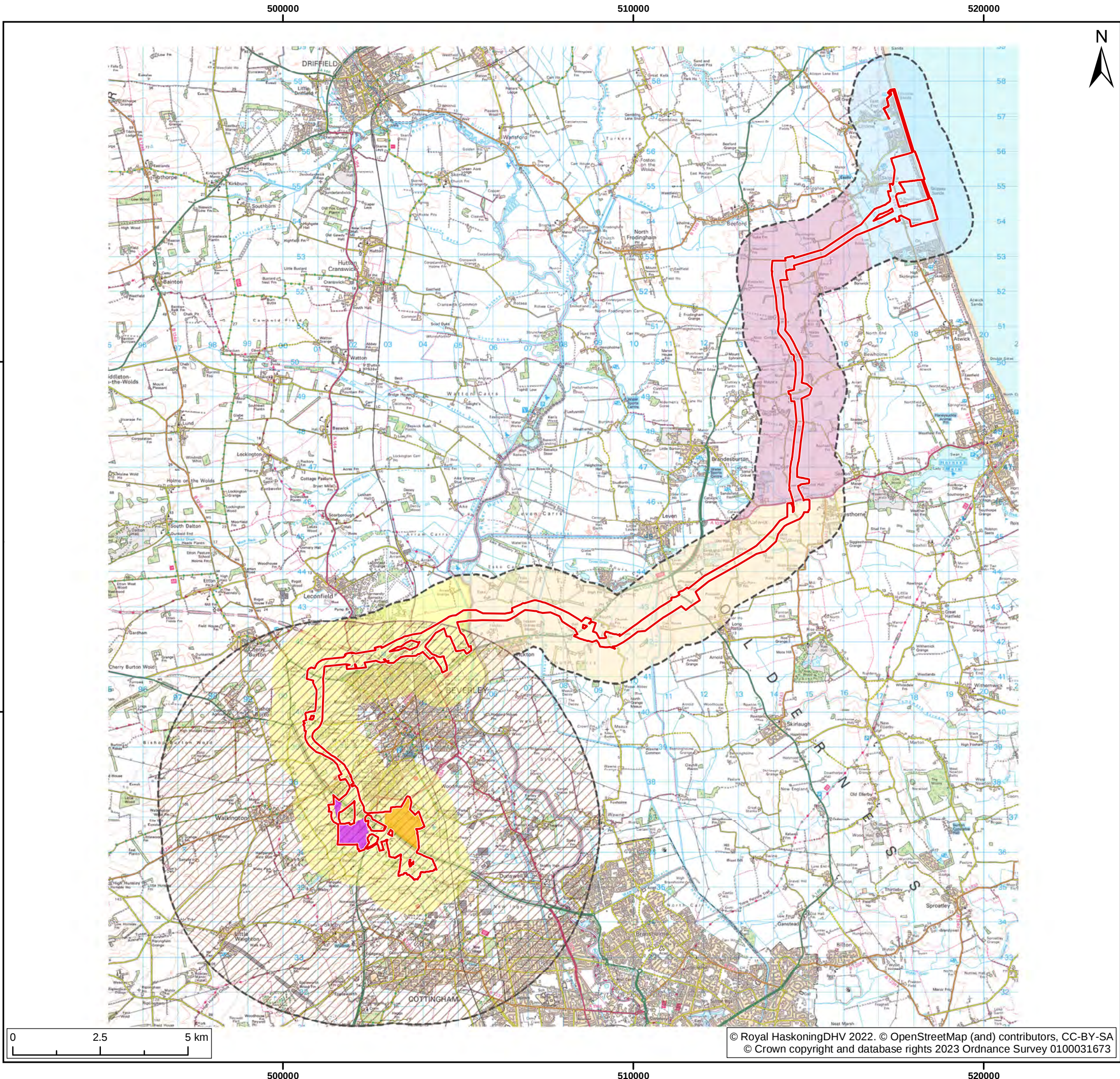




- Legend:
- Onshore development area
 - Landscape and visual study area
 - Sub area 1
 - Sub area 2
 - Sub area 3
 - Sub area 4
 - Sub area 5
 - Substation Zone 1
 - Substation Zone 4

