

P e l l F r i s c h m a n n

Longcroft Wind Farm

Technical Appendix 11.1 - Transport Assessment

October 2023

107057

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# 1 Introduction

## 1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by Renewable Energy Systems Ltd. (RES) (the applicant) to undertake a Transport Assessment (TA) for the proposed Longcroft Wind Farm (hereafter referred to as the proposed development), which is located within the Scottish Borders Council (SBC) boundary area. The site is defined by the red line as shown on Figure 1.

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The report identifies the key transport and access issues associated with the proposed development, including the route for abnormal loads. The TA identifies where the proposed development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report.

## 1.2 Report Structure

Following this introduction, the TA report is structured as follows:

- Section Two describes the proposed development;
- Section Three reviews the relevant transport and planning policies;
- Section Four sets out the methodology used in this assessment;
- Section Five describes the baseline transport conditions;
- Section Six describes the trip generation and distribution of traffic in the study area;
- Section Seven summarises the traffic impact assessment;
- Section Eight considers mitigation proposals for development related traffic within the study network; and
- Section Nine summarises the findings of the TA and outlines the key conclusions.

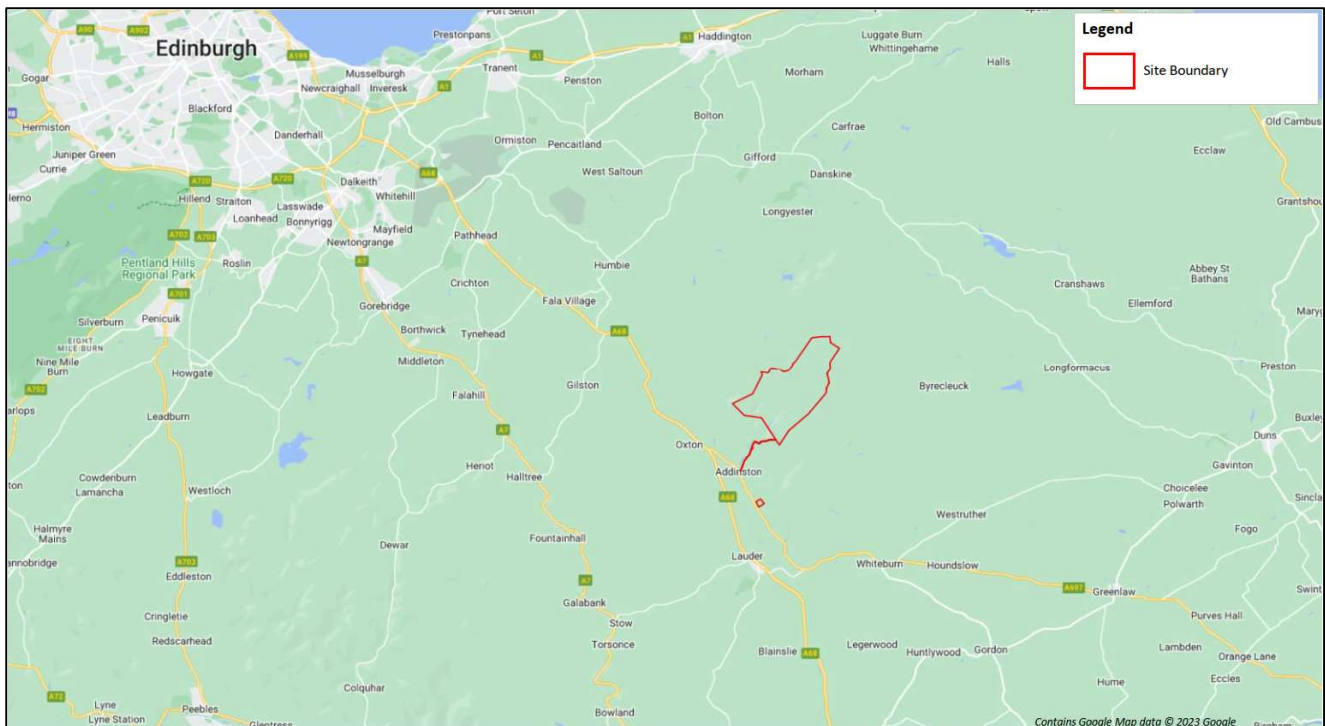
## 2 Site Background

### 2.1 Site Location

The site is situated in the south-west of the Lammermuir Hills, approximately 8.5 kilometres (km) to the north of Lauder in the Scottish Borders.

The general location of the site is shown in Figure 1.

Figure 1 Site Location



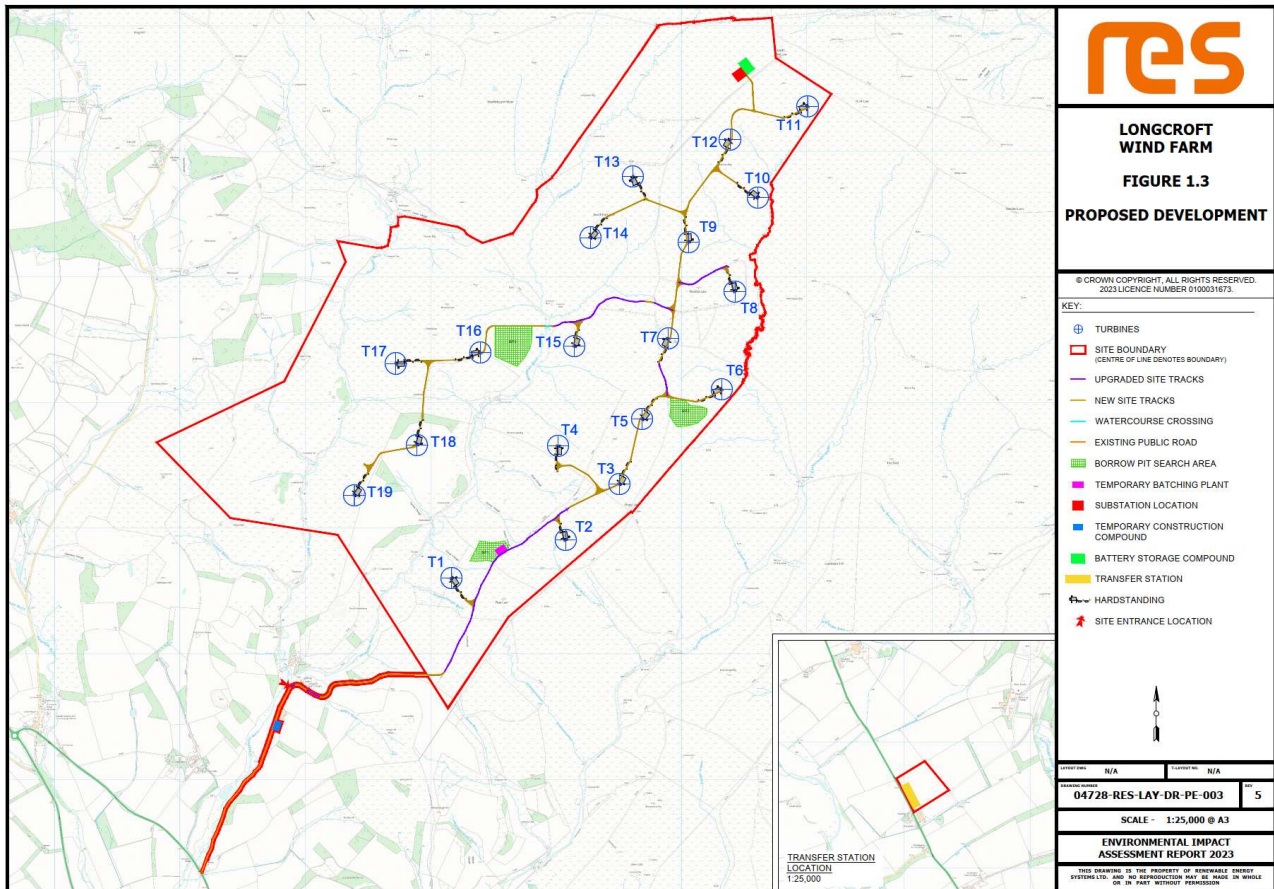
### 2.2 Proposed Development

The proposed development will comprise the following:

- up to 19 three-bladed horizontal axis wind turbines of up to 220m tip height. The wind turbines would be nominally rated at 6.6MW;
- at each wind turbine, associated low to medium voltage transformers and related switchgear;
- wind turbine foundations;
- hardstand areas for erection cranes at each wind turbine location;
- a network of access tracks including watercourse crossings, passing places, turning heads and site entrance from the D124;
- borrow pits (dependent on availability of stone within the site);
- a substation compound containing electrical infrastructure, control building, welfare facilities and a communications mast;
- a battery energy storage system (BESS), rated at 50MW and associated compound;
- a transfer station;
- public road widening along sections of D124 where required;
- a network of buried electrical and communication cables;
- temporary construction compounds;
- signage; and
- habitat management and biodiversity enhancement.

The proposed development is shown in Figure 2.

Figure 2 Proposed Development (courtesy of RES)



A complete description of the proposed development for the purposes of the Environmental Impact Assessment (EIA) regulations is provided in EIA Report Volume 1: Chapter 3: Proposed Development Description.

### 2.3 Candidate Turbines

The Siemens SG170 turbine was selected by the applicant as the candidate wind turbine for the purposes of this TA and appended Route Survey Report (RSR), to provide a worst case assessment. The details of the components have been provided by Siemens and are detailed in Table 1. These feature the UK tower design option, designed to keep tower diameters for tip heights in excess of 200m below 4.8m diameter.

The details of the components used are found in Table 1.

Table 1 Wind Turbine Components Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	87.500	4.186	3.500	29.000
Worst Case Tower Section	30.000	4.800	4.800	84.958

The RSR detailing the wind turbine components in detail and the proposed access route, with associated swept path assessment drawings is attached in Appendix A.

The selection of the final wind turbine model and specification will be subject to a commercial procurement process following consent of the application. The dimensions may therefore vary slightly from those assumed as part of this assessment.

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer to reduce the need for mitigation in constrained sections of the route. Where constraints are significant, blades would be transferred onto a ten-axle blade lifting trailer to reduce the amount of third-party land required and to reduce the extents of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.

Examples of the vehicles and trailers that are likely to transport loads are shown in Figures 3, 4 and 5.

**Figure 3 Dolly Clamp Trailer**



**Figure 4 Blade Lifter Trailer**





Figure 5 Tower Trailer



## 3 Policy Context

### 3.1 Introduction

An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

### 3.2 National Policy & Guidance

#### 3.2.1 National Planning Framework 4 (NPF4)

The National Planning Framework (NPF) is a long-term plan for Scotland that sets out where development and infrastructure is needed in the country. NPF4 sets out the Government's plan looking forward to 2045 that will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities. It is part of the development plan, and so influences planning decisions across Scotland.

NPF4 puts the climate and nature crises at the heart of the Scottish planning system and was adopted in February 2023.

Policy 11 which relates to Energy makes specific reference to the impacts of construction traffic associated with renewable energy projects. Policy 11 states the following:

*"e) In addition, project design and mitigation will demonstrate how the following impacts are addressed:*

➤ *vi. impacts on road traffic and on adjacent trunk roads, including during construction."*

The assessment undertaken as part of this TA and the associated EIA Report has taken cognisance of this and provided appropriate mitigation where necessary.

#### 3.2.2 Planning Advice Note (PAN) 75

Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

*"... transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning."*

*"All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact."*

#### 3.2.3 Transport Assessment Guidance (2012)

Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TA for development proposals in Scotland such that the likely transport effects can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport effects but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

### 3.2.4 Onshore Wind Turbines, Online Renewables Planning Advice (May 2014)

The most recent Scottish Government advice note regarding onshore wind turbines was published in 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines including landscape impact, impacts on wildlife and ecology, shadow flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

In terms of road traffic impacts, the guidance notes that in siting wind turbines close to major roads, pre-application discussions are advisable as this is important for the movement of abnormal indivisible loads during the construction period, ongoing planned maintenance and for decommissioning (if applicable).

## 3.3 Local Policy & Guidance

### 3.3.1 Scottish Borders Council Local Development Plan (2016)

The SBC Local Development Plan (LDP) was adopted in 2016 and has been prepared to address Scottish Borders community's future requirements up to 2025 .

Policy ED9: Renewable Energy Development:

*"The council will support proposals for both large scale and community scale renewable energy development including commercial wind farms, single or limited scale wind turbines, biomass, hydropower, biofuel technology, and solar power where they can be accommodated without unacceptable significant adverse impacts or effects, giving due regard to relevant environmental, community and cumulative impact considerations..."*

Policy IS4: Transport Development and Infrastructure:

*"... Proposals that generate significant travel demand will be required to provide the following criteria:*

- a) *Transport Assessments and Travel Plans*
- b) *Developer contributions where appropriate"*

Policy IS5: Protection of Access Routes:

*"Development that would have an adverse impact upon an access route available to the public will not be permitted unless a suitable diversion or appropriate alternative route, as agreed by the Council, can be provided by the developer."*

### 3.3.2 Scottish Borders Council Supplementary Guidance Renewable Energy (2016)

In relation to road and traffic implications associated with wind energy developments, The SBC Supplementary Guidance Renewable Energy states:

*"During construction, wind energy developments have the potential to generate significant levels of traffic, including abnormal loads associated with transporting the turbine components. The Council expects all proposals to fully consider potential impacts of the development on the Scottish Borders road network in terms of the structural and physical ability of both roads and bridges to accommodate the additional traffic generated and the need to minimise any disturbance to local communities. Should turbine transportation routes require to cross third party land, the applicant should ensure that appropriate agreements are in place to allow access to be achieved. Early contact should be made with the Council's roads planning section in terms of the scope and extent of a Transport Assessment and Construction Traffic Management Plan which would be required to address issues such as routeing, timing of deliveries, community liaison and road infrastructure improvements."*

With regards to Public Access, The SBC notes that:

*"If any turbines are proposed within 2km of a core path or significant access route the onus will be on the applicant to provide evidence to confirm any such turbines will not have a significantly detrimental impact on the path or route. Any proposals which have such an impact will be considered on a case by case basis taking cognisance of any mitigation measures..."*

### 3.3.3 Scottish Border Council, Local Access Transport Strategy (LATS)

The Local Access and Transport Strategy (LATS) is a key document for the SBC, setting out what are considered to be the key transport and access issues affecting the area, along with proposed approach to these issues. The key aspects of the policy in respect to development such as renewable energy are:

- *“Ensuring that development does not adversely impact on the transport network; and*
- *Identifying requirements for developer contributions to help mitigate against any adverse impact on the transport network from development.”*

The LATS Main Issues Report (LATS - MIR) was published in October 2015 and has yet to be fully approved by SBC.

## 3.4 Policy and Guidance Summary

The proposed development can align with the stated traffic and transport policy objectives and the design of the site and proposed mitigation measures will ensure compliance with national and local objectives.

## 4 Study Methodology

### 4.1 Introduction

There are three phases of the proposed development, which have been considered in this assessment and are as follows:

- the Construction Phase;
- the Operational Phase; and
- the Decommissioning Phase.

### 4.2 Project Phases – Transport Overview

Of the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant, bulk materials and wind turbine components will be transported to site, potentially resulting in a significant increase in traffic on the study network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the road network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

### 4.3 Scoping Discussions

The applicant submitted a request for a scoping opinion to the Scottish Ministers in respect of the EIA which included a section considering traffic and transport. A full review of that scoping opinion and other correspondence relating to the scope of the study including pre-application advice is provided in the Transport and Traffic Chapter of the EIA Report (Volume 1: Chapter 11).

## 5 Baseline Conditions

### 5.1 Access Arrangements

The proposed development will be accessed from the D124 road, connecting Longcroft Farm with the A697, via a newly provided site entrance at the end of the D124.

The site entrance will provide access to the site for all abnormal loads associated with the wind turbine deliveries, as well as access for Heavy Goods Vehicles (HGVs) delivering construction materials and general site traffic.

Construction traffic associated with the development will generally approach from the north-west and all Abnormal Indivisible Load (AIL) traffic access from the Port of Entry (POE) at Rosyth, utilising the proven abnormal load route used during the construction of other wind farms in the area, including Fallago Rig Wind Farm.

### 5.2 Study Area Determination

The Study Area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the proposed development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

Access for construction materials would be predominantly from the west via the A68(T) and A697 through to the site entrance. Where feasible, local materials will be sourced which will avoid traffic impacting on local communities as far as practicable. A number of borrow pit search areas are included in the proposed development.

As detailed above, the likely POE used for the discharging of wind turbine components will be the Port of Rosyth in Fife. AIL would route to the site via the A720 Edinburgh City bypass, A68 and A697. Full details of the AIL route are provided later in the report.

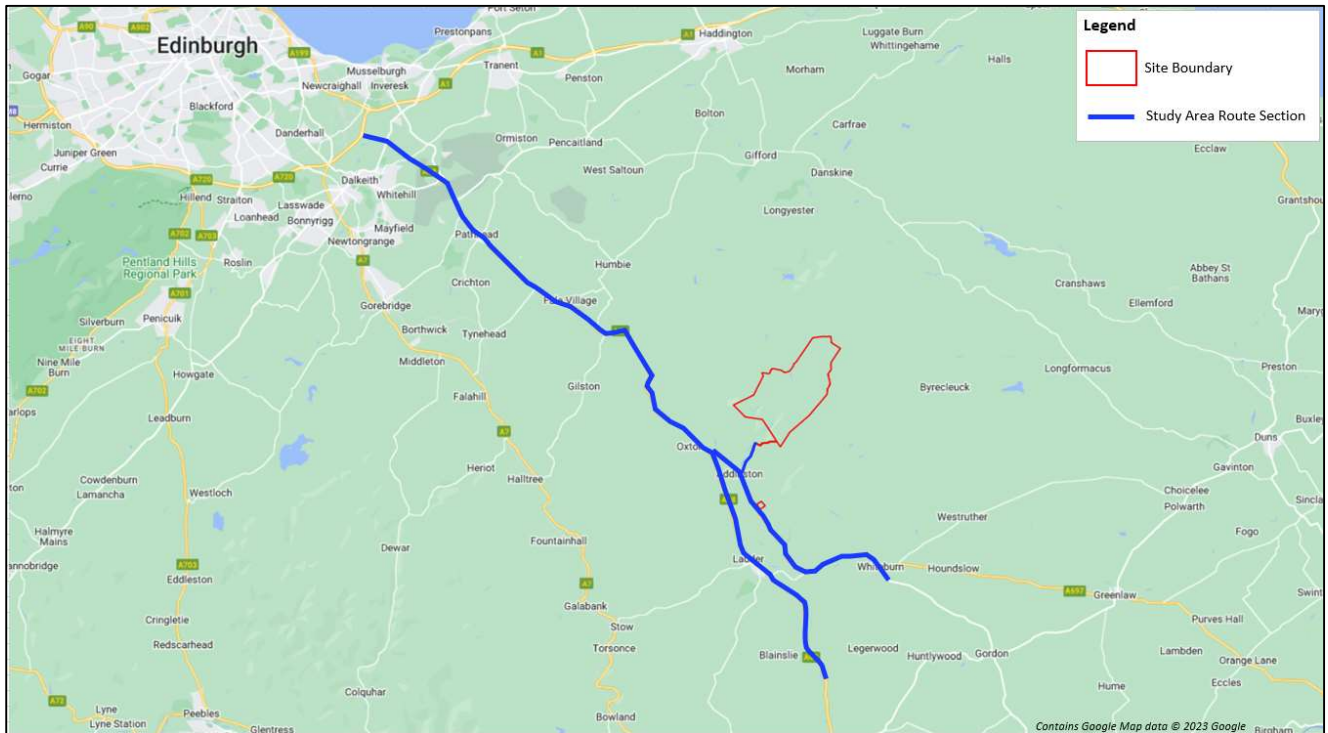
Based on the above, the Study Area for the assessment has therefore been assumed to be:

- A68 between the A720 and Birkhill;
- A697 between Carfraemill and Whiteburn; and
- D-Class Road, D124 between the A697 and site.

Effects associated with construction traffic generated by the proposed development would be most pronounced in close proximity to the site entrance and on the final approaches to the site. As vehicles travel away from the proposed development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the Study Area identified above.

The Study Area is shown in Figure 6.

Figure 6 Study Area



### 5.3 Pedestrian and Cyclist Networks

There are limited pedestrian facilities in the immediate vicinity of the site, reflecting the rural nature of the site. Those areas where pedestrian facilities are located are detailed below:

- there is a pedestrian footway on the southern side of the A697 at Carfraemill, running from the A68 Carfraemill Roundabout, for a distance of approximately 470m; and
- there is a pedestrian footway on the eastern side of the A68 at Carfraemill, running from the A68 Carfraemill Roundabout, for a distance of approximately 140m.

Further away from the proposed development in the wider Study Area, there are pedestrian facilities within the larger settlements, including Lauder and Pathhead, where there are footways on one side or both sides of the carriageway. In addition, there are dedicated signal-controlled crossing points for pedestrians in both settlements.

The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their rural setting.

A review of SBC's Core Path network<sup>1</sup> and the ScotWays Maps<sup>2</sup> enclosed in the Scoping Response indicates that Core Path 194 is located north-west of the site and Core Path 16, which runs through the eastern section of the site in a north-south direction. These are also recorded as Public Right of Ways (PRoWs) as BE/BE9/1 and BE/BE11/1, respectively, on the maps provided by ScotWays. A review of the Scottish Borders Oxton Longcroft Area map provided by SBC in the Scoping Response shows a number of "Other" paths which are located within, and in the immediate vicinity of, the site boundary including OXCH/LMC/269/0007/1, OXCH/FG0/1, OXCH/FG0/2, OXCH/FG0/3, CREL/FG0/4, CREL/FG0/5, OXCH/FG0/4, CREL/FG0/6 and CREL/FG0/3.

<sup>1</sup> The Scottish Borders Council, Countryside and Access Plan: <https://www.scotborders.gov.uk/mapadvanced>

<sup>2</sup> Scoping Opinion on behalf of Scottish Ministers, Longcroft Wind Farm, June 2023 [Page 82 of 97]

A review of Sustrans National Cycle Network (NCN) map<sup>3</sup> indicates that there are no NCN routes within the study area.

## 5.4 Road Access

### Unclassified road between the A697 and site

Access to the existing site area is taken from the D-Class Road, D124 which runs from its junction with the A697 to the south of Cleekhimin Bridge near Carfraemill. The road is a single carriageway road of varying width and approximately 1.77km in length. There are passing places located on the road, of varying standards. The road is maintained by SBC.

### A697

The A697 is a single carriageway rural road, which runs from Carfraemill at the A86 to Morpeth, for a distance of approximately 38km. On the sections of the road likely to be used by construction traffic, the national speed limit is in place.

### A68(T)

The A68 Edinburgh to Newcastle Upon Tyne is a Trunk Road operated by Bear Scotland. The road runs from the grade separated junction with the A720 Edinburgh City By-pass in a south-eastwards direction for a distance of approximately 83km to the Scotland / England border. The national speed limit is in place for the majority of its length, reducing to 20 or 30mph in villages and settlements along its length.

### Road Suitability

A number of the roads within the Study Area form part of the agreed route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes the A697 and A68(T).

The Agreed Timber Route Map<sup>4</sup> has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles i.e., HGVs. The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

<sup>3</sup> <https://www.sustrans.org.uk/national-cycle-network> [Accessed 06/09/2023]

<sup>4</sup> <https://timbertransportforum.org.uk/>



## 5.5 Existing Traffic Conditions

In order to assess the impact of construction traffic within the Study Area, Annual Average Daily Traffic (AADT) flows were obtained from the UK Department for Transport (DfT) traffic database<sup>5</sup> and TS database<sup>6</sup>. With regards to the traffic data obtained from TS database 2023 data has been used, while for the DfT database 2019 data has been used as 2023 is currently unavailable and these flows would be unaffected by Covid-related travel restrictions.

The traffic counts sites used were as follows:

1. A68(T) at Pathhead (TS Count site reference: 130754);
2. A68(T) North of Carfraemill (TS Count site reference: JTC00048);
3. A68(T) North of Lauder (TS Count site reference: ATC00004); and
4. A697 South of Addinston (DfT Count site reference: 50943).

DfT and TS traffic data allow the traffic flows to be split into vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

A National Road Traffic Forecast (NRTF) low growth factor was applied to the DfT survey data, to bring the traffic data up to the base year of 2023. The NRTF low growth factor for 2019 to 2023 is 1.027.

These sites were identified as being areas where sensitive receptors on the access routes would be located. A full receptor sensitivity and effect review is prepared in Volume 1, Chapter 11: Transport and Traffic of the EIA Report.

With regards to the D124 road, as previously discussed, this is a single-track road with passing places, serving a small number of isolated dwellings and providing access to areas used for agricultural purposes. The road is very lightly trafficked and given that all traffic used in the construction of the proposed development will use it to access the site, the percentage increase will be significant. As such rather than use the base flows to determine if an assessment is required, one has been undertaken regardless.

Figure 7 shows the location of the surveys, while Table 2 summarises the AADT traffic data collected and used in this assessment.

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<sup>5</sup> <https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints>

<sup>6</sup> <https://ts.drakewell.com/multinodemap.asp> (Accessed: October 2023)

Figure 7 Traffic Count Locations

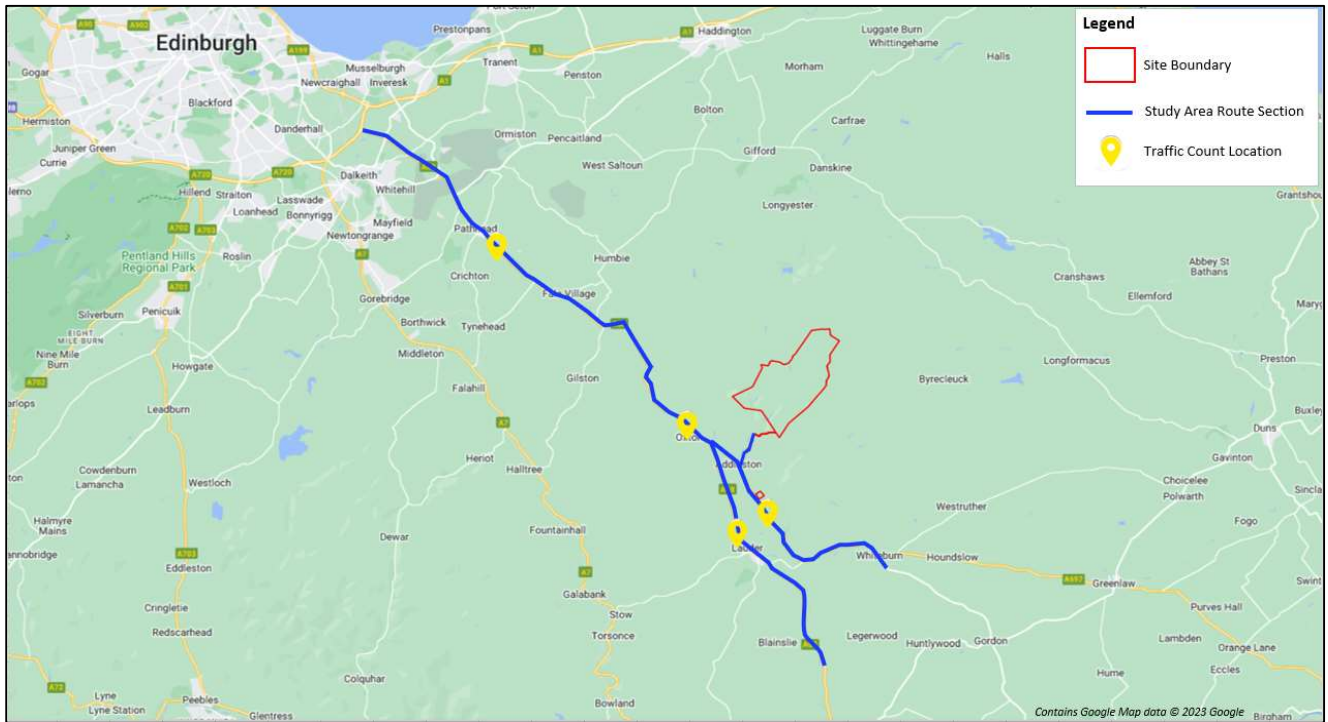


Table 2 24-hour Two-way Average Traffic Data (2023)

No.	Survey Location	Data Source	Cars & Lights	HGV	Total
1	A68(T) at Pathhead	TS	8,581	943	9,524
2	A68(T) North of Carfraemill	TS	7,498	1,375	8,873
3	A68(T) North of Lauder	TS	6,822	537	7,359
4	A697 South of Addinston	DfT	2,588	265	2,853

Please note minor variances due to rounding may occur.

The TS count sites which provided traffic volume data were also used to obtain speed statistics. The two-way seven-day average and 85th percentile speeds observed at the count sites are summarised in Table 3.

Table 3 Speed Summary (2023)

No.	Survey Location	Mean Speed (mph)	85th Percentile Speed (mph)	Speed Limit (mph)
1	A68(T) at Pathhead	25.7	29.8	30
2	A68(T) North of Carfraemill	26.5	56.4	60
3	A68(T) North of Lauder	24.3	29.2	20

\* No speed data available from DfT database

Speed information from the Table 3, suggests that there are speeding issues on the A68(T) North of Lauder, where a new 20mph speed limit has been recently introduced. Police Scotland may wish to consider enforcement spot checks in these areas.

## 5.6 Accident Review

Personal Injury Accident (PIA) data for the five-year period covering January 2017 to December 2021 was obtained from the online resource CrashMap<sup>7</sup> which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

<sup>7</sup> <https://www.crashmap.co.uk/>

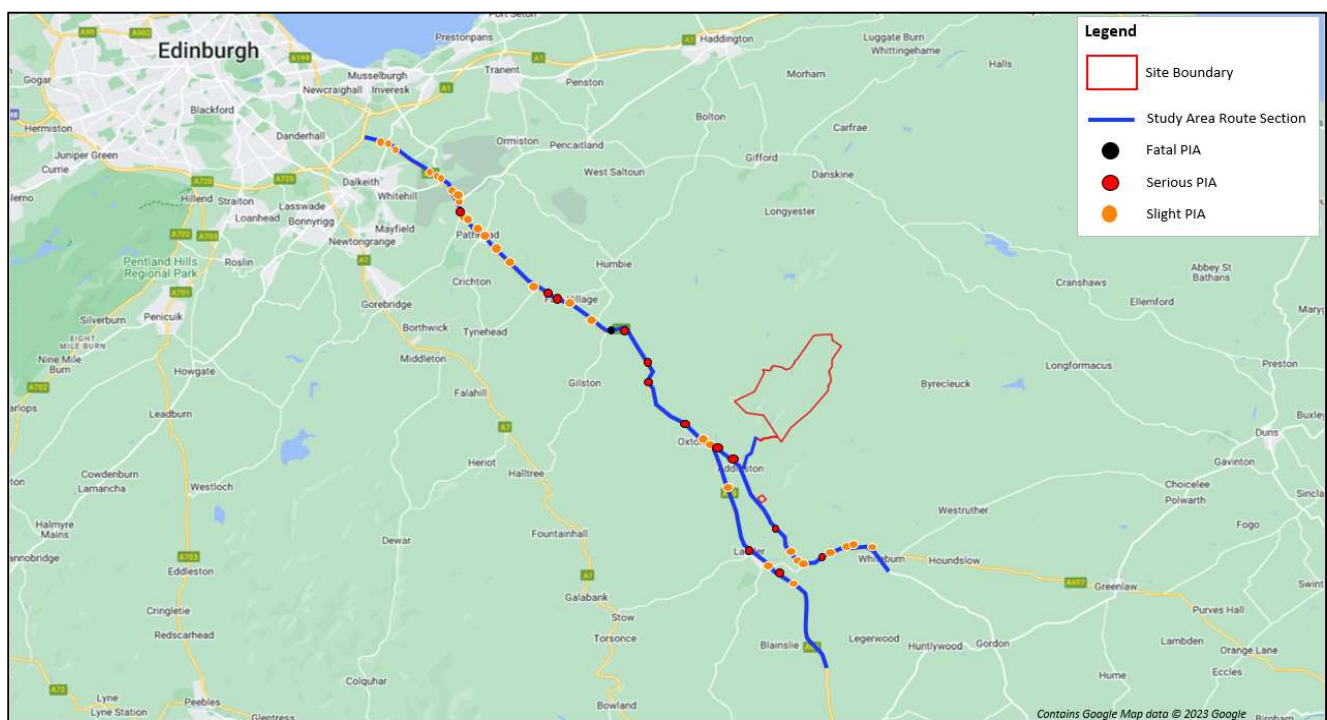
TA Guidance<sup>8</sup> requires an analysis of the PIA on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the site has been identified as being within a high accident area.

