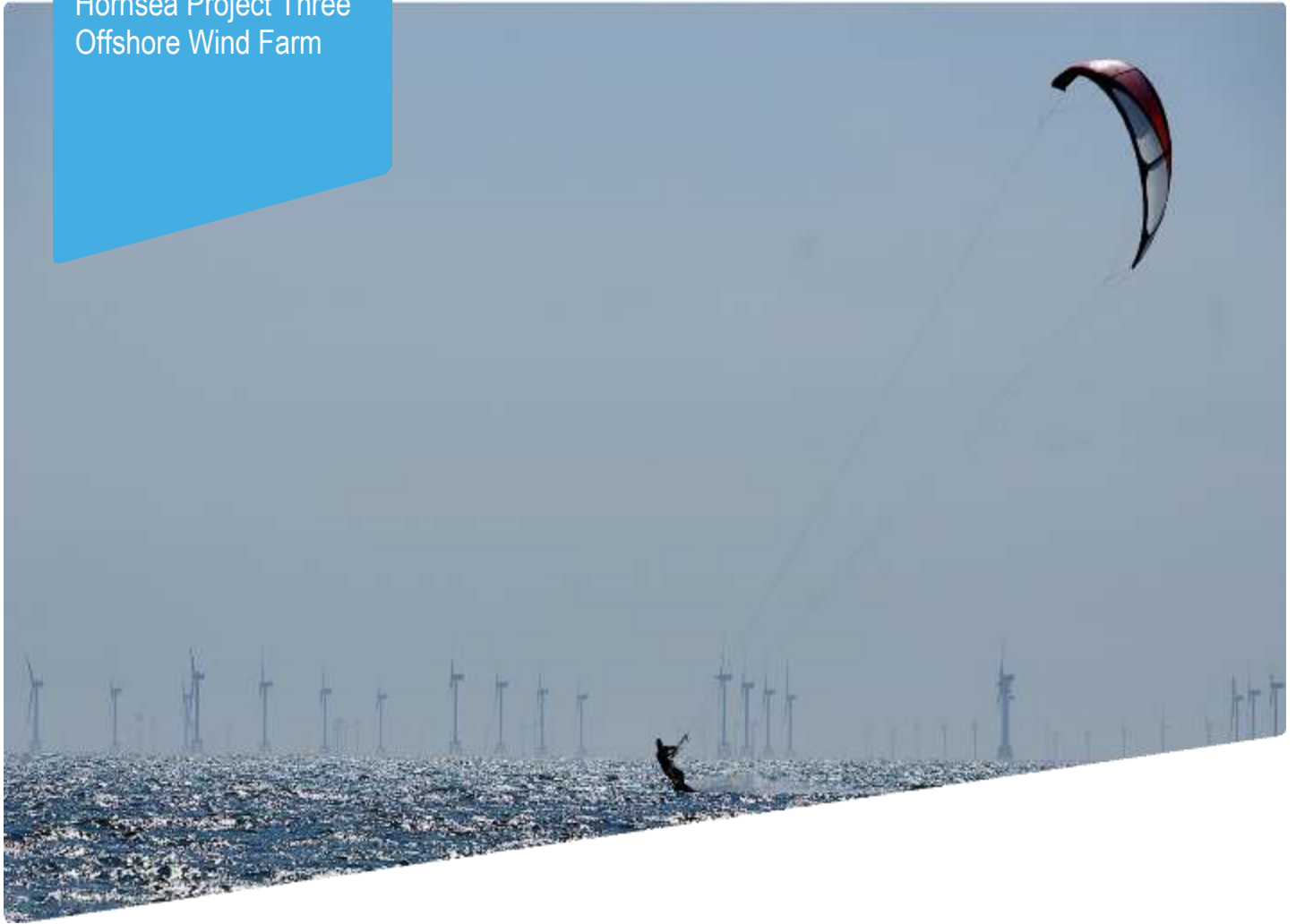


Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three Offshore Wind Farm

Appendix 20 to Deadline I Submission –
Main Construction Compound Briefing Note

Date: 7th November 2018

**Hornsea 3**
Offshore Wind Farm

**Orsted**

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

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Glossary

Defined term	Description
the Applicant	This is entity which owns Hornsea Project Three offshore wind farm (i.e. Ørsted Hornsea Project Three (UK) Ltd.).
Hornsea Three	The term Hornsea Three covers all elements within the Development Consent Order (i.e. both the offshore and onshore components).
the Hornsea Three array area	The Crown Estate Agreement for Lease (AfL) area.
the Hornsea Three offshore cable corridor	The corridor within which the offshore export cable will be located. Excludes array cables.
the Hornsea Three onshore cable corridor	The corridor within which the onshore export cable will be located.
statutory consultee	Organisations that are required to be consulted by the Local Planning Authorities and/or PINS, and who also have with a duty to respond to that consultation within a set deadline. This includes consultees that the Applicant is required to consult with, under Section 42 of the Planning Act 2008. Not all consultees will be statutory consultees (see non-statutory consultee definition below).
non-statutory consultee	Organisations that the Local Planning Authorities and/or PINS may choose to engage (if, for example, there are planning policy reasons to do so) who are not designated in law but are likely to have an interest in a proposed development.
Local Authority	The Local Authority is a body empowered by law to exercise various statutory functions for a particular area of the United Kingdom. This includes County Councils, District Councils and the Broads Authority, as set out in Section 43 of the Planning Act 2008.
Relevant Planning Authority	The Relevant Planning Authority is the Local Authority in respect of an area within which a project is situated, as set out in Section 173 of the Planning Act 2008. The Relevant Planning Authority is the body empowered by law to exercise statutory town planning functions for a particular area of the United Kingdom. Relevant Planning Authorities may have responsibility for discharging requirements and some functions pursuant to the Development Consent Order, once made.
Local Highway Authority	Public organisation responsible for the maintenance of local roads and consideration of the effects of proposed development projects on the road network.

Acronyms

Acronym	Definition
AD	Anaerobic Digestion
ATC	Automatic Traffic Counter
DCO	Development Consent Order
DfT	Department for Transport
HGVs	Heavy Goods Vehicles
LPA	Local Planning Authority
PEIR	Preliminary Environmental Information Report

1. Introduction

Background

- 1.1 The Applicant is promoting the development of the Hornsea Project Three Offshore Wind Farm (hereafter referred to as Hornsea Three). Hornsea Three is a project that will consist of an offshore generating station(s) with a capacity of greater than 100 MW and therefore is a Nationally Significant Infrastructure Project (NSIP), as defined by Section 15(3) of the Planning Act 2008, as amended. As such, there is a requirement to submit an application for a Development Consent Order (DCO) to the Planning Inspectorate (PINS) to be decided by the Secretary of State for Business, Energy and Industrial Strategy. A DCO application supported by an Environmental Statement was submitted to the Secretary of State for Development Consent in May 2018.
- 1.2 Within the DCO application, Hornsea Three has applied for consent to establish and use a main construction compound (Work No 13 of the dDCO) to support the construction of the onshore export cables.

Purpose of this briefing note

- 1.3 This briefing note has been prepared in response to Relevant Representations submitted by interested parties as part of the examination process and Examining Authority First Written Questions regarding the inclusion of the main construction compound within the project envelope. Therefore, to assist the reader, the briefing note provides a summary of the key relevant representations and Examining Authority First Written Questions relating to the main construction compound, as well as the Applicant's response.
- 1.4 This briefing note has also been prepared to provide a centralised, single source of information pertaining to the main construction compound, drawing from information already provided within the Application and expanding on specific points where relevant.
- 1.5 To support this purpose, the briefing note is structured as follows:
- Section 1 provides an introduction to the briefing note;
 - Section 2 provides details of the site selection and alternatives considered regard the main construction compound;
 - Section 3 provides a summary of the consultation relevant to the main construction compound (pre-application and post-application);
 - Section 4 provides a description of the main construction compound;
 - Section 5 provides a description of the potential interaction of the main construction compound (and its associated access) with Norfolk Vanguard/Norfolk Boreas offshore wind farm projects;
 - Section 6 provides a summary of the environmental impact assessment undertaken relevant to the main construction compound and its conclusions as reported within the Environmental Statement of the Application;
 - Section 7 provides a summary of the ongoing work being undertaken to inform the detailed Construction Traffic Management Plan; and
 - Section 8 sets out the approach to be taken to the main construction compound post-Deadline 1.

2. Site Selection and Consideration of Alternatives for the Main Construction Compound

Approach to identifying Construction Compounds

- 2.1 As stated in Volume 1, Chapter 3: Project Description of the Environmental Statement (APP-058), the Applicant proposes one main construction compound. The benefits of having one main construction compound have been identified through Ørsted's experience from previous projects in the UK. The purpose of the main construction compound is to operate as a central logistics base for the onshore export cable construction works, housing the central offices for project staff, welfare facilities and acting as a staging post and secure storage for equipment and component deliveries. The main construction compound would also provide a central secure location for key specialist construction apparatus such as HDD rigs. It would act as a central location for health and safety management and monitoring, as well as waste management across the full route (from the coastal cable landfall north of Weybourne to the National Grid connection at Norwich Main). It is noted that separate construction compounds would be established to support landfall works and construction of the HVAC booster station, the HVDC converter/HVAC substation and connection works into Norwich Main grid connection and that these would not draw on the main construction compound.
- 2.2 To support the construction of the onshore cable corridor the Applicant took an early strategic decision to identify a main construction compound to be supported by a number of secondary compounds providing localised welfare facilities and strategic storage areas along parts of the onshore cable corridor route. The secondary construction compounds, which have been located strategically along the onshore cable corridor, would operate as support bases as cable works pass through an area. The location of the five secondary construction compounds are identified in various topic chapters of the Environmental Statement, including Figure 1.1 of Volume 3, Chapter 1: Geology and Ground Conditions of the Environmental Statement (APP-073).
- 2.3 The Applicant considered the potential to utilise only the smaller secondary compounds along the route. However, it would not be feasible for these secondary compounds to house the main project staff on a location by location basis because of the transient nature of the construction works and how they progress section by section with the sequential activities that are required along the cable route. The use of a main construction compound therefore minimises the size of the secondary compounds, minimises their proposed duration and avoids the traffic movements associated with the relocation of project staff on a monthly basis. It is also noted that these secondary compounds are located on agricultural land.
- 2.4 Based on this, it is considered by the Applicant that the compound strategy set out in the Application i.e. to have one main construction compound and five secondary construction compounds (supported by localised soil storage locations) is the most appropriate to facilitate construction of the project whilst seeking to minimise unnecessary environmental impact. This is not a theoretical assumption, rather a decision based upon Ørsted's experience of developing projects in the UK and other countries.

Site selection

2.5 Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the Environmental Statement (APP-059) confirms that:

- Paragraph 4.12.6.2 In order to maintain a range of flexible options for the construction phase, three potential sites were identified and assessed within the PEIR, whilst an additional site was identified during the Phase 2.B and Phase 2.C consultation period. One site (Site 1: Weston Longville) was discounted on the basis of not possessing the required level of access for heavy goods vehicles (HGV), with another two (Sites 2 and 3, near Cawston Road, south of Salle), considered less suitable due to their separation from the strategic road network and being located on agricultural land that would need converting to hardstanding. Further details of these sites and their locations can be found in volume 4, Annex 4.4: Post PEIR Changes to Hornsea Project Three (Stages 8-9).
- Paragraph 4.13.7.2 An area within Oulton Airfield was selected as the main construction compound. While it is recognised that concerns remain regarding the use of this site specifically in terms of access; it is considered that these can be overcome through suitable mitigation, including traffic management measures.

2.6 In support of details documented in Site Selection and Consideration of Alternatives ES chapter, the identification and selection of the main construction compound was undertaken using the following broad criteria:

- The approximate area required would need to be at least 40,000 m² in overall extent to provide sufficient storage capacity;
- The land should be located approximately midway along the onshore cable corridor route to provide a central location that would have access to primary road routes to be used by the project;
- The site need not necessarily be within or immediately adjacent to the onshore cable corridor route but should have good access to the cable corridor as a whole along the road network;
- Ability to secure use of the land for the purposes of a main compound from a willing landowner and/or tenant;
- A preference for an existing area of hardstanding to minimise the environmental effect of the land take and earthworks, including impact on the best and most versatile agricultural land and transportation of materials during earthworks, and creation of hardstanding; and
- The land should be available for the duration of the proposed onshore cable corridor construction programme and unencumbered.

Alternative sites considered

2.7 As stated in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the Environmental Statement (APP-059) and Volume 4, Annex 4.4: Post-PEIR changes (APP-095), three potential locations for the main construction compound were identified and assessed as part of the Preliminary Environmental Information report (PEIR), whilst an additional site was identified during the Phase 2.B and 2.C consultation period. The consultation associated with this process is set out in Section 3.

- 2.8 Figure 2.1 shows the location of the three potential locations identified for the main construction compound (relative to the PEIR boundary) and assessed as part of the PEIR.

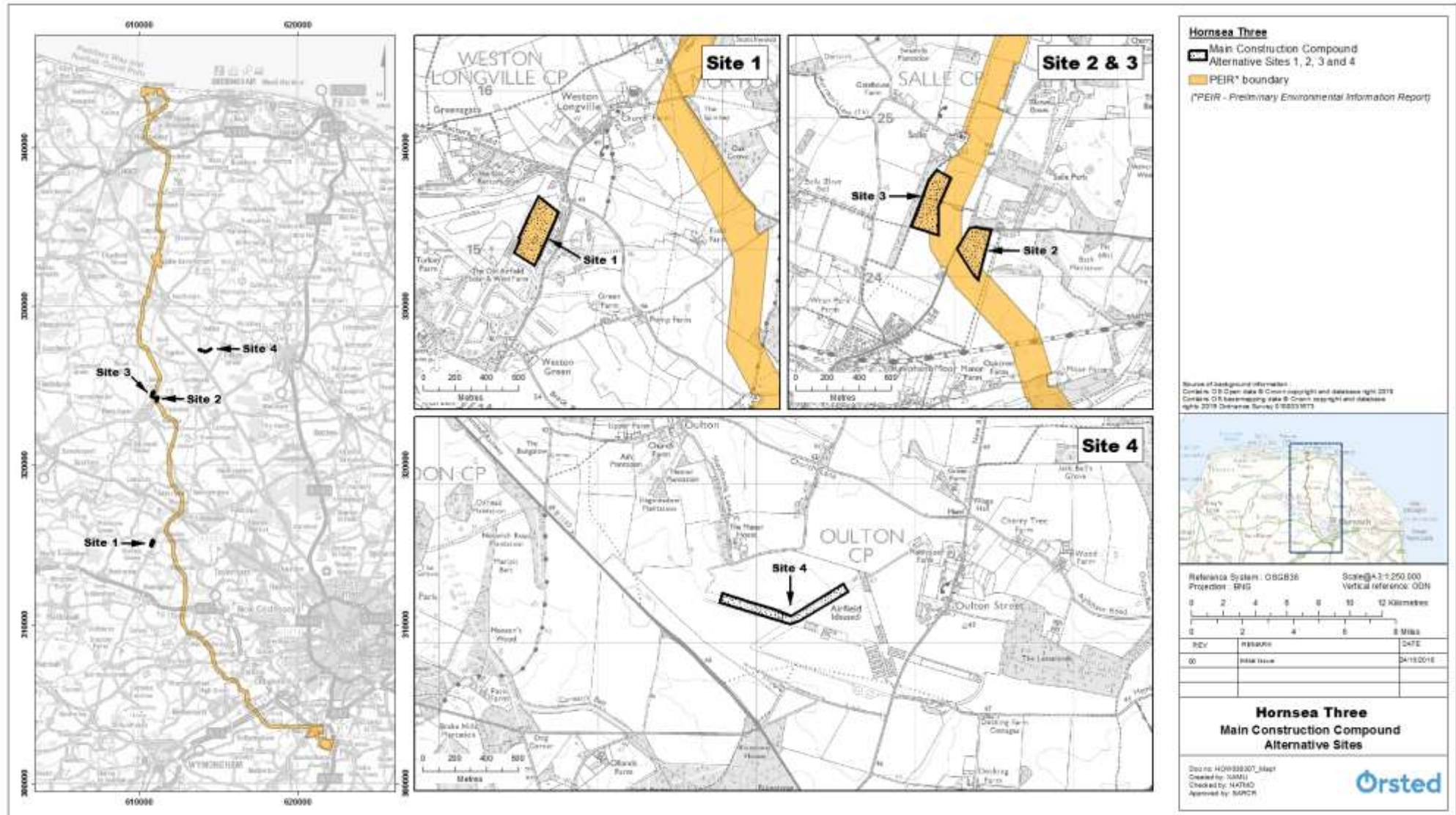


Figure 2.1: Location of Alternative Sites considered for the main construction compound at PEIR

