Outer Dowsing Offshore Wind Preliminary Environmental Information Report Volume 2, Appendix 28.1:

Landscape and Visual Assessment Visualisations Wirelines Part 1 of 2

Date: June 2023

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Rev: V1.0



Visualisation Methodology

Introduction

The viewpoint assessment is illustrated by a range of visualisations, including photographs and photomontages, which have been produced in accordance with NatureScot Visual Representation of Windfarms Guidance (NatureScot, 2017) and Landscape Institute (2019) Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals.

The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras, with a fixed lens and a full-frame (35 mm negative size) CMOS sensor. The photographs are taken on a tripod with a pano-head at a height of approximately 1.5m above ground. To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a planar projected panorama with a 53.5-degree field of view. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

A photomontage is a visualisation which superimposes an image of a Project upon a photograph or series of photographs. Photomontage is a widespread and popular visualisation technique, which allows changes in views and visual amenity to be illustrated and assessed, within known views of the 'real' landscape. A 3D block model of the Gas Insulated Switchgear (GIS) Onshore Substation (OnSS) has been included in the viewpoint visualisations. The parameters of the 3D block model and its location on the estimated OnSS platform taken from existing ground levels, are considered to represents the maximum design scenario for PEIR.

Photographs and photomontages have been prepared for all 14 viewpoints and visualisation figures are listed in the table opposite.

The diagram opposite illustrates the maximum design scenario that has been applied for the 3D block model for the OnSS, with a 19m maximum height applied to the extents of the buildings and 12m maximum height applied to all other infrastructure. While the lightning masts extend to a maximum of 30m, their slender design means they are not included in the overall consideration of maximum infrastructure height in the LVIA.

The use of the 3D block model is based on the 'Rochdale Envelope' approach, as supported by The Planning Inspectorate Advice Note Nine (The Planning Inspectorate, 2018). The Rochdale Envelope presents the parameters of the project which represent the maximum design scenario (MDS). This ensures the DCO application covers the maximum possible extent of the project. Visualisations in Figures 27.32 to 27.45, therefore, present a Rochdale Envelope approach, marked by a grey wireframe 3D box around the maximum extent of the OnSS, with a green 3D box indicating the height and extent of the GIS building, although with the understanding that this could be positioned in an alternative location within the grey wireframe 3D box. The grey 3D box represents the extent of the other infrastructure.

The proposed mitigation planting has been included in the viewpoints for each of the three indicative OnSS locations. These visualisations represent the approximate height of mitigation planting after 15 years, estimated to be 7 to 10m and as shown on the year 15 visualisations at an average of 8.5m in height.

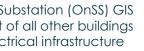
At DCO Application, the design of the OnSS will be further developed within the parameters set by the Rochdale Envelope. The footprint of the OnSS and the height of the structures within this footprint will not exceed the maximum parameters shown in the photomontages. The DCO Application will include a computer-generated model included in the visualisations and this will provide a more realistic impression of the OnSS, albeit still as an indicative representation of the OnSS within the Rochdale Envelope.

Viewpoint Visualisations Figure References

Receptor	Existing	Proposed Substation	Proposed Substation with Mitigation Planting (15 years growth)	
Lincolnshire Node OnSS				
LN1 Asserby Road	28.32a	28.32b	28.32c	
LN2 Mill Lane	28.33a	28.33b	28.33c	
LN3 Alford Road	28.34a	28.34b	28.34c	
LN4 Bilsby	28.35a	28.35b	28.35c	
Weston Marsh North OnSS				
WMN1 Marsh Lane Manor House	28.36a	28.36b	28.36c	
WMN2 A16 near Marsh Lane junction	28.37a	28.37b	28.37c	
WMN3 A16 near Gosberton Bank junction	28.38a	28.38b	28.38c	
WMN4 Macmillan Way near Ship Inn	28.39a	28.39b	28.39c	
WMN5 Macmillan Way near Welland House	28.40a	28.40b	28.40c	
Weston Marsh South OnSS				
WMS1 Marsh Road near Crowtree Farm	28.41a	28.41b	28.41c	
WMS2 Marsh Road near Kindergarten	28.42a	28.42b	28.42c	
Nursery				
WMS3 B1357 near Loosegate	28.43a	28.43b	28.43c	
WMS4 Carrington Road south	28.44a	28.44b	28.44c	
WMS5 Common Road north	28.45a	28.45b	28.45c	

		ODOW Sub footprint o and electr
30m Ligh	ntning Protection Mast	
		ODOW GIS
		Building footprint
		4,500m ²
•		[A fc di

