

12 December 2018

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Dear Sirs

Norfolk Vanguard Offshore Wind Farm Development Consent Order (the Project)
Case reference no: EN010079
The Applicant: Norfolk Vanguard Limited

Request to submit information into the Examination: Application Documents Errata, and Change Report.

We write further to the Applicant's response to the rule 6 letter dated 26 November 2018.

In accordance with a request from the Examining Authority at the Preliminary Meeting on 10 December 2018, we enclose the following documents:

1. **Change Report:** this document outlines minor changes to some elements of the Project, including minor amendments to the Order limits. Following full assessment of the potential implications associated with the changes, none have been found to alter the significance of environmental impacts assessed in the ES. Full details of the changes including a consideration of any environmental impacts and a summary of the status of landowner negotiations is outlined in the enclosed document.
2. **Application Documents Errata:** this document identifies minor errors in the Environmental Statement chapters.

In preparing these documents and when considering the resulting minor changes, the Applicant has had regard to 'Guidance for the examination of applications for development consent' (March 2015), and 'Advice Note 16: How to request a change which may be material' (March 2018). The Applicant is of the opinion that these changes are non-material and, given that all relevant affected landowners have agreed in principle to the Applicant seeking the Examining Authority's consent to make these changes, that the procedures within The Infrastructure Planning (Compulsory Acquisition) Regulations 2010 will not be activated. However, the Applicant will update the Examining Authority on landowner negotiations at Deadline 1. It should also be noted that final confirmation of the changes requested by National Grid is awaited and the Applicant will also update the Examining Authority on this at Deadline 1.

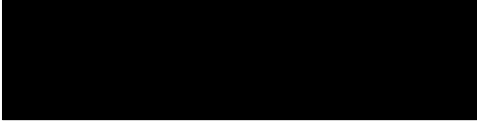
If the Examining Authority have any further queries or points of clarification, the Applicant can of course assist the panel throughout the course of Examination, via responses to written questions, and/or through correspondence on the contact details outlined at the top of this letter.

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We hope that the enclosed information assists the panel and we would kindly request that this it is accepted into the Examination.

Yours faithfully



Womble Bond Dickinson (UK) LLP

Enclosures

1. Change Report (document reference: Pre-Exa; Change Report; 9.3)
2. Application Documents Errata (document reference: Pre-Exa; Errata; 9.4).

Norfolk Vanguard Offshore Wind Farm Change Report

Applicant: Norfolk Vanguard Limited
Document Reference: Pre-ExA; Change Report; 9.3

Date: December 2018
Author: Royal HaskoningDHV

Photo: Kentish Flats Offshore Wind Farm



Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
16/07/18	00D	First draft for Internal review	GK/JA	PP	PP
23/08/18	01D	First draft for Norfolk Vanguard Limited review	GK/JA	PP	PP
08/10/18	02D	Second draft for Norfolk Vanguard Limited review	JA	GK	GK
01/11/18	03D	Third draft for Norfolk Vanguard Limited review	CC/ST	JA/GK	GK
08/11/18	04D	Fourth draft for Norfolk Vanguard Limited review	CC/ST	JA/GK	GK
30/11/18	05D	Fifth draft	ST	JA/GK	GK
12/12/18	06D	Sixth draft	GK	GK	GK
12/12/18	07F	Final draft	GK	GK	RS

EXECUTIVE SUMMARY

Following submission of the Development Consent Order (DCO) application for Norfolk Vanguard Offshore Wind Farm (the project), several minor project design amendments have been identified through liaison with potential contractors and landowners affected by the project. These amendments are summarised as follows:

- Offshore
 - An increase in the number and diameter of piles for the offshore electrical platforms
- Onshore
 - Amendments to a number of cable route accesses, as requested by landowners;
 - Minor route amendments, as requested by landowners;
 - Increases to the areas within which the National Grid towers will be located (resulting in equivalent increases to the areas subject to permanent compulsory acquisition); and inclusion of permanent new rights for that part of the overhead line that is to be repositioned, as requested by National Grid. Although these changes fall within the existing Order limits, the nature of the compulsory acquisition powers being sought (freehold acquisition/permanent new rights/temporary possession) in the affected land parcels will change, with a net increase in the land subject to permanent compulsory acquisition. It should be noted that no change is proposed to the size of the physical footprint of the tower bases. Discussions with National Grid's advisors have also suggested that the area scheduled for permanent new rights within National Grid's sealing compound (at plot 41/33) should be enlarged to permit the acquisition of rights over the whole sealing compound area. It is therefore proposed to extend this plot accordingly. It should be noted that National Grid's final approval of the changes proposed to the overhead line and related infrastructure is awaited.

Consideration has been given by Norfolk Vanguard Limited as to whether each amendment has the potential to give rise to any potential significant impacts beyond those which have been assessed in the Environmental Statement (ES). In addition, the potential implications of the amendments on other relevant application documents have been considered.

Following a thorough review of these potential implications, none of the proposed amendments have been found to result in any change to the impacts assessed in the ES, or any relevant DCO application documents as submitted in June 2018. The full details of the proposed amendments and potential impacts are found in sections 2.1 (offshore amendment) and 2.2 (onshore amendments).

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Glossary

DCO	Development Consent Order
ES	Environmental Statement
GBS	Gravity Base System
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
kJ	Kilojoule
LIDAR	Light Detection and Ranging
NV East	Norfolk Vanguard East
NV West	Norfolk Vanguard West
OWF	Offshore wind farm
VWPL	Vattenfall Wind Power Limited
WTG	Wind Turbine Generator

Terminology

Indicative mitigation planting	Areas identified for mitigation planting at the onshore project substation and Necton National Grid substation.
Jointing pit	Underground structures constructed at regular intervals along the cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	Where the offshore cables come ashore at Happisburgh South.
Mobilisation area	Areas approx. 100 x 100m used as access points to the running track for duct installation. Required to store equipment and provide welfare facilities. Located adjacent to the onshore cable route, accessible from local highways network suitable for the delivery of heavy and oversized materials and equipment.
Mobilisation zone	Area within which the mobilisation area will be located.
National Grid new / replacement overhead line tower	New overhead line towers to be installed at the National Grid substation.
National Grid overhead line modifications	The works to be undertaken to complete the necessary modification to the existing 400kV overhead lines.
National Grid substation extension	The permanent footprint of the National Grid substation extension
National Grid temporary works area	Land adjacent to the Necton National Grid substation which would be temporarily required during construction of the National Grid substation extension.
Necton National Grid substation	The existing 400kV substation at Necton, which will be the grid connection location for Norfolk Vanguard.
Offshore accommodation platform	A fixed structure (if required) providing accommodation for offshore personnel. An accommodation vessel may be used instead.

Offshore cable corridor	The corridor of seabed from the Norfolk Vanguard OWF sites to the landfall site within which the offshore export cables would be located.
Offshore electrical platform	A fixed structure located within the wind farm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore.
Offshore export cables	The cables which bring electricity from the offshore electrical platform to the landfall.
Offshore project area	The overall area of Norfolk Vanguard East, Norfolk Vanguard West and the offshore cable corridor.
Onshore 400kV cable route	Buried high-voltage cables linking the onshore project substation to the Necton National Grid substation.
Onshore cable route	The 45m easement which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction.
Onshore cables	The cables which take the electricity from landfall to the onshore project substation.
Onshore project area	All onshore electrical infrastructure (landfall; onshore cable route, accesses, trenchless crossing technique (e.g. Horizontal Directional Drilling (HDD)) zones and mobilisation areas; onshore project substation and extension to the Necton National Grid substation and overhead line modification).
Onshore project substation	A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from HVDC to HVAC, to 400kV (grid voltage). This also contains equipment to help maintain stable grid voltage.
Onshore project substation temporary construction compound	Land adjacent to the onshore project substation which would be temporarily required during construction of the onshore project substation.
Running track	The track along the onshore cable route which the construction traffic would use to access workfronts.
The Applicant	Norfolk Vanguard Limited
The OWF sites	The two distinct offshore wind farm areas, Norfolk Vanguard East and Norfolk Vanguard West .
The project	Norfolk Vanguard Offshore Wind Farm, including the onshore and offshore infrastructure.
Trenchless crossing zone (e.g. HDD)	Temporary areas required for trenchless crossing works.

1 INTRODUCTION

1.1 Project Background

1. Norfolk Vanguard Limited ('the Applicant', an affiliate company of Vattenfall Wind Power Limited (VWPL)) is seeking a Development Consent Order (DCO) for Norfolk Vanguard, an offshore wind farm (OWF) in the southern North Sea.
2. The OWF comprises two distinct areas, Norfolk Vanguard East (NV East) and Norfolk Vanguard West (NV West) ('the OWF sites'), within which wind turbine generators (WTG), associated platforms and array cables will be located. The offshore wind farm will be connected to the shore by offshore export cables installed within the offshore cable corridor from the wind farm to a landfall point at Happisburgh South, Norfolk. From there onshore cables would transport power over approximately 60km to the onshore project substation near Necton, Norfolk. A full project description is given in the Environmental Statement (ES) (document 6.1), Chapter 5 Project Description.
3. Norfolk Vanguard is located approximately 47km from the closest point of the Norfolk Coast. NV East covers an area of approximately 297km² and NV West covers an area of around 295km².
4. Once built, Norfolk Vanguard would have an export capacity of up to 1800MW, with the offshore components comprising:
 - Up to 200 WTGs;
 - Up to two offshore electrical platforms;
 - Up to two accommodation platforms;
 - Up to two met masts;
 - Up to two LiDAR;
 - Up to 600km array cables;
 - Up to 150km inter-connector cables; and
 - Up to 400km export cables (in two trenches of approximately 100km length each).
5. The key onshore components of the project are as follows:
 - Landfall;
 - Onshore cable route, including trenchless crossing zones (e.g. Horizontal Directional Drilling (HDD)) and mobilisation areas;
 - Onshore project substation;
 - Existing National Grid substation extension; and
 - National Grid new / replacement overhead line tower and temporary works.

6. The DCO application includes all offshore and onshore infrastructure associated with the project, including an extension to the existing National Grid substation near Necton and laying of cable ducts as enabling development for Norfolk Boreas (a sister project to Norfolk Vanguard) within the onshore cable route.
7. Construction of the project would be anticipated to commence between 2020 and 2021 for the onshore works, and around 2024 for the offshore works.
8. The DCO application was submitted by Norfolk Vanguard Limited on 26th June 2018 and was accepted for examination by the Planning Inspectorate on the 24th July 2018.

1.2 Purpose of this Document

9. Following submission of the DCO application to the Planning Inspectorate in June 2018, ongoing liaison with potential contractors, landowners and National Grid has identified the following minor project design amendments:
 - An increase in the number and diameter of piles for the offshore electrical platforms (discussed further in Section 2.1); and
 - Amendments to the submitted onshore Order limits as requested by landowners, including changes requested by National Grid to the tower search areas and the inclusion of new permanent rights for that part of the overhead line to be re-positioned (discussed further in Section 2.2).
10. This report sets out:
 - The request for each amendment;
 - Reasons why the amendment is sought;
 - An assessment of whether the amendment will give rise to any potential significant impacts beyond those which have been assessed in the Environmental Statement; and
 - An assessment of the implications of each amendment on other relevant application documents.

2 PROJECT DESIGN AMENDMENTS

2.1 Offshore Electrical Platform Piles

2.1.1 Overview of Amendment

11. Ongoing liaison between Norfolk Vanguard Limited and offshore electrical platform foundation suppliers has identified the potential for additional piles to be required for the offshore electrical platforms in line with current infrastructure design requirements.
12. The Environmental Impact Assessment (EIA) as presented in the ES and submitted as part of the DCO application is based on a maximum of six piles per offshore electrical platform (twelve in total for two platforms). In light of the new information, a maximum of 18 piles per platform is now required (36 in total for two platforms). This results in a minor (<3%) increase to the total number of piles for all offshore infrastructure, from 834 to 858 based on the following:
 - Up to 200 WTGs x 4 piles per turbine = 800;
 - Up to two offshore electrical platforms x 18 piles per platform = 36 (previously 12);
 - Up to two accommodation platforms x 6 piles per platform = 12;
 - Up to two met masts x 4 piles per platform = 8; and
 - Up to two LiDAR x 1 pile per device = 2.
13. In addition, the diameter of pin-piles for the offshore electrical platforms would increase from 3m to 5m.

2.1.2 Project Description

14. Section 5.4.4.1.1 of ES Chapter 5 describes the foundation options assessed for the offshore electrical platforms, which include:
 - Gravity Base System (GBS); or
 - Up to six legged jackets (piled or suction caisson).
15. There is no change to the GBS parameters as detailed in the ES and therefore this report focusses only on potential impacts where the six legged jackets represent the worst case scenario.
16. Changes to the number of piles and pile diameter affects the volume of drill arisings and pile driving durations. These are discussed further below.

2.1.2.1 Drill Arisings

17. Table 2.1 provides the worst case drilling parameters presented in the ES for the offshore electrical platform six legged foundation option, along with the revised parameters.
18. The total volume of drill arisings for all offshore infrastructure assessed in the ES was 402,320m³. The increase in drill arisings for the offshore electrical platforms would result in a revised total of 414,762m³ (a 3.1% increase).