2.9 A summary of each site assessed within the PEIR is provided below:

- Site 1: Weston Longville. This site was located to the south-west of Weston Longville to the north of an existing solar farm on a former airfield. The site had many positive attributes such as comprising existing hard standing and it was a suitable size with some flexibility for design. However, the site's access to the local and strategic road network, particularly for Heavy Goods Vehicles (HGVs) serving the project, to be utilised by the project was poor. This location would have necessitated additional travel requirements and HGV routing to serve the central and northern portion of the onshore cable corridor. This would have resulted in frequent long traffic movements from the south to the north of the onshore cable corridor. In addition, consultation with Norfolk County Council identified concerns regarding the potential for cumulative effects as a result of the proposed A47 dualling works in the locality – with extensive highway works proposed concurrently with Hornsea Three. Further, areas of concern included the impact on the junction between A47 and B1535 and the wider accessibility the settlement of Weston Longville (echoed by concerns raised by local residents and Weston Longville Parish Council). This locality is also subject to further HGV restrictions to manage traffic and the use of local roads in the absence of the Norwich western link. Although not sufficiently progressed to be considered a potential cumulative project to Hornsea Three, there is potential for this locality to be subject to further highway works associated with a new Norwich western link. Taken as a whole this site was discounted from further consideration.
- Sites 2 and 3 near to Cawston Road, south of Salle. These two sites benefitted from their location immediately adjacent to the proposed route of the onshore cable corridor and centrally located along the onshore cable route. However, both sites were slightly separated from the principal road network, placing additional pressure on the local roads over the construction period. The local road network also contained access constraints in and around Reepham and Cawston which had the potential for increased traffic/congestion, dust, vibration, noise etc, which in themselves would require further mitigation. Furthermore, both sites were located on agricultural land of predominantly Grade 3a quality (i.e. "best and most versatile" agricultural land) that would require the converting of agricultural land to hardstanding (and the associated earthworks and movement of aggregate construction materials), resulting in further vehicle movements on the local road during mobilisation and demobilisation periods. These sites were discounted from further consideration.

2.10 Based on additional site visits, a fourth potential site was identified prior to Phase 2.B and 2.C consultation period and is described below:

- Site 4: Oulton Airfield. This site is located to the north east of Reepham and west of Aylsham on a former airfield. The site has many positive attributes such as comprising existing hard standing and it was a suitable size with some flexibility for design. At the time of submission there were concerns regarding the use of this site, specifically in terms of access off the B1149 to the entrance to the airfield along The Street. However, the site has good access to the wider local and strategic road network, in particular the north south linkage provided by the B1149 and access from the recently completed Northern Distributor Road. The site is also free from the complexity of highway access restrictions (seen in respect of the other sites considered) and future highway works and its use as such is supported by the landowner.

2.11 To provide further clarity on the site selection conclusions and provide a clear comparison of all four alternative sites, each alternative is considered against the initial criteria and those criteria identified through consultation (namely interaction with other projects, HGV access feasibility and proximity to residential areas/properties) in Table 2.1 below.

2.12 This analysis identifies HGV access and community concerns to be the limitations which are common to all locations; this reflects the rural nature of Norfolk and the associated narrow local road networks.

Table 2.1: Site Selection Option Analysis for the Main Construction Compound

Site Selection Criteria	Site 1	Site 2	Site 3	Site 4
	Weston Longville	Land Cawston Road, south of Salle		Oulton Airfield
Site Area				
Location along the onshore cable corridor				
Access to the strategic road network required to be used to access the project				
Existing hardstanding				
Land Availability				
HGV Access				
Community concerns and proximity to residential areas/properties				

Identification of preferred site

2.13 In summary, the main construction compound is located at Site 4 at the Oulton Airfield, located off the B1149 near Oulton Street for several reasons:

- Site 4 is available, large enough and already comprises hardstanding;
- Site 4 is approximately mid-way along the onshore cable corridor route and is well placed to serve deliveries to the construction route; and
- Site 4 has close access to the strategic road network and has previously been used as a construction compound for other construction projects.

2.14 Based on the above, Site 4 was considered, and remains, a suitable location which would allow plant and materials to be stored safely and securely at a central location, whilst material and non-static plant could then be transported out to the active cable installation areas as required.

2.15 It is considered by the Applicant that the location chosen is the most appropriate for a main construction compound based on the aforementioned points, and that the concerns raised by stakeholders in respect to residential amenity and HGV traffic access can be addressed via appropriate mitigation measures to be developed in the detailed Construction Traffic Management Plan and detailed Code of Construction Practice, both of which are secured as pre-construction requirements for approval by the local planning authority within the dDCO (Requirement 8 and 17 respectively).

3. Description of the Main Construction Compound

3.1 As noted above, Site 4 was taken forward within the Application as the location for the Main Construction Compound. This section provides further details of the identified site.

Location

3.2 The location of the main construction compound is at the former Oulton Airfield, located approximately 3.5 km west of Aylesham and approximately 5 km north-east of Reepham. The location relative to the onshore cable corridor is shown in Figure 3.29 of Volume 1, Chapter 3: Project Description of the Environmental Statement [APP-058]. The location and Order Limits is shown in Figure 4.1 of Volume 4, Annex 4.4: Post-PEIR Changes (Stages 8-9) of the Environmental Statement [APP-095].

Existing baseline environment

3.3 The site identified for the main construction compound (former Oulton Airfield, off the B1149 near Oulton Street) comprises an area of hardstanding, with an associated existing access track which routes to the south-west for approximately 275 m before turning east for approximately 900 m.

3.4 Access to the main construction compound connects onto the western side of The Street, positioned approximately 950 m to the north of the B1149, approximately opposite the junction with Heydon Road. The Street routes broadly south to north, forming the minor arms of simple priority junctions with the B1149 (Holt Road) and the B1345 (Blickling Road), respectively.

3.5 The Street is a narrow single carriageway road, typically in the order of up to 5m wide with verges, hedgerows and some trees on both sides, although there are sections where the road narrows to below 5m in width. There is evidence of vehicles overrunning the verge and this has resulted in the edges of carriageway being exposed in some locations with localised widening and informal passing places being created through verge scrub and rutting.

3.6 The Street is generally a straight section of road between the B1149 and the access to the main construction compound, except for one bend approximately midway along this section in the vicinity of the access to The Granary on the East side of the road. Along the section between the B1149 and the former Oulton Airfield, The Street provides access to a number of field parcels, Docking Farm, Heydon Road and one residential property (The Old Railway Gatehouse). The residential property is located immediately adjacent to The Street, and in close proximity to a road hump associated with the non-designated railway which runs beneath The Street.

3.7 To the north of the access to the main construction compound, The Street becomes Oulton Street and then New Road and provides access to the community of Oulton Street, a number of fields and farms with associated buildings and working areas etc., Church Lane, Aylsham Road and The National Trust Textile Conservation Studio.

3.8 In summary, the main construction compound is located in an area with multiple land uses including:

- Agricultural land including a pig farm, pasture, arable and commercial shooting;
- Solar Farm;
- National Trust Textile Conservation Studio approximately 1 km to the north-east;
- Blickling Estate, approximately 2.4 km to the north-east (to the nearest section of parkland) at the end of New Road;
- Numerous residential properties located along Oulton Street and New Road, approximately 600m to the north-east of the proposed access point to The Street;

3.9 The site itself comprises hardstanding with existing uses limited to:

- Agricultural buildings;
- Farm and agricultural machinery storage;
- Hay/straw storage; and
- Other temporary storage as required.

3.10 The status of discussions with the landowner at the main construction compound is provided in updated Appendix B of the Statement of Reasons (submitted at Deadline 1, APP-032).

Proposed use of Site 4 for Hornsea Three

3.11 As identified in paragraph 3.7.3.31 of Volume 1, Chapter 3: Project Description of the Environmental Statement [APP-058], the Applicant has identified that the main construction compound will be required to support the construction of the onshore export cables.

Layout and proposed use

3.12 The main construction compound would operate as a central base for the onshore construction works and would house the central offices, welfare facilities, and stores, as well as acting as a staging post and secure storage for equipment and component deliveries. The site identified (Oulton Airfield, off the B1149 near Oulton Street) comprises hard standing suitable for the temporary placement of site facilities and to allow plant and materials to be stored safely and securely. Material and non-static plant will then be transported out to the active cable installation work locations.

3.13 The layout of the main construction compound will be determined once a contractor is appointed and the detailed design of the onshore cable corridor and construction programme is known. However, as stated in the Outline CoCP (APP-179), the layout of the main construction compound will be designed to avoid overlooking residential properties. Layout plans of the main construction compound, showing sensitive areas and buffer zones (e.g. ecological habitats or protected species), and areas where storage of potential pollutants (e.g. fuels, oils and other chemicals) will be avoided, will be determined in consultation with the Local Planning Authority and the Environment Agency as part of the preparation of the final CoCP (secured by means of Requirement 17 of the dDCO).

3.14 Although the primary function of the main construction compound is to support the construction of the onshore export cables, it may be necessary to retain part of the compound during the commissioning stages of Hornsea Three.

3.15 It is estimated that activities at the main construction compound associated with Hornsea Three would occur within an eight-year construction window. However, the active use (i.e. delivery of cable drums, regular movements by HGVs etc.) of the main construction compound would be limited to up to 30 months, excluding mobilisation and demobilisation. This could be across a single construction phase, or two construction phases. Should Hornsea Three be delivered across two phases, the main construction compound would be demobilised and not in active use during the 'gap', unless otherwise agreed with the local planning authority (as set in Section 3.8 of Volume 1, Chapter 3: Project Description of the Environmental Statement).

3.16 The main construction compound may include:

- Portacabin with offices, briefing and welfare facilities;
- Staff car parking;
- Wheel wash facilities (if deemed necessary);
- Indoor and outdoor lock-up storage areas;
- Storage for materials, machinery, lifting equipment and specialist equipment such as HDD rigs (see below);
- Portable generator(s) which could run on a 24-hour basis;
- Waste management (associated with Hornsea Three only);
- Security facilities, lighting and fencing; and
- Other items associated with supporting the onshore construction works.

Storage

3.17 The types, quantities and intended use of materials to be stored on site will be determined once a contractor is appointed and the detailed construction programme and logistics are known. However, materials to be stored at the main construction compound and their intended uses are likely to include:

- Cable drums for the onshore export cables before they are transported to the onshore cable corridor (see top right of Figure 3.1 below);
- Ducting for the onshore export cables before they are transported to the onshore cable corridor;
- Aggregate to be used for the haul road;
- Construction machinery such as excavators and HDD rigs to be used along the onshore cable corridor;
- Fuels for generators and portable lighting rigs;
- Rumble strips to be used at access points to the onshore cable corridor (see middle left of Figure 3.1 below);
- Signage to be used for safety and operational reasons (i.e. to direct construction traffic, or demarcate public rights of way etc.) (see bottom left of Figure 3.1 below);
- Temporary welfare facilities to be used at secondary compounds and major HDD compounds as required (see bottom right of Figure 3.1 below);
- Portable gates to be used to demarcate and control access through public rights of way along the onshore cable corridor.
- Post and rope or herras fencing to used for demarcation at, for example, the edges of the onshore cable corridor and public rights of way; and
- Portable lighting units.

3.18 Some examples of the material and equipment stored at the Hornsea Project One main construction compound are provided in Figure 3.1.



Figure 3.1: Images from Hornsea Project One Offshore Wind Farm Main Construction Compound (top left: storage of herras fencing); middle left: rumble strips; bottom left: signage; top right: ducting and cable drums and middle right: general storage; bottom right: portable welfare facility)

- 3.19 The main construction compound would also act as a centralised location for waste and recycling collection to facilitate re-use and recycling of materials wherever possible (see Figure 3.2). Further details on site waste management is provided in Volume 4, Annex 3.4: Site Waste Management Plan of the Environmental Statement (APP-088).



Figure 3.2: Waste and Recycling receptacles on the Hornsea Project One Offshore Wind Farm Main Construction Compound

Proposed management of Site 4 for Hornsea Three

- 3.20 The operation of the main compound would be managed in accordance with the Outline CoCP (APP-179), section 4.1.2 of which sets out the principles for good housekeeping that would be employed.
- 3.21 In establishing the main construction compound, the principal contractor would be required to:
- Ensure any crossing points over existing local services will be installed in a manner agreed with the asset owner;
 - Ensure surface runoff is managed appropriately;
 - Ensure any temporary services necessary to support the main construction compound will be installed in a manner agreed with the landowner and service provider; and
 - Co-ordinate activities with other users and tenants of the airfield to minimise wider disruption.

Hours of operation

- 3.22 The hours of operation for the onshore main construction compound are set out in the Outline CoCP (APP-179) which identifies the core working hours as:
- Monday to Friday: 07:00 - 18:00 hours;
 - Saturday: 07:00 - 13:00 hours;
 - Up to one hour before and after core working hours for mobilisation (“mobilisation period”), i.e. 06:00 to 19:00 weekdays and 06:00 to 14:00 Saturdays; and
 - Maintenance period 13:00 to 17:00 Saturdays.
- 3.23 During the mobilisation period, the contractor may undertake the following activities:

- Arrival and departure of the workforce at the site and movement to and from areas across the project;
- Site inspections and safety checks; site meetings (briefings and quiet inspections/walkovers);
- Site clean-up (site housekeeping that does not require the use of plant); and
- Low-key maintenance including site maintenance, safety checking of plant and machinery (provided this does not require or cause hammering or banging).

3.24 Importantly, mobilisation does not include HGV movements into and out of the main construction compound (i.e. HGV movements should only occur at the main construction compound during the core working hours unless otherwise agreed) but suppliers can make use of the wider highway network outside these hours to travel. The use of the mobilisation period will be agreed with the relevant local authority EHO officer in consultation with relevant planning authority on a case by case basis.

3.25 It may be beneficial to carry out several activities outside of the standard working hours to utilise periods such as abnormal loads/construction plant delivery, works within the highway/footpaths, or works affecting operational railways.

