**ESB Asset Development UK Limited**

# Millmoor Rig Wind Farm

## Abnormal Indivisible Load Route Assessment

111451

**MAY 2023**

# RSK GENERAL NOTES

**Project No.:** 111451-ALRA (0.2)

**Title:** Millmoor Rig Wind Farm, Abnormal Indivisible Load Route Assessment

**Client:** ESB Asset Development UK Limited

**Date:** 30 May 2023

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| | | | |
|---|---|---|---|
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| Date: | 30/05/2023 | Date: | 30/05/2023 |



Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

Cover Image: Causeymire Wind Farm, photo taken by Jon Hassel (jon.hassel@scptransport.co.uk)

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# 1 INTRODUCTION

## 1.1 Purpose of the Report

RSK has been commissioned by ESB Asset Development UK Limited (the applicant) to undertake a survey of the approved delivery route for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Millmoor Rig Wind Farm (the Proposed Development), located at Wauchope Forest, south of Bonchester Bridge in the Scottish Borders.

The Abnormal Load Route Assessment (ALRA) report has been prepared to help inform the applicant on the likely issues associated with the development of the site regarding off-site transport and access for AIL traffic. The report identifies the key points and issues associated with AIL deliveries and notes where remedial works, either in form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

Furthermore, it is the responsibility of the turbine supplier (depending on contractual arrangements) to ensure that the access route from the Port of Entry (POE) to the road transfer point is fit for purpose and that appropriate consideration for all road users has been made in accordance with the relevant health and safety legislation and ruling transport requirements.

## 1.2 Report Structure

The proceeding chapters of the report are structured as follows:

- **Section Two** provides details of the Proposed Development including candidate turbine components and anticipated transport vehicles;
- **Section Three** describes the delivery route options reviewed on the basis of the findings of a site visit along with the location of potential significant constraints including perceived / associated level of risk;
- **Section Four** provides a summary of the report and an outline of suggested further works, actions and recommendations for consideration; and
- **Appendices** details the location of the site and potential significant constraints and corresponding vehicle / load swept path assessment.

# 2 DEVELOPMENT DETAILS

## 2.1 Site Location

The Proposed Development is located in the Scottish Borders, within an area of commercial forestry in the Wauchope Forest. The land use within the site consists entirely of commercial forestry plantation. The plantation is currently active with some sections being felled, and other areas presenting recent crop plantation as well as mature stands. Only a few areas within the site are not covered by forestry:

- small areas kept clear around the abandoned settlement of Westshiels;
- forestry rides;
- areas adjacent to the streams and burns; and
- a quarry located in the western part of the site. The quarry area is recorded on OS mapping as disused but appears to be currently active.

There are few settlements near the site, these include the settlements of Wolfelee and Hyndlee along the B6357 approximately 1.6 km to 2.3 km to the west, and Southdean and Chesters along the A6088 approximately 0.8 km to 2.km to the northeast. The site is close to the Scotland/England border, being around 2.5 km at its closest point.

A site location plan is shown in Appendix 1.

## 2.2 Candidate Turbine

The applicant has indicated they are considering the Nordex N163 turbine for the purpose of this report and as the potential component for the proposed site.

The worst-case load for route assessment for the N163 sections is the Mid Tower. This section will be used for the subsequent desktop assessment of the proposed loads along the access route.

Details of the N163 mid tower section have been obtained directly from Nordex. The details of the mid tower section are summarised in Table 2.1.

**Table 2.1: Candidate Turbine Mid Tower Dimensions**

| Component | Length (m) | Maximum Width on Vehicle (m) |
|---|---|---|
| Nordex N163 Mid Tower | 35.0 | 5.0 |

## 2.3 Proposed Delivery Equipment

Towers will be carried in a 3 + 7 axle clamp adaptor. Figure 2.1 illustrates the tower component's transport system.

**Figure 2.1: 3+7 Axle Clamp Adaptor**

# 3 ACCESS ROUTE ASSESSMENT

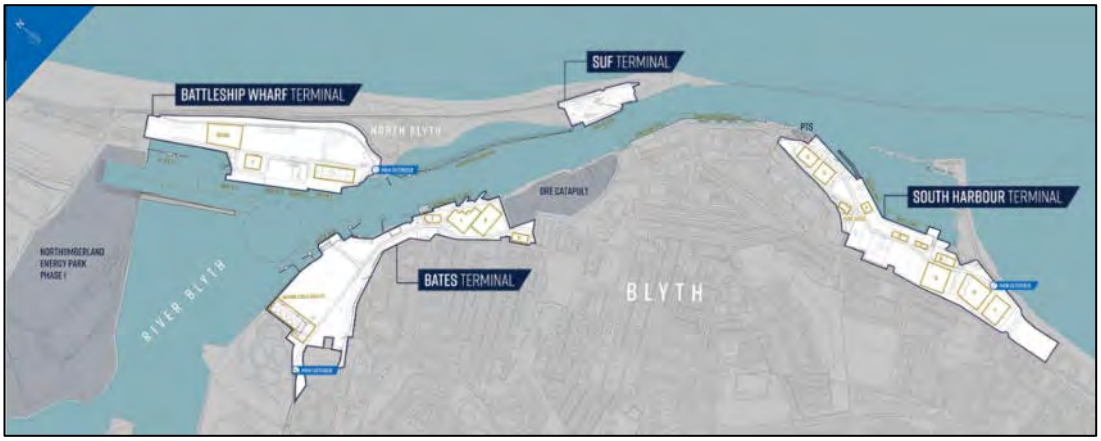
## 3.1 Port of Entry

The proposed Port of Entry (PoE) is Port of Blyth in Northumbria. The port is the most feasible port of access for projects in this area and has been used for a number of projects including: Hoprigshiels, Kinegar, Fallago Rig, Crystal Rigg and Ray Estate.

South Harbour and Battleship Wharf are two quayside sites of the port that have been used for wind turbine discharge, storage, and delivery egress.

The layout of the port is illustrated below in **Figure 3.1**.

**Figure 3.1: Port of Blyth Layout Plan**




Source: Port of Blyth <https://portofblyth.co.uk/facilities/> (Accessed 5th May 2023).

## 3.2 Proposed Access Route

An extensive site survey has been undertaken from the PoE to the point of access identified as the site entrance point. This survey was carried out using a desk-based review of the entire length of the delivery route. This report supersedes prior work prepared by Tetra Tech and provides an update to their original Route Survey Report (RSR) from April 2021.

Plans detailing the location of the areas considered to require detailed assessment, herein referred to as Points of Interest (POI), are contained within **Appendix 2** and **Appendix 3**.

The proposed access route to site is as follows:

- Loads would exit the port onto the B1329 and would head south;
- Loads would proceed westbound on the A1061, bypassing Blyth to the north, before turning onto the A189 southbound;
- Loads would turn right onto the westbound carriageway of the A19, before turning south and entering the A1 southbound;
- At the junction of the A1 / A696, loads will depart the A1 and head northwest on the A696;

- Continue on the A696 for 30 miles before continuing onto the A68 for 13 miles;
- Turn left onto the A6088 and proceed westbound;
- Turn left into an existing forestry access track junction and proceed to the site via the forestry tracks, upgraded to suit turbine deliveries.

The proposed route is illustrated in **Figure 3.2** below.

**Figure 3.2: Proposed Access Route**


Map data copyrighted OpenStreetMap contributors and available from https://www.openstreetmap.org. Contains Ordnance Survey data © Crown copyright and database right 2010 – 2023.

Loads would then proceed to the turbine locations within the site with on-site access tracks designed to the minimum standards of the selected turbine manufacturer. This is excluded from this assessment.

## 3.3 Route Constraints

The constraints noted on the site visit are detailed in **Table 3.1**, covering all constraints from the port of entry gate through to the site access junction. This assessment relates only to off-site constraints and does not consider access at the quayside or through the port or on-site access tracks or the design of the site access junction. The site access junction from the A6088 was included in the EIA Report as Appendix 12.1 which shows the design of the junction, Swept Path Analysis and visibility splays.

Location of the identified constraints are illustrated by **Figures A2.1 to A2.9** in **Appendix 2** and **Figure A3.1** in **Appendix 3**.

**Table 3.1: Points of Interest**

| POI | Key Constraint | Details |
|---|---|---|
| 01 | Links Road / A193 Roundabout  | • Loads will proceed across the junction, taking the second exit (A1061).<br>• Loads will over-sail the southern edge of the approach and departure arms of the junction, as well as over-sail the southern edge of the central island.<br>• The footway on the southern edge of the approach arm will be over-run.<br>• Two lighting columns on the southern edge of the departure arm may need to be temporarily removed, subject to topographical survey.<br>• Three chevron signs will need to be temporarily removed from the central island.<br>• Swept Path Assessment 111451-10-SK01-SK01 is included in Appendix 4 of this report. |
| 02 | A1061 / B1523 Roundabout, Blyth  | • Loads will proceed across the junction, taking the second exit (A1061).<br>• Loads will over-sail the northern and southern edges of the approach arm of the junction.<br>• Loads will over-sail the southern edge of the departure arm of the junction, as well as over-sail the southern edge of the central island.<br>• One chevron sign will need to be temporarily removed from the central island.<br>• A lighting column on the southern edge of the departure arm may need to be temporarily removed, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK02 is included in Appendix 4 of this report. |
| 03 | Laverock Hall Road / A1061 Roundabout  | • Loads will proceed across the new junction, taking the first exit (A1061).<br>• Loads will over-sail the southern edges of the approach and departure arms of the junction, as well as over-sail the southern edge of the central island.<br>• Bollards located on the southern edge of the approach arm will need to be temporarily removed. |

| POI | Key Constraint | Details |
|---|---|---|
| | | • Lighting columns may need to be temporarily removed on the southern edge of the approach and departure arms, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK03 is included in Appendix 4 of this report. |
| 04 | A192 / A1061 Roundabout and slip road<br>(A)<br>  <br>(B)<br>  | • Loads will proceed across the junction, taking the second exit (A1061).<br>• Loads will over-sail the southern edges of the approach and departure arms of the junction.<br>• Loads will over-sail the southern edge of the central island.<br>• A lighting column on the southern edge of the approach arm may need to be temporarily removed, subject to topographical survey.<br>• Two chevron signs will need to be temporarily removed from the central island.<br>• A road sign and bus stop sign may need to be temporarily removed from the southern edge of the departure arm, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK04A is included in Appendix 4 of this report.<br>• Following this junction, loads will diverge and join the A189 southbound.<br>• It is expected loads will over-sail the eastern edge of the slip road carriageway where localised hedge trimming and/or removal might be required, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK04B is included in Appendix 4 of this report. |
| 05 | A189 / A19 Roundabout, Cramlington<br>  | • Loads will turn right at the junction onto the A19 Westbound. To allow the manoeuvre to occur in safety, the escorts will need to ensure that the convoy has full access to the entry, circulating and exit lanes of the junction.<br>• Loads will slightly over-sail the southern edge of the departure arm, however the swept path assessment indicates that no physical works are required. |

| POI | Key Constraint | Details |
|---|---|---|
| | | • Swept Path Assessment 111451-10-SK01-SK05 is included in Appendix 4 of this report. |
| 06 | A19 / A1068 Seaton Burn Roundabout and slip road<br>  | • Loads will proceed across the junction, taking the second exit (A19).<br>• The swept path assessment indicates that no physical works are required. |
| |  | • Following this manoeuvre, loads will diverge onto the A1 southbound slip road and join the A1.<br>• Loads are expected to over-sail the eastern edge of the slip road carriageway where localised hedge trimming and/or removal might be required, subject to topographical survey,<br>• Swept Path Assessment 111451-10-SK01-SK06 is included in Appendix 4 of this report. |
| 07 | Kenton Bar Interchange<br>  | • Loads will turn off the A1 and enter the Kenton Bar Roundabout. Loads will take the third exit onto the A696. To allow the manoeuvre to occur in safety, the escorts will need to ensure that the convoy has full access to the entry, circulating and exit lanes of the junction.<br>• Loads will over-sail the eastern and western edges of the approach arm of the junction.<br>• Localised hedge trimming and/or removal might be required on the eastern edge of the approach arm, subject to topographical survey.<br>• A road sign may have to be temporarily removed from the western edge of the approach arm, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK07 is included in Appendix 4 of this report. |
| 08 | A696 / Newcastle Airport Roundabout | • Loads will continue ahead on the A696 (1st exit). |