Table 2.1 Offshore electrical platform foundation dimensions

Parameter	Parameters from the ES (Table 5.15 of Chapter 5)	Revised parameters
Maximum number of piles per platform	6 (based on 6 legs with one pile per leg)	18 (based on 6 legs with three piles per leg)
Maximum diameter of offshore electrical platform pin-piles (m)	3	5
Pile footprint (m ²)	7.07	19.63
Maximum penetration depth (m)	20	20
Maximum drill arisings per platform* (m ³)	848	7,069
Maximum footprint per platform (m ²)	N/A - GBS represents the worst case scenario for these parameters	
Maximum area of scour protection per platform (m ²)		
Maximum area of scour protection for two platforms(m ²)		
Maximum seabed preparation area per foundation (m ²)		

* should drilling be required

2.1.2.2 Pile Driving

19. Piling for the offshore electrical platforms is described in section 5.4.3.1.5 of ES Chapter 5. Table 2.2 (below) provides a summary of the worst case parameters presented in the ES for piling of the offshore electrical platform, along with the revised parameters.
20. The increase in pin pile diameter from 3m to 5m for the offshore electrical platforms does not affect the underwater noise modelling (Appendix 5.3 of the ES (document 6.2) as this assessment is already based on a maximum pin-pile diameter for the WTGs of 5m. Underwater noise associated with the change in pile diameter is therefore not considered further in this report.

Table 2.2 Offshore electrical platform piling parameters

Parameter	Parameters from the ES (Table 5.16 of Chapter 5)	Revised parameters
Maximum diameter (m)	3	5
Maximum hammer energy (kJ)	2,700	No change
Maximum seabed penetration (m)	70	No change
Soft start hammer energy (kJ)	270	No change

Parameter	Parameters from the ES (Table 5.16 of Chapter 5)	Revised parameters
Ramp up	20 mins at starting energy followed by 40 min ramp up to maximum energy	No change
Max number of blows per pile	300	No change
Average number of blows per pile	200	No change
Average 'active piling time' per pile (hr)	1.5	No change
Average piling time per foundation	9	27

2.1.3 Potential Impacts

21. As a result of the minor increase in the number of piles and pile diameter, the following effect magnitudes could potentially be altered:
 - The minor increase in drill arisings has the potential to affect suspended sediment and deposition, should drilling of piles be required; and
 - The minor increase in the number of piles may increase the overall duration of pile driving and associated underwater noise impacts for the project.
22. The sensitivity of receptors remain as presented in the ES.
23. The impacts of suspended sediment and deposition from drill arisings are addressed in the following application documents and the implications of the revised parameters are outlined in this report:
 - Environmental Statement (document 6.1 of the DCO application);
 - Chapter 8 Marine Geology, Oceanography and Physical Processes (see section 2.1.3.1);
 - Chapter 9 Marine Water and Sediment Quality (see section 2.1.3.2);
 - Chapter 10 Benthic and Intertidal Ecology (see section 2.1.3.3);
 - Chapter 11 Fish and Shellfish Ecology (see section 2.1.3.4); and
 - Site Characterisation Report (document 8.15 of the DCO application) (see section 2.1.3.7).
24. The impacts of underwater noise associated with piling are addressed in the following application documents and the implications of the revised parameters are outlined in this report:
 - Environmental Statement;
 - Chapter 11 Fish and Shellfish Ecology (see section 2.1.3.4);
 - Chapter 12 Marine Mammals (see section 2.1.3.5); and

- Information to Support Habitats Regulations Assessment (HRA) Report (document 5.3 of the DCO application; (see section 2.1.3.6).

25. These effects apply only to the construction phase of the project, and there would be no change to any operation and maintenance and decommissioning phase impacts, therefore this report focusses only on construction impacts.

2.1.3.1 Environmental Statement - Chapter 8 Marine Geology, Oceanography and Physical Processes

2.1.3.1.1 Impacts on marine geology, oceanography and physical processes receptors

26. The assessment for marine geology, oceanography and physical processes considers impacts on the following receptors:

- Haisborough, Hammond and Winterton Special Area of Conservation (SAC);
- North Norfolk Sandbanks and Saturn Reef SAC;
- Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ); and
- East Anglian coast.

27. Due to the distance from the OWF sites (in which the offshore electrical platforms would be located) to these receptors, the EIA has concluded no impact in relation to works in the OWF sites; therefore, as this distance to the OWF sites remains as presented in the ES, the minor increase in drill arisings for the offshore electrical platforms within the OWF sites would not alter this conclusion. There would therefore be **no change to the Marine Geology, Oceanography and Physical Processes impact assessment (for Norfolk Vanguard alone or cumulatively with other projects).**

28. Table 2.3 provides a summary of the potential project impacts associated with drill arisings which are as presented in the ES.

Table 2.3 Summary of Relevant Potential impacts for Marine Geology, Oceanography and Physical Processes receptors

Relevant Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Construction						
Changes in Suspended Sediment Concentration s due to Drill Arisings for Installation of Piled	Haisborough, Hammond and Winterton SAC	N/A	N/A	No impact	N/A	No impact
	North Norfolk Sandbanks and Saturn Reef SAC	N/A	N/A	No impact	N/A	No impact

Relevant Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Foundations for Wind Turbines	Cromer Shoal Chalk Beds MCZ	N/A	N/A	No impact	N/A	No impact
	East Anglian coast	N/A	N/A	No impact	N/A	No impact
Changes in Seabed Level due to Drill Arisings for Installation of Piled Foundations for Wind Turbines	Haisborough, Hammond and Winterton SAC	N/A	N/A	No impact	N/A	No impact
	North Norfolk Sandbanks and Saturn Reef SAC	N/A	N/A	No impact	N/A	No impact
	Cromer Shoal Chalk Beds MCZ	N/A	N/A	No impact	N/A	No impact
	East Anglian coast	N/A	N/A	No impact	N/A	No impact

2.1.3.1.2 *Effects which have potential to impact marine water and sediment quality and benthic ecology*

29. Chapter 8 identifies potential effects/changes on marine physical processes for which the receptor is considered in other chapters (e.g. Chapter 9 Marine Water and Sediment Quality and Chapter 10 Benthic and Intertidal Ecology). The following effects, as a result of drill arisings are considered in ES Chapter 8:

- Changes in suspended sediment concentrations due to the sediment plume created by drill arisings during foundation installation in the offshore wind farm (section 8.7.7.2 of ES Chapter 8);
- Changes in seabed level (morphology) due to sediment deposited from plumes created by drill arisings and the fate of aggregated drill arisings that are not suspended during foundation installation (section 8.7.7.4 of ES Chapter 8)

Suspended sediments from drill arisings

30. Section 8.7.7.2 of ES Chapter 8 states that the drilling process would cause localised and short-term increases in suspended sediment concentrations at the point of discharge of the drill arisings. The seabed disturbance effects at each foundation location are only likely to last for the equivalent of a few days of construction activity within the overall construction programme of up to 20 months for foundation

installation for a single phased build scenario or two 8 month installations for a two-phased approach. The minor increase from a total of 834 to 858 piles would result in an increase in the total drill arisings for the project as a whole from 402,320m³ to 414,762m³ (as discussed in Section 2.1.2.1). This would cause no change to the predicted extent or duration of sediments remaining in suspension, given the very small (3%) increase in sediment volume and because the type of sediment and physical processes acting upon them would remain as presented in the ES. Therefore, there is **no change to the effects of suspended sediment presented in the ES.**

Drill arisings mound footprint

31. Section 8.7.7.4 of ES Chapter 8 states that the worst case mound footprint, based on conservative assumptions, would only represent 0.08% of the total seabed within the OWF sites. The minor increase in drill arisings for the offshore electrical platforms within the OWF sites from 402,320m³ to 414,762m³ would represent 0.082% of the total seabed within the OWF sites, therefore there is **no change to the worst case mound footprint presented in the ES.**

2.1.3.2 Environmental Statement - Chapter 9 Marine Water and Sediment Quality

32. The results of the Marine Geology, Oceanography and Physical Processes (ES Chapter 8) impact assessment informs the Marine Water and Sediment Quality (ES Chapter 9) assessment. As there are no changes to the conclusions of Chapter 8, there would be **no changes to the Marine Water and Sediment Quality impact assessment.**

2.1.3.3 Environmental Statement - Chapter 10 Benthic and Intertidal Ecology

33. The results of the Marine Geology, Oceanography and Physical Processes (ES Chapter 8) impact assessment also informs the Benthic and Intertidal Ecology impact assessment (ES Chapter 10). As there are no changes to the conclusions of Chapter 8, there would be **no changes to the Benthic Ecology impact assessment.**

2.1.3.4 Environmental Statement - Chapter 11 Fish and Shellfish Ecology

2.1.3.4.1 Drill arisings

34. The results of the Marine Geology, Oceanography and Physical Processes (ES Chapter 8) impact assessment informs the assessment of increased suspended sediment concentrations and sediment re-deposition impacts on fish ecology (section 11.7.4.2 in ES Chapter 11 Fish Ecology). As there are no changes to the conclusions of Chapter 8, there would be **no changes to the Fish Ecology impact assessment.**

2.1.3.4.2 Pile driving

Spatial worst case scenario

35. The impacts of underwater noise from pile driving on fish ecology are assessed in section 11.7.4.3 of ES Chapter 11. Underwater noise modelling provided in Appendix

5.3 of the ES gives estimated impact ranges based on the expected noise levels and frequencies at any one time, either for a single pile or concurrent piling. Although the proposed amendment to the offshore electrical platform foundations involves a small increase to the number of piles, the number of foundations to be piled at any one time will not change. The increase in the number of offshore electrical platform piles therefore has no influence on the impact range of underwater noise.

Temporal worst case scenario

36. In addition to the spatial extent of underwater noise impacts, consideration was also given to the temporal worst case scenario. The ES assessed a total duration of 1,260 hours of piling activity (equivalent of 52.5 days), for all project infrastructure which could be piled over a 4 year construction duration.
37. As discussed in section 2.1.2.2, the average piling duration per offshore electrical platform would increase by 18 hours from 9 hours to 27 hours (an increase of 36 hours in total for two platforms). Table 2.4 shows that the revised total piling duration for the project would be 1,296 hours (the equivalent of 54 days during the 4 year construction duration) which represents a <3% increase in the total duration of piling activity.

Table 2.4 Piling duration

Infrastructure	Worst case scenario	Total no. of piles	Hours per pile - piling	Total hours
WTGs	6hrs per pile (9MW monopile) x 200 piles; or 1.5hrs per pin-pile (9MW quadropod) x 800 piles	800	1.5	1200
Offshore Electrical Platform	two platforms with 18 piles each	36	1.5	54
Accommodation Platform	two platforms with six piles each	12	1.5	18
Metmast	two metmasts with four piles each	8	1.5	12
LiDAR	2 LiDAR with monopiles	2	6	12
Total				1,296

38. As an additional 1.5 days of piling¹ within 4 years of construction is a minimal change, the magnitude of effect would not exceed the low classification identified in the ES based on the magnitude definitions presented in Table 11.5 of ES Chapter 11². This would therefore result in **no change to the Fish Ecology impact assessment**

¹ 54 days minus the 52.5 days assessed in the ES

² A low magnitude is defined as a discernible, temporary (throughout project duration) change, over a minority of the receptor, and / or limited but discernible alteration to key characteristics or features of the particular receptor's character or distinctiveness.

conclusions for Norfolk Vanguard alone or cumulatively with other projects. Table 2.5 provides a summary of the potential impacts on fish ecology associated with underwater noise from piling which are as presented in the ES.

Table 2.5 Summary of Relevant Potential impacts for Fish and Shellfish receptors

Potential Impact	Receptor	Value/ Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Construction						
Increased suspended sediment concentrations and sediment re-deposition	Adult and juvenile fish in general	Low	Low	Minor adverse	N/A	Minor adverse
	Sandeels	Medium	Low	Minor adverse	N/A	Minor adverse
	Herring	Low	Low	Minor adverse	N/A	Minor adverse
	Other species with spawning grounds in the offshore project area	Low	Low	Minor adverse	N/A	Minor adverse
	Shellfish	Low	Low	Minor adverse	N/A	Minor adverse
Underwater noise from piling (mortality/recoverable injury)	Fish with no swim bladder	Low - general	Negligible	Negligible	N/A	Negligible
		Medium - sandeels	Negligible	Minor adverse	N/A	Minor adverse
	Fish with swim bladder not involved in hearing	Low -general	Negligible	Negligible	N/A	Negligible
		Medium-Gobies	Negligible	Minor adverse	N/A	Minor adverse
	Fish with swim bladder involved in hearing	Low	Negligible	Negligible	N/A	Negligible
	Eggs and larvae	Medium	Negligible	Minor adverse	N/A	Minor adverse
	Shellfish	Medium	Negligible	Minor adverse	N/A	Minor adverse
	Sole, plaice, lemon sole	Low	Low	Minor adverse	N/A	Minor adverse

Potential Impact	Receptor	Value/ Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Underwater noise from piling (TTS and behavioural)	and mackerel					
	Sandeels	Medium	Low	Minor adverse	N/A	Minor adverse
	Sea bass	Low	Low	Minor adverse	N/A	Minor adverse
	Cod, whiting and sprat	Low	Low	Minor adverse	N/A	Minor adverse
	Herring	Medium	Low	Minor adverse	N/A	Minor adverse
	Elasmobranchs	Low	Low	Minor adverse	N/A	Minor adverse
	Diadromous species	Low	Low	Minor adverse	N/A	Minor adverse

2.1.3.5 Environmental Statement - Chapter 12 Marine Mammals

39. The following potential impacts associated with underwater noise during piling were assessed in section 12.7.4.2 of the ES at Chapter 12:

- Permanent auditory injury (harbour porpoise, grey seal and harbour seal);
- Temporary auditory injury (harbour porpoise, grey seal and harbour seal);
- Disturbance (harbour porpoise, grey seal and harbour seal); and
- Possible behavioural response in harbour porpoise.