3.26 Activities outside of the standard working hours will be agreed with the relevant local authority EHO officer in consultation with relevant stakeholders (e.g. third-party asset owner) as required.

Vehicle Movements associated with the main construction compound

3.27 An estimate of the likely number of daily construction vehicles for Hornsea Three at the main construction compound was set out in paragraph 7.8.3.44 of Volume 3, Chapter 7: Traffic and Transport of the Environmental Statement (APP-079). It was estimated in this document that there would be a maximum of 118 two-way HGV movements per day (i.e. all arrivals plus all departures) and 130 staff vehicle movements per day (i.e. all arrivals plus all departures). It should be noted, however, that such levels of traffic generation are highly unlikely to be generated on a day-to-day basis and represent a worst-case scenario.

3.28 The Applicant is undergoing a refinement process, to provide further clarity on the potential fluctuation of traffic flows to and from the main construction compound, as set out in the Applicant's response to Written Question 1.11.2. The Applicant intends to submit this at Deadline 3, if not before.

3.29 A component of the HGV traffic associated with Hornsea Three would involve the transportation of large cable drums via low loader vehicles to/from the main construction compound. These would be delivered to and stored at the main construction compound and then transported to the appropriate location, as required, for installation as part of the overall onshore cable route. Such cable drums (measuring up to approximately 4.5m in height and 4.14m in width) would be classified as abnormal loads and would require transportation under formalised escort conditions in addition to the measures defined in Annex A and B.

3.30 While the nature of the main construction compound can be considered temporary, the duration of its potential use (see paragraph 3.15) warrants comprehensive medium-term solutions to aid the passage of vehicles (particularly HGVs) to/from the main construction compound and to also accommodate the existing traffic on the network to minimise disruption during the 30-month active construction period associated with the onshore cable corridor. Details of the access strategy for the main construction compound are provided in sections 7 and 8 as well as Annex A and B.

Security and fencing

3.31 A set out in paragraph 4.1.7.5 of the Outline CoCP (APP-179), the main construction compound will be fenced using bolted and anchored herras fencing or its equivalent and on-site security will be deployed on a continuous basis if deemed necessary by the contractor. All boundary fences/screens will be maintained in a tidy condition and will be fit for purpose.

3.32 Access to the main construction compound will be limited to a single entry point and all personnel entries/exits will be recorded for security and health and safety purposes.

Lighting

3.33 Although portable task lighting would be required for any evening and night-time working, it is envisaged that lighting at the main construction compound would not be required during normal daylight hours unless visibility is poor due to weather conditions or low light levels. Light spill during out of hours working will be minimised through the use of task-orientated lighting, and as set out in the Outline CoCP (APP-179, paragraph 4.1.4.1), external lighting will be designed and positioned to:

- Provide the necessary levels for safe working;
- Minimise light spillage or pollution; and
- Avoid disturbance to adjoining residents and occupiers of buildings and to wildlife.

3.34 Lighting at the main construction compound will take into account the requirements set out in BS EB 12464-2:2014 (BSI, 21014). Lighting units will be designed to minimise illumination outside the construction works area, e.g., will be directional, task orientated and where possible, fully shielded.

3.35 Low levels of security lighting will be required, at the entrance to the site and office facilities as well as around the perimeter of the compound. No lighting fixtures would be greater than 4 m in height to avoid spill towards sensitive receptors including residential properties and Dark Sky Discovery Sites in the local area. This is set out in paragraph 4.1.4.2 of the Outline CoCP (APP-179) as amended at Deadline 1.

3.36 The detailed lighting strategy for during construction (i.e. temporary) will be submitted as part of the Code of Construction Practice (Code of Construction Practice) for the approval of the relevant planning authority under DCO Schedule 1, Part 3, Requirement 17 Code of Construction Practice. This document must be approved before works can commence.

Removal and Reinstatement

- 3.37 The main construction compound will be removed and the hardstanding sections of the site restored to the original condition when construction associated with Hornsea Three has been completed. As noted in updated paragraph 4.1.6.2 of the Outline CoCP (APP-179) submitted at Deadline 1, if works are delivered in phases, temporary construction compounds and accesses will be removed and the land reinstated on completion of construction work associated with that phase unless otherwise approved by the Local Planning Authority.
- 3.38 Based on feedback from NCC, works to the roadway (as set out in Annex A and Annex B) would be temporary in nature. However works to the junction with the B1149 and road hump, close to the residential property along The Street, would be permanent. Once an agreed access solution has been identified, the Applicant will incorporate commitments into the CTMP to (i) maintain the works for the duration of the project and (ii) remove and re-instate the land upon completion. Temporary and permanent works would mostly like be carried out by the Applicant’s contractors under licence from the Highway Authority.

4. Consultation relevant to the Main Construction Compound

Pre-application consultation

- 4.1 The Applicant introduced the requirement for temporary construction compounds early in the development of Hornsea Three and shared further information with consultees as the compound strategy developed, including the requirement for a main construction compound and potential options being considered by the Applicant for siting the compound. Table 4.1 outlines in chronological order when information regarding the main construction compound was shared and in what format. Importantly, this does not include direct engagement with individual parties carried out during the pre-application period and post-application period, which is summarised in Table 4.2 and Table 4.3 respectively.

Table 4.1: Overarching Summary of the pre-application consultation activities undertaken by the Applicant in respect of the main construction compound.

Date	Summary
October 2016	The Applicant published the Hornsea Three Scoping Report. This document outlined the potential requirement for temporary construction compounds during the onshore construction works. It was noted that the exact number, location and size of the compounds required would be confirmed once the substation location and onshore export cable route had been developed. It noted that the Environmental Statement would outline a high-level construction compound strategy, which will be further developed once the route was finalised, to indicate the potential size and broad spread of construction compounds that are likely to be required.
February 2017	In the Phase 1.B Consultation Overview document, the Applicant explained that temporary compounds would be required during the onshore construction works, and that the Applicant was in the process of identifying potential sites for these compounds within or near to the refined onshore export cable corridor. This document was published on the website and the information displayed at the Phase 1.B community consultation events. Individuals were asked to highlight anything that they would like the Applicant to consider when siting these compounds.

Date	Summary
July 2017	The Applicant published its Preliminary Environmental Information Report (PEIR) and carried out its statutory consultation (Phase 2.A) under section 42 of the Planning Act 2008. In the PEIR, the Applicant stated that a main construction compound would be required to operate as a central base for the onshore construction works. It was explained that the main construction compound would not need to be located on the route itself but on a suitable site in a central location in close proximity to export cable route. Three options being considered by the Applicant were presented in the PEIR, with a fourth alternative option presented on the Statutory Consultation Plans that were issued consultees and published on the Hornsea Three website.
September 2017	The PEIR and Statutory Consultation Plans with the four options identified for main construction compound were presented at the Phase 2 community consultation events. Individuals were asked to consider the options presented and highlight any thoughts or concerns.
November 2017	The Applicant carried out further statutory consultation (Phase 2.B) under section 42 of the Planning Act 2008 on additional locations beyond the previous Statutory Consultation boundary, including two minor amends to the main construction compound site at Oulton Airfield, Oulton.
February 2018	The Applicant confirmed in the February 2018 community newsletter that Oulton Airfield had been selected as the preferred site for the main construction compound, with up to five secondary compounds along the cable route to facilitate the construction works in those areas.
May 2018	The Applicant submitted its Development Consent Order (DCO) application to the Planning Inspectorate, including an Environmental Statement and various management plans, including an Outline Construction Traffic Management Plan.
June 2018	The Planning Inspectorate accepted the Applicant's DCO application for examination and the Applicant subsequently issued interested parties with the section 56 notice, detailing where they could view the application and how to register as an interested party and make a relevant representation.

Table 4.2: Summary of pre-application consultation/engagement with interested parties relevant to the Main Construction Compound.

Interested Parties	Consultation Summary
Norfolk County Council (NCC)	<ul style="list-style-type: none"> • Regular engagement throughout the pre-application consultation period. • Consulted on all aspects of the Project. • July 2017: Consulted with and submitted formal response to the Statutory Consultation (Phase 2.A). • November 2017: Consulted with and submitted formal response to the Further Statutory Consultation (Phase 2.B).
Broadland District Council (BDC)	<ul style="list-style-type: none"> • Regular engagement throughout the pre- and post-application periods. • Consulted on all aspect of the Project. • July 2017: Consulted with and submitted formal response to the Statutory Consultation (Phase 2.A). • November 2017: Consulted with and submitted formal response to the Further Statutory Consultation (Phase 2.B).
Highways England	<ul style="list-style-type: none"> • July 2017: Consulted with and submitted formal response to the Statutory Consultation (Phase 2.A) requesting a meeting. • September 2017: Highways England representatives attended the community consultation events to discuss potential interactions with the A47 proposal. • November 2017: Consulted on the Further Statutory Consultation (Phase 2.B). No response received.

Interested Parties	Consultation Summary
Oulton Parish Council	<ul style="list-style-type: none"> • Oulton Parish Council was invited to attend Parish Council briefing and Q&A sessions organised by the Applicant during the pre-application consultation period. • July 2017: Consulted with and submitted formal response to the Statutory Consultation (Phase 2.A) • November 2017: Consulted with and submitted formal response to the Further Statutory Consultation (Phase 2.B), requesting that Ørsted attend one of their Parish Council meetings. • December 2017: Oulton Parish Council attended the Broadland Parish Council briefing and Q&A session organised by the Applicant. • March 2018: The Applicant attended Oulton Parish Council meeting, specifically focused on the Main Construction Compound. • March 2018: Oulton Parish Council responded to the Focused Statutory Consultation (Phase 2.C).
Cawston Parish Council	<ul style="list-style-type: none"> • Cawston Parish Council was invited to attend the Broadland Parish Council briefing and Q&A sessions organised by the Applicant throughout the pre-application consultation period. • July 2017: Consulted with as part of the Statutory Consultation (Phase 2.A). • November 2017: Consulted on the Further Statutory Consultation (Phase 2.B). • March 2018: Cawston Parish Council attended the Broadland Parish Council briefing and Q&A session organised by the Applicant.
Weston Longville Parish Council	<ul style="list-style-type: none"> • Weston Longville Parish Council was invited to attend the Broadland Parish Council briefing and Q&A sessions organised by the Applicant during the pre-application consultation period. • July 2017: Consulted with and submitted formal response to the Statutory Consultation (Phase 2.A). • November 2017: Consultation on the Further Statutory Consultation (Phase 2.B). No response received. • December 2017: Weston Longville Parish Council attended the Broadland Parish Council briefing and Q&A session organised by the Applicant.
Salle Parish Council	<ul style="list-style-type: none"> • Salle Parish Council was invited to attend the Broadland Parish Council briefing and Q&A sessions organised by the Applicant during the pre-application consultation period. • July 2017: Consulted with as part of the Statutory Consultation (Phase 2.A). No response received. • November 2017: Consulted with as part of the Further Statutory Consultation (Phase 2.B). No response received.
Reepham Town Council	<ul style="list-style-type: none"> • Reepham Town Council was invited to attend the Broadland Parish Council briefing and Q&A sessions organised by the Applicant during the pre-application consultation period. • July 2017: Consulted with as part of the Statutory Consultation (Phase 2.A). No response received. • August 2017: Reepham Town Council attended Broadland Parish Council briefing and Q&A session organised by the Applicant. • November 2017: Consulted with as part of the Further Statutory Consultation (Phase 2.B). No response received. • December 2017: Cllr Graham Everett (District Councillor for Reepham) responded to the Further Statutory Consultation (Phase 2.B).
Councillor Greg Peck	<ul style="list-style-type: none"> • December 2017: Cllr Greg Peck responded to the Further Statutory Consultation (Phase 2.B) raising concerns regarding coordination with Vattenfall and use of the Oulton Airfield as the Main Construction Compound. • February 2018: The Applicant attended a meeting with Broadland Representatives, including Cllr Greg Peck and Keith Simpson MP. • March 2018: The Applicant attended Oulton Parish Council meeting, specifically focused on the Main Construction Compound. Cllr Greg Peck was present. • March 2018: Cllr Greg Peck responded to the Focused Statutory Consultation (Phase 2.C).

Post-application consultation

4.2 The Applicant has continued to engage with interested parties post-application. A summary of post-application consultation is provided in Table 4.3 below.

Table 4.3: Summary of consultation/engagement with interested parties relevant to the Main Construction Compound post-application.

Interested Parties	Consultation Summary
Norfolk County Council	<ul style="list-style-type: none"> • 21/09/2018: Meeting on SoCG and Outline Construction Traffic Management Plan. • 26/09/2019: Email to Stephen Faulkner and John Shaw advise of the updated TA, TA Clarification Note and Main construction compound traffic survey results. • 26/09/2018: Email to Liz Poole and John Shaw to provide Main Construction Compound Access Strategy ahead of Development Team Meeting on 01/10/2018. • 27/09/2018: Meeting with Martin Dixon of NCC to discuss The Street, Oulton. • 03/10/2018: Meeting on SoCG and feedback from John Shaw on Main Construction Compound Access Strategy. • 16/10/2018: Informed NCC of additional traffic surveys being undertaken along The Street. • 30/10/2018: Meeting with NCC to discuss traffic and transport matters, including the main construction compound.
Broadland District Council	<ul style="list-style-type: none"> • 01/10/2019: Email to Matthew Rooke to advise of the updated TA, TA Clarification Note, Main construction compound traffic survey results and Main Construction Compound Access Strategy. • 16/10/2018: Informed of additional traffic surveys being undertaken along The Street. • 31/10/2018: Meeting with Broadland to discuss SoCG and Main Construction Compound
Highways England	<ul style="list-style-type: none"> • 29/09/2019: Email to Shamsul Hoque and Planning Team email to advise of the updated TA, TA Clarification Note and Main construction compound traffic survey results • 01/10/2019: Email to Shamsul Hoque and Planning Team email to advise of the Main Construction Compound Access Strategy. • 16/10/2018: Informed of additional traffic surveys being undertaken along The Street. • 17/10/2018: Email received from HE indicating no concerns regarding impacts of the main construction compound on the Strategic Road Network.