| POI | Key Constraint | Details |
|---|---|---|
| |  | • Loads will over-sail the western edge of the approach arm, as well as the western edge of the central island.<br>• A lighting column may need to be temporarily removed from the western edge of the approach arm, subject to topographical survey.<br>• Two chevron signs will need to be temporarily removed from the western edge of the central island.<br>• Swept Path Assessment 111451-10-SK01-SK08 is included in Appendix 4 of this report. |
| 09 | A696 / Prestwick Road End Roundabout<br>  | • Loads will continue ahead on the A696 (1st exit)<br>• Loads will over-sail the western edge of the approach and departure arms, as well as the western edge of the central island.<br>• A lighting column may need to be temporarily removed from the western edge of the approach arm, subject to topographical survey.<br>• One chevron sign will need to be temporarily removed from the central island.<br>• Swept Path Assessment 111451-10-SK01-SK09 is included in Appendix 4 of this report. |
| 10 | B6545 / Cheviot View Roundabout<br>  | • Loads will continue ahead on the A696 (2nd exit).<br>• Loads will over-sail the eastern edge of the approach and departure arms, as well as over-run and over-sail the eastern edge of the central island.<br>• One road sign will need to be temporarily removed from the eastern edge of the central island.<br>• Two lighting columns may need to be temporarily removed from the eastern edge of the departure arm, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK10 is included in Appendix 4 of this report. |
| 11 | Clickemin Bridge (A696) | • Loads will continue northbound.<br>• Loads are anticipated to use the entire width of the carriageway through this section of road. |

| POI | Key Constraint | Details |
|---|---|---|
| |  | • Loads will over-sail the northern edge of the carriageway at several points round the bend.<br>• Loads will over-run the northern edges of two refuge islands where a load bearing surface may be required.<br>• On each island, one lighting column and two bollards will need to be temporarily removed.<br>• Swept Path Assessment 111451-10-SK01-SK11 is included in Appendix 4 of this report. |
| 12 | Ponteland Bridge (A696)<br>  | • Loads will continue ahead on the A696 (1st exit).<br>• Loads will over-sail the northern edge of the departure arm, as well as over-sail two refuges islands.<br>• Two bollards on each island will need to be temporarily removed.<br>• Swept Path Assessment 111451-10-SK01-SK12 is included in Appendix 4 of this report. |
| 13 | The Beeches (A696)<br>  | • Loads will continue ahead on the A696.<br>• The swept path assessment indicates that no physical works are required.<br>• Swept Path Assessment 111451-10-SK01-SK13 is included in Appendix 4 of this report. |
| 14 | A696 right-hand bend towards Belsay<br>  | • Loads will continue ahead on the A696.<br>• Loads will over-sail the inside (where there is a potential for Third Party land over-sail) and outside of the bend.<br>• Hedge/vegetation trimming and/or removal may be required on the northern edge of the bend, subject to topographical survey.<br>• Two lighting columns on the southern edge of the bend may need to be temporarily removed, subject to a topographical survey. |

| POI | Key Constraint | Details |
|---|---|---|
| | | • Swept Path Assessment 111451-10-SK01-SK14 is included in Appendix 4 of this report. |
| 15 | A696 left-hand bend past Belsay<br>  | • Loads will continue ahead on the A696.<br>• Loads will over-sail the inside of the bend where hedge/vegetation trimming and/or removal might be required, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK15 is included in Appendix 4 of this report. |
| 16 | A696 right-hand bend south of Kirkwhelpington<br>  | • Loads will continue northbound.<br>• Loads will over-sail the inside of the bend, however the swept path assessment indicates that no physical works are required.<br>• Swept Path Assessment 111451-10-SK01-SK16 is included in Appendix 4 of this report. |
| 17 | A696 left-hand bend north of Kirkwhelpington<br>  | • Loads will continue northbound.<br>• Loads will over-sail the inside of the bend where hedge/vegetation trimming and/or removal may be required, subject to topographical survey.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Swept Path Assessment 111451-10-SK01-SK17 is included in Appendix 4 of this report. |
| 18 | A696 bends south of Raylees<br>(A) | • Loads will continue northbound.<br>• Loads will over-sail both edges of the carriageway at several points along the left-hand bend where there is a potential for Third Party land over-sail.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Swept Path Assessment 111451-10-SK01-SK18A is included in Appendix 4 of this report. |

| POI | Key Constraint | Details |
|---|---|---|
| |  | • Loads will over-sail both edges of the carriageway on the approach to the right-hand bend.<br>• Loads will particularly over-sail the inside of the bend where there is a potential for Third Party land over-sail.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Swept Path Assessment 111451-10-SK01-SK18B is included in Appendix 4 of this report. |
| | (B)<br>  | • Loads will over-sail the eastern and western edges of the carriageway at several points on the approach to the left-hand bend where there is a potential for Third Party land over-sail.<br>• Loads will over-sail the inside of the left-hand bend where there is a potential for Third Party land over-sail.<br>• Distance to the existing stone wall to be confirmed and a topographical survey may be required.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Swept Path Assessment 111451-10-SK01-SK18C is included in Appendix 4 of this report. |
| | (C)<br>  | • Loads will over-sail the northern edge of the bend where there is a potential for Third Party land over-sail.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Vegetation trimming/removal may be required, subject to topographical survey.<br>• Swept Path Assessment 111451-10-SK01-SK18D is included in Appendix 4 of this report. |
| | (D) | |

| POI | Key Constraint | Details |
|---|---|---|
| |  | |
| 19 | A696 bends south of A696/B6341<br>(A)<br>  <br>  <br>  <br>(B) | • Loads will continue ahead on the A696.<br>• Loads will over-run and over-sail to the south on approach to the bend where there is a potential for Third Party land over-sail and over-run. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal will be required, and an existing stone wall might have to be temporarily removed. Three chevron signs will also need to be temporarily removed. A load bearing surface might have to be installed in the over-run area. Topographical survey will be required in this location<br>• Loads will also over-sail into Third Party land on the inside of the right-hand bend. Extent of the adopted Road Boundary should be confirmed and proximity to the existing building will need to be confirmed. Vegetation trimming/removal may also be required. Topographical survey will be required in this location.<br>• To the north of the right-hand bend loads will over-sail Third Party land on the inside edge of the left-hand bend. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal will be required. An existing stone wall and crash barrier may have to be temporarily removed. Topographical survey will be required in this location.<br>• Swept Path Assessment 111451-10-SK01-SK19A is included in Appendix 4 of this report. |

| POI | Key Constraint | Details |
|---|---|---|
| |  | • Loads will over-sail both edges of the carriageway on the approach to the right-hand bend. After the bend, loads will over-sail sections of the northern edge of the carriageway.<br>• Loads will over-sail Third Party land on the inside of the left-hand bend. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal will be required. An existing stone wall may have to be temporarily removed. Two road signs will need to be temporarily removed. Topographical survey will be required in this location.<br>• Swept Path Assessment 111451-10-SK01-SK19B is included in Appendix 4 of this report. |
| 20 | A696 Otterburn bends<br>  <br>  | • Loads will continue ahead on the A696.<br>• Loads will slightly over-sail the existing footway at two locations, one on the northern edge of the carriageway and one on the south.<br>• Extent of the adopted Road Boundary should be confirmed.<br>• Swept Path Assessment 111451-10-SK01-SK20 is included in Appendix 4 of this report.<br>• Loads will slightly over-sail the carriageway at two locations one on the northern edge of the carriageway and one on the south.<br>• Extent of the adopted Road Boundary should be confirmed. Loads will over-sail a build-out on the northern edge of the carriageway where two bollards will need to be removed.<br>• Swept Path Assessment 111451-10-SK01-SK20 is included in Appendix 4 of this report. |
| 21 | A696 bends south of Elishaw (A) | • Loads will continue ahead on the A696.<br>• Loads will over-sail the inside of the right-hand bend where there is a potential for Third Party land over-sail. Extent of the adopted Road Boundary should be confirmed. An existing stone wall may have to be temporarily removed. |

| POI | Key Constraint | Details |
|---|---|---|
| |  <br>(B)<br>  | • Topographical survey will be required at this location.<br>• Swept Path Assessment 111451-10-SK01-SK21A is included in Appendix 4 of this report.<br>• Loads will over-sail the western edges of the carriageway to the north and south of the slight right-hand bend where there is a potential for Third Party land over-sail. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal may be required. Topographical survey may be required at this location.<br>• Loads will over-sail the inside of the slight right-hand bend where there is a potential for Third Party Land over-sail. Extent of the adopted Road Boundary should be confirmed. An existing stone wall may have to be temporarily removed. Topographical survey will be required at this location.<br>• Swept Path Assessment 111451-10-SK01-SK21B is included in Appendix 4 of this report. |
| 22 | A68 bends south of Rochester<br>  | • Loads will continue ahead on the A68.<br>• Loads will over-sail both sides of the carriageway in this location where there is a potential for Third Party Land over-sail. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal may be required at several locations.<br>• Swept Path Assessment 111451-10-SK01-SK22 is included in Appendix 4 of this report. |
| 23 | A68 bends along Catcleugh Reservoir<br>(A) | • Loads will continue ahead on the A68<br>• Loads will over-sail both sides of the carriageway, particularly the inside of the bend.<br>• There is a potential for Third Party land over-sail.<br>• Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal may be required.<br>• Swept Path Assessment 111451-10-SK01-SK23A is included in Appendix 4 of this report. |

| POI | Key Constraint | Details |
|---|---|---|
| |  <br>(B)<br>  <br>(C)<br>  | • Loads will over-sail the inside of the left-hand bend where there is a potential for Third Party land over-sail. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal may be required. The proximity to crash barrier is to be confirmed. Topographical survey may be required at this location.<br>• Loads will also over-sail the northern and southern edges of the carriageway to the west of the left-hand bend. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal may be required.<br>• Swept Path Assessment 111451-10-SK01-SK23B is included in Appendix 4 of this report.<br><br>• Loads will over-sail the northern and southern edges of the carriageway at several locations along this section. Extent of the adopted Road Boundary should be confirmed. Vegetation trimming/removal might be required.<br>• Swept Path Assessment 111451-10-SK01-SK23C is included in Appendix 4 of this report. |
| 24 | A68 Whitelee Farm | • Loads will proceed ahead on the A68.<br>• The swept path assessment indicates that no physical works are required.<br>• Swept Path Assessment 111451-10-SK01-SK24 is included in Appendix 4 of this report. |

| POI | Key Constraint | Details |
|---|---|---|
| |  | |
| 25 | A68 North of Whitelee Farm<br>  | • Loads will proceed ahead on the A68.<br>• The swept path assessment indicates that no physical works are required<br>• Swept Path Assessment 111451-10-SK01-SK25 is included in Appendix 4 of this report. |
| 26 | A68 Carter Bar<br>  | • Loads will proceed ahead on the A68.<br>• The swept path assessment indicates that no physical works are required.<br>• Swept Path Assessment 111451-10-SK01-SK26 is included in Appendix 4 of this report. |
| 27 | A68 / A6088 Junction<br>  | • Loads will turn left off the A68 onto the A6088.<br>• The swept path assessment indicates that no physical works are required.<br>• Swept Path Assessment 111451-10-SK01-SK27 is included in Appendix 4 of this report. |

## 3.4 Swept Path Assessment Results and Summary

Detailed swept path assessment (SPA) drawings for the locations assessed are provided in Appendix 4. The drawings in Appendix 4 illustrate tracking undertaken for the worst-case turbine component at each location.

Each drawing shows the following detail:

- Grey – Ordnance Survey or topographical base mapping;
- Purple – turbine component load outline swept path;
- Green – vehicle body outline swept path;
- Red – vehicle wheel track swept path;
- Blue shaded – load/body over-sail area; and
- Red shaded – vehicle wheel over-run area.

Where any accommodation / mitigation works are identified the extent of any vehicle overrun and vehicle / load over-sail are illustrated on the SPA drawings. The accuracy of this assessment is limited by the quality of the OS mapping data used and how up to date the survey information is for any given POI. Every effort has been taken to verify details shown in the mapping data against observations made using available imagery and local knowledge.