40. The assessment of potential auditory injury (permanent and temporary) is based on the spatial extent of noise impacts for piling at any one time. Disturbance and possible behavioural response impacts are assessed on a spatial and temporal basis.

Spatial worst case scenario

41. As discussed in Section 2.1.3.4.2, underwater noise modelling provided in Appendix 5.3 of the ES gives estimated impact ranges based on the expected noise levels and frequencies at any one time, either for a single pile or concurrent piling. Although the proposed amendment to the offshore electrical platform foundations involves a greater number of piles, the number of foundations to be piled at any one time will not change.

42. As the spatial extent of noise impacts (and the associated potential number of marine mammals that could be affected) is assessed for piling noise at any one time, it is not dependent on the total number of piles. The increase in offshore electrical platform piles therefore has no influence on the conclusions of the auditory injury

impact assessments or the spatial aspects of the disturbance and possible behavioural response assessments.

Temporal worst case scenario

43. For the temporal aspect of disturbance and possible behavioural response, Table 2.6 shows the revised total piling duration for the project for an increase in the number of offshore electrical platform piles. The total piling duration includes 10 minutes of Acoustic Deterrent Device (ADD) deployment per pile, which may be used to provide mitigation for auditory injury impacts and should therefore be considered in the disturbance and behavioural response assessment. The revised total piling duration would be 1,439 hours (the equivalent of 60 days during the 4 year construction duration). When compared with the duration assessed in the ES of 1,399 hours (equivalent of 58 days), an additional 2 days of piling within the 4 years of construction is a minimal change which would not alter the negligible to low magnitude of effect identified in the ES. This is due to the temporal nature of the effect remaining intermittent and temporary (in accordance with the magnitude definitions presented in Table 12.7 of ES Chapter 12). Therefore there is **no change to the Marine Mammal impact assessment conclusions (for Norfolk Vanguard alone or cumulatively with other projects)**. Table 2.7 provides a summary of the potential impacts on marine mammals associated with underwater noise from piling which remain as presented in the ES.

Table 2.6 Piling and ADD duration

Infrastructure	Worst case scenario	Total no. of piles	Hours per pile - piling	Hours per pile - ADD	Total hours
WTGs	6hrs per pile (9MW monopile) x 200 piles; or 1.5hrs per pin-pile (9MW quadropod) x 800 piles	800	1.5	0.17 (10mins)	1333.3
Offshore Electrical Platform	Two platforms with 18 piles per platform	36	1.5	0.17 (10mins)	60
Accommodation Platform	Two platforms with six piles per platform	12	1.5	0.17 (10mins)	20
Metmast	Two metmasts with four piles per platform	8	1.5	0.17 (10mins)	13.3
LiDAR	2 LiDARs (monopile)	2	6	0.17 (10mins)	12.3
Total					1,439

Table 2.7 Summary of Relevant Potential impacts for Marine Mammals

Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Construction						
Impact 2: Underwater Noise during Piling						
Permanent Threshold Shift (PTS) from single strike of starting hammer energy	Harbour porpoise	High	Negligible	Minor adverse	Marine Mammal Mitigation Protocol (MMMP) for piling (in accordance with the Outline MMMP (document 8.13) submitted with the application)	Minor adverse
	Grey seal & harbour seal	High	Negligible	Minor adverse		Minor adverse
PTS from single strike of maximum hammer energy	Harbour porpoise	High	Negligible	Minor adverse	MMMP for piling including embedded mitigation	Minor adverse
	Grey seal & harbour seal	High	Negligible	Minor adverse		Minor adverse
PTS from Cumulative Sound Exposure Level (SEL)	Harbour porpoise	High	Negligible to Low	Minor to Moderate adverse	MMMP for piling including embedded mitigation	Minor adverse
	Grey seal & harbour seal	High	Negligible	Minor adverse		Minor adverse
Temporary Threshold Shift (TTS) and fleeing response	Harbour porpoise	Medium	Negligible	Minor adverse	MMMP for piling including embedded mitigation	Minor adverse
	Grey seal & harbour seal	Medium	Negligible	Minor adverse		Minor adverse
Disturbance during piling for single installation	Harbour porpoise	Medium	Negligible	Minor adverse	Southern North Sea candidate	Minor adverse
	Grey seal & harbour seal	Medium	Negligible	Minor adverse	Special Area of Conservation Site	Minor adverse
Disturbance during concurrent piling	Harbour porpoise	Medium	Negligible to Low	Minor adverse	Integrity Plan (in accordance with the In Principle Site Integrity Plan (document 8.17) submitted with the application)	Minor adverse
	Grey seal & harbour seal	Medium	Negligible	Minor adverse		Minor adverse
Possible behavioural	Harbour porpoise	Low	Low	Minor adverse		Minor adverse

2.1.3.6 Information to Support HRA Report

44. The HRA Screening (Appendix 5.1 of the Information to Support HRA report (document 5.3)) identified potential effects on the following features of Natura 2000 sites:

- Offshore ornithology (assessed in section 6 of the Information to Support HRA report);
 - Annex I Habitats (Reef and Sandbanks; section 7 of the Information to Support HRA report);
 - Annex II Species (Marine mammals; section 8 of the Information to Support HRA report); and
 - Onshore Annex I Habitats and Annex II Species (section 9 of the Information to Support HRA report).
45. Offshore electrical platforms are not relevant to the HRA for offshore ornithology, Annex I habitats or onshore designated sites due to the location of the works and/or the absence of a pathway for an effect on the sites or features of interest (e.g. the HRA for Annex I habitats relates to the Haisborough, Hammond and Winterton SAC which is affected only by offshore export cable installation).
46. The following designated sites in relation to marine mammals (Annex II species) are considered in section 8 of the Information to Support HRA Report:
- Southern North Sea cSAC/SCI (Harbour porpoise);
 - Humber Estuary SAC (Grey seal);
 - The Wash and North Norfolk Coast SAC (Harbour seal and grey seal); and
 - Winterton-Horsey Dunes SAC (Site is important for grey seal although not currently included as a feature).
47. Offshore electrical platforms are only relevant to the southern North Sea cSAC/SCI assessment as, due to the distance between the offshore electrical platforms (within the wind farm sites) and other relevant SACs, there is no pathway for effects.
48. The Information to Support HRA report (document 5.3; Section 8.3.1.1.2) provides an assessment of potential harbour porpoise displacement from the summer and winter areas of the southern North Sea cSAC/SCI. The Statutory Nature Conservation Bodies (SNCBs) current advice (Natural England, June 2017) is that displacement from the southern North Sea cSAC/SCI should not exceed 20% of the seasonal component of the southern North Sea cSAC/SCI at any one time and/or exceed, on average, 10% of the seasonal component of the southern North Sea cSAC/SCI over the duration of that season.
49. As with the Marine Mammal ES chapter (discussed in section 2.1.3.5), only the temporal element of underwater noise effects is influenced by the number of piles and therefore there is no change to the assessment of displacement at any one time.
50. Table 2.8 provides a comparison of the results presented in the Information to Support HRA report and the updated seasonal piling duration. This shows that an additional two days of piling as a result of the increased number of offshore

electrical platform piles (discussed above in section 2.1.3.5) would not result in an increase in the seasonal averages for Norfolk Vanguard beyond the 10% threshold based on the current SNCB advice (Natural England, June 2017). This would therefore cause **no change to the conclusion of no adverse effect on site integrity for the project (for Norfolk Vanguard alone or in-combination with other projects).**

Table 2.8 Comparison of ES and updated seasonal piling duration for single pile installation with the project installed in a single phase (Table 8.17 of the Information to Support HRA report)

Season	Duration based on ES/HRA worst-case scenario	Maximum seasonal averages in the Information to Support HRA report	Revised duration	Revised maximum seasonal area averages in the ES
Summer	All 59 days in one season = 32% of the summer period	<ul style="list-style-type: none"> NV East = 2.6% of southern North Sea (SNS) cSAC summer area; or NV West = 2.6% of SNS cSAC summer area; 	All 60 days in one season = 33% of the summer period	<ul style="list-style-type: none"> NV East = 2.6% of SNS cSAC summer area; or NV West = 2.6% of SNS cSAC summer area;
Winter	All 59 days in one season = 32% of the winter period.	<ul style="list-style-type: none"> NV East = 1.95% of SNS cSAC winter area; or NV West = 2.6% of SNS cSAC winter area³ 	All 60 days in one season = 33% of the winter period.	<ul style="list-style-type: none"> NV East = 1.98% of SNS cSAC winter area; or NV West = 2.6% of SNS cSAC winter area

51. Section 8.3.1.1.7 of the Information to Support HRA report considers the impacts on marine mammals associated with potential changes to water quality. As there are no changes to the Marine Water and Sediment Quality impact assessment (see section 2.1.3.2), there would be **no changes to the conclusions of this assessment in the Information to support HRA report.**

2.1.3.7 Site Characterisation Report

52. The quantity of material to be disposed as a result of potential drilling is discussed in Section 4.2 of the Site Characterisation Report (Document reference number 8.15). As discussed in Section 2.1.2.1, the total volume of drill arisings for all offshore infrastructure assessed in the Site Characterisation Report was 402,320m³. The

³ Table 8.17 in the Information to Support HRA report includes an erratum (see Errata report (document Pre-ExA;Errata;9.4) for further information). The value (2.6%) presented here is the corrected maximum winter seasonal area average for NV West.

increase in drill arisings for the offshore electrical platforms would result in a revised total of 414,762m³.

53. The potential impacts of disposal considered within the Site Characterisation Report are informed by Chapter 8 Marine Geology, Oceanography and Physical Processes, Chapter 9 Marine Water and Sediment Quality and Chapter 10 Benthic and Intertidal Ecology. As discussed above in Sections 2.1.3.1, 2.1.3.2 and 2.1.3.3 there are **no changes to the conclusions of these impact assessments and therefore there is no change to the impacts of disposal considered within the Site Characterisation Report.**

2.1.3.8 Consultation

54. Norfolk Vanguard has consulted the Marine Management Organisation and Natural England on the above amendment and is currently awaiting their response.

2.2 Amendments to the submitted onshore order limits

55. Ongoing liaison with landowners and National Grid has identified a number minor amendments to the submitted Order Limits and to the nature of interests sought in certain affected land parcels. All amendments are required to accommodate requests from landowners or National Grid; details of the relevant landowner negotiations are included in Appendix 1. The amendments have been requested by landowners to further minimise potential disruption during construction and/or operation. The proposed amendments all relate to minor amendments to the originally submitted alignments and so will not result in any changes to the previously described construction methodologies or timings.
56. The amendments are all located within the previously agreed EIA study areas and therefore the baseline presented within the submitted ES remains appropriate for the consideration of potential changes to the findings reported therein.
57. Within the following sections each proposed amendment is described along with a table considering the proposed change in the context of the previously assessed environmental topics.
58. As the original impact assessment reported impacts at a relatively large-scale, i.e. based on the overall footprint of the onshore cable route, onshore project substation or landfall, it is not meaningful to present the originally reported impact assessment significance levels for each topic for these very localised changes. As such, the assessment presented within the following sections considers the proximity of receptors to the proposed amendment and whether this would change the potential impact at that very localised level.

59. The associated plot numbers as presented within the submitted Land Plans (DCO document 2.2) are also provided for each amendment.

2.2.1 Cable Route amendment - Salle Estate (Plot No. 22/01, 22/03 and 22/04 – Land Plans Sheet 22)

60. A minor amendment to the onshore cable route has been requested in this location by the landowner. The location is north of Reepham centred on National Grid Reference TG 105 239. The cable route amendment has been requested by the landowner to minimise interaction with a parcel of land put forward in a “call for sites” for potential future housing allocations, as part of the Greater Norwich Local Plan.

61. The proposed route amendment is shown on Figure 1, which also indicates the extent of the Order limits within the original application that are no longer required. The route amendment is a total length of 460m and would replace a length of the previously submitted cable route that had a total length of 410m. The route amendment is wholly located within the same arable field as the original alignment and located wholly within the EIA study areas identified within the submitted ES.

62. Table 2.9 provides a consideration of the proposed route amendment in relation to each of the previously assessed onshore EIA topics.