The statistics are categorised into three categories, namely “Slight”, “Serious” and “Fatal”, for those accidents that result in a death. The locations and severity of the recorded accidents within the Study Area are summarised in Table 4, while Figure 8 shows their locations.

**Table 4 Personal Injury Accident Summary**

Survey Location	Slight	Serious	Fatal	HGV Incidents
A68(T)	23	11	1	13
A697	7	2	0	5
<b>Total</b>	<b>30</b>	<b>13</b>	<b>1</b>	<b>18</b>
<b>Percentage</b>	<b>68.18%</b>	<b>29.55%</b>	<b>2.27%</b>	-

**Figure 8 Accident Locations**



A summary analysis of the incidents indicates that:

- a total of 44 accidents were recorded within the study area roads within the five year period;
- of those 44 accidents, 30 were classed as “slight”, 13 as “serious” and one as “fatal”;
- the accident which included a fatality occurred on the A68, approximately 100m to the east of the B3668 junction. The accident involved two cars and resulted in one fatality;
- one accident involved a single vehicle motorcycle collision at the westbound access to Carfraemill Roundabout. The incident was classified as a serious accident;
- a total of 18 accidents involved HGVs, of which 13 occurred on the A68 and five occurred on the A697;
- four of the accidents involving HGVs on the A68 were recorded as serious, as was one on the A697 and the remainder were recorded as slight. All of the incidents also involved cars;
- there were no accidents recorded along the unclassified road between the A697 and site;

<sup>8</sup> [https://www.transport.gov.scot/media/4589/planning\\_reform\\_-\\_dpmtag\\_-\\_development\\_management\\_dpmtag\\_ref\\_\\_17\\_-\\_transport\\_assessment\\_guidance\\_final\\_-\\_june\\_2012.pdf](https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management_dpmtag_ref__17_-_transport_assessment_guidance_final_-_june_2012.pdf)

- there were no accidents involving pedestrians or cyclists within the Study Area during the survey period; and
- there were no reported accidents involving a bus in the study area.

Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the proposed development that currently require to be addressed or would be exacerbated by the construction of the proposed development.

## 5.7 Future Baseline Traffic Conditions

### 5.7.1 2030 Traffic Flows

Construction of the proposed development could commence during 2030 if consent is granted and is anticipated to take approximately 16 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2023 to 2030 is 1.036. These factors were applied to the survey data to estimate the 2030 Base traffic flows, as shown in Table 5. This will be used in the Construction Peak Traffic Impact Assessment.

**Table 5 24-hour Two-way Average Traffic Data (2030)**

No.	Survey Location	Cars & Lights	HGV	Total
1	A68(T) at Pathhead	8,890	977	9,867
2	A68(T) North of Carfraemill	7,768	1,425	9,192
3	A68(T) North of Lauder	7,067	557	7,624
4	A697 South of Addinston	2,681	275	2,956

*Please note minor variances due to rounding may occur.*

## 5.8 Committed Developments

### 5.8.1 Onshore Wind Farm and Energy Related Planning Applications

A review of the SBC online planning portal<sup>9</sup> and the Scottish Government's Energy Consents Unit portal<sup>10</sup> was undertaken in the preparation of this assessment to identify any consented developments within the vicinity of the proposed development which would generate significant traffic and should be included within the assessment.

Transport Assessment Guidance<sup>11</sup> advises that only those projects with extant planning permission or local development plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or not yet determined should not be included in cumulative assessments as they have yet to be determined. When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

Based on the above, one consented scheme was identified, namely Crystal Rig Wind Farm – Phase 4 (ECU00000607), which was consented in March 2021 and there are no common access routes proposed to be used during the construction of the developments. Furthermore, construction is currently scheduled to begin in 2023 with an expected completion date in 2024. Based on the available information, no further consideration of this scheme is required in the assessment.

<sup>9</sup> <https://eplanning.scotborders.gov.uk/online-applications/search.do?action=simple&searchType=Application>

<sup>10</sup> <https://www.energyconsents.scot/ApplicationSearch.aspx?T=1>

<sup>11</sup> <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>

### 5.8.2 Other Planning Applications

A review of the SBC online planning portal was also undertaken for other any other developments with planning consent, which should be considered within this assessment. The review examined consented developments whose trips are considered significant in scale (i.e., has associated traffic impact of over 10%).

The review did not identify any other significant traffic generating developments in the Study Area that may occur during the construction period associated with the proposed development.

It should be noted that the use of Low NRTF growth assumptions has provided a basis for general local development growth within the Study Area.

## 6 Trip Generation and Distribution

### 6.1 Construction Phase

#### 6.1.1 Trip Derivation

During the 16-month construction period, the following traffic will require access to the site:

- staff transport, in either cars or staff minibuses;
- construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock;
- components relating to the battery storage element and associated infrastructure; and
- abnormal loads consisting of the wind turbine sections and a heavy lift crane.

Average monthly traffic flow data was used to establish the construction trips associated with the proposed development, based on the assumptions detailed in the following sections. It should be noted that there may be variations in the following calculations due to rounding, which are not considered significant.

#### 6.1.2 Construction Staff

Staff will arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce on-site will depend on the activities undertaken, but, based on previous wind farm construction site experience for a project of this scale which suggests three staff per wind turbine during the short peak period of construction is likely, the maximum number of staff expected on-site could be around 57 per day.

For the purposes of estimating traffic movements, it was assumed that 40% of staff would be transported by minibus and 60% would arrive by car (single car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 72 vehicle movements (36 inbound trips and 36 outbound trips) per day during the peak period of construction.

#### 6.1.3 Abnormal Indivisible Load Deliveries

The wind turbines are broken down into components for transport to the site. The nacelle, blade and tower sections are classified as Abnormal Indivisible Loads (AIL) due to their weight, length, width and height when loaded. For the purposes of the report, the 'worst case' numbers of components requiring transport are illustrated in Table 6.

**Table 6 Turbine Components**

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2 (parts shared between 5 wind turbines on one delivery)

In addition to the wind turbine deliveries, up to two high-capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on site. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the wind turbines.

Escort vehicles would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed and it is assumed that three AIL turbine component loads would be delivered per convoy. This would result in 70 convoys on the network (excluding cranes), with a total of approximately 420 escort vehicle movements (210 trips in and 210 trips out).

Wind turbine components that do not classify as AILs, would be delivered in addition to these, resulting in a further 122 movements (61 trips in and 61 trips out). All of these deliveries are expected to occur over a period of approximately six months.

The escort vehicles have been assumed to be police cars and light goods vehicles. Motorcycles may be deployed, depending upon Police resources.

#### 6.1.4 General Deliveries

Throughout the construction phase, general deliveries will be made to the site by means of HGV. These would include fuel, site office and staff welfare. At the height of construction, it is assumed that up to 40 journeys to site are made (20 inbound trips and 20 outbound trips) per month.

#### 6.1.5 Material Deliveries

Various materials will need to be delivered to site to construct the site-based infrastructure. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the site to enable the formation of the site compound and to deliver construction machinery.

The site is large enough to warrant on-site batching of concrete. All wind turbine, substation foundation concrete will be mixed on-site, with deliveries of cement powder, water and sand and aggregates being delivered by HGV. For the purpose of this assessment, it is assumed that the cement powder and water will be delivered from concrete suppliers to the south, from local suppliers.

Sand and aggregate not sourced from on-site borrow pits will be delivered by tipper HGV and is expected to come from local quarries, located to the south. There are a number of potential suppliers including the following:

- Tarmac Craighouse Quarry at Earlston; and
- Blinkbonny Quarry, south of Gordon.

The estimated total volume of concrete required on site is 19,129 m<sup>3</sup>, based upon expected wind turbine foundation, substation foundation and miscellaneous uses across the proposed development. The individual deliveries associated with the raw materials have been estimated and result in inbound trips of 42 cement tankers, 606 sand and aggregate tippers, and 243 water tankers. It may be possible to extract some aggregate for use in concrete production from borrow pits within the site, however 100% of the aggregate has been assumed in the assessment to present a worst-case scenario.

Reinforcement required in the foundations across the proposed development are detailed in Table 7 below.

**Table 7 Steel Reinforcement Deliveries**

Element	Weight / Installation (t)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Wind Turbine Foundation	100 per wind turbine	19,000	30	64	128
Substation Foundation	100	100	30	4	8

The proposed access tracks will generally be 5m in width (however there would be some sections 6m wide) and would be designed to accommodate 13 tonne axle loads. In addition to the access tracks, crane hardstands will be constructed to enable the wind turbine erection process. It is estimated that 60% of the aggregate material requirements will be imported to the site. It is assumed that the aggregate material will arrive to site from quarries to the south as detailed above.

The estimate of imported material is detailed in Table 8.

**Table 8 Track Material Deliveries**

Element	Volume / Installation (m <sup>3</sup> )	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Stone / Aggregates	54,765	120,483	20	6,025	12,050

Geotextile will be delivered to site in rolls. A total of 351 large rolls may be required at site and will be delivered by HGV which will result in 36 vehicle movements (18 inbound trips in and 18 outbound trips).

Cables will connect each wind turbine to the substation compound. Trip estimates for the cable materials are provided below in Table 9 and 10. Three cables are to be provided within each cable trench and will be backfilled with cable sand. Geotextiles will be used to shield the trench and ducting will be used to protect the cable when it runs under roadways.

**Table 9 Cable Trip Estimate**

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Movements
Cables	30,910	500	185	21	42

**Table 10 Cable Sand Trip Estimate**

Element	Volume (m <sup>3</sup> )	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Cable Sand	10,432	16,691	20	835	1,670

One substation building will be constructed on the site. This will require deliveries of building materials and structural elements and will result in 240 vehicle movements (120 inbound trips in and 120 outbound trips). Battery storage deliveries will result in a further 64 HGV vehicle movements for battery, inverter and cabin / building deliveries etc.

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. Table 11 illustrates the trip generation throughout the construction programme for each month, showing construction vehicle movements, i.e. an inbound and outbound trip.



**Table 11 Construction Traffic Profile**

Activity	Class	Month															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Site Establishment & Remediation	HGV	50	50													50	50
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV	1,506	1,506	1,506	1,506	1,506	1,506	1,506	1,506								
Plant Deliveries	HGV	10	20													10	20
Concrete Batching Deliveries	HGV				255	255	255	255	255	255	255						
Reinforcement	HGV					68		68									
Cable & Ducting Deliveries	HGV								10	10	10	10	10				
Cabling Sand	HGV								334	334	334	334	334				
Geotextile Deliveries	HGV					18		18									
Substation & Energy Storage	HGV							40	40	40	40	40	40				
AIL Cranage	HGV											10		10			
AIL Deliveries	HGV											180	180	180			
AIL Escorts	Car & LGV											141	141	141			
Battery Storage	HGV							16	16	16	16						
Commissioning	Car & LGV															44	44
Staff	Car & LGV	478	796	796	1,195	1,195	1,593	1,593	1,593	1,593	1,593	1,593	1,593	1,593	1,593	1,593	1,195
Total HGV	HGV	1,606	1,616	1,546	1,801	1,887	1,801	1,943	2,201	695	695	614	604	230	40	100	110
Total Cars / LGV	Car & LGV	478	796	796	1,195	1,195	1,593	1,593	1,593	1,593	1,593	1,733	1,733	1,733	1,593	1,637	1,239
<b>Total Movements</b>		2,084	2,413	2,343	2,995	3,081	3,394	3,536	3,794	2,288	2,288	2,348	2,338	1,963	1,633	1,737	1,349
<b>Total HGV per Day</b>		73	73	70	82	86	82	88	100	32	32	28	27	10	2	5	5
<b>Total Cars / LGV per Day</b>		22	36	36	54	54	72	72	72	72	72	79	79	79	72	74	56
<b>Total per Day</b>		95	110	106	136	140	154	161	172	104	104	107	106	89	74	79	61

Please note minor variances due to rounding may occur.  
 Calculations assume that there are 22 working days per month.

The peak of construction activity is expected to occur in Month 8 when there will be a total of 172 vehicle movements, comprising 100 two-way HGV movements and 72 two-way car / LGV movements.

This would equate to 8 two-way HGV movements per hour across a typical 12-hour day, assuming a flat traffic profile.

#### 6.1.6 Distribution of Construction Trips

The distribution of proposed development construction traffic on the network will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months are as follows:

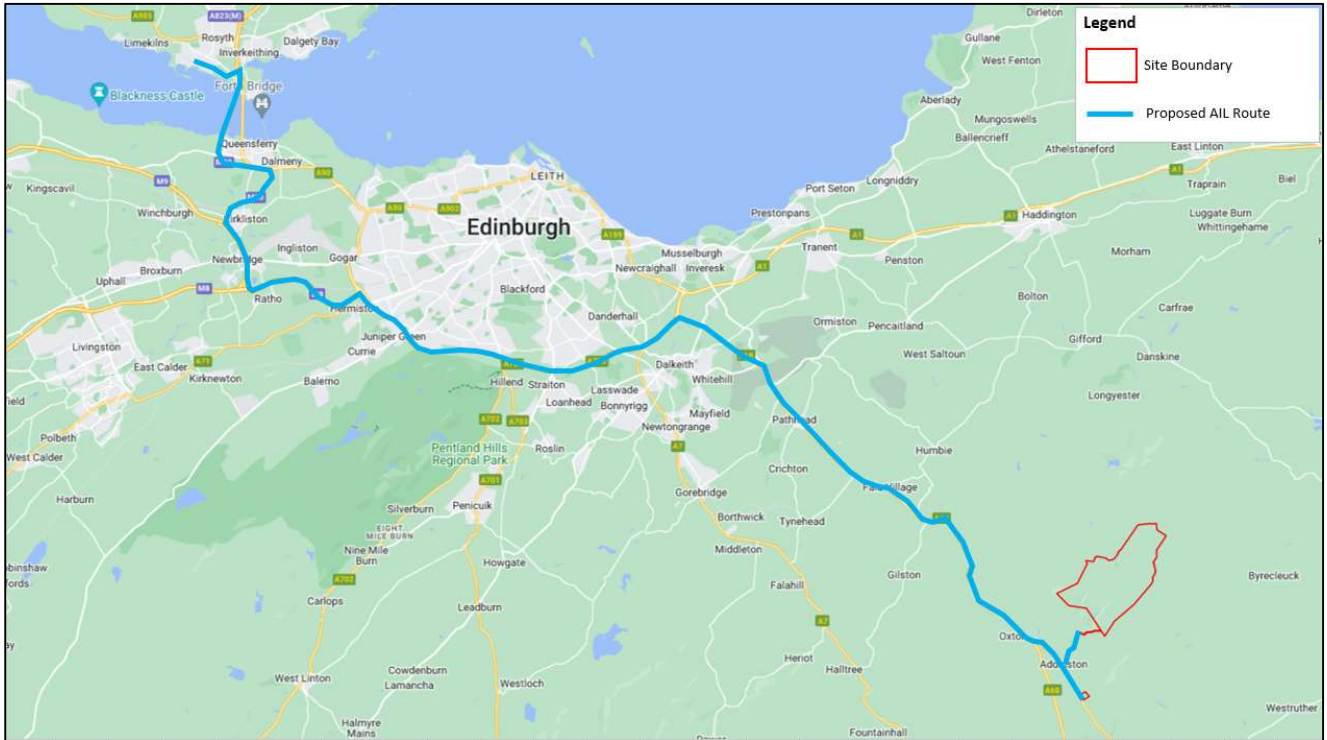
- all construction traffic enters the site via the D124 road, accessed from the A697;
- deliveries associated with concrete materials, such as cement powder and water, will be sourced from local concrete suppliers, which for the purpose of this assessment will originate from the A68 to the south or the A697 from the south (for the purposes of the assessment, these have been split 50/50);
- for the purpose of this assessment it is proposed that 60% of access track and hardstand aggregate requirements will be sourced from local quarries, which are assumed to originate from the A68 to the south or the A697 from the south (for the purposes of the assessment, these have been split 50/50). The BoP contractor will confirm final quarry and material sourcing with SBC in the final CTMP;
- HGV deliveries associated with cabling and associated materials, etc. will arrive via the A68, A697 and D124;
- staff working at the site are likely to be based locally. It is assumed that 45% will come from the A68 to the north, 45% from the south, and 10% from the A697 to the south-east; and
- general site deliveries will be split 50/50 via the A68 from the north and south.

For the purposes of preparing Volume 1, Chapter 11: Traffic and Transport and this TA, it has been assumed that all abnormal load traffic will access the pro site via the following route:

- loads will exit the port onto Keith Road and will then proceed eastbound;
- loads will then merge onto the B981 before turning right onto the M90 southbound;
- loads will continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- loads will merge onto the M8 at Newbridge and will proceed towards Edinburgh until Hermiston Gait, where they will turn right and join the A720 Edinburgh City Bypass;
- loads will continue eastbound on the length of the A720 before exiting at the Millerhill Junction;
- loads will proceed southbound on the A68 until Carfraemill when they will turn left onto the A697 south-eastbound;
- loads would continue to a proposed transfer point near Newbigging Walls on the A697 before returning north-westbound with, blades in the blade lifting trailer; and
- loads would turn right at Cleekhimin onto the D124 and continue to the site entrance.

The above route is shown in Figure 9.

Figure 9 AIL Component Delivery Route



The above route has been considered in full, within the AIL RSR, provided in Appendix A.

### 6.1.7 Peak Construction Traffic

Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction are summarised in Table 12.

Table 12 Peak Construction Traffic

Survey Location	Cars / LGV	HGV	Total
A68 at Pathhead	33	4	36
A68 North of Carfraemill	33	4	36
A68 North of Lauder	33	50	82
A697 South of Addinston	72	100	172

Please note that variances may occur due to rounding.

## 6.2 Decommissioning Phase

Prior to decommissioning of the site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction or operational phases as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on site to allow transport by a reduced number of HGVs.

## 7 Traffic Impact Assessment

### 7.1 Construction Impact

The peak month traffic data was combined with the future year (2030) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in Table 13.

**Table 13 2030 Baseline + Construction Development – Flows and Impact**

Ref No.	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	A68(T) at Pathhead	8,923	981	9,903	0.4%	0.4%	0.4%
2	A68(T) North of Carfraemill	7,800	1,429	9,229	0.4%	0.3%	0.4%
3	A68(T) North of Lauder	7,100	606	7,706	0.5%	9.0%	1.1%
4	A697 South of Addinston	2,754	375	3,128	2.7%	36.4%	5.8%

Please note minor variances due to rounding may occur.

The total traffic movements are predicted to increase by less than 6% on all of the study area. It is however assumed that the total traffic increase on the rural single track road (D124) leading through to the site from the A697 will be in excess of 100% for total traffic due to the extremely low levels of existing traffic using it.

Table 13 shows that HGV traffic movements will increase by more than 10% on the A697 South of Addinston (36.4%) Whilst this increase could be considered high, it is generally caused by relatively low HGV flows on this link which will see an increase of 100 HGV movements. This represents approximately eight HGV movements per hour on the link during construction activities, which is not considered significant in terms of overall traffic flows.

A review of the existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 “The NESAs Manual”. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in Table 14.

**Table 14 2030 Peak Traffic Flow Capacity Review**

Ref. No.	Survey Location	2030 Baseline Flow	2030 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	A68(T) at Pathhead	9,867	9,903	28,800	65.6%
2	A68(T) North of Carfraemill	9,192	9,229	28,800	68.0%
3	A68(T) North of Lauder	7,624	7,706	28,800	73.2%
4	A697 South of Addinston	2,956	3,128	21,600	85.5%

The results indicate there are no road capacity issues with the addition of construction traffic associated with the proposed development and significant spare capacity exists within the trunk and local road network to accommodate all construction phase traffic.

## 8 Proposed Traffic Mitigation Measures

### 8.1 Construction Traffic

#### 8.1.1 Construction Traffic Management Plan (CTMP)

During the construction period, a project website, blog or social media feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This will be agreed with SBC.

The following measures will be implemented during the construction phase through the CTMP:

- Agree AIL route modifications and improvements with SBC and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options RSR, which are presented in Appendix A;
- Where possible, the detailed design process would minimise the volume of material to be imported to site to help reduce HGV numbers;
- A Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the site entrance, depending on the views of SBC;
- Normal site working hours would be limited to between 0700 and 1900 (Monday to Saturday) though component delivery and turbine erection may take place outside these hours;
- Appropriate traffic management measures would be put in place on the A697 and D124 leading through to the site, to avoid conflict with general traffic, subject to the agreement of SBC. Typical measures would include HGV turning and crossing signs and/ or banksmen at the site access and warning signs;
- Provide construction updates on the project website, social media feeds and a newsletter to be distributed to residents within an agreed distance of the site;
- Adoption of a voluntary reduced speed limits at locations to be agreed with SBC;
- All drivers would be required to attend an induction to include:
  - A toolbox talk safety briefing;
  - The need for appropriate care and speed control;
  - A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and
  - Identification of the required access routes and the controls to ensure no departure from these routes.

SBC may request that an agreement to cover the cost of abnormal wear and tear on its road network is made.

Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would provide evidence of any change in the road condition during the construction phase. Any necessary repairs would be coordinated with SBC's roads team. Any damage caused by traffic associated with the proposed development during the construction period, that would be hazardous to public traffic, would be repaired immediately.

Damage to road infrastructure caused directly by construction traffic would be remediated, and street furniture that is removed on a temporary basis would be fully reinstated.

There would be a regular road review, and any debris and mud would be removed from the carriageway using an on-site road sweeper to ensure road safety for all road users.

Before the AILs traverse the route, the following tasks would be undertaken to ensure load and road user safety:

- ensure any vegetation which may foul the loads is trimmed back to allow passage;
- confirm there are no roadworks or closures that could affect the passage of the loads;
- check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- confirm the police are satisfied with the proposed movement strategy.

## 8.2 Abnormal Load Traffic

### 8.2.1 Abnormal Load Transport Management Plan

There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.

All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the local authority and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.

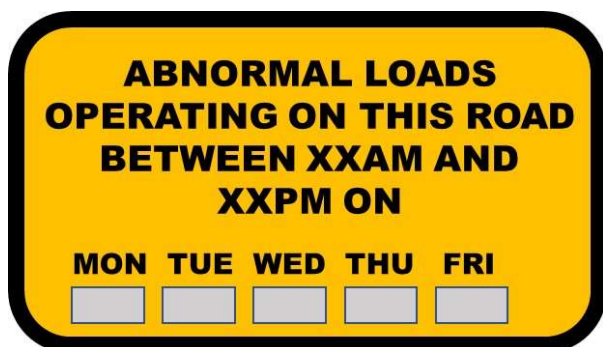
The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- on sections of single carriageway road, for example on the D124;
- at locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- where traffic turns at a road junctions, requiring other traffic to be restrained on other approach arms; and
- in locations where high speeds of general traffic are predicted.

Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in Figure 10. Flip up panels (shown in grey) would be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.

Figure 10 Example Information Sign



This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

The location and numbers of signs would be agreed post consent and would form part of the Traffic Management Proposal for the project.

The Abnormal Load Transport Management Plan would also include:

- procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
- a diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;
- a protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- proposals to establish a construction liaison group to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

### 8.2.2 Public Information

Information on the wind turbine convoys would be provided to local media outlets such as local papers and local radio to help assist the public.

Information would relate to expected vehicle movements from the port of entry through to the site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

The applicant would also ensure information was distributed through its communication team via the project website, local newsletters, and social media.

### 8.2.3 Convoy System

A police escort would be required to facilitate the delivery of the predicted AILs. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort will warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy will remain in radio contact at all times where possible.

The abnormal loads convoys will be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

The times in which the convoys will travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

## 8.3 Outdoor Access Management Plan (OAMP)

Within the site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the paths and public roads. A Path Planning Study will be conducted post consent and will be secured through a planning condition. Findings from the study will be used to formulate a set of measures into an Outdoor Access Management Plan (OAMP), while an Outline Outdoor Access Management Plan, is provided in EIA Report Volume 4: Technical Appendices as Technical Appendix 3.4.

Users of the Core Paths / Rights of Way will be separated from construction traffic through the use of barriers. Crossing points will be provided where required, with path users having right of way. Appropriate Traffic Signs Manual Chapter 8 compliant temporary road signage would be provided to assist at these crossing for the benefit of all users.

The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the Core Paths, Rights of Way and at

crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

Signage will be installed on the site exits that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in the weekly toolbox talks.

With regards to the possible interaction with horses on and in the vicinity of the proposed development, a scoping response has been received from The British Horse Society. Consideration will therefore be given to the implementation of measures to mitigate any potential issues between construction traffic and horse riders. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

The main factors causing fear in horses in this situation are:

- something approaching them, which is unfamiliar and intimidating;
- a large moving object, especially if it is noisy;
- lack of space between the horse and the vehicle;
- the sound of air brakes; and
- anxiety on the part of the rider.

The British Horse Society has previously recommended the following actions that will be included in the site training for all HGV staff:

- on seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;
- if the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
- the vehicle should not move off until the riders are well clear of the back of the HGV;
- if drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and
- all drivers delivering to the site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

## 8.4 A Staff Travel Plan

A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- appointment of a Travel Plan Coordinator (TPC);
- provision of public transport information;
- mini-bus service for transport of site staff;
- promotion of a car sharing scheme; and
- car parking management.

## 8.5 Operational Phase Mitigation

The D124 and access tracks near the site entrance will be well maintained and monitored during the operational life of the proposed development. Regular maintenance will be undertaken to keep the access track drainage systems fully operation and to ensure there are no run-off issues onto the public road network.



## 9 Summary and Conclusions

Pell Frischmann has been commissioned by Renewable Energy Systems Ltd. (the applicant) to undertake a Transport Assessment for the proposed Longcroft Wind Farm, which is located within the Scottish Borders Council boundary area.

The proposed development will be accessed from the D124 road, connecting Longcroft Farm with the A697, via a newly provided site entrance. The site entrance will provide access to the site for all abnormal loads associated with the wind turbine deliveries, as well as access for HGVs delivering construction materials and general site traffic.

ALL traffic access from the Port of Entry at Rosyth, utilising the proven abnormal load route used during the construction of other wind farms in the area, including Fallago Rig Wind Farm.

Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

The construction traffic will result in a temporary increase in traffic flows on the road network surrounding the proposed development. The maximum traffic effect associated with construction of the proposed development is predicted to occur in Month 8 of the construction programme. During this month, an average of 100 HGV movements is predicted per day and it is estimated that there will be a further 72 car / LGV movements per day to transport construction workers to and from the proposed development site.

In addition a review of the theoretical road capacity was undertaken for the Study Area, which showed that with the addition of construction traffic associated with the proposed development, there was significant spare capacity within the road network.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows for both general construction traffic and abnormal loads associated with the delivery of the turbine components. It is considered that these can be secured by condition with the Scottish Borders Council.

The proposed development will lead to a temporary increase in traffic volumes within the Study Area during the construction phase only. It is therefore concluded that there are no transport related matters which would preclude the construction of the proposed development site.

## Appendix A Route Survey Report

Pell Frischmann

Longcroft Wind Farm

Appendix A - Route Survey Report

October 2022

107057

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<b>Report Ref.</b>	<b>231024 Res Longcroft Rsr</b>					
<b>File Path</b>	<a href="https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/107057 RES Longcroft/01 - WIP/Reports/RSR/231024 RES Longcroft RSR.docx">https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/107057 RES Longcroft/01 - WIP/Reports/RSR/231024 RES Longcroft RSR.docx</a>					
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# 1 Introduction

## 1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by RES (the applicant) to undertake a route survey review of a potential delivery route for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Longcroft Wind Farm (the proposed development), located to the east of Oxtou, Scottish Borders.

The Route Survey Report (RSR) has been prepared to help inform the applicant on the likely issues associated with the development of the site with regards to off-site transport and access for AIL traffic from Rosyth to site. The report identifies the key issues associated with AIL deliveries and notes that remedial works, either in the form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between PF and the applicant at this point in time.

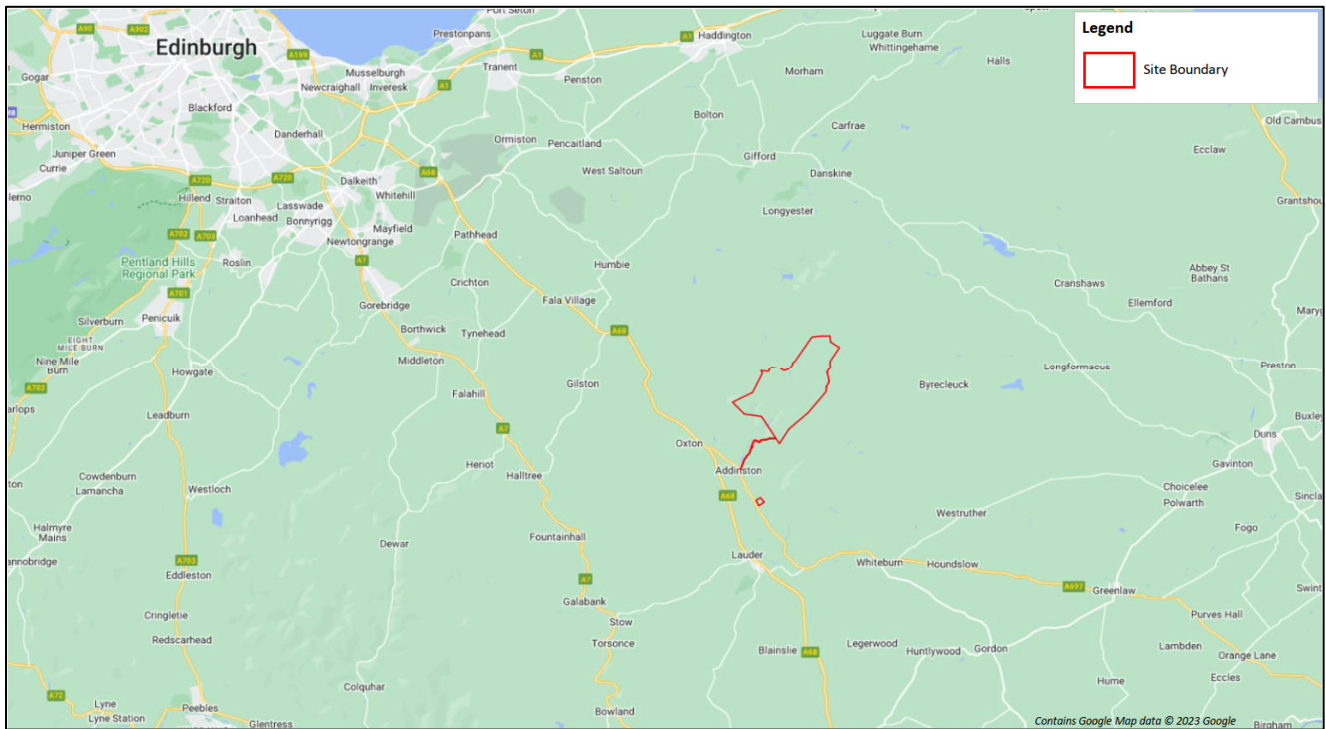
It is the responsibility of the applicant to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction. The applicant will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety provision for all road users and is in accordance with the relevant legislation at the time of delivery.

