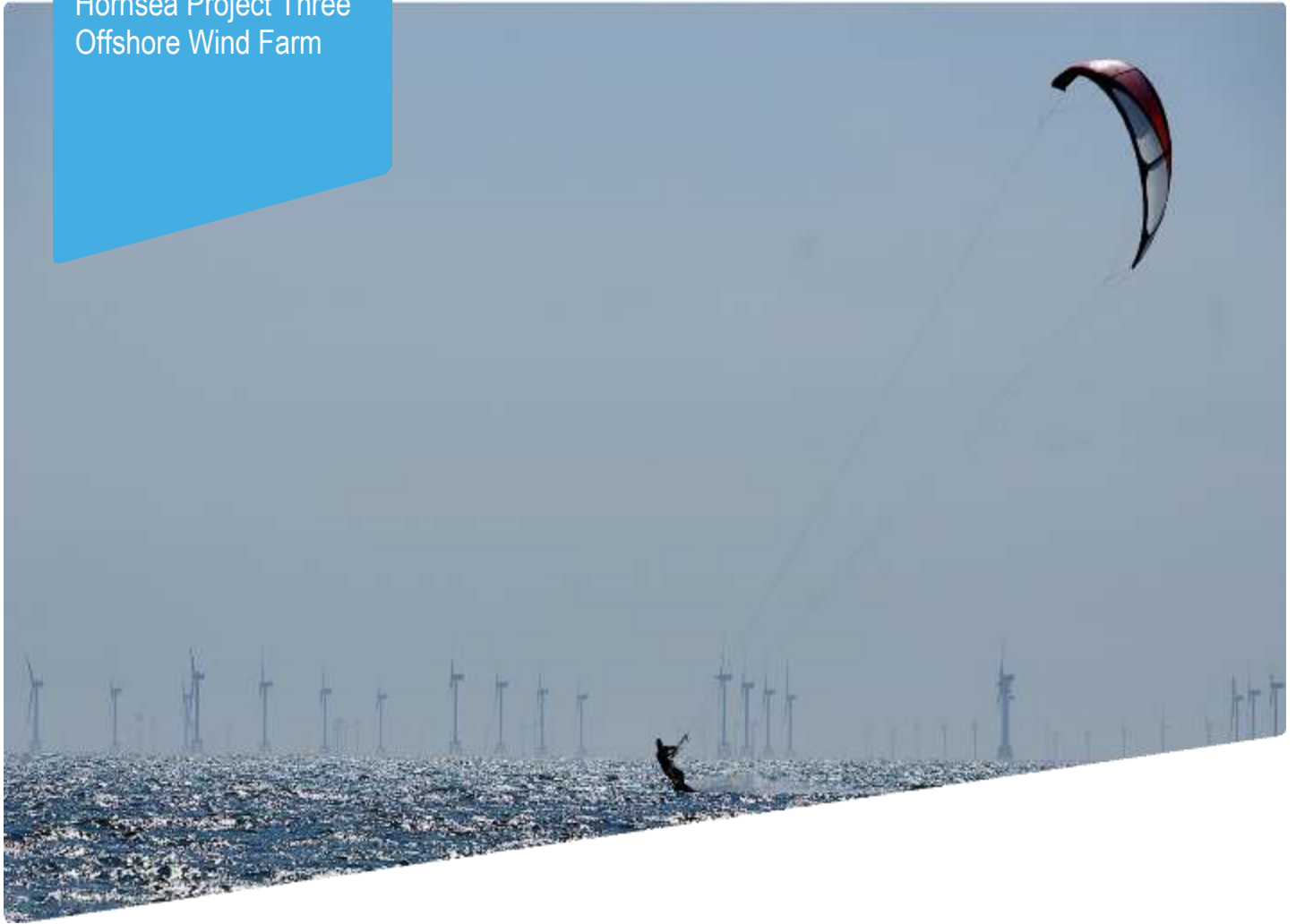


Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three Offshore Wind Farm

Appendix 29 to Deadline I - Permanent Access Note for HVDC converter/HVAC substation

Date: 7th November 2018

Document Control			
Document Properties			
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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 Ørsted Hornsea Project Three (UK) Ltd., on behalf of Ørsted Power (UK) Ltd., 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.