## 3.5 Land Ownership

The limits of road adoption can vary depending on the location of the site a specific policy of the road authority. Typically, it comprises land within a defined boundary including the road carriageway.

In rural areas the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established fence/hedges lines or a maximum 2 m from the road edge. This can vary between areas and location.

## 3.6 Access Junction Considerations

The access area predominantly follows the existing track: however, some limited upgrade works would be required to accommodate the AILs proposed.

The access would be designed to allow access for both standard HGVs as well as abnormal loads. The junction would take the form of widened bellmouth with merge tapers to accommodate the larger vehicles transporting the wind turbine generator (WTG) component abnormal loads. Improvements would also be made to increase visibility splays at the access junction.

The design and form of the junction will need to be discussed with Scottish Borders Council (SBC). The junction will also need to be built in accordance with the turbine supplier design criteria.

Site access junction drawings are provided in Technical Appendix 12.1 of the EIA Report.

## 3.7 Summary Issues

The developer should undertake the following prior to the delivery of the first abnormal loads, to ensure load and road user safety:

- That any necessary topographical surveys are undertaken and the swept path results repeated;
- A revised review of axle loading on structures along the entire access route with the various road agencies is undertaken immediately prior to the loads being transported in case of last minute changes to structures;
- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- That any verge vegetation and tree canopies which may foul loads is trimmed prior to loads moving;
- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;
- That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect the developer from spurious damage claims.

# 4 SUMMARY AND CONCLUSIONS

## 4.1 Summary of Access Review

RSK has been commissioned by ESB to undertake a survey of the approved delivery route for wind turbine AILs associated with the construction and development of Millmoor Rig Wind Farm, located at Wauchope Forest, south of Bonchester Bridge in the Scottish Borders.

This report identifies the key points and issues associated with the proposed route and outlines the issues that will need to be considered for successful delivery of components.

This access review has been based upon worst-case of Nordex N163 turbine sections and has been undertaken on the basis of a 3 + 7 axle clamp adaptor for tower sections.

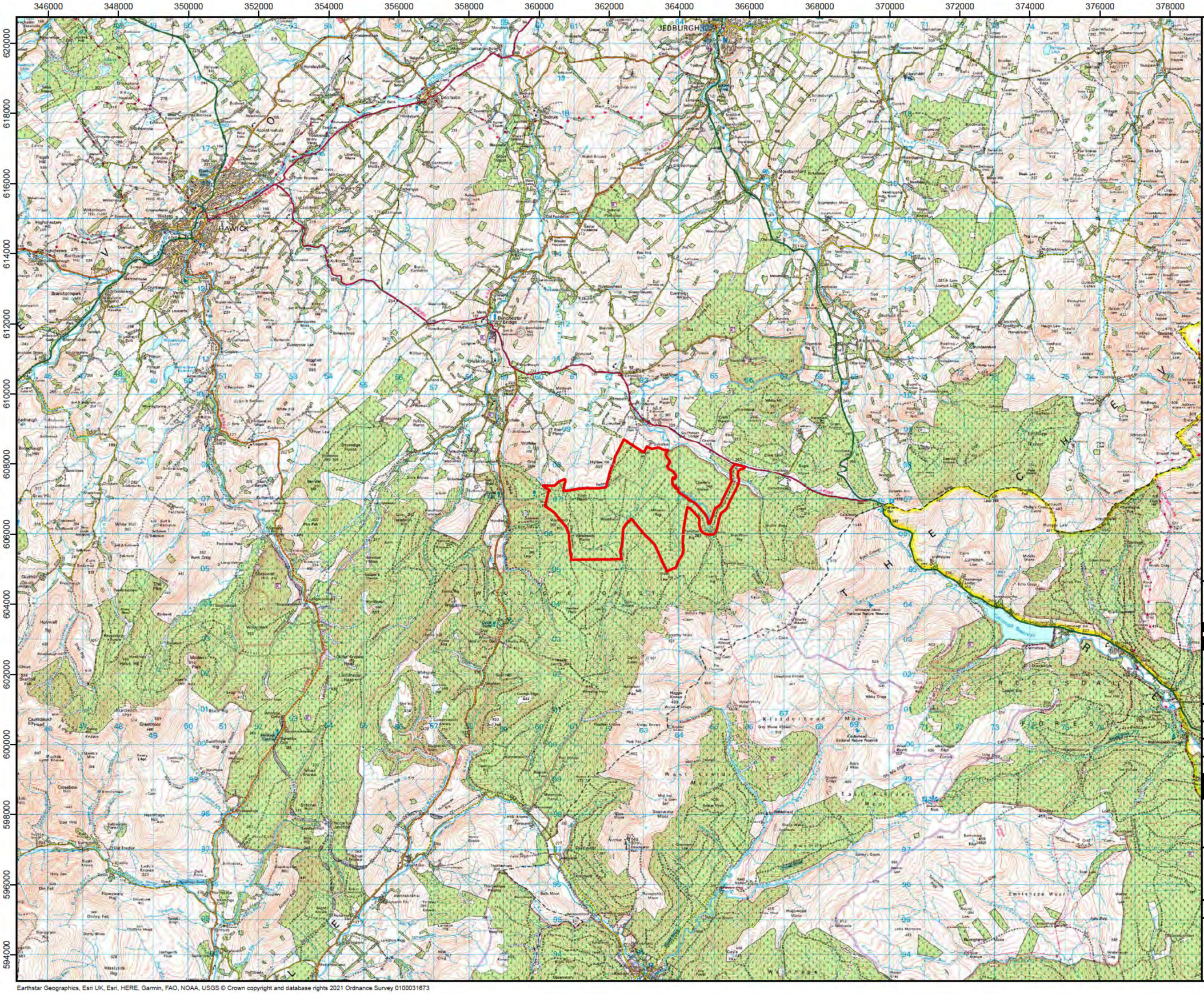
The report is prepared in support of the EIA/AI. Various road modifications and interventions are required to successfully access the site. If these are undertaken, access to the wind farm site is considered feasible.

## 4.2 Actions Required before Development Commences

The following actions are recommended to pursue the transport and access issues further:

- Prepare detailed mitigation design proposals to help inform the land option/consultee discussions;
- Undertake any necessary topographical surveys;
- Obtain the necessary land options;
- Undertake discussions with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures; and
- Develop a detailed operational Traffic Management Plan to assist in transporting the proposed loads.

# APPENDIX 1
# SITE LOCATION PLAN (EIAR FIGURE 1.1)




Legend:

Application Boundary

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter


| Rev | Date | Description | Drn | Chk | App |
|---|---|---|---|---|---|
| 03 | 10/08/2022 | Title Change | TM | AP | RB |
| 02 | 10/08/2022 | Site Boundary with Access Added. | TM | AP | RB |
| 01 | 10/08/2022 | Basemap Change | TM | AP | RB |

**Millmoor Rig Wind Farm**

TITLE: Figure 1.1: Site Location Plan

ID:P663320_Figure 1: Site Location Plan

0 0.5 1
Kilometres

Scale: 1:100,000 @ A3

REV 03

Path: H:\600000 - Glasgow\663320 Millmoor Rig Wind Farm EIA\01 - GIS\03Figures\02Draft

# APPENDIX 2
# POINTS OF INTEREST LOCATIONS

**Figure A2.1 (POI 1 – 4)**


**Figure A2.2 (POI 5 – 6)**

**Figure A2.3 (POI 7 – 13)**


**Figure A2.4 (POI 14 – 15)**

**Figure A2.5 (POI 16 – 17)**

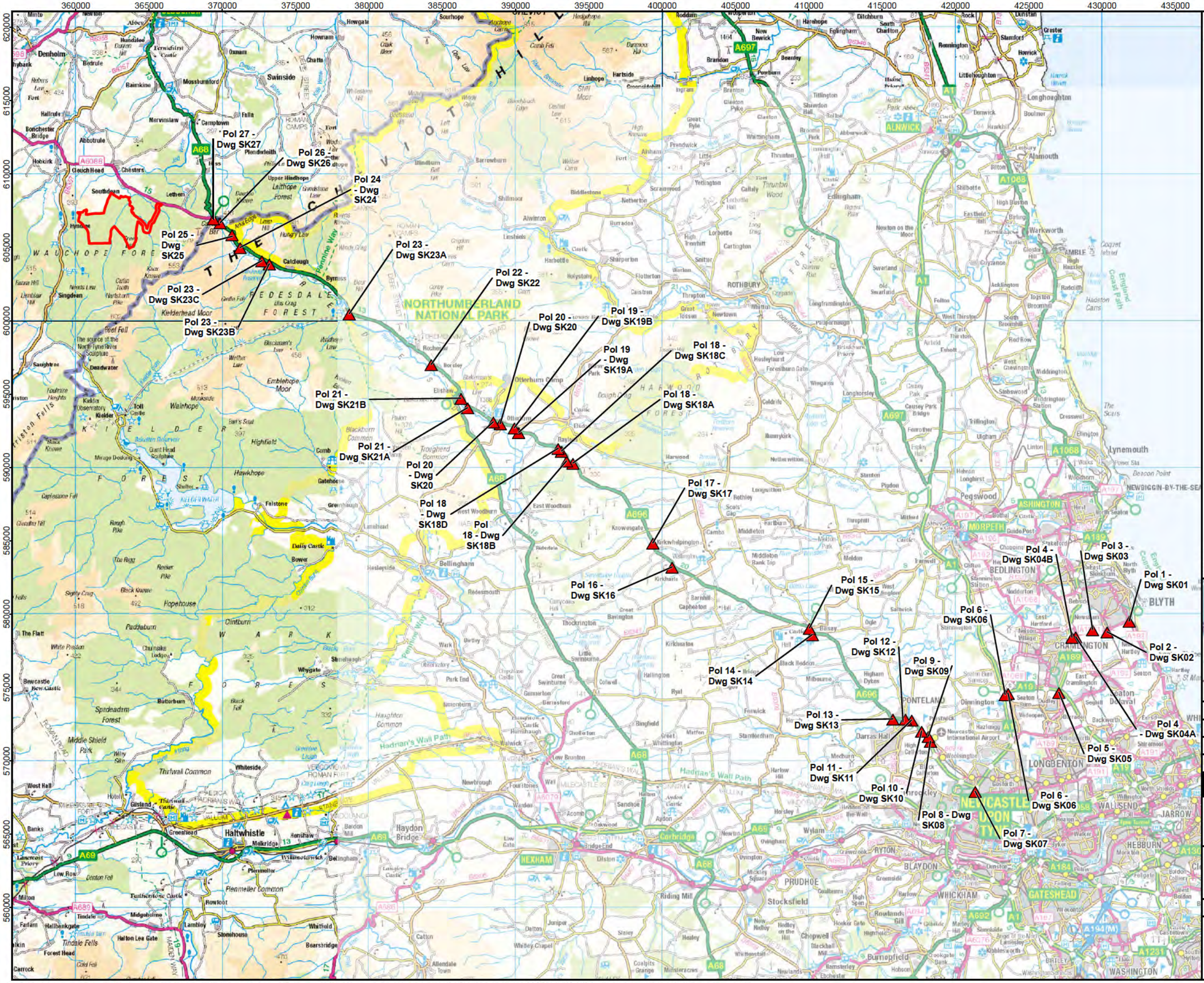

**Figure A2.6 (POI 18 – 21A)**

**Figure A2.7 (POI 21B – 22)**


**Figure A2.8 (POI 23A – 23C)**

**Figure A2.9 (POI 23C – 27)**

# APPENDIX 3
# POINTS OF INTEREST LOCATION PLAN




Legend:

- Site Boundary
- Points of Interest

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

| Rev | Date | Description | Drn | Chk | App |
|---|---|---|---|---|---|
| 00 | 30/05/2023 | First Draft | TM | DL | LS |

**Milmoor Rig Wind Farm**

TITLE: Figure A3.1:
Points of Interest Locations

ID:Milmoor Rig ALRA_Milmoor Rig ALRA

0 4.5 9
Kilometres
Scale: 1:240,000 @ A3

REV 00

Path: \\he-nas3\projects\600000 - Glasgow\663320 Milmoor Rig Wind Farm EIA\663320 Milmoor Rig Wind Farm EIA\01 - GIS\Milmoor Rig ALRA aprx\Milmoor Rig ALRA

# APPENDIX 4
# SWEPT PATH ASSESSMENTS

N

Lighting column to be temporarily removed.
Subject to topographical survey.