## 2 Site Background

### 2.1 Site Location

The site is located to the east of Oxton, Scottish Borders. Figure 2-1 illustrates the general site location (in green).

Figure 2-1: Site Location Plan



### 2.2 Candidate Turbine

The Siemens Gamesa SG170 turbine was selected by the Applicant as the candidate wind turbine for the purposes of this access review to provide a worst case assessment. The details of the components have been provided by Siemens and are detailed in Table 2-1. These feature the UK tower design option, designed to keep tower diameters for tip heights in excess of 200m below 4.8m diameter. The details of the components used are found in Table 2-1.

Table 2-1: Turbine Components Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	87.500	4.186	3.500	c.29.000
Worst Case Tower Section	30.000	4.800	4.800	84.958

### 2.3 Proposed Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer in line with Siemens Gamesa transport requirements.

Where constraints are significant, blades would be transferred onto a ten-axle blade lifting trailer to reduce the amount of third-party land required and to reduce the extents of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints. An example is illustrated in Figure 2-3.

The base and mid towers would be carried on a 4+7 clamp tower trailer. The hub, nacelle housing, and top towers would be carried on a six-axle step frame trailer.

**Figure 2-2: Dolly Clamp Trailer**



**Figure 2-3: Blade Lifter Trailer**





Figure 2-4: Tower Trailer



### 3 Access Route Review

#### 3.1 Port of Entry

The proposed Port of Entry (POE) is Rosyth, Fife. The port is the closest port to site and as such is in line with the Government's "Water Preferred" policy towards AIL movements. The port has been used by renewables deliveries in the past for a number of wind farms, although these have utilised smaller loads than those that are proposed by Vestas. The port has sufficient quay and storage space and is well located for the strategic trunk road network.

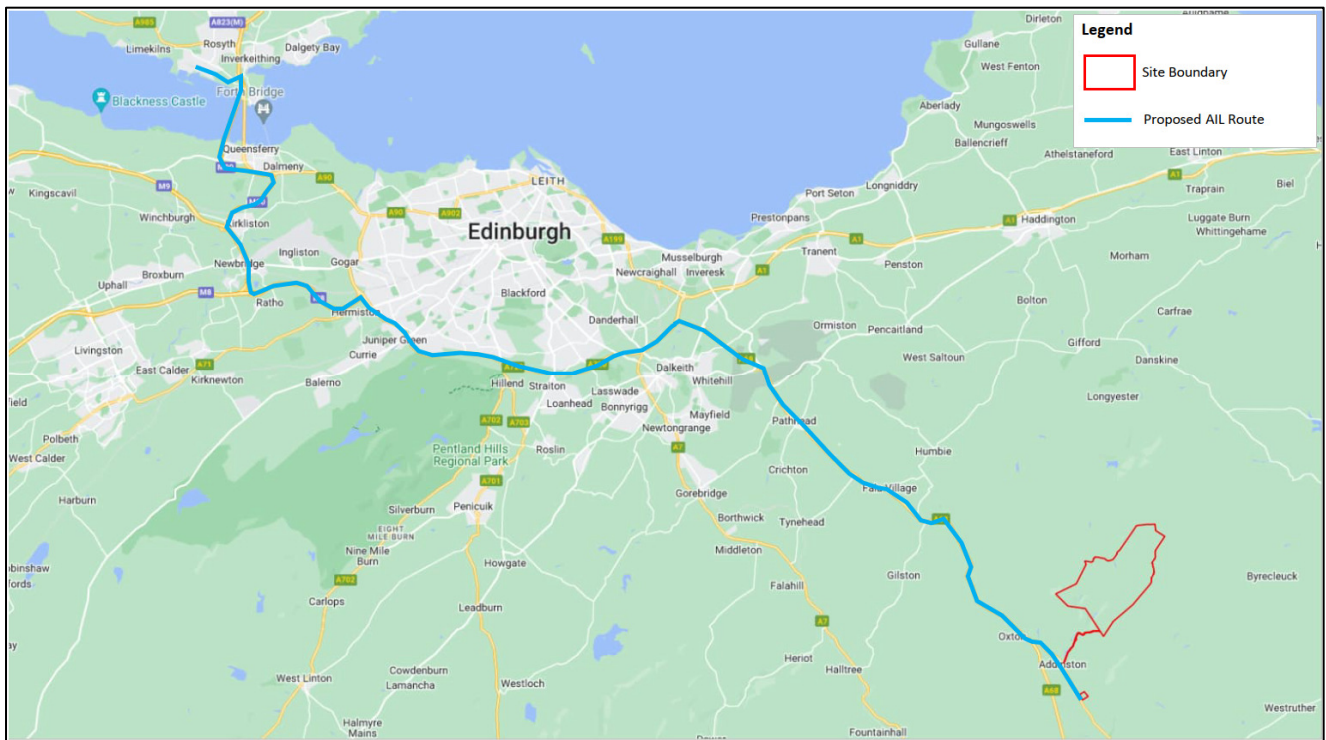
#### 3.2 Proposed Access Route

The proposed access route from Rosyth Port to site is as follows:

- Loads would exit the port onto Keith Road and would then proceed eastbound;
- Loads would then merge onto the B981 before turning right onto the M90 southbound;
- Loads would continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- Loads would merge onto the M8 at Newbridge and would proceed towards Edinburgh until Hermiston Gait, where they would turn right and would join the A720 Edinburgh City Bypass;
- Loads would continue eastbound on the length of the A720 before exiting at the Millerhill Interchange;
- Loads would proceed southbound on the A68 until Carfraemill when they would turn left onto the A697 eastbound;
- Loads would continue to a proposed transfer point near Newbigging Walls on the before returning north with blades in the blade lifting trailer; and
- Loads would turn right at Cleekhimin onto the D124 and continue to the site.

The proposed access route is illustrated in Figure 3-1.

Figure 3-1: Access Route






### 3.3 Route Constraints

The constraints noted on the site visit are detailed in the table below. These cover all constraints from the port access gate through to the site entrance. No consideration of the transport issues within the port or site have been undertaken and this includes the design of the site entrance.


Plans illustrating the location of the constraints are provided in Appendix A.

**Table 3-1: Constraint Points and Details**

POI	Key Constraint	Details
1	<p><b>Port of Rosyth Gate</b></p> 	<p>Loads will exit the port and proceed eastbound on St Margaret Way.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the left hand verge on entry where a load bearing surface should be laid. The temporary fencing should be removed.</p> <p>Loads will overrun and oversail the central island where a load bearing surface should be laid. One lit set of chevron signs should be removed.</p> <p>Loads will oversail the central reservation of the exit arm, where two bollards should be removed. They will then oversail the northern verge on exit, though no physical mitigation measures will be required.</p> <p>Swept path assessment SK01 is included in Appendix B.</p>
2	<p><b>St Margaret Way Roundabout</b></p> 	<p>Loads will take the first exit at the roundabout to continue on St Margaret Way.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the north eastern verge and splitter island on entry where one road sign and one bollard should be removed.</p> <p>Loads will overrun and oversail the central island where a load bearing surface should be laid and the island lowered to carriageway level. One set of lit chevron signs should be removed and trees / vegetation cleared.</p> <p>The blade will oversail and over-run the exit splitter island where one road sign and one bollard should be removed and a load bearing surface laid.</p> <p>Loads will oversail the northern verge following the roundabout where one lighting column, one road sign and trees / vegetation should be removed. Loads will also over-run the southern verge where a load bearing surface should be laid.</p> <p>Swept path assessment SK02 is included in Appendix B.</p>

POI	Key Constraint	Details
3	<p><b>Dunsyre House Roundabout</b></p> 	<p>Loads will take the second exit at the roundabout to continue on St Margaret Way before joining the B981.</p> <p>A swept path assessment has been undertaken and indicates that when approaching the roundabout, loads will oversail the southern verge of the bend, where trees and vegetation should be cleared. Loads will also over-run the northern verge where a load bearing surface is required.</p> <p>Loads will oversail and over-run the northern verge the entry splitter island where one road sign and one bollard should be removed and a load bearing surface laid.</p> <p>Vehicles will overrun and oversail the central island where a load bearing surface should be laid and two sets of lit chevron signs removed. Vegetation / trees should be cleared.</p> <p>The blade will oversail and over-run the exit splitter island where one road sign should be removed. They will then oversail the northern verge on exit, where one lighting column, one lit road sign and one electric junction box should be removed. On the southern verge, a load bearing surface is required and one road sign should be removed.</p> <p>Swept path assessment SK03 is included in Appendix B.</p>
4	<p><b>B981 Ferrytoll Gytratory</b></p> 	<p>Loads will take the third exit at the roundabout to join the M90 southbound.</p> <p>A swept path assessment has been undertaken and indicates that the blade will oversail the northern verge of the entry arm, where one lighting column should be removed and vegetation should be trimmed.</p> <p>Loads will oversail the north-western verge of the roundabout island, though no further physical mitigation will be required.</p> <p>The blade tip oversail the northern verge of the roundabout, where one traffic signal head, one lit road sign, one pedestrian crossing signal and guardrail should be removed.</p> <p>Loads will oversail the central reservation of the southbound off-slip where one traffic signal head should be removed.</p> <p>The loads will also oversail the north-eastern edge of the roundabout island where the loads should be raised using the trailer suspension to oversail the safety barrier and embankment. Care should be taken as there will be limited clearance to the traffic signal gantry arm and to the underbridge. One set of chevron signs should be removed.</p> <p>To minimise the impact on the embankment on the inside of the right turn, loads will overrun the eastern footway when joining the on-slip. A load bearing surface should be laid and existing utilities should be protected.</p> <p>Swept path assessment SK04 is included in Appendix B.</p>


POI	Key Constraint	Details
5	<p><b>M8 Hermiston Gait Roundabout</b></p> 	<p>Loads will take the third exit at the roundabout and join the A720 eastbound. Vehicle escorts must ensure that loads can merge safely and that trailing traffic does not attempt to merge into the convoy</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge at two locations.</p> <p>Loads will also oversail the verge of the roundabout island, where five traffic signal heads, two lighting columns, two road signs and two sets of chevron signs should be removed. Trees and vegetation should be cleared.</p> <p>Swept path assessment SK05 is included in Appendix B.</p>
6	<p><b>A720 Sheriffhall Roundabout</b></p> 	<p>Loads will take the third exit at the roundabout to continue on the A720. Vehicle escorts must ensure that loads can merge safely, and that trailing traffic does not attempt to merge into the convoy</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the roundabout island, where five traffic signal heads, three sets of chevron signs, three road signs, two lighting columns and two electrical boxes should be removed.</p> <p>Loads will oversail the northern verge of the exit arm, where two lighting columns, one road sign and sections of pedestrian guardrail should be removed.</p> <p>Swept path assessment SK06 is included in Appendix B.</p>
7	<p><b>A720 Approaching Millerhill Junction</b></p> 	<p>As it not possible for loads to utilise the roundabouts and underpass to join the A68, it is proposed that loads will cross the dual carriageway's central reservation before exiting the A720 at Millerhill through the westbound on-slip.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central reservation of the carriageway, where a load bearing surface should be laid and kerbs should be protected. Sections of barrier should be removed from the central reservation.</p> <p>Vehicle escorts must ensure that oncoming traffic is held during movement of loads.</p> <p>Swept path assessment SK07 is included in Appendix B.</p>



POI	Key Constraint	Details
8	<b>A720 Slip Road / A68 Roundabout</b> 	<p>Loads will take the first exit at the roundabout to join the A68 southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the south-eastern verge of the roundabout, where one lit road sign, two road signs, three lighting columns and guardrail should be removed. Loads to be raised to oversail the embankment.</p> <p>Swept path assessment SK08 is included in Appendix B.</p>
9, 10	<b>A68 Dalkeith Bypass</b>  	<p>Loads will travel through the bend and continue on the A68.</p> <p>All street furniture should be removed from the central reservations to allow for passage of wide loads.</p>
11	<b>A68 Pathhead - Main Street</b>  	<p>Loads will travel through the bend and continue southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail both footways through the section and the splitter island. One tree, one road sign and two bollards should be removed and parking should be suspended.</p> <p>Swept path assessment SK09 is included in Appendix B.</p>



POI	Key Constraint	Details
12	<b>A68 Pathhead</b> 	<p>Loads will travel through the bend and continue on Main St.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge and parking should be suspended.</p> <p>Loads will overrun the splitter island where two bollards and one lighting column should be removed. A load bearing surface should be laid and loads will oversail the verge on the inside of the following left bend. Trees / vegetation should be removed.</p> <p>Swept path assessment SK10 is included in Appendix B.</p>
13	<b>A68 South-East of Pathhead</b> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>Loads will oversail the verge / footway on the inside of the right bend where vegetation / trees should be trimmed</p>
14	<b>A68/B6458 Junction</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>Loads will oversail the verge on the inside of the bend where one bollard should be removed.</p>
15	<b>A68 South of Fala Dam Bends</b> 	<p>Loads will travel through the bends and continue southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the southern verge on approach to the first bend where a load bearing surface should be laid. Two sets of chevron signs to be removed. Vegetation to be cleared. Loads will oversail the safety barrier in the northern verge.</p> <p>The loads will oversail the hazard markers in the northern verge of the second bend, where trees and vegetation should be trimmed.</p> <p>Swept path assessment SK11 is included in Appendix B.</p>

POI	Key Constraint	Details
16	<b>A68/B6368 Junction Bends</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>Loads will oversail the verge on the outside of the right bend.</p>
17	<b>A68 North-West of Oxtou</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>The clearances to overhead utility wires will need to be confirmed with the utility firms prior to loads moving under them to avoid dangers of flashover.</p>
18, 19	<b>A68 Carfraemill Roundabout and Bend</b>  	<p>Loads will take the first exit at the roundabout and continue on the A697.</p> <p>A swept path assessment has been undertaken and indicates that loads will over-run the western verge of the A68 where one lighting column and vegetation should be removed and a load bearing surface provided.</p> <p>Loads will over-run the entry splitter island, central island of the roundabout and exit splitter island where load bearing surfaces are required and two lighting columns, three road signs and three bollards should be removed.</p> <p>In the inside of the junction turn, three lighting columns, one road sign and one junction box should be removed and a load bearing surface provided. A load bearing surface is required.</p> <p>Loads will oversail both verges on the A697, where one lighting column and two road signs should be removed.</p> <p>A review of the extents of road adoption at the junction should be undertaken.</p> <p>Swept path assessment SK12 is included in Appendix B.</p>



POI	Key Constraint	Details
20	<b>A697 Kelphope Burn Bridge</b> 	<p>Loads will travel over the bridge and continue southbound.</p> <p>Loads should be raised using trailer suspension to ensure adequate ground clearance through this section. Care should be taken to maintain the required clearance height to overhead utilities.</p>
21	<b>A697 South-East of Carfraemill</b> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>Loads should be raised using trailer suspension to ensure adequate ground clearance through this section. Care should be taken to maintain the required clearance height to overhead utilities.</p> <p>Ground clearance should be confirmed during the test run.</p>
22	<b>A697 North-West of Addinston</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
23	<b>A697 Newbigging Walls Transfer Station</b> 	<p>Due to the inability for loads to turn left from the A697 onto the Longcroft access road, it is proposed that loads will continue to a transfer location where the blades would be transferred onto a blade lifting trailer and tower loads would turn to approach the junction from the east.</p> <p>Blades would arrive on the dolly clamp trailer and depart the site on the blade lifting trailer. It is assumed that the blade is in the raised position from this point to the site entrance. All overhead utilities and obstructions on the route will need to be removed.</p> <p>Swept path assessment SK13 is included in Appendix B.</p>
24, 25, 26 & 27	<b>A697 Westbound to Cleekhimin</b>	<p>All overhead utilities and tree branches spanning across the road will need to be relocated / removed to allow the raised blade to pass in safety.</p>

POI	Key Constraint	Details
<p>28 &amp; 29</p>	<p><b>A697 / D124 Junction</b></p> 	<p>Loads will turn right onto the D124.</p> <p>Loads will overrun and oversail the western verge on approach to the junction where a load bearing surface should be laid and trees / vegetation should be trimmed.</p> <p>Loads will overrun and oversail both verges of the D124 where load bearing surfaces should be laid and utility poles, trees and vegetation should be removed within the assumed limits of road adoption.</p> <p>The entire D124 will need to be widened to a minimum of 4.5m with a 5.5m clearance width. Due to the extremely constrained nature of the road, a detailed design for the whole section on a topographical base will be required following engagement with Scottish Borders Council.</p> <p>An indicative 4.5m widening to the east of the road has been provided in all following drawings for illustration only and only mitigation requirements beyond this widening has been identified.</p> <p>All overhead utilities and obstructions should be removed. Utility poles to the east of the road will need to be removed / relocated as part of the widening works.</p> <p>Swept path assessment SK15 is included in Appendix B.</p>
<p>30</p>	<p><b>D124 Road</b></p> 	<p>Loads will continue north on the D124 road.</p> <p>Loads will oversail the eastern verge. Loads bearing surfaces outwith the proposed 4.5m widening will be required. A passing place sign should be removed and utility poles relocated.</p> <p>Swept path assessment SK16 is included in Appendix B.</p>

POI	Key Constraint	Details
<p>31 &amp; 32</p>	<p><b>D124 Road (2)</b></p> 	<p>Loads will continue north along the D124 road.</p> <p>An indicative 4.5m widening to the east of the road has been provided in the swept path drawings. Mitigation requirements beyond this widening have been identified.</p> <p>Vegetation in the eastern verge will need to be removed and utility poles relocated. One utility pole in the western verge will need to be relocated.</p> <p>A minor road widening outwith the 4.5m widening zone is required.</p> <p>Swept path assessment SK17 is included in Appendix B.</p>
<p>33, 34 &amp; 35</p>	<p><b>D124 Road (3)</b></p> 	<p>Loads will continue northeast on the D124.</p> <p>An indicative 4.5m widening to the east of the road has been provided in the swept path drawings. Mitigation requirements beyond this widening have been identified.</p> <p>Loads will oversail the western verge, however no physical works are required.</p> <p>Loads will oversail the eastern verge where vegetation trimming will be required. Utility poles will need to be removed / relocated on this side of the road.</p> <p>Loads will pass to the east of the existing cattle grid where a load bearing surface should be provided. The existing fence and gates should be removed and the cattle grid replaced or upgraded.</p> <p>Swept path assessment SK18 is included in Appendix B.</p>

POI	Key Constraint	Details
36	<p><b>D124 Road (4)</b></p> 	<p>Loads will continue north east along the road having travelled down a steep gradient. The vertical profile of the road will need to be assessed on the topographical base plan during the detailed design stage.</p> <p>An indicative 4.5m widening to the east of the road has been provided in the swept path drawings. Mitigation requirements beyond this widening have been identified.</p> <p>Through the following left bend, loads will oversail the eastern verge where the utility poles should be removed and a minor over-run surface provided.</p> <p>Swept path assessment SK19 is included in Appendix B.</p>
37 & 38	<p><b>D124 / Proposed Site Entrance</b></p> 	<p>Loads will turn right off the D124 and will proceed eastbound to the site access track.</p> <p>The existing wall and utility poles in the eastern verge will need to be relocated. The junction to the east will need to be resurfaced and a new bridge / culvert will be required to cross the stream.</p> <p>Loads will then proceed to site on private access tracks, allowing direct access to the turbine locations.</p> <p>Swept path assessment SK20 is included in Appendix B.</p>

### 3.4 Swept Path Assessment Results and Summary

The detailed swept path drawings for the locations assessed are provided in Appendix B for review. The drawings in Appendix B illustrate tracking undertaken for the worst case loads at each location.

The colours illustrated on the swept paths are:

- Grey / Black – OS / Topographical Base Mapping;
- Green – Vehicle body outline (body swept path);
- Red – Tracked pathway of the wheels (wheel swept path); and
- Purple – The over-sail tracked path of the load where it encroaches outwith the trailer (load swept path).

Where mitigation works are required, the extents of over-run and over-sail areas are illustrated on the swept path drawings.

Please note that where assessments have been undertaken using Ordnance Survey (OS) base mapping, there can be errors in this data source.

Where provided by the applicant, topographical data has been utilised. Please note that Pell Frischmann cannot accept liability for errors on the data source, be that OS base mapping or client supplied data.

### 3.5 Weight Review

A weight review has been undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) contacts database using the Highways Agency website [www.esdal.com](http://www.esdal.com).

All of the relevant ESDAL contacts are noted in Table 3-2 and all have been contacted to ascertain if there are any relevant constraints that should be noted. The feedback from the consultees is provided in Appendix C.

**Table 3-2: ESDAL Contacts**

<b>Organisation</b>	<b>Email Address</b>
Fife Council	Fifetrans.abnormal-loads@fife.gov.uk
Forth Bridge	seabnormalload@bearsotland.co.uk
Scottish Borders Council	roadworks@scotborders.gov.uk
BEAR Scotland	seabnormalload@bearsotland.co.uk
Police Scotland	OSDAbnormalLoadsScotland@scotland.pnn.police.uk
Network Rail	AbLoadsESDAL@networkrail.co.uk
Historic Rail Estate	rsgbrb@jacobs.com
Scottish Canals	SCAbnormal.Loads@scottishcanals.co.uk
Transport Scotland	AbnormalLoads@transport.gov.scot
Scotland Transerv	abnormalloadrouting@scotlandtranserv.co.uk

### 3.6 Land Ownership

The limits of road adoption can vary depending upon the location of the site and the history of the road agencies involved. The adopted area is generally defined as land contained within a defined boundary where the road agency holds the maintenance rights for the land. In urban areas, this usually defined as the area from the edge of the footway across the road to the opposing footway back edge. 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 / hedge lines or a maximum 2m from the road edge. This can vary between areas and location.

### 3.7 Summary Issues

It is strongly suggested that following a review of the RSR, the applicant should undertake the following prior to the delivery of the first abnormal loads, to ensure load and road user safety:

- A 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

### 4.1 Summary of Access Review

Pell Frischmann has been commissioned by the applicant to prepare a Route Survey Report to examine the issues associated with the transport of AIL turbine components to the proposed development.

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.

The report is presented for consideration to the applicant. Various road modifications, structural reviews, and interventions are required to successfully access the site. If these are undertaken, access to the consented wind farm site is considered feasible.

### 4.2 Further Actions

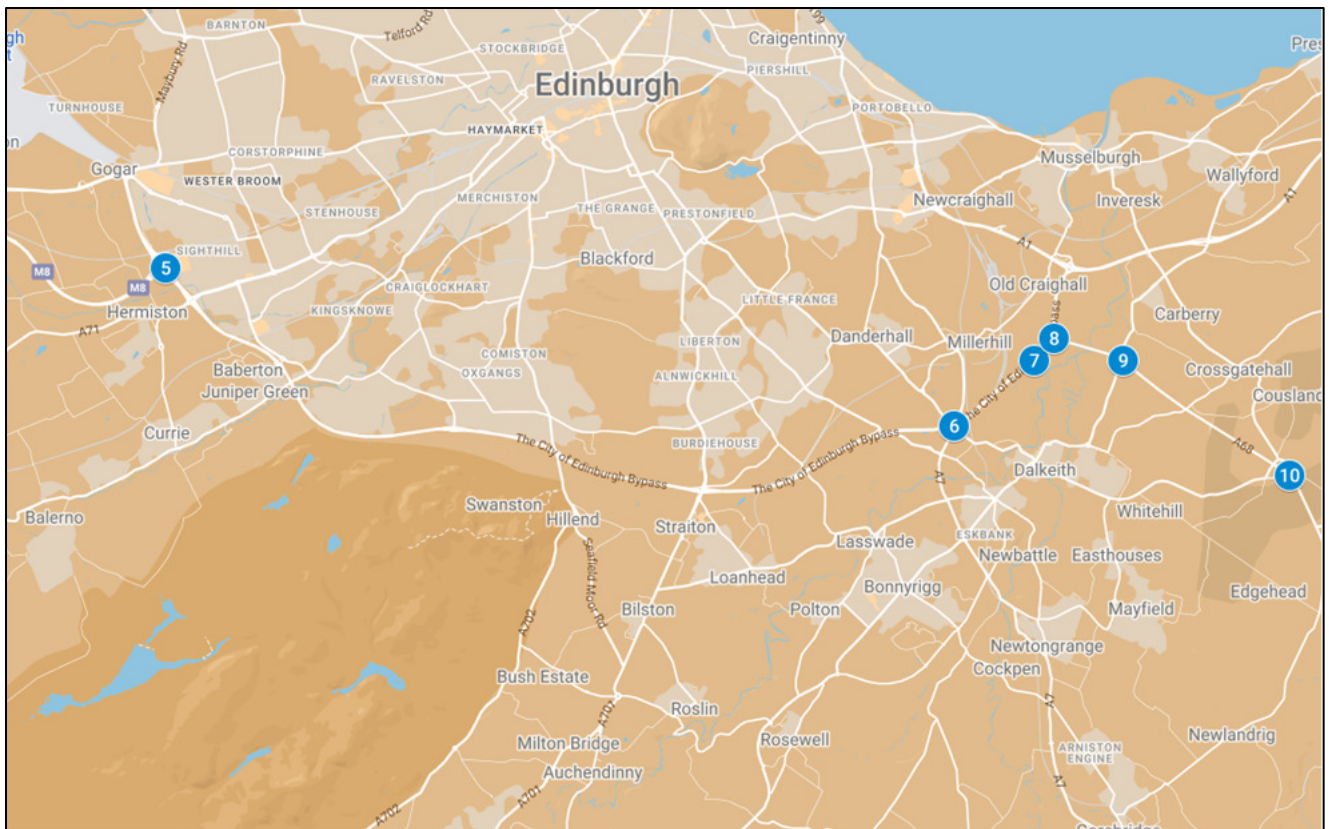
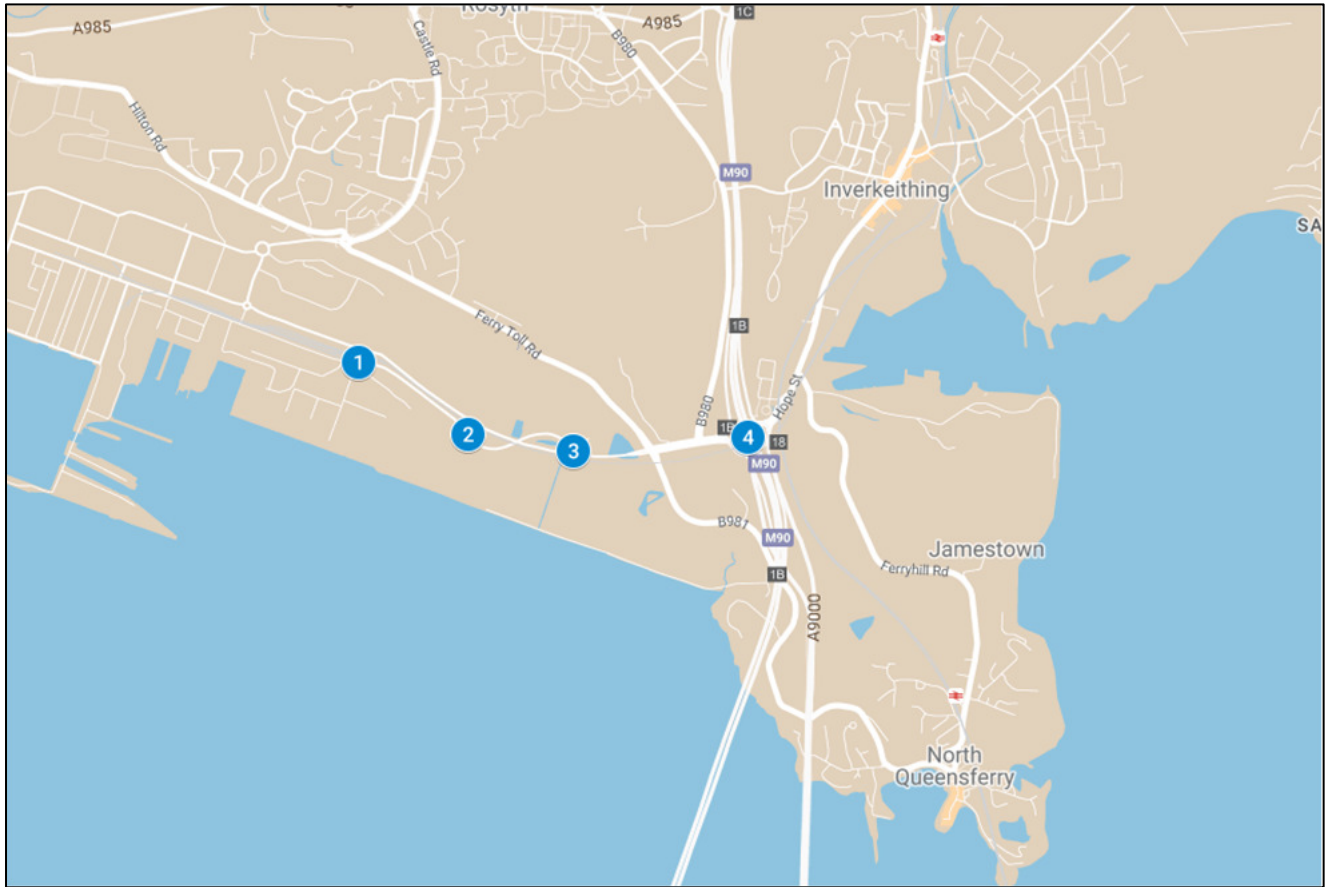
The following actions are recommended to pursue the transport and access issues further:

- Prepare detailed mitigation design proposals;
- Undertake discussion with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures; and
- Develop a detailed operational Transport Management Plan to assist in transporting the proposed loads.