Purpose of this Access Note

- 1.2 This Permanent Access Note has been prepared to set out the actions taken in order to achieve a safe provision of a HGV access for a HVDC converter/HVAC substation off the B1113, in Swardeston, which is to be part of the Hornsea Three DCO application.
- 1.3 This briefing note has also been prepared to provide a centralised, single source of information pertaining to the substation access, drawing from information already provided within the Application and expanding on specific points where relevant, as agreed with Norfolk County Council to supply a single document as part of the Statement of Common Ground and in response to RR-035.
- 1.4 A road safety audit was undertaken in October 2018 by CJ Safety Audit, who was appointed by Create Consulting Engineers LTD on behalf of Ørsted Hornsea Project Three (UK) Ltd in order to demonstrate that the provision of the aforementioned HVDC converter/HVAC substation access did not have any concerning safety implications for the existing traffic on the B1113 or any future traffic generated by Hornsea Three.
- 1.5 The road safety audit report is included as part of Annex B of this report and is also summarised in section 3 of this report.

2. Draft access scheme

- 2.1 The proposal is for an access junction off B1113, just south of the A47 underbridge at Swardeston. In the long term, the junction will provide access to a proposed electrical supply substation. In the shorter term (3 years), it is designed to cater for abnormal construction vehicles of up to 93.5m in length and 5.0m in width.
- 2.2 All these vehicles would access the site from the north, in a “left in only” basis, and would egress the site back into the B1113 to the north, in a “right out only” basis. At this point, the B1113 is subject to the national 60mph speed limit.
- 2.3 Regarding the above, the junction has been designed accordingly, and RPS Drawing JNY8772-72 ‘Substation Access Detail and TRACK Runs’ has been include to this report, in Annex A.
- 2.4 The plan shows the proposed access junction layout as well as the tracking of abnormal vehicles expected to access/egress the site during the construction phase.

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 HVDC converter/HVAC substation access did not have any concerning safety implications for the existing traffic on the B1113 or any future traffic generated by Hornsea Three. The road safety audit report is included as part of Annex B.
- 3.2 The CJ Safety Audit report raises one single comment regarding the left turn from the B1113. This comment is in relation to the lack of detail provided regarding road construction: i.e. kerbing, pavement material and drainage.
- 3.3 The road safety audit report continues stating that this could have a bearing on the safe operation of the access, such as preventing verge encroachment and ponding/detritus on the highway. It considers the latter to be of particular importance as the site and access road are on a down gradient towards the junction, and this part of B1113 appears to be a low point with little positive drainage. The audit therefore suggests that early consideration is advised.

4. Designer Response to Road Safety Audit

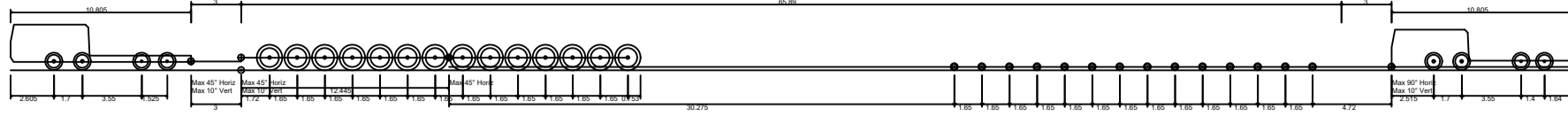
- 4.1 In response to the comments raised within the road safety audit report, a designer response to road safety audit has been prepared by Create Consulting Engineers and the aforementioned report is included as part of Annex C of this report.
- 4.2 A summary of the reasons or proposals the designer 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

