

Appendix 12.1: Transport Assessment

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Transport Assessment

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Annex A Route Survey Report

1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by LUC, on behalf of Loch Liath Wind Farm Ltd (the Applicant) to undertake a Transport Assessment (TA) for the proposed Loch Liath Wind Farm (the Proposed Development), located to within the Balmacaan Estate of the closest turbine with the closest turbine being located approximately 13km south-west of Drumnadrochit. The Site is located within The Highland Council (THC) administrative area.

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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

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

2 Site Background

2.1 Site Location

The Site is located within Balmacaan Estate, which is directly west of the Great Glen and Loch Ness within THC administrative area. The location of the Site is shown in Figure 1.

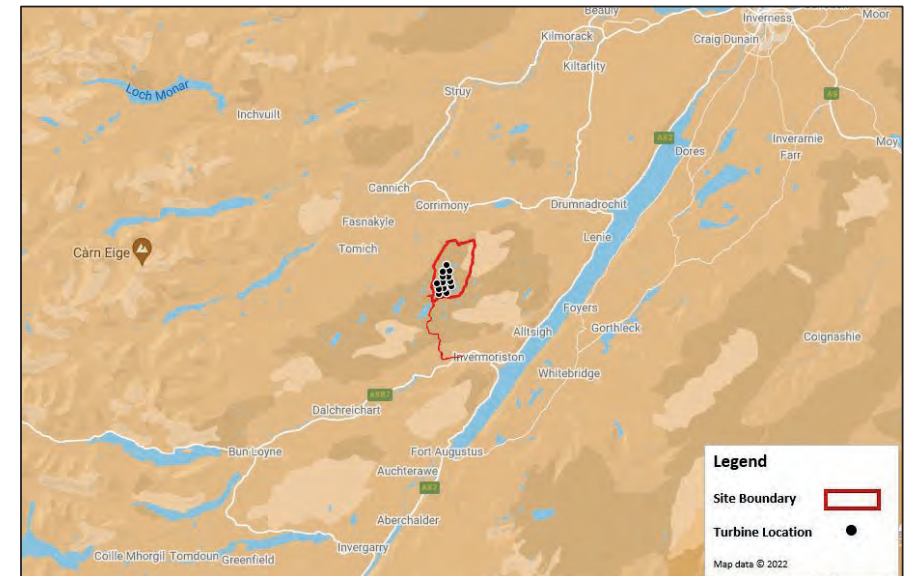


Figure 1 Site Location

In summary, the Proposed Development will comprise:

- 13 wind turbines (three will have tip heights of up to 180 m and ten will have a tip height of up to 200m);
- Foundations supporting each wind turbine;
- Associated crane hardstandings at each turbine location;
- A network of onsite access tracks and associated watercourse crossings;
- A network of underground cables to connect the turbines to the onsite substation;
- A control building and substation;
- A permanent anemometer mast including associated foundations and hardstandings;
- Temporary construction compound, laydown area and car park; and
- Borrow pit.

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 4.

2.2 Candidate Turbines

The Siemens Gamesa 155 has been selected as the candidate turbine for the purpose of this TA. Details of the turbine components are presented in Table 1.

Table 1 Turbine Components Summary¹

Section	Length (m)	Width (m)	Height (m)	Weight (m)
Blade	76.00	4.500	2.882	25.600
Tower	32.240	4.800	4.500	TBC

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

The swept path assessments undertaken in the Route Survey Report (RSR), which is presented in Annex A, have been based upon the blade (using a standard Super Wing carrier and 60-degree lifter as Kyle of Lochalsh) and a top tower section to represent the worst case assessment loads.

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 Super Wing Carrier trailer to reduce the need for mitigation in constrained sections of the route.

A 60-degree blade lifter has been considered for egressing the port at Kyle of Lochalsh.

The tower section would be carried in a 4+7 clamp trailer.



Figure 2 Super Wing Trailer

¹ All turbines have been assessed as a 200m tip height as a robust assessment.



Figure 3 Blade Lifter Trailer



Figure 4 Mid 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 and Guidance

3.2.1 National Planning Framework 4 (NPF4)

The Revised Draft National Planning Framework 4 (RDNPF4) was laid in Parliament on 08 November 2022. The National Planning Framework 4 (NPF4) was approved by Scottish Parliament on 11 January 2023 and it is now passed to Scottish Ministers and is expected to be adopted on 13th February.

Policy 11: Energy within the RDNPF4 notes that:

“Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:

- *Wind farms including repowering, extending, expanding and extending the life of existing wind farms; and*
- *Energy storage, such as battery storage and pumped storage hydro.*

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

- *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
- *Public access, including impact on long distance walking and cycling routes and scenic routes;*
- *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
- *Cumulative impacts.*

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 Transport Assessments (TA) for development proposals in Scotland such that the likely transport impacts 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 impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

3.3 Local Policy and Guidance

3.3.1 Highland-wide Local Development Plan (2012)

The Highland-wide Local Development Plan (LDP) was adopted by THC in April 2012 and is the established planning policy for the Highlands. It sets out a settlement strategy and spatial framework for how the Council foresees development occurring in the forthcoming twenty-year period.

The LDP does not contain any specific transport policy guidance for the Proposed Development. However, Policy 56 is relevant with regards general transport policy. The relevant transport elements from this policy are:

“Development proposals that involve travel generation must include sufficient information with the application to enable the Council to consider any likely on- and off- site transport implications of the development and should:

- *incorporate appropriate mitigation on site and/or off site, provided through developer contributions where necessary, which might include improvements and enhancements to the walking/cycling network and public transport services, road improvements and new roads; and*
- *incorporate an appropriate level of parking provision, having regard to the travel modes and services which will be available and key travel desire lines and to the maximum parking standards laid out in Scottish Planning Policy or those set by the Council.*

When development proposals are under consideration, the Council's Local Development Strategy will be treated as a material consideration.

The Council will seek the implementation and monitoring of Green Travel Plans in support of significant travel generating developments.”

3.3.2 Guidance on the Preparation of Transport Assessments (2014)

THC has prepared guidance on how TAs should be prepared for development sites within The Highlands. The guidance was published by THC in November 2014.

This TA has noted the guidelines and has provided the required assessment.

3.4 Policy and Guidance Summary

The Proposed Development can align with the stated 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 life of the Proposed Development. All three phases 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 all of the three phases, the construction phase is considered to have the greatest impact in terms of transport. Construction plant, bulk materials and turbine sections will be transported to Site, and may potentially have a significant increase in traffic on the study network.

The decommissioning phase involves fewer trips on the 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. Potential effects associated with decommissioning are therefore not assessed in detail in Chapter 12.

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. Potential effects associated with operation are therefore not assessed in detail in Chapter 12.

It should be noted however the construction effects are short lived and temporary in nature.

4.3 Scoping Discussions

The Applicant submitted a request for 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 Access, Traffic and Transport Chapter of the EIA Report (Volume 1: Chapter 12).

5 Baseline Conditions

5.1 Access Arrangement

The Proposed Development will be accessed through the existing Bhlaraidh Wind Farm access, located along the A887. Vehicles will then reach the turbine locations through private access tracks. All vehicles will access and egress the Site through this access.

5.2 Study Determination

The Study Area is shown in Figure 5 and indicates local 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 Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

Strategic access to the Site is available from the north and south of the Site via the A82 (T), from the west via the A87 (T) and along the A887 (T) where the Site entrance is located from the existing Bhlaraidh Wind Farm access.

It is proposed that turbine blades will be delivered from Kyle of Lochalsh Port to the west of the Site, while all other turbine components will be delivered from Corpach Port.

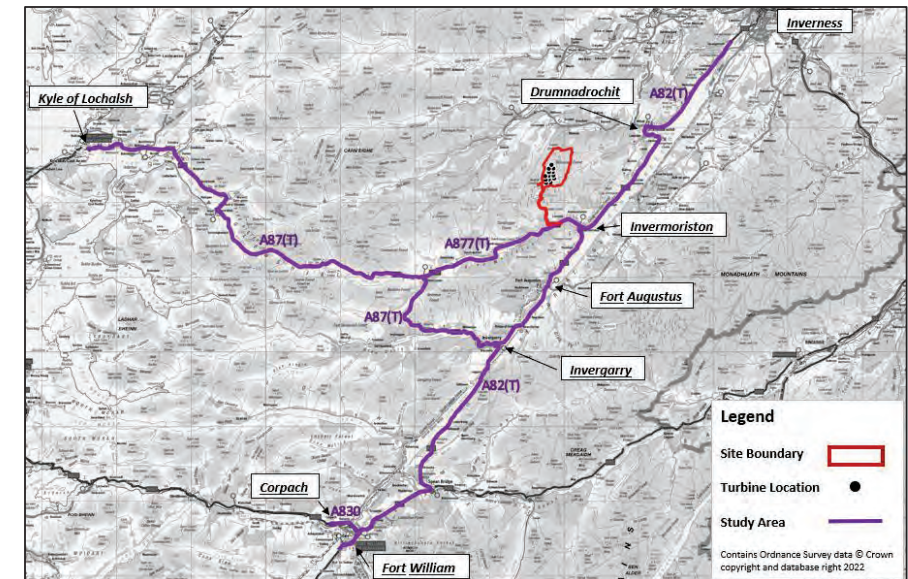


Figure 5 Assessment Study Area

The Study Area for this assessment is as follows:

- A87, between Kyle of Lochalsh and Invergarry;
- A887, between Bun Loyne and Invermoriston;

- A82, between Fort William and south of Inverness; and
- A830, between Lochybridge and Corpach.

5.3 Pedestrian and Cyclist Networks

A review of The Highland Council's Core Path network (<https://highland.maps.arcgis.com/apps/webappviewer/>) indicates that there are no Core Paths in the vicinity of the Site access. However, a small section of route H117 is located along the proposed access to the Proposed Development and this is listed as an "other route" and is not designated as a Right of Way (RoW).

A review of Sustrans' Map of the National Cycle Network (<https://www.sustrans.org.uk/national-cycle-network>) indicates that there are no National Cycle Network routes in the vicinity of the Site access or along the AIL delivery routes.

The Great Glen Way is a 127 km waymarked route between Inverness and Fort William which is mainly traffic-free, however there are sections in Drumnadrochit, Invermoriston, Fort Augustus and Invergarry where pedestrians use the footways beside the highway and at these locations cyclists and horse riders travel along the road.

5.4 Road Access

The A87 is a two-way single carriageway which runs from Invergarry to Uig, in the north of Skye and is predominantly subject to the national speed limit, however this reduces when traveling through villages along the route. The A87 forms part of the trunk road network which is maintained by BEAR Scotland in this area.

The A887 is a two-way single carriageway which forms part of the trunk road network and links the A87, at Bun Loyne, to the A82, at Invermoriston. The A887 is predominantly subject to the national speed limit.

The A82 is a two-way single carriageway which forms part of the trunk road network and links Glasgow to Inverness via Fort William. The A82 is predominantly subject to the national speed limit.

The A830 is a two-way single carriageway road which forms part of the trunk road network. The section of the A830 near the access to Corpach Port is subject to a speed limit of 40mph, however, the road is generally subject to the national speed limit.

5.5 Existing Traffic Conditions

Traffic flow information was obtained from the Transport Scotland (TS) database and Department for Transport (DfT) Traffic Statistics database for the following count points:

1. A887, west of Site Access (near Bun Loyne) (DfT 40958);
2. A887, east of Site Access (assumed traffic flow data from DfT 40958);
3. A82, south of Invermoriston (DfT 50707);
4. A82, east of Invergarry (DfT 10760);
5. A82, northwest of Spean Bridge (TS ATC01036);
6. A82, Lochybridge (DfT 91196);
7. A830, east of Blar Mhor Roundabout (DfT 793);
8. A82, Fort William (DfT 30767);
9. A87, south of A87 / A887 (DfT 30776);
10. A87, west of A87 / A887 (DfT 10770);
11. A87, south of Dornie (TS ATCNW004);
12. A87, west of Balmacara (DfT 768);
13. A87, west of Kyle of Lochalsh (TS JTC00147);
14. A82, south of Drumnadrochit (DfT 758) and
15. A82, north of Lochend (DfT 20765).

These sites were identified as being areas where sensitive receptors on the access route would be located. A full receptor sensitivity and effect review is prepared in the Access, Traffic and Transport Chapter of the EIA Report (Volume 1: Chapter 12).

The locations of the count sites are shown in Figure 6.

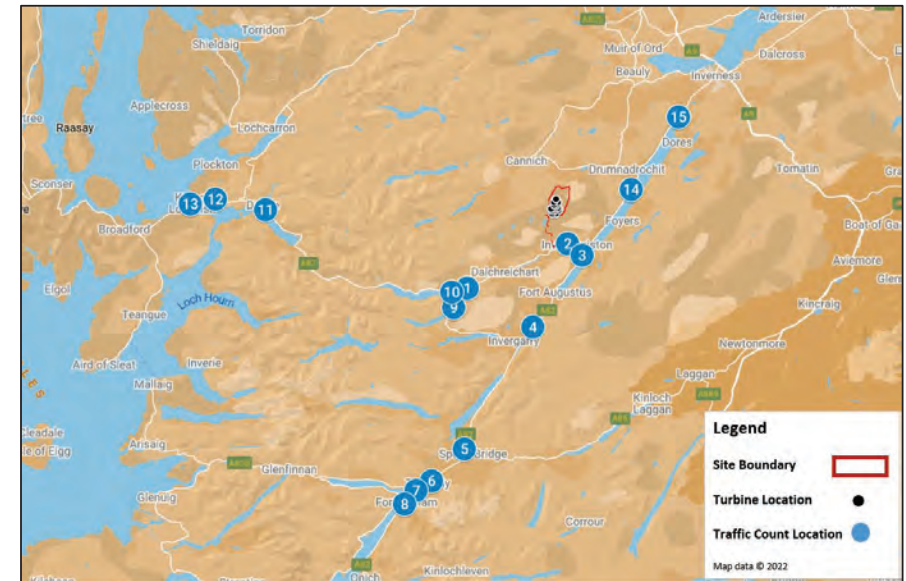


Figure 6 Traffic Count Locations

The traffic counters allowed the traffic flows to be split into vehicle classes and the data have been summarised into cars / light goods vehicles (LGV) and heavy goods vehicles (HGVs) (buses and all goods vehicles >3.5 tonnes gross maximum weight).

The traffic flows for the DfT count locations were extracted for 2019 flows, as these flows would not be affected by Covid-19 travel restrictions. A National Road Traffic Forecast (NRTF) high growth factor of 1.042 was applied to the 2019 flows in order to estimate 2022 flows. Table 2 summarises the 24-hour average daily traffic data collected at the count sites.