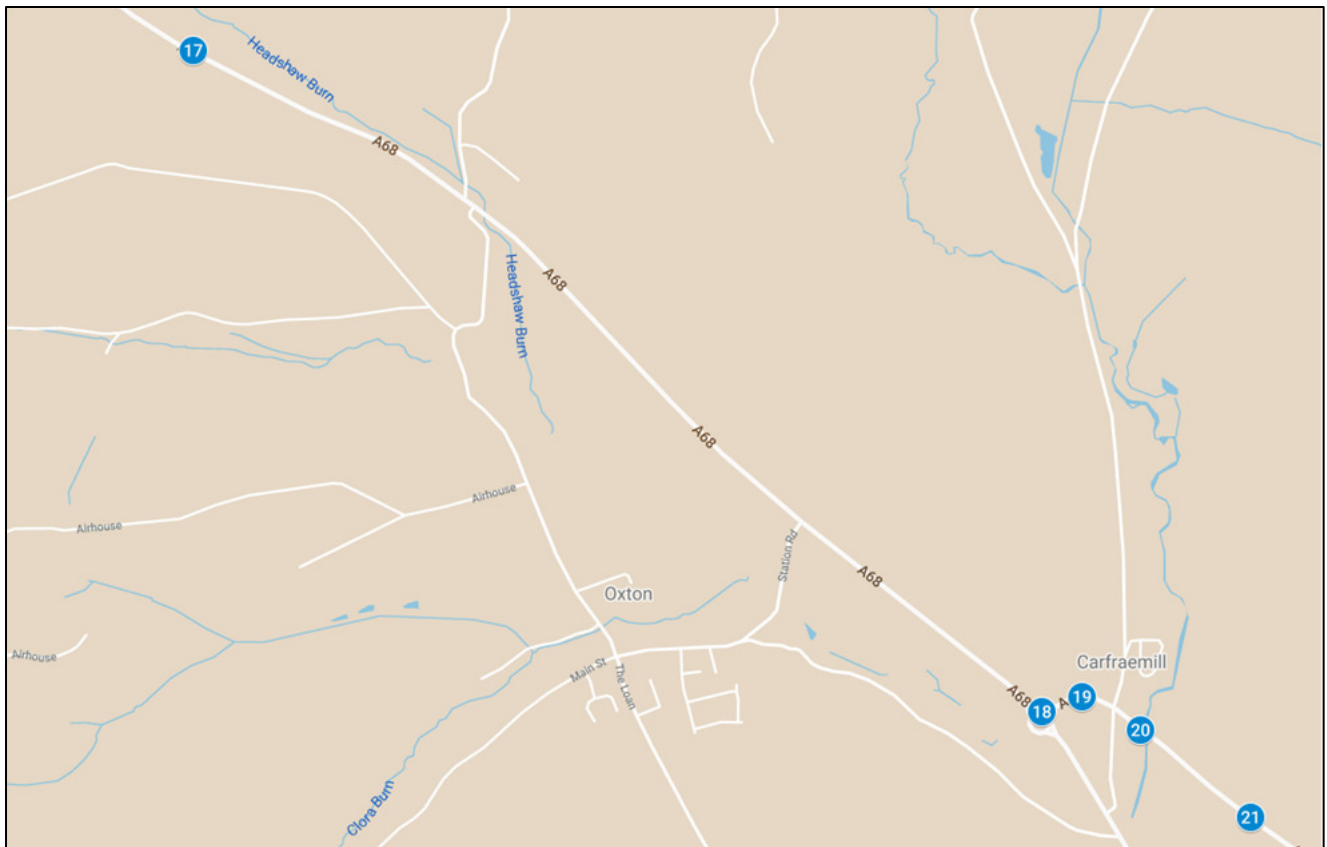
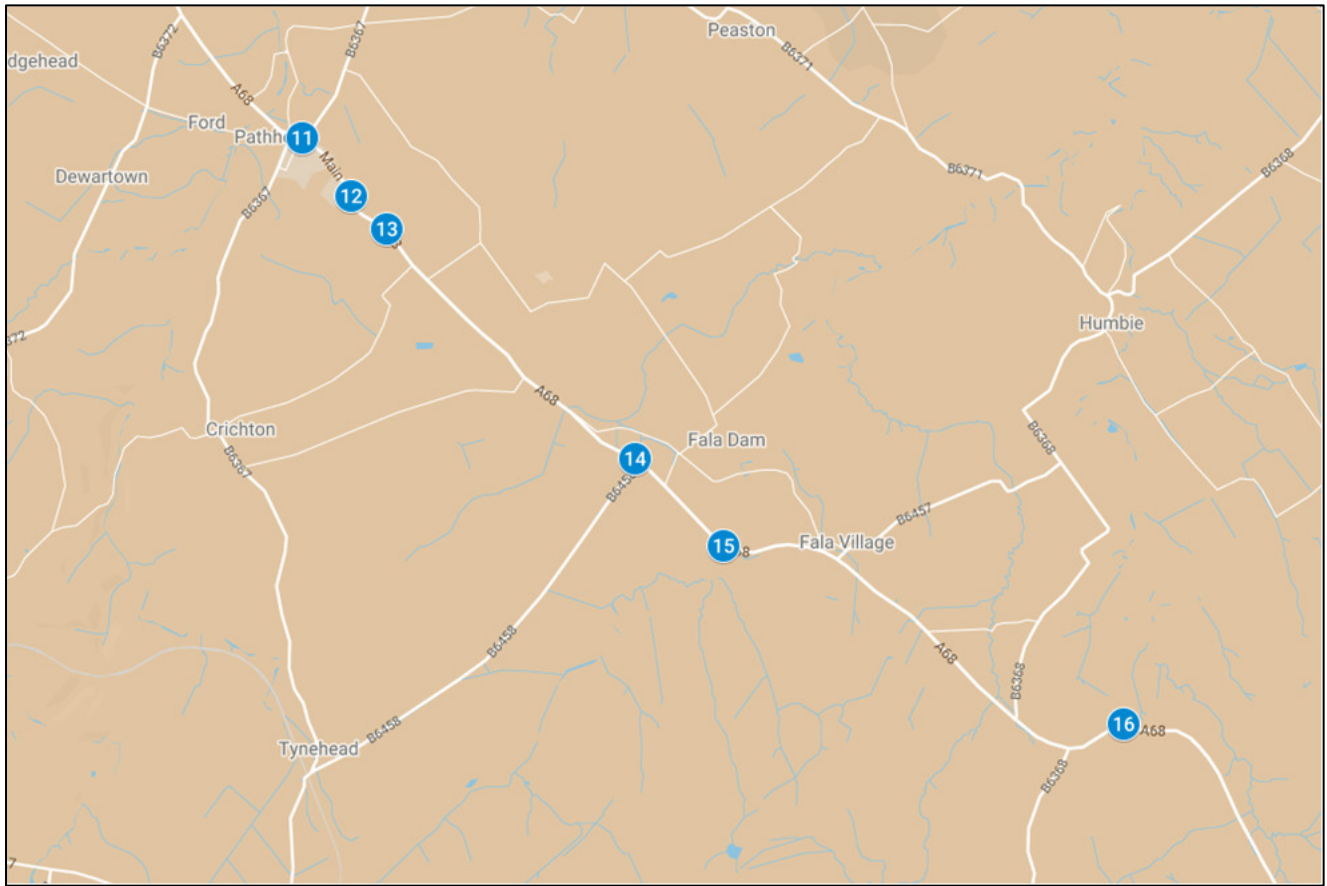
## Appendix A Points of Interest

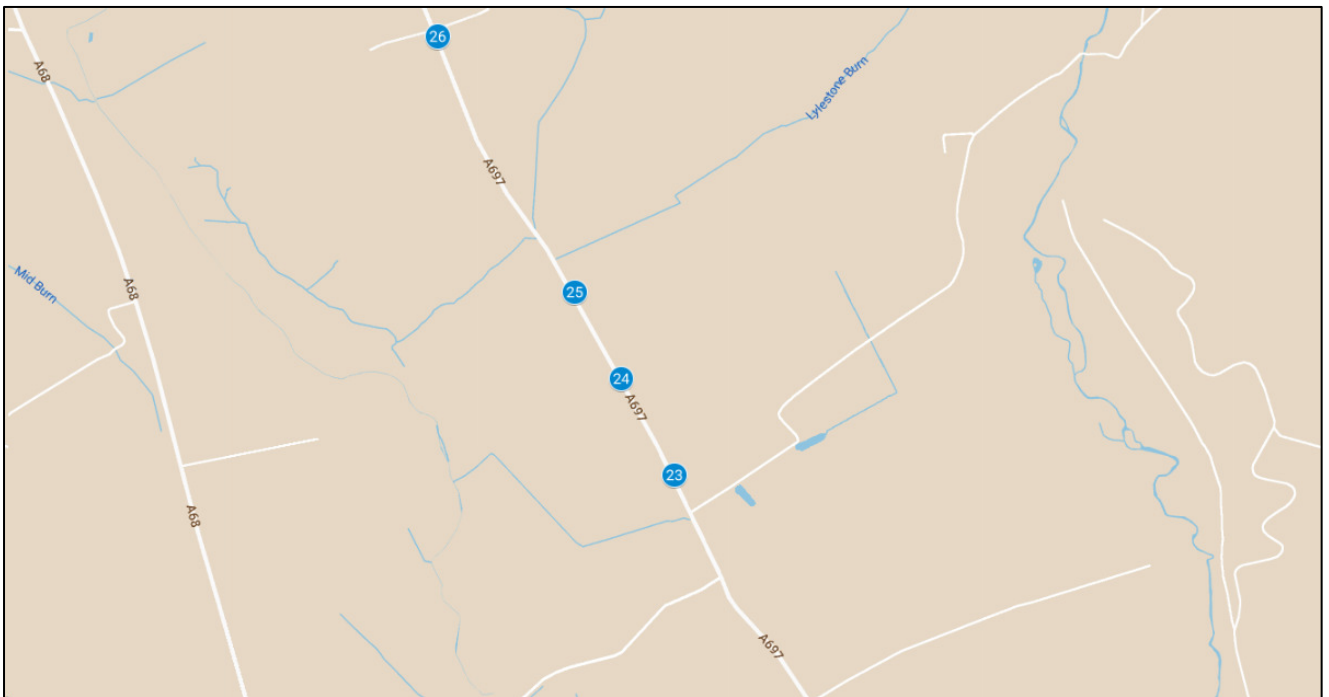
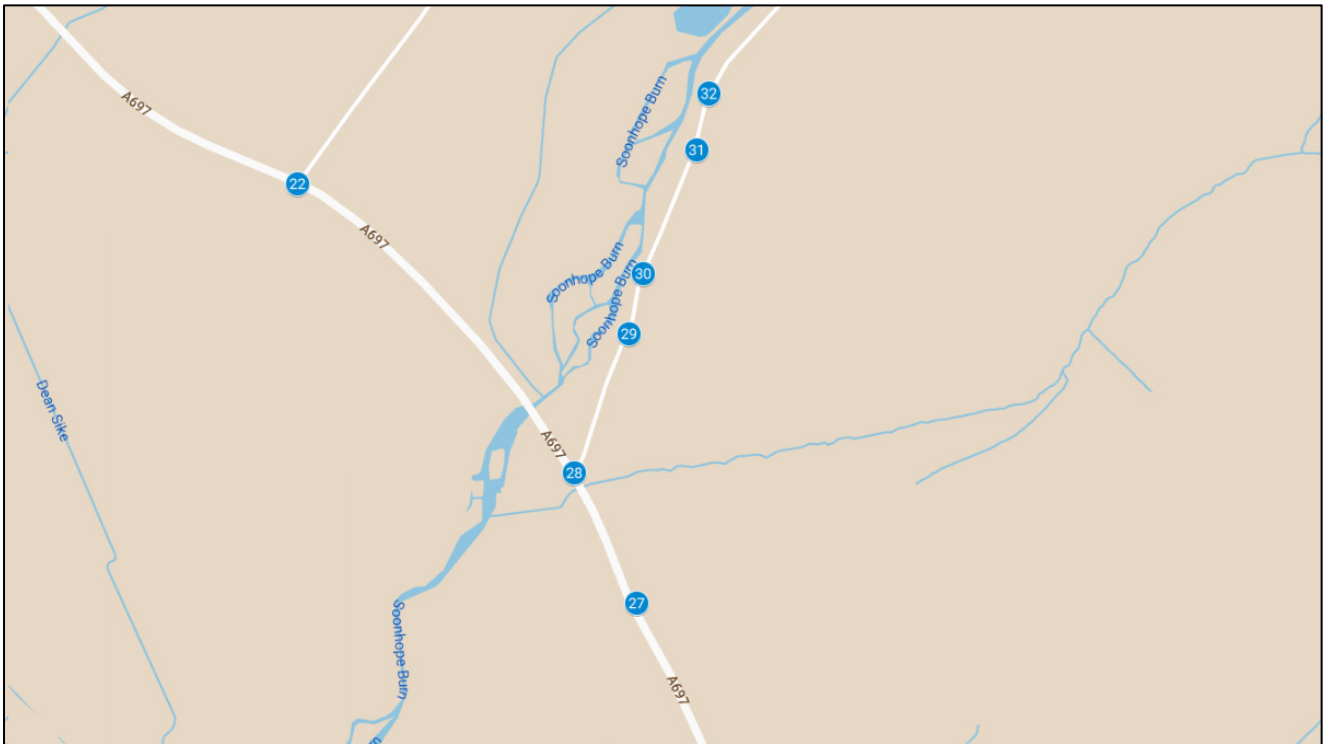
The following plans can be viewed electronically here:

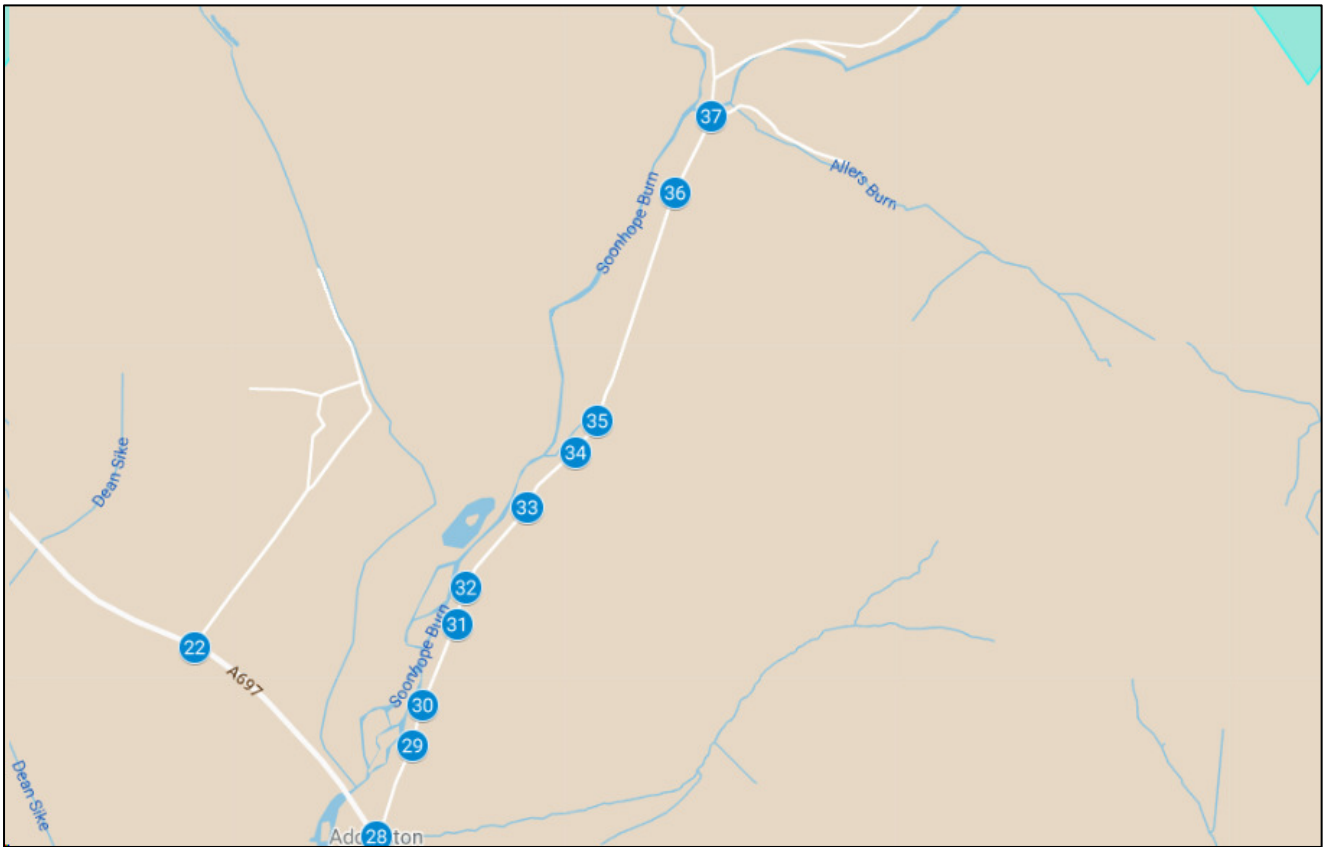
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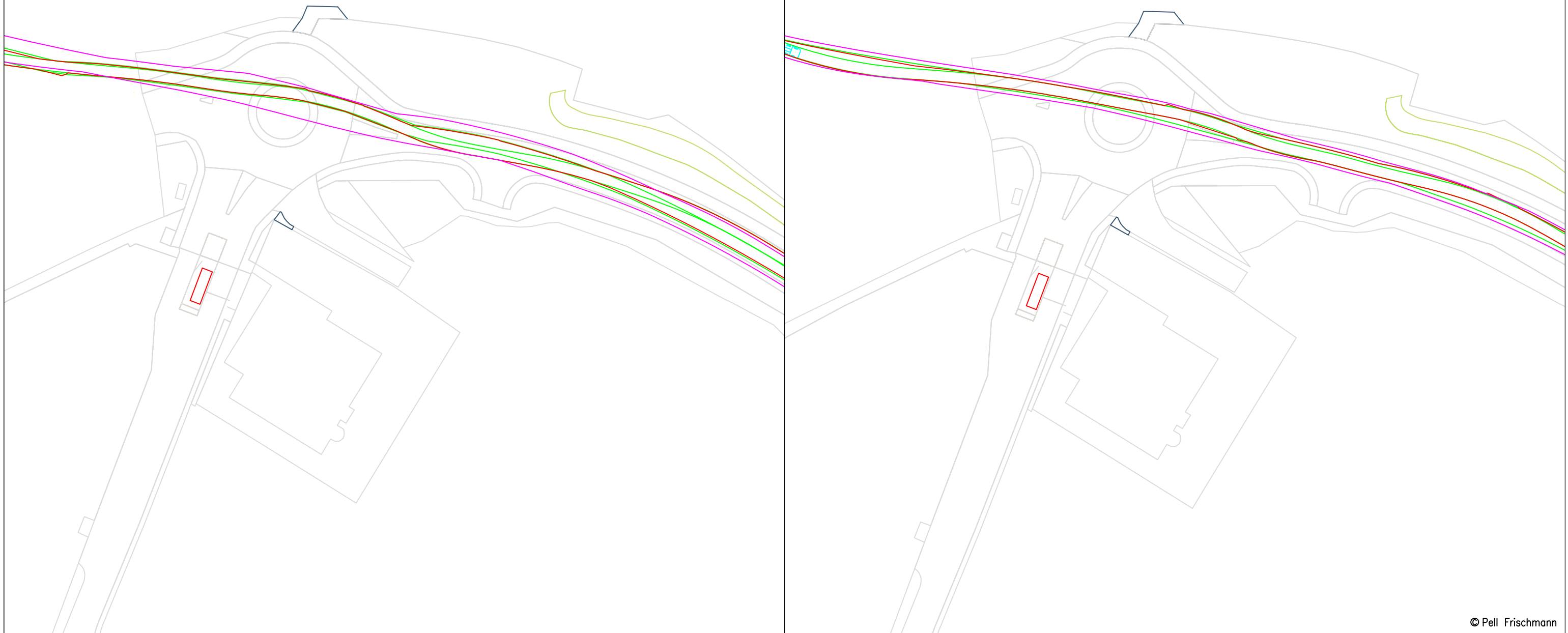




## Appendix B Swept Path Assessments

Blade

Tower



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Project

Longcroft Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	27/10/2023

Scale 1:1000 @ A3

File No. 231026 Longcroft SPA SG170.dwg

Drawing Status Draft

Client RES

Drawing Title

87.5m Blade and Tower

Point of Interest 1

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

Port of Rosyth Gate

Drawing No. SK01

Notes:  
 1. All mitigation is subject to confirmation through a test run.  
 2. This is not a construction drawing and is intended for illustration purposes only.

Revision 1

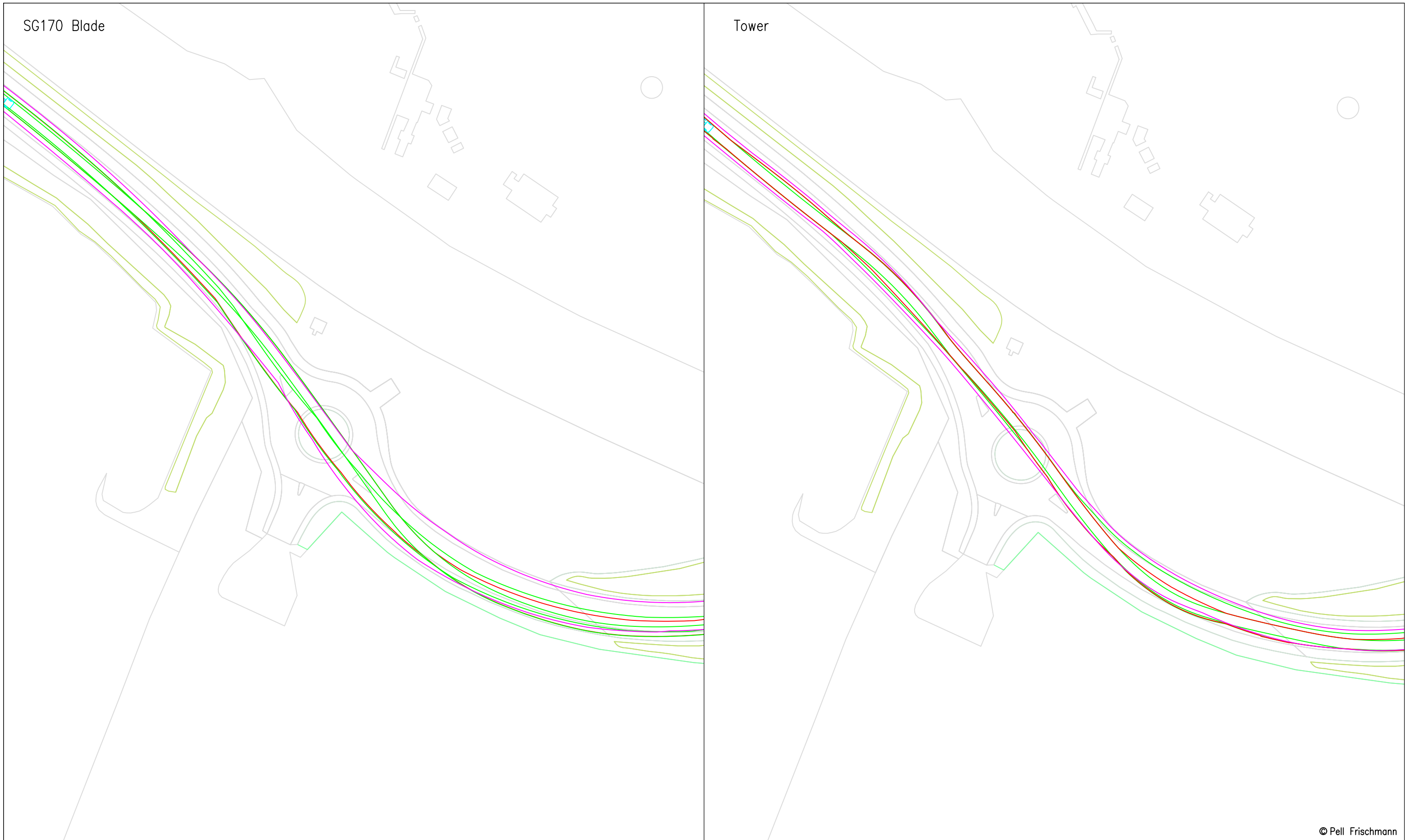


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<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfeinburgh@pellfrischmann.com www.pellfrischmann.com						Project			Longcroft Wind Farm		
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Client						Designed	SK	02/06/2022	File No. 231026 Longcroft SPA SG170.dwg		
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Client						Drawing Title		87.5m Blade and Tower			
						SPA Location		Port of Rosyth Gate			
Client						Point of Interest		1			
Client						Drawing No.	SK01A			Revision	1
Key						Notes:			1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail					

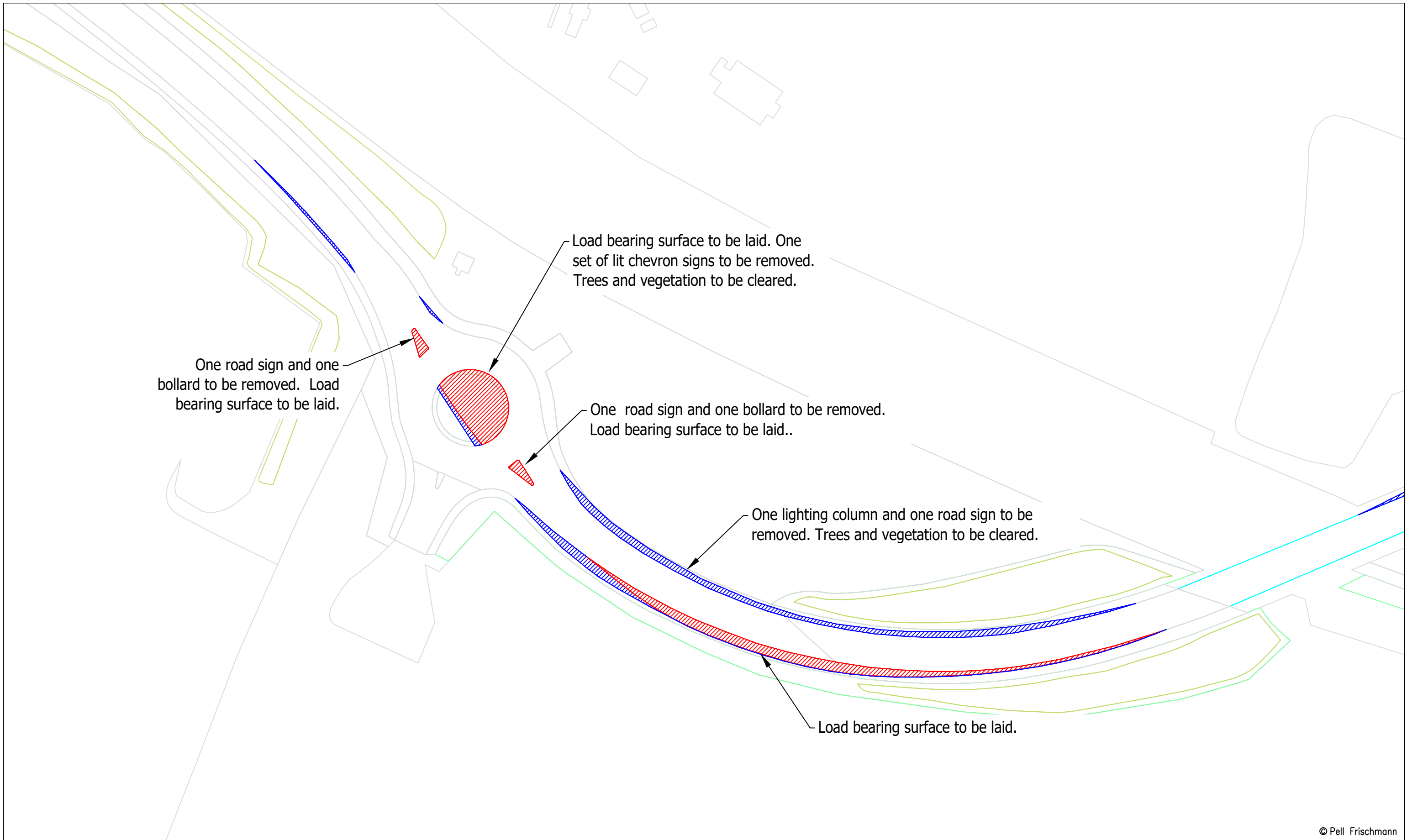
SG170 Blade

Tower



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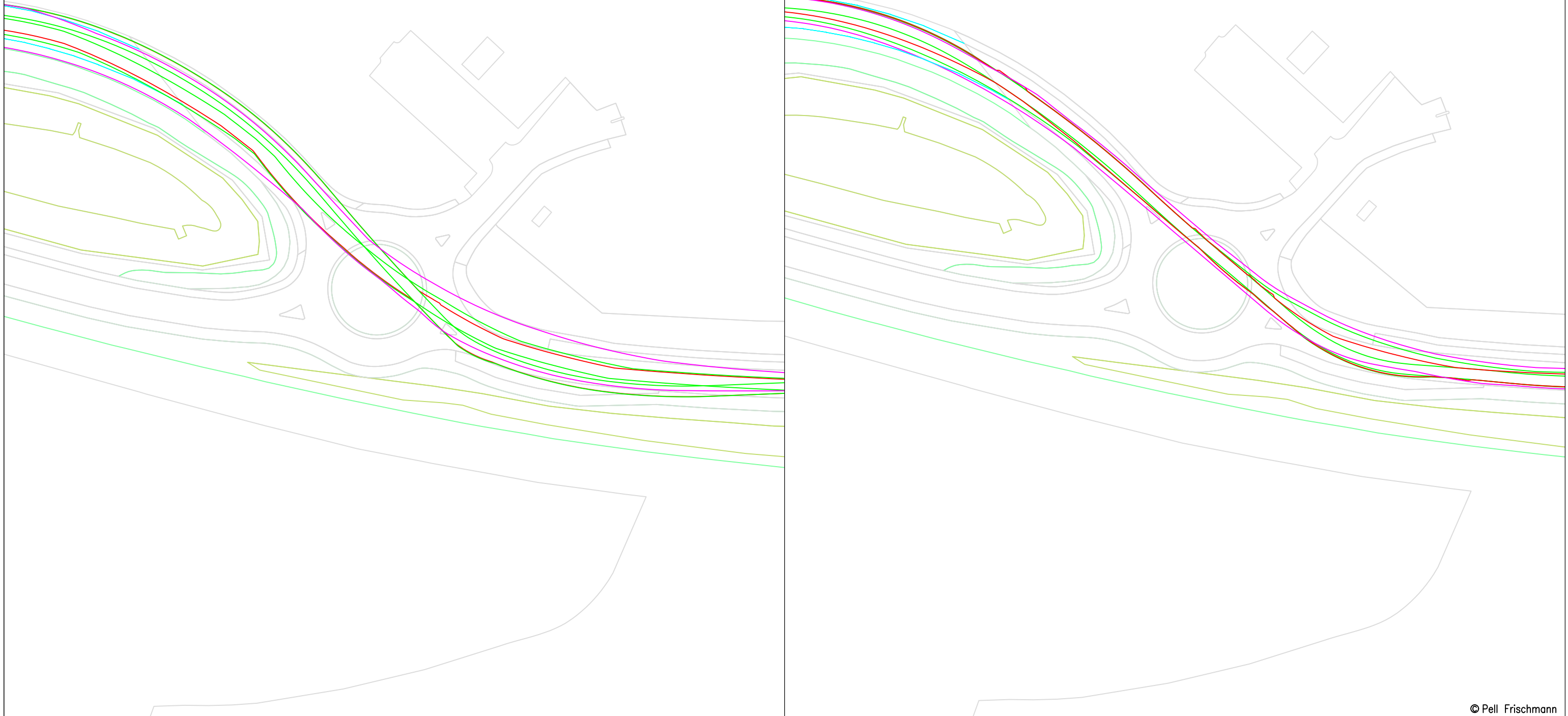
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Key		Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Point of Interest		2	Drawing No.	SK02A	Notes:	Revision	1
				SPA Location		St Margaret Way Roundabout						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			



SG170 Blade

Tower



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Project

Longcroft Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	27/10/2023

Scale 1:1000 @ A3

File No. 231026 Longcroft SPA SG170.dwg

Drawing Status Draft

Point of Interest 3

Client RES

Drawing Title

87.5m Blade and Tower

Drawing No.  
SK03

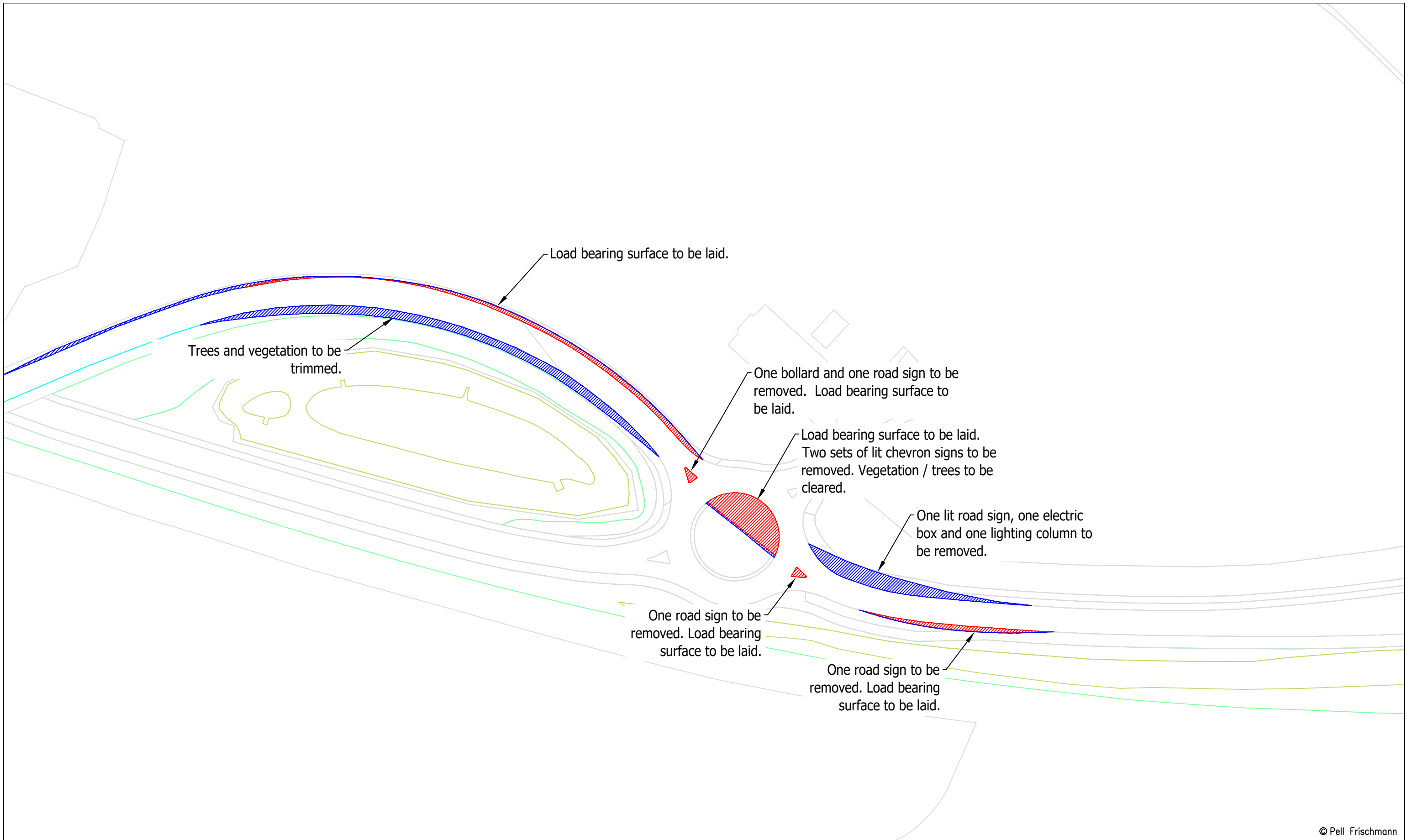
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 2. This is not a construction drawing and is intended for illustration purposes only.