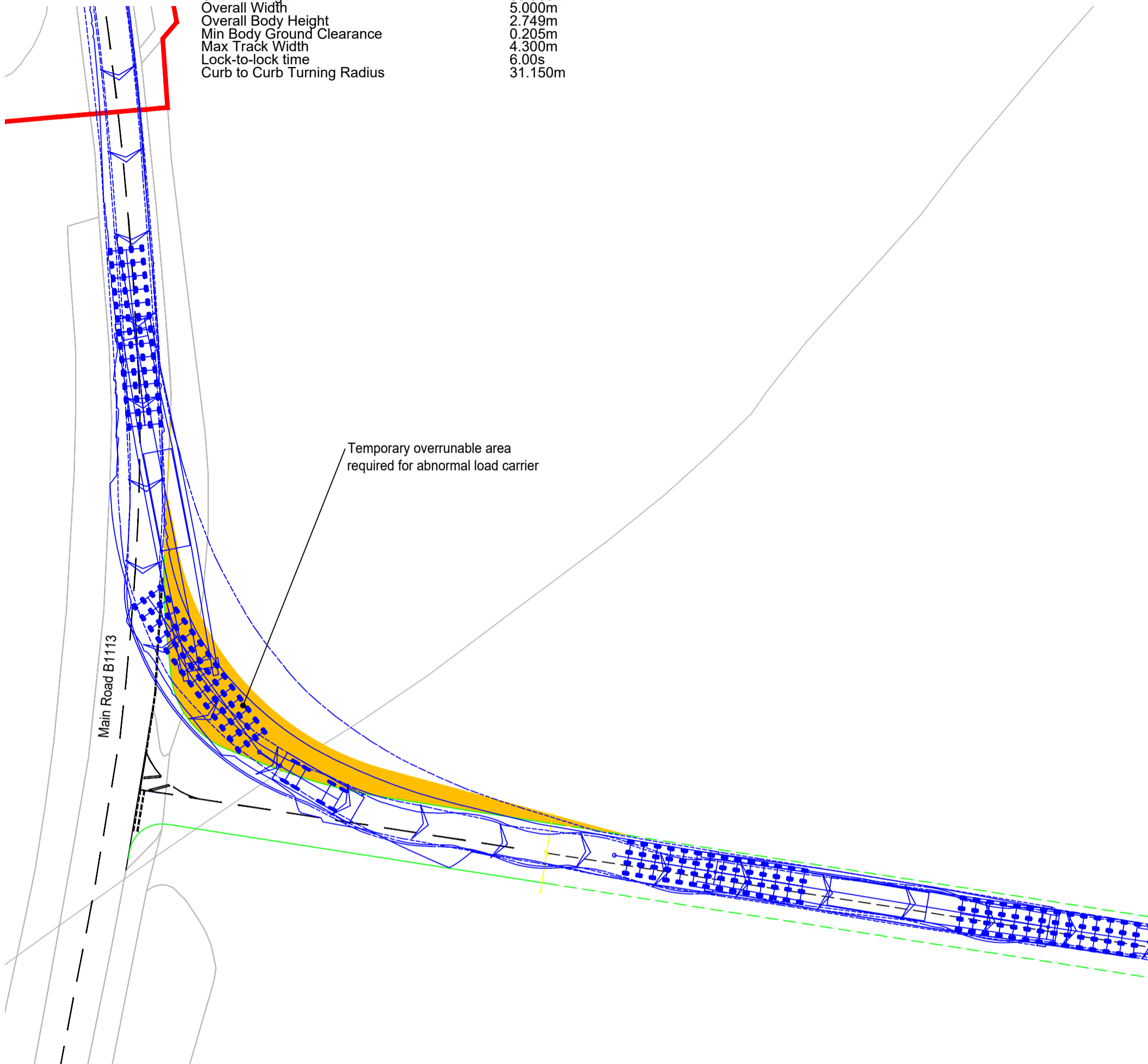
Problem (para no.)	Agree/ Disagree	Reasons/Proposals
3.3	Agree	An updated plan containing the proposed construction of the junction or temporary left turn overrun area; including kerbing, pavement material and drainage would be submitted prior to commencement of any work for approval.