Table 2 24-hour Average Traffic Data (2022)

Ref. No.	Survey Location	Cars / LGV	HGV	Total
1	A887, west of Site Access (near Bun Loyne)	873	174	1,047
2	A887, east of Site Access*	873	174	1,047
3	A82, south of Invermoriston	2,592	253	2,846
4	A82, east of Invergarry	2,591	243	2,834
5	A82, northwest of Spean Bridge	3,176	778	3,954
6	A82, Lochybridge	5,349	582	5,931
7	A830, east of Blar Mhor Roundabout	8,733	560	9,293
8	A82, Fort William	10,478	667	11,145
9	A87, south of A87 / A887	1,456	111	1,567

Ref. No.	Survey Location	Cars / LGV	HGV	Total
10	A87, west of A87 / A887	2,130	233	2,363
11	A87, south of Dornie	2,755	612	3,367
12	A87, west of Balmacara	3,839	252	4,091
13	A87, west of Kyle of Lochalsh	3,400	591	3,991
14	A82, south of Drumnadrochit	3,392	447	3,839
15	A82, north of Lochend	6,224	728	6,952

*Assumed Count Point based on traffic flow from DfT Count Point 40958

Please note that variances may occur due to rounding.

5.6 Accident Review

Road traffic accident data for the period commencing 01 January 2018 through to the 30 June 2021 was obtained from the online resource crashmap.co.uk which uses data collected by the police about road traffic crashes occurring on British roads. It should be noted that traffic information available for 2021 is provisional data until June.

The statistics are categorised into three categories, namely "Slight" for damage only incidents, "Serious" for injury accidents and "Fatal" for accidents that result in a death.

The Accident Study Area comprises the following links:

- The A887, between Bun Loyne and Invermoriston;
- The A87, between Bun Loyne and Kyle of Lochalsh;
- The A87, between Bun Loyne and Invergarry;
- The A82, between Invergarry and Lagnalean;
- The A82, between Invergarry and Fort William; and
- The A830, between Lochybridge and Corpach.

5.6.1 The A887, between Bun Loyne and Invermoriston

A summary analysis of the incidents along the A887, between Bun Loyne and Invermoriston indicates that:

- A total of two accidents were recorded along the A887, of which one accident was recorded as slight and one accident was recorded as serious; and
- The two accidents involving cars occurred at the south side of the narrow bridge in Glenmoriston, where northbound traffic are to give way to oncoming southbound vehicles.

5.6.2 The A87, between Bun Loyne and Kyle of Lochalsh

A summary analysis of the incidents along the A87, between Bun Loyne and Kyle of Lochalsh indicates that:

- A total of 18 accidents were recorded along the A87, between Bun Loyne and Kyle of Lochalsh, of which 11 accidents were recorded as slight, six were recorded as serious and one fatality was recorded;
- The fatal accident involved a single car accident to the east of Kirkton;
- A total of three accidents involved motorcycles, of which two were classified as serious and one was classified as slight;
- A total of four accidents involved HGVs, of which one was classified as slight and three were classified as serious; and
- One accident involved a bus and was classified as serious.

5.6.3 The A87, between Bun Loyne and Invergarry

A summary analysis of the incidents along the A87, between Bun Loyne and Invergarry indicates that:

- A total of 15 accidents were recorded along the A87, between Bun Loyne and Invergarry, of which eight were recorded as slight, six were recorded as serious and one fatality was recorded;
- The fatal accident involved a single car accident and occurred at the bridge between Glen Garry Viewpoint West and Glen Garry Viewpoint East; and
- A total of two accidents involved motorcycles, which were both classified as slight. Both of these accidents also involved cars.

5.6.4 The A87, between Invergarry and Lagnalean

A summary analysis of the incidents along the A87, between Invergarry and Lagnalean indicates that:

- A total of 26 accidents were recorded along A82, between Invergarry and Lagnalean, of which 15 were recorded as slight, seven were recorded as serious and four fatalities were recorded;
- One fatal accident occurred approximately 100m to the south of the entrance to Dochgarroch Primary School, near the southbound bus layby;
- One fatal accident involved a pedestrian and occurred near the access to Dochfour House (to the north of Lochend Burn);
- One fatal accident involved a pedestrian and an HGV and occurred approximately 275m to the east of Kerrowdown cul-de-sac;
- One fatal accident involving two cars occurred approximately 15m to the east of Loch Ness Bay Camping;
- A total of five accidents involved motorcycles, of which three accidents were classified as slight and two accidents were classified as serious;
- A total of three accidents involved HGVs, of which one was classified as fatal, one was classified as serious and one as slight;
- One incident involved a bus, which was classified as slight; and
- Pedestrians were involved in a total of four accidents, of which two were classified as fatal and two were classified as slight.

5.6.5 The A82, between Invergarry and Fort William

A summary analysis of the incidents along the A82, between Invergarry and Fort William indicates that:

- A total of 36 accidents were recorded along the A82, between Invergarry and Fort William, of which 18 accidents were classified as slight and 16 were classified as serious. Two fatalities were recorded within the Accident Study Area;
- One fatal accident occurred approximately 150m to the north of Glen Gloy cul-de-sac and involved HGVs;
- One fatal accident occurred approximately 1km to the northeast of the road signposted for Tomacharich and Camisky and involved cars;
- A total of four accidents involved motorcycles, which were all classified as serious;
- A total of five accidents involved HGVs, which were classified as three as slight, one as serious and one fatality;
- One bus was involved in an incident which was classified as slight;
- A total of four incidents involved pedal cycles of which one was classified as serious and three were classified as slight. Two of the accidents which were classified as slight occurred on the A82 / Bus Station Access roundabout; and
- One accident involved a pedestrian and was classified as slight. The incident involved a car and occurred near the Ben Nevis Services Station.

5.6.6 The A830, between Lochybridge and Corpach.

A summary analysis of the incidents along the A830, between Lochybridge and Corpach indicates that:

- A total of two accidents were recorded along the A830, between Lochybridge and Corpach, one of the accidents was classified as slight and one accident involving a fatality occurred;
- The accident involving a fatality occurred approximately 250m, to the northwest of Blar Mhor Roundabout and involved an HGV and a pedestrian; and
- The accident which was classified as slight occurred at the Kilmallie Road / A830 priority junction and involved cars.

5.7 Future Baseline Traffic Conditions

5.7.1 2027 Traffic Flows, excluding Committed Development Trips

Construction of the project could commence during 2027 if consent is granted and is anticipated to take up to 18 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction and typical operational phase, base year traffic flows were determined by applying a NRTF high growth factor to the 2022 traffic flows in Table 2.

The NRTF high growth factor for 2022 to 2027 is 1.062. These factors were applied to the 2022 survey data to estimate the 2027 Base traffic flows shown in Table 3. This will be used in the Construction Peak Traffic Impact Assessment.

Table 3 24-hour Average Traffic Data (2027)

Ref. No.	Survey Location	Cars / LGV	HGV	Total
1	A887, west of Site Access (near Bun Loyne)	927	185	1,112
2	A887, east of Site Access*	927	185	1,112
3	A82, south of Invermoriston	2,753	269	3,022
4	A82, east of Invergarry	2,752	258	3,010
5	A82, northwest of Spean Bridge	3,373	827	4,200
6	A82, Lochybridge	5,680	619	6,299
7	A830, east of Blar Mhor Roundabout	9,274	594	9,869
8	A82, Fort William	11,128	708	11,836
9	A87, south of A87 / A887	1,546	118	1,664
10	A87, west of A87 / A887	2,262	248	2,510
11	A87, south of Dornie	2,926	650	3,575
12	A87, west of Balmacara	4,077	268	4,345
13	A87, west of Kyle of Lochalsh	3,611	627	4,238
14	A82, south of Drumnadrochit	3,602	475	4,077
15	A82, north of Lochend	6,610	774	7,383

*Assumed Count Point based on traffic flow from DFT Count Point 40958

Please note that variances may occur due to rounding.

5.8 Committed Developments

5.8.1 Onshore Wind Farm and Substation Planning Applications

A review of surrounding wind farm planning applications has been undertaken and finds are detailed in Table 4.

Table 4 Surrounding Wind Farm Planning Applications

Reference	Name	Distance (Approx.)	Number of Wind Turbines	Current Status
21/04080/S36	Bhlaraidh Wind Farm Extension	< 1 km	15	Consented

Reference	Name	Distance (Approx.)	Number of Wind Turbines	Current Status
14/02879/FUL	Dell Wind Farm	< 20 km	14	Consented
14/02055/S36	Millennium South Wind Farm	< 20 km	10	Consented
21/00101/S36	Corriegarth 2 Wind Farm	< 20 km	14	Under Consideration
22/01760/S36	Bunloinn Wind Farm	< 25 km	10	Under Consideration
20/01796/S36	Cloiche Wind Farm	< 25 km	29	Under Consideration
15/00737/FUL	Aberarder Wind Farm	< 25 km	12	Under Construction ²

Bhlaraidh Wind Farm Extension is to be located to the immediate south of the Proposed Development, and it is proposed that access to the Proposed Development will be via the existing Bhlaraidh Wind Farm. As such, construction traffic associated with Bhlaraidh Wind Farm Extension will travel along the Proposed Development's Study Area.

Dell Wind Farm was granted planning permission subject to conditions on 22 August 2019. Condition 1 relates to the Condition of Development which states that the development is to be commenced within 5 years of the date of the Decision Notice. It is therefore possible that the construction of Dell Wind Farm will be constructed at the same time as the Proposed Development. In September 2021, scoping for a revised planning application for Dell Wind Farm Variation was undertaken which will seek to reduce the number of turbines from 14 to 12 and increase the maximum blade tip height from 130.5m to 149.9m. A review of the transport planning submissions associated with the consented Dell Wind Farm proposal indicates that construction traffic associated with the proposal will travel along the Proposed Development's Study Area.

An Extension of S36 Commencement Period was granted to extend the commencement of development of the Millennium South Section 36 consent to 30 September 2022. As the anticipated year of commencement of construction of the Proposed Development is 2027, it can be reasonably concluded that Millennium South wind farm will either be operational by the time construction on the Proposed Development commences or that the application will have lapsed.

Traffic flows associated with the consented wind farm developments detailed above have not been included in the 2027 Baseline Flows as the construction trips associated with the consented wind farms are temporary in nature and the inclusion of these traffic flows in the baseline will dilute the potential impact that the Loch Liath Wind Farm proposals will have. The approach taken is therefore considered to be an overly robust assessment.

In order to inform the THC of possible issues if the consented onshore wind farm sites were to be constructed concurrently with the Proposed Development and have overlapping peak construction timescales, a combined sensitivity review assessment has been undertaken including Bhlaraidh Wind Farm Extension and the consented Dell Wind Farm construction traffic flows as part of the cumulative assessment in Chapter 12 of the EIA Report.

As Corriegarth 2 Wind Farm, Bunloinn Wind Farm and Millennium South Wind Farm have not been granted planning consent, and Aberarder Wind Farm will be constructed before construction activities commence for the Proposed Development, they are not included in assessment sensitivity review.

It should be noted that any crossover of traffic with the Proposed Development flows would be addressed via the Construction Traffic Management Plan (CTMP), secured by planning condition on the Proposed Development's consent.

² Listed as Under Construction on the Highland Wind Turbine Mapping – as of 16 June 2022 (<https://highland.maps.arcgis.com/apps/webappviewer/index.html?id=5ec04b13a9b049f798cadd5055f1787>)

5.8.2 Other Planning Applications

A review of local online planning applications has been undertaken on the THC planning applications website to determine committed developments 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 determined that the Mixed-Use Development at Drum Farm, Drumnadrochit (Planning Ref. 19/02762/FUL and 19/02761/FUL) should be included within the future baseline.

These committed development trips have been added to the 2027 Baseline flows, previously shown in Table 3, as these trips are anticipated to be permanent trips on the traffic network. The combined flows are presented in Table 5. This will be used in the Construction Peak Traffic Impact Assessment.

Table 5 2027 Future Baseline Flows (including Committed Development Trips)

Ref. No.	Survey Location	Cars / LGV	HGV	Total
1	A887, west of Site Access (near Bun Loyne)	927	185	1,112
2	A887, east of Site Access*	927	185	1,112
3	A82, south of Invermoriston	3,261	269	3,530
4	A82, east of Invergarry	3,260	258	3,518
5	A82, northwest of Spean Bridge	3,881	827	4,708
6	A82, Lochybridge	6,188	619	6,807
7	A830, east of Blar Mhor Roundabout	9,274	594	9,869
8	A82, Fort William	11,636	708	12,344
9	A87, south of A87 / A887	1,546	118	1,664
10	A87, west of A87 / A887	2,262	248	2,510
11	A87, south of Dornie	2,926	650	3,575
12	A87, west of Balmacara	4,077	268	4,345
13	A87, west of Kyle of Lochalsh	3,611	627	4,238
14	A82, south of Drumnadrochit	4,110	475	4,585
15	A82, north of Lochend	7,935	774	8,708

*Assumed Count Point based on traffic flow from DfT Count Point 40958

Please note that variances may occur due to rounding.

It should be noted that the use of Low National Road Traffic Forecast (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 18-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; and
- Abnormal loads consisting of the wind turbine sections and a heavy lift crane.

Average monthly traffic flow data were used to establish the construction trips associated with the Proposed Development based on the assumptions detailed in the following sections.

6.1.2 Construction Staff

Staff would arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce onsite 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 turbine during the short peak period of construction is likely, the maximum number of staff expected onsite could be around 39 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 52 vehicle trips (26 inbound trips and 26 outbound trips) per day during the peak period of construction.

6.1.3 Abnormal Indivisible Load Deliveries

The 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.

In addition to the turbine deliveries, 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 onsite. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the 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 turbine components would be delivered per convoy. This would result in 48 convoys (13 convoys associated with blade deliveries and 35 convoys associated with tower and crane deliveries) on the network, with a total of 290 escort journeys (145 trips in and 145 trips out).

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

Table 6 Turbine Components

Components	Number of Components per turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1

Components	Number of Components per turbine
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

6.1.4 General Deliveries

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

6.1.5 Material Deliveries

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

The Site is large enough to warrant onsite batching of concrete, and concrete for turbine and substation foundations will be mixed onsite. For the purpose of this assessment, it is assumed that deliveries of cement powder and water being delivered by HGV tankers will be delivered from Inverness. Sand and aggregate would be delivered by tipper HGV and is assumed to originate at quarries located off the A82, to the southwest of Inverness.

Individual deliveries associated with the raw materials required for onsite batching have been estimated and result in inbound trips of 29 cement tankers, 415 sand & aggregate tippers and 166 water tankers.

