The Great Grid Upgrade

BT-NG-020621-545-0046

Bramford to Twinstead Reinforcement

Volume 5: Reports and Statements

Document 5.8 (B): Photomontages

Final Issue B
August 2023

Planning Inspectorate Reference: EN020002

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

nationalgrid

Version History

Date	Issue	Status	Description / Changes
April 2023	A	Final	For DCO submission
August 2023	B	Final	The font type in the legend and labels and the north arrow shown on Sheets 1 to 5 of Appendix 2: Photomontage Viewpoint Location Plan was distorted when downloaded and viewed in certain PDF software. This has been amended for Procedural Deadline A. The substantive visual content of the plan was not affected and has not been amended.

Contents

1. Introduction

1.1 Overview

1.1.1 National Grid Electricity Transmission plc (here on referred to as National Grid) is making 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') would be achieved by the construction and operation of a new electricity transmission line over a distance of approximately 29km (18 miles), the majority of which would follow the general alignment of the existing overhead line network.

1.1.2 This document has been produced to support the application for development consent under the Planning Act 2008.

1.2 Structure of this Report

1.2.1 The following table explains the structure of the document from technical methodology, through to plans and photomontage figures.

Table 1.1 – Structure of this Report

Chapter	Content
1: Introduction	Description of background and requirements for photomontages on the project.
2: Viewpoint Selection and Visualisation Type Determination	Explanation of the process undertaken for selection of location and visualisation type as confirmed through consultation.
3: Assumptions and Limitations	Description of all assumptions and limitations applied to the process and final output of photomontages.
4: Type 4 Visualisation Process Methodology	Technical methodology for production of Type 4 Visualisations (photomontages).
References	List of references used in the report.
Appendix 1: Schedule of Photomontage Figures	Full table with cross references to relevant figures for each viewpoint.
Appendix 2: Photomontage Viewpoint Location Plan	This plan shows the location of each photomontage over several sheets.
Appendix 3: Photomontage Figures	This appendix contains the photomontages. Due to file size these are provided separately (**application documents 5.8.1** to **5.8.3**)

1.3 Guidelines

1.3.1 This methodology document explains the visualisation production process undertaken in accordance with the following core guidance documents (refer to end of document for full details):

- Landscape Institute Technical Guidance Note 06-19 Visual Representation of Development Proposals (LI TGN 06/19) (Landscape Institute, 2019) and
- Guidelines for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

2. Viewpoint Selection and Visualisation Type Determination

2.1 Viewpoints

2.1.1 A total of thirty-six viewpoints have been selected from the long list of representative viewpoints to represent the project as photomontages. These have been chosen to represent the project as seen from a range of locations, distances and users across the different project sections. A viewpoint location plan is provided in Appendix 2: Photomontage Viewpoint Location Plan showing the geographical locations of photomontage viewpoints across the whole project. The location of the visualisations have been discussed with the relevant planning authorities, as indicated in the Statement of Common Ground (**application document 7.3.1**).

2.1.2 Information relating to the photomontage viewpoints and the reason for their selection is outlined in ES Appendix 6.4: Viewpoint Assessment (**application documents 6.3.6.4.1** to **6.3.6.4.7**). The majority of the viewpoints are given a reference number representative of the section of the project within which they lie, for example AB-03 lies within Section AB: Bramford Substation to Hintlesham. The exception is HV-01, which has been selected as a representative heritage viewpoint (HV) due to the proximity of the project to Hintlesham Hall (a Grade I listed building).

2.2 Visualisation Type Determination

2.2.1 The Landscape Institute LI TGN 06/19 guidance identities a process of determining the Visualisation Type by way of a proportionate appraisal of project type/scale, likely audience, visualisation purpose and anticipated level of visual effect. This has been undertaken by a suitably qualified Landscape Architect and determined that Type 4 were suitable to support the application for development consent.

2.2.2 Type 4 visualisations are produced as defined in LI TGN 06/19:

- *'Type 4: Photomontage / Photowire (survey/scale verifiable) - are photomontages or photowires, produced using quantifiable data, with procedural transparency and appropriate levels of accuracy. This involves using a defined camera / lens combination and establishing the camera location with sufficient locational accuracy to enable accurate scaling and location of the 3D model within the view.'*
- The objective of Type 4 visualisation is to present a printed image which gives a realistic impression of appearance, context, form and extent of the proposed development. Type 4 is summarised in TGN06/19 Section 4 Page 24 – Type 4 Summary as *'Type 4 visualisations enable the highest level of locational accuracy and image scaling where required.'*

2.2.3 The recommendations from this summary have been adhered to as follows:

- *'For sites / settings which can be captured either as single images or panoramically, use a 50mm lens with Full Frame Sensor camera…*
- *…The enlargement factor should be stated on each presentation page, together with the label 'Visualisation Type: 4'…*
- *…For very wide linear infrastructure, consider presenting cylindrical panoramas up to 90° at A1 width, with multiple sheets for very wide panoramas.*
- *Wherever wider context is important to understanding of the proposal, include an A1 width 90° cylindrical baseline photograph.*
- *Accompany visualisations with a Technical Methodology (see Appendix 10) including a clear written description of procedures involved in image capture and processing. Bullet 1.'*

3. Assumptions and Limitations

3.1 Introduction

3.1.1 Every effort has been made to ensure a reasonable level of accuracy was maintained throughout the production of the photomontages and that the project is represented accurately. This chapter outlines the assumptions and limitations.