3 No. chevron signs to be temporarily removed.

2 No. lighting columns to be temporarily removed.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Web: www.rskgroup.com

Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 1: Links Rd / A193 Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK01 | — |

Scale
0 5 10 20 30

N

Delaval View

A 1061

Chevron sign to be temporarily removed.

Potential for lighting column to be temporarily removed.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| _ | _ | _ | _ | _ | _ |

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Client
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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 2: B1523 / A1061 Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK02 | _ |

Scale
0 5 10 20 30

N

Bollards to be temporarily removed.
Potential for lighting column to be temporarily removed.
Subject to topographical survey.

Potential for lighting column to be temporarily removed.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 3: Laverock Hall Rd / A1061 Roundabout
N163 Tower Section (35m x 5m)

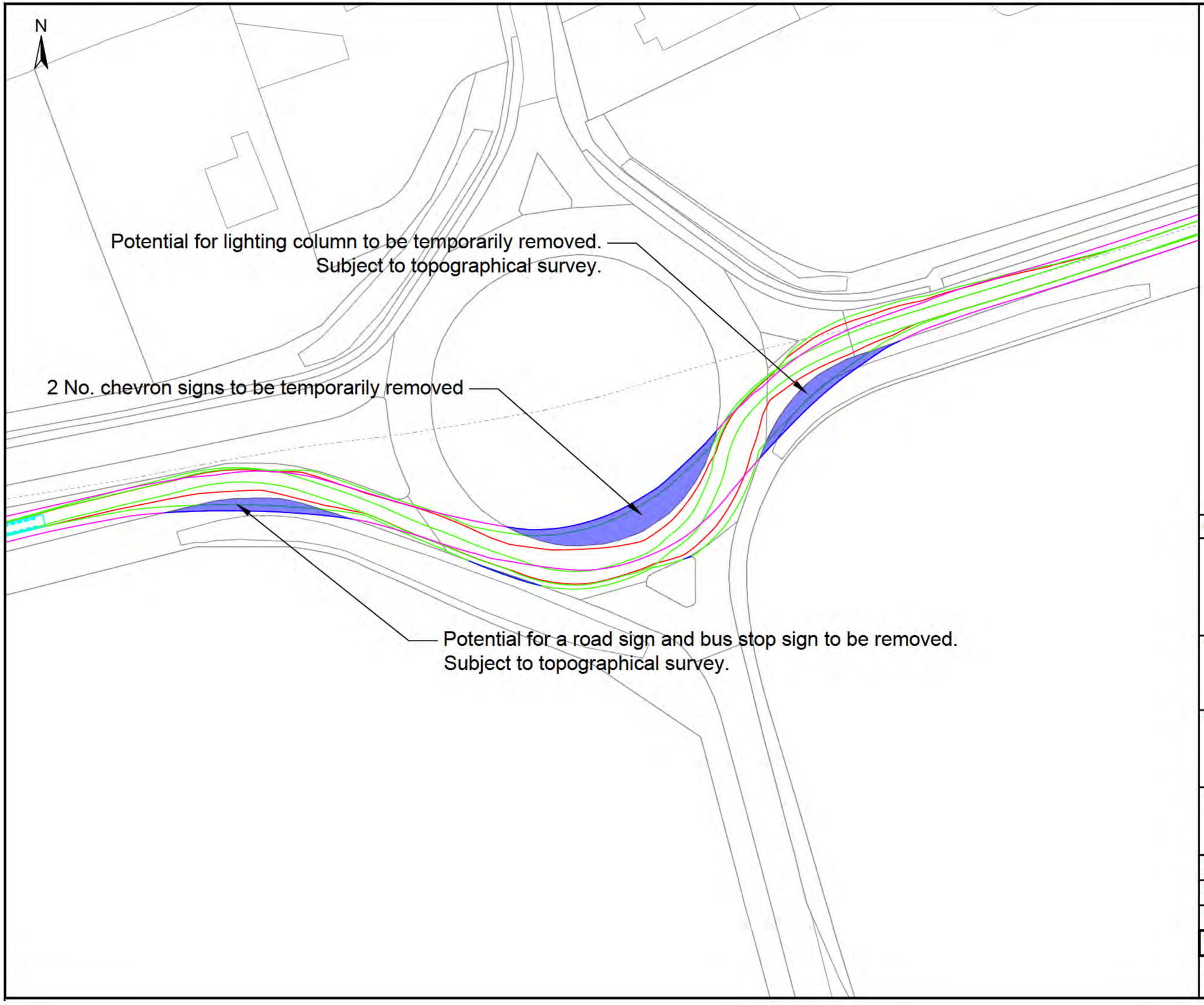
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK03 | — |

Scale
0 5 10 20 30




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
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Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
Pol 4: A192 / A1061 Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK04A | — |

Scale
0 7.5 15 30 45

N

Localised hedge trimming and/or removal might be required.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
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Client
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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 4: A192 / A189 Sliproad
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK04B | — |

Scale
0 10 20 40 60


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
Pol 5: A189 / A19 Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK05 | — |

Scale
0 7.5 15 30 45


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
Pol 6: Seaton Burn Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK05 | — |

Scale
0 10 20 40 60

N

Localised hedge trimming and/or removal might be required.
Subject to topographical survey.

Potential for road sign to be temporarily removed.
Subject to topographical survey.

A66(T)

Boro Const & Ward Bdy

GR

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
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Client

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Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
PoI 7: Kenton Bar Interchange
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK07 | — |

Scale
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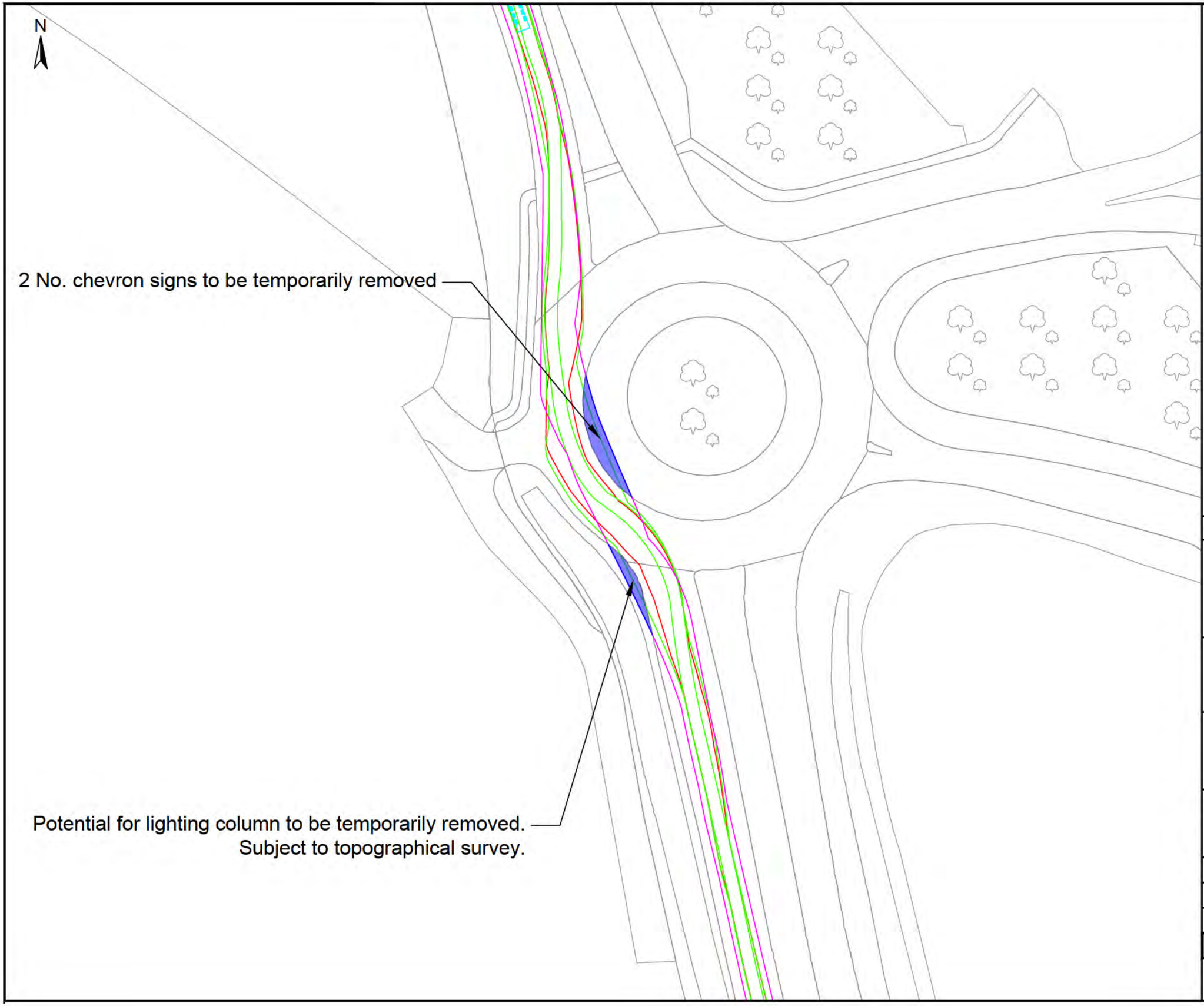


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 8: Newcastle Airport Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK08 | — |

Scale
0 7.5 15 30 45

N

1 No. chevron sign to be temporarily removed

Potential for lighting column to be temporarily removed.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 9: Prestwick Road Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1.999999 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK09 | — |

Scale
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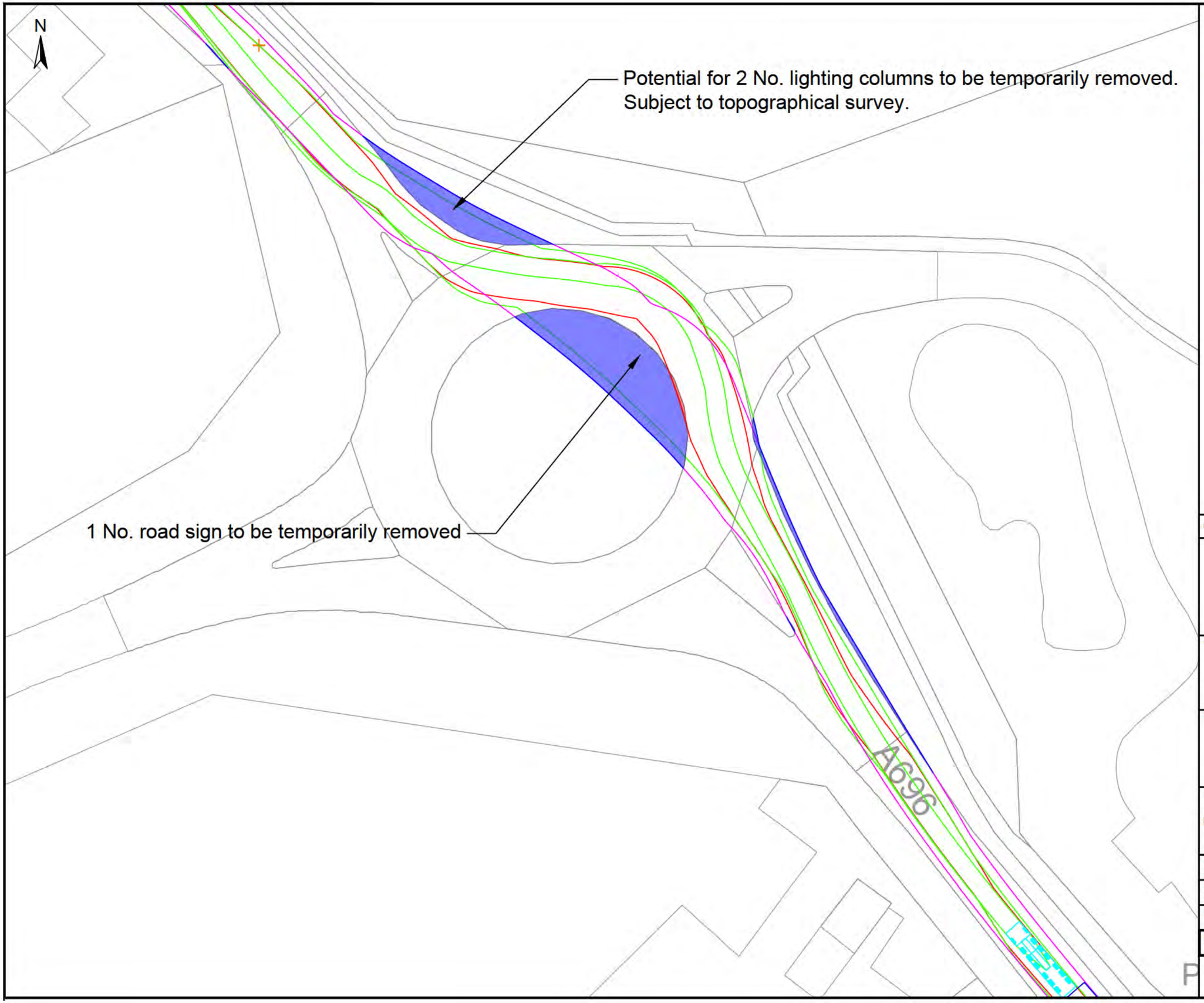