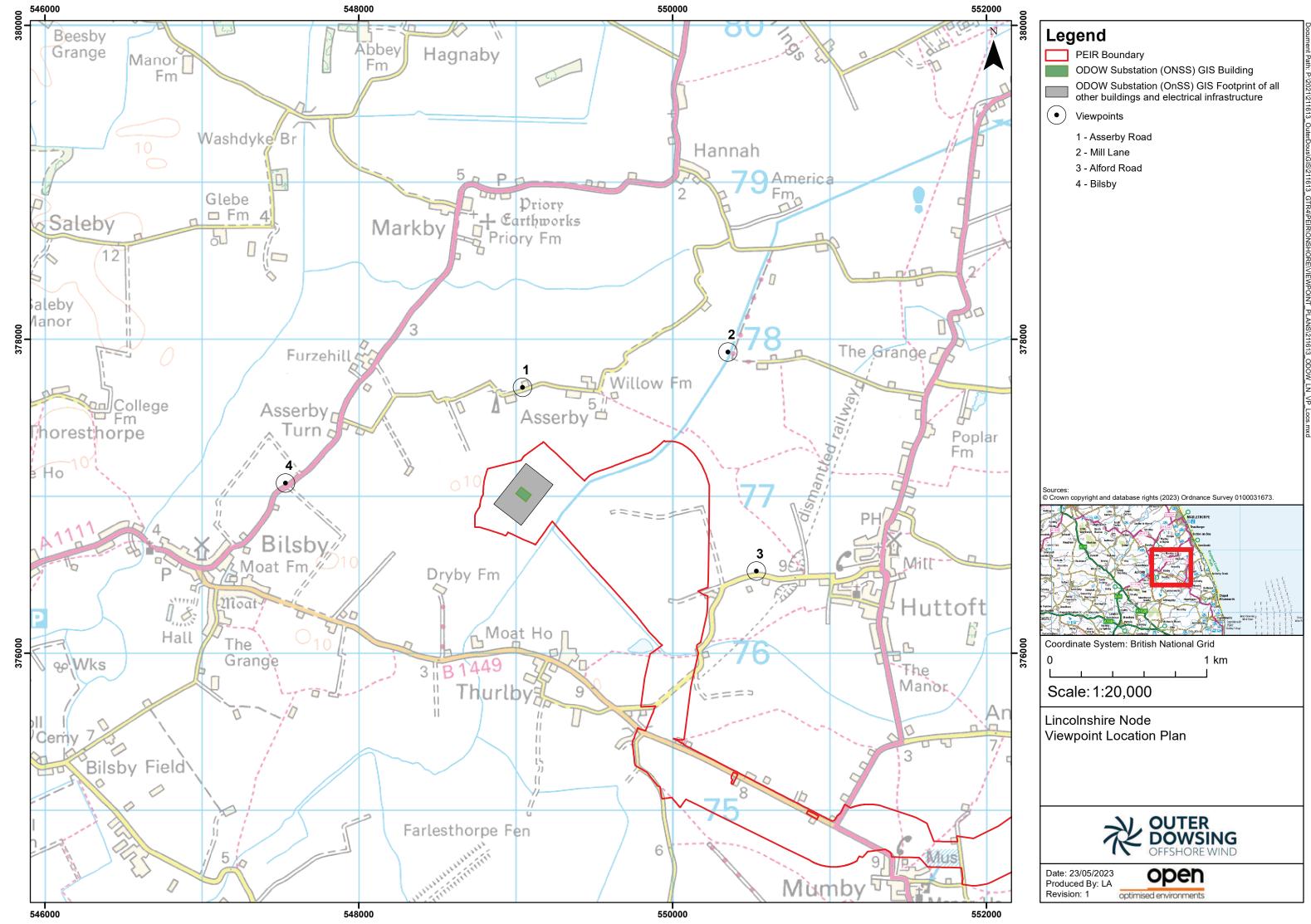








1x GIS OnSS





OS reference:549042EEye level:6.9 m ACDirection of view:179°Distance to site:0.5 km

549042E 377693N 6.9 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Camera:Canon EOS 6DLens:Canon EF 50mm f/1.4Camera height:1.5 m **Date and time:** 08/10/2022, 07:09:21

Enlargement Factor: 150% @A1

Figure 28.32a - Existing Lincolnshire Node Viewpoint 1: Asserby Road OUTER DOWSING OFFSHORE WIND