3.2 Visualisation Scenarios

3.2.1 The following scenarios are represented within the figures:

- Viewpoints representing the removal, modification or replacement and installation of new 400kV and removal of 132kV overhead lines, as well as underground cable routes: winter in the first year of operation after completion (winter year 1) scenario only is presented as this is considered to represent the reasonable worst case; and
- Viewpoints D04 [Appendix 3 - sheets 19 and 20], F20 [sheets 26 and 27], G2.5 [sheets 34 and 35], G26 [sheets 36 and 37], G07 [sheets 38 and 39] and H07 [sheets 41 and 42]: representing the grid supply point (GSP) substation, cable sealing end (CSE) compounds and / or underground cable sections: both winter year 1 and summer 15 years after completion (summer year 15) scenarios are presented to reflect a worst case scenario (winter); and the designed function of proposed planting, as established after 15 years (summer). Due to file size Appendix 3 is provided separately (**application documents 5.8.1** to **5.8.3**).

3.2.2 See Section 4.6 and Appendix 1: Schedule of Photomontage Figures for further information.

3.3 Existing Vegetation

3.3.1 The growth of retained and existing vegetation within both year 1 and year 15 visualisations has not been represented, due to uncertainty of age, growth rates and future maintenance regimes, as it is outside the control of National Grid.

3.3.2 Proposals for vegetation removal or coppicing as shown on the Trees and Hedgerows to be Removed or Managed Plans (**application document 2.9**) have been reflected in all photomontages where relevant.

3.4 Proposed Planting

3.4.1 All planting proposals have been modelled in accordance with embedded measures and additional mitigation as shown on Figure 16.1: Embedded Measures and Mitigation Proposals (**application document 6.4**). See Section 4.4 of this document for further details of modelling of planting within the final 3D model.

3.4.2 With the exception of occasional feathered and standard trees, trees and shrubs have generally not been modelled for the operation year 1 scenario, only suitable tree and shrub shelters. This is to reflect a worst-case scenario whereby the smallest plants within the typical range of proposed planting heights at year 1 (see Table 3.1) would not be visible above the shelters or would not be visually noticeable. It is assumed in areas proposed for woodland regeneration that the year 1 of operation would not have any regenerative woodland growth, however in year 15 of operation, growth of regenerative woodland plants are assumed to be sporadically distributed in a range between 3.67m and 6.05m with occasional taller trees up to 7.7m.

Table 3.1 – Proposed Planting Assumptions (based on professional judgement of growth rates)

Planting Type	Specification at Year 1 of Operation	Average Growth Rate (range)	Assumed Minimum Height at Year 15 of Operation
Native Woodland	Mix of 450mm tall whip planting within 600mm shrub and 1.2m tree shelters, plus occasional standard trees (3-3.5m tall) and feathered trees with single stakes 1.2m tall.	230mm to 450mm per year	3.67m to 7.7m tall
Scattered Native Trees	3.5-3.5m standard tree with single stake	300mm per year	7.5m to 7.7m tall
Native Scrub	600mm tall shrub shelters	300mm to 450mm per year	4.65m to 6.05m tall
Native Hedgerows	450mm spiral tree guard in double staggered row	300mm to 450mm per year	Managed to 2-2.5m tall

3.5 3D Modelling of Project Proposals

3.5.1 The 3D model is based on the core data within the following assumptions and limitations.

- Overhead line modelling: Phase spacers between the overhead line conductors were not included within the modelling as these elements are not visually significant and are therefore not shown; and
- Permanent access routes and bellmouths: It is assumed that permanent access routes would be constructed at grade and follow existing topography in all but one location, Stour Valley West CSE compound. At this location, additional 3D modelling has been undertaken to create the cutting earthworks for the permanent access route between access point and the CSE compound. This modelling work used suitable assumptions for gradients of the access route and earthwork slopes (see Section 4.6 for further details).