Annex A Draft Access scheme

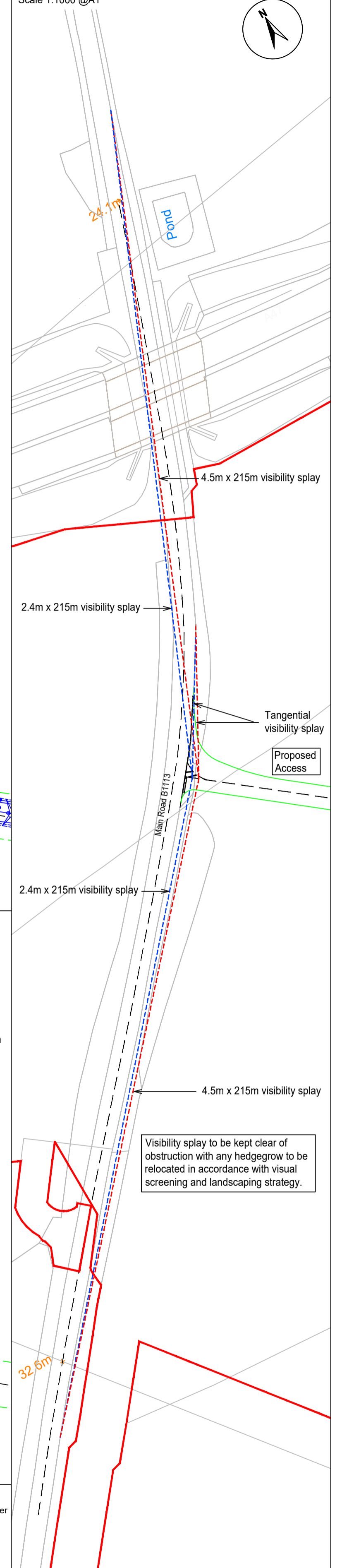
Abnormal Load Vehicle Swept Path Analysis
Scale 1:500 @A1