S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

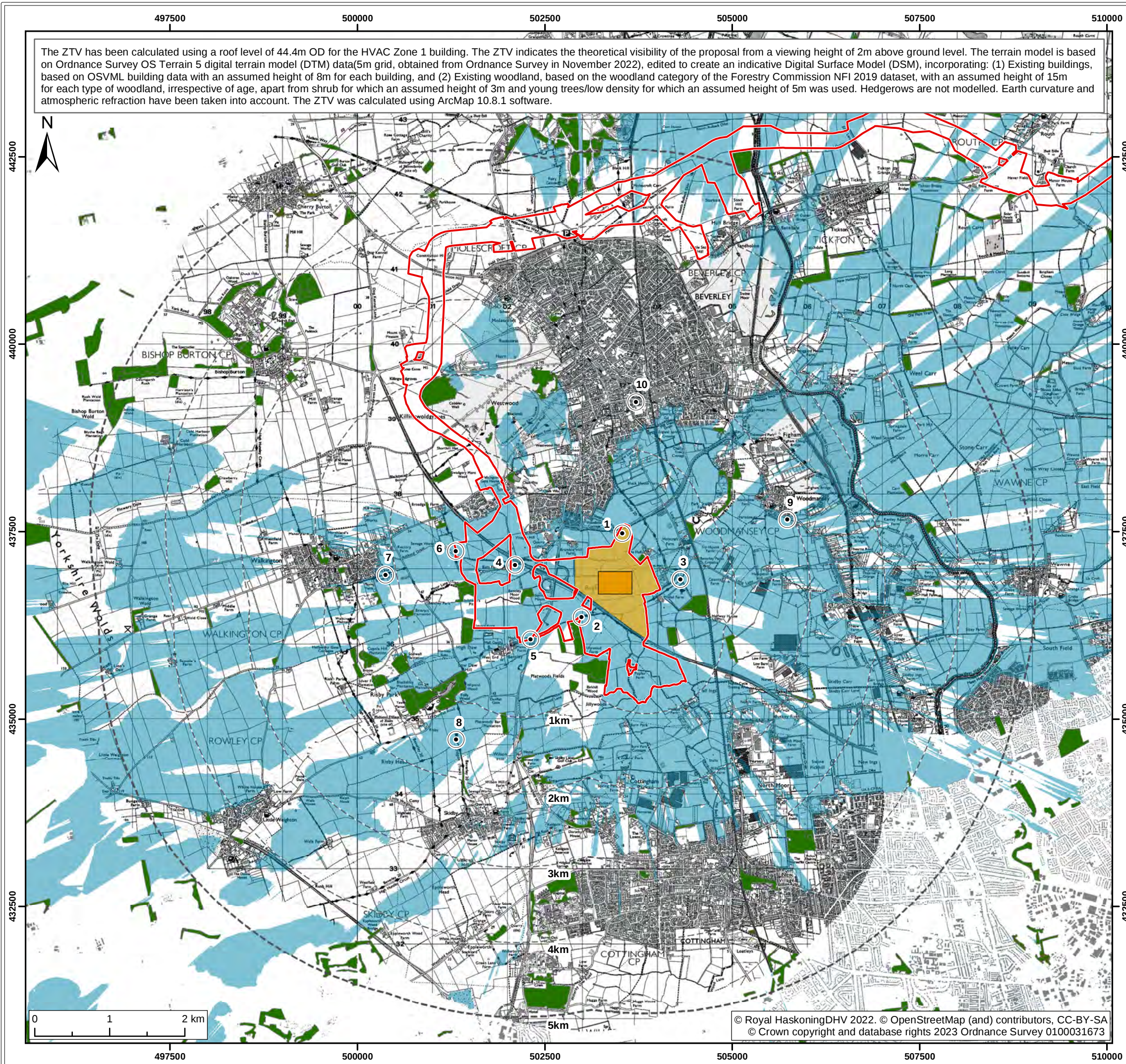
Landscape and Visual Study Area

Figure: 23-1 Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_1

Co-ordinate system: British National Grid Page Size: A3 Scale: 1:110,000

Project: Dogger Bank South Offshore Wind Farms Report: Dogger Bank South: Preliminary Environmental Information Report





Legend:

- Onshore development area
- Indicative substation footprint (Zone 1)
- Substation Zone 1
- 1km intervals from substation zones
- 5km from substation zones
- Viewpoint location
- 1: Shepherd Lane
- 2: Beverley 20 near Jillywood Farm
- 3: Beverley Parks
- 4: Butt Farm
- 5: Coppelflat Lane, Bentley
- 6: Beverley 20 near Broadgate
- 7: Walkington
- 8: Beverley 20 footpath, Risby
- 9: Woodmansey
- 10: Beverley Minster tower
- Existing woodland screening
- Existing building screening
- Theoretical visibility of the proposal**
- Proposed Zone 1 substation theoretically visible