4. Type 4 Visualisation Process Methodology

4.1 Photography and Survey Data

4.1.1 Viewpoint locations were verified on site to maximise views of the project and, where practicable, avoid any obstructions that limit views. The selected viewpoints are listed in Appendix 1: Schedule of Photomontage Figures and shown on the Photomontage Viewpoint Location Plan in Appendix 2. At each viewpoint location, the following survey data was collected:

- Geographical Positioning Systems (GPS) reference noting the location of the camera in Ordnance Survey (OS) coordinates as well as the ground elevation in metres above Ordnance Datum (m AOD);
- The height of the camera above ground level (between 1.5m and 1.6m);
- Date and time photograph; and
- Weather conditions at the time of photography.

4.1.2 The baseline photographs were taken using a Canon EOS 5D Mark III Digital Single Lens Reflex (SLR) camera with a fixed 50mm focal length lens set to the maximum resolution, including recording the metadata. All photographs were taken on a tripod mounted and levelled to the vertical and horizontal axes.

4.1.3 Camera locations were recorded in winter and summer by a land surveyor using a Global Navigation Satellite System (GNSS) with the location of tripod location photographed.

4.1.4 Winter photographs were taken in March 2022 and summer photographs in July 2021 in fair weather.

4.1.5 Camera settings were standardised for the correct exposure, shutter speed and resolution to enable clean production of panoramic images and high-resolution output.

4.1.6 The panoramic photography was undertaken using a series of photographs taken with a panoramic tripod head set to provide a 60% overlap (15° increments) between frames to reduce barrel distortion. The photographs were taken in a landscape orientation due to the rural setting of viewpoints, in line with LI TGN 06/19.

4.2 Panoramic Baseline Images

4.2.1 Photographs were stitched together using PTGui software using cylindrical projection to produce a single panoramic image. During this process, only minor improvements, for example, to balance brightness and contrast, were made within the software due to variable light conditions on site. All survey information as well as other relevant information is provided on the viewpoint figures.

4.2.2 Images were then cropped to a 90º horizontal and 27º vertical field of view as determined by the 50mm focal lens used for the photography. Images were then resized to fit to the final A1 page plates (820 x 250mm) to reflect 96% image enlargement. This was to enable a comfortable viewing distance is maintained for viewing all figures.

4.3 Camera Matching Process

4.3.1 To assist the process of matching the baseline photograph with the 3D digital model of the project, reference points were identified at each viewpoint location. Reference points are features that could be identified from a topographical survey or OS data. Examples include telegraph poles, field boundaries and pylons.

4.3.2 The baseline panoramic images were imported into the 3D modelling software (Autodesk 3DS Max Design 2020) and used in the camera matching process as backdrops when rendering, using the VRay Next engine. As part of this process, the ‘warped old-style camera’ settings were used match the cylindrical projection of the baseline panoramic image, to allow accurate matching of reference points.

4.3.3 To enable the 3D modelling software to operate efficiently, all 3D model data was relocated from OS to a local grid location using a common global shift of -599000, -237000, 0m.

4.3.4 The base 3D model (existing environment and site context) was produced using information from topographical surveys and 2D and 3D OS contour information to vertically place reference objects.

4.3.5 In the 3D modelling software, the locations of the viewpoints were added to the model using the survey data (with global shift applied). The viewpoints were then used as a starting point for fixing the location of the 3D camera by matching terrain, reference points and other information in the model to the corresponding features in the background image (the 3D camera backdrop).

4.3.6 Once the correct aspect, orientation and any camera roll (potential minor rotation of the camera when photograph taken) were confirmed and checked, and locations locked for use in rendering.

4.4 3D Design Modelling

4.4.1 3D models of the project were produced in Autodesk 3DS Max using design data produced by National Grid and its contractors. The models have been produced in accordance with details and Proposed Alignment shown on the General Arrangement Plans (**application document 2.10**).

4.4.2 The following processes were undertaken to the computer aided design (CAD) model information to produce representative visualisations from the design information:

- Existing Terrain Modelling: A combined model using different levels of contour and Lidar information was created to cover all areas of referencing for the camera matching process;
- Overhead line pylons and conductors: Minor work was required to remove existing/retained pylons and conductors from the CAD design models, and to add suitable materials for realistic rendering;
- CSE Compounds: Minor work was required to add suitable materials to the models for realistic rendering. At the Stour Valley West CSE compound, some minor changes to the earthworks (cuttings) were required to tie in the permanent access route earthworks to the entrance area cuttings; and
- Permanent Access Routes: Permanent access routes were modelled from 2D GIS Shapefile data. The widths were modelled based on the connection to permanent bellmouth proposals and then draped over the existing terrain modelling to create the track surfaces. Additional modelling within Autodesk Civil 3D was undertaken to align the permanent access track to the entrance to the Stour Valley West CSE compound which is within cutting. This was undertaken through creation of a corridor model using existing topographical survey surface data and match the base level (62m AOD) of the compound entrance with existing grade at between 2.25 and 4.5% longitudinal gradient. Earthworks from the edge of the permanent access route were created back to existing (cut) at a gradient of 1 in 2.