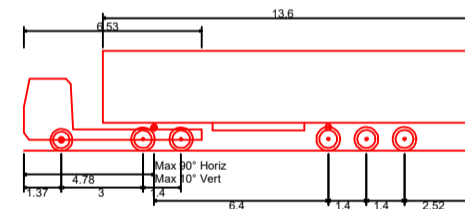
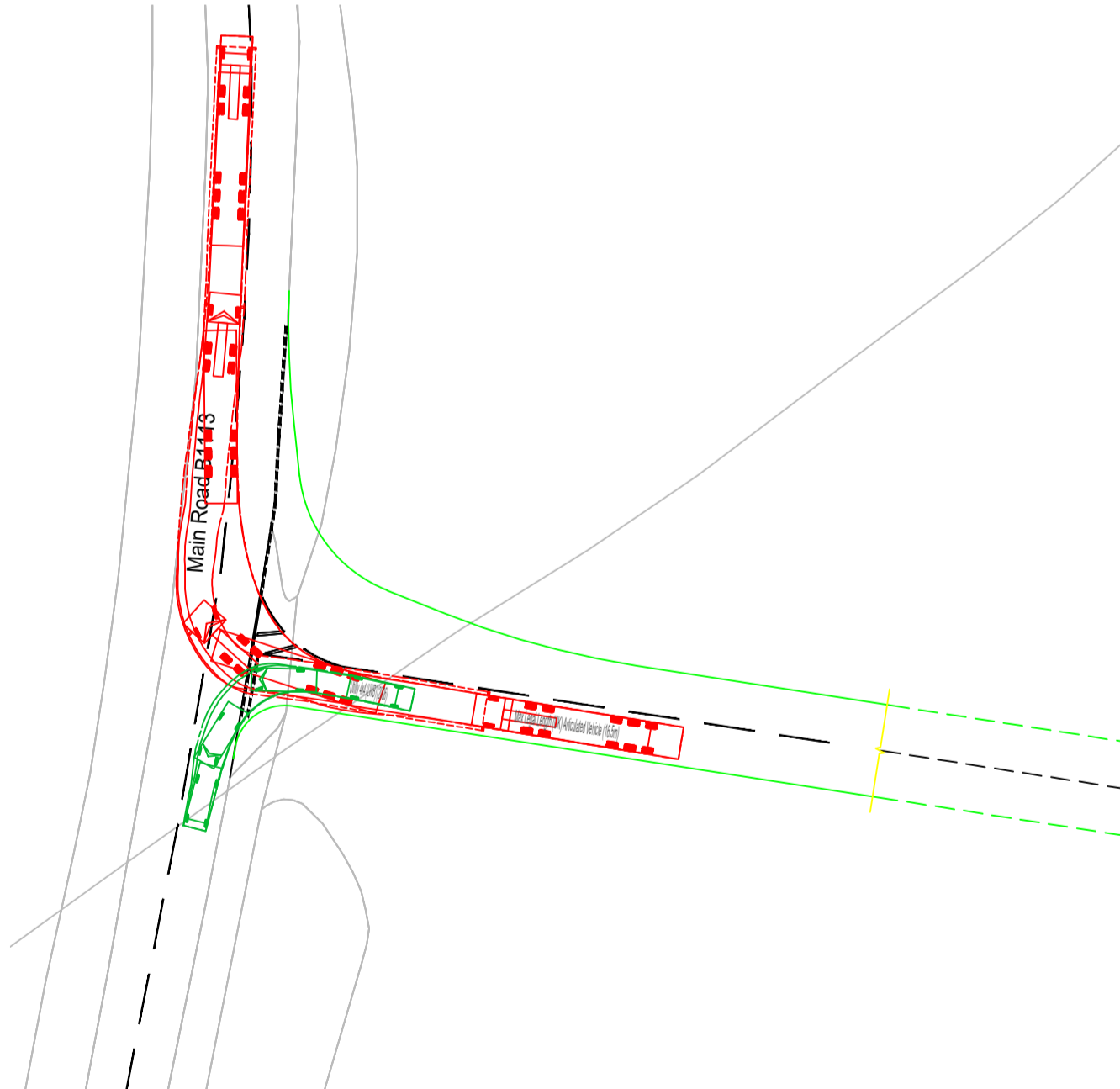
Abnormal Load Carrier 28 Axle 5m wide
 Overall Length 93.500m
 Overall Width 5.000m
 Overall Body Height 2.749m
 Min Body Ground Clearance 0.205m
 Max Track Width 4.300m
 Lock-to-lock time 6.00s
 Curb to Curb Turning Radius 31.150m



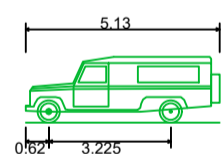
Proposed Access Visibility Splay
Scale 1:1000 @A1



Max legal Articulated Vehicle Swept Path Analysis
Scale 1:500 @A1



Max Legal Length (UK) Articulated Vehicle (16.5m)
 Overall Length 16.500m
 Overall Width 2.550m
 Overall Body Height 3.681m
 Min Body Ground Clearance 0.411m
 Max Track Width 2.500m
 Lock-to-lock time 6.00s
 Curb to Curb Turning Radius 6.530m



Utility 4x4 (LWB) (2006)
 Overall Length 5.130m
 Overall Width 1.790m
 Overall Body Height 1.750m
 Min Body Ground Clearance 0.289m
 Track Width 1.701m
 Lock-to-lock time 4.00s
 Curb to Curb Turning Radius 7.540m

- NOTES
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Client Orsted
 Project Hornsea Project 3
 Title Substation Access

DRAFT

Key
 Order Limits

Rev	Description	Date	Initial	Checked
B	Tracking amended.	21.09.18	IG	DA
A	Order Limits added	13.08.18	HN	DA