Reinforcement required in the foundations across the site 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
Turbine Foundation	133	1,733	30	58	116
Substation Foundation	20	1	30	1	2

While it is expected that on-site borrow pits will be able to meet at least 70% of the aggregate material requirements for access tracks and crane pads, in order to provide a robust and maximum case assessment, it has been assumed that 50% of the aggregate material will be sourced from quarries offsite. For the purpose of this assessment, it is assumed that all aggregate material would be sourced from a quarry located to the southwest of Inverness, off the A82. The access tracks would generally be 6 m in width and would be designed to accommodate 13 tonne axle loads.

The tracks, crane pads and compounds would require geotextile in the foundations. Geotextile would be delivered to Site in rolls. A total of 410 large rolls could be required at Site and would be delivered by HGV, which would result in a total of 42 journeys (21 inbound trips and 21 outbound trips).

Cables would connect each turbine to the internal substation and control building. Trip estimates for the cable materials and ducting are provided below in Tables 8, 9 and 10. Three cables would be provided within each cable trench and would be backfilled with cable sand. The cable materials would be likely be delivered from the Central Belt, via the A82, to the south of the Site and it is assumed that cable sand will be delivered from a quarry located to the southwest of Inverness, off the A82.

Table 8 Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Cables	30,773	500	62	7	14

Table 9 Cable Sand Trip Estimate

Element	Volume (m³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Cable Sand	3,462	5,539	20	277	554

Table 10 Ducting Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Ducting	750	5	150	8	15

A substation building would be constructed onsite. This will require deliveries of building materials and structural elements and would result in 86 journeys (43 inbound and 43 outbound).

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.

The peak of construction occurs in Month 8 with 130 journeys per day (52 Car / Lights and 78 HGV journeys).

6.1.6 Distribution of Construction Trips

The distribution of the Proposed Development traffic on the network would 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 and exits the Site via the existing Bhlaraidh Wind Farm access, located along the A887. Vehicles will then reach the turbine locations through access tracks. All vehicles will access and egress the Site through this access;
- Deliveries associated with the batching of concrete onsite such as cement and water would arrive via the A82, to the southwest of Inverness;
- Aggregate materials for use in the construction of the site infrastructure as well as for onsite concrete batching would be sourced from local quarries. For the purposes of the assessment, it is assumed that all material would be taken from the quarries located to the southwest of Inverness. The Balance of Plant (BoP) contractor would confirm final quarry and material sourcing with THC in the CTMP;
- HGV deliveries associated with the High Voltage (HV) electrical installation, control buildings, batteries and associated materials would arrive via the A82, to the south of the Site;
- Staff working at the Site are likely to be based locally. It is assumed that 50% would arrive from Inverness, 25% from Fort Augustus and 25% from Fort William;
- General Site deliveries would be via the A82 to the north of the Site. These are generally smaller rigid HGV vehicles.

Loads relating to the turbine components would be delivered from two separate proposed Ports of Entry (PoE) for the Site, which are Kyle of Lochalsh Harbour for the blades and Corpach Harbour for the tower components.

Abnormal loads associated with the blade sections of the wind turbines will depart the harbour at Kyle of Lochalsh and travel to the Site:

- Loads will exit Kyle of Lochalsh Port using a blade lifting trailer and turn right onto the A87;
- Continue on the A87 to Kyleakin Roundabout and take the third exit to stay on the A87;
- Continue on the A87 and turn right into the proposed storage area located at the Broadford Aerodrome, where the blades will be transferred onto a standard trailer;
- Loads will exit the Broadford Aerodrome and turn left onto the A87 travelling eastbound;
- Continue on the A87 to Kyleakin Roundabout and take the first exit to stay on the A87;
- Continue straight to join the A887;
- Loads will turn left into Bhlaraidh Wind Farm and will proceed to the turbine locations through access tracks.

Table 11 Construction Traffic Profile

Activity	Class	Month																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment	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	40	40
Imported Stone	HGV	1,324	1,324	1,324	1,324	1,324	1,324	1,324	1,324	1,324									
Reinforcement	HGV					30	30	30	30										
Concrete Deliveries	HGV				174	174	174	174	174	174	174								
Cable and Ducting Deliveries	HGV								10	10		10							
Cabling Sand	HGV								92	92	92	92	92	92					
Geotextile Deliveries	HGV				14		14		14										
Substation Building	HGV							22	22	22	22								
Cranes	HGV											10			10				
Turbine Tower etc. Deliveries	HGV											53	53	53	53				
Turbine Blades Deliveries	HGV											20	20	20	20				
ALL Escorts (Tower etc.)	Car & LGV											53	53	53	53				
ALL Escorts (Blades)	Car & LGV											20	20	20	20				
"Commissioning and Demobilisation"	Car & LGV															40	40	40	40
Staff	Car & LGV	616	616	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	616	616
Total HGV		1,414	1,414	1,364	1,552	1,568	1,582	1,589	1,705	328	338	215	215	205	123	40	40	90	90
Total Cars / LGV		616	616	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,217	1,217	1,217	1,217	1,184	1,184	656	656
Total Movements		2,030	2,030	2,508	2,696	2,712	2,726	2,733	2,849	1,472	1,482	1,432	1,431	1,422	1,339	1,224	1,224	746	746
Total HGV per Day		64	64	62	71	71	72	72	78	15	15	10	10	9	6	2	2	4	4
Total Cars / LGV per Day		28	28	52	52	52	52	52	52	52	52	55	55	55	55	54	54	30	30
Total per Day		92	92	114	123	123	124	124	130	67	67	65	65	65	61	56	56	34	34

Please note variances due to rounding may occur.

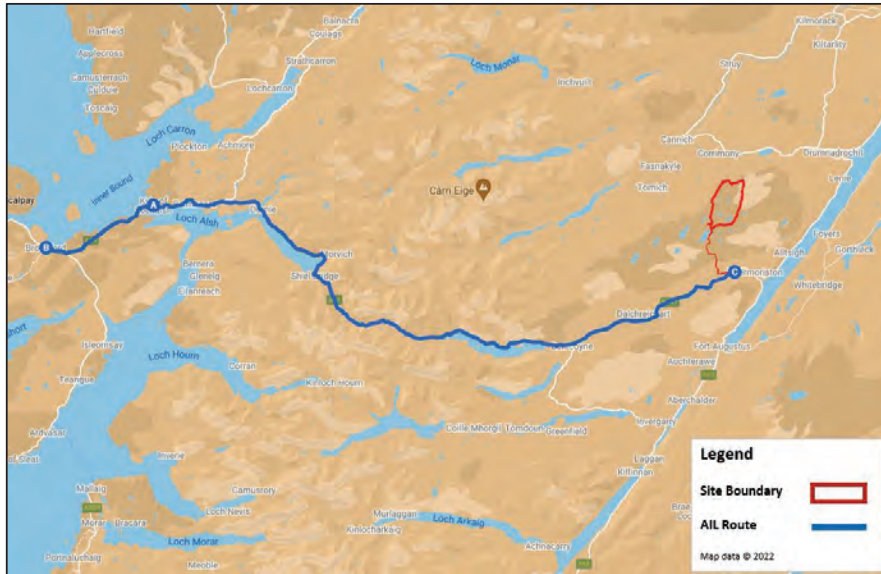


Figure 7 AIL Blade Component Delivery Route

Abnormal loads associated with the tower sections of the wind turbines will depart the Corpach Harbour and travel to the Site:

- Loads will exit Corpach Harbour via the main gate and turn right onto the A830;
- Continue on the A830 to Lochybridge Roundabout and take the first exit onto the A82; and
- Loads will turn left onto the A887 and right to utilise the existing Bhlaraidh Wind Farm tracks towards the turbine locations.

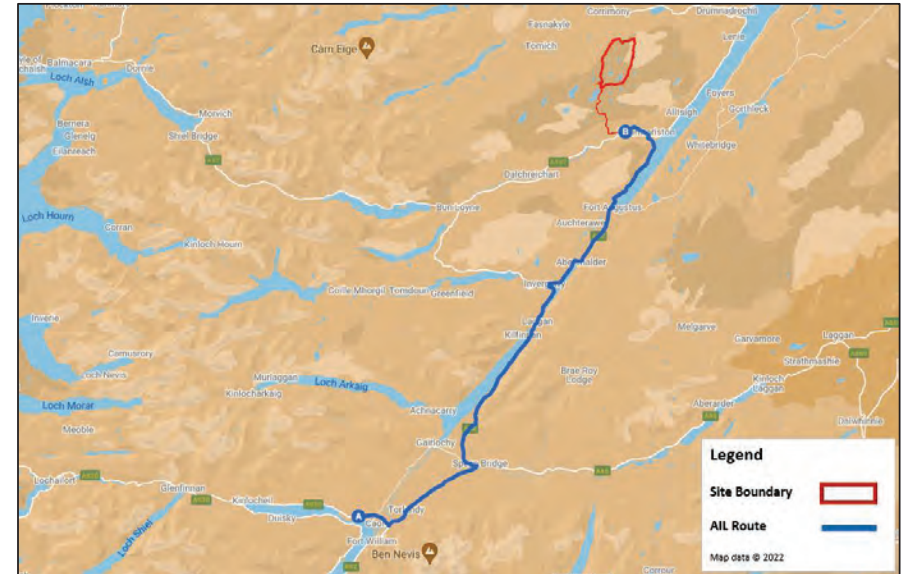


Figure 8 AIL Tower Component Delivery Route

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

Ref. No.	Survey Location	Cars / LGV	HGV	Total
1	A887, west of Site Access (near Bun Loyne)	10	0	10
2	A887, east of Site Access*	42	78	119
3	A82, south of Invermoriston	10	0	11
4	A82, east of Invergarry	10	0	11
5	A82, northwest of Spean Bridge	10	0	11
6	A82, Lochybridge	10	0	11
7	A830, east of Blar Mhor Roundabout	10	0	11
8	A82, Fort William	10	0	10
9	A87, south of A87 / A887	0	0	0
10	A87, west of A87 / A887	10	0	10
11	A87, south of Dornie	10	0	10
12	A87, west of Balmacara	10	0	10
13	A87, west of Kyle of Lochalsh	10	0	10
14	A82, south of Drumnadrochit	31	77	108
15	A82, north of Lochend	31	77	108

*Assumed Count Point based on traffic flow from DfT Count Point 40958

Please note that variances may occur due to rounding.

6.2 Decommissioning Phase

Prior to decommissioning of the Proposed Development, a traffic assessment will 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 onsite 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 (2027) 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 2027 Future Baseline + Construction Traffic (based on peak construction phase: Month 8)

Ref. No.	Survey Location	Cars / LGV	HGV	Total	Cars / LGV % Increase	HGV % Increase	Total % Increase
1	A887, west of Site Access (near Bun Loyne)	938	185	1,123	1.12%	0.00%	0.94%
2	A887, east of Site Access*	969	262	1,231	4.49%	41.94%	10.71%
3	A82, south of Invermoriston	3,272	269	3,541	0.32%	0.16%	0.31%
4	A82, east of Invergarry	3,271	258	3,529	0.32%	0.17%	0.31%
5	A82, northwest of Spean Bridge	3,891	827	4,719	0.27%	0.05%	0.23%
6	A82, Lochybridge	6,199	619	6,818	0.17%	0.07%	0.16%
7	A830, east of Blar Mhor Roundabout	9,285	595	9,880	0.11%	0.07%	0.11%
8	A82, Fort William	11,647	708	12,355	0.09%	0.00%	0.08%
9	A87, south of A87 / A887	1,546	118	1,664	0.00%	0.00%	0.00%
10	A87, west of A87 / A887	2,272	248	2,520	0.46%	0.00%	0.41%
11	A87, south of Dornie	2,936	650	3,586	0.36%	0.00%	0.29%
12	A87, west of Balmacara	4,087	268	4,355	0.26%	0.00%	0.24%
13	A87, west of Kyle of Lochalsh	3,621	627	4,249	0.29%	0.00%	0.25%
14	A82, south of Drumnadrochit	4,141	552	4,693	0.76%	16.24%	2.36%
15	A82, north of Lochend	7,966	851	8,817	0.39%	9.96%	1.24%

*Assumed Count Point based on traffic flow from DfT Count Point 40958

Please note that variances may occur due to rounding

The total traffic movements are not predicted to increase by more than 30% on all of the study network, in line with IEMA guidelines. Total traffic levels are all below 10% (with the exception of at the site access junction) which are considered insignificant and is similar in scale to what is generally accepted as daily variation in traffic flows.

The total HGV traffic movements will increase significantly on the A887, to the east of the Site's access. Whilst this increase is statistically significant, it is generally caused by the relatively low HGV flows on the A887 and will see an additional 78 HGV journeys per day (39 inbound and 39 outbound). This approximately represents approximately four additional inbound HGV journeys every hour during construction activities, which is not considered significant in operational terms.

It should also be noted the construction phase is transitory in nature and the peak of construction activities is short-lived.

A review of 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 2027 Daily Traffic (12 hour) Capacity Review Summary

Ref. No.	Survey Location	2027 Baseline Flow	2027 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	A887, west of Site Access (near Bun Loyne)	1,112	1,123	21,600	95%
2	A887, east of Site Access*	1,112	1,231	21,600	94%
3	A82, south of Invermoriston	3,530	3,541	21,600	84%
4	A82, east of Invergarry	3,518	3,529	21,600	84%
5	A82, northwest of Spean Bridge	4,708	4,719	21,600	78%
6	A82, Lochybridge	6,807	6,818	21,600	68%
7	A830, east of Blar Mhor Roundabout	9,869	9,880	28,800	66%
8	A82, Fort William	12,344	12,355	81,600	85%
9	A87, south of A87 / A887	1,664	1,664	21,600	92%
10	A87, west of A87 / A887	2,510	2,520	21,600	88%
11	A87, south of Dornie	3,575	3,586	21,600	83%
12	A87, west of Balmacara	4,345	4,355	21,600	80%
13	A87, west of Kyle of Lochalsh	4,238	4,249	21,600	80%
14	A82, south of Drumnadrochit	4,585	4,693	21,600	78%
15	A82, north of Lochend	8,708	8,817	21,600	59%

Please note that variances may occur due to rounding.

The results indicate there are no road capacity issues with the Proposed Development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

8 Proposed Traffic Mitigation Measures

8.1 Construction Phase

The following measures would be implemented through a CTMP during the construction phase. The CTMP would be agreed with THC prior to construction works commencing and will include the following measures.