4.4.3 Proposed planting areas were modelled using extracted 2D GIS shapefiles. These areas and lines were then used to create the type of planting as follows:

Year 1

- Woodland planting: mix of 1.2m tree and 600mm tall shrub shelters (both 100mm diameter) modelled along with occasional standard trees (3.5-3.5m) and feathered trees (1.75 -2m) tall x 1m wide;
- Individual native tree planting: 3.5-3.5m standard trees with single stake at each identified location;
- Native scrub planting: 600mm tall shrub shelters (160mm diameter); and
- Hedge planting: A double staggered row of 450mm tall x 40mm diameter shelters at 300mm centres.

Year 15

- Woodland planting: 3.67m-7.7m tall with occasion taller trees up to 9m;
- Individual tree planting: 7.5-7.7m tall;
- Native scrub planting: 4.65m generally with occasional shrubs / small trees up to 6.05m tall in patches;
- Hedgerows: represented as a managed hedgerow 2-2.5m tall; and
- Woodland regeneration: 3.67m – 6.05m with occasional taller trees up to 7.7m, modelled in patches.

4.4.4 The final 3D model incorporated materials and finishes (e.g. steel, gravel tracks, tarmac, grass) and then merged into the existing scene. The environment lighting and atmospheric effects were also matched to the existing conditions as closely as possible using the RAW metadata. The fixed 3D cameras were then used to render the project over the baseline photograph as an image exported as .jpeg and .png formats for use in Adobe Photoshop for final image production.

4.5 Compilation of Type 4 Visualisations (Photomontages)

4.5.1 Baseline panoramic images were adjusted in Adobe Photoshop to reflect any elements and/or vegetation lost to facilitate the project and any retained foreground elements were layered over the top of the rendered layers showing the project. Rendered images were generated from Autodesk 3DS Max Design software for the final production stage in Adobe Photoshop, where inserted and any minor adjustments made to colour and texture undertaken using Photoshop adjustment tools. Once all layering and final adjustments were completed, all panoramic photographs and visualisations were resized to 820 mm x 250 mm at 300 pixels per cm (ppc) to a reflect a 96% enlargement of 90º horizontal x 27º vertical field of view.

4.5.2 All final images were then inserted to scale in 820mm x 250mm frames within the A1 figures in AutoCAD software. Figures also included accompanying information as detailed below:

- Visualisation type;
- Date and time of photograph;
- Viewpoint ground elevation;

- OS National Grid Reference and elevation;
- Season within which the photography was taken;
- Site lighting conditions when the photography was taken;
- Camera height above ground;
- Camera lens size;
- Aperture, ISO and shutter speed details;
- Bearing to centre of the panoramic;
- Sheet size;
- Enlargement factor;
- Camera specification;
- Field of view information;
- Direction of view;
- Key notes on use such as details on a comfortable viewing distance from the eye; and
- Inset plans showing the location and orientation of the viewpoints.

4.5.3 Once each viewpoint sheet set was complete, all images were printed to a single pdf document set at high resolution and to 1:1 scale so that there was no loss of image size.

4.6 Final Output Summary

4.6.1 The photomontages are presented in Appendix 3: Photomontage Figures (**application documents 5.8.1** to **5.8.3**) and are provided for different types of scenario dependant on the nature and content of proposals within each view as follows. All survey information as well as other important information is provided on the figure sheets:

All Viewpoints

- Existing View – Winter 2022 Baseline Panoramic; and
- Winter Year 1 – Type 4 Visualisation (Photomontage).

Viewpoints D04, F20, G2.5, G07 and G26

- Existing View – Winter 2022 Baseline Panoramic;
- Winter Year 1 – Type 4 Visualisation (Photomontage);
- Existing View –Summer 2021 Baseline Panoramic; and
- Summer Year 15 – Type 4 Visualisation (Photomontage).

4.7 Data and Viewing Instructions

4.7.1 All of the photomontages presented within Appendix 3 (**application documents 5.8.1** to **5.8.3**)are produced at A3 for ease of reading and for information purposes only. The photomontages at A1 size and associated data are also available on request, in line with the Landscape Institute guidance. Requests for A1 copies or data should be made to contact@bramford-twinstead.nationalgrid.com.

References

Landscape Institute (2019). Technical Guidance Note 06-19 Visual Representation of Development Proposals (LI TGN 06/19). London: Landscape Institute.

Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment. 3rd Edition. Abingdon: Routledge.