OS reference: Eye level:6.9 mDirection of view:179° **Distance to site:** 0.5 km

549042E 377693N 6.9 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Lens: Canon EF 50mm f/1.4 Camera height: 1.5 m **Date and time:** 08/10/2022, 07:09:21

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.32b - Proposed Substation (Maximum Design Scenario) Lincolnshire Node Viewpoint 1: Asserby Road OUTER DOWSING OFFSHORE WIND



OS reference: Eye level:6.9 mDirection of view:179° **Distance to site:** 0.5 km

549042E 377693N 6.9 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Canon EF 50mm f/1.4 Lens: Camera height: 1.5 m **Date and time:** 08/10/2022, 07:09:21

Enlargement Factor: 150% @A1

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ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.32c - Proposed Substation (Maximum Design Scenario) with Mitigation Planting (15 Years Growth) Lincolnshire Node Viewpoint 1: Asserby Road OUTER DOWSING OFFSHORE WIND



OS reference:550351EEye level:3.5 m ACDirection of view:235°Distance to site:1.4 km

Horizontal field of view:53.5° (planar projection)Principal distance:812.5 mmPaper size:841 x 297 mm (half A1)Correct printed image size:820 x 260 mm

 Camera:
 Canon EOS 6D

 Lens:
 Canon EF 50mm f/1.4

 Camera height:
 1.5 m

 Date and time:
 08/10/2022, 07:41:56

Figure 28.33a - Existing Lincolnshire Node Viewpoint 2: Mill Lane OUTER DOWSING OFFSHORE WIND



 OS reference:
 550351E

 Eye level:
 3.5 m AC

 Direction of view:
 235°

 Distance to site:
 1.4 km

550351E 377919N 3.5 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Camera:Canon EOS 6DLens:Canon EF 50mm f/1.4Camera height:1.5 m **Date and time:** 08/10/2022, 07:41:56

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.33b - Proposed Substation (Maximum Design Scenario) Lincolnshire Node Viewpoint 2: Mill Lane OUTER DOWSING OFFSHORE WIND



 OS reference:
 550351E

 Eye level:
 3.5 m AC

 Direction of view:
 235°

 Distance to site:
 1.4 km

550351E 377919N 3.5 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Camera:Canon EOS 6DLens:Canon EF 50mm f/1.4Camera height:1.5 m **Date and time:** 08/10/2022, 07:41:56

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.33c - Proposed Substation (Maximum Design Scenario) with Mitigation Planting (15 Years Growth) Lincolnshire Node Viewpoint 2: Mill Lane OUTER DOWSING OFFSHORE WIND



OS reference:550532EEye level:4.7 m ACDirection of view:288°Distance to site:1.4 km

550532E 376522N 4.7 m AOD

Horizontal field of view:53.5° (planar projection)Principal distance:812.5 mmPaper size:841 x 297 mm (half A1)Correct printed image size:820 x 260 mm

 Camera:
 Canon EOS 6D

 Lens:
 Canon EF 50mm f/1.4

 Camera height:
 1.5 m

 Date and time:
 08/10/2022, 08:08:29

Figure 28.34a - Existing Lincolnshire Node Viewpoint 3: Alford Road OUTER DOWSING OFFSHORE WIND



 OS reference:
 55053

 Eye level:
 4.7 m

 Direction of view:
 288°

 Distance to site:
 1.4 km

550532E 376522N 4.7 m AOD 1.4 km

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Canon EF 50mm f/1.4 Lens: Camera height: 1.5 m **Date and time:** 08/10/2022, 08:08:29

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.34b - Proposed Substation (Maximum Design Scenario) Lincolnshire Node Viewpoint 3: Alford Road OUTER DOWSING OFFSHORE WIND



 OS reference:
 55053

 Eye level:
 4.7 m

 Direction of view:
 288°

 Distance to site:
 1.4 km

550532E 376522N 4.7 m AOD 1.4 km

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Canon EF 50mm f/1.4 Lens: Camera height: 1.5 m **Date and time:** 08/10/2022, 08:08:29

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.34c - Proposed Substation (Maximum Design Scenario) with Mitigation Planting (15 Years Growth) Lincolnshire Node Viewpoint 3: Alford Road OUTER DOWSING OFFSHORE WIND



OS reference:547532EEye level:10 m AODirection of view:93°Distance to site:1.3 km

547532E 377083N 10 m AOD

Horizontal field of view:53.5° (planar projection)Principal distance:812.5 mmPaper size:841 x 297 mm (half A1)Correct printed image size:820 x 260 mm