S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

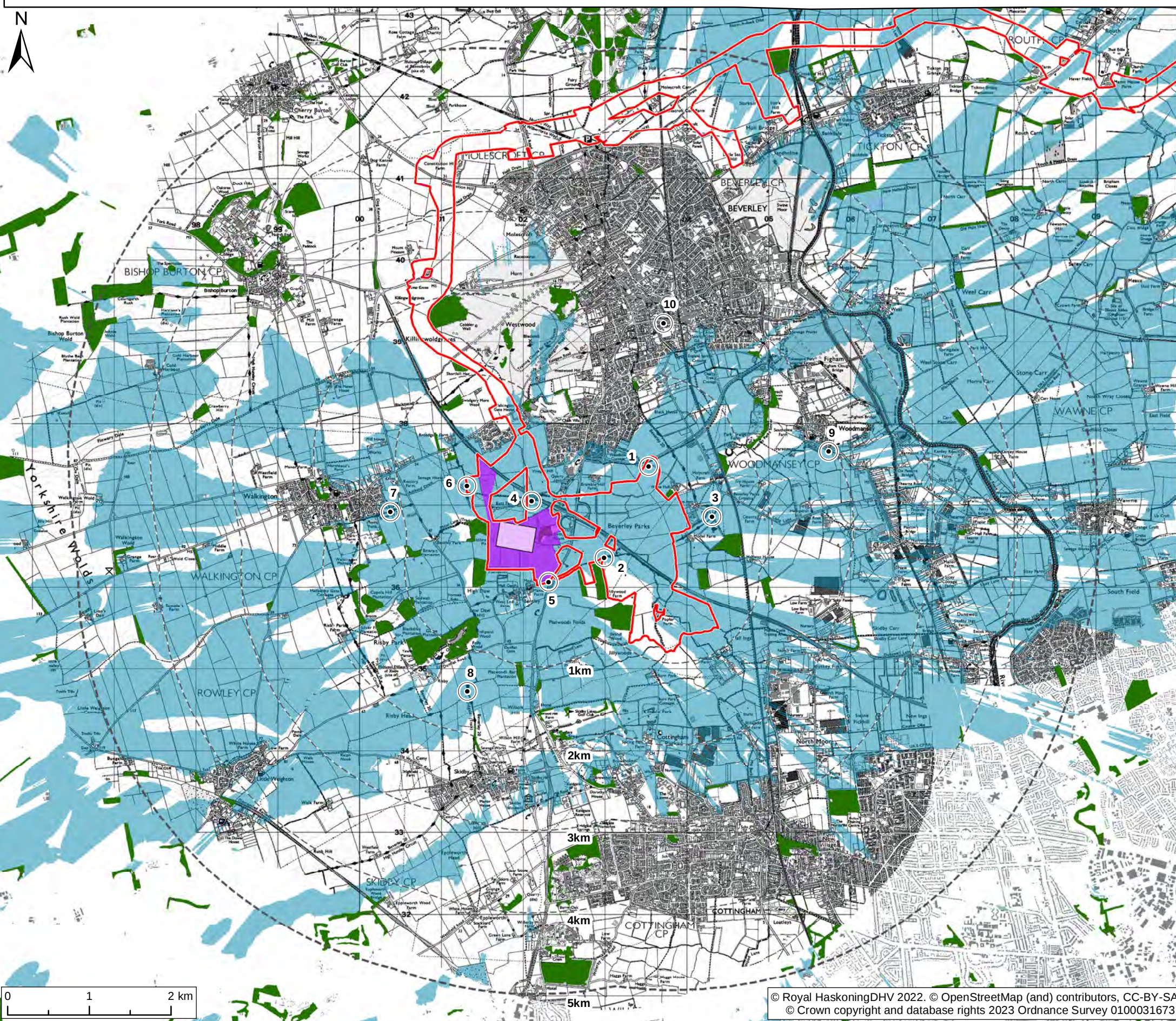
Onshore Substation Zone of Theoretical Visibility: Zone 1

Figure: 23-2

Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_2

Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:50,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Preliminary Environmental Information Report	

The ZTV has been calculated using a roof level of 59.5mOD for the HVAC Zone 4 building. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2019 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcMap 10.8.1 software.