Appendix 1: Schedule of Photomontage Figures

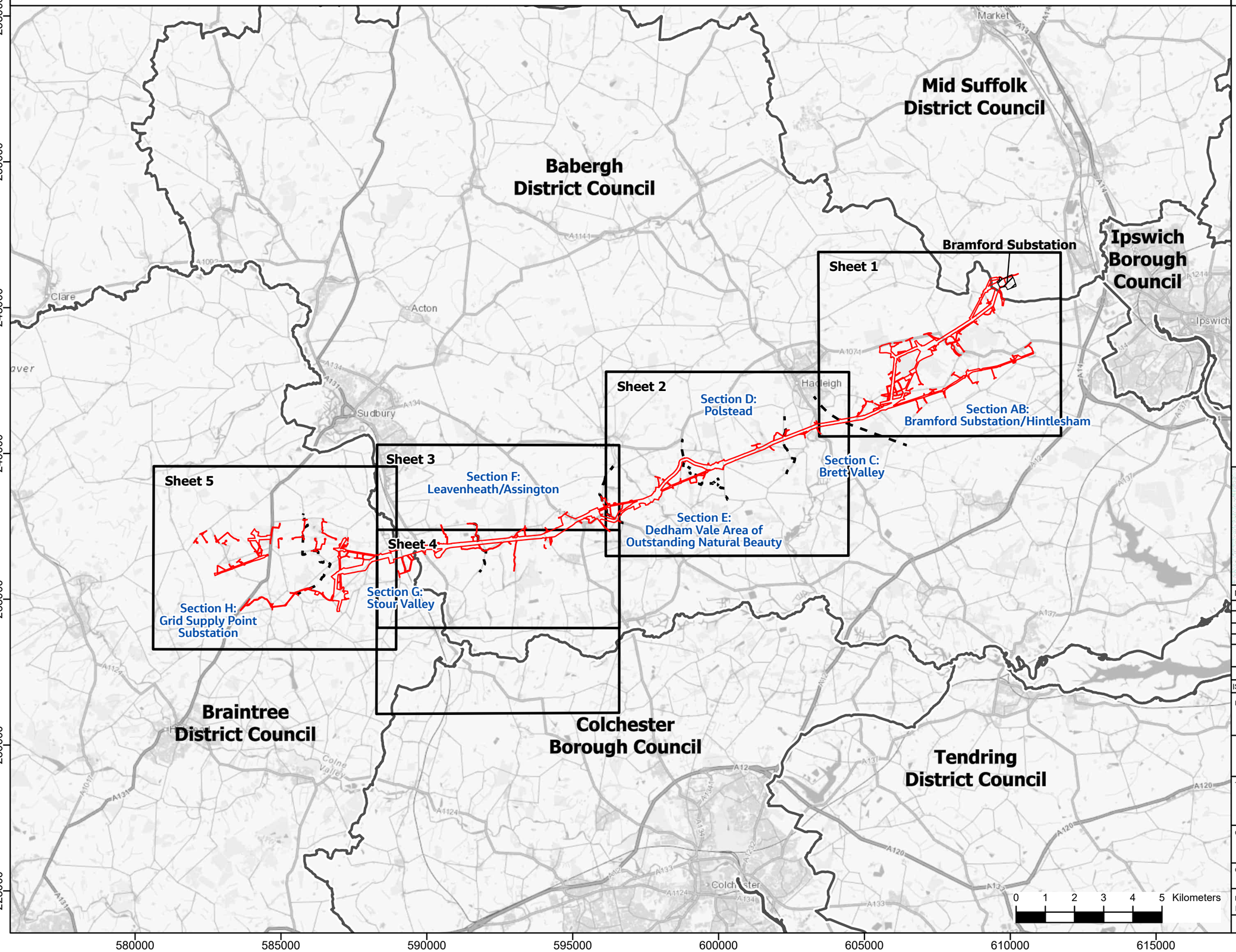
Sheet	Photomontage Number	Viewpoint Reference	Description	Photomontage Scenario
Appendix 3 (Part 1) (application document 5.8.1)				
01	01	AB03	View from Church Hill looking south-west towards Hintlesham.	Winter year 1
02	02	AB05	View looking south from the edge of Hintlesham.	Winter year 1
03	03	AB06	View looking north from Chattisham Lane.	Winter year 1
04	04	AB21	View from Public Right of Way north of Hintlesham Hall.	Winter year 1
05	05	HV01	View north-west from Hintlesham Hall.	Winter year 1
06	06	AB20	View west from Hintlesham Hall.	Winter year 1
07	07	AB2.18	View from Public Right of Way near Camperdown Cottage.	Winter year 1
08	08	AB08	View from the A1071 near Normans Farm	Winter year 1
09	09	AB09	View from Woodlands Road to the west of Chattisham.	Winter year 1
10	10	AB2.29	View from Public Right of Way to the south-east of Elmsett.	Winter year 1
11	11	AB10	View from the Public Right of Way to the south of A1071 near Cobbold's Farm.	Winter year 1
12	12	AB11	View from the Public Right of Way near the business park on Pond Hall Road.	Winter year 1
13	13	C08	View from the Public Right of Way off Wade's Lane north of Brett Vale Golf Club.	Winter year 1
14	14	C11	View from Public Right of Way off Benton Street south of Hadleigh.	Winter year 1
15	15	C01	View from the Public Right of Way near Ashbrook House in the Brett Valley.	Winter year 1
16	16	C03	View from Overbury Hall Road.	Winter year 1
Appendix 3 (Part 2) (application document 5.8.2)				
17	17	D2.2	View from Constitution Hill to the west of Hadleigh.	Winter year 1
18	18	D02	View from the south-east from the Public Right of Way on Rands Road.	Winter year 1
19, 20	19A, 19B	D04 (Winter Yr1 & Summer Yr15)	View from the Public Right of Way between Polstead Road and Stoke Road.	Winter year 1 and summer year 15
21	20	E2.10	View from the Public Right of Way on Sudbury Road north of Stoke-by-Nayland.	Winter year 1
22	21	E02	View from Calais Street in Whitestreet Green.	Winter year 1
23	22	E07	View from the Public Right of Way near Whitestreet Green in Dedham Vale Area of Outstanding Natural Beauty.	Winter year 1
24	23	F02	View from the Public Right of Way to the north of Harrow Street.	Winter year 1
25	24	F2.14	View from the Public Right of Way to the south of Assington Hall.	Winter year 1