Table 2.9 Salle Estate considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposal is no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposal is located wholly within the same arable field as the original alignment and is no closer to any identified sensitive receptors associated with land use and agriculture. The route amendment is a total length of 460m and would replace a length of the previously submitted cable route that had a total length of 410m. The increase in area of land required does not lead to any increase in the previously reported magnitude of impacts, therefore the significance remains the same.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	The proposal is no closer to any identified sensitive receptors associated with onshore ecology and ornithology, and therefore there will be no change to the previously reported findings.	No change
Traffic and transport (Chapter 24)	The proposal will not lead to any increase in the previously reported traffic demand and will not change the traffic distribution across the relevant identified links, and therefore there will be no change to the previously reported findings.	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Noise and vibration (Chapter 25)	<p>The nearest noise sensitive receptor in this location is CRR15 to the south of the cable route on Oak Drive (refer to ES Figure 25.2 – map 5 of 9). This was located approximately 85m from the original cable route alignment. No significant construction noise impacts were identified (reported as 57.9dB based on a significance threshold of 65dB).</p> <p>The eastern aspect of the proposed route alignment brings the construction works in slightly closer proximity to a residential property north of the route on the B1145. This was originally 95m from the works. The proposed route alignment will reduce this distance of separation to 85m. However, this matches the distance of separation for the nearest noise sensitive receptor that was originally assessed. No significant noise impacts are anticipated as a result of the proposed route amendment.</p>	No change
Air quality (Chapter 26)	<p>The eastern aspect of the proposed route alignment brings the construction works in slightly closer proximity to a residential property north of the route on the B1145. This was originally 95m from the works. The proposed route alignment will reduce this distance of separation to 85m. However, this matches the distance of separation for the nearest property along the original alignment. No significant air quality impacts were identified in the original assessment. As such, no significant air quality impacts are anticipated as a result of the proposed route amendment.</p>	No change
Human health (Chapter 27)	<p>In the context of the proposed route alignment, potential health impacts are related to potential increases to construction noise, air quality and exposure to historic contaminants. As stated above, there are no identified changes to the findings of these assessments, therefore no significant impacts to human health are anticipated as a result of the proposed cable route amendment. As such, there will be no change to the previously reported findings.</p>	No change
Onshore archaeology and cultural heritage (Chapter 28)	<p>The proposal is no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and the proposal does not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment, and therefore there will be no change to the previously reported findings.</p>	No change
Landscape and visual impact (Chapter 29)	<p>The proposal is no closer to any identified sensitive visual receptors and does not lead to any change in views from previously identified sensitive receptors. The construction methodology is unchanged from that previously assessed and the proposed amendment would not lead to any increased visibility or change in landscape character. As such, there will be no change to the previously reported findings.</p>	No change
Tourism and recreation (Chapter 30)	<p>The proposal is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.</p>	No change
Socio-economics (Chapter 31)	<p>The proposed cable route amendment will not result in any changes to the reported construction workforce numbers,</p>	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	and therefore there will be no change to the previously reported findings.	

63. Based on the review provided in Table 2.9 there are **no changes to the impacts identified for onshore EIA receptors associated with the proposed cable route amendment**. The findings of the submitted Environmental Statement remain valid.

2.2.2 Cable Route and access amendment – A Jones (Plot No. 28/03, 28/04, 28/05 and 28/06 – Land Plans Sheet 28)

64. A minor amendment to the alignment of the north-south construction access has been requested in this location by the landowner. The request would move the proposed north-south access approximately 25m east into the adjacent field, also owned by this landowner. This positions the construction access on the opposite side of an existing broad hedgerow, which will increase the distance of separation between the construction access and the landowner’s residence, with the hedgerow adding natural screening of construction vehicles.

65. A minor amendment to the onshore cable route has also been requested in this location by the same landowner. The proposed amendment aligns the cable route closer to the southern field boundary, seeking to minimise the area of the field taken out of production during construction.

66. The proposed changes to the construction access and the cable route alignment are shown on Figure 2, which also indicates the extent of the Order limits within the original application that are no longer required.

67. The location of these amendments is centred on National Grid Reference TG 044 178. The amendments are located wholly within the EIA study areas identified within the submitted ES. Table 2.10 provides consideration of these proposed amendments in relation to each of the previously assessed onshore EIA topics.

Table 2.10 A Jones considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposal is no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposals are no closer to any identified sensitive receptors associated with land use and agriculture. The new areas of land required are comparable in size to those that are no longer required, i.e. there is no net increase in the	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	area of land affected. Any changes are considered negligible and do not lead to any increase in the previously reported magnitude of impacts, therefore the previously assessed impact significance remains unchanged.	
Onshore ecology and ornithology (Chapters 22 and 23)	The proposals are no closer to any identified sensitive receptors associated with onshore ecology and ornithology. The new construction access will be located on the opposite side of the existing hedgerow; however, the hedgerow will not be affected. As such, there will be no change to the previously reported findings.	No change
Traffic and transport (Chapter 24)	The proposals will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	The proposals are no closer to any identified noise sensitive receptors. The access proposal positions the construction access on the opposite side of an existing broad hedgerow, which will increase the distance of separation between the construction access and the landowner's residence, with the hedgerow adding natural screening of construction vehicles. As such, there will be no change to the previously reported findings.	No change
Air quality (Chapter 26)	The proposals are no closer to any identified sensitive receptors associated with air quality, and therefore there will be no change to the previously reported findings.	No change
Human health (Chapter 27)	The proposals are no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposals are no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and do not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposals are no closer to any identified sensitive receptors and do not lead to any change in views from previously identified sensitive receptors that would lead to an increase in visual impact or a change in landscape character. The access proposal positions the construction access on the opposite side of an existing broad hedgerow, which will increase the distance of separation between the construction access and the landowner's residence, with the hedgerow adding natural screening of construction vehicles. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposal is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed cable route amendment will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

68. Based on the review provided in Table 2.10 there are **no changes to the impacts identified for onshore EIA receptors associated with the proposed cable route and construction access amendments**. The findings of the submitted Environmental Statement remain valid.

2.2.3 Access amendment – G Anderson (Plot No. 34/11 – Land Plans Sheet 34)

69. A minor amendment to a construction access has been requested in this location by the landowner. The access amendment comprises a 150m length of the east-west construction access being removed and replaced by two shorter accesses: one approximately 10m in length; and one approximately 70m in length.
70. With this amendment construction traffic would utilise the running track along the cable route, and only require short lengths of track to access and egress the running track. This would avoid a block of woodland in proximity to the cable route.
71. The location of this amendment is centred on National Grid Reference TF 974 150. The proposed changes to this construction access are shown on Figure 3, which also indicates the extent of the Order limits within the original application that are no longer required.
72. The amendment is located wholly within the EIA study areas identified within the submitted Environmental Statement. Table 2.11 provides a consideration of these proposed amendments in relation to each of the previously assessed onshore EIA topics.

Table 2.11 G Anderson considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed access change is no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposal is no closer to any identified sensitive receptors associated with land use and agriculture. The area of land required represents a net reduction in land take compared to the original application; however, this is considered negligible and does not lead to any change in the previously reported magnitude of effect or the significance of the impact.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	<p>The proposed access change will avoid the loss of 0.06ha of plantation woodland.</p> <p>Bats have been confirmed roosting within a tree at the north-western corner of this block of plantation woodland. In addition, the edge of this woodland block was identified as having moderate suitability for supporting foraging bats.</p> <p>The proposed access route amendment would remove any requirement for direct losses to this woodland block. At a</p>	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	<p>localised level this represents a reduction in the potential for direct impacts to bats utilising this block of woodland for foraging and roosting. At a project level the overall impacts reported for bat species would remain unchanged.</p> <p>Beyond this the proposed access change is no closer to any other sensitive receptors associated with onshore ecology and ornithology, and therefore there will be no change to the previously reported findings.</p>	
Traffic and transport (Chapter 24)	The access change will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	The proposed access change is no closer to any identified noise sensitive receptors, and therefore there will be no change to the previously reported findings.	No change
Air quality (Chapter 26)	The proposed access change is no closer to any identified sensitive receptors associated with air quality, and therefore there will be no change to the previously reported findings.	No change
Human health (Chapter 27)	The proposed access change is no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the previously reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposal is no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and does not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposal is no closer to any identified sensitive receptors and does not lead to any change in views from previously identified sensitive receptors that would lead to an increase in visual impact or a change in landscape character. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposed access change is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed access change will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

73. Based on the review provided in Table 2.11 there are **no changes to the impacts identified for onshore EIA receptors associated with these two construction access amendments**. Whilst there is a very localised reduction in potential impacts to roosting and foraging bats associated with a block of plantation woodland, the findings of the submitted Environmental Statement are considered to remain valid.

2.2.4 Access amendments – EF Harrold (Plot No. 18/06, 18/07, 19/02 and 19/03 – Land Plans Sheets 18 and 19)

74. Minor amendments to two construction accesses have been requested in this location by the landowner.
75. An amendment to the western access requires a 200m length of the east-west construction access to be relocated approximately 15m south, running parallel to the original alignment. This would take construction traffic off the main access to the landowner’s residential property at National Grid Reference TG 153 261 earlier and take advantage of an existing farm access into the field where construction works will take place. The location of this amendment is centred on National Grid Reference TG 148 261.
76. An amendment to the eastern access requires a 200m length of the north-south construction access to be relocated approximately 50m east, running parallel to the original alignment. The amendment has been requested by the landowner to avoid a block of vegetation used for shooting cover. The location of this amendment is centred on National Grid Reference TG 160 264.
77. The proposed changes to these two construction accesses are shown on Figure 4, which also indicates the extent of the Order limits within the original application that are no longer required.
78. The amendments are located wholly within the EIA study areas identified within the submitted Environmental Statement. Table 2.12 provides a consideration of these proposed amendments in relation to each of the previously assessed onshore EIA topics.

Table 2.12 EF Harrold considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed access changes are no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposals are no closer to any identified sensitive receptors associated with land use and agriculture. There is no net increase in the area of land required for these access amendments; as such any change is considered negligible and would not lead to any increase in the previously reported magnitude of effect, therefore the significance of impact remains unchanged. As such, there will be no change to the previously reported findings.	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Onshore ecology and ornithology (Chapters 22 and 23)	The proposed access changes are no closer to any identified sensitive receptors associated with onshore ecology and ornithology. The eastern amendment avoids a block of vegetation used for shooting cover. However, this vegetation has little ecological value and does not result in any changes to the previously reported impacts.	No change
Traffic and transport (Chapter 24)	The access changes will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	The proposed access changes are no closer to any identified noise sensitive receptors, and therefore there will be no change to the previously reported findings.	No change
Air quality (Chapter 26)	The proposed access changes are no closer to any identified sensitive receptors associated with air quality, and therefore there will be no change to the previously reported findings.	No change
Human health (Chapter 27)	The proposed access changes are no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the previously reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposed access changes are no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and do not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposed access changes are no closer to any identified sensitive receptors and do not lead to any change in views from previously identified sensitive receptors that would lead to any increase in visual impact or a change in landscape character. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposed access changes are no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed access changes will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

79. Based on the review provided in Table 2.12 there are **no changes to the impacts identified for onshore EIA receptors associated with these two construction access amendments**. The findings of the submitted Environmental Statement remain valid.

2.2.5 Access amendment – S Hammond (Plot No. 07/05 – Land Plans Sheet 7)

80. A minor amendment to an operational access has been requested in this location by the landowner. The access amendment removes an approximately 220m north-south section of the originally proposed operational access which ran parallel to the existing formal access to a residential property. The amendment would instead utilise the existing property access for this 220m stretch, with a short (15m) access introduced that connects the property access to the project area.
81. The location of this amendment is centred on National Grid Reference TG 302 318. The proposed change to this operational access is shown on Figure 5, which also indicates the extent of the Order limits within the original application that are no longer required.
82. The amendment is located wholly within the EIA study areas identified within the submitted Environmental Statement. Table 2.13 provides a consideration of this proposed amendment in relation to each of the previously assessed onshore EIA topics.

Table 2.13 S Hammond considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed access change is no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposal utilises an existing access and is no closer to any identified sensitive receptors associated with land use and agriculture. There is a reduction in the area of agricultural land required, however this is considered negligible and does not lead to any change in the previously reported magnitude of effect, therefore the impact significance remains unchanged.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	The proposed access change is no closer to any sensitive receptors associated with onshore ecology and ornithology, and therefore there will be no change to the previously reported findings.	No change
Traffic and transport (Chapter 24)	The access change will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	The proposed access change is no closer to any identified noise sensitive receptors, and therefore there will be no change to the previously reported findings.	No change
Air quality (Chapter 26)	The proposed access change is no closer to any identified sensitive receptors associated with air	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	quality, and therefore there will be no change to the previously reported findings.	
Human health (Chapter 27)	The proposed access change is no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the previously reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposal is no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and does not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposal is no closer to any identified sensitive receptors and does not lead to any change in views from previously identified sensitive receptors that would lead to any increase in visual impact or a change in landscape character. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposed access change is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed access change will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

83. Based on the review provided in Table 2.13 there are **no changes to the impacts identified for onshore EIA receptors associated with this operational access amendment**. The findings of the submitted Environmental Statement remain valid.

2.2.6 Route amendment – C Allhusen (Plot No. 38/10, 39/4, 39/5, 39/06, 39/07, 39/08, 39/11, 39/13, 39/14, 39/15, 40/01, 40/03, 40/04, 40/05, 40/06, 40/07, 40/10, and 40/12 – Land Plans Sheet 38, 39 and 40)

84. Two cable route options were included at this location within the original application – a northern and a southern option. Both options were assessed within the submitted Environmental Statement. Further discussion with the landowner (C Allhusen) and the property owner located in proximity to both options (Mr and Mrs Garrett of Wood Farm) has identified a preferred route which crosses between the two previously assessed routes, across two arable fields.

85. The amendment to connect the northern and southern routes requires a 500m amendment to the cable route to cross two arable fields to the south of Wood Farm. The location of the amendment is centred on National Grid Reference TF 910 108.

86. The proposed route amendment is shown on Figure 6, which also indicates the extent of the Order limits within the original application that are no longer required. The total length of the preferred route is the same as the previously assessed northern route in this location (both 2.7km in total). The route amendment is wholly located within the same two arable fields as the originally assessed alignments, and located wholly within the EIA study areas identified within the submitted Environmental Statement.
87. Table 2.14 provides a consideration of the proposed route amendment in relation to each of the previously assessed onshore EIA topics.