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
Pol 10: B6545 / Cheviot View Roundabout
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK10 | — |

Scale
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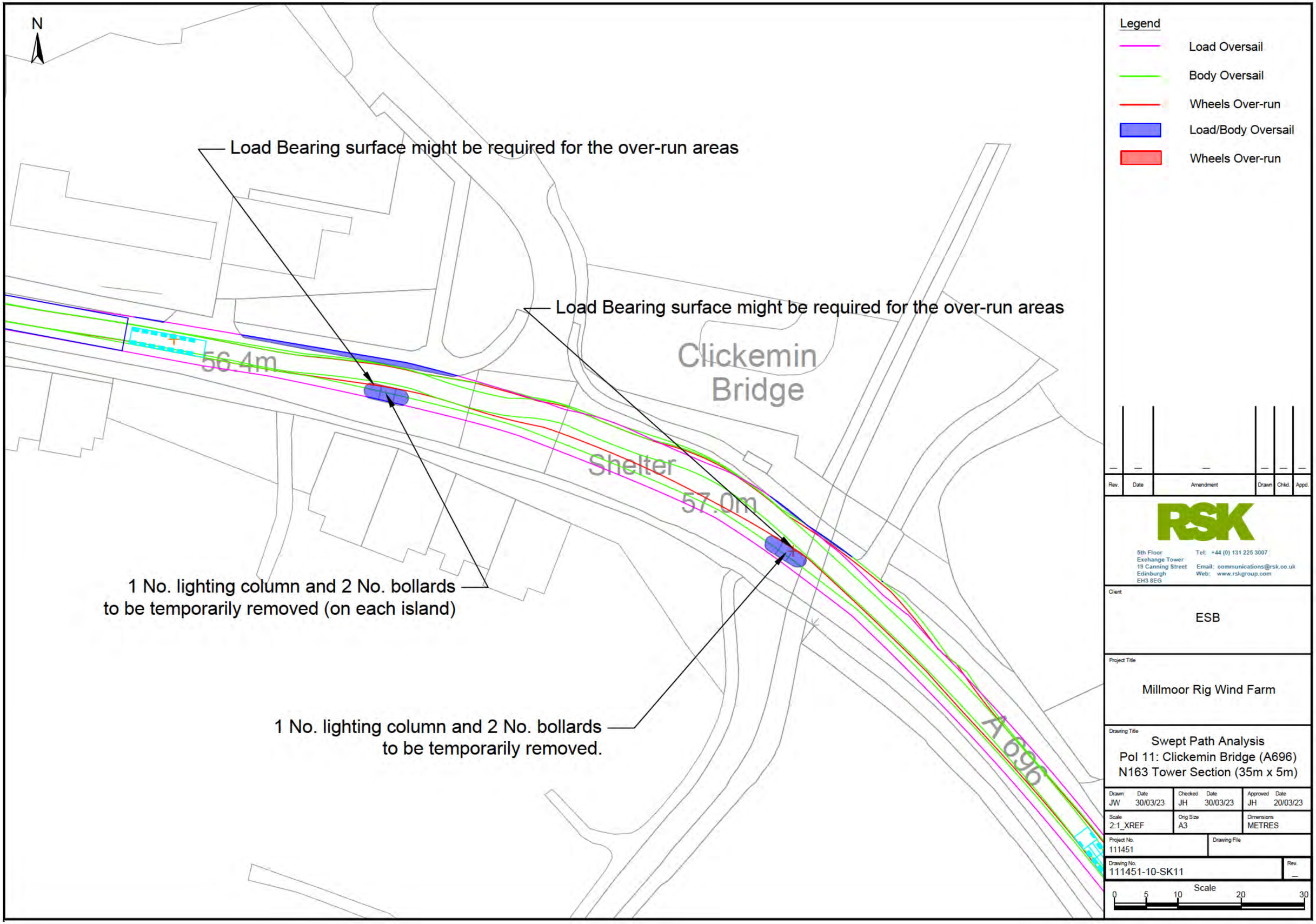


| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 11: Clickemin Bridge (A696)
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK11 | — |

Scale
0 5 10 20 30

N

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

56.7m

Ponteland Bridge

B 6323

Ash House

LB

2 No. bollards
to be temporarily removed (on each island)

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| – | – | – | – | – | – |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 12: Ponteland Bridge (A696)
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK12 | – |

Scale
0 5 10 20 30


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Email: communications@rsk.co.uk
Web: www.rskgroup.com

Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
Pol 13: The Beeches (A696)
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK13 | — |

Scale
0 7.5 15 30 45

N

TCB

116.3m

1 No. lighting column to be temporarily removed.
Subject to topographical survey.

Hedge/Vegetation trimming and/or removal might be required.
Subject to topographical survey.
Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed

1 No. lighting column to be temporarily removed.
Subject to topographical survey.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| _ | _ | _ | _ | _ | _ |

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Email: communications@rsk.co.uk
Web: www.rskgroup.com

Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 14: A696 RH bend towards Belsay
N163 Tower Section (35m x 5m)

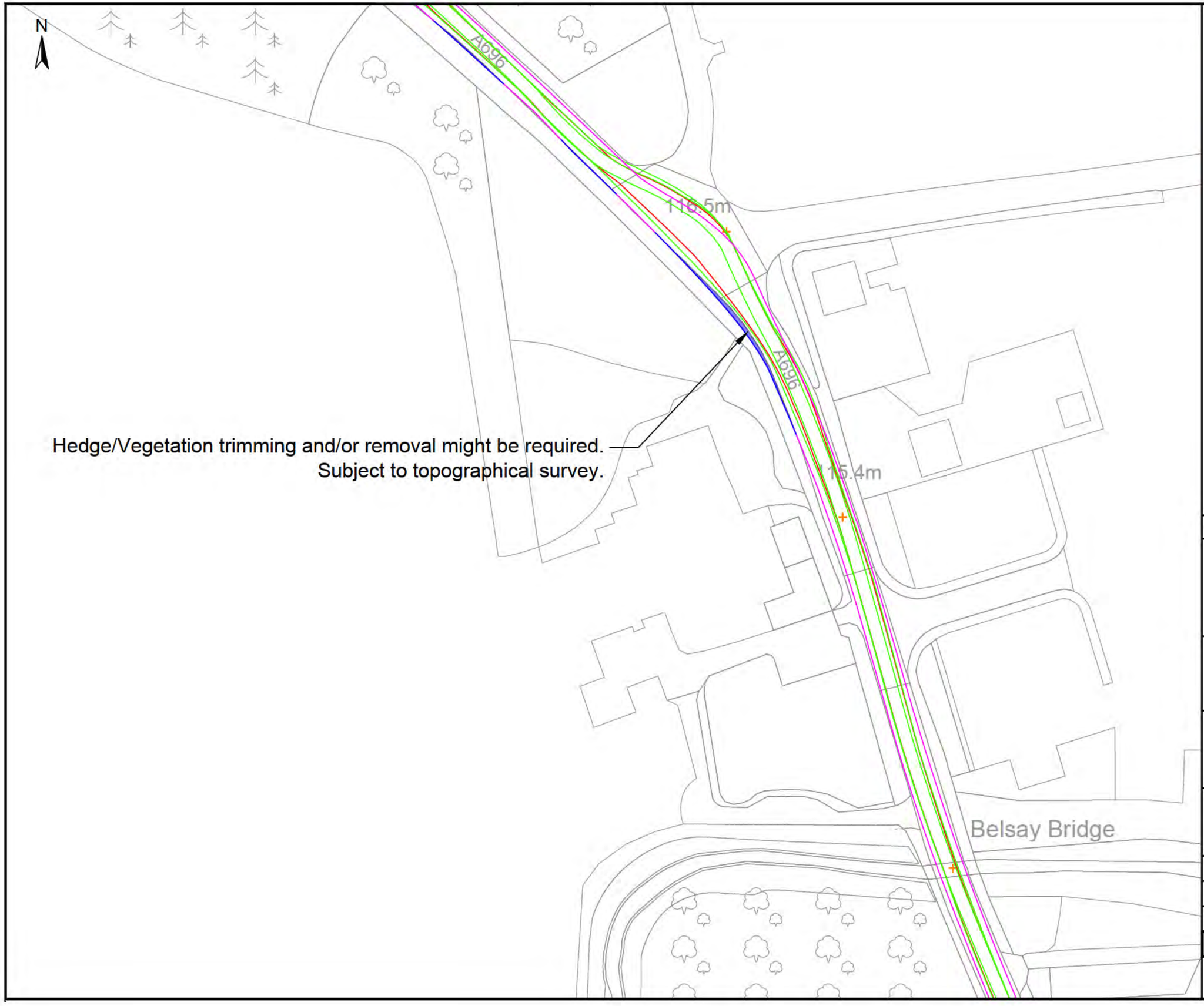
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK14 | _ |

Scale
0 5 10 20 30




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| – | – | – | – | – | – |

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Email: communications@rsk.co.uk
Web: www.rskgroup.com

Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
Pol 15: A696 LH bend past Belsay
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK15 | – |

Scale
0 7.5 15 30 45


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Web: www.rskgroup.com

Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis

Pol 16: A696 RH bend south of Kirkwhelpington

N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK16 | — |

Scale

0 5 10 20 30

N

Potential hedge/vegetation trimming
and/or removal required.
Subject to topographical survey.
Extents of Highway Boundary to be confirmed.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Web: www.rskgroup.com

Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 17: A696 LH bend north of Kirkwhelpington
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 2:1_XREF | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK17 | — |

Scale
0 5 10 20 30

N

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| – | – | – | – | – | – |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
PoI 18: A696 bends south of Raylees
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK18A | – |

Scale
0 10 20 40 60

N

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| _ | _ | _ | _ | _ | _ |

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Client
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Project Title
Millmoor Rig Wind Farm