Sheet	Photomontage Number	Viewpoint Reference	Description	Photomontage Scenario
26, 27	25A, 25B	F20 (Winter Yr1 & Summer Yr15)	View from Assington Lane to the east of Hagmore Green.	Winter year 1 and summer year 15
28	26	F10	View from the Public Right of Way near Moor's Farm to the south of Assington.	Winter year 1
29	27	F2.18	View from Dyers Lane near the A134 north of Assington.	Winter year 1
Appendix 3 (Part 3) (application document 5.8.3)				
30	28	F16	View from the B1508 Sandy Hill to the west of Wormingford.	Winter year 1
31	29	G01	View from public right of way near Dorking Tye House.	Winter year 1
32	30	G2.3	View from Public Right of Way at Little Cornard.	Winter year 1
33	31	G24	View from Public Right of Way near Hill Farm to the north-west of Bures.	Winter year 1
34, 35	32A, 32B	G2.5 (Winter Yr1 & Summer Yr15)	View from Langley Hill to the south of Lamarsh.	Winter year 1 and summer year 15
36, 37	33A, 33B	G26 (Winter Yr1 & Summer Yr15)	View from the Public Right of Way to the south of Middleton.	Winter year 1 and summer year 15
38, 39	34A, 34B	G07 (Winter Yr1 & Summer Yr15)	View from the Public Right of Way near Mabb's Corner.	Winter year 1 and summer year 15
40	35	G35	View from Public Right of Way to the north of Twinstead.	Winter year 1
41, 42	36A, 36B	H07 (Winter Yr1 & Summer Yr15)	View from Rectory Lane on the edge of Wickham St Paul.	Winter year 1 and summer year 15

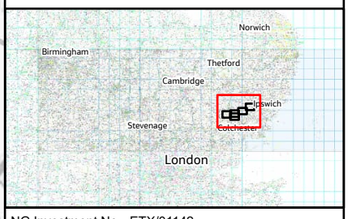
Appendix 2: Photomontage Viewpoint Location Plan

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINT LOCATION PLAN - KEY PLAN
REGULATION 5(2)(q)
SHEET 1 OF 1
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL

Application Document 5.8



Legend
- Section boundaries
- Order Limits
- Local authority districts
- Existing Bramford Substation



NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	04/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE : Appendix 2 Photomontage Viewpoint Location Plan - Key Plan

CIRCUIT / SITE : Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO. AAA_BTT_Photomontage_Figure_1_KeyPlan_Rev0

A3

NG DRAWING No. BT-JAC-020631-500-0096

SCALE : 1:125000

SHEET NO. 1

NO. OF SHEETS 1

ISSUE: B

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINTLOCATION PLAN
REGULATION 5(2)(q)
SHEET 1 OF 5
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL

Application Document 5.8

AB: Bramford Substation/Hintlesham

AB2.29
AB2.18
AB03
AB21
AB08
HV01
AB20
AB10
AB05
AB06
AB11
AB09

400kV
132kV

- Section boundaries
- Order Limits
- Proposed overhead line
- Proposed modification to existing overhead line
- Proposed realignment of existing overhead line
- Proposed removal of overhead line
- Proposed underground cables
- Proposed cable sealing end compounds
- Grid supply point substation
- Photomontage viewpoints

246000
245000
244000
243000
242000
241000
604000
605000
606000
607000
608000
609000
610000
611000