Interested Parties	Consultation Summary
Oulton Parish Council	<p><i>A Working Group was set up between Ørsted and representatives of Oulton Parish Council to further explore the specific traffic management measures that would be put in place along The Street to facilitate safe access to the Main Construction Compound.</i></p> <ul style="list-style-type: none"> • 25/07/2018: Working Group meeting #1 • 27/09/2018: Working Group meeting #2 • 21/09/2018: Email to Alison Shaw providing drawings of the Access Options to be presented at Working Group meeting #2 • 22/09/2018: Hard copies sent to Alison Shaw providing drawings of the Access options to be presented at Working Group Meeting #2 • 26/09/2018: Email to Alison Shaw providing the Main Construction Compound Access Strategy and Main construction compound traffic survey results. • 02/10/2019: Email to Allison Shaw to advise of the updated TA and TA Clarification Note • 16/10/2018: Email informing OPC of additional traffic surveys being undertaken along The Street. • 17/10/2018: Emailed to confirm agreed meeting minutes from Working Group #2, including update captured in post meeting notes. • 19/10/2018: Email from OPC providing further information on the traffic figures for the Street Farm potato store application. • 02/11/2018: Emailed to provide update on the consultation between the Applicant and NCC. • 06/11/2018: Email from OPC providing feedback from the OPC Meeting on 23 October, as well as feedback from meeting with NCC.
Cawston Parish Council	<p><i>A Working Group was set up between Ørsted and representatives of Cawston Parish Council to discuss traffic management measures of relevance to Cawston Parish Council.</i></p> <ul style="list-style-type: none"> • 18/10/2018: The Applicant emailed CPC to arrange the first working group meeting and to advise them that their full representation may not have been submitted to PINS. • 29/10/2018: Working Group Meeting #1 covering main construction compound and traffic and transport impacts in Cawston.
Councillor Greg Peck	<ul style="list-style-type: none"> • 17/10/2018: Emailed to provide update on Main Construction Compound and Access Strategy.
Closest Residential Property (The Old Railway Gatehouse)	<ul style="list-style-type: none"> • 27/09/18: Meeting on Main Construction Compound Access Strategy. • 14/10/18: Phone Call to gain approval for noise and vibration survey and methodology at the Old Railway Gatehouse • 15/10/18: Create Consulting Engineers Limited met with residents on site when setting up survey equipment at property. • 18/10/2018: Email informing ORG of additional traffic surveys being undertaken along The Street and offering follow up meeting during week commencing 12/11/2018. <p><i>The Applicant intends to discuss the results of the surveys undertaken at their property and to request their feedback on the options being considered by the Applicant to feed into the Main Construction Compound Strategy.</i></p>
Bluestone Bungalow, Holt Road, Cawston, Norwich, NR10 4HU	<ul style="list-style-type: none"> • 19/10/2018: Introductory letter sent to residents of Bluestone Bungalow to update them on the proposal and offer a meeting to discuss the Main Construction Compound Access Strategy.

4.3 In addition to the above, the Applicant has consulted with Vattenfall (Norfolk Vanguard) during the pre-application and post-submission phases, and shared information about each project's requirements for compounds and access to them.

4.4 The Applicant will continue to engage with interested parties beyond Deadline I and during the examination period, through the development of Statements of Common Ground with Norfolk County Council and Broadland District Council. At the Parish Council level, the Applicant will continue to meet with the delegated working groups and will provide information to these groups that can be distributed more widely.

Relevant Representations relevant to main construction compound

4.5 Table 4.4 provides a summary of the key issues raised through the Relevant Representations which have been made and extend to the inclusion of the main construction compound within the project envelope. A full reproduction of the Relevant Representations and the Applicant’s response to those representations is provided in the Applicant’s Comments on Relevant Representations (including Summaries of RR over 1500 words).

Table 4.4: Summary of key issues raised through Relevant Representations regarding the Main Construction Compound at Oulton Airfield

RR Number	Summary of key issues relevant to Main Construction Compound raised in Relevant Representations	Applicant’s Response
RR-005; RR-006; RR-034; RR-035; RR-038; RR-041; RR-042; RR-043; RR-044; RR-046; RR-056; RR-057; RR-064; RR-074	<ul style="list-style-type: none"> • Site Selection • Construction Programme/duration of use • Traffic and Transport (including suitability, safety and impact on tourism routes) • Residential Amenity (including noise) • Historic Environment • Lighting • Cumulative Impacts with Norfolk Vanguard 	<p>The Applicant has responded, through the preparation of this Briefing Note to the specific points raised in these Relevant Representations.</p> <p>In particular:</p> <ul style="list-style-type: none"> • site selection is addressed in section 3; • construction programme/duration of use is addressed in paragraph 3.15; • traffic and transport points are addressed in paragraph 3.27 – 3.30; paragraphs 5.2 – 5.4, Section 6 and 7; and Annex A and B. • residential amenity points are addressed in paragraphs 5.5 – 5.11 and Section 6 and 7; • historic environment points are addressed in paragraphs 5.12 – 5.14; • Lighting points are addressed in paragraphs 3.33 – 3.36; and • Cumulative impacts with Norfolk Vanguard are addressed in Table 3.6; paragraphs 5.15 – 5.19 and Annex A and B.

Examining Authority First Written Questions relevant to main construction compound

4.6 Table 4.5 provides a summary of the Examining Authorities first written questions around the inclusion the main construction compound within the project envelope. The Applicant’s response to those questions is provided in the Applicant’s Responses to the ExA’s First Written Questions.

Table 4.5: Summary of Examining Authority First Written Questions regarding the Main Construction Compound at Oulton Airfield

Question	Examining Authority First Written Questions (Main Construction Compound)	Where in this document the Applicant has provided a response
1.1.13	<p>Figure 3.21 of Annex 4.3 to the ES [APP-094] indicates the construction compound options that were considered.</p> <p>Please provide further justification for the selection of Oulton Street as the proposed location for the main construction compound</p>	<p>The Applicant has provided further justification for the selection of the former Oulton Airfield as the main construction compound in Section 3 of this Briefing note.</p>
1.8.8	<p>The NT [RR-056] refers to Oulton Airfield as a non-designated heritage asset. Does the Applicant agree that Oulton Airfield is a non-designated heritage asset? Please can the Applicant and NT provide their respective assessments of the heritage significance of Oulton Airfield (including its association with the Grade I listed Blickling Hall) and the effects of the proposed construction compound on that significance.</p>	<p>The Applicant has provided further discussion regarding Oulton Airfield as a non-designated heritage asset and the effects of the main construction compound in Section 6 of this Briefing note.</p>
1.11.8	<p>Paragraph 7.8.3.44 of the ES [APP-079] provides an estimate of the potential vehicle movements at the main construction compound at Oulton Street.</p> <p>A) Please provide further details of the proposed use of the main construction compound at Oulton Street including: the types, quantities and intended use of materials to be stored;</p> <p>B) the calculations of the potential traffic movements in connection with the use of the compound; and</p> <p>C) the hours of operation and the expected times/frequency of particular traffic movements.</p>	<p>The Applicant has provided details of the proposed use, including hours of operation, of the main construction compound in Section 2 of this Briefing note.</p> <p>Details on the potential traffic movements are set out in 3.27 – 3.30, although further work to refine this is ongoing as set out in Sections 6 and 7. Work is also ongoing in respect to the access strategy as a whole as identified in Annex A and B.</p>
1.11.9	<p>The main construction compound at Oulton Street would be located close to some construction and storage components of the proposed Norfolk Vanguard/Norfolk Boreas scheme.</p> <p>Please provide an assessment of the potential in-combination traffic and transport effects of the proposal in the locality of Oulton Street, including details of likely construction timetables for all projects and proposed measures to minimise any impacts.</p>	<p>The applicant has agreed a SoCG with Norfolk Vanguard Ltd (and Norfolk Boreas Ltd). The SoCG documents the ongoing work in considering the cumulative traffic impacts of these projects on shared roads to be utilised by both projects.</p> <p>With regards to traffic and transport matters (pertinent to this note) the SoCG acknowledges there may be cumulative impacts on a small number of shared road links during construction of the two projects and relevant discussions between Hornsea Three and NV are ongoing.</p> <p>Both parties continue to work together to ensure alignment of highway threshold levels applied by each project, i.e. traffic capacity of each road link before significant impacts are expected, and alignment as to the scope of appropriate traffic management measures that may be required as thresholds are reached – i.e. confirming:-</p> <ul style="list-style-type: none"> - Thresholds on each street (or part of street) where no or limited (“soft”) traffic management measures would be required, such as controls on

Question	Examining Authority First Written Questions (Main Construction Compound)	Where in this document the Applicant has provided a response
		<p>daily traffic demand, driver induction, community liaison;</p> <ul style="list-style-type: none"> - Thresholds on each street (or part of street) which would trigger further “soft” traffic management measures, such as timing of deliveries, hazard signage, restricted periods, and temporary speed restrictions; and - Thresholds on each street (or part of street) which would trigger further “harder” traffic management measures -such as flow control, pedestrian crossing points, parking restrictions and other traffic management measures, in some instances physical interventions such as localised widening or passing places. <p>Any mitigation measures identified for these shared links would be secured through each project’s final Construction Traffic Management Plans to be developed post-consent. These would be developed with, and approved by, Norfolk County Council as Highways Authority.</p> <p>Whilst these workstreams are ongoing, the locations which require further consideration due to the potential cumulative impact of both projects include The Street (linking B1149 with Oulton Street).</p> <p>Hornsea Three and NV will be looking to reach an agreement on these matters and engage with Norfolk County Council as the highways authority to reach a shared common point of agreement. This workstream is ongoing and for the purposes of the SoCG submitted at Deadline 1.</p> <p>Whilst the cumulative impact on traffic and transport therefore remains “not agreed” between the Applicant and Norfolk Vanguard, material headway has been made and both projects are confident that agreement can be reached in the short term.</p> <p>If CTMP measures are required along The Street (linking B1149 with Oulton Street), these measures will be captured in a revised Outline CTMP to be submitted in due course into the Hornsea Three examination.</p>
1.11.10	<p>Paragraph 1.5.3.6 of the ES [APP-159] states that traffic management measures are to be designed post-submission which might include a diversion route for the main compound at Oulton Street.</p> <p>A) Please provide details of what such measures might be, including any measures to manage HGV movements.</p>	<p>The Applicant has provided details of traffic management measures which may be adopted to facilitate access to the main construction compound in Section 6 and 7, as well as Appendix A (the Main Construction Compound Access Strategy) of this Briefing note.</p>

Question	Examining Authority First Written Questions (Main Construction Compound)	Where in this document the Applicant has provided a response
	B) How they would be secured in the dDCO?	
1.12.9	<p>Paragraphs 3.7.3.32 of the ES [APP -058] states that Oulton Airfield is proposed to be the main construction compound.</p> <p>A)What would be the hours of use of the construction compound, including for vehicles coming to and from the compound?</p> <p>B)Please provide an assessment of noise arising from the use of the compound, including from vehicle movements on Oulton Street.</p> <p>C)What noise mitigation measures may be required at this location?"</p>	<p>The Applicant has provided details of the proposed use, including hours of operation, of the main construction compound in Section 2 of this Briefing note.</p> <p>Details on the noise assessment relating to the use of the compound (excluding vehicle movements) is provided in section 5.5-5.8). Details on the potential traffic movements are set out in 3.27 – 3.30, although further work to refine this and inform the assessment on residential amenity (including noise) is ongoing as set out in Sections 6 and 7. Work is also ongoing in respect to the access strategy as a whole as identified in Annex A and B.</p>
1.15.16	<p>Several interested parties, including BDC [RR-057], have drawn attention to a dismissed planning appeal in 2014 for an anaerobic digester plant at Oulton Airfield.</p> <p>Please comment on the relevance and implications of that appeal decision for Hornsea Project Three, particularly in relation to the appeal Inspector's conclusions regarding effects on local highway conditions, highway safety on Oulton Street and the living conditions of local residents.</p>	<p>The Applicant has demonstrated how the proposed access strategy for the main construction compound has overcome the issues raised in respect to the dismissed planning appeal for an anaerobic digester plant in Annex A and B.</p>

5. Conclusions of the Environmental Statement

5.1 An assessment of the potential impacts resulting from the onshore main construction compound is presented in the Environmental Statement included within the Application. This section provides a summary of the findings of the Environmental Statement relevant to the main compound and issues raised in Relevant Representations, whilst Section 6 summarises the work undertaken post-application prior to Deadline 1 and Section 7 summarises the work ongoing.

Traffic and Transport

5.2 An assessment of traffic and transport impacts is presented in Volume 3, Chapter 7: Traffic and Transport of the Environmental Statement (APP-079).

5.3 As stated in Volume 6, Annex 7.2: Description of Network Links and Sensitivity of the Environmental Statement (APP-160), The Street is included as Link ID 208 and its sensitivity has been assessed. The estimated construction traffic flows along The Street are set out in paragraph 7.8.3.44 of Volume 3, Chapter 7: Traffic and Transport of the Environmental Statement (APP-079). The Applicant has assessed that there is a need for mitigation as set out in Table 7.4 and paragraph 7.7.5.50 of Volume 3, Chapter 7: Traffic and Transport of the Environmental Statement (APP-079).

- 5.4 Within the Environmental Statement the mitigation is defined as traffic management measures along The Street, to be secured through the development of the Construction Traffic Management Plan (CTMP) (secured under Requirement 18 of the dDCO [APP-027]) which will be submitted to and approved by the relevant planning authority in consultation with the relevant highway authority. To establish the principles of the CTMP, an outline CTMP was submitted with the Application (APP-176).

Noise and Vibration

- 5.5 An assessment of noise and vibration impacts is presented in Volume 3, Chapter 8: Noise and Vibration of the Environmental Statement (APP-080).
- 5.6 Volume 3, Annex 8.2: Construction Noise Model Output of the Environmental Statement (APP-168) sets out the assumptions and results of the noise modelling undertaken to identify the likely levels of noise associated with the use of construction compounds and from the construction traffic associated with Hornsea Three. This incorporates the main construction compound and assumes a maximum design scenario of construction activities (synonymous to cable installation) within the assessment. Noise impacts from construction activities have been identified using British Standard guidance (BS 5228-1:2009+A1:2014) and taking into account the duration of an activity, the expected types of plant items and equipment (e.g. generators) that will be used, the times when the plant will be used and the attenuation of sound due to distance, ground attenuation and barriers.
- 5.7 With the implementation of mitigation measures, the noise and vibration impacts from the construction activities at the main construction compound will have a negligible effect on nearby noise sensitive receptors (as shown in Sheet 4 of Figure 1.1 presented in APP-168).
- 5.8 Mitigation measures to minimise disturbance to noise sensitive receptors, including those close to the main construction compound, are set out in section 6.2 of the Outline CoCP (APP-179), which will form the basis of the final CoCP to be submitted and approved by the relevant planning authority under Requirement 17 of the draft DCO (APP-027). These mitigation measures include the implementation of Best Practicable Means (e.g. where reasonably practicable, the use of quieter alternative methods, plant or equipment; and the use of hoardings, enclosures or acoustic barriers) and agreeing construction noise management measures for specific construction activities with the relevant local authority prior to the start of construction. These noise management measures will be added to the final CoCP.

Air Quality

- 5.9 An assessment of noise and vibration impacts is presented in Volume 3, Chapter 9: Air Quality of the Environmental Statement (APP-081).
- 5.10 A risk-based assessment of potential impacts from fugitive dust emissions was undertaken using the Institute of Air Quality Management (IAQM) method. This indicated that, in the absence of dust control measures, the overall dust impact risk for the construction-phase of Hornsea Three, including at the main construction compound, would be categorised as high.

- 5.11 Dust control measures that are appropriate to this high level of risk category have been identified in detail in Table 9.29 of Volume 3, Chapter 9: Air Quality of the Environmental Statement [APP-081]. With the application of controls recommended by the IAQM for high risk construction areas, the risk of impacts would be expected to be reduced such that the effect is 'not significant' in EIA terms. Furthermore, the impact is predicted to be of local spatial extent, intermittent and effects are not anticipated to continue beyond the construction phase (i.e. they are predominantly reversible).