- Where possible the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Traffic Management Plan;
- 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 the views of THC;
- Normal site working hours would be limited to between 0700 and 1900 (Monday to Friday) and 0700 and 1300 (Saturday) though component delivery, turbine erection and emergency works may take place outside these hours;
- Appropriate traffic management measures would be put in place on the A887 to avoid conflict with general traffic, subject to the agreement of the roads authority. Typical measures would include HGV turning and crossing signs and/ or banksmen at the Site's access and warning signs;
- Provide construction updates on the project website and/ or a newsletter to be distributed to residents within an agreed distance of the Site.
- Adoption of a voluntary speed limit of 15 mph for all construction vehicles through Invermoriston, Lochend / Dochgarroch, Drumnadrochit, Fort Augustus, Kyle of Lochalsh, Inverinate, Shiel Bridge, Invergarry, Spean Bridge, Fort William and Corpach;
- All drivers would be required to attend an induction to include:
 - A tool box 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.

THC may require an agreement to cover the cost of abnormal wear and tear on the A887 within 200 m of the Site's access junction.

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 state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Roads Authority. 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.

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

There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

8.2 Abnormal Load 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 Roads Authorities 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 at the following locations:

- On the A87 Kyleakin Roundabout where contraflow measures will be introduced so that the loads can navigate through the junction;
- On the A82, A87 and A887 where the loads may straddle the centre line or where fast moving oncoming traffic may be encountered;
- Where traffic turns at a road junction, 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 9. 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.

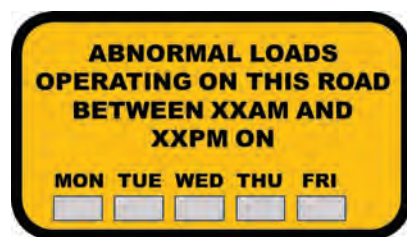


Figure 9 Example Information Sign

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 wider Construction Traffic Management Plan for the Proposed Development.

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;

8.3 Public Information

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

Information would relate to expected vehicle movements from the PoE 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.

8.4 Convoy System

A police escort would be required to facilitate the delivery of the predicted loads. 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 would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.

The abnormal loads convoys would 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 would travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

8.5 Operational Phase Mitigation

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

9 Summary & Conclusions

Pell Frischmann has been commissioned by LUC, on behalf of Loch Liath Wind Farm Ltd (the Applicant) to undertake a Transport Assessment for the proposed Loch Liath Wind Farm (the Proposed Development), located to within the Balmacaan Estate approximately 4km to the south west of Drumnadrochit. The Site is located within The Highland Council administrative area. 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 would 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 programme. During this month, an average of 78 HGV movements is predicted per day and it is estimated that there would be a further 52 car and light van movements per day to transport construction workers to and from the Site.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows.

No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature.

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 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.

This report is to be regarded as confidential to our Client and is intended for their use only and may not be assigned except in accordance with the contract. Consequently, and in accordance with current practice, any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded, except to the extent that the report has been assigned in accordance with the contract. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

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Loch Liath Wind Farm

Abnormal Indivisible Load Route Survey

April 2023

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- Appendix A Points of Interest
- Appendix B Swept Path Assessments

1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by Statkraft to undertake a route access review of potential delivery routes for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Loch Liath Wind Farm, located to the west of Levishe, Scottish Highlands.

The Route Survey Report (RSR) has been prepared to help inform Statkraft on the likely issues associated with the development of the site with regards to off-site transport and access for AIL traffic. 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 Statkraft at this point in time.

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

2 Site Background

2.1 Site Location

The development site is located to the west of Levishie, Scottish Highlands. Figure 2-1 illustrates the general site location.

Figure 2-1: Site Location Plan



2.2 Candidate Turbine

Statkraft have indicated that they wish to consider the worst case components from a Siemens Gamesa SGRE155 turbine at a tip height of 200m.

The details of the components have been provided by Siemens and are detailed in Table 2-1.

Table 2-1: Turbine Components Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	76.571	4.424	3.000	25.600
Base Tower	14.034	4.800	4.800	84.400
Mid Tower 1	19.880	4.800	4.800	84.300
Mid Tower 2	22.400	4.800	4.794	73.900
Mid Tower 3	28.560	4.794	4.102	72.000
Top Tower	35.040	4.102	3.574	70.300

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 Superwing Carrier trailer to reduce the need for mitigation in constrained sections of the route.

Where constraints are extreme, loads would be transferred onto a Goldhofer blade lifting trailer. This trailer has the ability to lift blades up to a maximum angle of 60 degrees, lifting blades over potential constraints and shortening the plan view length.

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

Figure 2-2: Superwing Carrier Trailer



Figure 2-3: Blade Lifting Trailer



Figure 2-4: Tower Trailer



3 Access Route Review

3.1 Port of Entry

Two potential Ports of Entry (PoE) have been assessed as part of this study; Kyle of Lochalsh Harbour and Corpach Harbour. The route from Corpach Harbour has been assessed for tower loads only.

Statkraft has requested that an assessment is completed for blade only loads from Kyle of Lochalsh Harbour to site. This will involve the use of a blade lifter to exit the port and transport blades to Broadford Aerodrome where they will be transferred onto superwing carrier trailers for onward delivery to the proposed site. The route from Kyle of Lochalsh Harbour has only been assessed for blade loads due to weight restrictions for other components. Loads can be offloaded by geared vessels or onshore mobile cranes. The harbour has been used for delivery of components for a number of windfarms including Bhlaraidh and Stronelairg with the largest turbine being a Vestas V117 and Millennium 1 and 2, the largest turbine being a Senvion MM92.

3.2 Proposed Access Route

3.2.1 Kyle of Lochalsh Route – Blade Only

The proposed access route to site is detailed below:

- Loads would exit Kyle of Lochalsh Harbour and turn left to join the A87 westbound;
- Loads would cross the Skye Bridge onto the Isle of Skye;
- Loads would turn right into the proposed storage area in Broadford Aerodrome to transfer onto the Superwing and tower clamp trailers;
- Loads would exit Broadford Aerodrome and proceed eastbound on the A87;
- Loads would continue eastbound onto the A887 at Bun Loynne; and
- Loads would continue on the A887 eastbound to the site entrance west of Invermoriston.

Figure 3-1: Proposed Route - Kyle of Lochalsh



3.2.2 Corpach Harbour Route – Tower Only

The proposed access route to site is detailed below:

- Loads would exit Corpach Harbour via the main gate and turn right to join the A830 eastbound;
- Loads would take the first exit at Lochybridge Roundabout to join the A82 northbound;
- Loads would turn left at the junction in Invermoriston to join the A887 westbound; and
- Loads would continue on the A887 westbound to the site access.

Figure 3-2: Proposed Access Route - Corpach



3.3 Route Constraints




The constraints noted on the desktop review are provided in the tables below. These cover all constraints from the port access gate through to the site access junction. No consideration of the transport issues within the port or development site have been undertaken and this includes the design of the site access junction.





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




Table 3-1: Constraint Points and Details – Kyle of Lochalsh Route


POI	Key Constraint	Details
1 & 2	Kyle of Lochalsh Exit & A87 Junction	<p>Loads will turn left to exit the west pier onto the adjacent access road. Loads will then turn left at the junction to join the A87 westbound.</p> <p>To exit the port, blade loads must be placed in a blade lifting trailer. They will be raised to 60° to and should remain in the upright position through to Broadford Aerodrome. The blade can be lowered on straight sections if required.</p> <p>Following transfer at Broadford Aerodrome, loads will pass this location on the A87 eastbound. Mitigation for both manoeuvres has been included.</p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the fence and rail tracks on exiting the pier where two lighting columns should be removed. A token system is run by Network Rail for temporary occupations and must be agreed prior to deliveries. Third party land will be required.</p> <p>Loads will over-sail both verges of the port exit road and a load bearing surface should be laid in the northern verge to allow over-run.</p> <p>The blade tip will over-sail third party land to the east of the road at the junction.</p> <p>On the return from Broadford Aerodrome, blades will be carried flat using the superwing carrier. On the approach to the port junction loads will over-sail both verges through the right bend where three lighting columns should be removed, and the vegetation trimmed.</p> <p>Swept path assessment SK01 is included in Appendix B.</p>






POI	Key Constraint	Details
3	A87 Kyleakin Roundabout 	<p>Loads will take the third exit at the roundabout to continue on the A87 westbound, undertaking a contraflow manoeuvre.</p> <p>Following transfer at Broadford Aerodrome, loads will approach this roundabout from the west and take the first exit to continue on the A87 eastbound. Mitigation for both manoeuvres has been included.</p> <p>A swept path assessment has been undertaken and indicates that loads will over-run the northern splitter island where a load bearing surface should be laid and two bollards should be removed.</p> <p>The blade tip will over-sail the western verge of the central island, though no physical mitigation measures will be required.</p> <p>Loads will over-run and over-sail the inside verge where a load bearing surface should be laid and two lighting columns and two road signs should be removed. The vegetation should be cleared.</p> <p>The blade tip will over-sail two bollards on the southern splitter island where one lighting column and one road sign should be removed.</p> <p>When travelling north the blade tip will over-sail the southern verge on entering the roundabout, though no physical mitigation measures will be required.</p> <p>Swept path assessment SK02 is included in Appendix B.</p>
4	A87 Old Kyle Farm 	<p>Loads will continue on the A87 westbound.</p> <p>The blades should be lowered under the overhead cables at this location. Alternatively, to reduce transit times, the cables should be placed under the road.</p> <p>Following transfer at Broadford Aerodrome, loads will pass this location on the A87 eastbound. The blade will not require lowering as it will be in the Superwing Carrier trailer.</p>
5	A87 Broadford Aerodrome 	<p>Loads will turn right to exit the A87 and access the storage and transfer location in Broadford Aerodrome.</p> <p>Following transfer at Broadford Aerodrome, loads will turn left to join the A87 eastbound. Mitigation for both manoeuvres has been included.</p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the safety barrier and two bollards on the south-eastern verge on turning at the junction. The trees and vegetation should be trimmed. Third party land will be required.</p> <p>Loads will over-run and over-sail the inside verge where the existing load bearing surface should be extended, and land reprofiling will be required. The vegetation should be cleared. Third party land will be required.</p> <p>The blade tip will over-sail the western verge of the access road on exiting storage where one road sign should be removed, and the vegetation should be cleared.</p> <p>Swept path assessment SK03 is included in Appendix B.</p>

POI	Key Constraint	Details
6	A87 Creag Loisgte   	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.</p>
7	A87 Sgalpaidh 	<p>Loads will continue on the A87 eastbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail the inside verge through the bend, though no works are required.</p> <p>Swept path assessment SK04 is included in Appendix B.</p>

POI	Key Constraint	Details
8	A87 Lochalsh House 	Loads will continue on the A87 eastbound. Loads will over-sail the inside verge of the left-hand bend, though no physical mitigation measures will be required.
9	A87 Balmacara 	Loads will continue on the A87 eastbound. Loads will over-sail the inside verge of the left-hand bend, though no physical mitigation measures will be required.
10	A87 Auchertyre 	Loads will continue on the A87 eastbound. Loads will over-sail the inside verge of the right hand bend, though no physical mitigation measures will be required.



POI	Key Constraint	Details
11	A87 Cnoc an Tuairnir 	Loads will continue on the A87 southbound. A swept path assessment has been undertaken and indicates that loads will over-sail the inside verge of the left-hand bend where the vegetation should be trimmed. The blade tip will over-sail the outside verge of the following right-hand bend, though no physical mitigation measures will be required. Loads will over-sail the safety barrier on the inside verge where the trees and vegetation should be trimmed. Swept path assessment SK05 is included in Appendix B.



POI	Key Constraint	Details
12	A87 Dun Beag 	<p>Loads will continue on the A87 southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail both verges through the section, though no physical mitigation measures will be required. Loads will over-sail the safety barrier on the inside of the first bend. The proximity of loads to the rock face on the inside verge of the left-hand bend should be confirmed on a topographical base survey.</p> <p>Swept path assessment SK06 is included in Appendix B.</p>
13	A87 Easter Keppoch 	<p>Loads will continue on the A87 southbound.</p> <p>Loads will over-sail the inside verge of the left-hand bend where the vegetation should be trimmed.</p>
14	A87 Inverinate 	<p>Loads will continue on the A87 southbound.</p> <p>Loads will over-sail the inside verge of the left-hand bend, though no physical mitigation measures will be required.</p>

POI	Key Constraint	Details
15	A87 Allt a' Chruinn 	<p>Loads will continue on the A87 southbound.</p> <p>Loads will over-sail the inside verge of the left-hand bend, though no physical mitigation measures will be required.</p>
16	A87 An Cnapach 	<p>Loads will continue on the A87 southbound.</p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the safety barrier on the outside verge of the bend where four road signs and two bollards should be removed, and the trees and vegetation should be trimmed. Loads will over-sail the inside verge where the proximity to the rock face should be confirmed on a topographical base survey. The trees and vegetation should be trimmed.</p> <p>Swept path assessment SK07 is included in Appendix B.</p>
17	A87 Loch Shiel 	<p>Loads will continue on the A87 southbound.</p> <p><i>The OS mapping in this section does not accurately represent the road alignment. As such, available aerial resources were used to provide an indicative road edge. It is recommended that the swept path assessments are repeated on a topographical base survey to confirm the proposed mitigation.</i></p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the safety barrier on the outside verge of the first right-hand bend where the trees and vegetation should be trimmed. Loads will over-sail the inside verge, though no physical mitigation measures will be required.</p> <p>Loads will over-sail the safety barrier on the inside verge of the following left-hand bend where one set of chevron signs should be removed, and the trees and vegetation should be trimmed.</p> <p>The blade tip will over-sail the outside verge of the final right-hand bend, though no physical mitigation measures will be required. Loads will over-sail the inside verge where the proximity to the rock face should be confirmed on a topographical base survey.</p> <p>Swept path assessment SK08 is included in Appendix B.</p>

POI	Key Constraint	Details
18	A87 south of Loch Shiel	<p>Loads will continue on the A87 southbound.</p> <p><i>The OS mapping in this section does not accurately represent the road alignment. As such, available aerial resources were used to provide an indicative road edge. It is recommended that the swept path assessments are repeated on a topographical base survey to confirm the proposed mitigation.</i></p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail the inside verge of the first left-hand bend, though no physical mitigation measures will be required.</p> <p>Loads will over-sail the inside verge of the second left-hand bend where the vegetation should be trimmed.</p> <p>The blade tip will over-sail the safety barrier and several bollards on the outside verge of the final right-hand bend. Loads will over-sail the inside verge where the proximity to the rock face should be confirmed on a topographical base survey and the vegetation should be trimmed.</p> <p>Swept path assessment SK09 is included in Appendix B.</p>