Legend:

- Onshore development area
- Indicative substation footprint (Zone 4)
- Substation Zone 4
- 1km intervals from substation zones
- 5km from substation zones
- Viewpoint location
- 1: Shepherd Lane
- 2: Beverley 20 near Jillywood Farm
- 3: Beverley Parks
- 4: Butt Farm
- 5: Coppelflat Lane, Bentley
- 6: Beverley 20 near Broadgate
- 7: Walkington
- 8: Beverley 20 footpath, Risby
- 9: Woodmansey
- 10: Beverley Minster tower
- Existing woodland screening
- Existing building screening
- Theoretical visibility of the proposal**
- Proposed Zone 4 substation theoretically visible

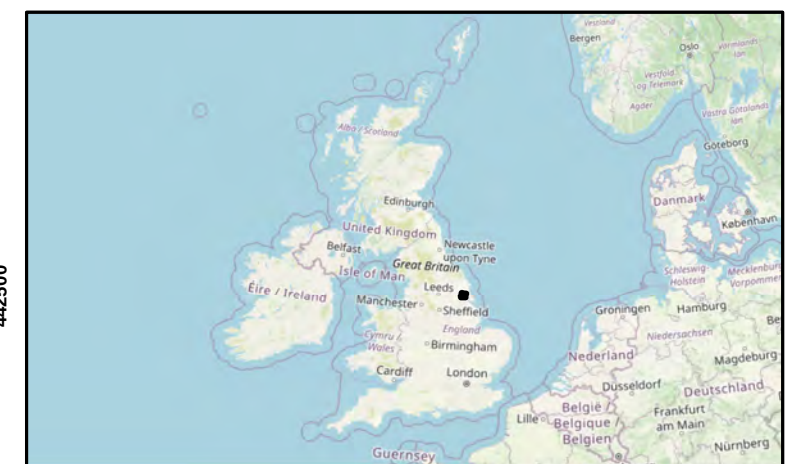
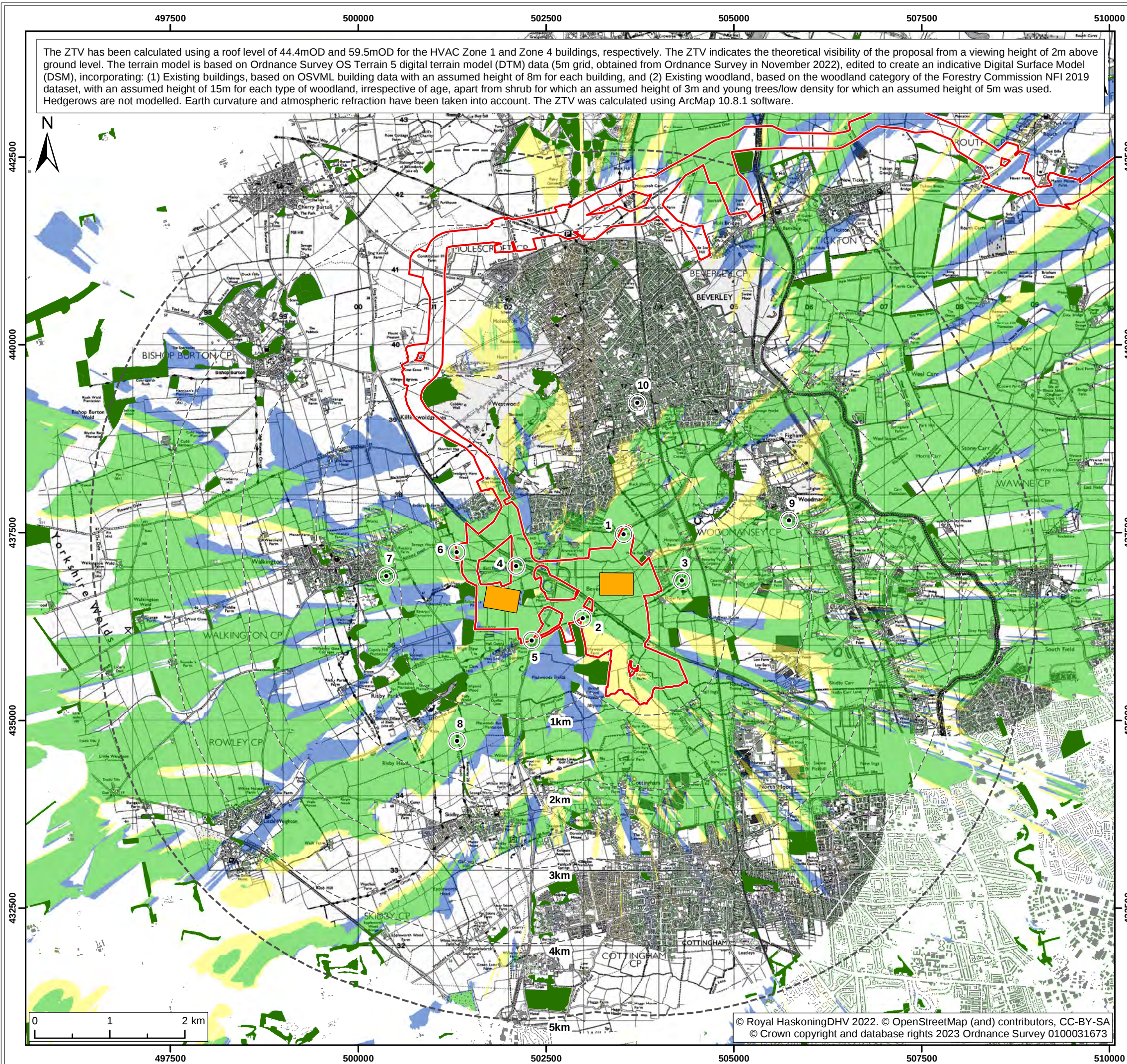
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Onshore Substation Zone of Theoretical Visibility: Zone 4