 Camera:
 Canon EOS 6D

 Lens:
 Canon EF 50mm f/1.4

 Camera height:
 1.5 m

 Date and time:
 04/11/2022, 12:05:41

Figure 28.35a - Existing Lincolnshire Node Viewpoint 4: Bilsby OUTER DOWSING OFFSHORE WIND



OS reference:547532EEye level:10 m ACDirection of view:93°Distance to site:1.3 km

547532E 377083N 10 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Lens: Canon EF 50mm f/1.4 Camera height: 1.5 m **Date and time:** 04/11/2022, 12:05:41

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.35b - Proposed Substation (Maximum Design Scenario) Lincolnshire Node Viewpoint 4: Bilsby OUTER DOWSING OFFSHORE WIND



OS reference: Eye level:10 mDirection of view:93° **Distance to site:** 1.3 km

547532E 377083N 10 m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Lens: Canon EF 50mm f/1.4 Camera height: 1.5 m **Date and time:** 04/11/2022, 12:05:41

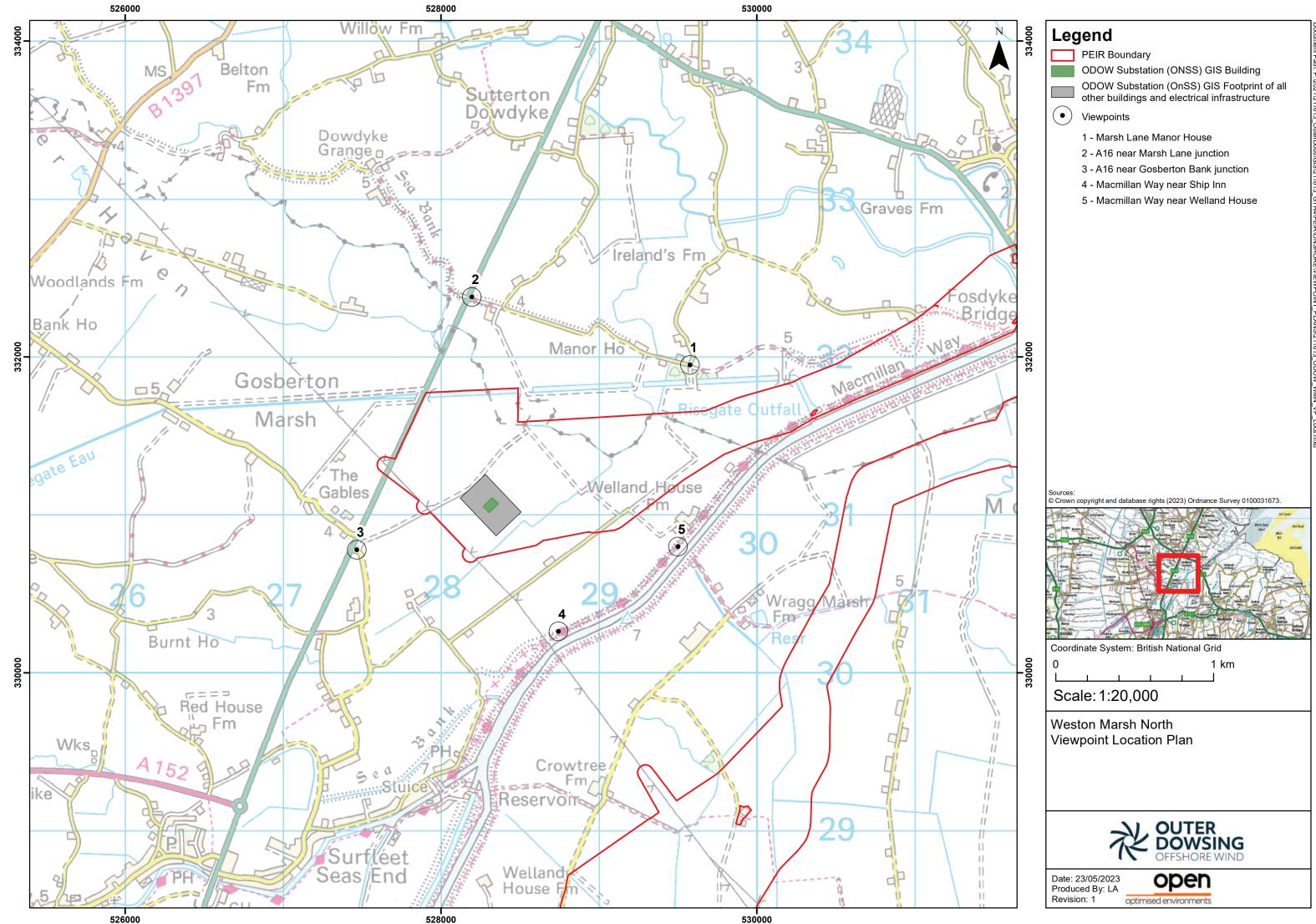
ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.35c - Proposed Substation (Maximum Design Scenario) with Mitigation Planting (15 Years Growth) Lincolnshire Node Viewpoint 4: Bilsby