POI	Key Constraint	Details
19 & 20	A87 Achnangart	<p>Loads will continue on the A87 southbound.</p> <p>Loads will over-sail both verges through the bends. The vegetation should be trimmed on the inside verges of the first right-hand bend and third left-hand bend.</p>
21	A87 west of Cnoc nan Each	<p>Loads will continue on the A87 eastbound.</p> <p><i>The OS mapping in this section does not accurately represent the road alignment. As such, available aerial resources were used to provide an indicative road edge. It is recommended that the swept path assessments are repeated on a topographical base survey to confirm the proposed mitigation.</i></p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail the safety barrier on the inside verge of the left-hand bend.</p> <p>The blade tip will over-sail the safety barrier and several bollards on the outside verge of the following right-hand bend where a land search is recommended to confirm the extent of the adopted boundary. Loads will over-sail the inside verge where the proximity to the retaining wall should be confirmed on a topographical base survey.</p> <p>Swept path assessment SK10 is included in Appendix B.</p>

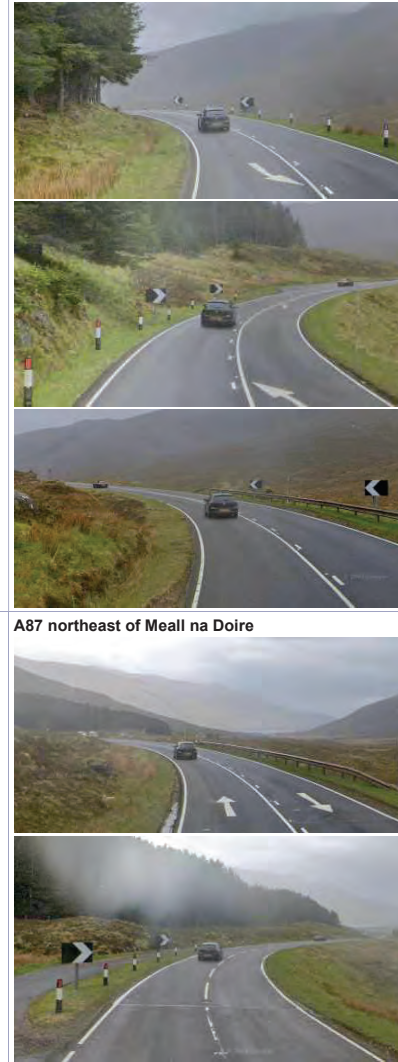
POI	Key Constraint	Details
22	A87 Eas-nan-Arm Bridge 	<p>Loads will continue on the A87 eastbound.</p> <p><i>The accuracy of the mapping through this location is extremely poor. It is recommended that a topographical survey is completed of this bend to allow the swept path assessment to be completed.</i></p> <p>Subject to the results of that survey it is anticipated that loads will over-sail into third party land on the inside of the bend where the stone wall will be over-sailed. Loads will over-sail the outside of the bend where two chevron signs should be removed.</p>
23	A87 Eas Druim Dubh Thollaidh 	<p>Loads will continue on the A87 eastbound.</p> <p><i>The OS mapping in this section does not accurately represent the road alignment. As such, available aerial resources were used to provide an indicative road edge. It is recommended that the swept path assessments are repeated on a topographical base survey to confirm the proposed mitigation.</i></p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail the inside verge of the right bend where the safety barrier will be over-sailed.</p> <p>Loads will over-sail the inside verge of the left-hand bend where the embankment should be reprofiled, and the wall should be removed. Third party land may be required.</p> <p>Swept path assessment SK11 is included in Appendix B.</p>

POI	Key Constraint	Details
24 & 25	A87 Creagan Luib an Eorna 	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail both verges through the bends. Loads to be raised to allow over-sail of the barriers. The vegetation should be trimmed on the inside verges of both left-hand bends.</p>
26	A87 northeast of Doire na Ba 	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail the inside verge of the left-hand bend, though no physical mitigation measures will be required.</p>

POI	Key Constraint	Details
27 – 29	A87 east of Doire na Ba	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail both verges through the bends. The vegetation should be trimmed on the inside verges of the bends.</p>




POI	Key Constraint	Details
30	A87 northwest of Meall na Doire	<p>Loads will continue on the A87 eastbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will over-sail both verges through the bends. The proximity to the rock face should be confirmed on the northern verge through the first double bend using a topographical survey. The bollards will be over-sailed.</p> <p>Swept path assessment SK12 is included in Appendix B.</p>
31	A87 northeast of Meall na Doire	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail the inside verge of the left-hand bend and both verges of the following right-hand bend, though no physical mitigation measures will be required.</p>






POI	Key Constraint	Details
32	A87 Lub a Bhodaich 	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.</p>
33	A87 Cluanie Inn 	<p>Loads will continue on the A87 eastbound.</p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the bollards on the outside verge of the first right-hand bend and two sets of chevron signs should be removed. Loads will over-sail the inside verge where one private sign, three lighting columns, fence, and all bollards should be removed. Third party land will be required.</p> <p>The blade tip will over-sail several bollards on the outside verge of the following right-hand bend where one set of chevron signs should be removed. Loads will over-sail the inside verge where loads will over-sail the safety barrier and the fence should be removed. Third party land will be required.</p> <p>Loads will over-sail the inside verge of the final left-hand bend, though no physical mitigation measures will be required.</p> <p>Swept path assessment SK13 is included in Appendix B.</p>



POI	Key Constraint	Details
34	A87 Cruachan Coille a' Chait 	<p>Loads will continue on the A87 eastbound.</p> <p>Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.</p>

POI	Key Constraint	Details
35 & 36	A87 Lundie 	Loads will continue on the A87 eastbound. Loads will over-sail both verges through the bends. Snow poles should be removed from the inside verges. Loads will over-sail the safety barrier and bollards through the second bend.

POI	Key Constraint	Details
37 & 38	A87 southeast of Creag Lundie 	Loads will continue on the A87 eastbound. Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.

POI	Key Constraint	Details
39 & 40	A87 Eilean nan Greusaich 	Loads will continue on the A87 eastbound before continuing straight to join the A887 eastbound. Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.
41	A887 Torgyle Bridge 	Loads will continue on the A887 eastbound. A swept path assessment has been undertaken and indicates that loads will over-sail both verges through the double bend, though no physical mitigation measures will be required. The blade tip will over-sail the bollards on the outside verge of the following left-hand bend where one utility pole should be removed. Loads will over-run and over-sail the inside verge where a load bearing surface should be laid, and land reprofiling will be required. Two utility poles and two road signs should be removed. The trees and vegetation should be cleared. Third party land will be required. Loads will continue to over-sail the inside verge to the south-western verge where the fence, stone bridge parapet and one road sign should be removed. Swept path assessment SK14 is included in Appendix B.

POI	Key Constraint	Details
42	A887 Torgyle Lodge 	Loads will continue on the A887 eastbound. A swept path assessment has been undertaken and indicates that the blade tip will over-sail the bollards on the outside verge of the bend where the clearance to the hillside should be confirmed on a topographical base survey. Potential third party land required. Two utility poles and one road sign should be removed. Loads will over-sail the inside verge where one road sign should be removed. Swept path assessment SK15 is included in Appendix B.
43	A887 Eilean Ach' Dugraidh 	Loads will continue on the A887 eastbound. Loads will over-sail both verges through the bends where vegetation should be trimmed. Bollards will be over-sailed.

POI	Key Constraint	Details
44	A887 Dundreggan Reservoir 	<p>Loads will continue on the A887 eastbound.</p> <p>Loads will over-sail both verges through the bends where loads will over-sail the safety barrier. A land search is recommended on the northern verge to confirm the extent of the adopted boundary.</p> <p>Swept path assessment SK16 is included in Appendix B.</p>
45	A887 Coille Bhlaraidh 	<p>Loads will continue on the A887 eastbound.</p> <p>Loads will over-sail both verges through the bends, though no physical mitigation measures will be required.</p>

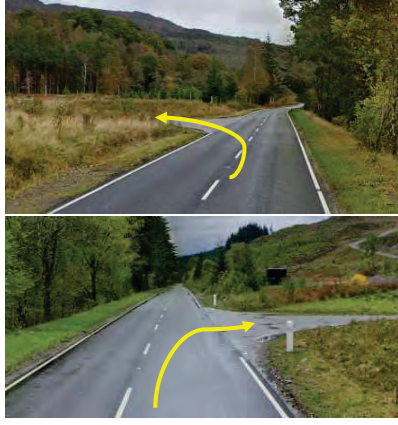












POI	Key Constraint	Details
46	Site Access Junction 	<p>Blade loads will turn left into the site access junction, having approached from the west. Tower loads will turn right into the site access junction, having approached from the east.</p> <p>The OS mapping in this section does not accurately represent the road alignment. As such, available aerial resources were used to provide an indicative road edge. It is recommended that the swept path assessments are repeated on a topographical base survey to confirm the proposed mitigation.</p> <p>A swept path assessment has been undertaken and indicates that the blade tip will over-sail the south-eastern verge on turning at the junction where the trees should be cleared. Third party land may be required.</p> <p>Loads will utilise the existing over-run areas on the inside verges of the respective turns. Obstructions should be cleared from the over-sail areas.</p> <p>The access junction should be upgraded in accordance with The Highland Council and turbine manufacturer standards. Suitable visibility splays will be required. Third party land may be required for junction upgrades.</p> <p>Swept path assessment SK17 is included in Appendix B.</p>



Table 3-2: Constraint Points and Details - Corpach Route

POI	Key Constraint	Details
47	Corpach Harbour 	<p>Tower loads will exit the harbour and turn right to join the A830 eastbound.</p> <p>A swept path assessment has been undertaken and indicates that within the port a section of security fencing should be removed.</p> <p>On exiting the port, the railway crossing barrier and accompanying lights should be removed from the inside of the turn. A section of fence, one lighting column, and two harbour signs should also be removed from this location. Any vegetation should be cleared. Third party land is required.</p> <p>On the northern verge of the A830 a load bearing surface should be laid, and one lighting column and one planter should be removed. The trees and vegetation should be removed.</p> <p>Swept path assessment SK18 is included in Appendix B.</p>
48	A830 Bollards Corpach 	<p>Loads will continue on the A830 eastbound.</p> <p>Three road islands within Corpach will require bollards to be removed or lowered.</p> <p>Vehicle escorts must ensure that loads do not stop on the nearby canal bridge. Access to the full carriageway width will be required when crossing.</p>
49	Blar Mhor Roundabout 	<p>Loads will take the second exit at the roundabout to continue on the A830 eastbound, undertaking a contraflow manoeuvre.</p> <p>A swept path assessment has been undertaken and indicates that on navigating the roundabout, one set of lit chevron signs should be removed from the central island.</p> <p>On exiting the roundabout, the vertical clearance of loads to the embankment should be confirmed during the test run.</p> <p>Swept path assessment SK19 is included in Appendix B.</p>

POI	Key Constraint	Details
50	Lochybridge Roundabout 	<p>Loads will take the first exit at the roundabout to join the A82 northbound.</p> <p>A swept path assessment has been undertaken and indicates that on approach to the roundabout there is a wall and bridge parapet which need lowered and two lighting columns removed. Third party land is required.</p> <p>On exiting the roundabout, a load bearing surface should be laid, and two bollards and one road sign removed from the exit splitter island. A load bearing surface should be laid on the eastern verge.</p> <p>Swept path assessment SK20 is included in Appendix B.</p>
51	A82 Spean Bridge 	<p>Loads will continue on the A82 northbound.</p> <p>A swept path assessment has been undertaken and indicates that on approach to the bend a load bearing surface should be laid on the eastern verge.</p> <p>On the inside of the bend the vertical clearance of loads to the bridge parapet and fencing should be confirmed during the test run. Two road signs and one lighting column should be removed and trees should be trimmed.</p> <p>Third party land is required.</p> <p>Swept path assessment SK21 is included in Appendix B.</p>
52	A82 Lower Glenfintaig Farm 	<p>Loads will continue on the A82 northbound.</p> <p>A swept path assessment has been undertaken and indicates that the vegetation should be trimmed on the western verge throughout the section.</p> <p>Swept path assessment SK22a is included in Appendix B.</p>

POI	Key Constraint	Details
53	A82 Carn a' Ghrianain 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that loads will over-sail the eastern verge, though no physical mitigation measures will be required. Swept path assessment SK23 is included in Appendix B.
54	A82 northeast of Carn a' Ghrianain 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that no physical mitigation measures are required. Swept path assessment SK23 is included in Appendix B.
55	A82 Tom Eachrain 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that no physical mitigation measures are required. Swept path assessment SK24 is included in Appendix B.
56	A82 Laggan Locks 	Loads will continue on the A82 northbound. Loads will over-sail the inside verge of the right-hand bend where the trees and vegetation should be trimmed.
57	A82 Laggan Swing Bridge 	Loads will continue on the A82 northbound. Loads will over-sail the inside verge of the left-hand bend prior to the bridge, though no physical mitigation measures will be required.

POI	Key Constraint	Details
58	A82 Invergarry Castle Remains 	Loads will continue on the A82 northbound. Loads will over-sail the inside verge of the right-hand bend where the trees and vegetation should be trimmed.
59	A82 Invergarry Junction 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that throughout the section the vegetation on the inside of the bend should be trimmed. Two road signs and one bollard should be removed. The trees on the inside of the following left-hand bend should be trimmed. Swept path assessment SK is included in Appendix B.
60	A82 west of Sports Ground Fort Augustus 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that loads will over-sail the eastern verge through the bend, though no physical mitigation measures will be required. Swept path assessment SK26 is included in Appendix B.
61	A82 / B862 / Station Rd Junction Fort Augustus 	Loads will continue on the A82 northbound. A swept path assessment has been undertaken and indicates that that loads will over-sail the inside of the bend, where vegetation should be trimmed. Load proximity to the building should be confirmed during the test run. Third party land is potentially required. A load bearing surface will need to be laid and street furniture cleared within the extent of the over run. Swept path assessment SK27 is included in Appendix B.

POI	Key Constraint	Details
62	A82 / A887 Junction Invermoriston 	Loads will turn left at the junction to join the A887 westbound. A swept path assessment has been undertaken and indicates that on navigating the turn, a load bearing surface should be laid on the eastern verge. Three lighting columns, several trees, a section of fence, and street furniture should be removed. Third party land is required. On the inside of the turn load proximity to the building should be confirmed during the test run. Swept path assessment SK28 is included in Appendix B.
63	A887 Glencroft 	Loads will continue on the A887 westbound. A swept path assessment has been undertaken and indicates that Swept path assessment SK28 is included in Appendix B.

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 client, topographical data has been utilised. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping or client supplied data.

3.5 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.

3.6 Summary Issues

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

- That any necessary topographical surveys are undertaken, and the swept path results completed;
- 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

PF has been commissioned by Statkraft to prepare a Route Survey Report to examine the issues associated with the transport of AIL turbine components to the Loch Liath Wind Farm.