Figure: 23-3		Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_3	
Co-ordinate system: British National Grid		Page Size: A3	Scale: 1:50,000
Project: Dogger Bank South Offshore Wind Farms		Report: Dogger Bank South: Preliminary Environmental Information Report	





Legend:

- Onshore development area
- Indicative substation footprint (Zones 1 & 4)
- 1km intervals from substation zones
- 5km from substation zones
- Viewpoint location
- 1: Shepherd Lane
- 2: Beverley 20 near Jillywood Farm
- 3: Beverley Parks
- 4: Butt Farm
- 5: Coppleflat Lane, Bentley
- 6: Beverley 20 near Broadgate
- 7: Walkington
- 8: Beverley 20 footpath, Risby
- 9: Woodmansey
- 10: Beverley Minster tower
- Existing woodland screening
- Existing building screening
- Theoretical visibility of the proposal**
- Only Zone 1 substation theoretically visible
- Only Zone 4 substation theoretically visible
- Both substations theoretically visible

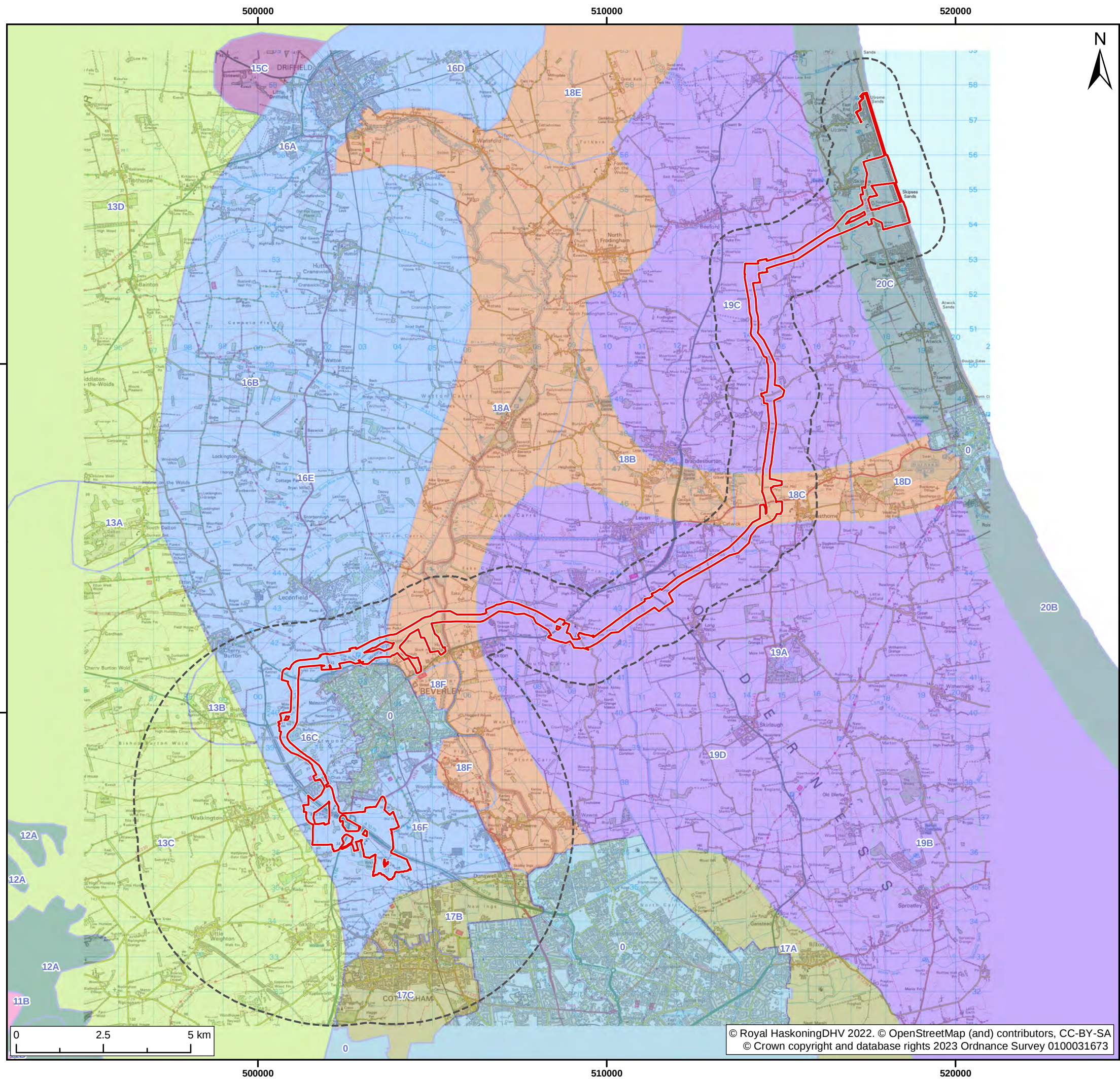
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Onshore Substation Zone of Theoretical Visibility: Combined