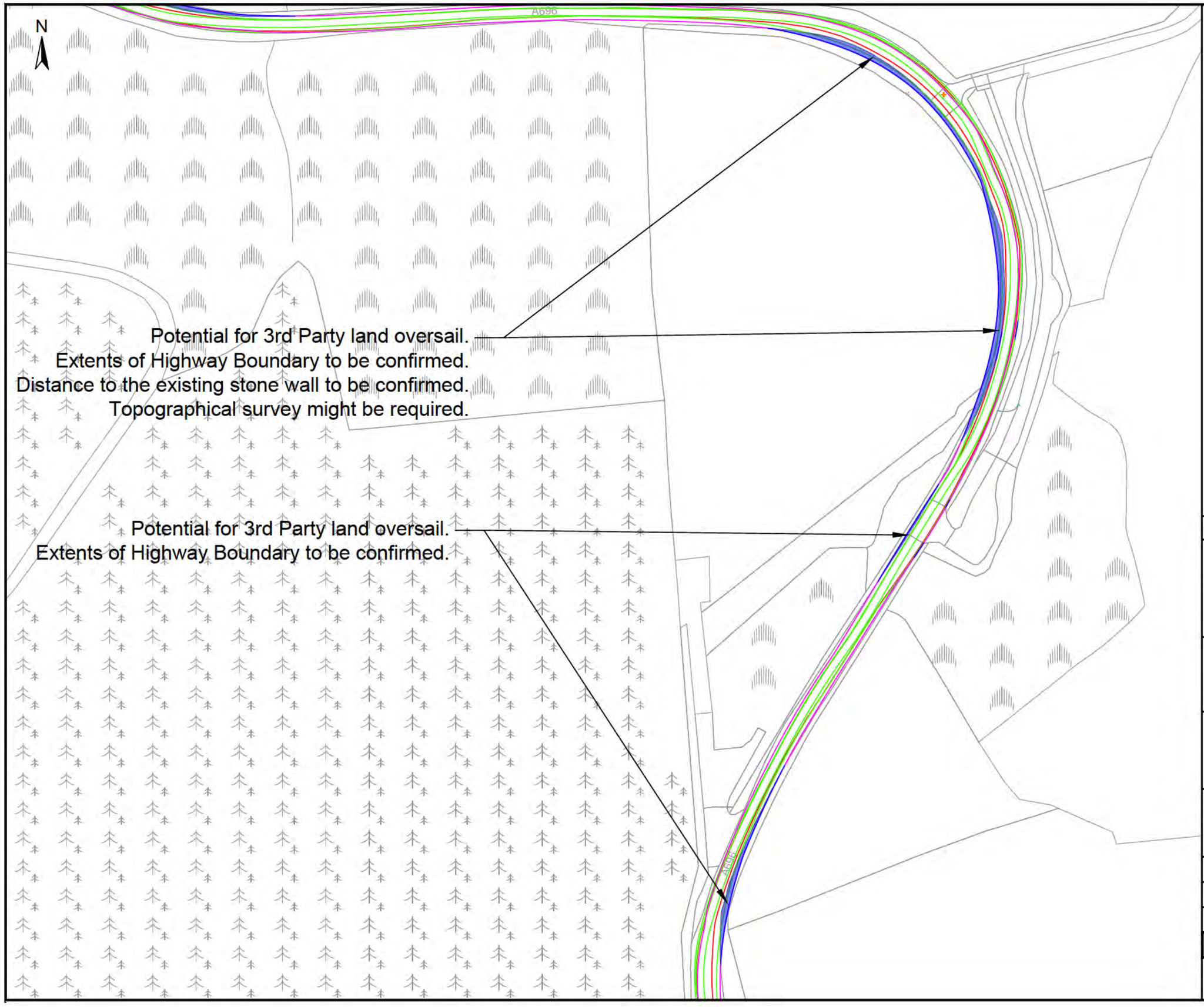
Drawing Title
Swept Path Analysis
Pol 18: A696 bends south of Raylees
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

Project No. 111451
Drawing File
Drawing No. 111451-10-SK18B
Rev. _

Scale
0 7.5 15 30 45




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
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Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
PoI 18: A696 bends south of Raylees
N163 Tower Section (35m x 5m)

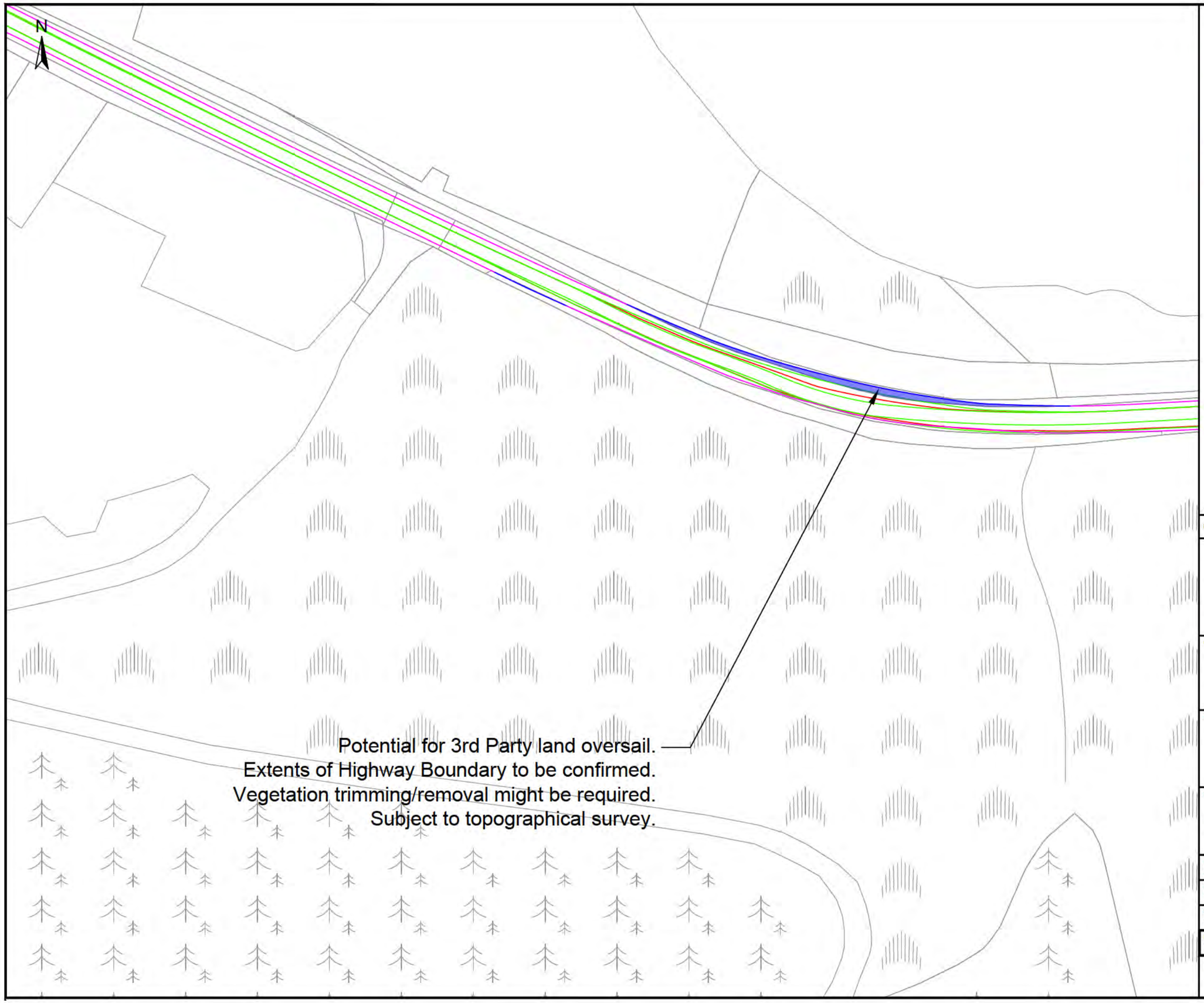
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK18C | — |

Scale: 0 12.5 25 50 75




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
Pol 18: A696 bends south of Raylees
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK18D | — |

Scale
0 7.5 15 30 45

N

180.1m

3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal will be required.
Existing stone wall and crash barrier
might have to be temporarily removed.
Topographical survey will be required.

3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal might be required.
Proximity to existing building will have to be confirmed
Topographical survey will be required.

Potential 3rd Party land over-run.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal will be required.
Existing stone wall might have to be temporarily removed.
Load bearing surface might have to be installed.
Topographical survey will be required.

3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal will be required.
Existing stone wall might have to be temporarily removed.
3 No. chevron signs to be temporarily removed.
Topographical survey will be required.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
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Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 19: A696 bends south of A696/B6341 Junction
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK19A | — |

Scale
0 10 20 40 60

N

179.1m

A696

3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal will be required.
Existing stone wall might have to be temporarily removed.
2 No. road signs to be temporarily removed.
Topographical survey will be required.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
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Client
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Project Title
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Drawing Title
Swept Path Analysis
Pol 19: A696 bends south of A696/B6341 Junction
N163 Tower Section (35m x 5m)

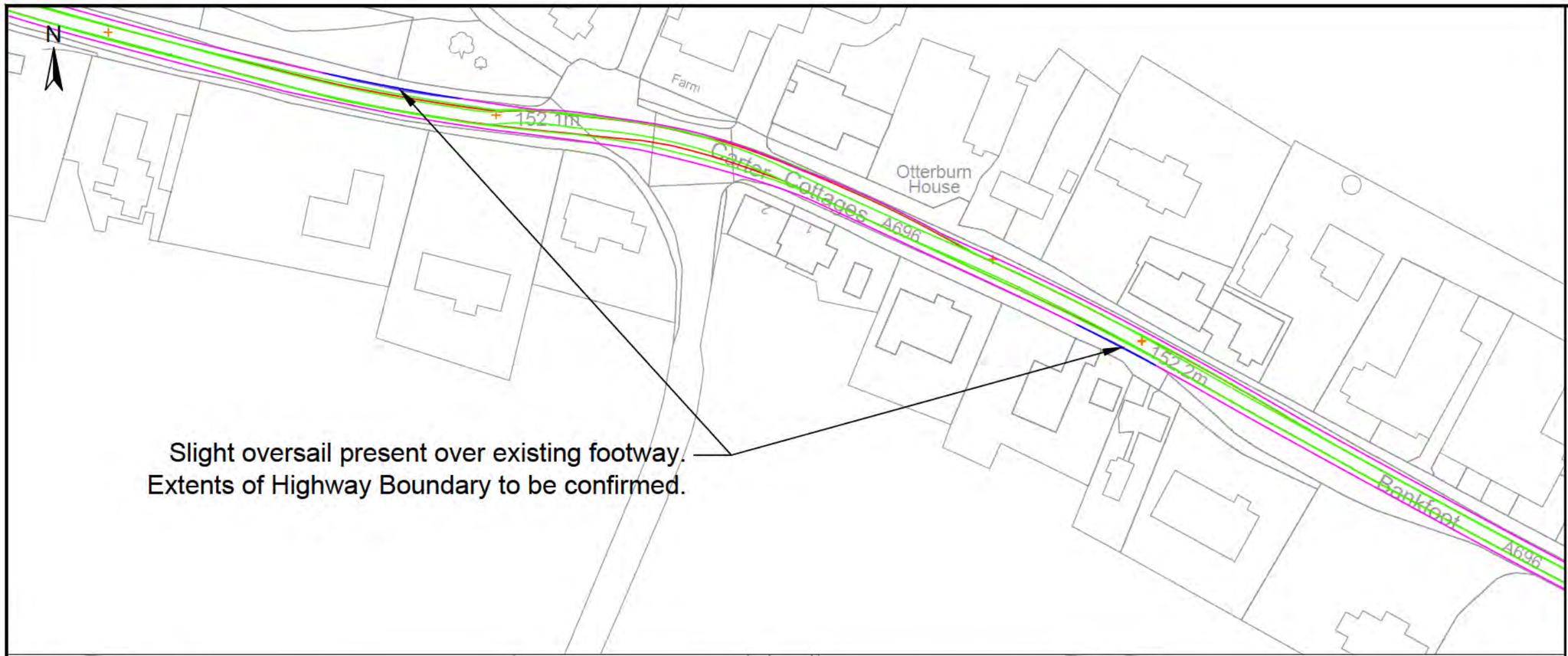
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