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 Statkraft. 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.

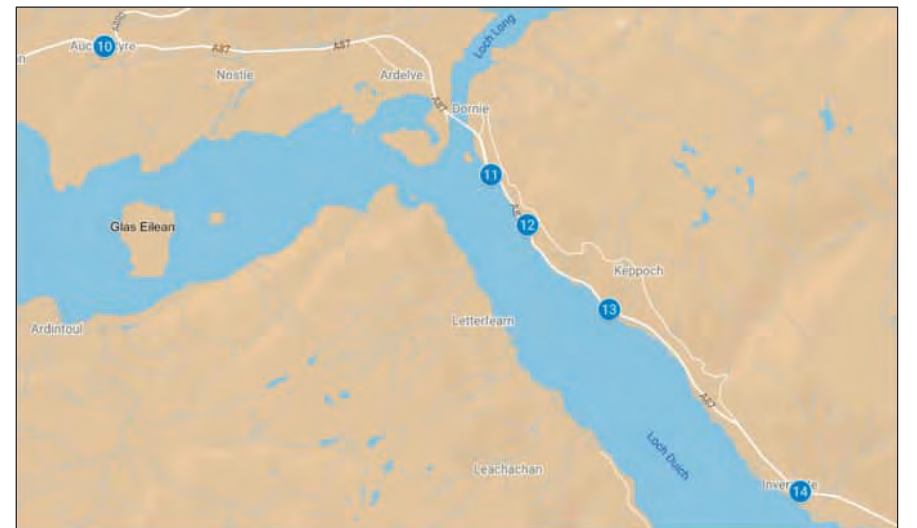
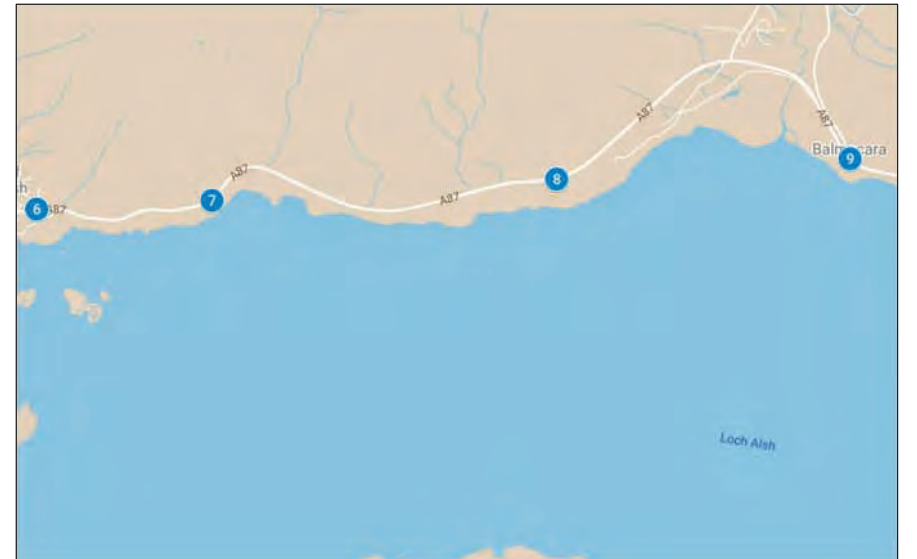
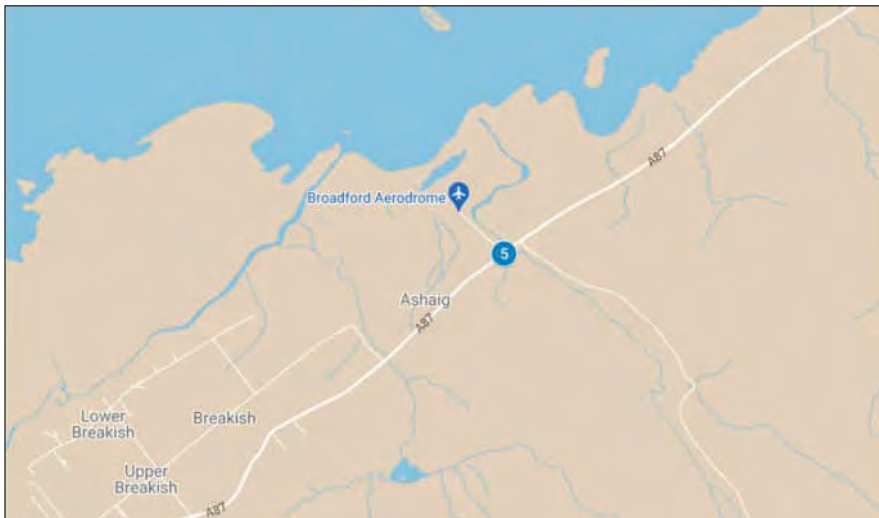
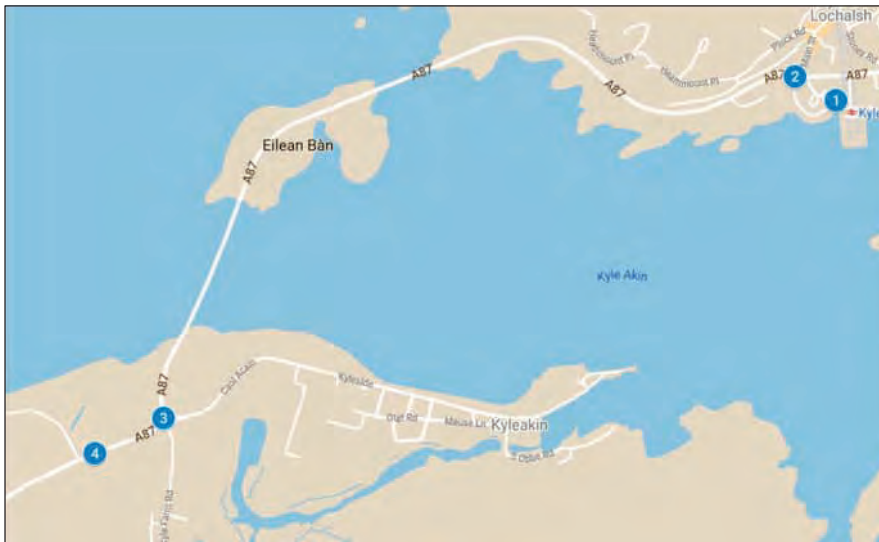
4.2 Further Actions

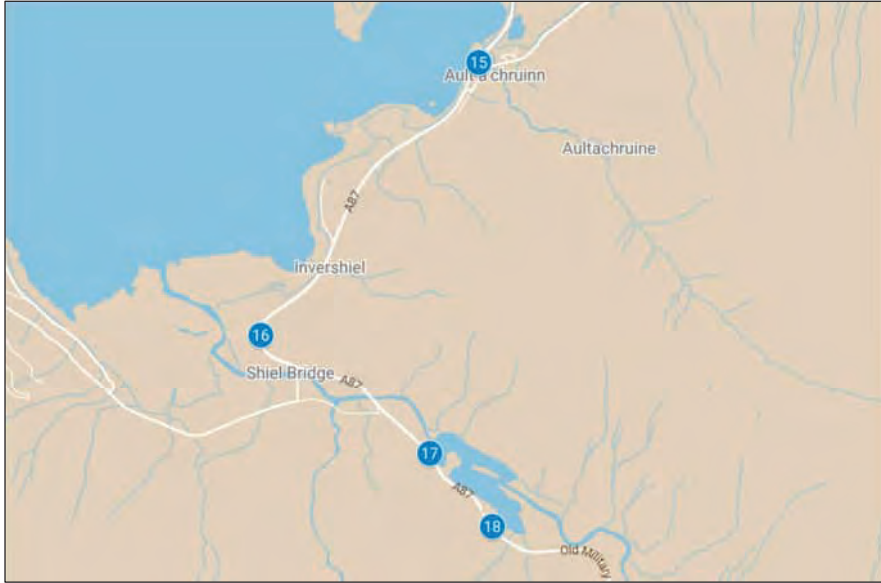
The following actions are recommended to pursue the transport and access issues further:

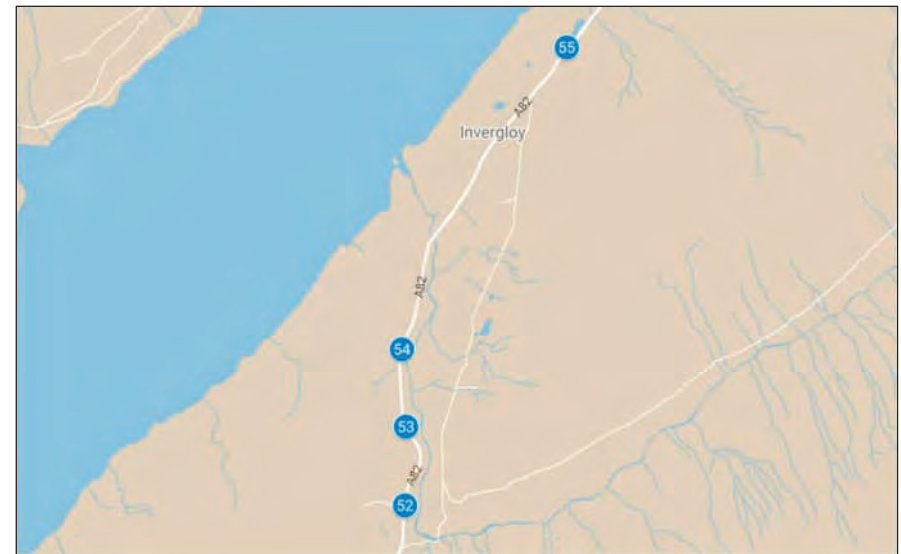
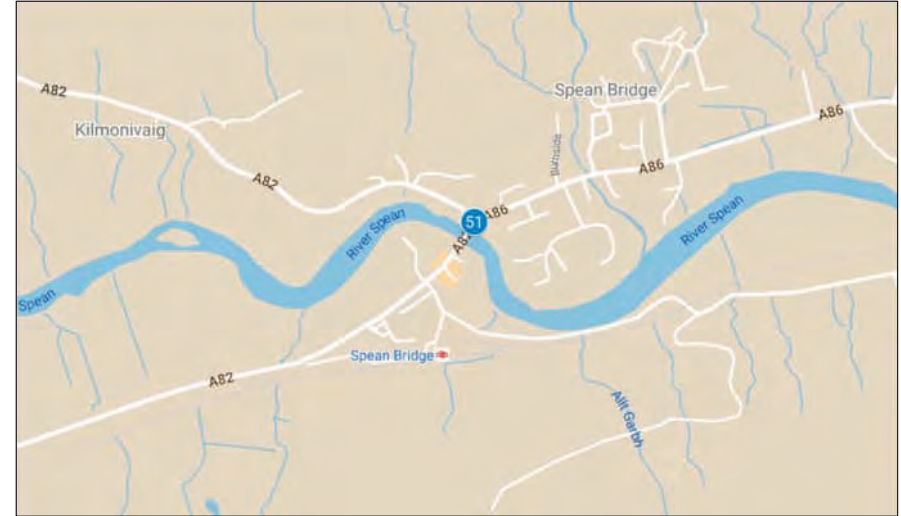
- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Obtain the necessary land options;
- Undertake discussion with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures; and
-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

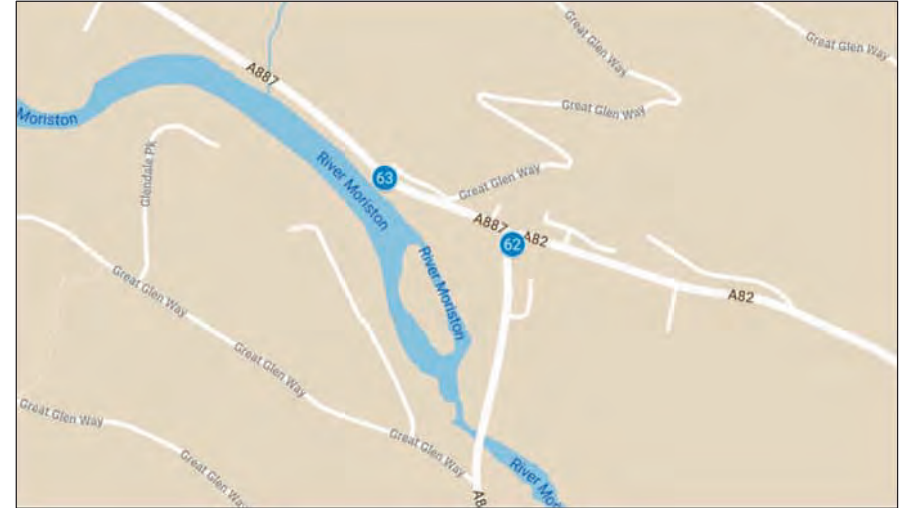
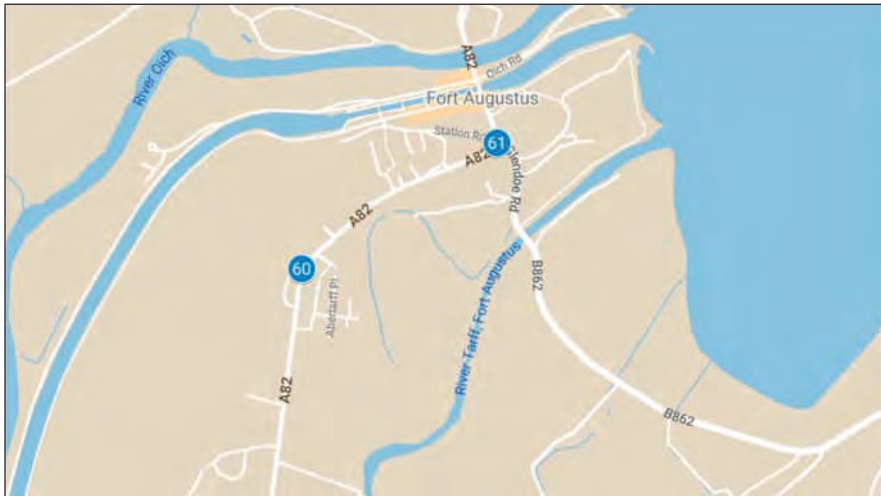
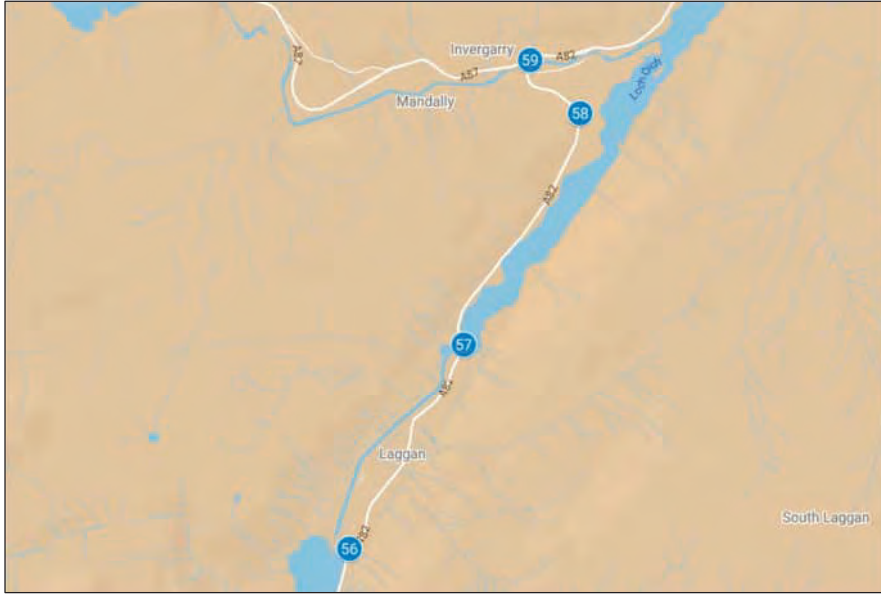
An electronic version of the POI plan can be found here:

<https://www.google.com/maps/d/u/0/edit?mid=1w0ZYorxZSaOFq2ay-4BQ9gnZiXKHuN0&usp=sharing>

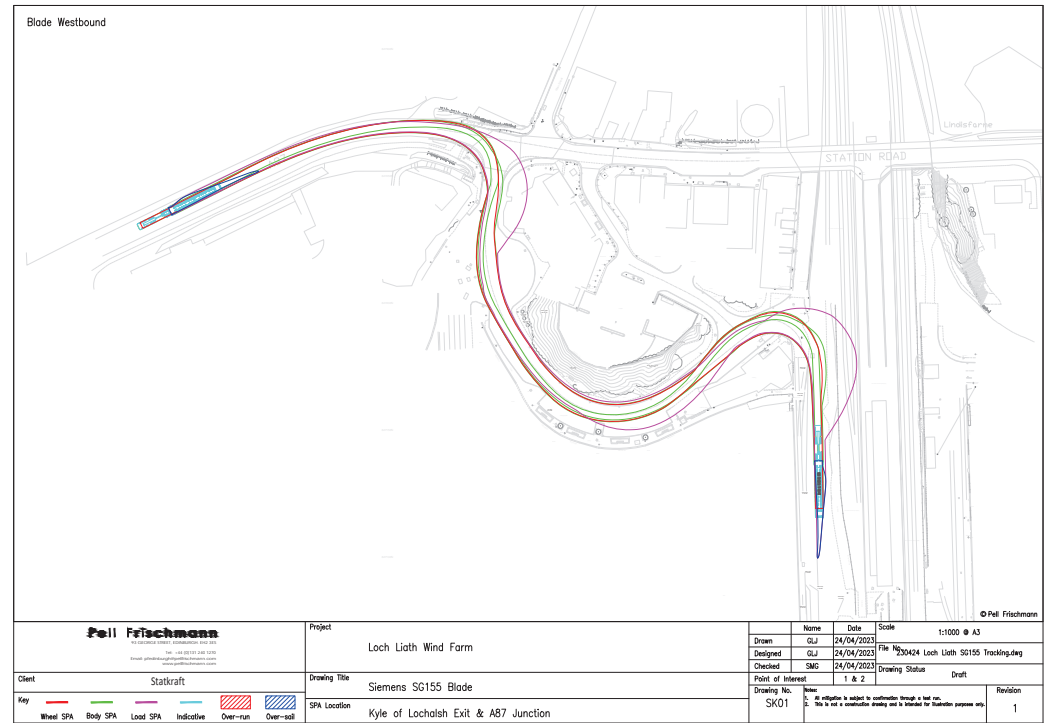


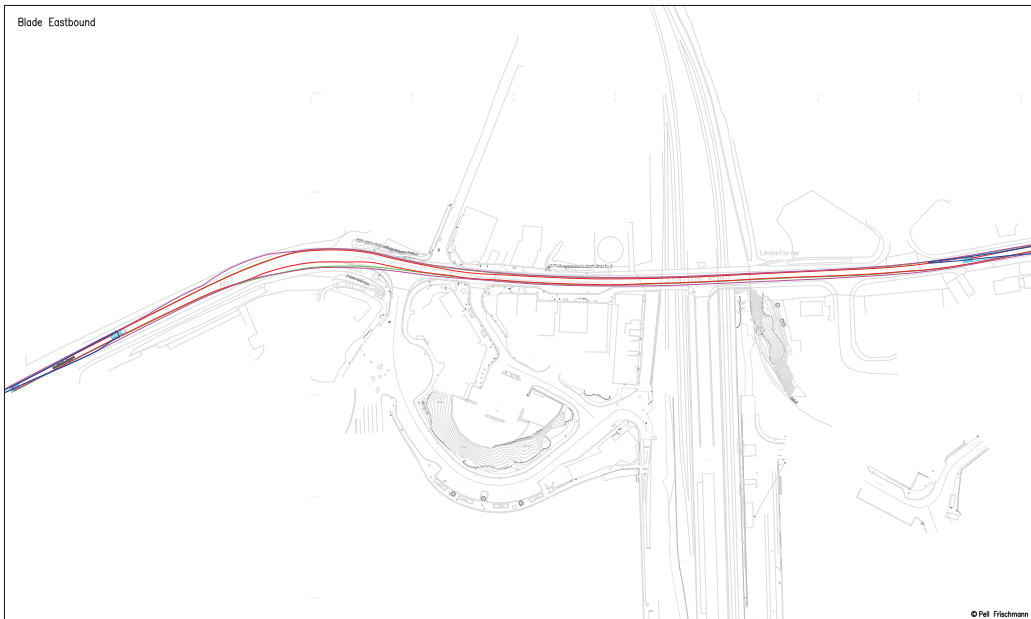




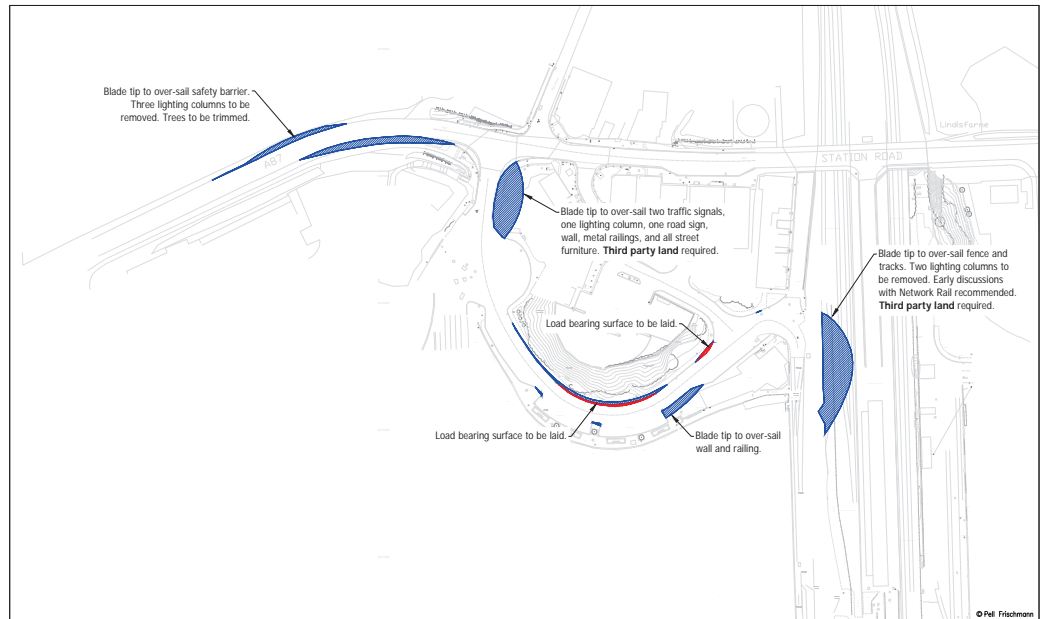


Appendix B Swept Path Assessments





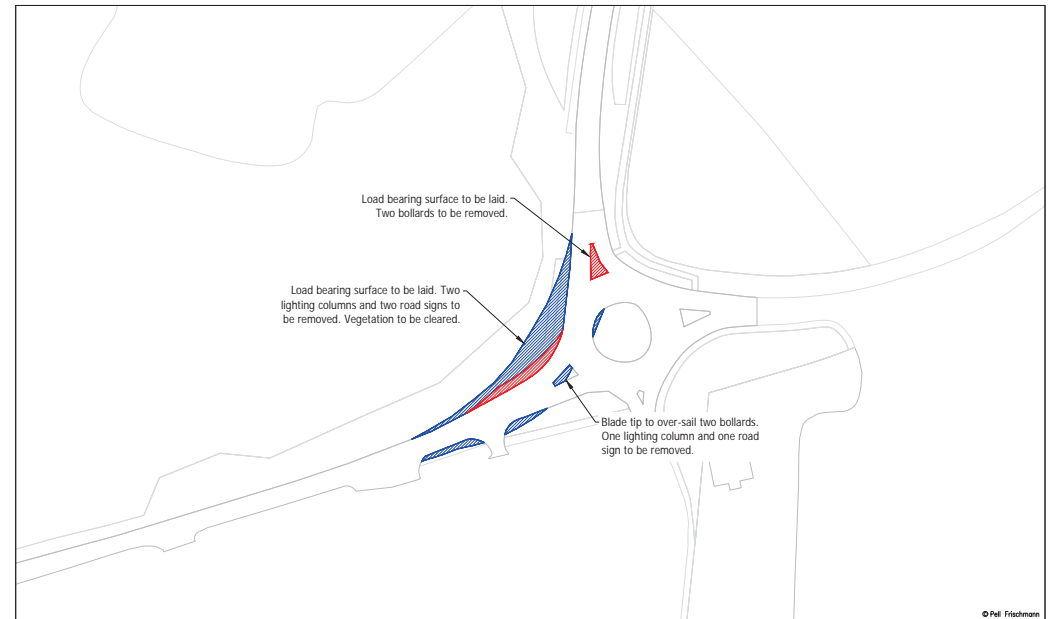
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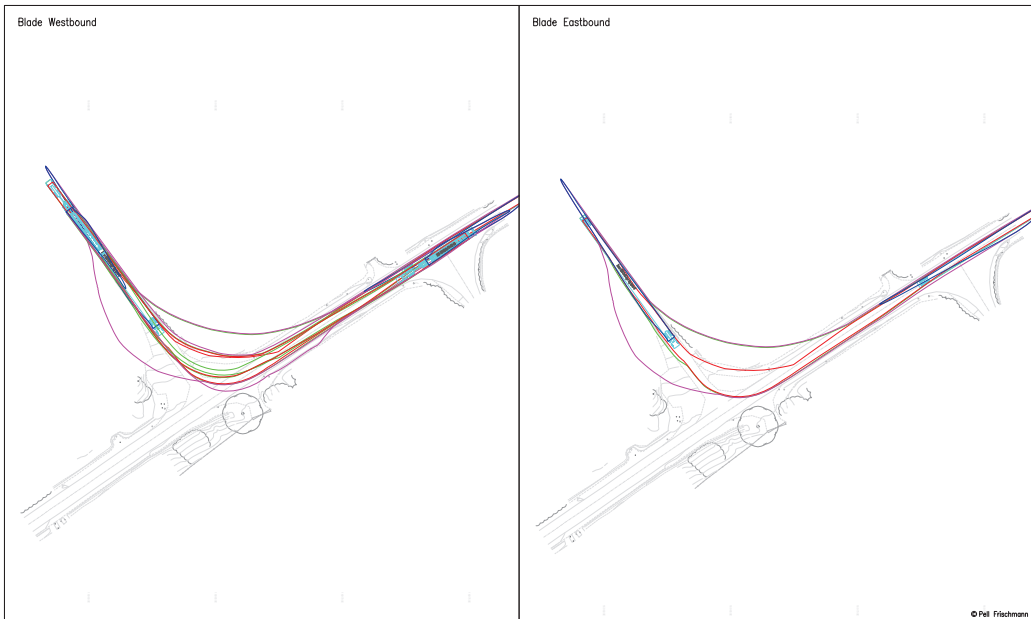
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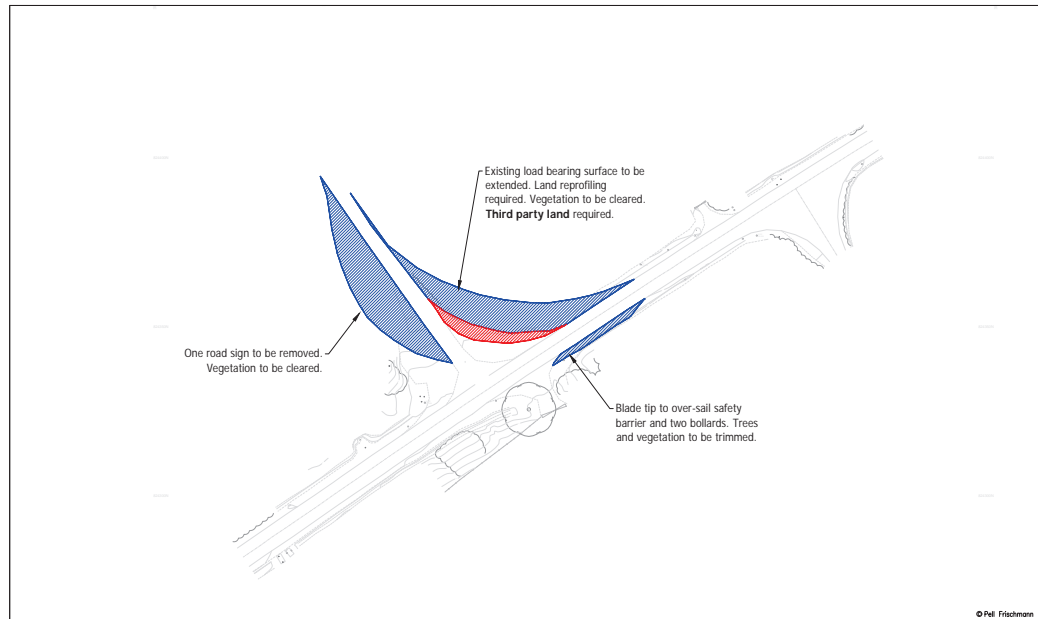
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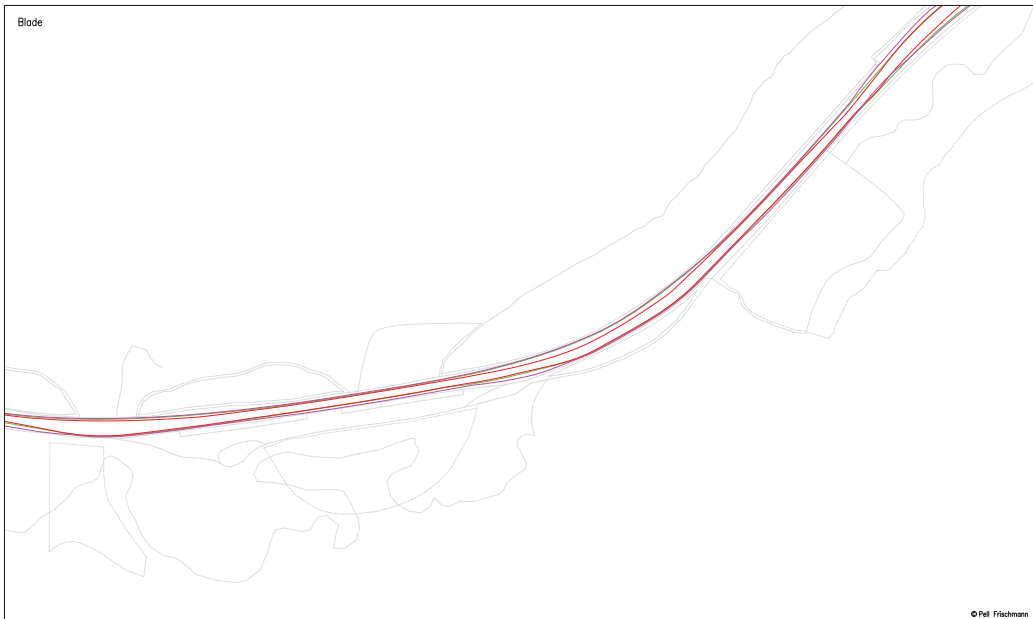
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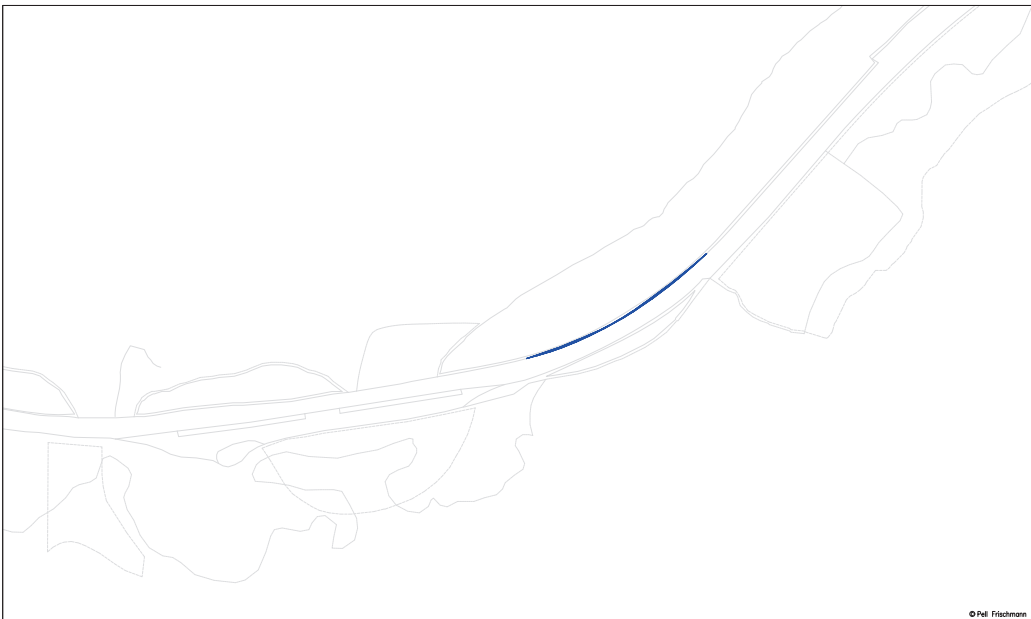