Historic Environment

- 5.12 Paragraph 1.6.2.52 of Volume 6, Annex 5.1: Desk Based Assessment of the Environmental Statement (APP-149) briefly describes the baseline in terms of Oulton airfield and notes that some of the buildings remain, including the control tower, and that a large portion of the runways were removed in 1979. In addition, this appendix notes that the airfield has Historic Environment Record (HER) number 7364 and is therefore a heritage asset.
- 5.13 The Works Plan - Onshore (APP-013) show Works Numbers 13 and 14 (the main construction compound and associated access), which are secured through DCO, as being located on the existing hardstanding at the airfield. It is the Applicant's view that a detailed assessment of Oulton Airfield is screened out of the EIA, as much of its heritage value has arguably already been lost in the removal of a large portion of the runways and repurposing of the site for agriculture. In any event, the proposed use as a main construction compound (set out throughout the application. Paragraphs 3.7.3.31 to 3.7.3.32 of Volume 1, Chapter 3: Project Description and paragraphs 4.1.7.3 to 4.1.7.6 inclusive of the Outline CoCP (APP_179)) means that no intrusive works would occur and it would be in temporary use only; the remaining section of runway and tracks will be retained and their form will remain unaltered during the proposed use. The airfield already comprises hard standing suitable for the temporary placement of site facilities (such as offices, briefing rooms, catering facilities, storage etc. typically housed in port-a-cabins) and to allow plant and materials to be stored safely and securely. Therefore, no significant effects to Oulton Airfield are anticipated.
- 5.14 Finally, paragraph 5.11.1.158 et seq. of Volume 3, Chapter 5: Historic Environment (APP-077) of the Environmental Statement outlines the assessment of the setting of the Blickling Conservation Area, located some 600 m east of the main construction compound at its nearest point. The Applicant acknowledges there may be a degree of visibility of the construction activities on the main construction compound, however the impacts on the setting of Blickling Conservation Area, a designated asset of medium sensitivity, would be of local spatial extent, medium term duration, continuous and reversible. It concludes that no significant effects will occur as a result of Hornsea Three.

Interaction with Norfolk Vanguard and Norfolk Boreas

- 5.15 Hornsea Three's approach to Cumulative effects assessment is documented in Volume 1, Chapter 5, Section 4 of the Environmental Impact Assessment Methodology [APP-060]. The Cumulative Effect Assessment (CEA) considers the likely effects arising from Hornsea Three alongside the likely effects of other development activities in the vicinity of Hornsea Three, based on the information available.

- 5.16 As noted in Volume 4, Annex 5.2: Cumulative Effects Screening Matrix of the Environmental Statement, Vattenfall is proposing to build a major offshore windfarm called Norfolk Vanguard (alongside elements of Norfolk Boreas), located nearly 50 km from Norfolk's coast. For the purpose of this document this project is hereafter referred to as 'Norfolk Vanguard'. As part of a wider compound strategy set out within their DCO application the construction of the onshore cable corridor for Norfolk Vanguard would be served by cable logistics areas near Oulton Airfield. The physical overlap of the projects is shown in Figure 1 of the Statement of Common Ground between Ørsted Hornsea Project Three (UK) Ltd and Norfolk Vanguard Ltd and Norfolk Boreas Ltd.
- 5.17 Hornsea Three adopted a tiered approach to its cumulative assessment in line with standard industry practice and in accordance with The Planning Inspectorate Advice Note Nine and its complementary guidance in Advice Note 17. In the case of NV (application reference EN010079), this has been included in the CEA (Tier 3 development) for Hornsea Three due to the fact that the project remained 'in planning', and at the time of writing the Environment Statement for Hornsea Three was typically reliant upon material presented in Norfolk Vanguard's PEIR.
- 5.18 The Applicant's assessments were undertaken based on Norfolk Vanguard's PEIR which provided initial estimates for the additional traffic loadings to/from The Street to be a primary peak of 16 weeks at 96 daily movements and a secondary peak of 6 weeks at 88 daily movements.
- 5.19 In 28 June 2018, Norfolk Vanguard submitted its application to the Planning Inspectorate, and this was accepted in 24 July 2018. As documented in the SoCG with Norfolk Vanguard, as well as in the response to Examiners First Written Question 1.15.3, the Applicant is currently working with Norfolk Vanguard to update the cumulative effects assessment in respect to traffic and transport and associated air quality and noise and vibration.

6. Work Undertaken Post-Application, prior to Deadline 1, to inform the Construction Traffic Management Plan

- 6.1 In response to submissions made by stakeholders in relevant representations and pre-and post-application consultation (see Section 4), the Applicant has undertaken a range of baseline surveys to clarify the baseline traffic and transport conditions at the main construction compound (including its implications on baseline air quality and noise and vibration). The purpose of these surveys and follow on work is to obtain further clarify on the traffic flows along The Street, providing detailed analysis of types of vehicle, speed etc., and inform the development of traffic management measures which will ultimately be presented in the final CTMP developed post consent / pre-commencement of works.
- 6.2 Whilst this information does help inform the baseline data on which the Environmental Statement is based, the additional data does not alter or amend the findings of the Environmental Statement submitted with the Application. This information includes:

- Automatic Traffic Surveys - 15 June 2018 to 28 June;
- Automatic Traffic Surveys - 16 October;
- Video Turning Counts – 16 October;
- 24 hour traffic flow survey - 16 October; and
- Noise and vibration surveys completed at the Old Railway Gatehouse - 15 October to 22 October.

6.3 Using the baseline traffic survey data, the Applicant first identified a number of options which demonstrated how vehicles could access the main construction compound to/from the main road network, via The Street in a safe and efficient manner. This is provided in Annex B: Main Construction Compound Access Strategy which identifies four options:

- Option 1: Passing Places;
- Option 2: Comprehensive Widening;
- Option 3a: Passing Places with B1149/The Street/B1345 Circulatory; and
- Option 3b: Temporary One-Way Northbound All Traffic (The Street);

6.4 Annex B also takes into consideration the interaction between Hornsea Three and other projects in the area, most notably Norfolk Vanguard/Norfolk Boreas projects which are currently being promoted by Vattenfall, as well as historic planning history at the proposed main construction compound site (e.g. the Anaerobic Digester facility (planning application reference 20130860)). The access options identified in Annex B were submitted to stakeholders for their review and comment in September and October 2018 (see Section 4). In addition, the proposals were submitted for consideration at NCC's Development Team Meeting on 01 October 2018.

6.5 Feedback from NCC, including from the Development Team Meeting, was provided on 30 October 2018 and confirmed that Option 1: Passing Places was considered an acceptable and workable solution subject to the findings of a Stage 1 Safety Audit. All other options were considered either unsuitable on highway safety grounds, or to be excessive. Feedback also advised that the NCC would be looking for the works to the road way to be temporary, whilst works to the road hump (as described in Annex A and B) and the B1149 junction to be permanent. This feedback is reflected in the Statement of Common Ground with Norfolk County Council submitted at Deadline 1.

6.6 Feedback from Oulton Parish Council (OPC) in September 2018, through an established Working Group, has indicated continued opposition to the use of Site 4 as the main construction compound. This is reflected in the Relevant Representation [RR-034]. Without prejudicing this position, OPC identified Option 1: Passing Places to be the least worst option of the options tabled in Annex B, but noted that there remained concerns.

6.7 Based on the feedback received, and to confirm that all other options were unsuitable, the Applicant undertook Stage 1 Road Safety Audits for all access options presented in Annex B. The findings of these audits are reported in Annex A: Main Construction Compound Access Strategy – Safety Review, and confirm that taking account of the Stage 1 Road Safety Audit, and designers response to the findings, Option 1: Passing Places provides an acceptable and workable solution which would provide access the main construction compound to/from the main road network, via The Street in a safe and efficient manner.

- 6.8 Subsequent feedback from OPC received via email on 05 November 2018, noted that none of the options identified in Annex B were well received at an October Parish Council meeting, and that residents raised concerns that the current baseline traffic (including agricultural traffic) had not been satisfactorily considered by the Applicant. This is addressed in Annex B, as well as in response to Examining Authority Question 1.11.11.
- 6.9 Although the Applicant considers that significant progress has been made in demonstrating a workable access strategy for the main construction compound, it is acknowledged that the measures set out in Annex A and B in respect of Option 1: Passing Places are part of ongoing discussions with NCC (as local highway authority) and other interested stakeholders (including OPC). Notwithstanding this, the Applicant is confident that a solution acceptable to NCC as the local highway authority, taking into consideration the feedback received from OPC, can be reached and will be secured, once agreed, through the Outline CTMP (APP-176). The status of discussions regarding the main construction compound are reflecting in the Statement of Common Ground between Hornsea Project Three and Norfolk County Council, as well as between Hornsea Project Three and Broadland District Council as submitted at Deadline 1.

7. Steps to be undertaken Post-Deadline 1

- 7.1 Although the Applicant considers that significant progress has been made in demonstrating a workable access strategy for the main construction compound, it is acknowledged that the measures set out in Annex A and B in respect of Option 1: Passing Places are part of ongoing discussions with NCC (as local highway authority) and other interested stakeholders (including OPC). As such, for the purpose of Deadline 1, the work in respect to traffic and transport at the main construction compound is considered to be ongoing (see also paragraphs 7.3 – 7.6 below in respect to the CEA assessment). Furthermore, as the access strategy to be implemented will have direct impacts on the associated noise and vibration, and air quality assessment – particularly at the residential property located along The Street (The Old Railway Gatehouse), this work is also considered ongoing.

Cumulative Effects Assessment

- 7.2 There may be cumulative impacts on a small number of shared road links during construction of Hornsea Project Three and Norfolk Vanguard, including at The Street (linking B1149 with Oulton Street) which is of direct relevance to the main construction compound. Both parties continue to work together to ensure alignment of highway threshold levels applied by each project, i.e. traffic capacity of each road link before significant impacts are expected, and alignment as to the scope of appropriate traffic management measures that may be required as thresholds are reached – i.e. confirming:

- Thresholds on each street (or part of street) where no or limited (“soft”) traffic management measures would be required, such as controls on daily traffic demand, driver induction, community liaison;
- Thresholds on each street (or part of street) which would trigger further “soft” traffic management measures, such as timing of deliveries, hazard signage, restricted periods, and temporary speed restrictions; and
- Thresholds on each street (or part of street) which would trigger further “harder” traffic management measures -such as flow control, pedestrian crossing points, parking restrictions and other traffic management measures, in some instances physical interventions such as localised widening or passing places.

7.3 Any mitigation measures identified for these shared links would be secured through each project’s final Construction Traffic Management Plans to be developed post-consent. These would be developed with, and required to be approved by, Norfolk County Council as Highways Authority under requirement 18 of the draft DCO (Version 1, as submitted for Deadline 1).

7.4 Hornsea Three and Norfolk Vanguard will be looking to reach an agreement on these matters and engage with Norfolk County Council as the highways authority to reach a shared common point of agreement. Although these measures have not been agreed at Deadline 1, material headway has been made and both projects are confident that agreement can be reached in the short term.

7.5 It is noted that the access strategies being developed, as reported in Annex A and B, take account of these discussions with Norfolk Vanguard and are being designed such that they would provide an acceptable access solution within the cumulative scenario.

Annex A Main Construction Compound Access Strategy – Safety Review

Annex A - Main Construction Compound Access Strategy – Safety Review

Ørsted

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London, SW1P 1WG

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

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1. Introduction

Background

- 1.1 As stated in Volume 1, Chapter 3: Project Description of the Environmental Statement (APP-058), one onshore main construction compound is needed as part of the construction process for Hornsea Three to manage the construction and cabling activities and to act as a central base for the construction operations to ensure they progress efficiently. A location for a main construction compound was identified within Volume 1, Chapter 3: Project Description of the Environmental Statement (APP-058), at the former Oulton Airfield which currently has access via The Street, which connects the B1149 to the south and B1345 to the north.
- 1.2 This access strategy presents a final solution for Hornsea Three construction vehicles to access the main construction compound to/from the main road network, via The Street in a safe and efficient manner.

Purpose of this Safety Review

- 1.3 This safety review has been prepared to set out the actions taken in order to achieve a safe access to the main construction compound. This review has also been prepared to provide a centralised, single source of information pertaining to the main compound access, drawing from information already provided within the Application and expanding on specific points where relevant.
- 1.4 A road safety audit was undertaken in October 2018 by CJ Safety Audit, who was appointed by Create Consulting Engineers LTD in order to demonstrate that the provision of the aforementioned compound access did not have any concerning safety implications for the existing traffic on the B1149 or any future traffic generated by Hornsea Three.
- 1.5 CJ Safety Audit was provided with Main Construction Compound Access Strategy (Design Development Document) – **Annex B to Appendix 20** which considers the 4 options presented to stakeholders to provide highway access to the main construction compound, which has an anticipated life of up to 8 years. Works include improvements to C263, The Street, its junction with B1149 and the site access junction, together with one-way routing of traffic via C593 Blickling Road.
- 1.6 The road safety audit report is included as part of Appendix A of this report and is also summarised in section 4 of this report.
- 1.7 In addition to the ‘Hornsea 3 Main Construction Compound Access Strategy’, Sep 2018, the following drawings were submitted for the road safety audit, and are included as part of Main Construction Compound Access Strategy (Design Development Document) – **Annex B to Appendix 20** -
- 1554/03/101 Proposed Improvements Option 1 (Sheet 1 of 2);
 - 1554/03/102 Proposed Improvements Option 1 (Sheet 2 of 2);
 - 1554/03/103 Proposed Improvements Option 2 (Sheet 1 of 2);
 - 1554/03/104 Proposed Improvements Option 2 (Sheet 2 of 2);
 - 1554/03/105 Proposed One-Way Routing Option 3A; and
 - 1554/03/106 Proposed One-Way Routing Option 3B.

2. Draft Scheme Options

2.1 The ‘Main Construction Compound Access Strategy’ report, includes the four options. The four options are as follows:-

- Option 1: Passing Places;
- Option 2: Comprehensive Widening;
- Option 3a: Passing Places with B1149/The Street/B1345 Circulatory;
- Option 3b: Temporary One-Way Northbound All Traffic (The Street);

Option 1: “Passing Places”

2.2 The main feature of this option comprises a total of eight extended passing places (to accommodate two full-length articulated vehicles) at key locations along The Street extending from the junction with the B1149 to the Oulton Airfield access, with all construction traffic routed to/from the B1149 using The Street to the south of the proposed compound; and includes improvements to junction geometry and drainage at the B1149/The Street junction through bellmouth widening, installation of “containment” kerbs to prevent HGV and agricultural vehicle overrunning and a formal means of drainage including filter drain/soakaway on the South side of the junction to minimise the potential for ponding.

2.3 A “shallow-dig” system of road widening is proposed for the passing places and a cellular system of road construction is identified (Grasscrete, or similar) with a view to minimising impact on existing Root Protection Areas (RPAs) associated with mature tree specimen.

Option 2 “Comprehensive Widening”

2.4 Option 2 effectively builds on Option 1 and would provide more extensive road widening (up to 6.0m) along The Street extending from the junction with the B1149 to the Oulton Airfield access, through wider application of the cellular system of road construction referred to above.

Option 3a: Passing Places with B1149/The Street/B1345 Circulatory

Option 3a would provide all of that associated with Option 1, plus additional passing places along The Street to the north of Oulton Airfield, where these can be successfully accommodated. A circulatory system would then be employed (for construction traffic only) involving The Street, the B1149 and the B1345, joining at the B1149/B1345 roundabout.