Figure: 23-4 Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_4

Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:50,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Preliminary Environmental Information Report	





Legend:

- Onshore development area
- Landscape and visual study area

East Riding of Yorkshire Landscape Character Type

- 0: Urban
- 11: Jurassic Hills Farmland
- 12: Sloping Wooded Farmland
- 13: Open High Rolling Farmland
- 15: Wolds Valley Farmland
- 16: Sloping Farmland (Edge of Wolds)
- 17: Farmed Urban Fringe
- 18: Low Lying Drained Farmland
- 19: Open Farmland
- 20: Coastal Farmland

Refer to Chapter 23 for details of landscape character areas
(Landscape character areas source: East Riding of Yorkshire Council).

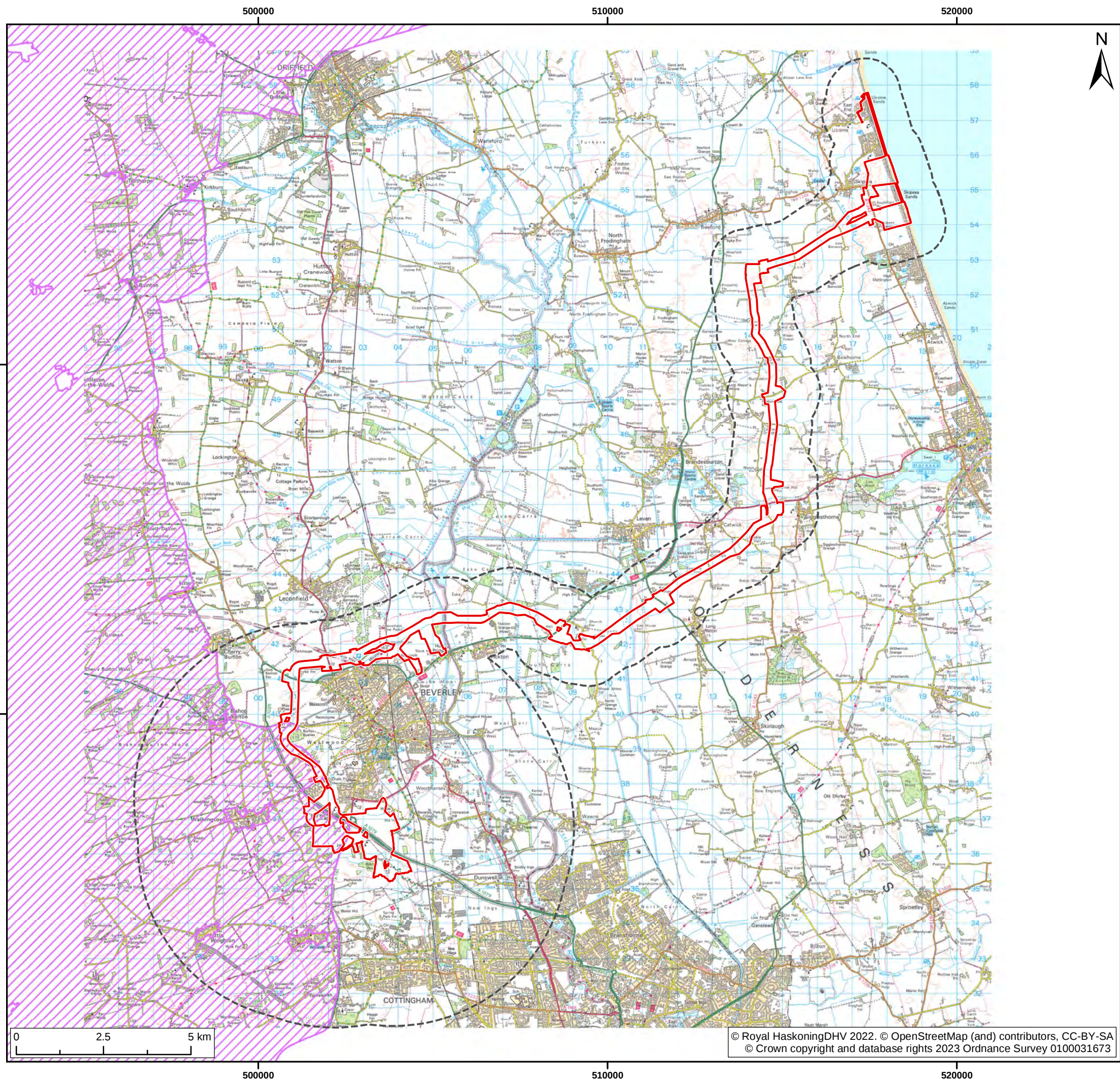
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Landscape Character