OUTER DOWSING OFFSHORE WIND





OS reference: Eye level: Direction of view: Distance to site:

529577E 331949N 6 m AOD 235° 1.4 km

Horizontal field of view:53.5° (planar projection)Principal distance:812.5 mmPaper size:841 x 297 mm (half A1)Correct printed image size:820 x 260 mm

 Camera:
 Canon EOS 6D

 Lens:
 Canon EF 50mm f/1.4

 Camera height:
 1.5 m

 Date and time:
 08/10/2022, 09:38:28

Figure 28.36a - Existing Weston Marsh North Viewpoint 1: Marsh Lane near Manor House OUTER DOWSING OFFSHORE WIND



OS reference: Eye level: Direction of view: Distance to site:

6 m AOD 235° 1.4 km

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

812.5 mm 841 x 297 mm (half A1)

Camera:Canon EOS 6DLens:Canon EF 50mm f/1.4Camera height:1.5 m **Date and time:** 08/10/2022, 09:38:28

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.36b - Proposed Substation (Maximum Design Scenario) Weston Marsh North Viewpoint 1: Marsh Lane near Manor House OUTER DOWSING OFFSHORE WIND



OS reference: Eye level: Direction of view: Distance to site:

235° 1.4 km Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

812.5 mm 841 x 297 mm (half A1)

Canon EF 50mm f/1.4 Camera height: 1.5 m **Date and time:** 08/10/2022, 09:38:28

Weston Marsh North Viewpoint 1: Marsh Lane near Manor House OUTER DOWSING OFFSHORE WIND



OS reference:528195EEye level:6.1m AODirection of view:175°Distance to site:1.1 km

528195E 332380N 6.1m AOD

Horizontal field of view: Principal distance: Paper size: **Correct printed image size:** 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Camera:Canon EOS 6DLens:Canon EF 50mm f/1.4Camera height:1.5 m **Date and time:** 08/10/2022, 13:43:09

Figure 28.37a - Existing Weston Marsh North Viewpoint 2: A16 near Marsh Lane junction OUTER DOWSING OFFSHORE WIND



OS reference: Eye level: Direction of view: 175° **Distance to site:** 1.1 km

528195E 332380N 6.1m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Canon EF 50mm f/1.4 Lens: Camera height: 1.5 m **Date and time:** 08/10/2022, 13:43:09

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.37b - Proposed Substation (Maximum Design Scenario) Weston Marsh North Viewpoint 2: A16 near Marsh Lane junction OUTER DOWSING OFFSHORE WIND



OS reference: Eye level: Direction of view: 175° **Distance to site:** 1.1 km

528195E 332380N 6.1m AOD

Horizontal field of view: Principal distance: Paper size: Correct printed image size: 820 x 260 mm

53.5° (planar projection) 812.5 mm 841 x 297 mm (half A1)

Canon EOS 6D Camera: Canon EF 50mm f/1.4 Lens: Camera height: 1.5 m **Date and time:** 08/10/2022, 13:43:09

Enlargement Factor: 150% @A1

ODOW Substation (OnSS) GIS Footprint of all other buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

ODOW Substation (ONSS) GIS Building Rochdale Envelope (19m in height)

Figure 28.37c - Proposed Substation (Maximum Design Scenario) with Mitigation Planting (15 Years Growth) Weston Marsh North Viewpoint 2: A16 near Marsh Lane junction OUTER DOWSING OFFSHORE WIND



OS reference:527466E 330780NEye level:6m AODDirection of view:72°Distance to site:0.7 km

Horizontal field of view:53.5° (planar projection)Principal distance:812.5 mmPaper size:841 x 297 mm (half A1)Correct printed image size:820 x 260 mm

 Camera:
 Canon EOS 6D

 Lens:
 Canon EF 50mm f/1.4

 Camera height:
 1.5 m

 Date and time:
 08/10/2022, 13:27:23

Figure 28.38a - Existing Weston Marsh North Viewpoint 3: A16 at Surfleet Bank junction OUTER DOWSING OFFSHORE WIND