Option 3b: Temporary One-Way Northbound All Traffic (The Street);

2.5 Option 3a would only provide the bellmouth improvements at the B1149/The Street junction and **all movements** (including existing residential, agricultural and commercial traffic) would be subject to a temporary one-way arrangement for the duration of the Hornsea Three project, northbound along The Street for the entire section between the B1149 to the south and B1345 to the north of the main construction compound at Oulton Airfield,

3. Road Safety Audit

- 3.1 A road safety audit was undertaken in October 2018 by CJ Safety Audit, who was appointed by Create consulting Engineers LTD in order to demonstrate that the provision of the aforementioned compound access did not have any concerning safety implications for the existing traffic on the The Street or any future traffic generated by Hornsea Three. The road safety audit report is included as part of Appendix A.
- 3.2 The CJ Safety Audit report raises a number of comments and offers some recommendations to overcome these problems.
- 3.3 A summary of the Auditor’s comments is shown in table 3.1 below.

Table 3.1: Summary of the Safety Audit comments.

Comment	Affected Options					Comments
	1	2	3a	3b	Location	
3.1				✓	The Street	<p><u>Problem:</u> head-on collisions due to a 12km one-way system that could be contravened by local users/residents of The Street to avoid a lengthy diversion.</p> <p><u>Recommendation:</u> Re-assess the principle of the proposed one-way system.</p>
3.2	✓	✓	✓		Bend in The Street	<p><u>Problem:</u> head-on collision on bend due to restricted forward visibility at the bend in The Street.</p> <p><u>Recommendation:</u> Widen the carriageway on the outside of the bend to reduce the likelihood of conflict. The Auditors note that there is a wide bellmouth on the outside of the bend. It appears that providing an edge of carriageway marking a metre or two back into the bellmouth might achieve much of the desired widening.</p>

3.3		✓			The Street	<p><u>Problem:</u> Loss of control due to differential skidding resistance if a pre-cast modular construction is used for the widening of The Street, in Option 2.</p> <p><u>Recommendation:</u> If this option is pursued, the carriageway widening should have a similar surface to the adjacent carriageway as regards ride quality and skidding resistance.</p>
3.4		✓			The Street	<p><u>Problem:</u> elevated accident risk due to increased speed as the Street is to be widened to a uniform 6m carriageway.</p> <p><u>Recommendation:</u> Carriageway widening is not recommended without improving the other safety aspects of the highway.</p>
3.5			✓	✓	Blickling Road	<p><u>Problem:</u> Blickling Road is particularly narrow and twisty between Itteringham Road and The Bure bridge, with limited forward visibility and may be unsuitable for large articulated HGV, which may lead on head-on collision.</p> <p><u>Recommendation:</u> Re-assess in detail the suitability of this route for use by large HGVs.</p>
3.6			✓	✓	The Street	<p><u>Problem:</u> elevated accident risk to local users because of proposed diversion of site traffic, including large HGVs, northwards through the settlement of Oulton Street</p> <p><u>Recommendation:</u> If either of these options is to be pursued, a 20mph speed limit within the settlement would help offset the risk from increased traffic.</p>
3.7				✓	The Street	<p><u>Problem:</u> Elevated accident risk due to increased northbound traffic speeds. On the undeveloped lengths this could be detrimental to roadside and to the risk of collision at field accesses.</p> <p><u>Recommendation:</u> If this option is pursued, appropriate traffic calming measures should be included.</p>

3.0	✓	✓	✓	✓	B1149 at junction with The Street	<u>Problem:</u> The junction lies on a long straight high-speed section of B1149 where drivers may be tempted to overtake. Specific advance signing is suggested to warn drivers of the potential for conflict with slow turning HGVs.
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4. Designer Response to Road Safety Audit

- 4.1 In response to the comments raised within the road safety audit report, a designer response to road safety audit has been prepared by Create Consulting Engineers and the aforementioned report is included as part of Appendix B of this report.
- 4.2 A summary of the reasons or proposals the designer has put together in response to the safety audit comments is shown in table 4.1 below.

Table 4.1: Summary of the Designer Response

Comment Ref.	Agree/Disagree	Reasons/Proposals
3.1	Agree	Option 3b is no longer pursued
3.2	Agree	Carriageway is to be widened by edge of carriageway marking a metre or two back into the bellmouth.
3.3	Agree	Option 2 is no longer pursued
3.4	Agree	Option 2 is no longer pursued
3.5	Agree	Options 3a and 3b are no longer pursued.
3.6	Agree	Options 3a and 3b are no longer pursued.
3.7	Agree	Option 3b is no longer pursued
3.10	Agree	Signing is to be proposed as part of the access design layout. A red background sign stating 'CAUTION HGVs TURNING' is to be provided on the B1149 near the junction (or similar signing to be agree with the Highway Authority).

- 4.3 Taking account of the Safety Audit and designer's response Option 1 as shown on Create Drawings number 1554_03_101 and 1554_03_102 contained in Appendix C is recommended for approval by Norfolk County Council.
- 4.4 It has been agreed with Norfolk County Council that a final scheme design will be prepared and submitted prior to Deadline 2 which will also include the following;
- Scheme to be updated to include safety audit comments; and
 - Pavement Assessment of The Street;
 - Construction details of the passing bays with confirmed axle loading; and
 - Construction design of the vertical alignment changes adjacent to the Old Railway Gatehouse.

Appendix A Road Safety Audits



C J Safety Audit

**HORNSEA 3 OFF-SHORE WIND FARM
OULTON, NORFOLK: MAIN CONSTRUCTION COMPOUND
HIGHWAY ACCESS WORKS**

STAGE 1 ROAD SAFETY AUDIT

**REPORT REF: CCE11C/NGC/RSA1
October 2018**

Report prepared for: Create Consulting Engineers Ltd
15 Princes Street
Norwich
Norfolk
NR3 1AF

Project Information:

Client	Create Consulting Engineers Ltd on behalf of Orsted
Client Ref	1554
Title	Main Construction Compound, Oulton, Norfolk: Highway Access Works
Report author	N G Calder BSc(Hons) CEng MICE MCIHT MSoRSA

Report Status:

Issue	Status	Purpose	Date
1	Draft	Client approval	29/10/18
2	Final	Client issue	30/10/18

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Disclaimer: C J Safety Audit accepts no responsibility to any third parties to whom the information contained in this report is made known.

1. Introduction

- 1.1 This report has been produced as a result of a Stage 1 Road Safety Audit (RSA) carried out at the request of Create Consulting Engineers Ltd on behalf of Orsted.
- 1.2 The RSA Team membership was as follows:-
- N G Calder BSc(Hons) CEng MICE MCIHT MSoRSA
Principal Road Safety Consultant
CJ Safety Audit
- J M Jones IEng MCIHT FIHE MSoRSA
Principal Road Safety Consultant
CJ Safety Audit
- 1.3 The RSA was undertaken in October 2018 and comprised an examination of the documents provided by the client (see Appendix A) together with a site visit on 24 October 2018 between the hours of 14:00 and 15:15. The weather was bright and the road surface dry. Traffic flows on The Street were very light, and on B1149 moderate; all were free-flowing.
- 1.4 The terms of reference of the RSA are as described in Road Safety Audit Standard HD19/15. The audit team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.
- 1.5 The proposed Main Construction Compound for the Hornsea 3 project is located at a former airfield at Oulton Street, just north of B1149. The audited scheme comprises 4 options to provide highway access to the compound, which has an anticipated life of 8 years. Works include improvements to C263 The Street, its junction with B1149 and the site access junction, together with one-way routing of traffic via C593 Blickling Road.
- 1.6 The auditors have reviewed the most recent 5-year police accident record (2013-2017) for the location on Crashmap.co.uk. During this period there have been no recorded accidents on C263 The Street. However, two (both slight) occurred on B1149 in immediate vicinity of its junction with The Street: one involved tail-end collision on B1149, the other a left-turn conflict at the junction. A further two accidents (both slight) occurred on C593 Blickling Road on the potential one-way re-routing section.
- The record is considered to be low with no specific implications for the proposed scheme.
- 1.7 A problem location plan has been included in Appendix B to the report.

2. Items Raised at Previous Road Safety Audits

The auditors are not aware of any previous audits.

3. Items Raised at this Stage 1 Road Safety Audit

General

3.1 Problem

Location: The Street (Option 3b)

Summary: head-on collisions due to one-way contravention

Option 3b imposes a lengthy diversion of up to 12km for local users/residents of The Street, which some drivers may consider an unreasonable burden. In a very rural location (with no practical enforcement) this may lead to contravention of the one-way system, particularly at quieter times. This could result in head-on collisions.

Recommendation

Re-assess the principle of the proposed one-way system.

Road Alignment

3.2 Problem

Location: bend in The Street (Options 1, 2, 3a)

Summary: head-on collision on bend

Approx. 400m north-east of B1149 there is a bend in The Street with restricted forward visibility. It is proposed to improve visibility by hedge trimming, however the Auditors estimate that it will still be substandard, raising the risk of head-on collision on the narrow carriageway, particularly between larger vehicles.

Recommendation

Widen the carriageway on the outside of the bend to reduce the likelihood of conflict (widening on the inside would further reduce northbound forward visibility). The Auditors note that there is a wide bellmouth on the outside of the bend (serving The Granary). It appears that providing an edge of carriageway marking a metre or two back into the bellmouth might achieve much of the desired widening.

3.3 Problem

Location: The Street (Option 2)

Summary: loss of control due to differential surface

Under Option 2, it is proposed to widen the carriageway of The Street to a uniform 6m; however, the Auditors note that this is to be achieved using a pre-cast modular

construction. This raises concern over surface performance when driven at any speed. A vehicle with nearside wheels running on the modular surface and off-side wheels on the original carriageway may prove difficult to control, particularly when braking, due to the differential skidding resistance.

Recommendation

If this option is pursued, the carriageway widening should have a similar surface to the adjacent carriageway as regards ride quality and skidding resistance.

3.4 Problem

Location: The Street (Option 2)

Summary: elevated accident risk due to increased speed

Under Option 2, it is proposed to widen the carriageway of The Street to a uniform 6m. This will produce more free-flowing traffic conditions and is likely to result in increased speeds. This would be detrimental to roadside safety, where narrowed verges, trees and telegraph poles pose a hazard to any errant vehicle. It would also raise the risk of collision at field accesses, at the bend and on approach to proposed shuttle working at the Old Railway Gatehouse.

Recommendation

Carriageway widening is not recommended without improving the other safety aspects of the highway.

3.5 Problem

Location: Blickling Road (Options 3a & 3b)

Summary: risk of head-on collision

C593 Blickling Road follows an historic alignment and HGV traffic is currently very low. The 1.5km section between Itteringham Road and The Bure bridge is particularly narrow (too narrow for a centreline) and twisty with limited forward visibility. The Auditors are concerned that it is unsuitable for the proposed increase in large articulated HGVs under these two Options, which may lead to head-on collisions.

Recommendation

Re-assess in detail the suitability of this route for use by large HGVs.

3.6 Problem

Location: The Street (Options 3a & 3b)

Summary: elevated accident risk to local users

These two options propose diversion of site traffic, including large HGVs, northwards through the settlement of Oulton Street. The Auditors noted that this section of road

is more eventful, with frequent private accesses, on-street parking and some pedestrian activity. The additional traffic would be detrimental to the safety of existing users.

Recommendation

If either of these options is to be pursued, a 20mph speed limit within the settlement would help offset the risk from increased traffic.

3.7 Problem

Location: The Street (Option 3b)

Summary: elevated accident risk due to increased speed

Option 3b proposes one-way operation on The Street for all users. The removal of all opposing traffic is likely to result in increased northbound traffic speeds. On the undeveloped lengths this could be detrimental to roadside safety (where narrow verges, trees and telegraph poles pose a hazard to any errant vehicle) and to the risk of collision at field accesses. Within the settlement of Oulton Street, it could be detrimental to the safety of local users.

Recommendation

If this option is pursued, appropriate traffic calming measures should be included.

Junctions

3.8 No comment

Non-Motorised Users

3.9 No comment

Signing and Lighting

3.10 Comment – for consideration at detailed design

Location: B1149 at junction with The Street (all Options)

The junction lies on a long straight high-speed section of B1149 where drivers may be tempted to overtake. Specific advance signing is suggested to warn drivers of the potential for conflict with slow turning HGVs.

4. Audit Team Statement

We certify that this audit has been carried out in accordance with Road Safety Audit Standard HD19/15.

Audit Team Leader

Nevil Calder
Member of the Society of Road Safety Auditors (MSoRSA)
Principal Road Safety Consultant
CJ Safety Audit

Signed:



Date: 30 October 2018

Audit Team Members

Malcolm Jones
Member of the Society of Road Safety Auditors (MSoRSA)
Principal Road Safety Consultant
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Signed:



Date: 30 October 2018

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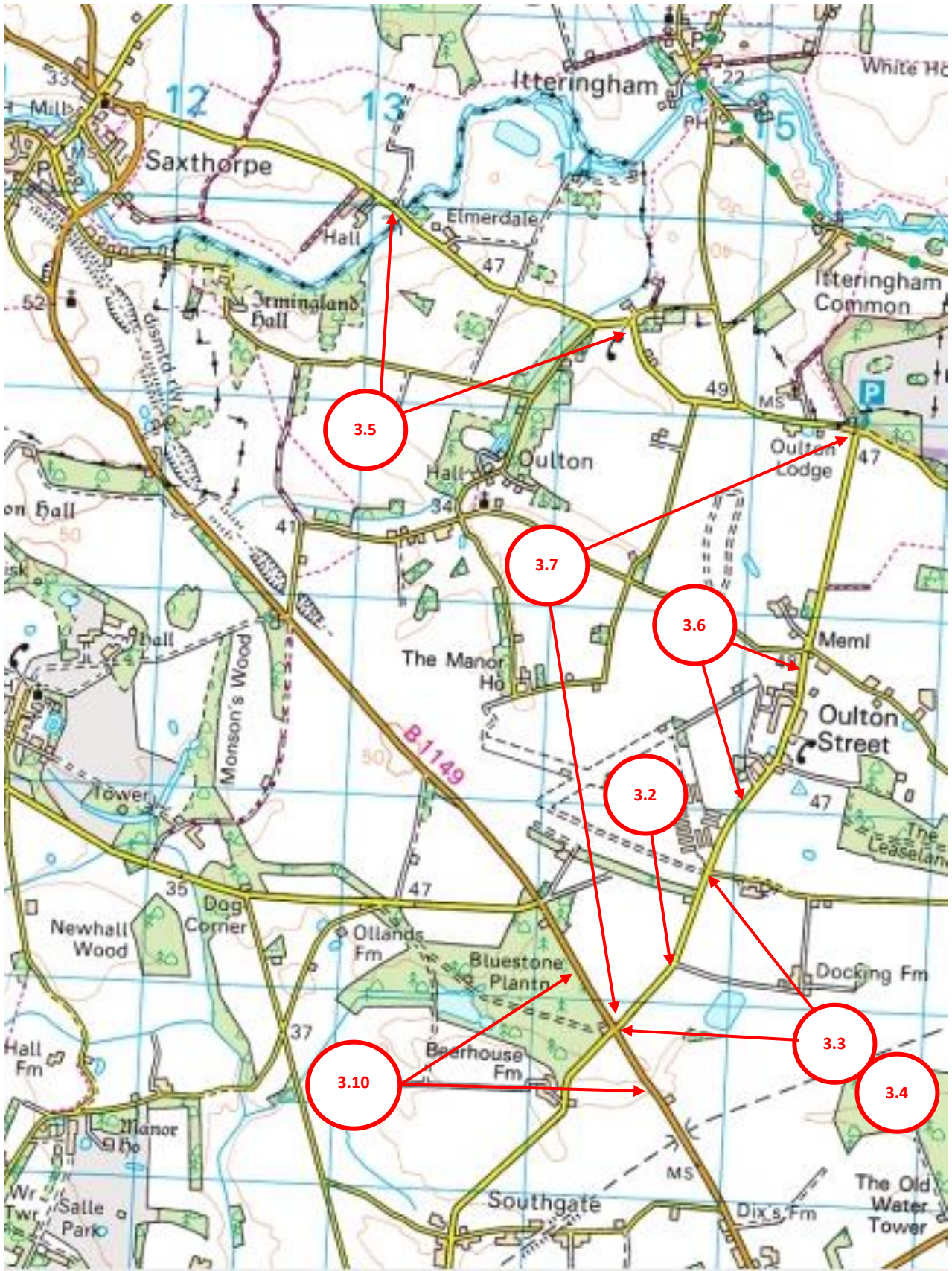
APPENDIX A - Audit Submission Documents

The following documents were submitted for this road safety audit:-

Hornsea 3	Main Construction Compound Access Strategy	Sep 2018
Drg no 1554/03/101	1:1000	Proposed Improvements Option 1 (Sheet 1 of 2)
Drg no 1554/03/102	1:1000	Proposed Improvements Option 1 (Sheet 2 of 2)
Drg no 1554/03/103	1:1000	Proposed Improvements Option 2 (Sheet 1 of 2)
Drg no 1554/03/104	1:1000	Proposed Improvements Option 2 (Sheet 1 of 2)
Drg no 1554/03/105	1:1000	Proposed One-Way Routing Option 3A
Drg no 1554/03/106	1:1000	Proposed One-Way Routing Option 3B
Predicted HGV movement data		
5yr Accident Data from Crashmap.co.uk		

No departures from standard were advised.

