAA_B2T_04_Proposed_Development



Path: \\gblon0vs01\GISProj\B2600017_NG_Bramford2Twinstead\GIS\06_PEIR\AAA_B2T_04_Proposed_Development.aprx

# Option 2




## FIGURE 4.1

Legend

- Section Boundaries
- Existing overhead line

Overhead lines and Cables

- New overhead line
- New underground cables
- Modifications to the existing overhead line
- Realignment of the existing overhead line
- Removal of the existing overhead line

Pylons

- Proposed Pylon
- Modification to Existing Pylon
- Existing Pylon
- Realignment of Existing Pylon
- Pylon Removal

Temporary Works

- Draft Order Limits
- Access Points

Listed Buildings within 100m of the Draft Order Limits

- Grade I Listed Buildings
- Grade II* Listed Buildings
- Grade II Listed Buildings
- Ancient Woodland Inventory Site
- Site of Special Scientific Interest (SSSI)

This figure shows the combined draft Order Limits for both options. The draft Order Limits would be refined down once a preferred option was selected following the statutory consultation

Listed Buildings only labelled where within 100m of the draft Order Limits


| Rev. | Date | Purpose of revision | Drawn | Check'd | Rev'd | Appr'd |
|---|---|---|---|---|---|---|
| 1 | 12/2021 | Final | PM | TC | TC | CW |


Jacobs
160 Dundee St, Edinburgh, EH11 1DQ, UK.
Tel: +44(0)131 659 1500
www.jacobs.com


Client: nationalgrid

Project: BRAMFORD TO TWINSTEAD

Drawing Title: Hintlesham Woods Options - Option 2

Page 2 of 2

Drawing Status: Final

| | | |
|---|---|---|
| Scale @ A3 | 1:15,000 | DO NOT SCALE |
| Jacobs No. | B2416601 | |
| Client No. | | |

Drawing No. AAA_B2T_04_Proposed_Development



Path: \\gblon0vs01\GISProj\B2600017_NG_Bramford2Twinstead\GIS\06_PEIR\AAA_B2T_04_Proposed_Development.aprx

## How can I view the consultation plans?

Our plans are available to view and download on our website (nationalgrid.com/bramford-twinstead) or in paper copy on request (a printing charge may be incurred).

## How can I provide feedback using the consultation plans?

Your views are important to us and will help shape our plans as our project develops further. We welcome your feedback on all aspects of our design, including any geographical areas of interest.

You can provide your feedback through the following channels:

- **Online:** Fill in our feedback form online at nationalgrid.com/bramford-twinstead
- **In paper copy:** Visit us at one of our events to collect a paper copy feedback form, which can be completed and handed to the team. You can also collect a feedback form at a deposit location, or request one by telephone or email.
- **By email**: You can send your comments or scanned electronic copies of our feedback questionnaire to contact@bramford-twinstead.nationalgrid.com.
- **By post:** You c**an send your paper copy questionnaire or comments to: B TO T REINFORCEMENT (please** write this in capitals and you do not need a stamp).

You can use the consultation plans to identify key geographical areas of interest along with the proposed new infrastructure and works to existing infrastructure in each section. You can then provide your feedback in the relevant section of the feedback questionnaire.

If you have any questions about the Bramford to Twinstead project or require assistance with interacting with our consultation plans, please contact us using the details below:

- Email: contact@bramford-twinstead.nationalgrid.com
- Freephone: **0808 196 1515**

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