Revision  
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Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

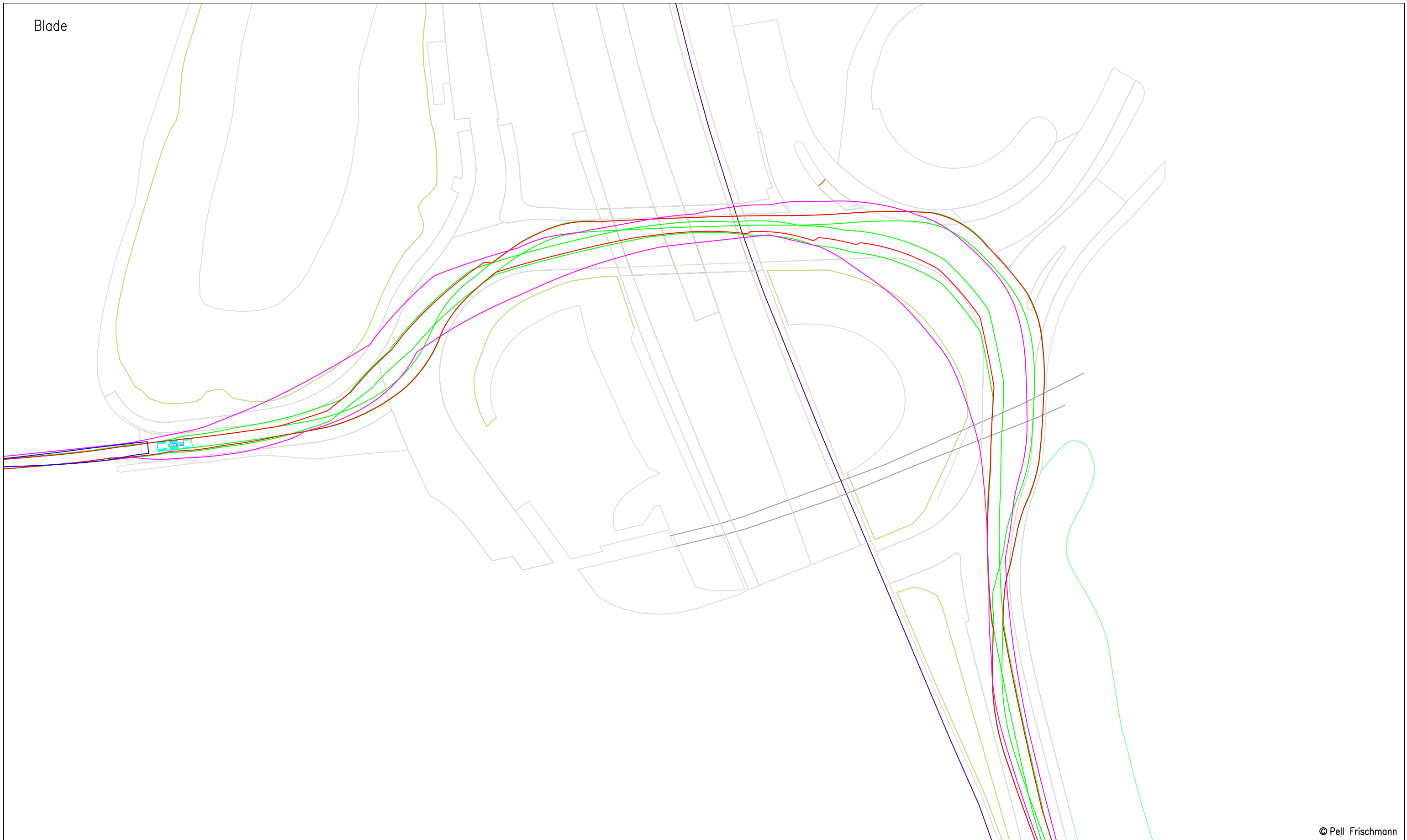
Dunsyre House Roundabout



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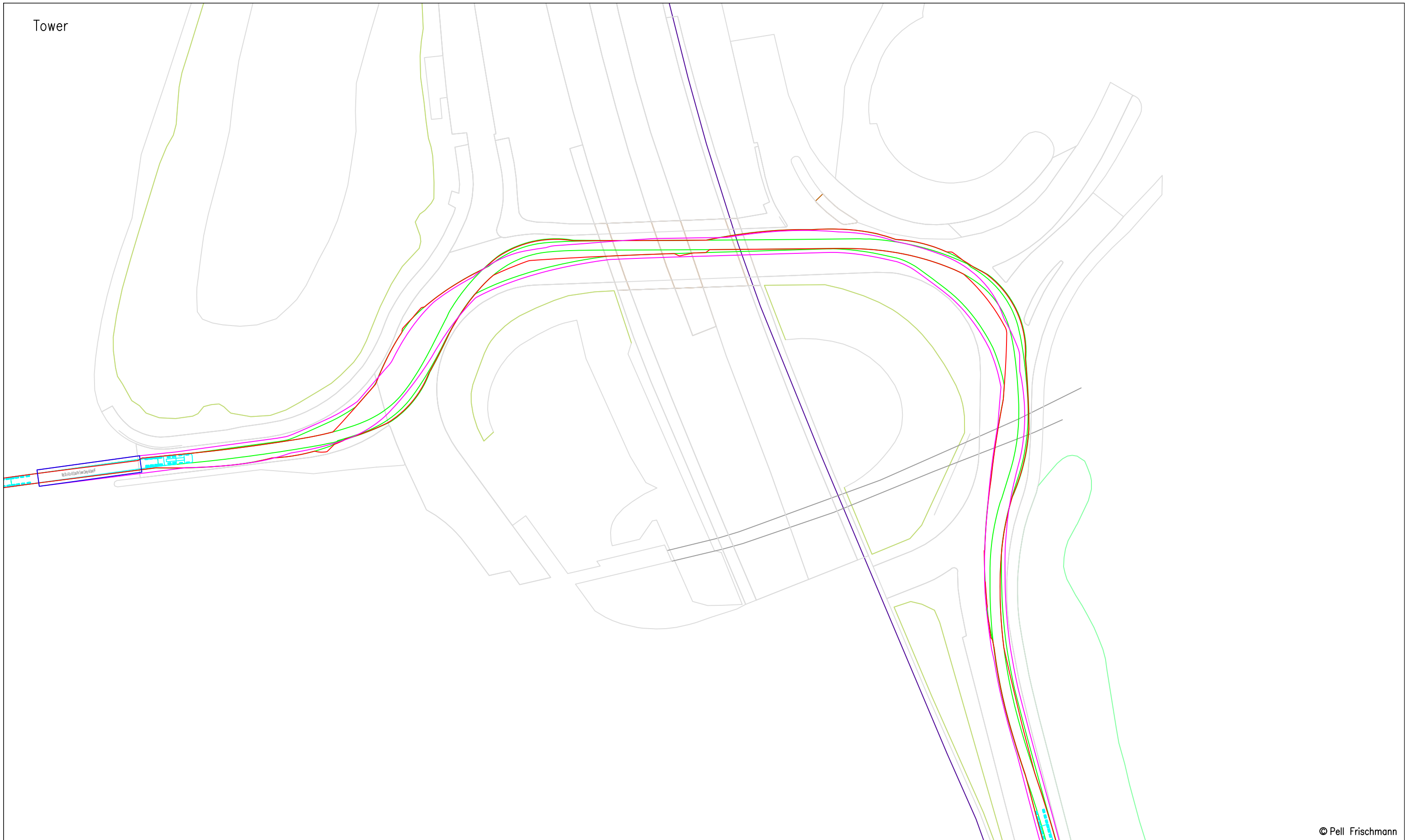
Blade



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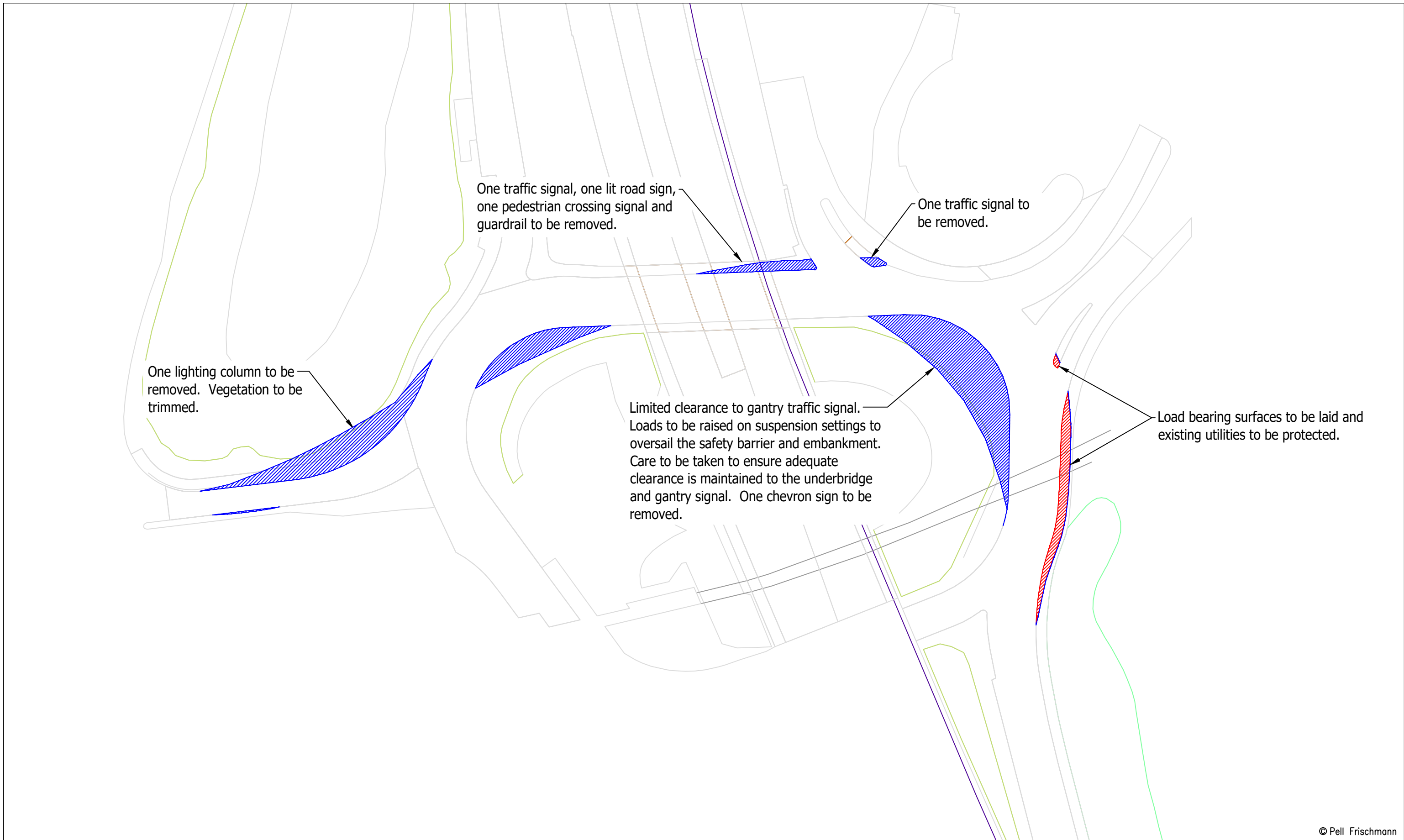
<b>Pell Frischmann</b> <small>93 GEORGE STREET, EDINBURGH, EH2 3ES</small> <small>Tel: +44 (0)131 240 1270</small> <small>Email: pfeinburgh@pellfrischmann.com</small> <small>www.pellfrischmann.com</small>		Project		Longcroft Wind Farm		Name		Date		Scale	
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Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail						

Tower



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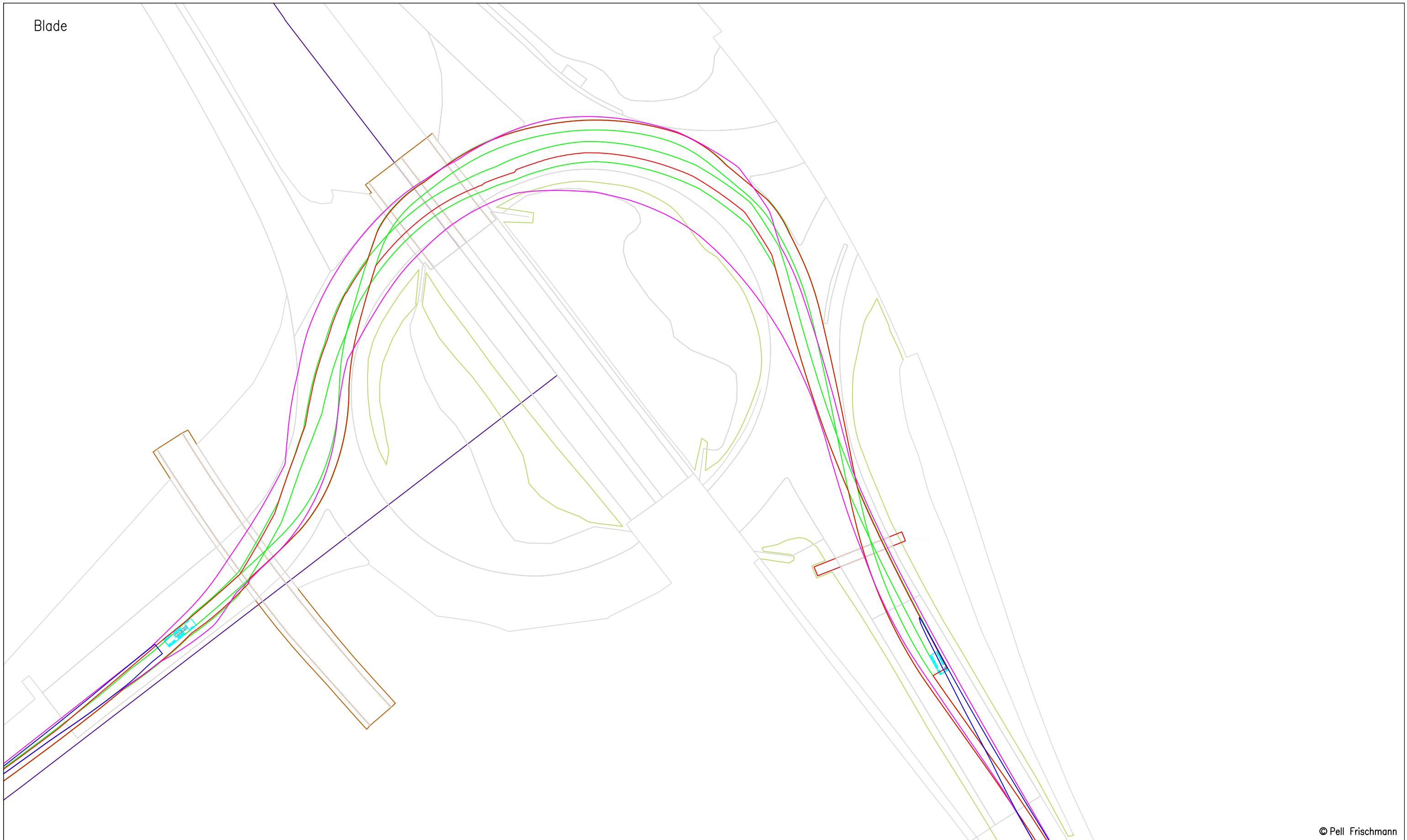
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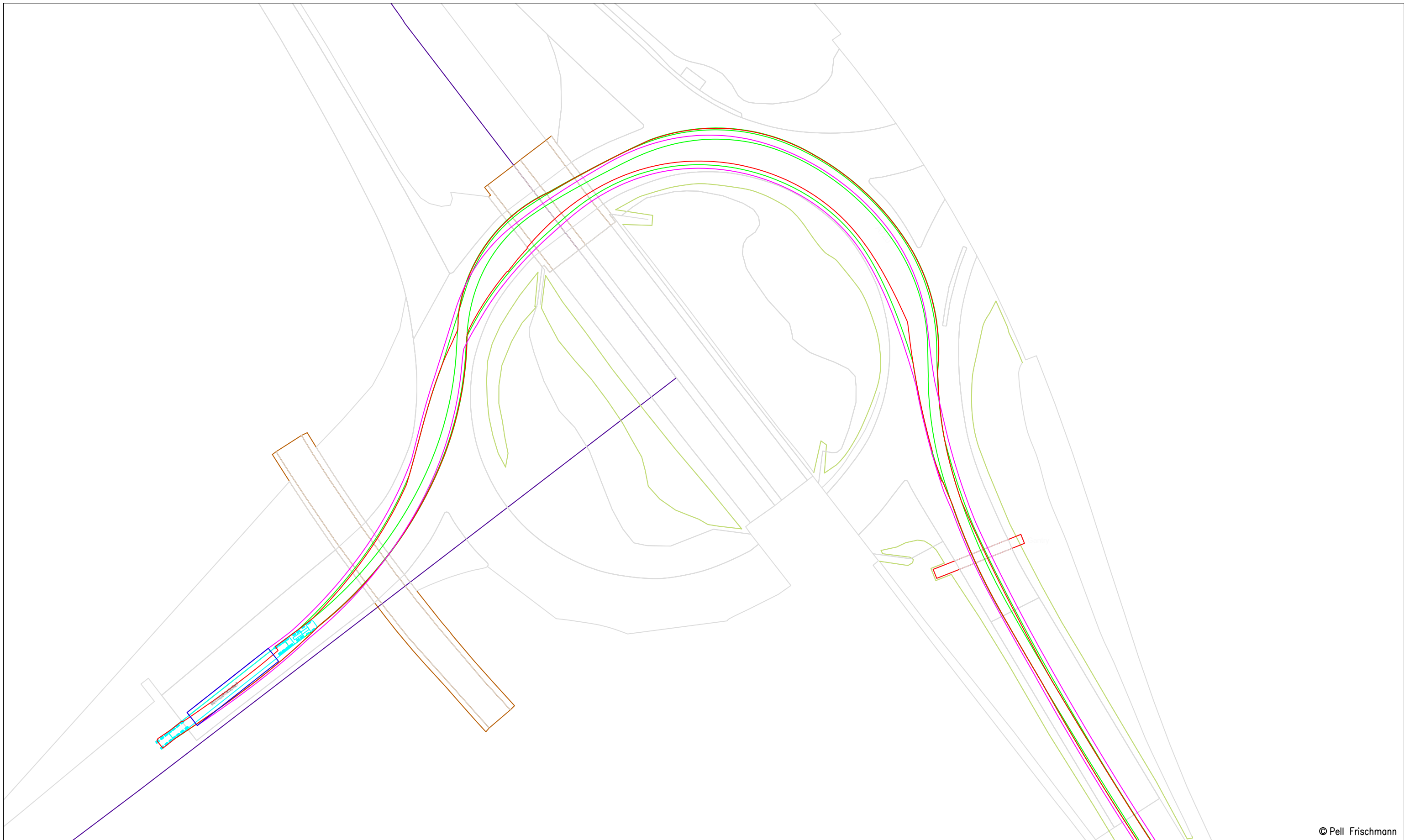
<b>Pell Frischmann</b> <small>93 GEORGE STREET, EDINBURGH, EH2 3ES</small> <small>Tel: +44 (0)131 240 1270</small> <small>Email: pfeinburgh@pellfrischmann.com</small> <small>www.pellfrischmann.com</small>		Project		Longcroft Wind Farm		Name		Date		Scale											
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Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																

Blade



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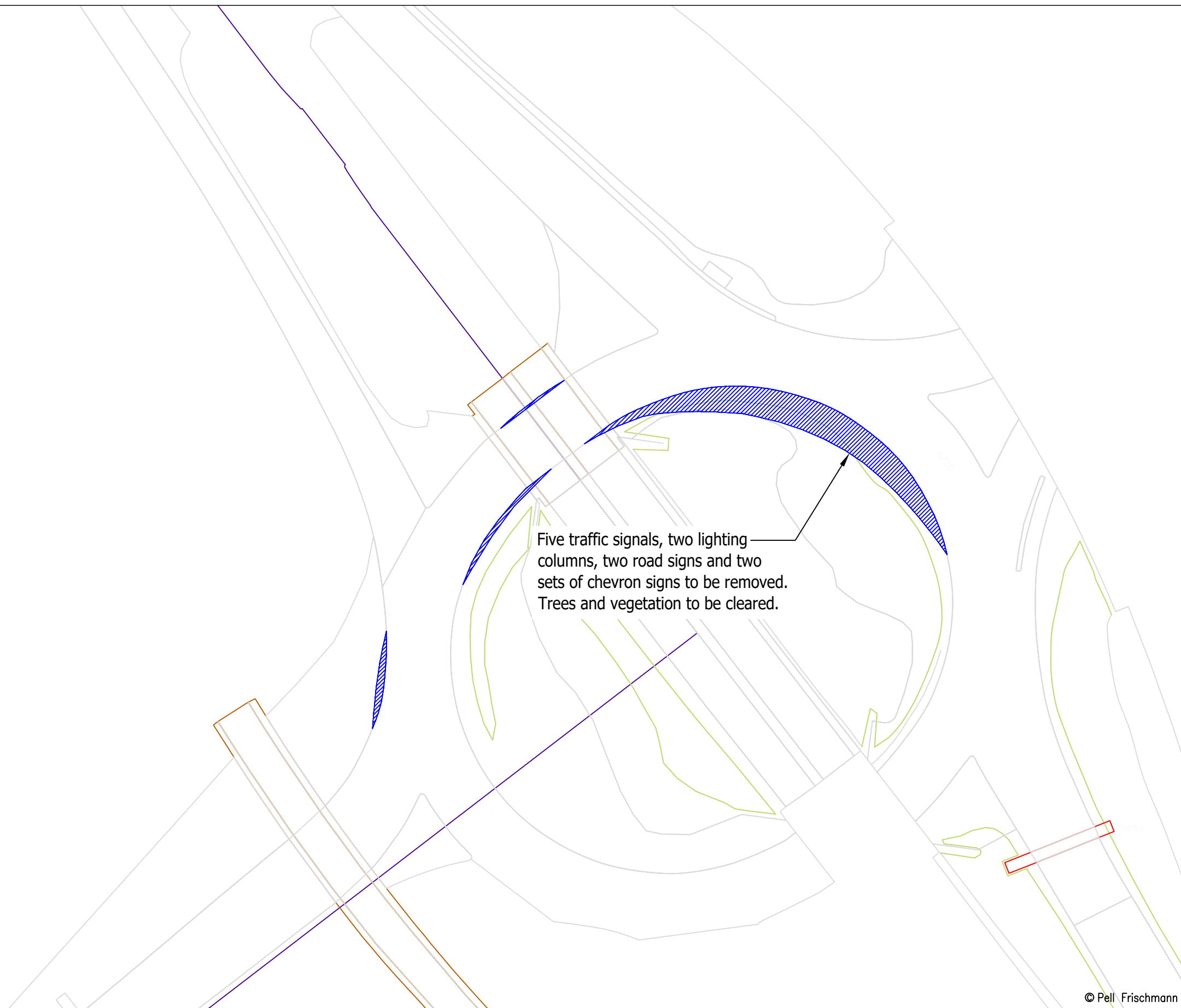
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Mitigation



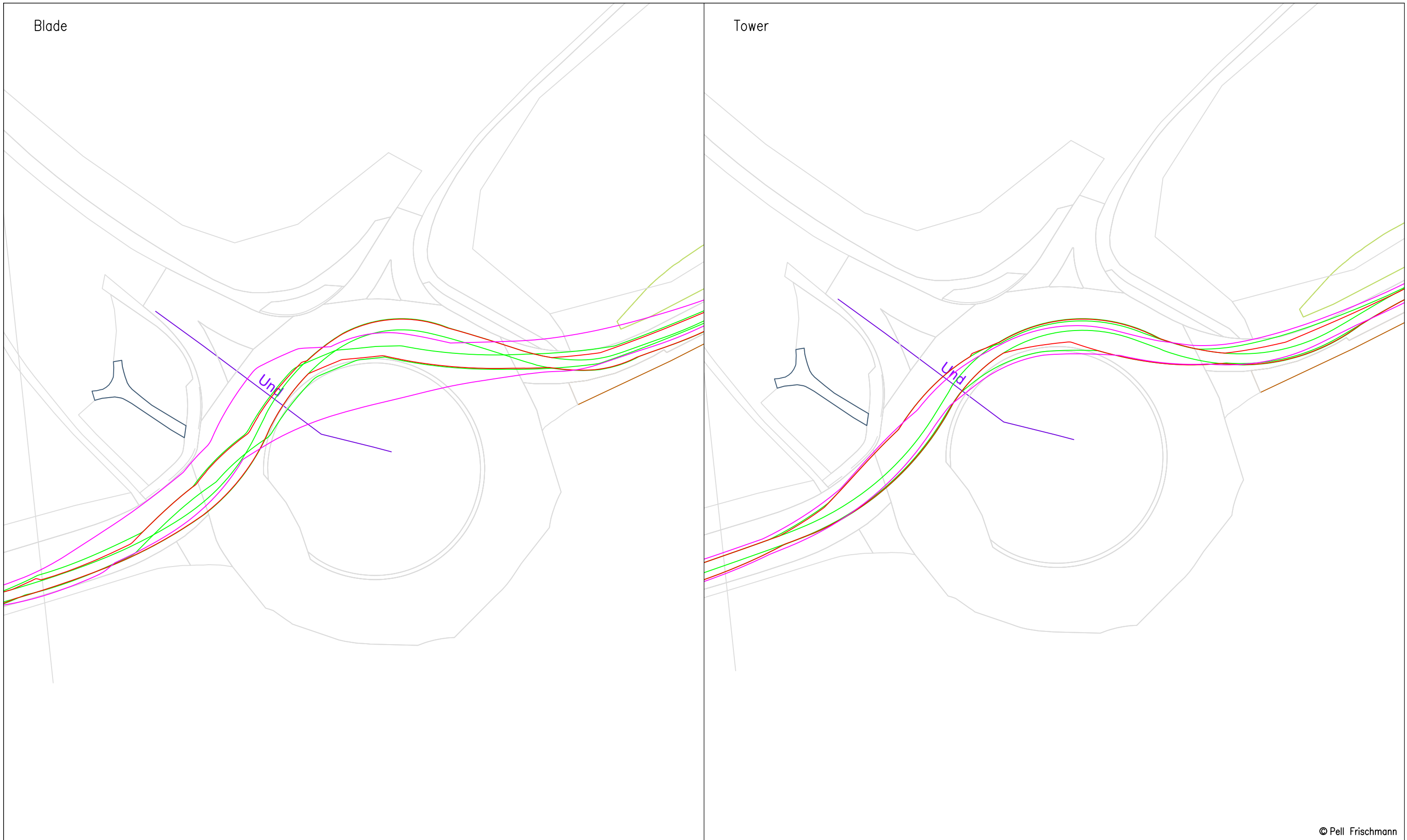
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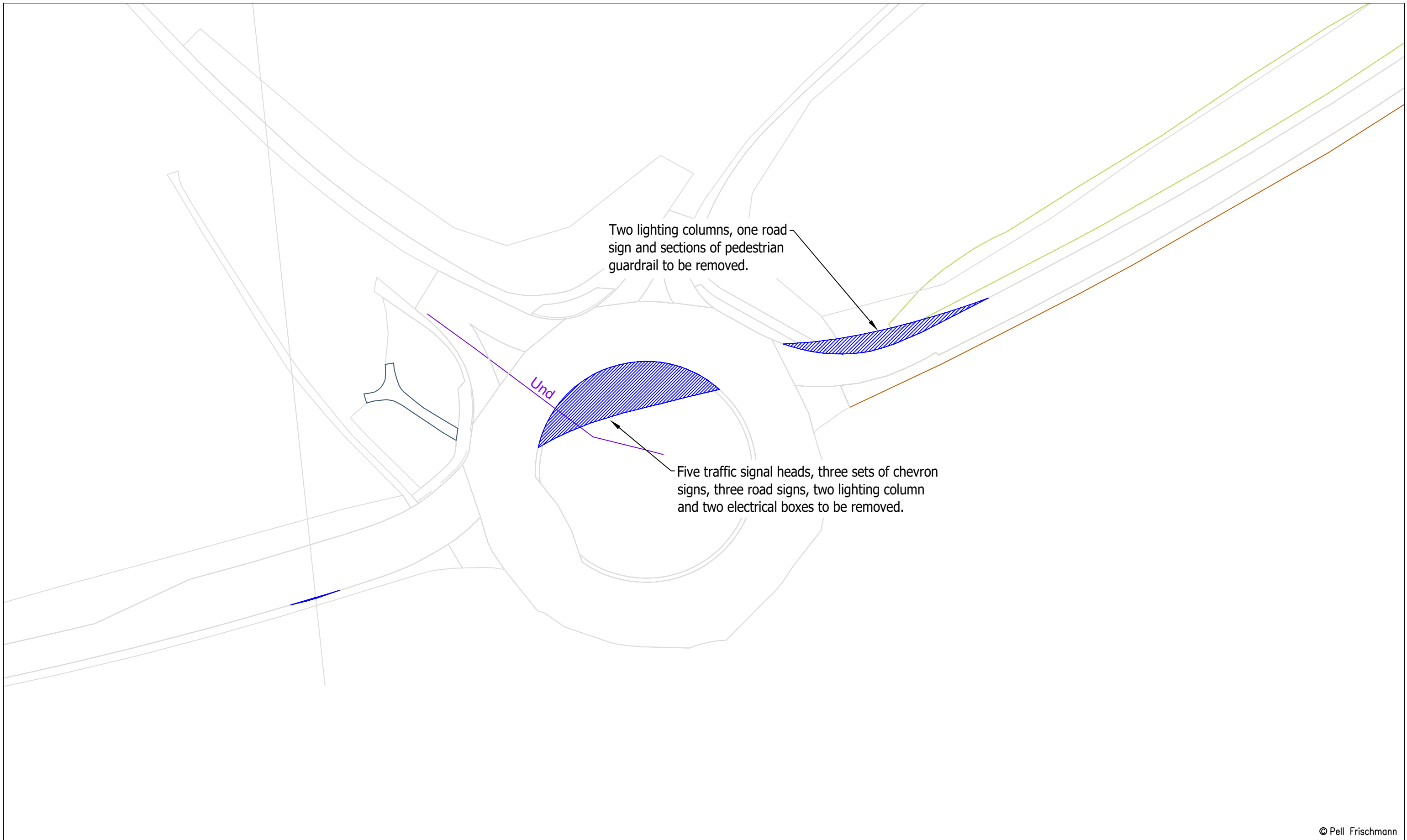
Blade