Status Information
 Project Number JNY8772
 Drawn By AJ
 Scale @ A2
 As Shown
 Checked by DA
 Date Created 15.02.18

Drawing Number JNY8772-72
 Rev B

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Annex B Road Safety Audit



C J Safety Audit

**HORNSEA 3 OFF-SHORE WIND FARM
SWARDESTON, NORFOLK
PROPOSED SUBSTATION ACCESS**

STAGE 1 ROAD SAFETY AUDIT

**REPORT REF: CCE11A/JMJ/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	JNY8772
Title	Substation, Swardeston, Norfolk – Proposed Access Junction
Report author	J M Jones IEng FIHE MCIHT MSoRSA

Report Status:

Issue	Status	Purpose	Date
1	Final	Client approval	24/10/18
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:-
- J M Jones IEng MCIHT FIHE MSoRSA
Principal Road Safety Consultant
CJ Safety Audit
- N G Calder BSc(Hons) CEng MICE MCIHT 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 23 October between the hours of 15:00 and 15:30. The weather was sunny and the road surface dry. Traffic flows were moderate and 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 audited scheme comprises a proposed access junction off B1113, just south of the A47 underbridge at Swardeston. In the long term, the junction will provide access to a proposed electrical supply substation. In the shorter term (2-2.5 years), it is designed to cater for abnormal construction vehicles of up to 93.5m in length and 5.0m width. All these movements will be on a "left in, right out" basis, and the junction has been designed accordingly. At this point, the B1113 is subject to the national 60mph speed limit.
- 1.6 The auditors have reviewed the most recent 5 year police accident record (2012-2016) for the location on Crashmap.co.uk. There have been no recorded accidents in the vicinity of the proposed junction.
- 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 No comment

Road Alignment

3.2 No comment

Junctions

3.3 Comment

Location: Left turn from B1113

The drawing provided for audit does not give any detail of the proposed construction of the junction or temporary left turn overrun area; for example kerbing, pavement material and drainage. This could have a bearing on its safe operation, such as preventing verge encroachment and ponding/detritus on the highway. The latter is of particular importance as the site and access road are on a down gradient towards the junction, and this part of B1113 appears to be a low point with little positive drainage. Early consideration is advised.

Non-Motorised Users

3.4 No comment

Signing and Lighting

3.5 No comment

4. General Comments

- 4.1 Although not part of the audit brief, the Auditors note that B1113 meets the primary route network at a very skewed junction approx. 1 mile north of the scheme. As this lies on the intended construction route, the designers should be aware that it may prove difficult for very large vehicles.

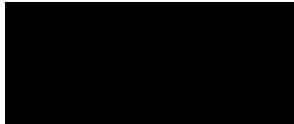
5. Audit Team Statement

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

Audit Team Leader

Malcolm Jones
Member of the Society of Road Safety Auditors (MSoRSA)
Principal Road Safety Consultant
CJ Safety Audit

Signed:

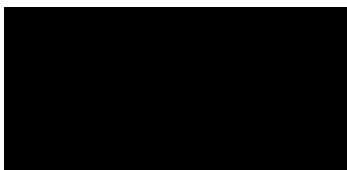


Date: 30 October 2018

Audit Team Members

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

Signed:



Date: 30 October 2018

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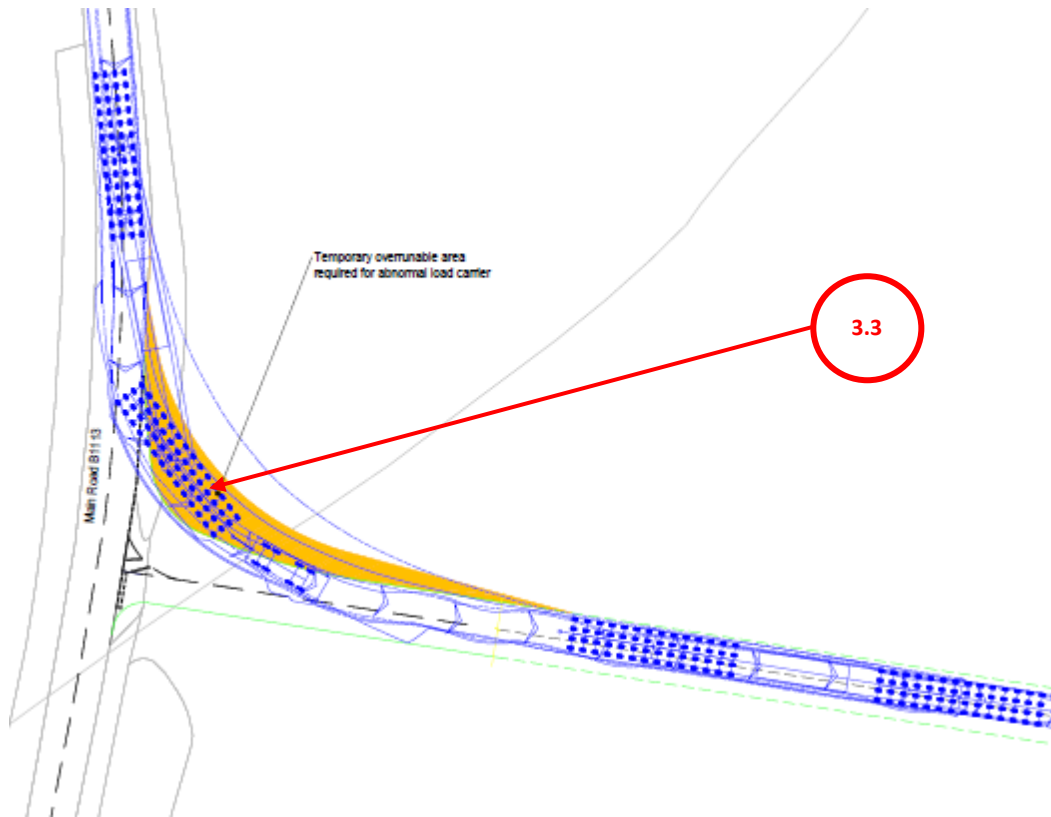
APPENDIX A - Audit Submission Documents

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

Drg no JNY8772-72 1:500@A1 Substation Access Detail and TRACK Runs
Predicted HGV movement data
5yr Accident Data from Crashmap.co.uk

No departures from standard were advised.

APPENDIX B – Problem Location Plan



Annex C Designer Response

Introduction

- 4.4 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 HVDC converter/HVAC substation access did not have any concerning safety implications for the existing traffic on the B1113 or any future traffic generated by Hornsea Three. The road safety audit report is included as part of Annex B of this report.
- 4.5 This report details Create Consulting Engineers Ltd's ('Create') response to the Stage 1 Road Safety Audit (RSA) Report carried out on the proposed access junction off B1113, just south of the A47 underbridge at Swardston ('the Site'). A site visit on 23 October between the hours of 15:00 and 15:30 was undertaken and the results were issued in report reference CCE11A/JMJ/RSA1.

Response to Items Raised at the Stage 1 Road Safety Audit

4.6 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 (Annex B). 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 as a formal “Designer Response”.

Junctions:

4.7 Ref 3.3: The drawing provided for audit does not give any detail of the proposed construction of the junction or temporary left turn overrun area; for example kerbing, pavement material and drainage. This could have a bearing on its safe operation, such as preventing verge encroachment and ponding/detritus on the highway. The latter is of particular importance as the site and access road are on a down gradient towards the junction, and this part of B1113 appears to be a low point with little positive drainage. The auditors noted that early consideration is advised.

Engineer’s Response:

4.8 The engineer agrees with CJ Safety Audit. An updated plan containing the proposed construction of the junction or temporary left turn overrun area; including kerbing, pavement material and drainage would be submitted prior to commencement of any work for approval.