0 0.25 0.5 0.75 1 Kilometers

NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	09/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE: Appendix 2 Photomontage Viewpoint Location Plan

CIRCUIT / SITE: Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO.
AAA_BTT_Photomontage_Figure_1_Rev0

A3

NG DRAWING No.
BT-JAC-020631-500-0096

SHEET NO. 1 | NO. OF SHEETS 5 | ISSUE: B

SCALE: 1:25000

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINTLOCATION PLAN
REGULATION 5(2)(q)
SHEET 2 OF 5
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL

Application Document 5.8

- Section boundaries
- Order Limits
- Proposed overhead line
- Proposed modification to existing overhead line
- Proposed realignment of existing overhead line
- Proposed removal of overhead line
- Proposed underground cables
- Proposed cable sealing end compounds
- Grid supply point substation
- Photomontage viewpoints

D: Polstead
D02
C01
C03
C11
C08
D04
E07
E02
E2.10
C: Bret Valley
Dedham Vale East Cable Sealing End Compound
E: Dedham Vale Area of Outstanding Natural Beauty

400kV 132kV

242000 241000 240000 239000 238000 237000

597000 598000 599000 600000 601000 602000 603000 604000

0 0.25 0.5 0.75 1 Kilometers

NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	09/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE: Appendix 2 Photomontage Viewpoint Location Plan

CIRCUIT / SITE: Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO.
AAA_BTT_Photomontage_Figure_1_Rev0