APPENDIX B – Problem Location Plan



Appendix B Designers Response

Oulton Access Strategy Stage 1 RSA Designer Response

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

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3. Conclusion	8

1. Introduction

- 1.1 A road safety audit was undertaken in October 2018 by CJ Safety Audit, who was appointed by Create consulting Engineers LTD on behalf of Orsted in order to demonstrate that the provision of the Oulton main compound access did not have any concerning safety implications for the existing traffic on The Street or any future traffic generated by Hornsea Three.
- 1.2 This report details Create Consulting Engineers Ltd's ('Create') response to the Stage 1 Road Safety Audit (RSA) Report carried out on the proposed main compound access off The Street ('the Site'). A site visit on 24 October between the hours of 14:00 and 15:15 was undertaken and the results were issued in report reference CCE11C/NGC/RSA1.

2. Response to Items Raised at the Stage 1 Road Safety Audit

2.1 This section provides a formal “Designer Response” to the comments made in the Stage 1 Road Safety Audit including the general comments in Section 3 of the RSA. The RSA’s paragraph numbers are used here as reference numbers. Items raised by the Stage 1 Road Safety Audit carried out by CJ Safety Audit are presented below and addressed by Create Consulting Engineer’s as a formal “Designer Response”.

General:

2.2 Ref 3.1: Option 3b imposes a lengthy diversion of up to 12km for local users/residents of The Street, which some drivers may consider an unreasonable burden. In a very rural location (with no practical enforcement) this may lead to contravention of the one-way system, particularly at quieter times. This could result in head-on collisions. Therefore, head-on collisions due to the one-way contravention are likely to occur on The Street.

Recommendation

2.3 Re-assess the principle of the proposed one-way system

Engineer’s Response:

2.4 Agreed. Therefore, for this and other reasons, this option (Option 3b) is no longer pursued.

Road Alignment:

2.5 Ref 3.2: Approx. 400m north-east of B1149 there is a bend in The Street with restricted forward visibility. It is proposed to improve visibility by hedge trimming, however the Auditors estimate that it will still be substandard, raising the risk of head-on collision on the narrow carriageway, particularly between larger vehicles. This comment affects options 1, 2 and 3a.

Recommendation

2.6 Widen the carriageway on the outside of the bend to reduce the likelihood of conflict (widening on the inside would further reduce northbound forward visibility). The Auditors note that there is a wide bellmouth on the outside of the bend (serving The Granary). It appears that providing an edge of carriageway marking a metre or two back into the bellmouth might achieve much of the desired widening

Engineer’s Response:

2.7 Agree. Carriageway is to be widened by edge of carriageway marking a metre or two back into the bellmouth.

2.8 Ref 3.3: Under Option 2, it is proposed to widen the carriageway of The Street to a uniform 6m; however, the Auditors note that this is to be achieved using a pre-cast modular construction. This raises concern over surface performance when driven at any speed. A vehicle with nearside wheels running on the modular surface and off-side wheels on the original carriageway may prove difficult to control, particularly when braking, due to the differential skidding resistance.

Recommendation

2.9 If this option is pursued, the carriageway widening should have a similar surface to the adjacent carriageway as regards ride quality and skidding resistance.

Engineer's Response:

- 2.10 Agreed. Due to this and other comments raised by the Auditors, this option (Option 2) is no longer pursued.
- 2.11 Ref 3.4: Under Option 2, it is proposed to widen the carriageway of The Street to a uniform 6m. This will produce more free-flowing traffic conditions and is likely to result in increased speeds. This would be detrimental to roadside safety, where narrowed verges, trees and telegraph poles pose a hazard to any errant vehicle. It would also raise the risk of collision at field accesses, at the bend and on approach to proposed shuttle working at the Old Railway Gatehouse.

Recommendation

- 2.12 Carriageway widening is not recommended without improving the other safety aspects of the highway.

Engineer's Response:

- 2.13 Agreed. Due to this and other comments raised by the Auditors, this option (Option 2) is no longer pursued.
- 2.14 Ref 3.5: C593 Blickling Road follows an historic alignment and HGV traffic is currently very low. The 1.5km section between Itteringham Road and The Bure bridge is particularly narrow (too narrow for a centreline) and twisty with limited forward visibility. The Auditors are concerned that it is unsuitable for the proposed increase in large articulated HGVs under these two Options, which may lead to head-on collisions. This comment affects options 3a and 3b.

Recommendation

- 2.15 Re-assess in detail the suitability of this route for use by large HGVs.

Engineer's Response:

- 2.16 Agreed. Due to this and other comments raised by the Auditors, these two options (Options 3a and 3b) are no longer pursued.
- 2.17 Ref 3.6: These two options propose diversion of site traffic, including large HGVs, northwards through the settlement of Oulton Street. The Auditors noted that this section of road is more eventful, with frequent private accesses, on-street parking and some pedestrian activity. The additional traffic would be detrimental to the safety of existing users. This comment affects options 3a and 3b.

Recommendation

If either of these options is to be pursued, a 20mph speed limit within the settlement would help offset the risk from increased traffic.

Engineer's Response:

- 2.18 Agreed. Due to this and other comments raised by the Auditors, these two options (Options 3a and 3b) are no longer pursued.

2.19 Ref 3.7: Option 3b proposes one-way operation on The Street for all users. The removal of all opposing traffic is likely to result in increased northbound traffic speeds. On the undeveloped lengths this could be detrimental to roadside safety (where narrow verges, trees and telegraph poles pose a hazard to any errant vehicle) and to the risk of collision at field accesses. Within the settlement of Oulton Street, it could be detrimental to the safety of local users.

Recommendation

If this option is pursued, appropriate traffic calming measures should be included.

Engineer's Response:

2.20 Agreed. Due to this and other comments raised by the Auditors, this option (Option 3b) is no longer pursued.

Signing and Lighting:

2.21 Ref 3.10: The junction lies on a long straight high-speed section of B1149 where drivers may be tempted to overtake. Specific advance signing is suggested to warn drivers of the potential for conflict with slow turning HGVs.

Recommendation

Specific advance signing is suggested to warn drivers of the potential for conflict with slow turning HGVs.

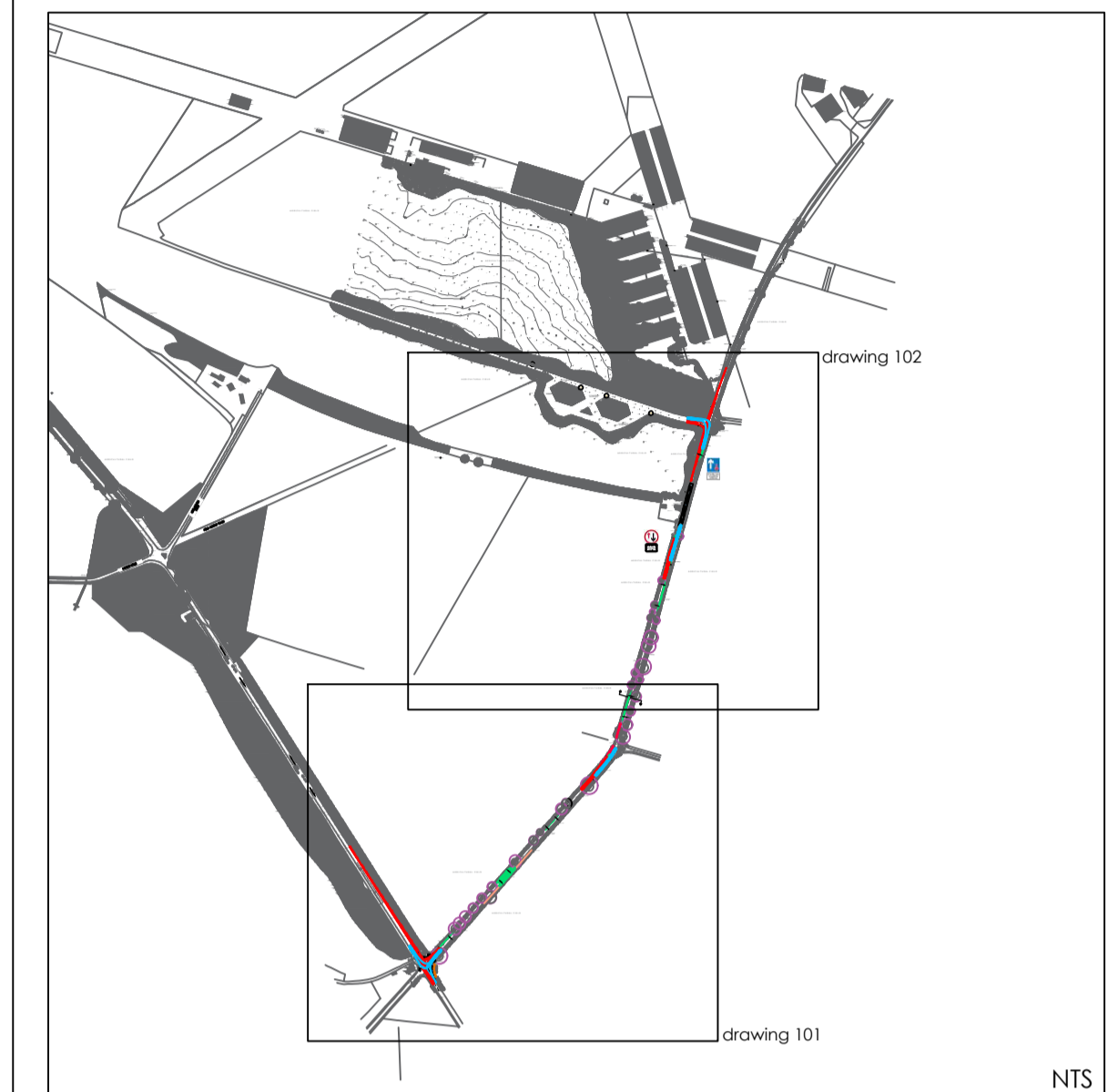
Engineer's Response:

2.22 Agree. Signing is to be proposed as part of the access design layout. A red background sign stating 'CAUTION HGVs TURNING' is to be provided on the B1149 near the junction (or similar signing to be agreed with the Highway Authority).

3. Conclusion

- 3.1 It can be concluded from the aforementioned Engineer responses in section 2 that following the Stage 1 Road Safety Audit, the engineers agrees that the safest option is **Option 1**, where only two problems have been raised and these raised concerns can be overcome with the following measures:
- Carriageway is to be widened by edge of carriageway marking a metre or two back into the bellmouth serving The Granary; and
 - Signage warning the presence of HGVs turning within the vicinity of the junction to be added as part of the access design layout.

Appendix C Promoted Access Strategy



OPTION 1: PASSING PLACES

GENERAL NOTES:

1. PASSING PLACES (PP) TO BE FORMED BY SHALLOW-DIG CELLULAR SYSTEM (E.G. GRASSCRETE OR SIMILAR) PROVIDING LOCALISED 6.0m OVERALL ROAD WIDTH, WITH PERMEABLE DRAINAGE TO SUB-STRATA. PASSING PLACES ARE LOCATED AND SPECIFIED WITH SHALLOW-DIG CELLULAR SYSTEM SO TO MINIMISE IMPACT OF THEIR CONSTRUCTION ON EXISTING TREE ROOT PROTECTION AREAS.
2. THE DRAWING IS BASED ON A TOPOGRAPHIC SURVEY UNDERTAKEN BY PLANDESCIL REF 17697 IN CONJUNCTION WITH DIGITAL OS MAPPING.
3. ANY EXCAVATION CLOSE TO TREES/HEDGES TO BE CARRIED OUT IN ACCORDANCE WITH NJUG GUIDELINES.
4. SERVICES ARE TO BE PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES.
5. TO BE READ IN CONJUNCTION WITH ALL OTHER LAYOUT AND DETAIL DRAWINGS.
6. ACCESS FOR PEDESTRIANS AND CYCLISTS IS TO BE MAINTAINED AT ALL TIMES. ACCESS TO PROPERTIES ARE TO BE MAINTAINED AND WORKS PROGRAMMED IN CONSULTATION WITH PROPERTY OWNERS.
7. ANY ROAD MARKINGS/ROAD SIGNS ARE TO BE IN ACCORDANCE WITH THE S1 DOCUMENT "TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS, 2016"