Tower



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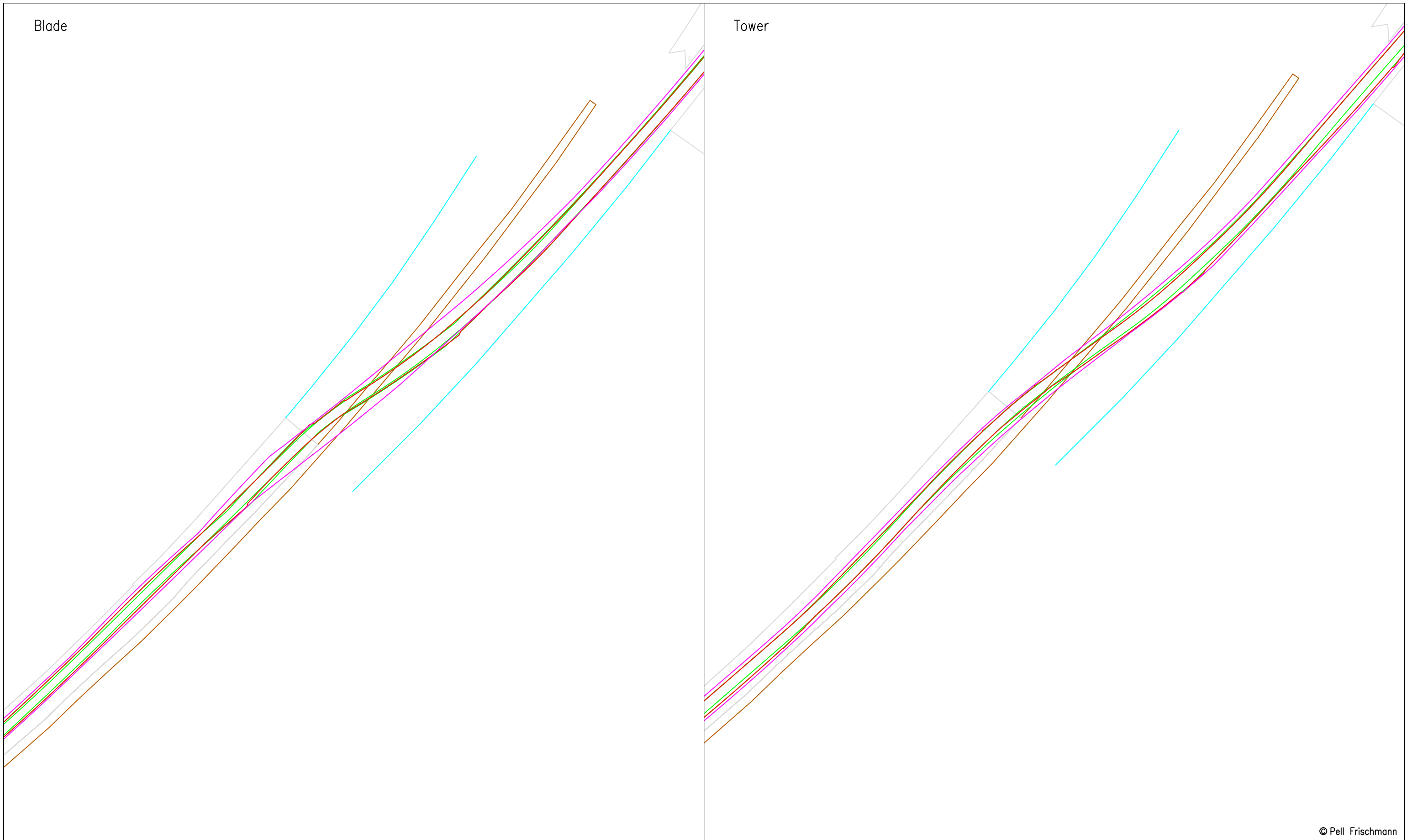


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Client						Drawing Title			File No.	
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Blade

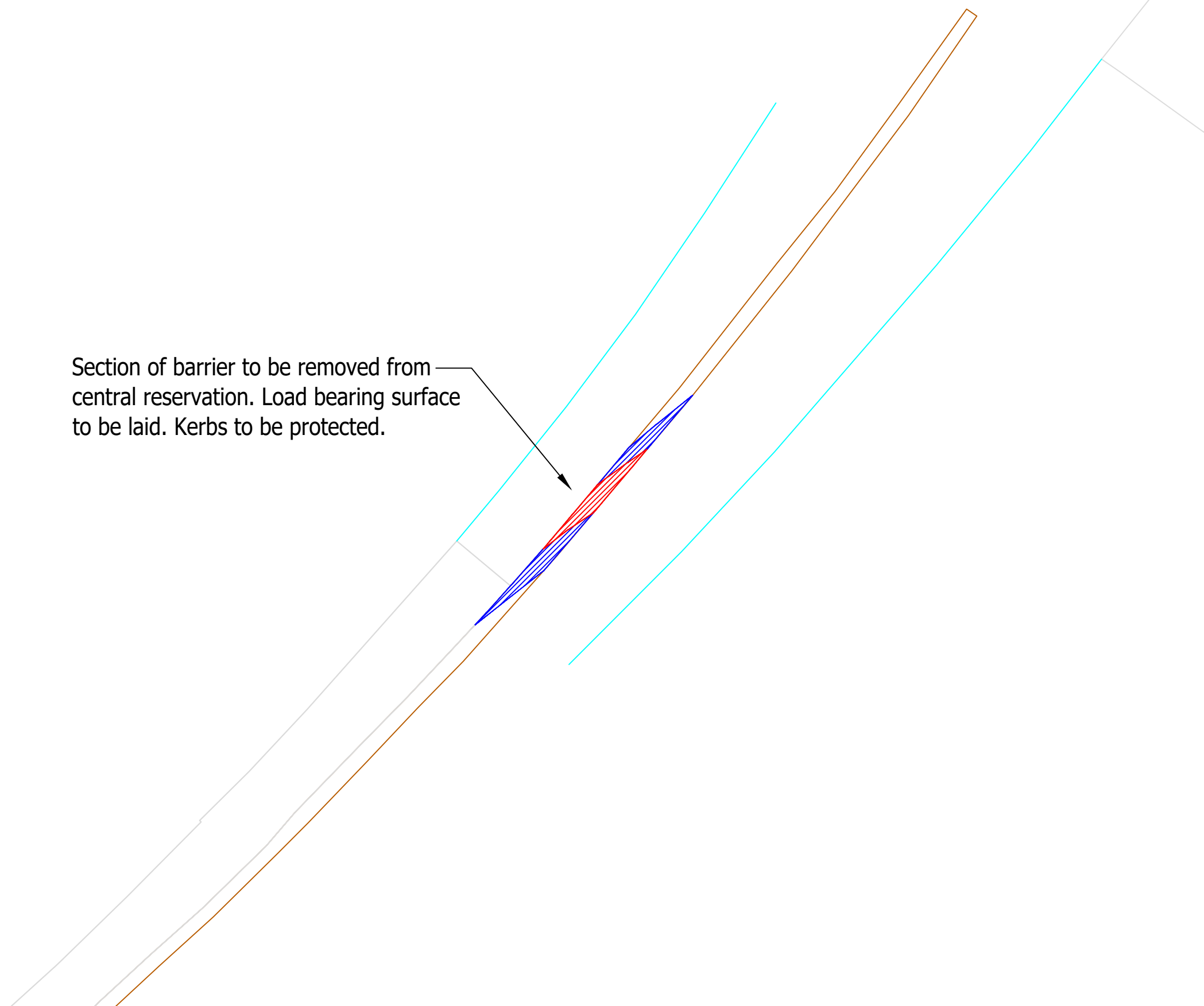
Tower



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Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	A720 Millerhill Junction	SK07	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	

Section of barrier to be removed from central reservation. Load bearing surface to be laid. Kerbs to be protected.

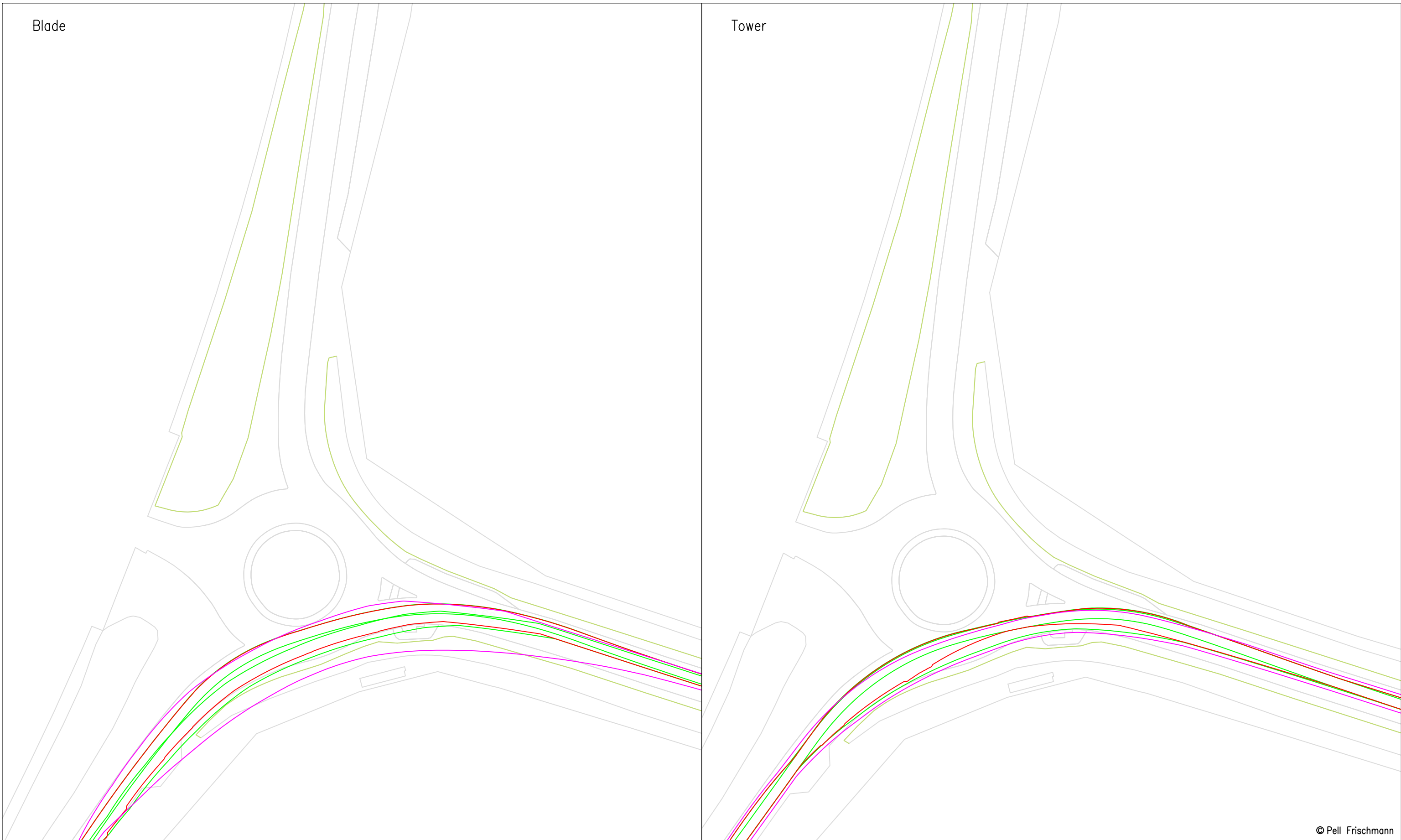


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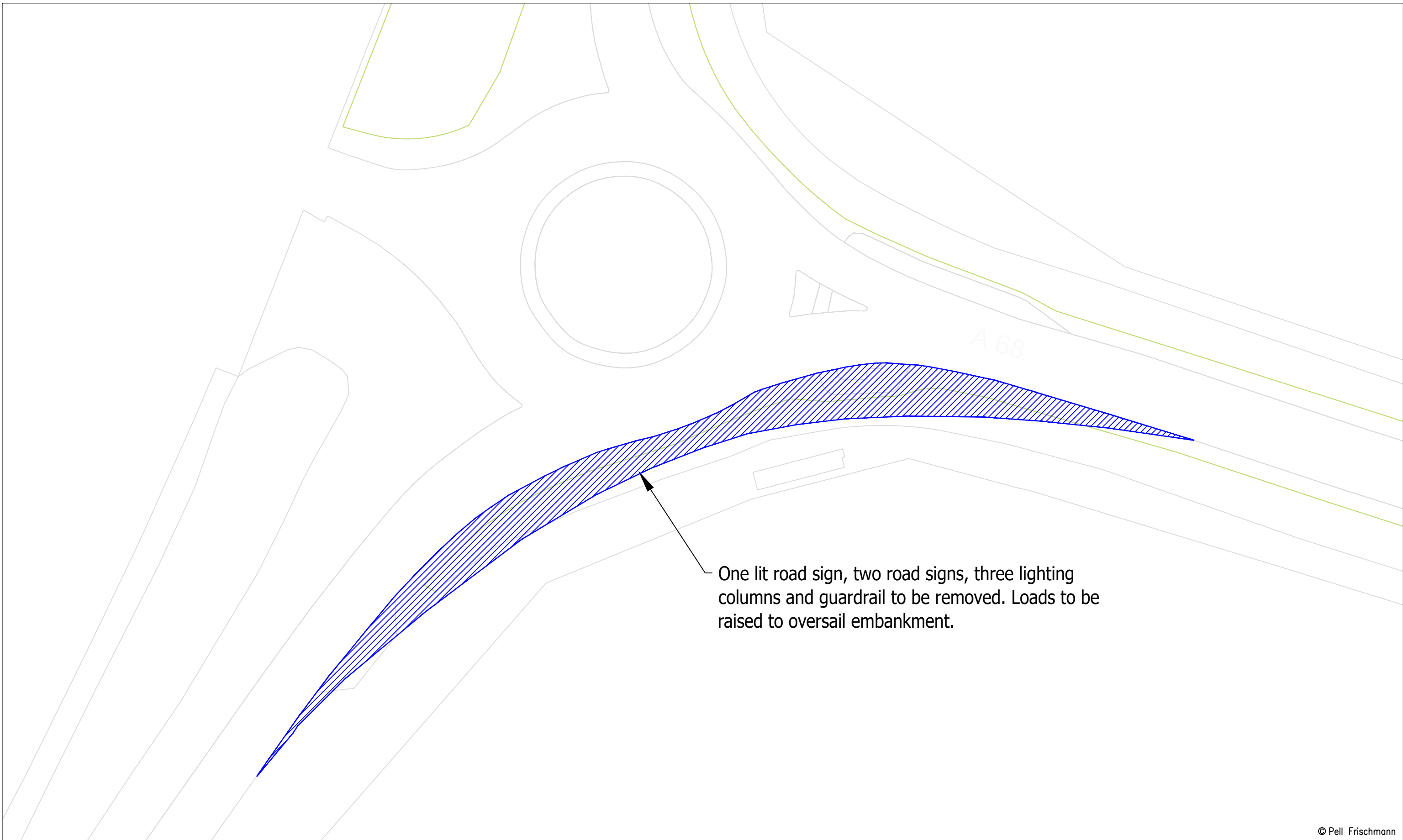
Blade

Tower



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RES		SPA Location		A720 Slip Road / A68 Roundabout		Checked	GB	27/10/2023	Drawing Status	Draft	
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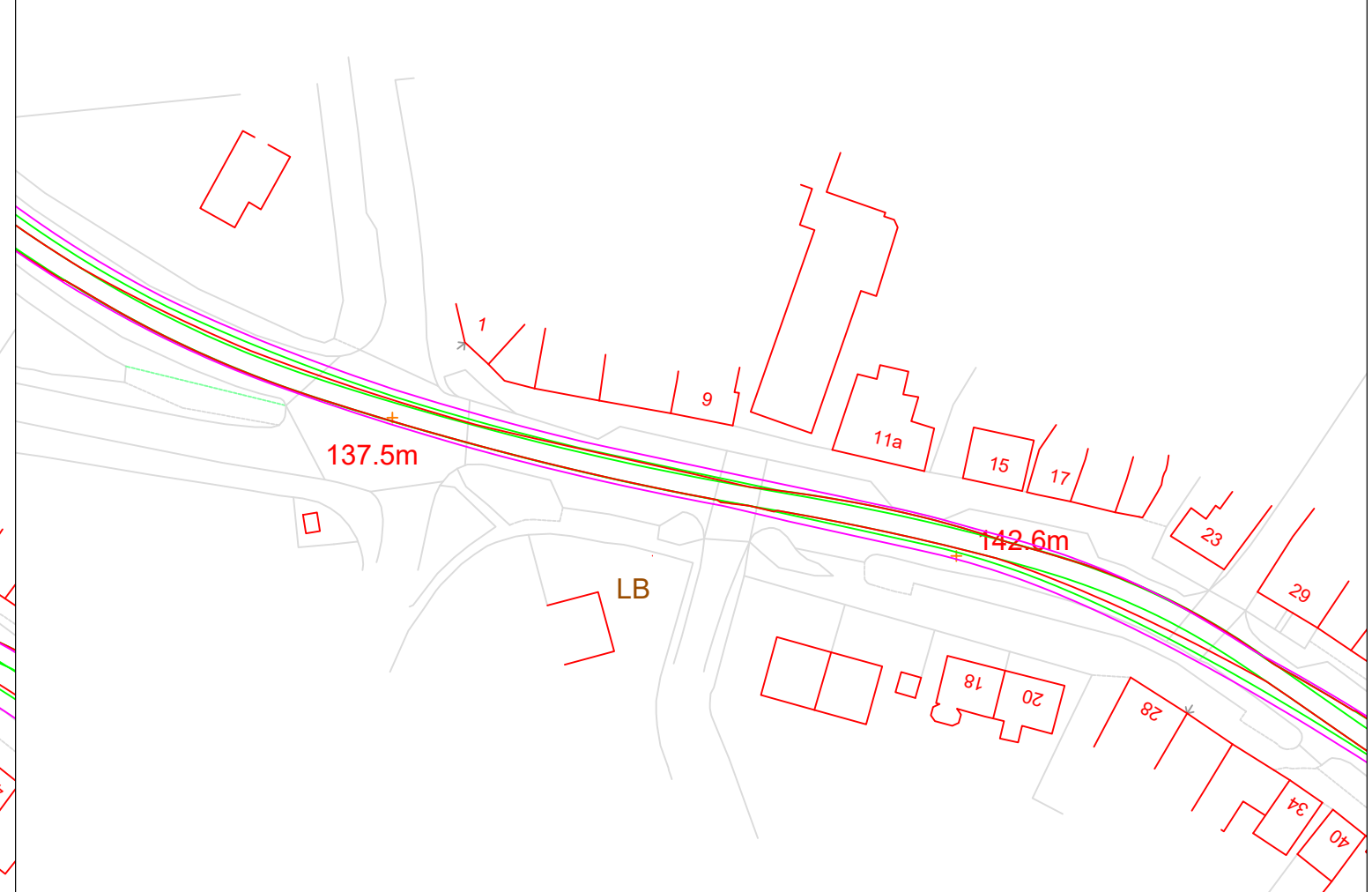
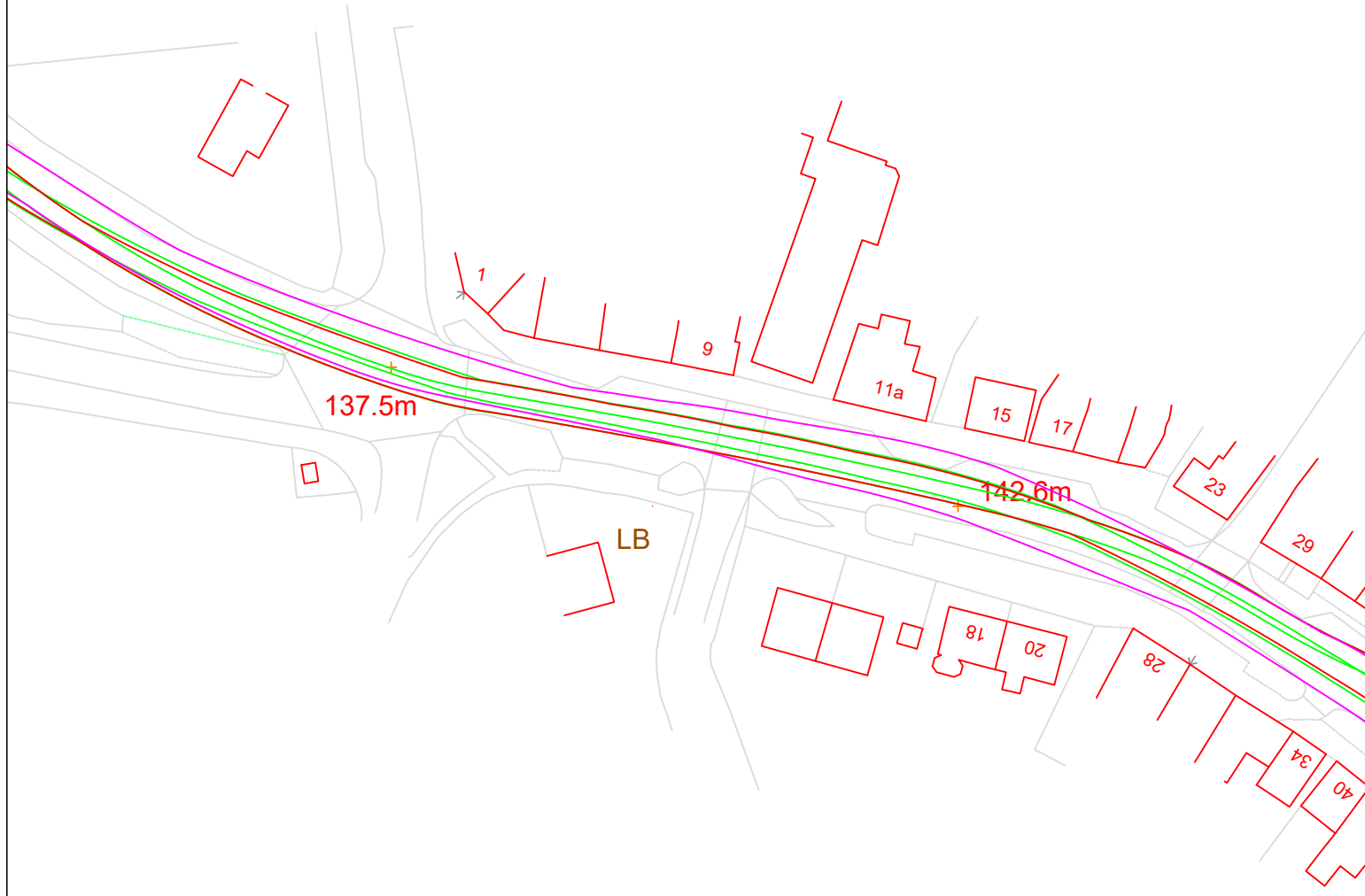


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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg	
RES		SPA Location		87.5m Blade and Tower		Checked	GB	27/10/2023	Drawing Status	Draft	
Key		A720 Slip Road / A68 Roundabout		Point of Interest		8		Drawing No.	SK08A		Revision
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail				Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1			

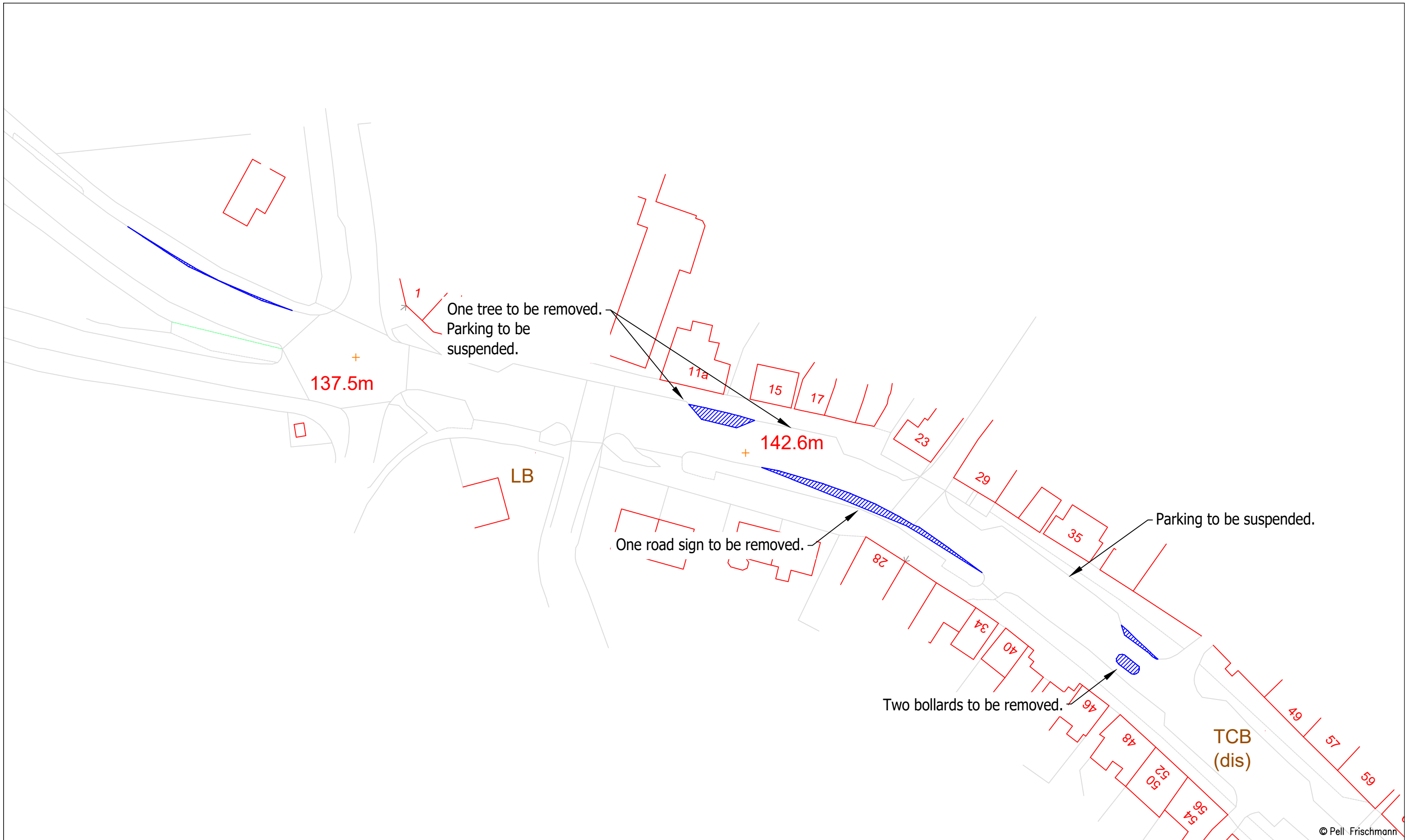
Blade

Tower



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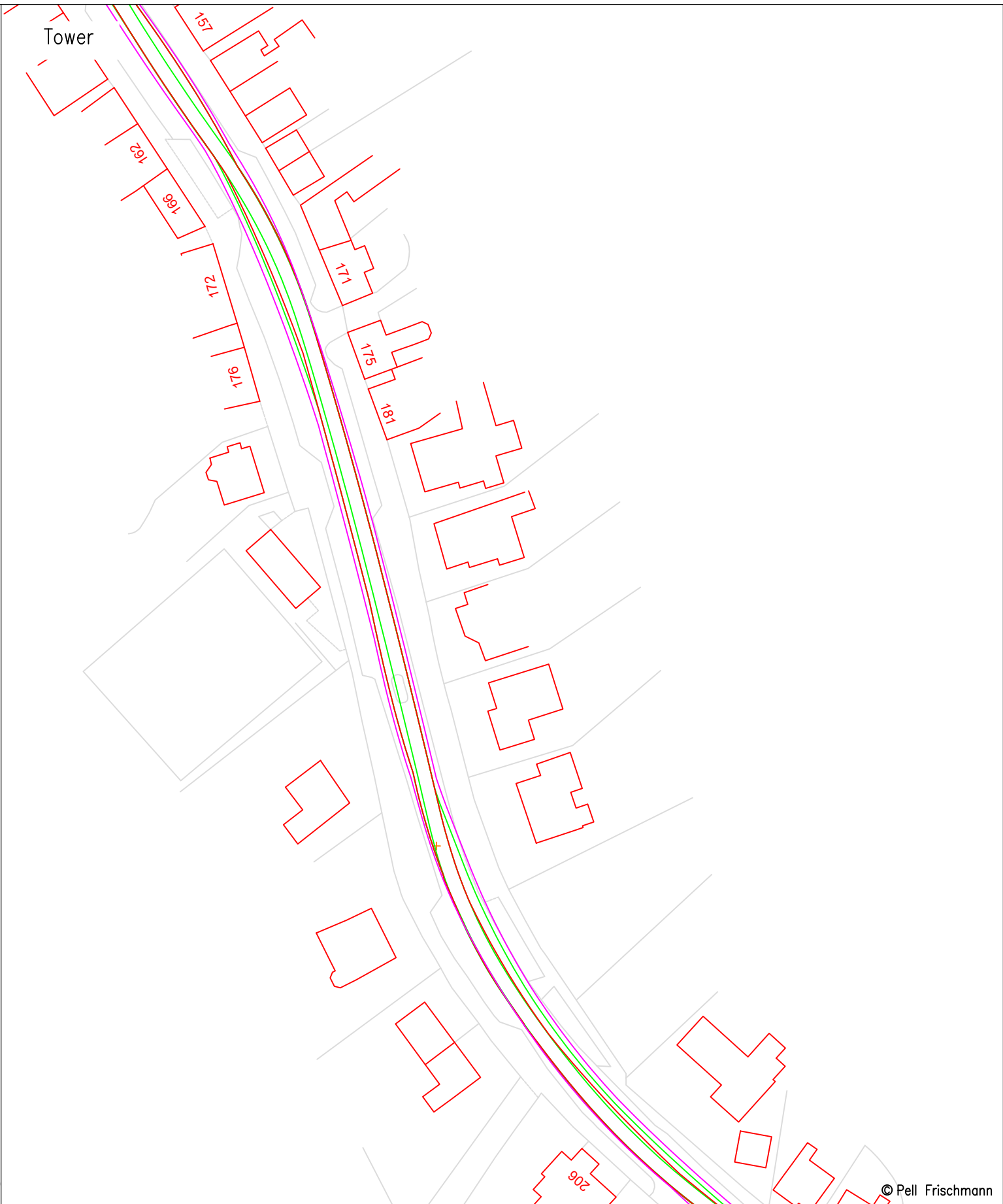
<b>Pell Frischmann</b> <small>93 GEORGE STREET, EDINBURGH, EH2 3ES                  Tel: +44 (0)131 240 1270                  Email: ptedinburgh@pellfrischmann.com                  www.pellfrischmann.com</small>		Project		Longcroft Wind Farm		Drawn	SK	02/06/2022	Scale	1:1500@ A3
		Client		Drawing Title		Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg
Client		RES		Drawing Title		Checked	GB	27/10/2023	Drawing Status	Draft
Client		RES		SPA Location		Point of Interest		11	Revision	
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Drawing No.	SK09	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
				SPA Location						1