Table 2.14 C Allhusen considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed route amendment is no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposed route amendment does not increase the area of agricultural land taken out of production – the total length of the originally assessed northern route in this location was 2.7km and the total length of the new route (including the 500m route amendment) is 2.7km. The amendment crosses the same two arable fields that are crossed by the originally assessed northern route. In addition, the route amendment follows field boundaries for approximately 80% of its 500m length; this is considered beneficial in comparison to both the originally submitted northern and southern route options in this location. As such, there may be a small improvement on the amount of land isolated during the works in a localised context. At a project level this improvement is assessed as negligible. As such, there will be no change to the previously reported findings.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	<p>The proposed route amendment crosses two arable fields that were previously identified as having no ecological interest. The 40m wide corridor overlaps with a small stand of mature trees located within one of these arable fields. The location of the trees is shown on Figure 6.</p> <p>A site visit was undertaken in October 2018 to determine the bat roost potential of this stand of trees. The trees are semi-mature but assessed to be of negligible to low bat roost potential, i.e. not supporting features suitable to support roosting bats. However, given the bat presence in the wider area the trees themselves are considered valuable bat foraging habitat.</p> <p>The embedded mitigation committed to within the submitted Environmental Statement and captured within the Outline Landscape and Ecological Management Strategy (OLEMS) (DCO document 8.7) will be applied in this location, specifically section 9.7.2 of the OLEMS. As such:</p>	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
	<ul style="list-style-type: none"> The cable route working width will be reduced from 40m to 20m in proximity to this stand of trees; and Trees will be avoided. <p>With these project wide embedded mitigation measures applied there will be no tree losses associated with the proposed cable route amendment, and therefore no impact to foraging or roosting bats.</p> <p>Beyond this the proposed route amendment is no closer to any other sensitive receptors associated with onshore ecology and ornithology. As such, there will be no change to the previously reported findings.</p>	
Traffic and transport (Chapter 24)	The proposed route amendment will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	<p>The proposed route amendment is approximately 50m at its closest to the residential property at Wood Farm. The façade of the residence at Wood Farm is identified by Noise Sensitive Receptor SSR4* within the originally submitted Environmental Statement. This was originally assessed for noise modelling based on a distance of separation of 38m between the property façade and the construction works. Construction noise impacts for SSR4* were assessed as “no impact”.</p> <p>As the route amendment increases the distance of separation between SSR4* and the construction works potential construction noise impacts will remain as no impact.</p>	No change
Air quality (Chapter 26)	The proposed route amendment is no closer to any identified sensitive receptors associated with air quality, and therefore there will be no change to the previously reported findings.	No change
Human health (Chapter 27)	The proposed route amendment is no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the previously reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposal is no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and does not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and visual impact (Chapter 29)	The proposal is no closer to any identified sensitive receptors and does not lead to any change in views from previously identified sensitive receptors that would lead to any increase in visual impact or a change in landscape character. As such, there will be no change to the previously reported findings.	No change
Tourism and recreation (Chapter 30)	The proposed route amendment is no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Socio-economics (Chapter 31)	The proposed route amendment will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

88. Based on the review provided in Table 2.14 there are **no changes to the impacts identified for onshore EIA receptors associated with the proposed cable route amendment**. The findings of the submitted Environmental Statement remain valid.

2.2.7 National Grid Tower Search Area and Repositioning of Overhead Line

89. Two amendments have been identified and requested by National Grid to the dimensions of the tower search area footprints - Work No. 11 (E) and Work No. 11 (W) – as defined on the submitted Works Plan (DCO ref: 2.4). In addition, National Grid has requested that the Order is amended to permit a permanent right to be acquired for two sections of the overhead line which will be repositioned as a result of the new tower locations (Figure 8). Discussions with National Grid's advisors have also suggested that the area scheduled for permanent new rights within National Grid's sealing end compound (at plot 41/33) should be enlarged to permit the acquisition of rights over the whole compound area. It is therefore proposed to extend this plot accordingly (Figures 7 and 8). It should be noted that National Grid's final approval of the changes proposed to the overhead line and related infrastructure is awaited. The two tower amendments represent a widening of the available search areas within which the two overhead line towers will be located. The permanent footprint and heights of the two new towers will be unchanged from that previously assessed. The increased size of the search areas is required to provide flexibility to National Grid when micrositing the position of towers at the detailed design stage. Although these changes fall within the existing Order limits, the nature of the compulsory acquisition powers being sought (freehold acquisition/permanent new rights/ temporary possession) in the affected land parcels will change, with a net increase in the land subject to permanent compulsory acquisition.

90. The proposed increased dimensions of the two tower search areas avoid any interaction with a block of proposed tree planting to be undertaken as part of the embedded mitigation for Norfolk Vanguard (Work No. 10C) and avoids any interaction with previously approved landscape mitigation associated with the operational Dudgeon substation.

91. The location of these amendments is centred on National Grid Reference TF 890 108. The proposed changes are shown on Figure 7, which also indicates the originally submitted extent of the tower search areas and overhead line temporary works.
92. The amendments are located wholly within the EIA study areas identified within the submitted Environmental Statement. Table 2.15 provides a consideration of this proposed amendment in relation to each of the previously assessed onshore EIA topics.

Table 2.15 National Grid tower search area and overhead line repositioning considerations

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Ground conditions and contamination (Chapter 20)	The proposed amendments are no closer to any identified sensitive receptors associated with ground conditions and contamination, and therefore there will be no change to the previously reported findings.	No change
Land use and agriculture (Chapter 21)	The proposed amendments are located wholly within the same arable field as the original works and are no closer to any identified sensitive receptors associated with land use and agriculture. The increase in the search area is considered negligible and does not lead to any increase in the previously reported magnitude of effect, therefore the impact significance remains unchanged. As such, there will be no change to the previously reported findings.	No change
Onshore ecology and ornithology (Chapters 22 and 23)	The proposed amendments are no closer to any sensitive receptors associated with onshore ecology and ornithology, and therefore there will be no change to the previously reported findings.	No change
Traffic and transport (Chapter 24)	The proposed amendments will not lead to any increase in the previously reported traffic demand and will not change how traffic is distributed across the identified links, and therefore there will be no change to the previously reported findings.	No change
Noise and vibration (Chapter 25)	The proposed amendments are no closer to any identified noise sensitive receptors, and therefore there will be no change to the previously reported findings.	No change
Air quality (Chapter 26)	The proposed amendments are no closer to any identified sensitive receptors associated with air quality, and therefore there will be no change to the previously reported findings.	No change
Human health (Chapter 27)	The proposed amendments are no closer to any identified sensitive receptors associated with human health, and therefore there will be no change to the previously reported findings.	No change
Onshore archaeology and cultural heritage (Chapter 28)	The proposed amendments are no closer to any identified sensitive receptors associated with onshore archaeology and cultural heritage and do not affect known buried heritage assets or any of the receptors assessed in the heritage settings assessment any more than previously reported. As such, there will be no change to the previously reported findings.	No change
Landscape and Visual Impact	The originally submitted footprints for Work No. 11 East and West represent two stretches of the existing overhead line	No change

Onshore ES topic	Consideration of potential effects	Change to previously assessed findings?
Assessment (Chapter 29)	<p>(of approximately 50m each) along which the new and replacement towers will be located.</p> <p>The proposed widening of these two search areas effectively increases the section of the overhead lines along which a new and replacement tower may be located from approximately 50m to 100m. The dimensions of the towers remain the same as that originally assessed. Whilst the final position of the towers has the potential to be located anywhere along a 100m stretch of overhead line compared to the original 50m stretch, the assessment originally undertaken remains representative for the landscape and visual impact assessment.</p> <p>The proposed amendment avoids any interaction with a proposed block of mitigation tree planting (Work No. 10C) and avoids any interaction with previously approved landscape mitigation associated with the operational Dudgeon substation. As such, this change will not alter any commitments proposed for landscape screening associated with this project or Dudgeon Offshore Wind Farm.</p> <p>The proposed minor repositioning of the overhead line results in no change to the Landscape and Visual Impact Assessment.</p>	
Tourism and recreation (Chapter 30)	The proposed amendments are no closer to any identified sensitive receptors associated with tourism and recreation, and therefore there will be no change to the previously reported findings.	No change
Socio-economics (Chapter 31)	The proposed amendments will not result in any changes to the reported construction workforce numbers, and therefore there will be no change to the previously reported findings.	No change

93. Based on the review provided in Table 2.15 there are **no changes to the impacts identified for onshore EIA receptors associated with the increased dimensions of the tower search areas - Work No. 11 East and Work No. 11 West, or the repositioned sections of the overhead line.** The findings of the submitted Environmental Statement remain valid.

2.2.8 Onshore cable route operational access amendment – Plot No. 20/12, 20/13, 20/14, 20/15, 20/16 (Land Plans Sheet 20)

94. The approach adopted to identify operational access through the project design was to secure an access route into each field parcel that the onshore cable route passes through to ensure that future cable repairs can be made as necessary with minimum impact whilst also attempting to minimise the need to damage crops and hedgerows. To achieve this, the project description includes access to the cable route in the majority of fields along the length of the onshore cable route. However,

following a recent detailed site walkover and further on-site investigations, it has become apparent that the proposed side access as shown on sheet 20 of the Land Plans (parcels 20/12, 20/13, 20/14, 20/15, 20/16) is not tenable and this operational access has therefore been removed from the Order limits.

95. The location of the amendment is centred on National Grid Reference TG 126 243. The proposed access amendment is shown on Figure 9, which indicates the extent of the Order limits within the original application that are no longer required.
96. No alternative access is proposed and its removal will result in **no changes to the impacts previously identified**. The findings of the submitted Environmental Statement remain valid.

2.3 Summary of Design Amendments

97. Table 2.16 summarises all design amendments and confirms that there are no changes to the impact assessments in the submitted ES and other DCO application documents as a result of the amendments.

Table 2.16 Summary of design amendments

Amendment	Reason	Any change to impact significance assessed in the ES?	Details of changes to conclusions of other documents affected
Offshore			
Increase in maximum number of piles per offshore electrical platform (from 6 to 18) and an increase in diameter of pin-piles for offshore electrical platforms from 3m to 5m.	Due to liaison between Norfolk Vanguard Limited and offshore electrical platform foundation providers.	No changes	Site Characterisation Report (DCO document reference 8.15) – no changes. Information to Support HRA Report – no changes.
Onshore			
Salle Estate Cable route amendment (centred on National Grid Reference TG 105 239). Figure 1.	Requested by landowner to minimise interaction with a parcel of land put forward in a “call for sites” for potential future housing allocations, as part of the Greater Norwich Local Plan.	No changes	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.
A Jones Movement of the north-south construction access 25m east at National Grid Reference	Requested by landowner to increase separation distance between construction access and landowner’s residence;	No changes	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.

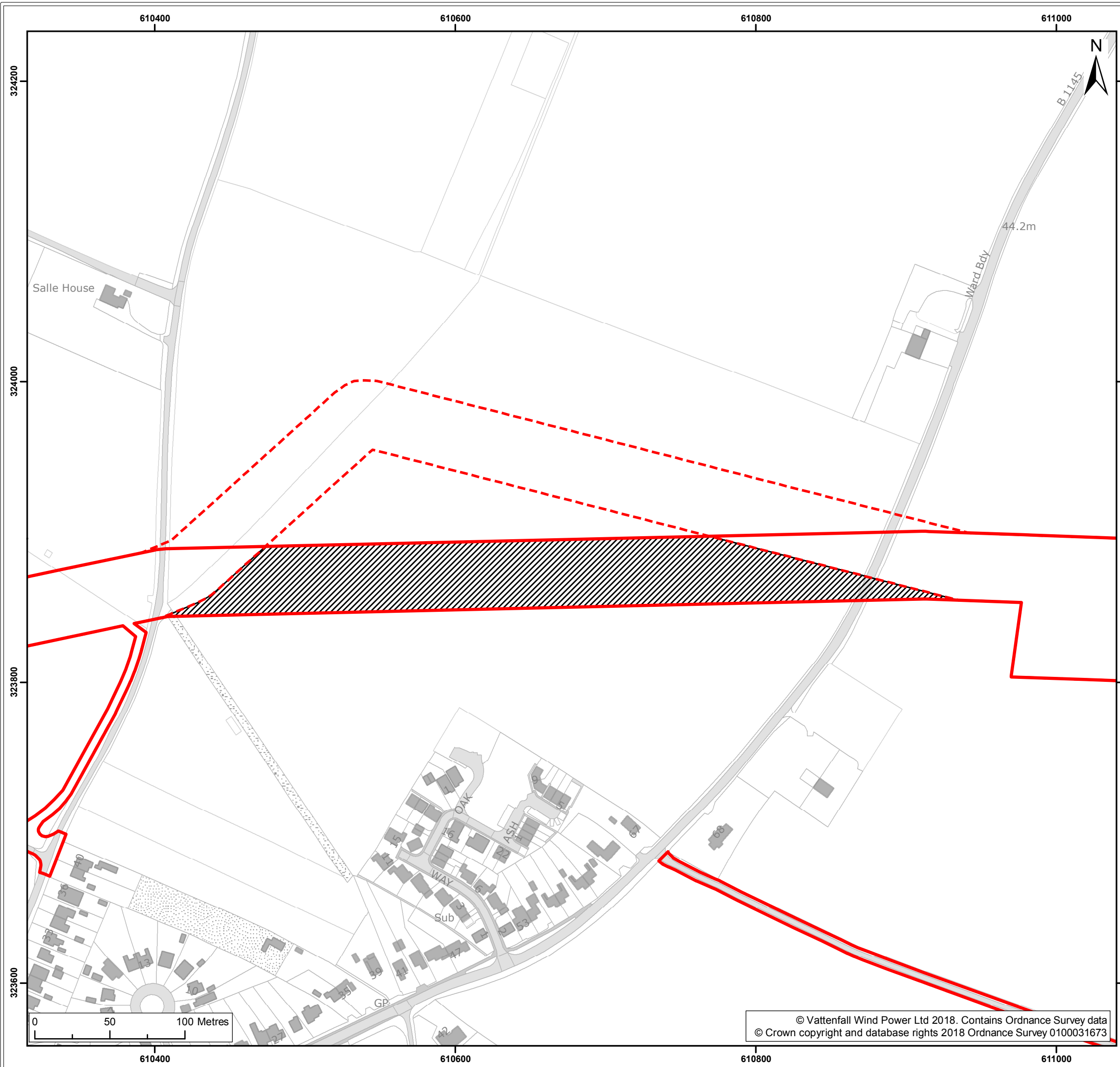
Amendment	Reason	Any change to impact significance assessed in the ES?	Details of changes to conclusions of other documents affected
TG 044 178. Figure 2.	the amendment also offers additional screening from an existing hedgerow.		
G Anderson 150m length of the east-west construction access being removed and replaced by two short accesses: one approximately 10m in length; and one approximately 70m in length at National Grid Reference TF 974 150. Figure 3.	Requested by landowner to maximise the use of the running track within the cable route and only require short lengths of the existing access to access and egress the running track. The amended route would avoid a block of woodland in proximity to the cable route.	No changes	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.
EF Harrold Amendment to western access: Relocation of a 200m length of the east-west construction access to 15m south (centred on National Grid Reference TG 148 261). Figure 4.	Requested by landowner to take advantage of an existing farm access for construction works.	No changes	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.
EF Harrold Amendment to eastern access: Relocation of a 200m length of the north-south construction access to 50m east (centred on National Grid Reference TG 160 264). Figure 4.	Requested by landowner to avoid a block of vegetation used for shooting cover.	No changes	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.
S Hammond 220m north-south section of the proposed access to be removed and use the existing property for this stretch instead, with a 15m access introduced to connect the property access to the project	Requested by landowner to reduce the length of new access to be constructed at this location.	No changes.	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.