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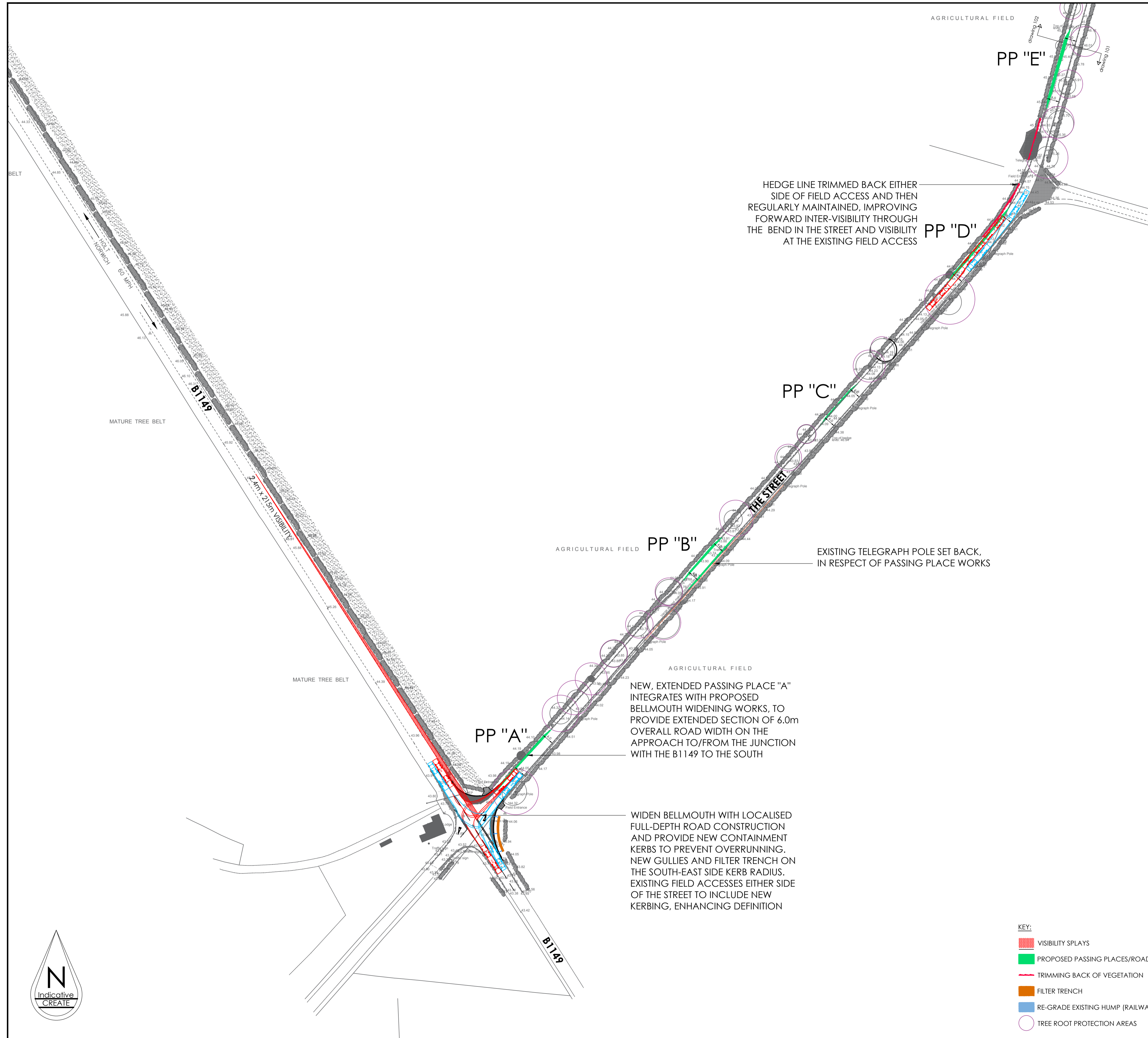
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REV	DATE	AMENDMENT DETAILS	DRAWN	APPROVED

Telephone: 01603 877010

PROJECT HORNSSEA 3 OFF-SHORE WIND FARM	DATE 18.09.18	DRAWING STATUS INFORMATION	
	SCALE(S) 1:1,000	DESIGNED MDA	
DRAWING TITLE PROPOSED IMPROVEMENTS THE STREET, OULTON (OPTION 1) SHEET 1 OF 2	CHECKED PZ	APPROVED PZ	 create CONSULTING ENGINEERS LTD
JOB No 1554	DRAWING No 03/101	REVISION	
CLIENT ORSTED			

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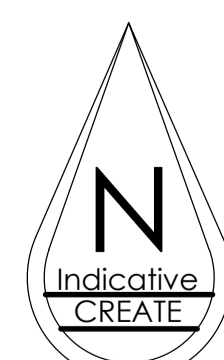
HEDGE LINE TRIMMED BACK EITHER SIDE OF FIELD ACCESS AND THEN REGULARLY MAINTAINED, IMPROVING FORWARD INTER-VISIBILITY THROUGH THE BEND IN THE STREET AND VISIBILITY AT THE EXISTING FIELD ACCESS

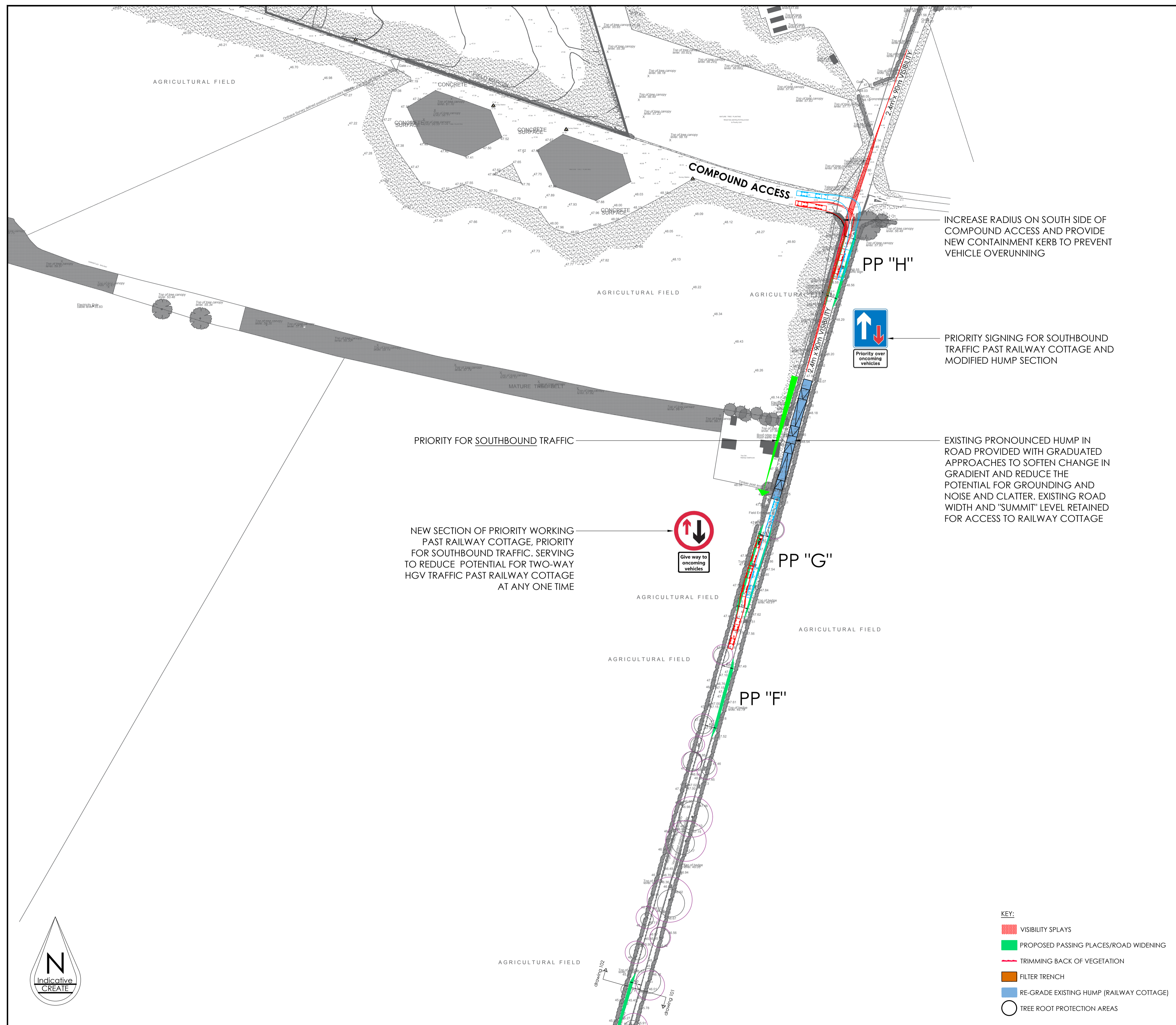
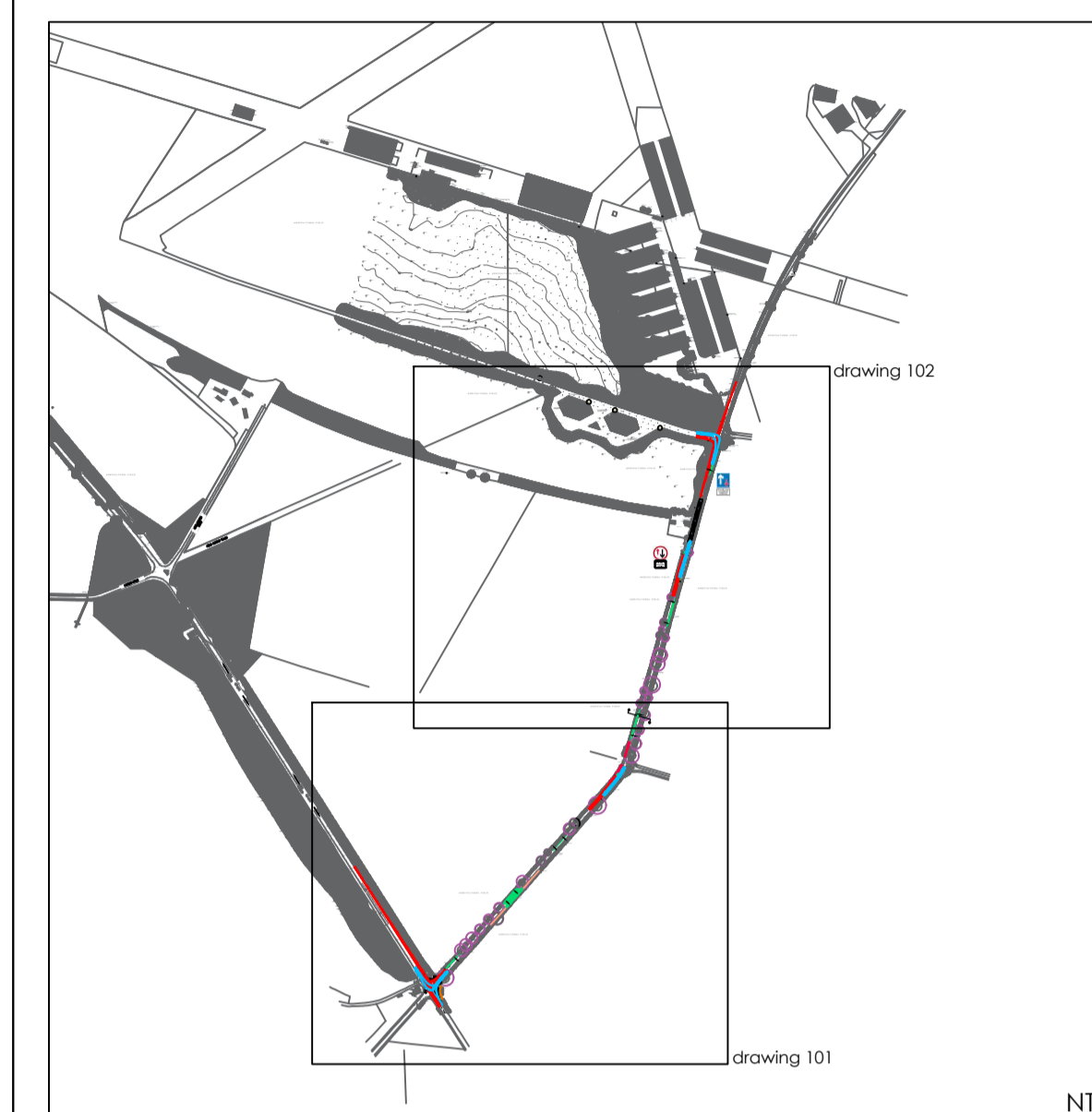
EXISTING TELEGRAPH POLE SET BACK, IN RESPECT OF PASSING PLACE WORKS

NEW, EXTENDED PASSING PLACE "A" INTEGRATES WITH PROPOSED BELLMOUTH WIDENING WORKS, TO PROVIDE EXTENDED SECTION OF 6.0m OVERALL ROAD WIDTH ON THE APPROACH TO/FROM THE JUNCTION WITH THE B1149 TO THE SOUTH

WIDEN BELLMOUTH WITH LOCALISED FULL-DEPTH ROAD CONSTRUCTION AND PROVIDE NEW CONTAINMENT KERBS TO PREVENT OVERRUNNING. NEW GULLIES AND FILTER TRENCH ON THE SOUTH-EAST SIDE KERB RADIUS. EXISTING FIELD ACCESSES EITHER SIDE OF THE STREET TO INCLUDE NEW KERBING, ENHANCING DEFINITION

- KEY:
- VISIBILITY SPLAYS
 - PROPOSED PASSING PLACES/ROAD WIDENING
 - TRIMMING BACK OF VEGETATION
 - FILTER TRENCH
 - RE-GRADE EXISTING HUMPS (RAILWAY COTTAGE)
 - TREE ROOT PROTECTION AREAS





INCREASE RADIUS ON SOUTH SIDE OF COMPOUND ACCESS AND PROVIDE NEW CONTAINMENT KERB TO PREVENT VEHICLE OVERRUNNING



PRIORITY SIGNING FOR SOUTHBOUND TRAFFIC PAST RAILWAY COTTAGE AND MODIFIED HUMP SECTION

PRIORITY FOR SOUTHBOUND TRAFFIC

EXISTING PRONOUNCED HUMP IN ROAD PROVIDED WITH GRADUATED APPROACHES TO SOFTEN CHANGE IN GRADIENT AND REDUCE THE POTENTIAL FOR GROUNDING AND NOISE AND CLATTER. EXISTING ROAD WIDTH AND "SUMMIT" LEVEL RETAINED FOR ACCESS TO RAILWAY COTTAGE

NEW SECTION OF PRIORITY WORKING PAST RAILWAY COTTAGE, PRIORITY FOR SOUTHBOUND TRAFFIC. SERVING TO REDUCE POTENTIAL FOR TWO-WAY HGV TRAFFIC PAST RAILWAY COTTAGE AT ANY ONE TIME



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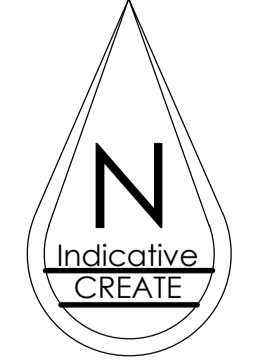
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Telephone: 01603 877010

PROJECT HORNSEA 3 OFF-SHORE WIND FARM	DATE 18.09.18	DRAWING STATUS INFORMATION	
DRAWING TITLE PROPOSED IMPROVEMENTS THE STREET, CULTON (OPTION 1) SHEET 2 OF 2	SCALE(S) 1:1,000	DESIGNED MDA	DRAWN MDA
CLIENT ORSTED	JOB No 1554	CHECKED PZ	APPROVED PZ
	DRAWING No 03/102	REVISION	



Annex B Main Construction Compound Access Strategy - Options

Oulton Access Strategy Stage 1 RSA Designer Response

Ørsted

5 Howick Place,

London, SW1P 1WG

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

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1. Introduction

- 1.1 A road safety audit was undertaken in October 2018 by CJ Safety Audit, who was appointed by Create consulting Engineers LTD on behalf of Orsted in order to demonstrate that the provision of the Oulton main compound access did not have any concerning safety implications for the existing traffic on The Street or any future traffic generated by Hornsea Three.
- 1.2 This report details Create Consulting Engineers Ltd's ('Create') response to the Stage 1 Road Safety Audit (RSA) Report carried out on the proposed main compound access off The Street ('the Site'). A site visit on 24 October between the hours of 14:00 and 15:15 was undertaken and the results were issued in report reference CCE11C/NGC/RSA1.

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Engineer’s Response:

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