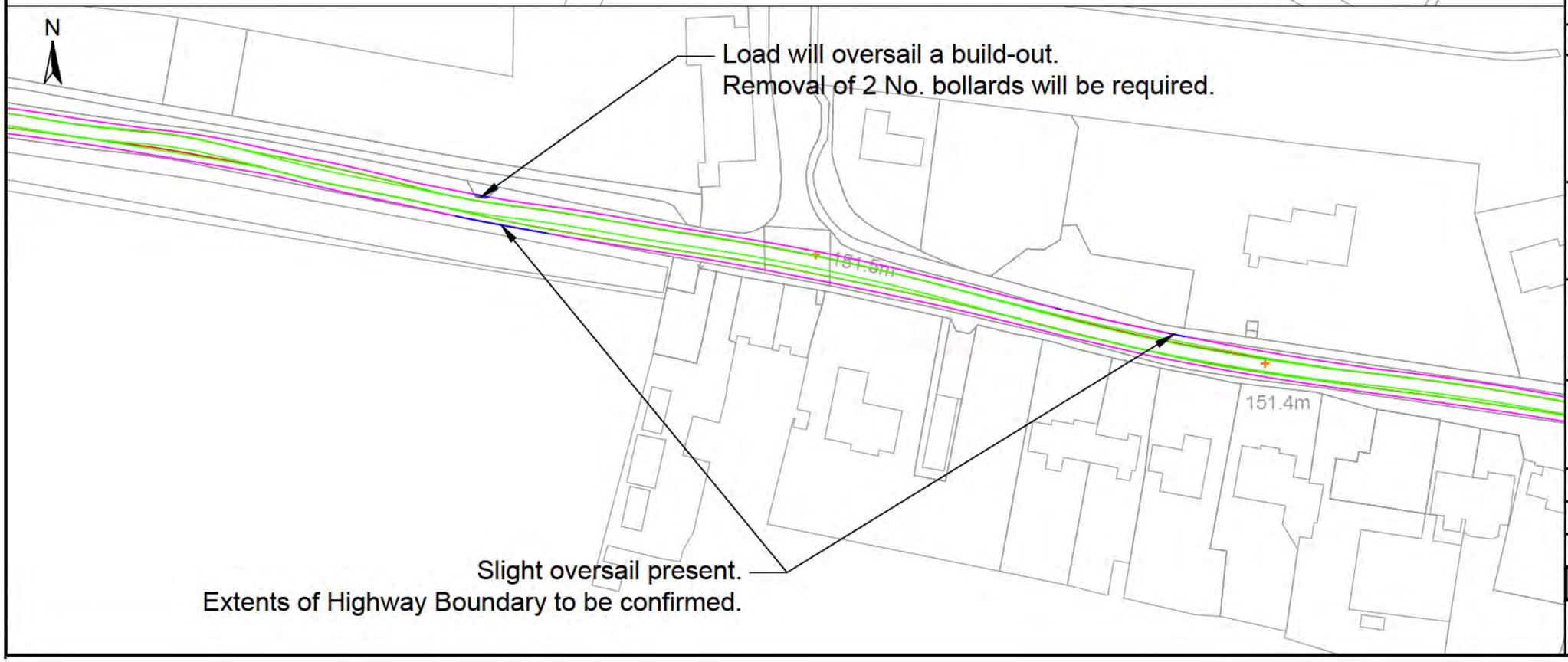
| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK19B | — |

Scale
0 7.5 15 30 45




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| – | – | – | – | – | – |

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Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
PoI 20: A696 Otterburn bends
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK20 | – |

Scale
0 10 20 40 60

N

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Existing stone wall might have to be temporarily removed.
Topographical survey will be required.

153.4m

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 21: A696 bends south of Elishaw
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:750 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK21A | — |

Scale
0 7.5 15 30 45

N

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Existing stone wall might have to be temporarily removed.
Topographical survey will be required.

MS

154.5m

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal might be required.
Topographical survey might be required.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
PoI 21: A696 bends south of Elishaw
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1000 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK21B | — |

Scale
0 10 20 40 60

N

Potential for 3rd Party land oversail.
Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal might be required.

MS

A68

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 22: A68 bends south of Rochester
N163 Tower Section (35m x 5m)

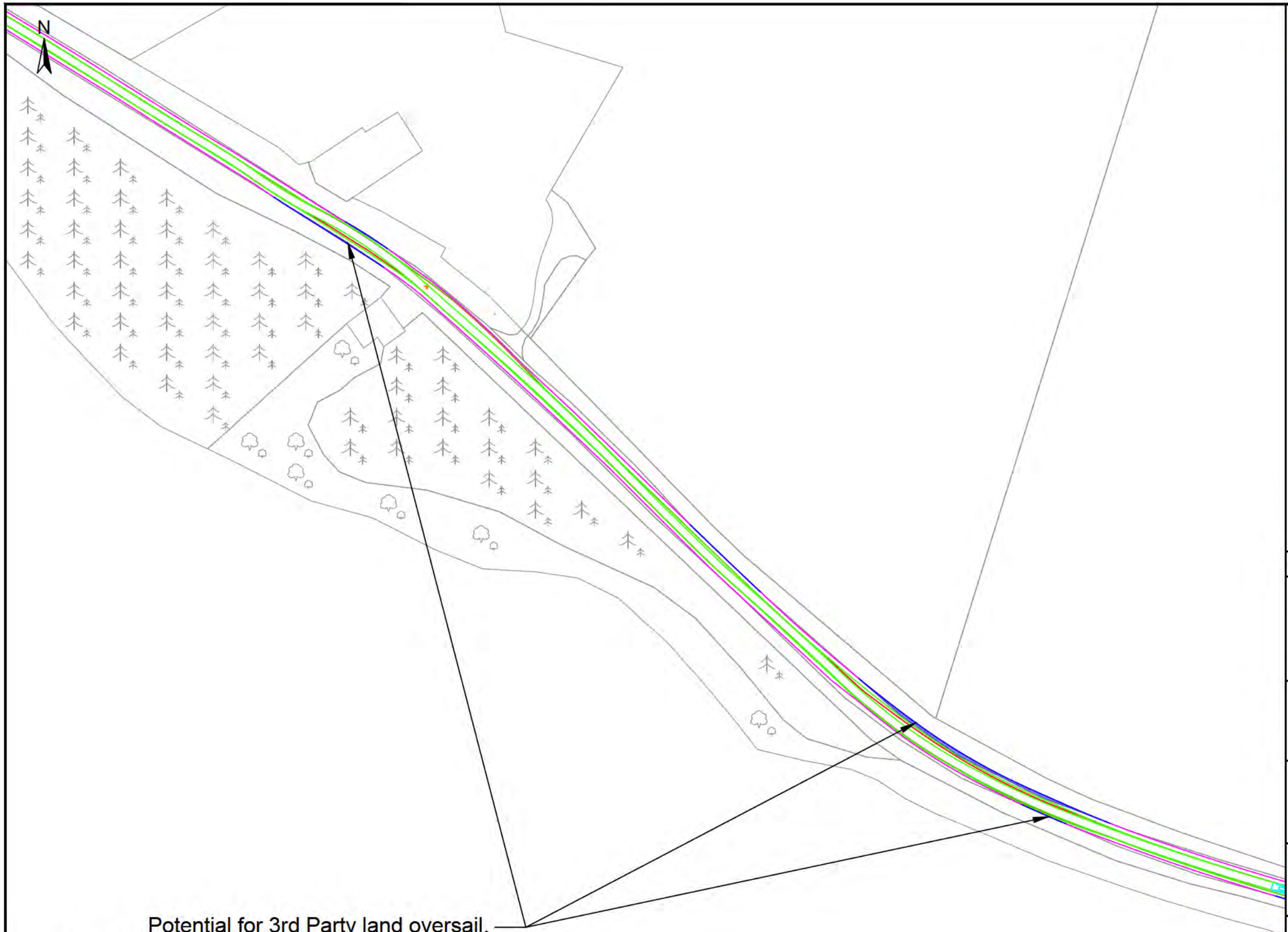
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK22 | — |

Scale
0 12.5 25 50 75




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
Pol 23: A68 bends along Catcleugh Reservoir
N163 Tower Section (35m x 5m)

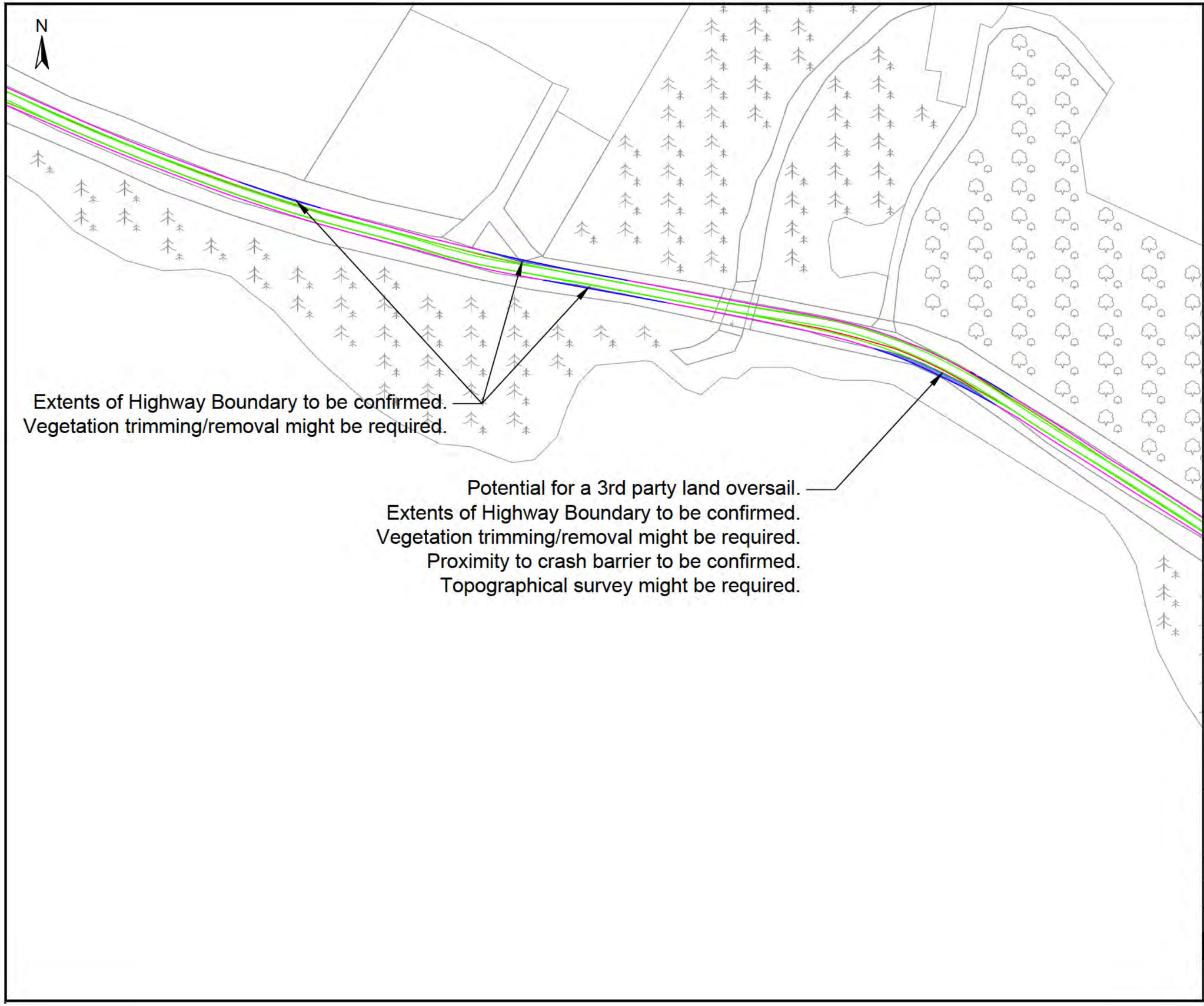
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK23A | — |

Scale
0 12.5 25 50 75




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client
ESB

Project Title
Millmoor Rig Wind Farm

Drawing Title
Swept Path Analysis
Pol 23: A68 bends along Catcleugh Reservoir
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK23B | — |

Scale
0 12.5 25 50 75

N

Extents of Highway Boundary to be confirmed.
Vegetation trimming/removal might be required.