Amendment	Reason	Any change to impact significance assessed in the ES?	Details of changes to conclusions of other documents affected
area. Centred on National Grid Reference TG 302 318. Figure 5			
C Allhusen 500m amendment to the cable route near Wood Farm, at National Grid Reference TF 910 108. Figure 6.	Modification identified through discussions with landowner and adjacent property owner to minimise disruption to both parties.	No changes	Land Plans, Works Plans and Book of Reference to be updated. Amendments anticipated to draft DCO, Explanatory Memorandum and Statement of Reasons
National Grid Widening of the tower search area and inclusion of permanent right for repositioned section of overhead line. Figure 7	Requested by National Grid to provide flexibility when micro-siting the overhead line towers at the detailed design stage.	No changes.	Land Plans, Works Plans and Book of Reference to be updated. Amendments anticipated to draft DCO, Explanatory Memorandum and Statement of Reasons
Removal of proposed operational access to onshore cable route at National Grid Reference TG 126 243. Figure 9	Following a detailed site walkover and further on-site investigations the proposed side access as shown on sheet 20 of the Land Plans (parcels 20/12, 20/13, 20/14, 20/15, 20/16) is not tenable. No alternative is required.	No change	Land Plans, Works Plans and Book of Reference to be updated. No other documents affected.

3 REFERENCES

Natural England (2017). Current Advice on Assessment of Impacts on the Southern North Sea Harbour Porpoise cSAC. Note dated 13th June 2017.

FIGURES



- Legend:
- Salle route amendment
 - Norfolk Vanguard onshore red line boundary
 - Section of order limits no longer required

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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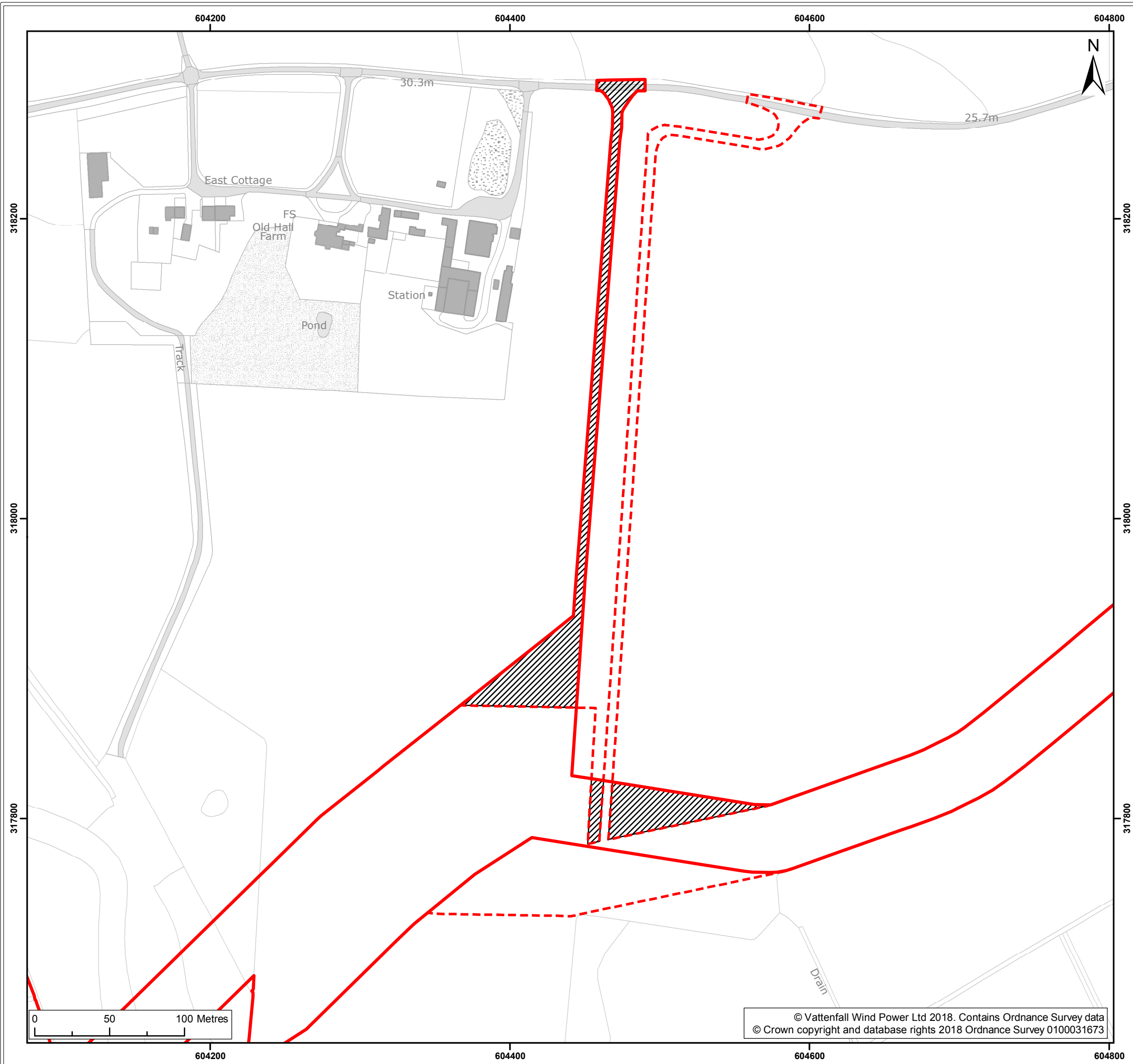
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03	08/10/2018	LB	JA	A3	1:2,500

Co-ordinate system: British National Grid EPSG: 27700

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- Legend:
-  Ann Jones route amendment
 -  Norfolk Vanguard onshore red line boundary
 -  Section of order limits no longer required

Project:	Report:
Norfolk Vanguard Offshore Wind Farm	Change Report

Title:
Ann Jones route amendment

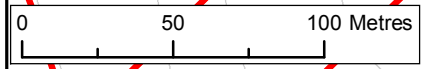
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Co-ordinate system: British National Grid EPSG: 27700





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- Legend:
- Glen Anderson access amendment
 - Norfolk Vanguard onshore red line boundary
 - Section of order limits no longer required

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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Title:
Glen Jones access amendment

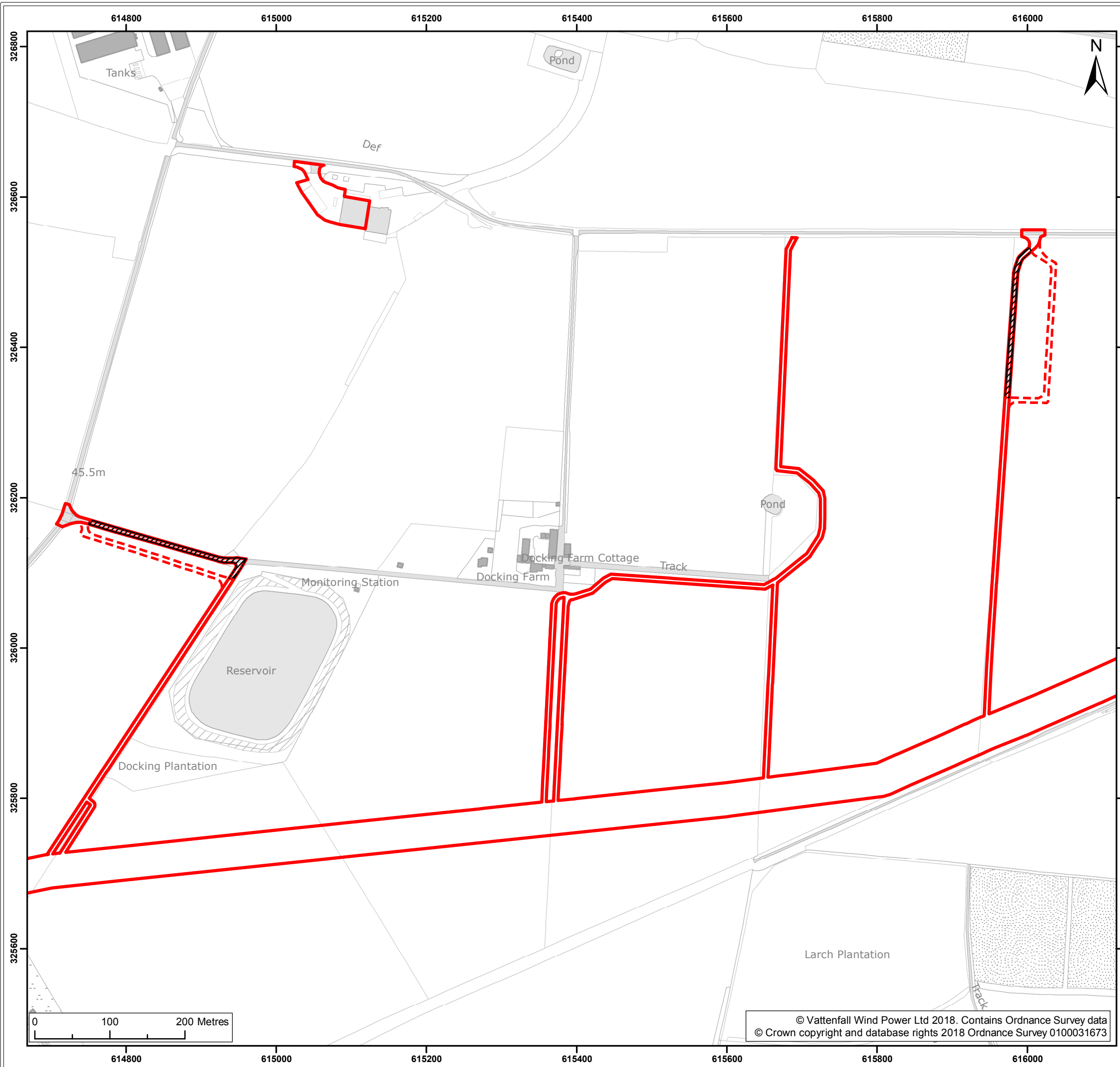
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Co-ordinate system: British National Grid EPSG: 27700



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Legend:

- EF Harold access amendment
- Norfolk Vanguard onshore red line boundary
- Section of order limits no longer required

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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Title:
EF Harold access amendment