A3

NG DRAWING No. BT-JAC-020631-500-0096

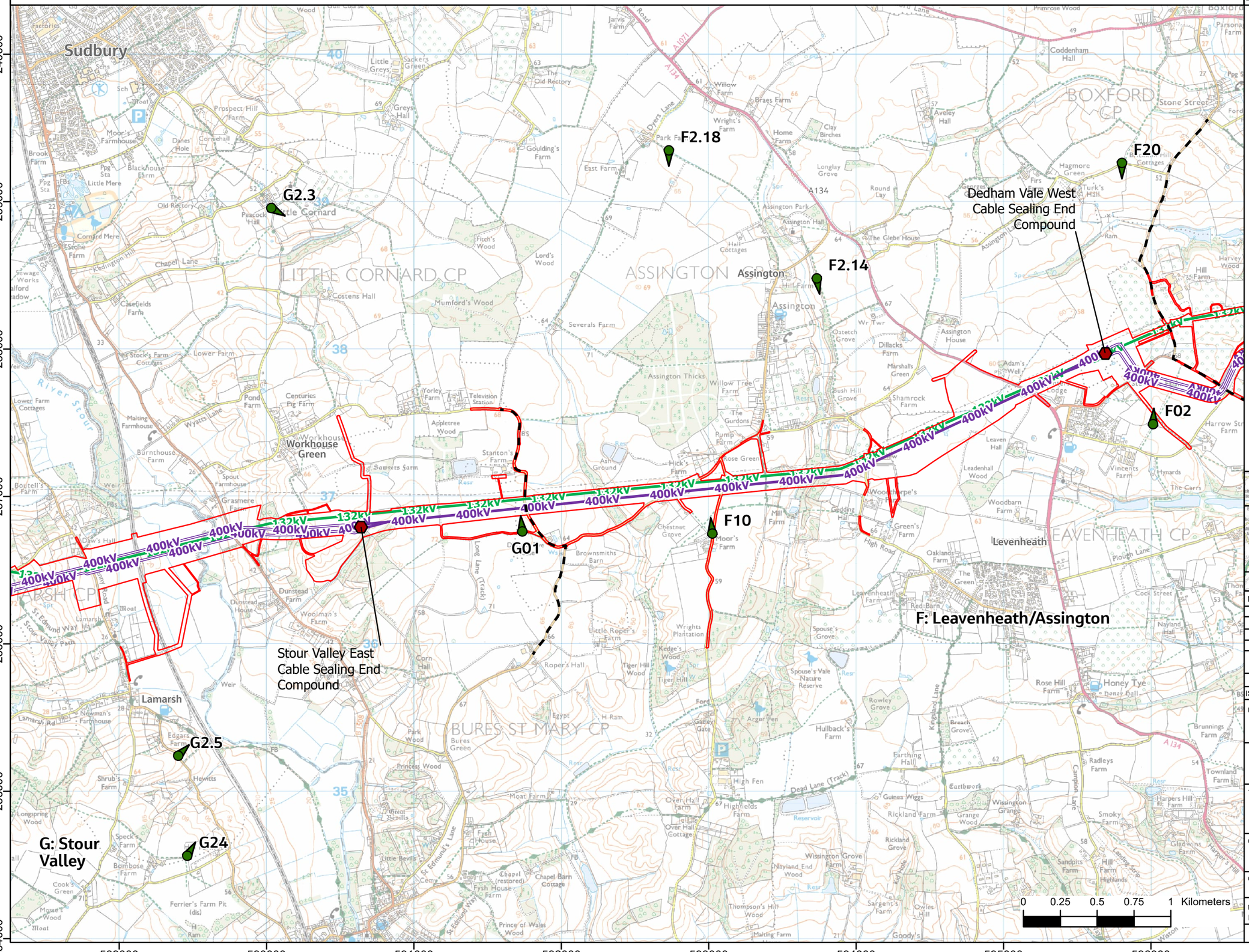
SHEET NO. 2

NO. OF SHEETS 5

ISSUE: B

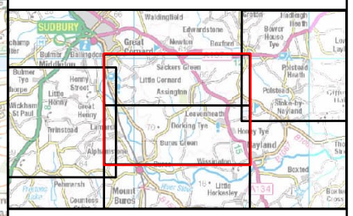
SCALE: 1:25000

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINTLOCATION PLAN
REGULATION 5(2)(q)
SHEET 3 OF 5
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL



Application Document 5.8

- Section boundaries
- Order Limits
- Proposed overhead line
- Proposed modification to existing overhead line
- Proposed realignment of existing overhead line
- Proposed removal of overhead line
- Proposed underground cables
- Proposed cable sealing end compounds
- Grid supply point substation
- Photomontage viewpoints



NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	09/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE: Appendix 2 Photomontage Viewpoint Location Plan

CIRCUIT / SITE: Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO.
AAA_BTT_Photomontage_Figure_1_Rev0

A3

NG DRAWING No.
BT-JAC-020631-500-0096

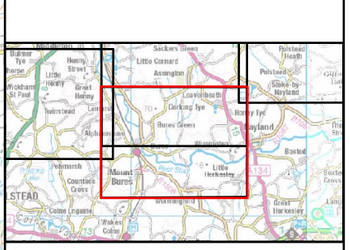
SCALE: 1:25000

SHEET NO. 3 | NO. OF SHEETS 5 | ISSUE: B

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINTLOCATION PLAN
REGULATION 5(2)(q)
SHEET 4 OF 5
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL

Application Document 5.8

- Section boundaries
- Order Limits
- Proposed overhead line
- Proposed modification to existing overhead line
- Proposed realignment of existing overhead line
- Proposed removal of overhead line
- Proposed underground cables
- Proposed cable sealing end compounds
- Grid supply point substation
- Photomontage viewpoints



NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	09/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE: Appendix 2 Photomontage Viewpoint Location Plan

CIRCUIT / SITE: Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO.
AAA_BTT_Photomontage_Figure_1_Rev0

A3

NG DRAWING No.
BT-JAC-020631-500-0096

SHEET NO. 4 | NO. OF SHEETS 5 | ISSUE: B

SCALE: 1:25000

0 0.25 0.5 0.75 1 Kilometers

NATIONAL GRID (BRAMFORD TO TWINSTEAD REINFORCEMENT) ORDER
PINS APPLICATION NUMBER: EN020002
PHOTOMONTAGE VIEWPOINTLOCATION PLAN
REGULATION 5(2)(q)
SHEET 5 OF 5
IN THE DISTRICTS OF MID SUFFOLK DISTRICT COUNCIL, BABERGH DISTRICT COUNCIL AND BRAINTREE DISTRICT COUNCIL

Application Document 5.8

239000
238000
237000
236000
235000
234000

581000 582000 583000 584000 585000 586000 587000 588000

H: Grid Supply Point Substation

Grid Supply Point Substation

Single circuit sealing end compound

G18

G26

G35

G07

Stour Valley West Cable Sealing End Compound

G: Stour Valley

Twinstead

Alphamstone

- Section boundaries
- Order Limits
- Proposed overhead line
- Proposed modification to existing overhead line
- Proposed realignment of existing overhead line
- Proposed removal of overhead line
- Proposed underground cables
- Proposed cable sealing end compounds
- Grid supply point substation
- Photomontage viewpoints

0 0.25 0.5 0.75 1 Kilometers

NG Investment No. ETX/01142

ISSUE	DATE	REMARKS	DRWN	CHKD	APPD
B	08/2023	Updated for Procedural Deadline A	PM	MS	CW
A	09/2023	Rev A for DCO Application	PM	JP	CW

PROJECT: Bramford to Twinstead Reinforcement

nationalgrid

TITLE: Appendix 2 Photomontage Viewpoint Location Plan

CIRCUIT / SITE: Bramford – Pelham & Bramford – Braintree – Bulls Lodge

GIS

ORIGINATOR DRAWING NO. AAA_BTT_Photomontage_Figure_1_Rev0

A3

NG DRAWING No. BT-JAC-020631-500-0096

SCALE: 1:25000

SHEET NO. 5

NO. OF SHEETS 5

ISSUE: B

Page intentionally blank

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