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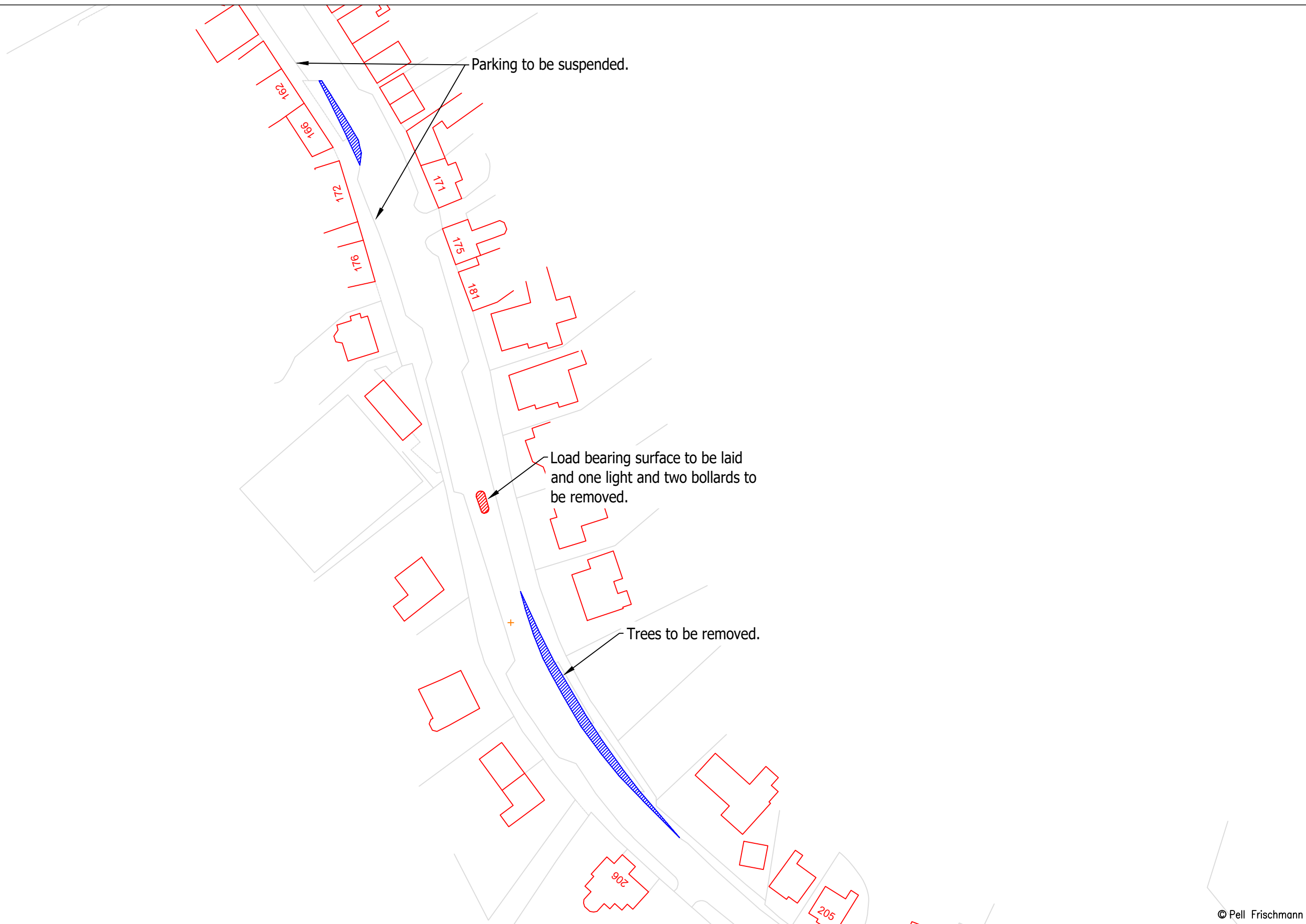
<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: ptedinburgh@pellfrischmann.com www.pellfrischmann.com		Project		Longcroft Wind Farm		Name		Date		Scale	
		Client		Drawing Title		Drawn		Designed		File No.	
RES		87.5m Blade and Tower		Checked		GB		27/10/2023		Drawing Status	
Key		SPA Location		Point of Interest		Drawing No.		Notes:		Revision	
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		A68 Pathhead – Main Street		11		SK09A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	





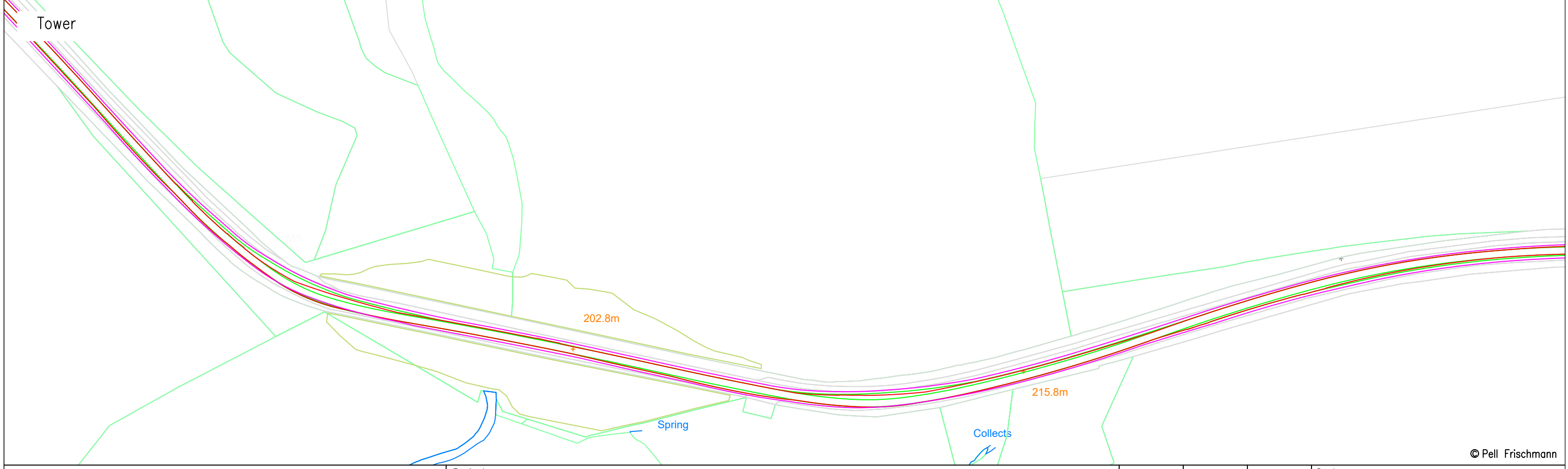
© Pell Frischmann

<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: ptedinburgh@pellfrischmann.com www.pellfrischmann.com		Project		Longcroft Wind Farm		Drawn	SK	02/06/2022	Scale	1:1500@ A3			
		Client		Drawing Title		Designed	SK	02/06/2022	File No.		231026 Longcroft SPA SG170.dwg		
Client		RES		Drawing Title		Checked	GB	27/10/2023	Drawing Status		Draft		
Key		Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		Point of Interest		12		Drawing No.		Revision	
				A68 Pathhead		SK10		Notes:		1			
								1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.					



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						Client			RES			Drawing Title			87.5m Blade and Tower																																															
Key						SPA Location			A68 Pathhead			<table border="1"> <tr> <td>Drawn</td> <td>SK</td> <td>02/06/2022</td> <td rowspan="3">Scale</td> <td colspan="2">1:500 @ A3</td> </tr> <tr> <td>Designed</td> <td>SK</td> <td>02/06/2022</td> <td rowspan="2">File No.</td> <td colspan="2">231026 Longcroft SPA SG170.dwg</td> </tr> <tr> <td>Checked</td> <td>GB</td> <td>27/10/2023</td> <td rowspan="2">Drawing Status</td> <td colspan="2">Draft</td> </tr> <tr> <td colspan="3">Point of Interest</td> <td colspan="3">12</td> </tr> <tr> <td colspan="3">Drawing No.</td> <td colspan="3">SK10A</td> <td colspan="3">Notes:</td> <td colspan="3">Revision</td> </tr> <tr> <td colspan="3"></td> <td colspan="3"></td> <td colspan="3">         1. All mitigation is subject to confirmation through a test run.          2. This is not a construction drawing and is intended for illustration purposes only.       </td> <td colspan="3">1</td> </tr> </table>			Drawn	SK	02/06/2022	Scale	1:500 @ A3		Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg		Checked	GB	27/10/2023	Drawing Status	Draft		Point of Interest			12			Drawing No.			SK10A			Notes:			Revision									1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			1		
Drawn	SK	02/06/2022	Scale	1:500 @ A3																																																										
Designed	SK	02/06/2022		File No.	231026 Longcroft SPA SG170.dwg																																																									
Checked	GB	27/10/2023			Drawing Status	Draft																																																								
Point of Interest			12																																																											
Drawing No.			SK10A			Notes:			Revision																																																					
						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			1																																																					
<table border="1"> <tr> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>▨</td> <td>▨</td> </tr> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>						—	—	—	—	▨	▨	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																																													
—	—	—	—	▨	▨																																																									
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																																																									



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Project  
 Longcroft Wind Farm

Drawn	SK	02/06/2022	Scale	1:1500 @ A3
Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg
Checked	GB	27/10/2023	Drawing Status	Draft
Point of Interest		15		

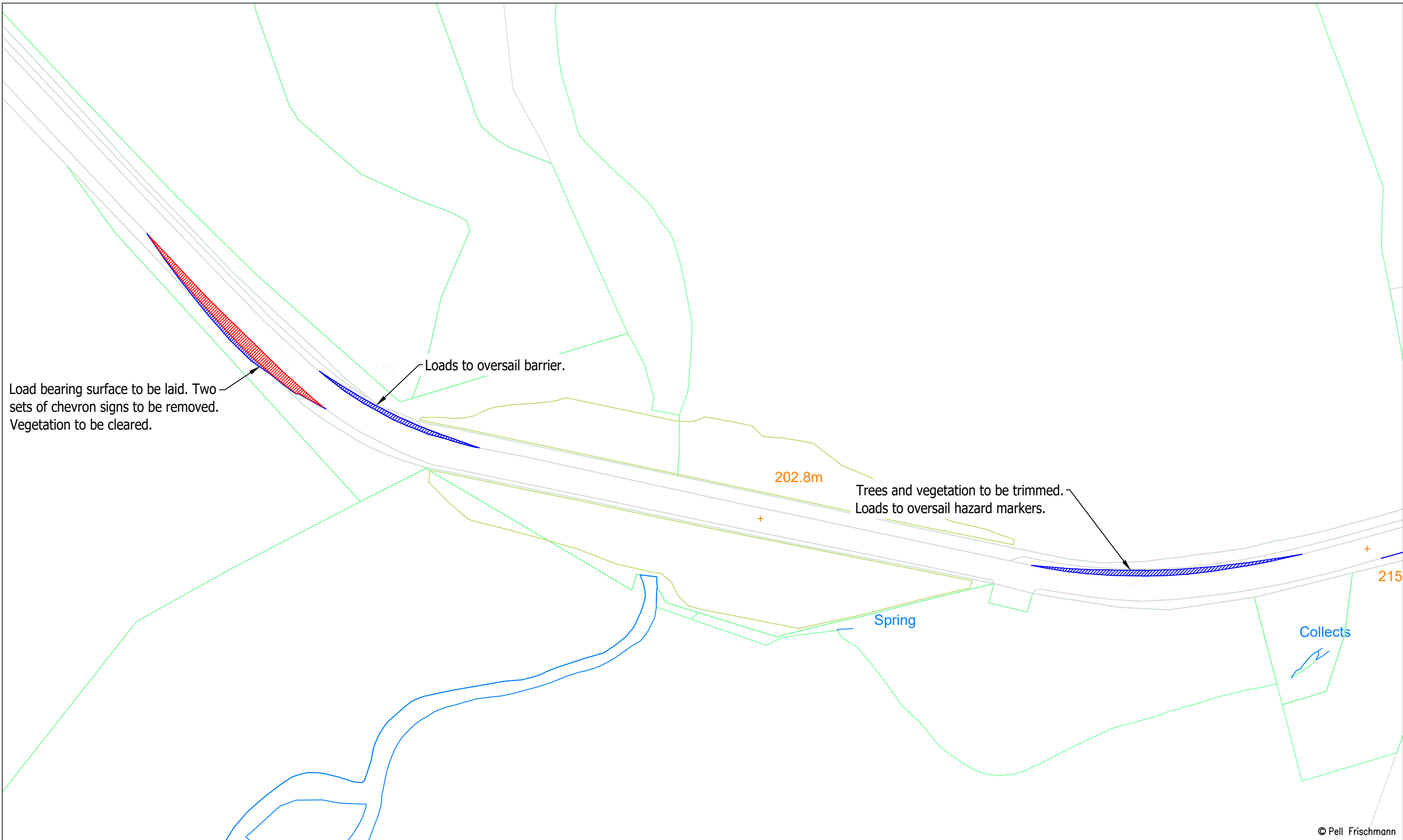
Client  
 RES

Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

Drawing Title  
 87.5m Blade and Tower

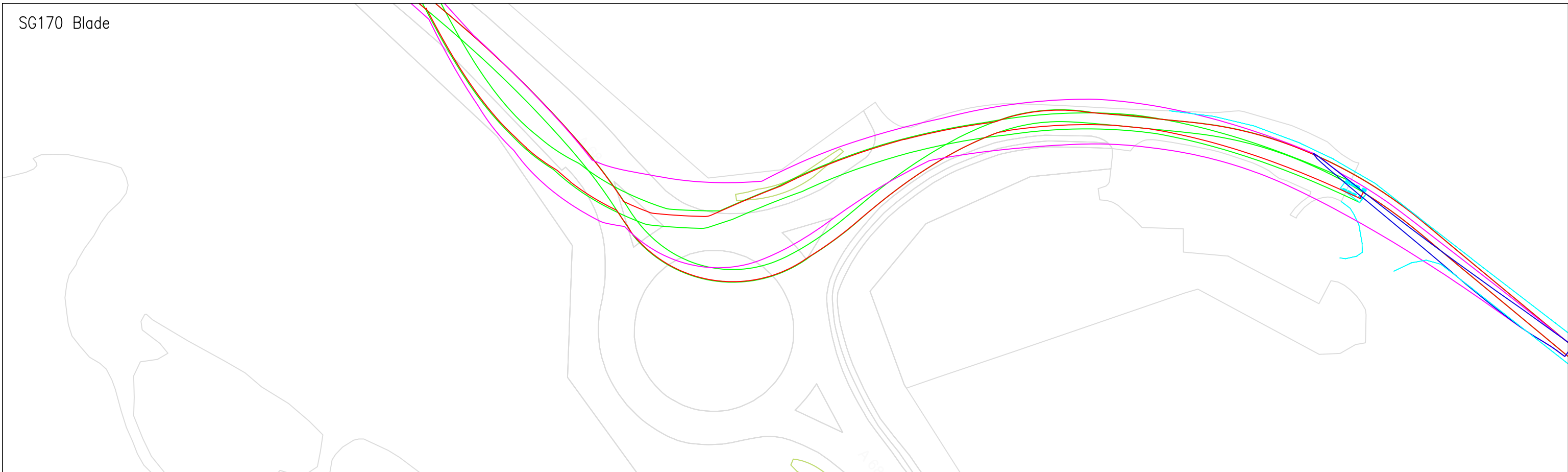
SPA Location  
 A68 South of Fala Dam Bends

Drawing No.	SK11	Notes:	Revision
		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1

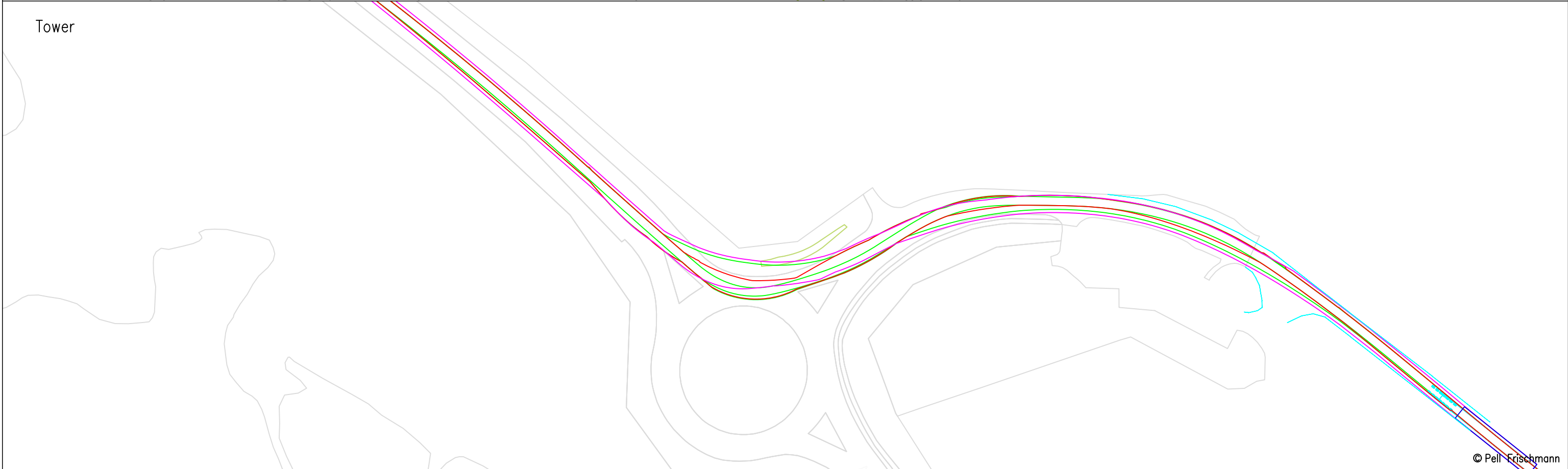


<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfe@pellfrischmann.com www.pellfrischmann.com						Project			Scale						
						Longcroft Wind Farm			1:1250 @ A3						
Client						Drawing Title			File No.						
						87.5m Blade and Tower			231026 Longcroft SPA SG170.dwg						
Client						SPA Location			Drawing Status						
						A68 South of Fala Dam Bends			Draft						
Key						Point of Interest		Revision							
<table border="1"> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>						Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	15		1	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail										
						Drawing No.		Notes:							
						SK11A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.							

SG170 Blade



Tower



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Project

Longcroft Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	27/10/2023

Scale 1:1250 @ A3

File No. 231026 Longcroft SPA SG170.dwg

Drawing Status Draft

Client RES

Drawing Title

87.5m Blade and Tower

Point of Interest 18 & 19

Drawing No. SK12

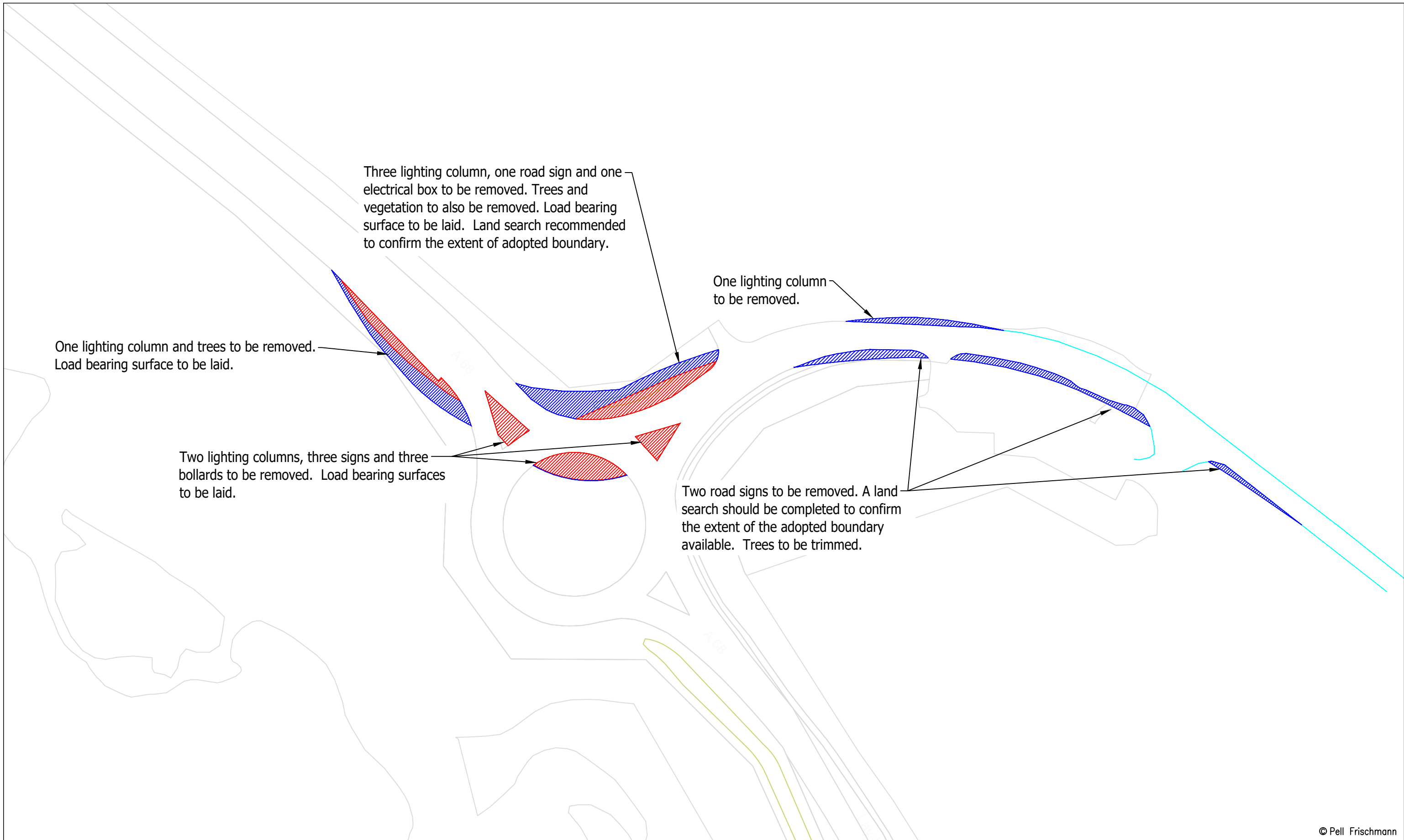
Notes:  
 1. All mitigation is subject to confirmation through a test run.  
 2. This is not a construction drawing and is intended for illustration purposes only.

Revision 1

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

A68 Carfraemill Roundabout and Bend



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		Client		Drawing Title		SPA Location		Drawn	SK	02/06/2022	File No.		1:500 @ A3
RES		87.5m Blade and Tower		A68 Carfraemill Roundabout and Bend		Designed	SK	02/06/2022	231026 Longcroft SPA SG170.dwg		Drawing Status		
Key		Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Checked		GB	27/10/2023	Draft	
						Point of Interest		18 & 19		Drawing No.		Revision	
						SK12A		Notes:		1. All mitigation is subject to confirmation through a test run.		1	
								2. This is not a construction drawing and is intended for illustration purposes only.					



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
RES		87.5m Blade and Tower		23		SK13		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	
SPA Location		A697 Newbigging Walls Transfer Station									
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail					



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
Client		RES		87.5m Blade and Tower		28&29		SK15		1	
SPA Location		A697 / D124 Junction		Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.					
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail					



Cleekhimin Bridge

Cleekhimin House

Vegetation / trees and utility poles to be removed. Passing place sign to be removed.

Load bearing surface to be laid and trees / vegetation to be trimmed.

Entire road to be widened to a minimum of 4.5m running width with a clearance envelope of 5.5m. All utilities poles to be removed at this location.

Load bearing surfaces to be laid and trees / vegetation to be trimmed. Overhead utilities to be removed.

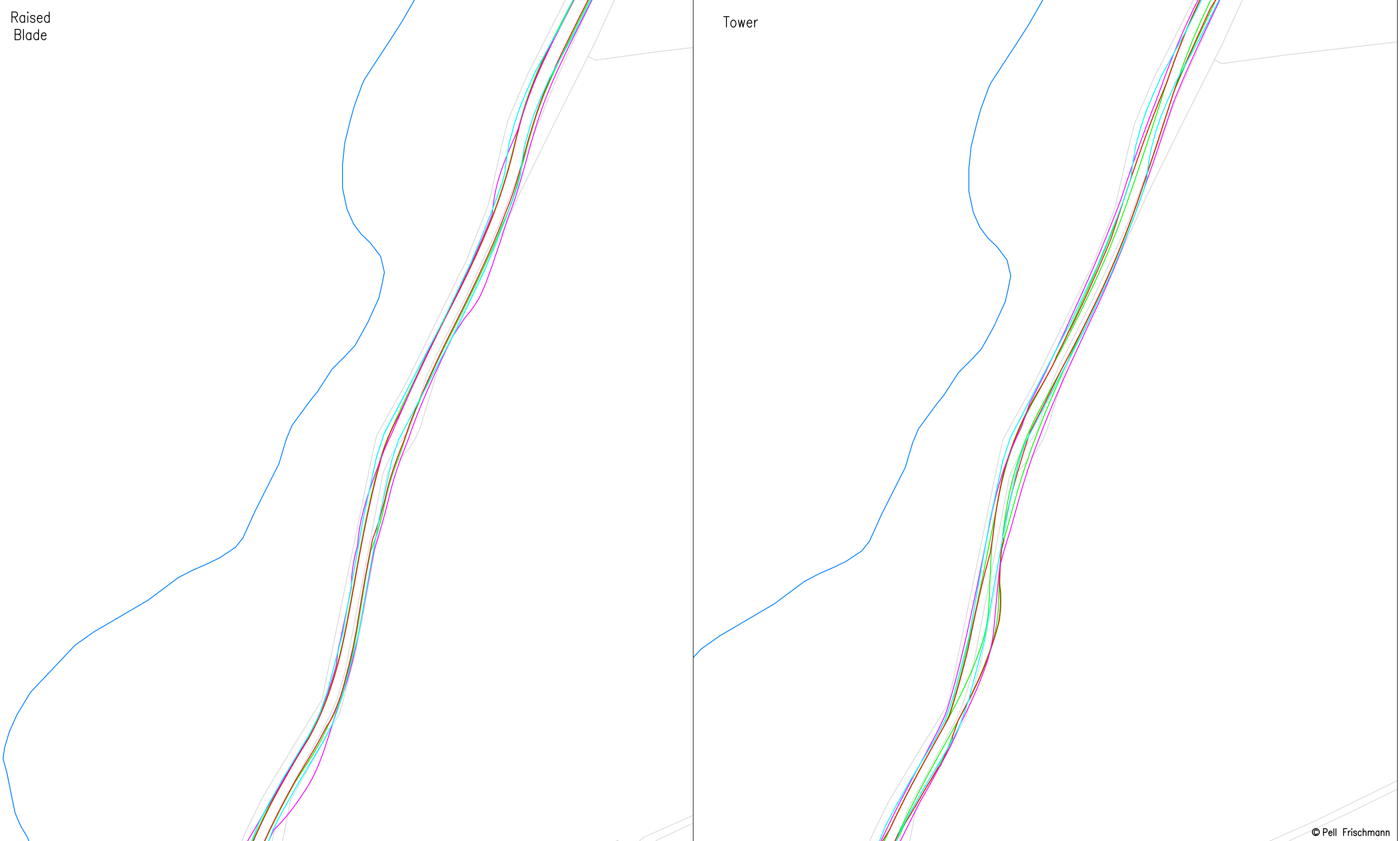
Load bearing surface to be laid and trees / vegetation to be trimmed.

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		Client		Drawing Title		SPA Location		Drawn		Designed		File No.	
RES		87.5m Blade and Tower		A697 / D124 Junction		Checked		27/10/2023		28&29		Draft	
Key		Wheel SPA		Body SPA		Load SPA		Indicative		Over-run		Over-sail	
												Revision	
								Drawing No.		Notes:		1	
								SK15A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			

Raised  
Blade

Tower



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Project

Longcroft Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	27/10/2023

Scale 1:1500@ A3

File No. 231026 Longcroft SPA SG170.dwg

Drawing Status Draft

Client RES

Drawing Title

87.5m Blade and Tower

Point of Interest 30

Drawing No.  
SK16

Notes:  
1. All mitigation is subject to confirmation through a test run.  
2. This is not a construction drawing and is intended for illustration purposes only.