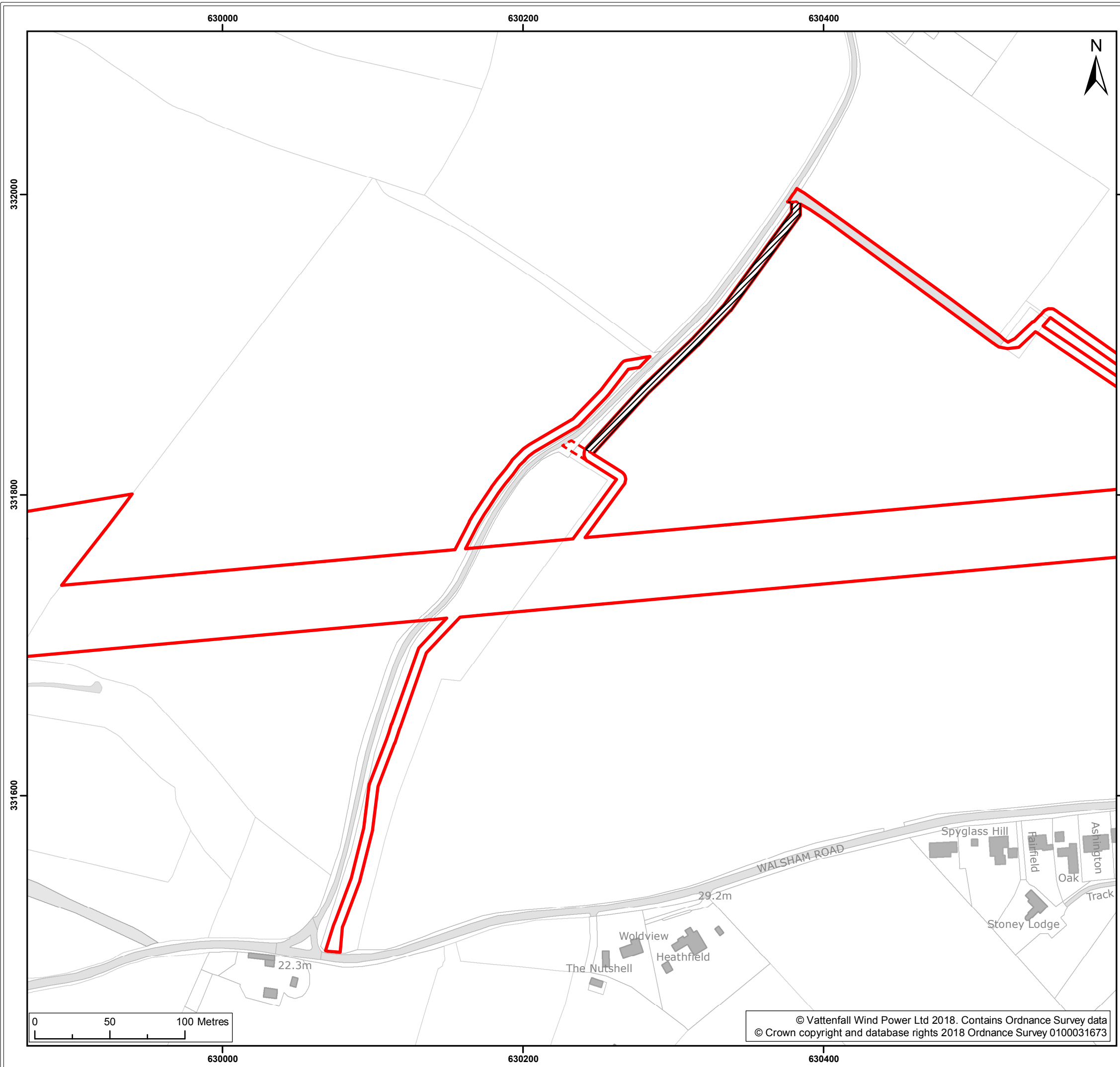
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- Legend:
- Hammond access amendment
 - Norfolk Vanguard onshore red line boundary
 - Section of order limits no longer required

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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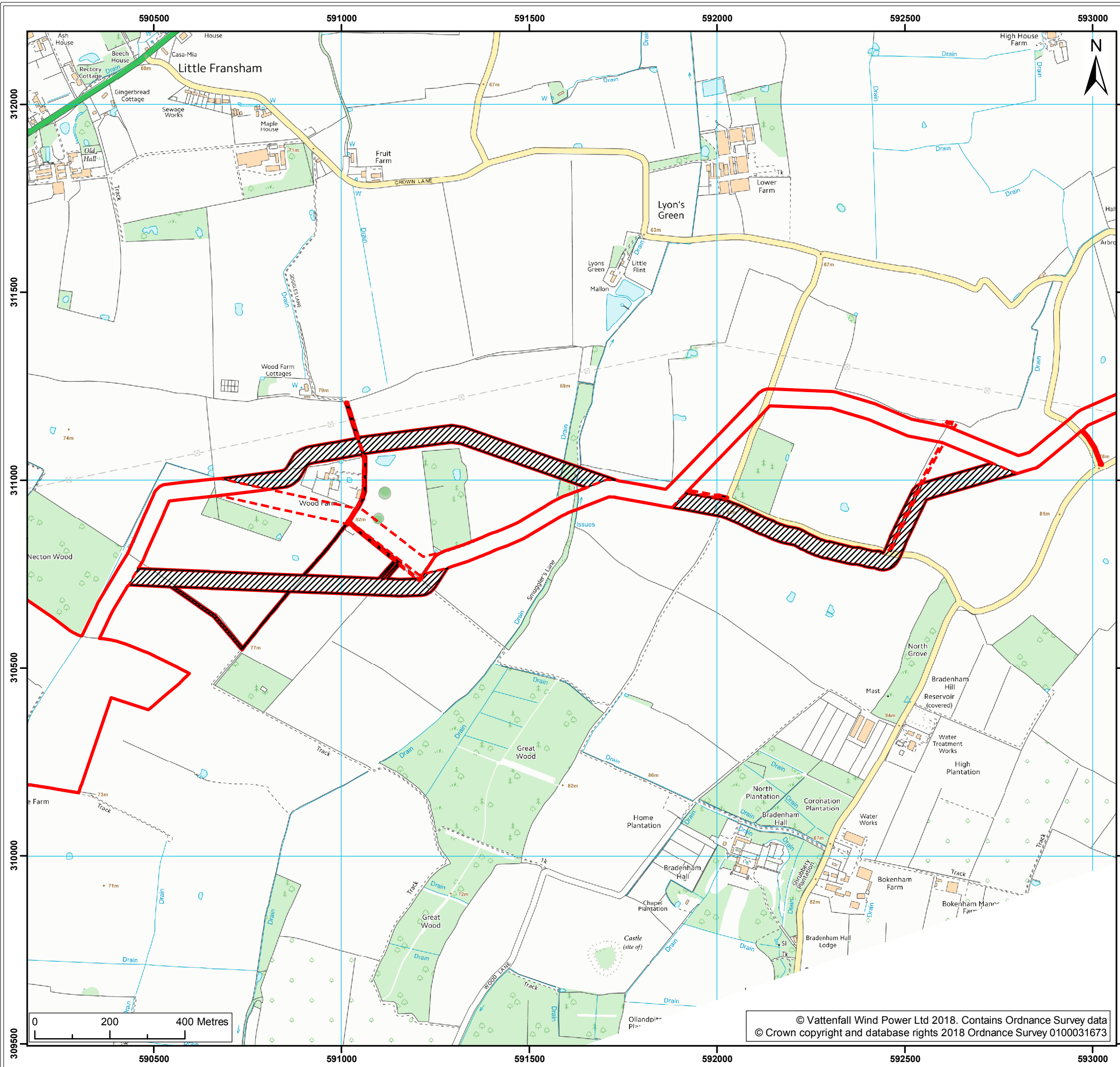
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Hammond access amendment

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Co-ordinate system: British National Grid EPSG: 27700



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Legend:

- C Allhusen access/cable route amendment
- Norfolk Vanguard onshore red line boundary
- Section of order limits no longer required
- Broadleaved woodland - semi-natural

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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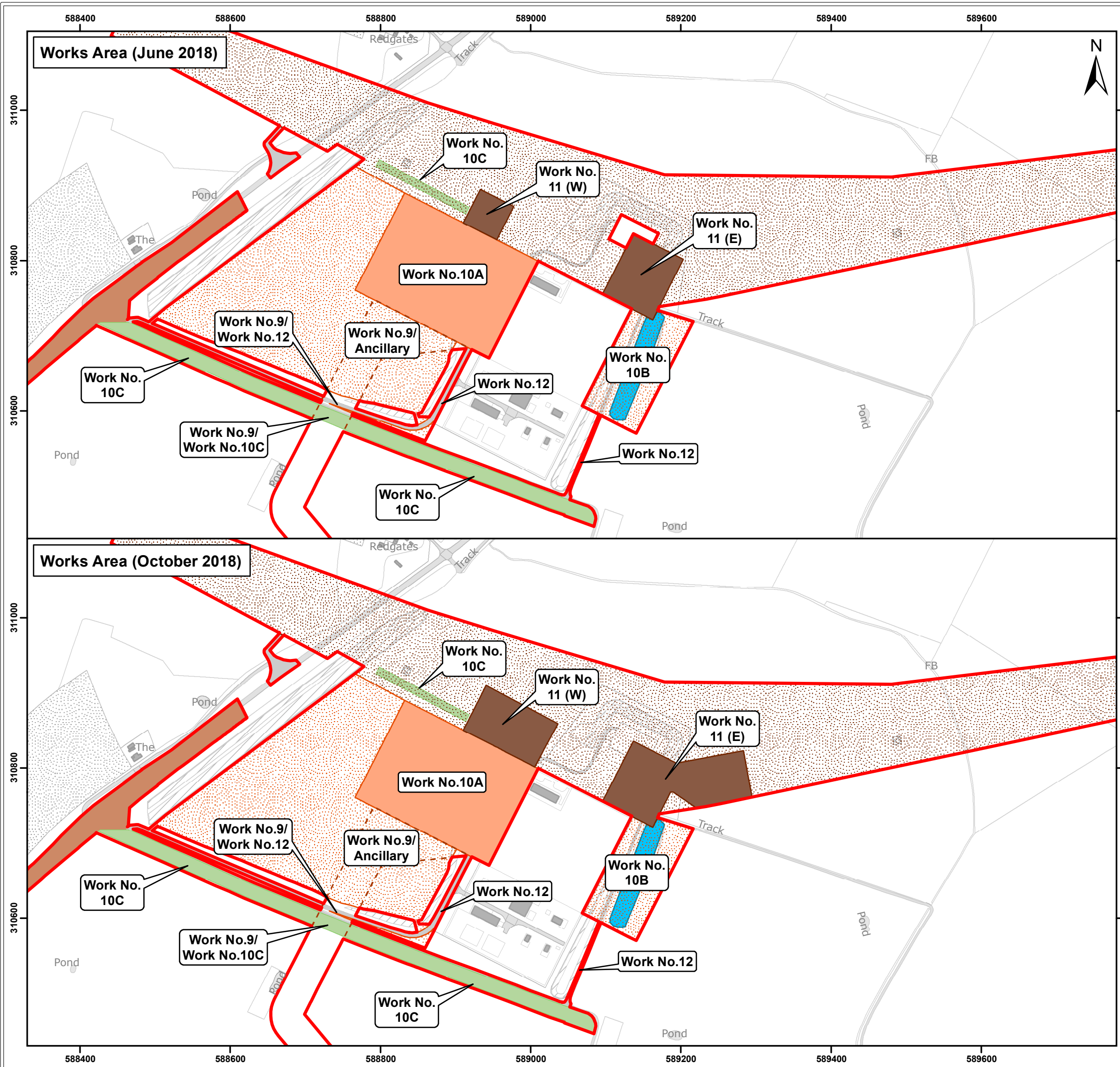
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03	28/11/2018	LB	JA	A3	1:5,000

Co-ordinate system: British National Grid EPSG: 27700

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Legend:

- Norfolk Vanguard onshore red line boundary
- Onshore cable route**
 - Onshore 400kv cable route
- Access**
 - Construction access
 - Operation access
- National Grid**
 - National Grid substation extension
 - National Grid new / replacement overhead line tower search area
 - National Grid temporary works
 - Overhead line temporary works
- Mitigation areas**
 - Indicative attenuation pond
 - Indicative mitigation planting