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
Pol 23: A68 bends along Catcleugh Reservoir
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK23C | — |

Scale
0 12.5 25 50 75

N

3 1m

A68

Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
PoI 24: A68 Whitelee Farm
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

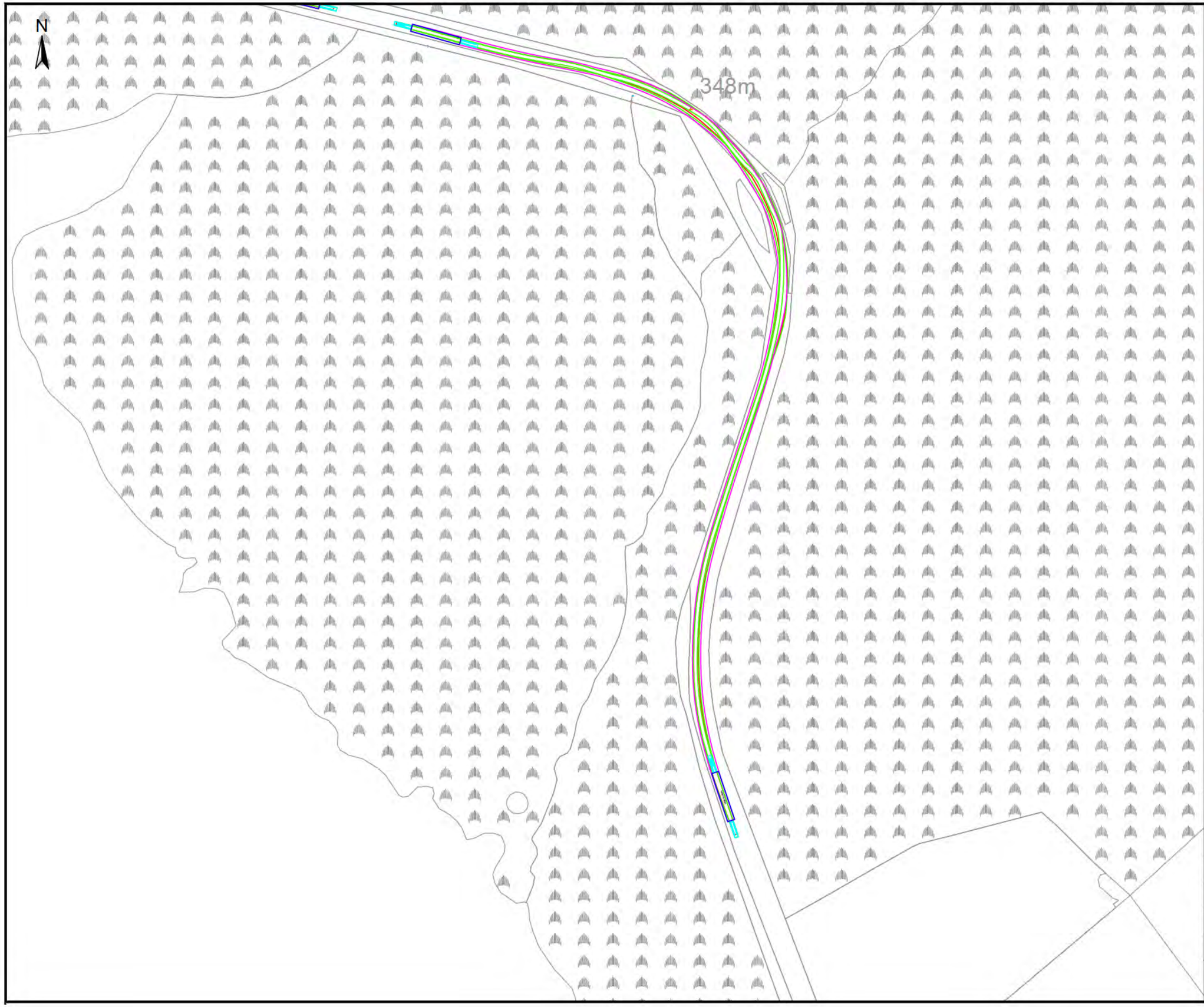
| Scale | Orig Size | Dimensions |
|---|---|---|
| 1: 2500 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK24 | — |

Scale

0 25 50 100 150




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
PoI 25: A68 North of Whitelee Farm
N163 Tower Section (35m x 5m)

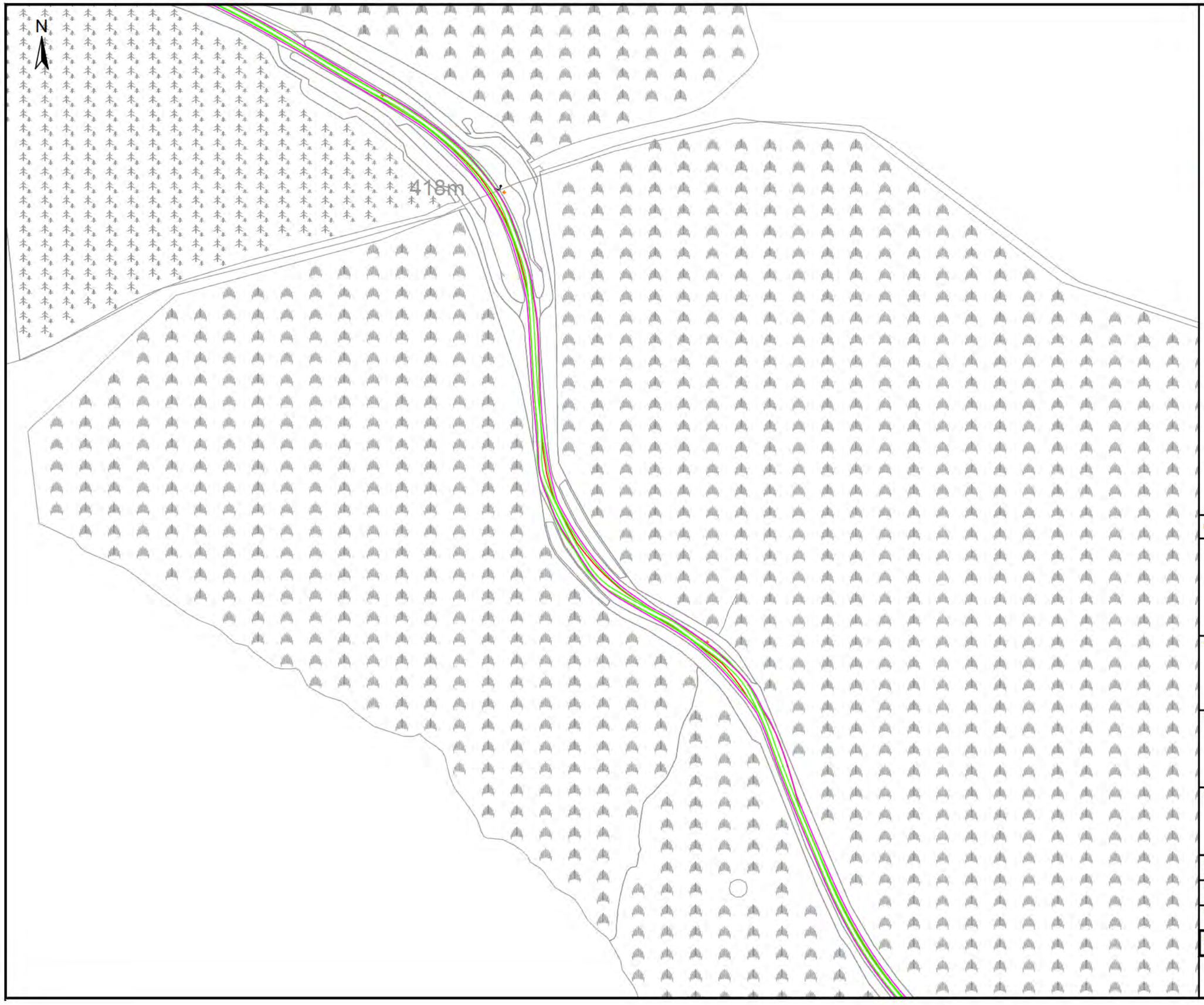
| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1: 2500 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK25 | — |

Scale
0 25 50 100 150




Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Email: communications@rsk.co.uk
Web: www.rskgroup.com

Client: ESB

Project Title: Millmoor Rig Wind Farm

Drawing Title: Swept Path Analysis
Pol 26: A68 Carter Bar
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1: 2500 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK26 | — |

Scale
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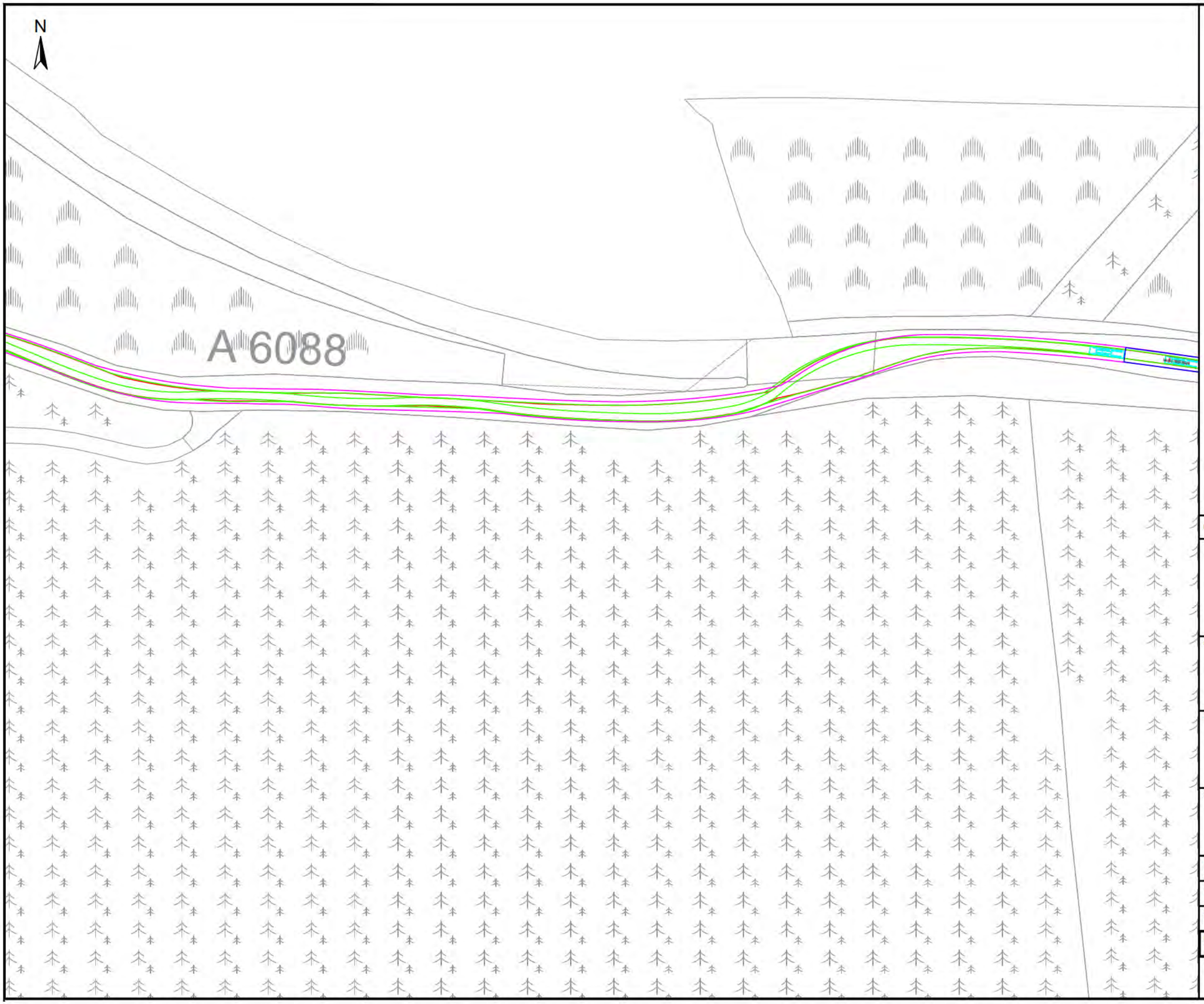


Legend

- Load Oversail
- Body Oversail
- Wheels Over-run
- Load/Body Oversail
- Wheels Over-run

| Rev. | Date | Amendment | Drawn | Chkd. | Appd. |
|---|---|---|---|---|---|
| — | — | — | — | — | — |

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Client

ESB

Project Title

Millmoor Rig Wind Farm

Drawing Title

Swept Path Analysis
PoI 27: A68 / A6088 Junction
N163 Tower Section (35m x 5m)

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| JW | 30/03/23 | JH | 30/03/23 | JH | 20/03/23 |

| Scale | Orig Size | Dimensions |
|---|---|---|
| 1:1250 | A3 | METRES |

| Project No. | Drawing File |
|---|---|
| 111451 | |

| Drawing No. | Rev. |
|---|---|
| 111451-10-SK27 | — |

Scale
0 12.5 25 50 75