Revision  
1

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

D124 Road

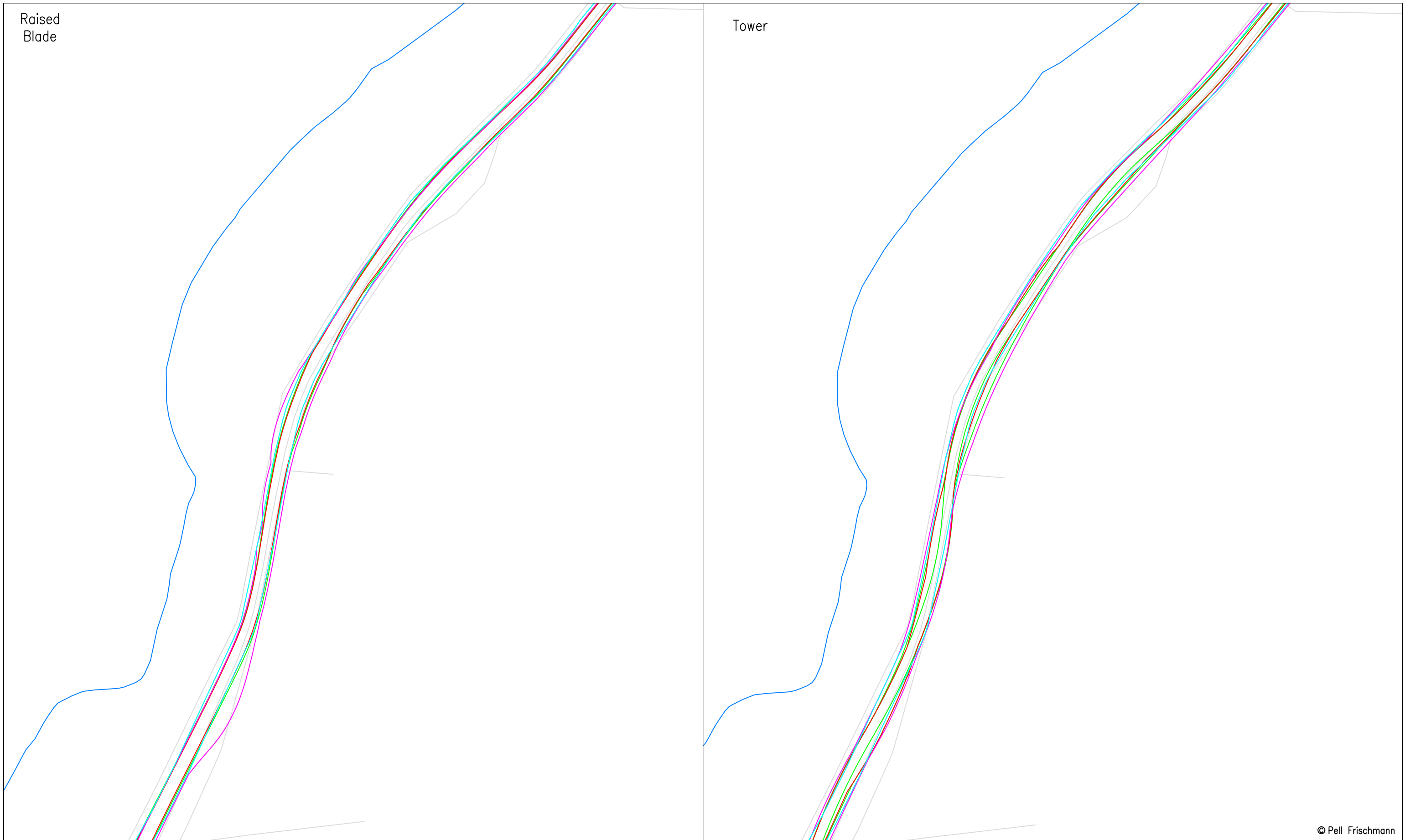


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						Longcroft Wind Farm			1:500 @ A3	
Client						Drawing Title			File No.	
						87.5m Blade and Tower			231026 Longcroft SPA SG170.dwg	
Key <span style="color:red">—</span> Wheel SPA <span style="color:green">—</span> Body SPA <span style="color:magenta">—</span> Load SPA <span style="color:cyan">—</span> Indicative <span style="border: 1px solid red; padding: 2px;"> </span> Over-run <span style="border: 1px solid blue; padding: 2px;"> </span> Over-sail						SPA Location			Drawing Status	
						D124 Road			Draft	
						Point of Interest		Revision		
						30		1		
						Drawing No.		Notes:		
						SK16A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		

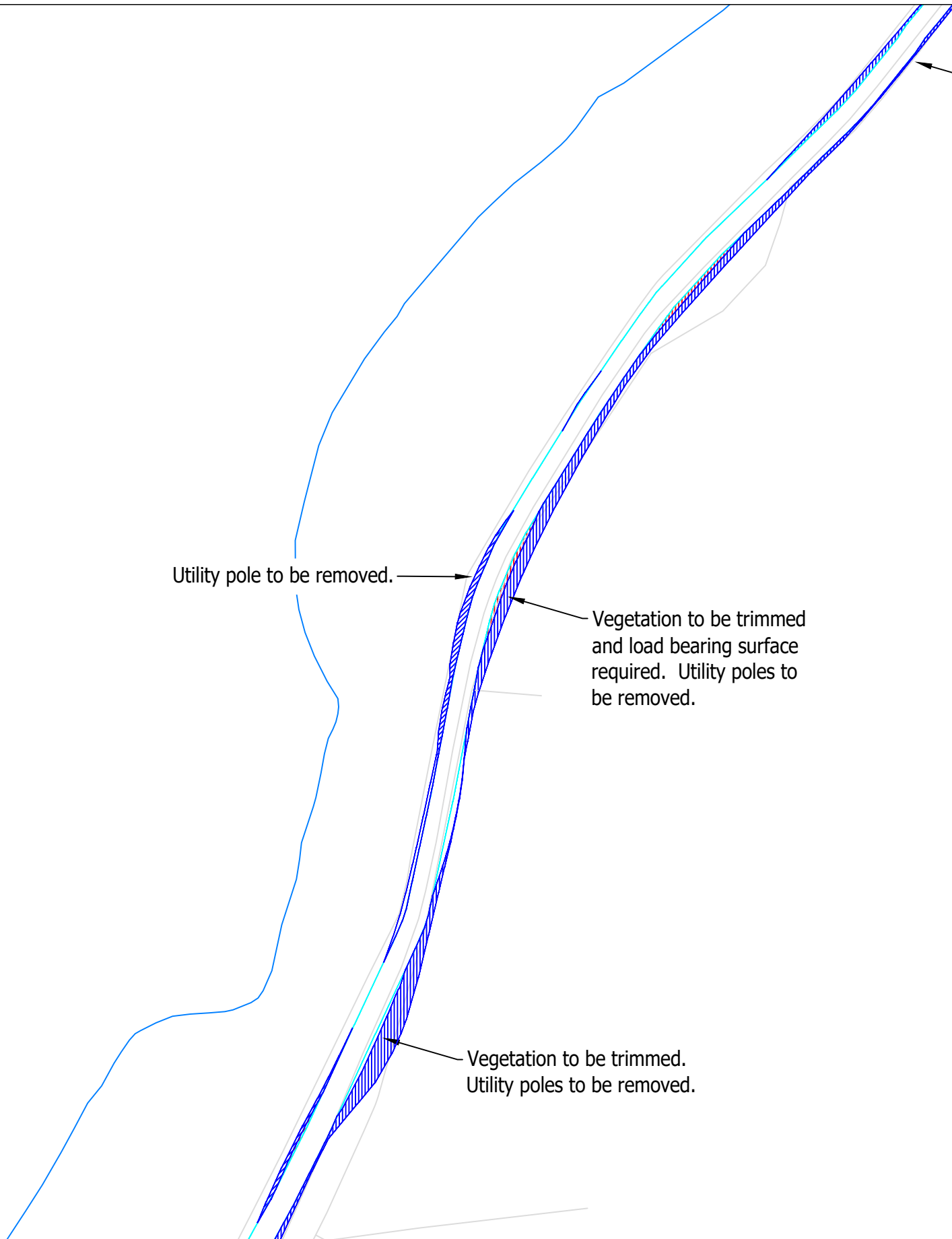
Raised  
Blade

Tower



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		Client		Drawing Title		Drawn	SK	02/06/2022	File No. 231026 Longcroft SPA SG170.dwg
Client		Drawing Title		Designed	SK	02/06/2022	Drawing Status	Draft	
Client		Drawing Title		Checked	GB	27/10/2023	Point of Interest	31&32	
Client		Drawing Title		SPA Location		Drawing No.	Notes:	Revision	
Client		Drawing Title		SPA Location		SK17	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1	
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail			



Vegetation to be trimmed.  
Utility poles to be removed.

Utility pole to be removed.

Vegetation to be trimmed  
and load bearing surface  
required. Utility poles to  
be removed.

Vegetation to be trimmed.  
Utility poles to be removed.

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						Drawn	SK	02/06/2022	Scale 1:500 @ A3		
Client						Designed	SK	02/06/2022	File No. 231026 Longcroft SPA SG170.dwg		
						Checked	GB	27/10/2023	Drawing Status Draft		
RES						Drawing Title			87.5m Blade and Tower		
Key Wheel SPA (Red line) Body SPA (Green line) Load SPA (Magenta line) Indicative (Cyan line) Over-run (Red hatched) Over-sail (Blue hatched)						SPA Location			D124 Road (2)		
						Point of Interest		31&32		Drawing No.	
						Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			
								1			

Raised  
Blade

Tower

CG

CG

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Project

Longcroft Wind Farm

Drawn	SK	02/06/2022	Scale	1:1500@ A3
Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg
Checked	GB	27/10/2023	Drawing Status	Draft
Point of Interest		33-35		

Client RES

Drawing Title

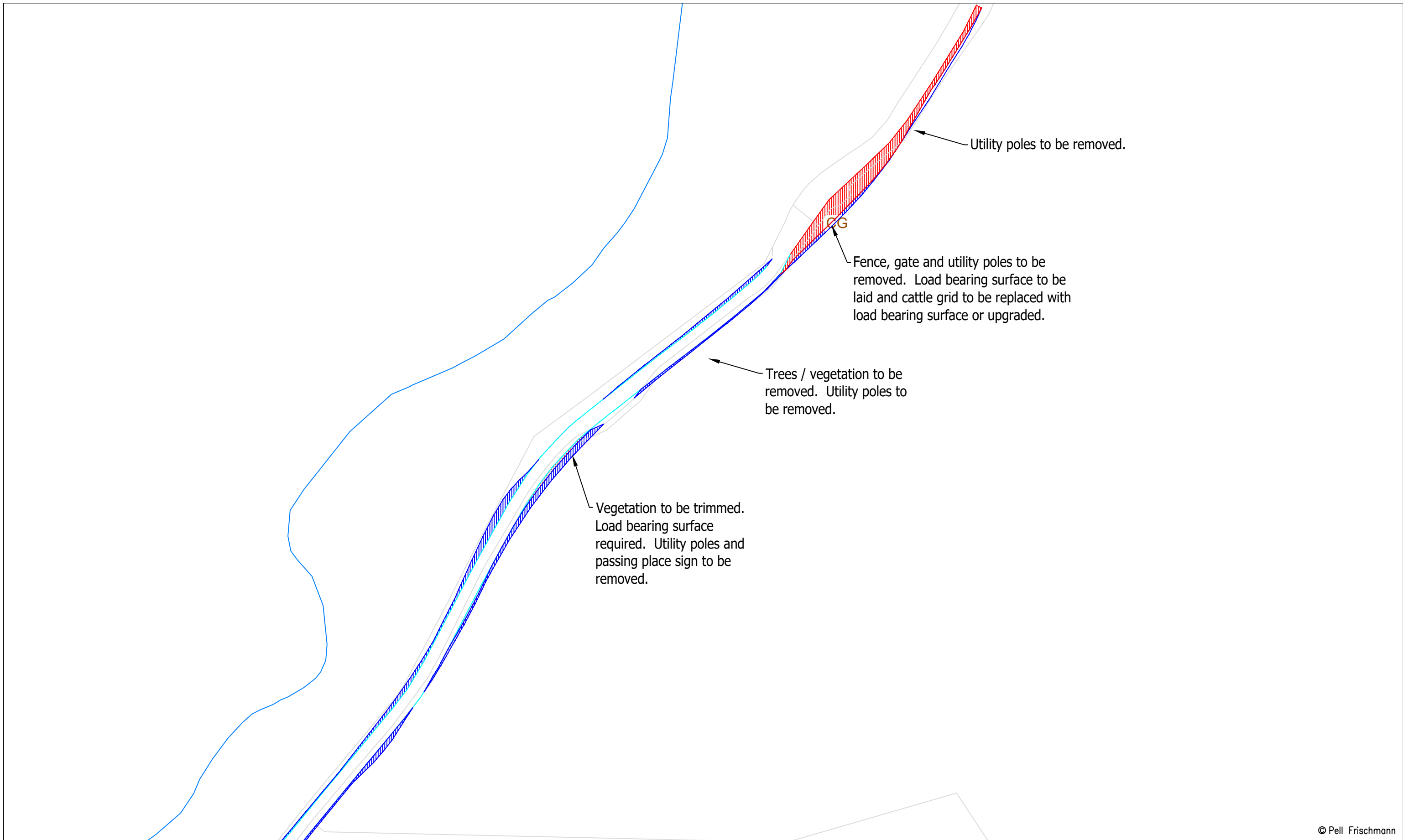
87.5m Blade and Tower

Drawing No.	SK18	Notes:	Revision
		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1

Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

D124 Road (3)



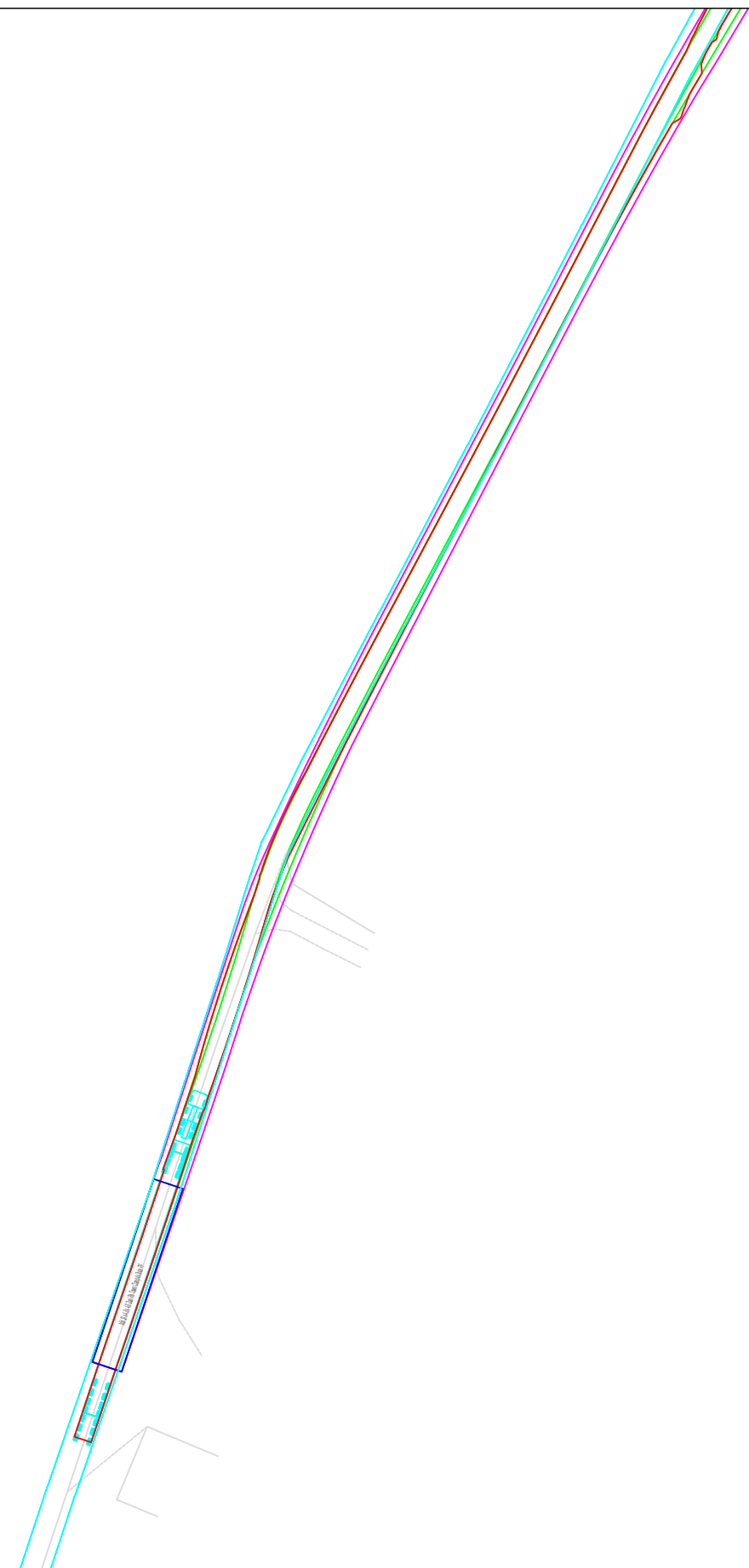
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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg	
RES		SPA Location		87.5m Blade and Tower		Checked	GB	27/10/2023	Drawing Status	Draft	
Key	<span style="color:red">—</span>	<span style="color:green">—</span>	<span style="color:magenta">—</span>	<span style="color:cyan">—</span>	<span style="border: 1px solid red; background: repeating-linear-gradient(45deg, transparent, transparent 2px, red 2px, red 4px); display: inline-block; width: 10px; height: 10px;"></span>	<span style="border: 1px solid blue; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, blue 2px, blue 4px); display: inline-block; width: 10px; height: 10px;"></span>	Point of Interest		33-35		
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Drawing No.	Notes:		Revision	
							SK18A	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	

Raised  
Blade



Tower



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Project

Longcroft Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	27/10/2023

Scale 1:1500@ A3

File No. 231026 Longcroft SPA SG170.dwg

Drawing Status Draft

Client RES

Drawing Title

87.5m Blade and Tower

Point of Interest 36

Drawing No.  
SK19

Notes:  
1. All mitigation is subject to confirmation through a test run.  
2. This is not a construction drawing and is intended for illustration purposes only.

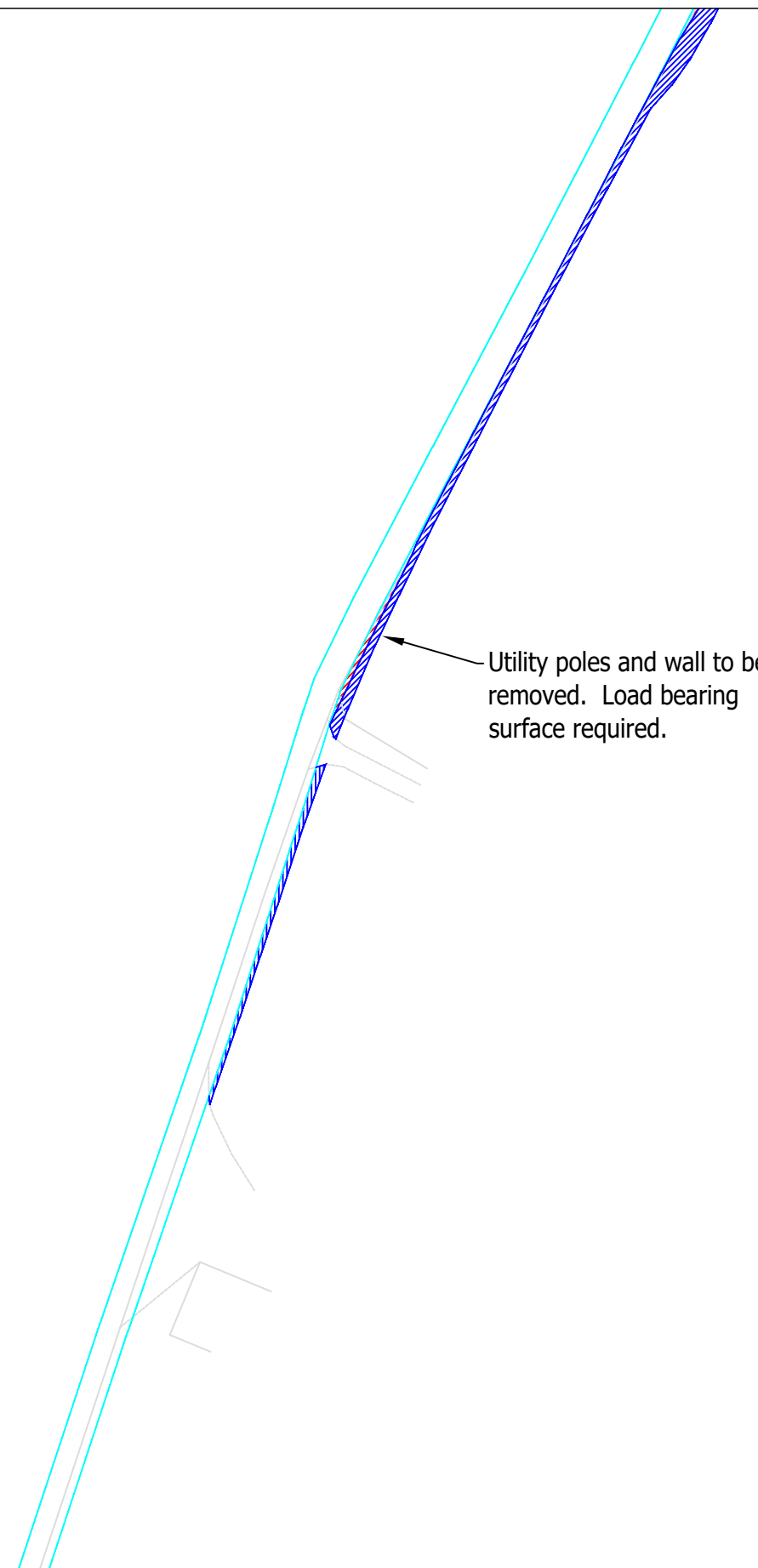
Revision  
1

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

D124 Road (4)



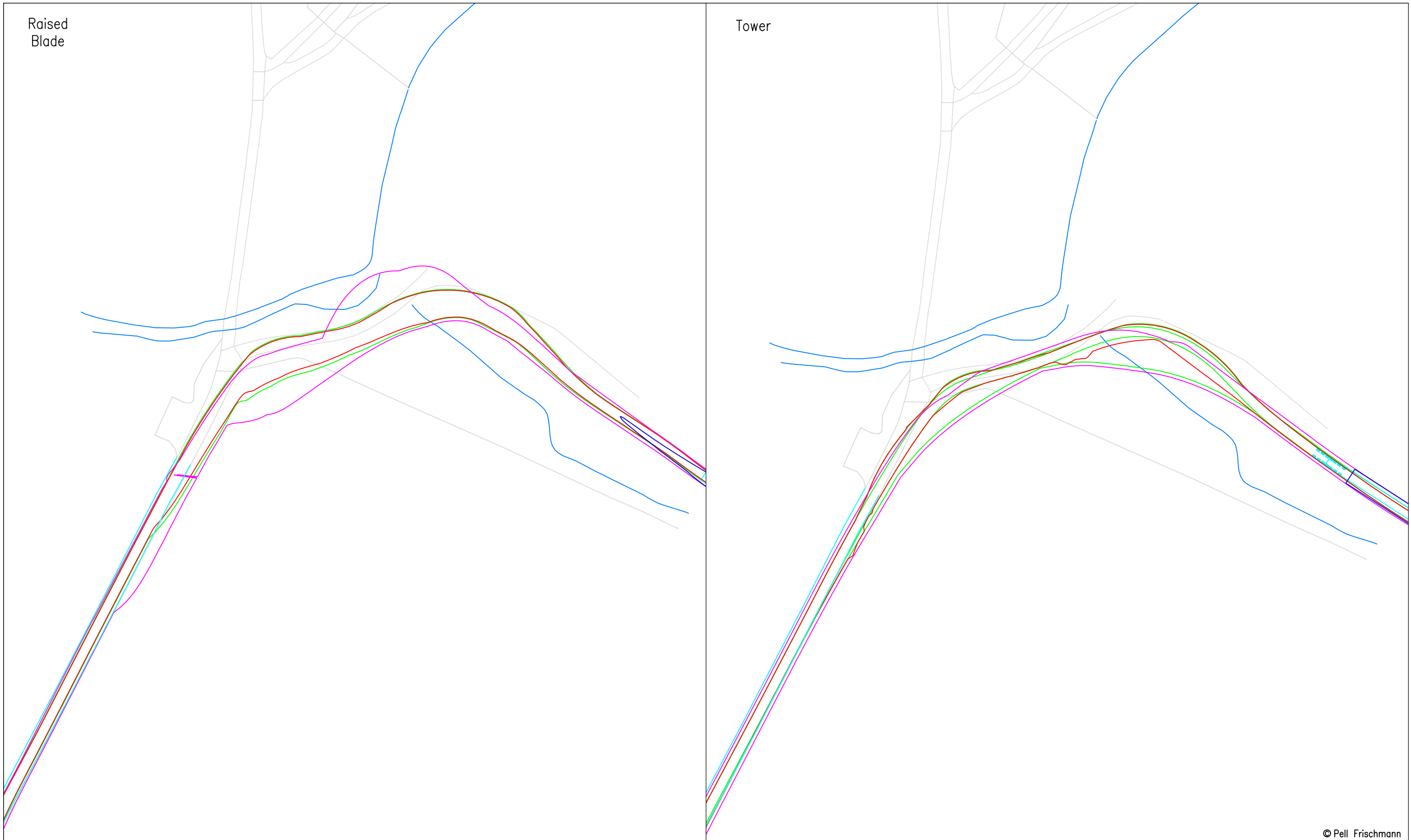


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						Longcroft Wind Farm			1:500 @ A3	
Client						Drawing Title			File No.	
						87.5m Blade and Tower			231026 Longcroft SPA SG170.dwg	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing Status	
						D124 Road (4)			Draft	
Drawing No. SK19A						Point of Interest 36		Revision 1		
Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.										

Raised  
Blade

Tower



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<b>Pell Frischmann</b> <small>93 GEORGE STREET, EDINBURGH, EH2 3ES          Tel: +44 (0)131 240 1270          Email: pfeinburgh@pellfrischmann.com          www.pellfrischmann.com</small>		Project		Longcroft Wind Farm		Drawn	SK	02/06/2022	Scale	1:1500@ A3	
		Client		Drawing Title		Designed	SK	02/06/2022	File No.	231026 Longcroft SPA SG170.dwg	
RES		SPA Location		87.5m Blade and Tower		Checked	GB	27/10/2023	Drawing Status	Draft	
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Point of Interest		37&38		Revision
							Drawing No.	Notes:		1	
							SK20	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			



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						Longcroft Wind Farm			1:500 @ A3													
Client						Drawing Title			File No.													
						87.5m Blade and Tower			231026 Longcroft SPA SG170.dwg													
Key: <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 10px; background-color: red; border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background-color: green; border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background-color: magenta; border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background-color: cyan; border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, red 2px, red 4px); border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, blue 2px, blue 4px); border: 1px solid black;"></td> </tr> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>												Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location			Drawing Status	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																	
Drawing No. SK20A						D124 / Site Access Junction			Draft													
						Point of Interest 37&38 Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			Revision 1													

Appendix C ESDAL  
Correspondence

From: OSD Abnormal Loads Scotland

Sent: 08 June 2023 10:56

To: George Smith

Good Morning,

In response to your email enquiry dated 08th June 2023ac, I can provide the following information on behalf of Police Scotland.

When a haulier has been selected for a particular project and they have been furnished with precise dimensions of the load to be transported by road, thereafter as part of the planning process a detailed route survey is produced by the haulier identifying all potential issues often referred to as "pinch points" along the entire proposed route. The route is then examined and commented upon by Transport Scotland /Transerv and the relevant Local Council amongst other partners.

Police Scotland consider the proposed route primarily from a road safety perspective .If due to the abnormal dimensions it is apparent other road users will be required to be directed to stop along the route by police in order to safely facilitate the movement or encroachment into an opposing undivided carriageway will occur, then police officers will be deployed to warn other road users of the presence of the abnormal load. The timings of the movements are dependent on many factors dependant on the route and Transport Scotland may place restrictions on travel during peak times to ensure journey time reliability along their trunk road network.

In general terms the movement of Abnormal Indivisible Loads (A.I.L) along most if not all routes in more rural areas, from my experience has an impact on the infrastructure of the general area and local community although Police Scotland are not best placed to comment in detail on this subject. Examples of this from previous projects could include, delays to freight traffic travelling to or from ferry ports, delays experienced by bus services including tourist bus tours operated in the area (Invergordon Port being a cruise ship port), delays to teachers and or pupils attending for scheduled school start times and delays.

Regards

Frankie Anderson  
Business Support Administrator  
Vehicle Recovery & Abnormal Loads  
Police Scotland  
Fife Divisional HQ  
Detroit Road  
Glenrothes  
Fife  
KY6 2RJ

From: rsgbrb  
Sent: 09 June 2023 10:48  
To: George Smith  
Subject: RE: Dunside ESDAL

Dear George,

Thank you for your enquiry.

I have assessed the proposed route, and can confirm that no Historical Railways Estate structures will be affected.

I therefore have no objections, or any further comment to make.

Regards  
Tania  
Tania Howell  
Abnormal Loads Officer (on behalf of National Highways Historical Railways Estate)  
Jacobs

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From: Fifetrans Abnormal-Loads  
Sent: 09 June 2023 08:50  
To: George Smith

Hi George,

I would like to let you know that the route you proposed is suited to travel.

Regards  
Mariana Fonseca

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From: SC Abnormal Loads  
Sent: 08 June 2023 11:20  
To: George Smith

Good morning,

No Scottish Canals structures affected.

Thanks,  
Brian.

**From:** SE Abnormal Loads  
**Sent:** 12 June 2023 11:21  
**To:** George Smith  
**Cc:** SE Abnormal Loads

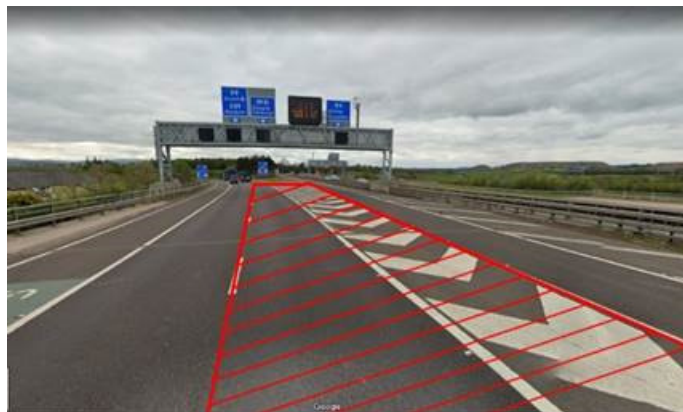
Good morning George,

Having reviewed the below the only issue we have is that we have a blanket 80 tonne restriction across the A68 trunk road so the highlighted sections are the areas we would require to assess further once you have the entire movement configuration confirmed. This will allow us to complete a high level sense check across the region of the A68 you will be travelling.

As you have said below, once you have this, please submit a Special Order and this will allow us to give you a more detailed response once we can assess the axel weights, lengths etc against each structure it will cross.

Also for your information we also have a restriction as follows that you should be aware of:

Due to restrictions on the M9S 1-1 40 Newmains East structure, which is located on the M9 southbound carriageway at Junction 1a with the M90, west of Kirkliston where the M9 crosses the B9080, this load cannot use Lane 2 of the slip road or the central chevrons between the slip road and main carriageway, as shown in the photo below. When using the slip road, the load must stay as close to the bus lane side as possible. When staying on the main carriageway the load may use the hatched area next to the central reservation. The load can still go ahead but must avoid using the restricted lane and follow the above guidance.



Please note that neither the Operating Company nor the Scottish Ministers or Director assume responsibility of any kind in connection with the movement of the relevant abnormal indivisible load or abnormal vehicle, and in following any advice provided, the owner and the operator of the vehicle shall not be relieved of any of their obligations or liabilities under the relevant Legislation.

Kind regards,

**Lewis Kane**

**Graduate Engineer | BEAR Scotland | NMC - South East Unit**