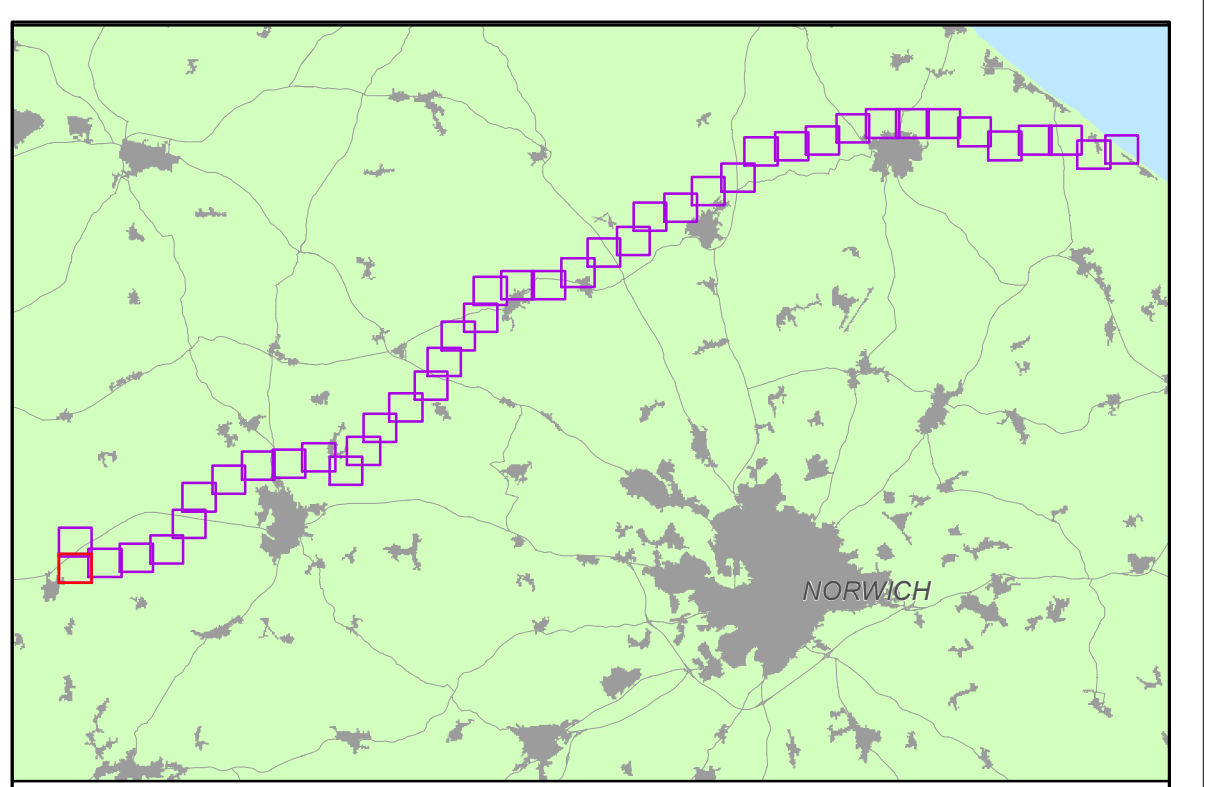
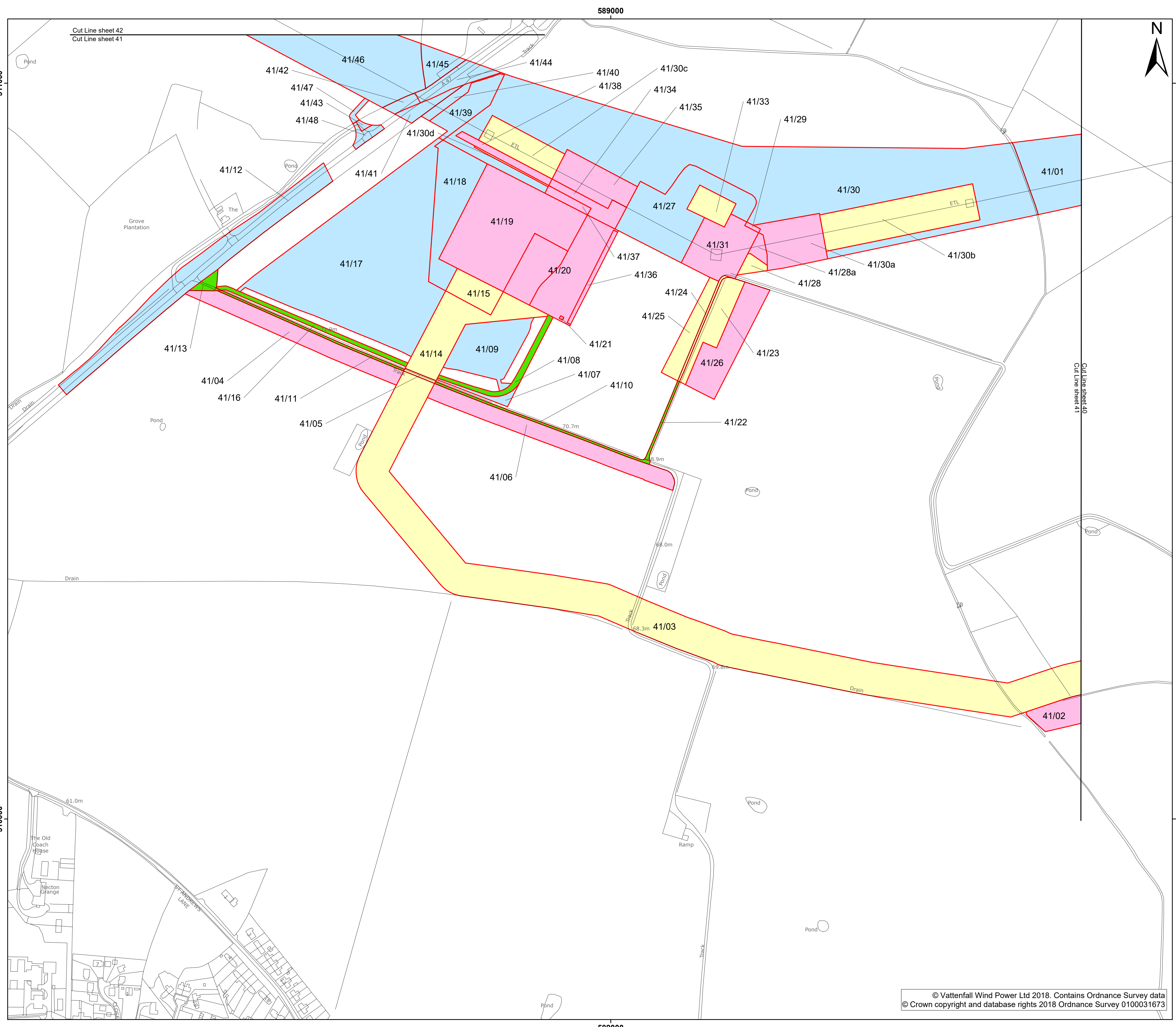
Project:	Report:
Norfolk Vanguard Offshore Wind Farm	Change Report

Title:
National grid National Grid new / replacement overhead line tower search area amendment

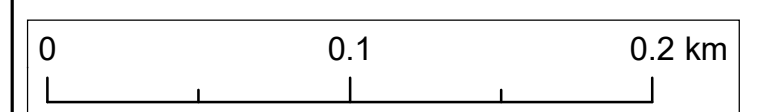
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Co-ordinate system: British National Grid EPSG: 27700

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- Colour**
- Temporary Rights
 - Acquisition of Permanent New Rights, Access Only
 - Permanent Freehold Acquisition
 - Acquisition of Permanent New Rights



Project: Norfolk Vanguard Offshore Wind Farm
 Report: Development Consent Order

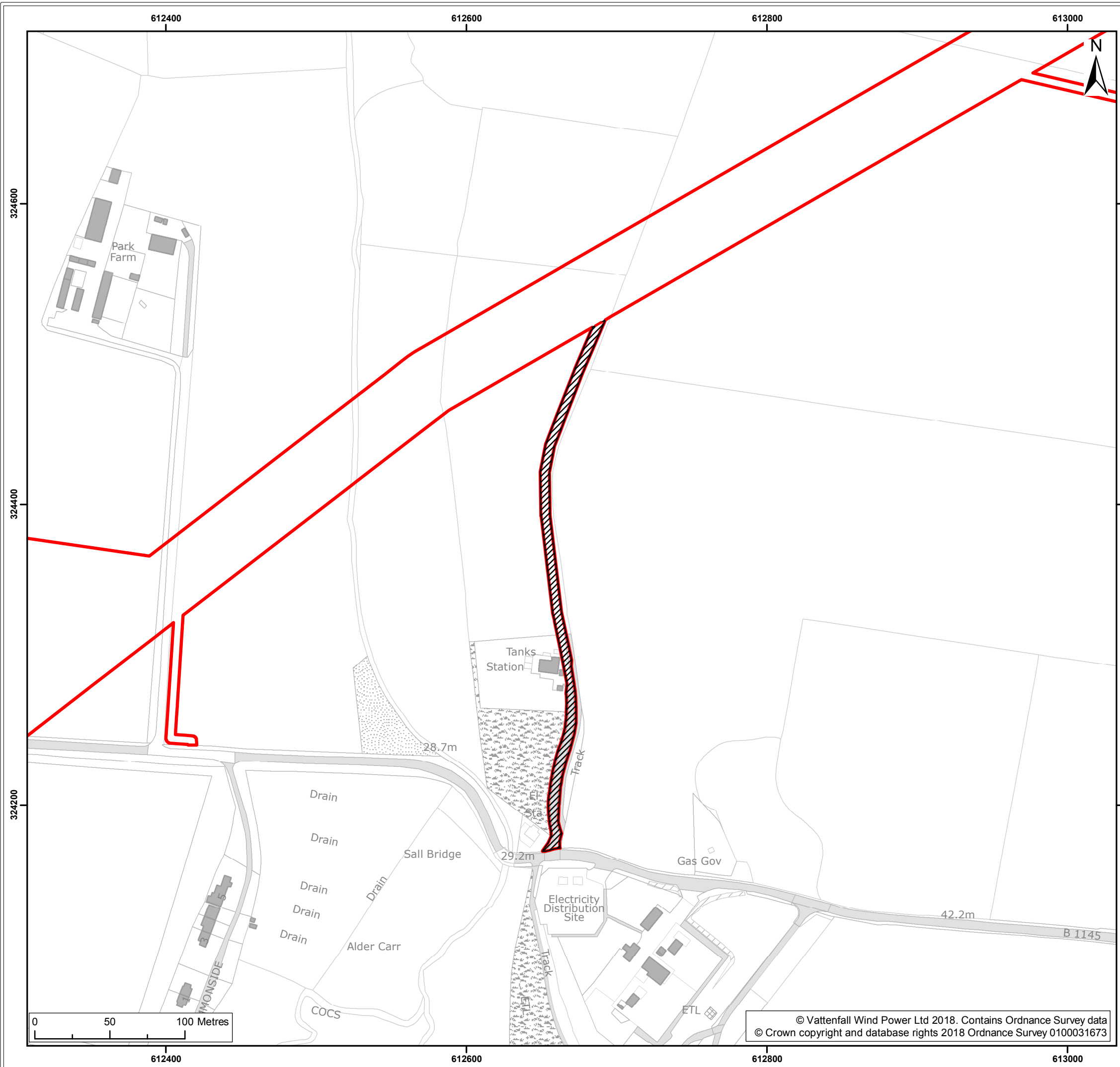
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 Sheet 41

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Co-ordinate system: British National Grid EPSG: 27700

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- Legend:
- Access amendment
 - Norfolk Vanguard onshore red line boundary
 - Section of order limits no longer required

Project: Norfolk Vanguard Offshore Wind Farm	Report: Change Report
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Title:
Access amendment

Figure: 9	Drawing No: PB4476-008-002-009				
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01	28/11/2018	LB	JA	A3	1:2,500

Co-ordinate system: British National Grid EPSG: 27700

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APPENDIX 1

Status of relevant landowner negotiations

Cable Route Amendment (Plot No)	Date of original change request to Order limits	Status of landowner negotiations
Salle Estate (Plot No. 22/01, 22/03 and 22/04 – Land Plans Sheet 22)	March 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been reissued and Vattenfall are awaiting receipt of these. Confirmation of route change acceptance has now been received from the agent representing Salle.
A Jones (Plot No.28/03, 28/04, 28/05 and 28/06 – Land Plans Sheet 28)	April 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been returned agreeing to the route change.
G Anderson (Plot No. 34/11 – Land Plans Sheet 34)	May 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been reissued and Vattenfall are awaiting receipt of these. Confirmation of route change acceptance has now been received from the agent representing Glenn Anderson.
EF Harrold (Plot No. 18/06, 18/07, 19/02 and 19/03 – Land Plans Sheets 18 and 19)	April 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been reissued and Vattenfall are awaiting receipt of these.
S Hammond (Plot No. 07/05 – Land Plans Sheet 7)	April 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been returned agreeing to the route change.
C Allhusen (Plot No.38/10, 39/4, 39/5, 39/06, 39/07, 39/08, 39/11, 39/13, 39/14, 39/15, 40/01, 40/03, 40/04, 40/05, 40/06, 40/07, 40/10, and 40/12 – Land Plans Sheet 38, 39 and 40)	June 2018	Following full assessment this change has been accepted by Vattenfall. This has been discussed and agreed in principle with the affected landowner. Heads of Terms have been returned agreeing to the route change.
Mr and Mrs Garrett - Land Plans Sheet 39 (in relation to route amendment C Allhusen, see above)	May 2018	Following full assessment this change has been accepted by Vattenfall. Email confirmation received from the affected landowner confirming their acceptance of the change. The affected party is a neighbouring landowner to the amendment and so no Heads of Terms are required to be signed.
TC Dudgeon OFTO Plc - National Grid Tower Search Area and Repositioning of Overhead Line- Land Plans Sheet 40	Requested by National Grid June 2018	Following full assessment this change has been accepted by Vattenfall. Email confirmation received from the affected landowner confirming their acceptance of the change. Discussions are taking place regarding the required Heads of Terms agreements.
DH King, JM King, MA King, CA Tomkins - National Grid Tower Search Area and Repositioning of Overhead	Requested by National Grid June 2018	Following full assessment this change has been accepted by Vattenfall. The change has been discussed with the affected landowner. Vattenfall are progressing discussions with the agent representing the landowners.

Cable Route Amendment (Plot No)	Date of original change request to Order limits	Status of landowner negotiations
Line - Land Plans Sheet 40		
<p>Alexander Gavin Angell Lane & Mills & Reeve Trust Corporation Limited, Norfolk County Council, Anglian Water Services Limited, Eastern Power Networks plc.</p> <p>Plot No. 20/12, 20/13, 20/14, 20/15, 20/16</p>	<p>November 2018</p>	<p>This change was proposed by Norfolk Vanguard and a full assessment has been undertaken. The affected landowners have been notified that these plots are no longer required and Heads of Terms plans have been updated and reissued (Alexander Gavin Angell Lane & Mills & Reeve Trust Corporation Limited, Norfolk County Council).</p> <p>For two landowners (Anglian Water Services Limited and Eastern Power Networks), Heads of Terms are now no longer required.</p>