Figure: 23-5	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_5		
Co-ordinate system: British National Grid		Page Size: A3	Scale: 1:110,000
Project: Dogger Bank South Offshore Wind Farms		Report: Dogger Bank South: Preliminary Environmental Information Report	





- Legend:
- Onshore development area
 - Landscape and visual study area
 - Important Landscape Area (ERYC)

S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

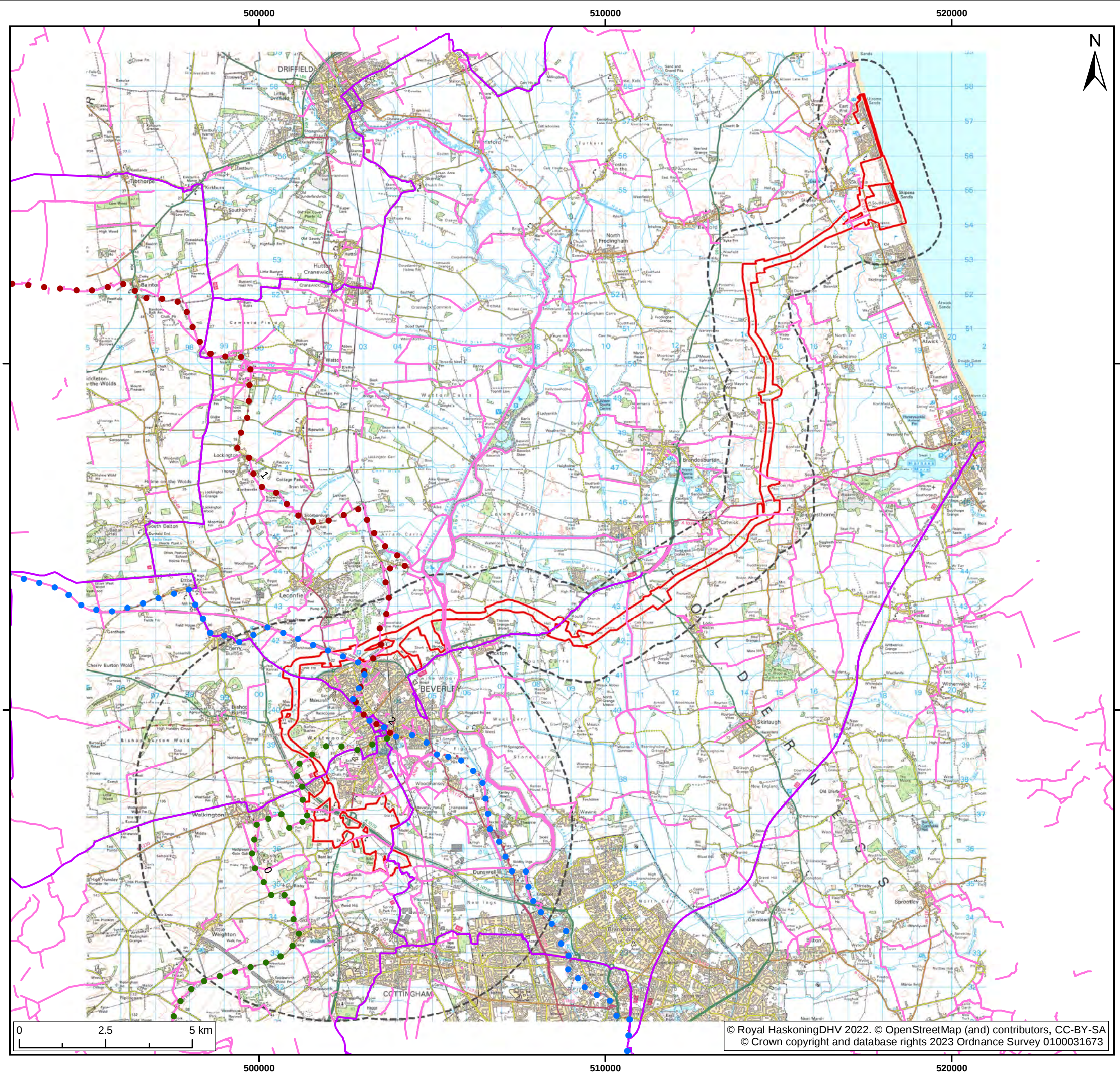
Title:

Landscape Designations

Figure: 23-6 Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_6

Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:110,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Preliminary Environmental Information Report	





Legend:

- Onshore development area
- Landscape and visual study area
- Public Right of Way (indicative)

National Cycle Network (Sustrans)

- National Cycle Network Route
- National Cycle Network Link Route

Long Distance Walking Routes (indicative)

- Beverley 20
- Minster Way
- Wilberforce Way

S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
S2	P01	06/02/2023	Suitable for Information	GS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Recreation

Figure: 23-7 Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_7

Co-ordinate system: British National Grid Page Size: A3 Scale: 1:110,000

Project: Dogger Bank South Offshore Wind Farms Report: Dogger Bank South: Preliminary Environmental Information Report





Baseline photograph - Zone 1



OS reference:	503533 E 437484 N
AOD (Above Ordnance Datum):	10.9 m
Direction of view:	185°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 09:00

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 1



OS reference:	503533 E 437484 N
AOD (Above Ordnance Datum):	10.9 m
Direction of view:	185°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 09:00

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.

	24m Site Area
	27m Maximum Infrastructure Height



Baseline photograph - Zone 1



OS reference:	502988 E 436362 N
AOD (Above Ordnance Datum):	18.2 m
Direction of view:	65°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 10:00

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 1



OS reference:	502988 E 436362 N
AOD (Above Ordnance Datum):	18.2 m
Direction of view:	65°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 10:00

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



24m Site Area

27m Maximum Infrastructure Height



Baseline photograph - Zone 1



OS reference:	504312 E 436866 N
AOD (Above Ordnance Datum):	9.3m
Direction of view:	265°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 10:28

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 1



OS reference:	504312 E 436866 N
AOD (Above Ordnance Datum):	9.3m
Direction of view:	265°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 10:28

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



24m Site Area

27m Maximum Infrastructure Height



Baseline photograph - Zone 4



OS reference:	502102 E 437056 N
AOD (Above Ordnance Datum):	27.6 m
Direction of view:	205°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 08:15

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 4



OS reference: 502102 E 437056 N
AOD (Above Ordnance Datum): 27.6 m
Direction of view: 205°
Horizontal field of view: 90° (cylindrical projection)

Vertical field of view: 14.2°
Image Enlargement Factor: 96%
Paper size: 841 x 297 mm (half A1)
Correct printed image size: 820 x 260 mm

Camera: NIKON D750
Lens: Nikkor AF 50mm f/1.8D
Camera height: 1.5 m (above AOD)
Date and time: 19/05/2022 08:15

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



24m Site Area
27m Maximum Infrastructure Height



Baseline photograph - Zone 4



OS reference:	502310 E 436070 N
AOD (Above Ordnance Datum):	28.5 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 09:40

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 4



OS reference:	502310 E 436070 N
AOD (Above Ordnance Datum):	28.5 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 09:40

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



24m Site Area

27m Maximum Infrastructure Height



Baseline photograph - Zone 4



OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.4 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



Visualisation showing maximum onshore substation parameters – Zone 4



OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.4 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	14.2°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 260 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts provided in .shp format and development height parameters provided by Royal Haskoning DHV on 8/12/2023.



24m Site Area

27m Maximum Infrastructure Height