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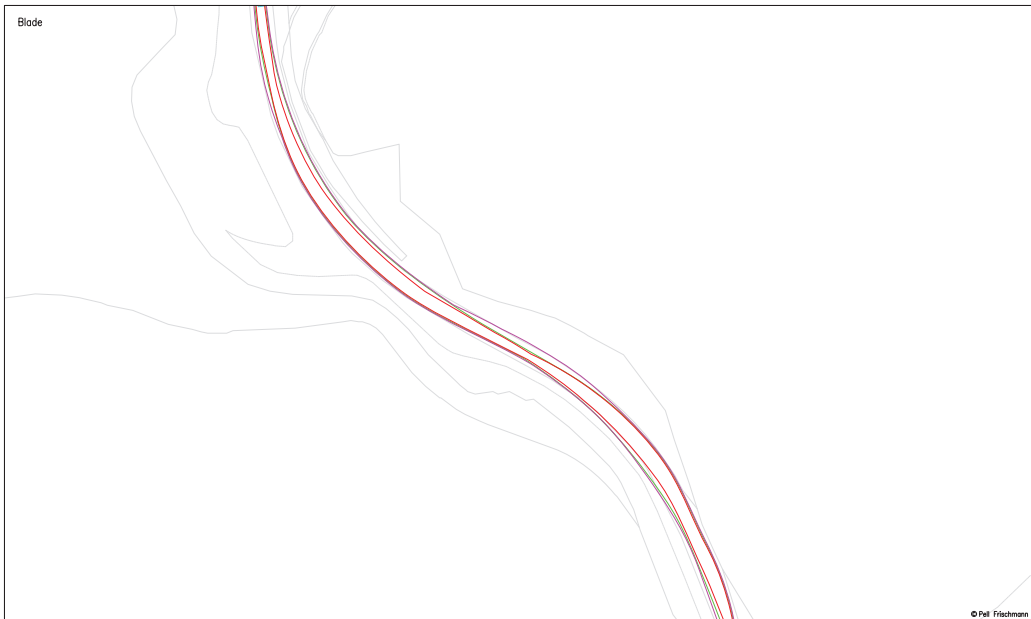
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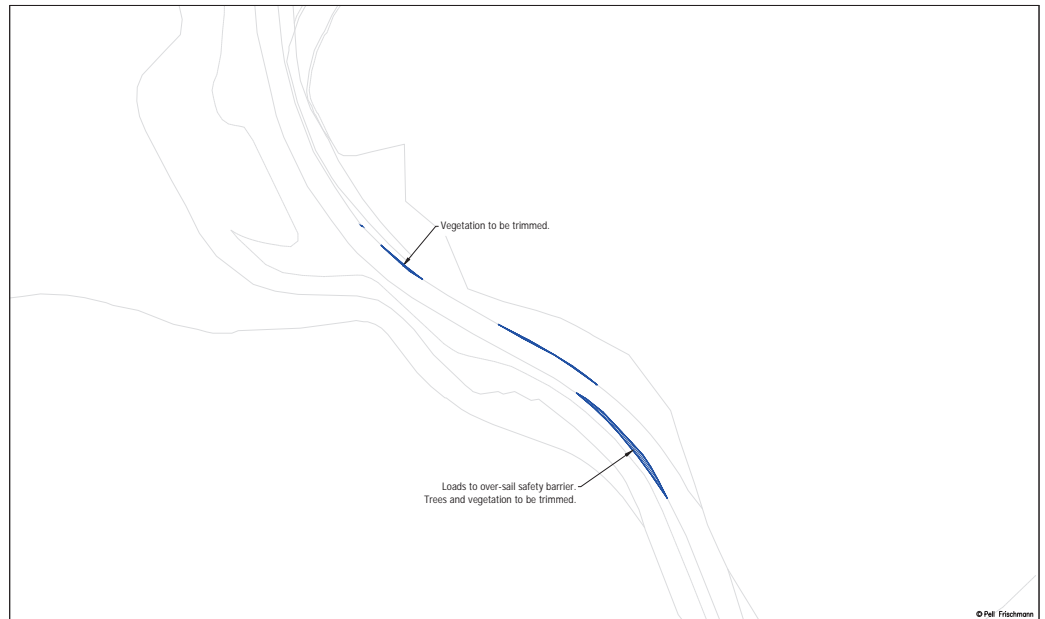


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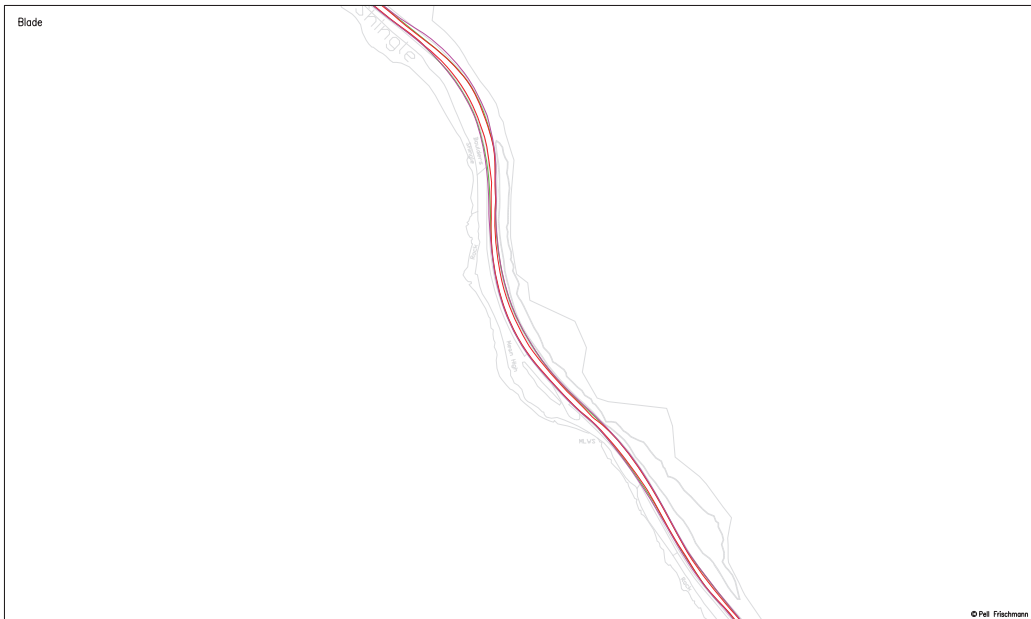
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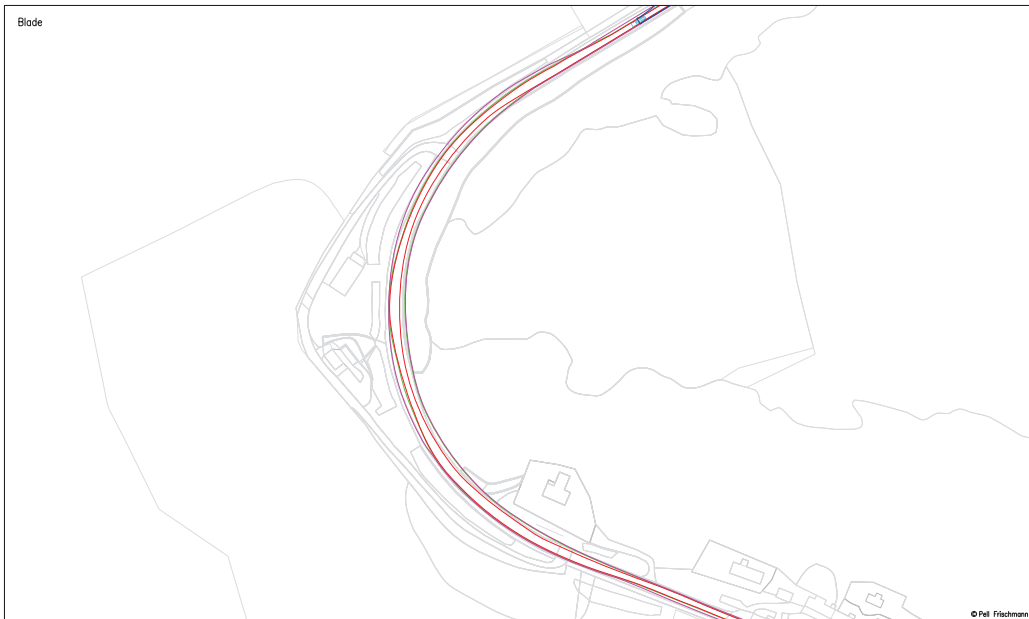
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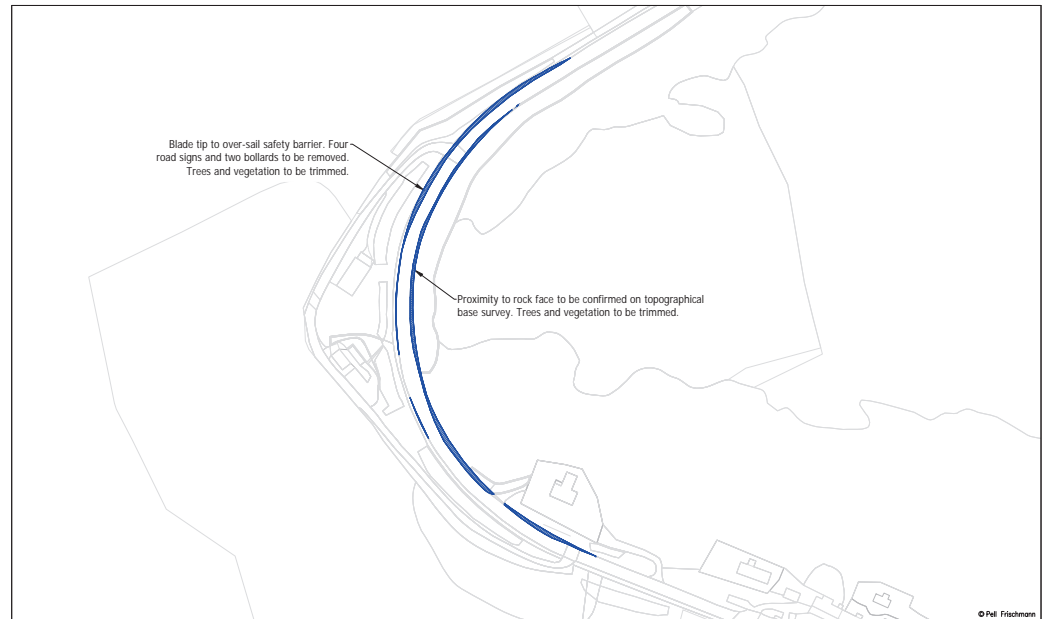
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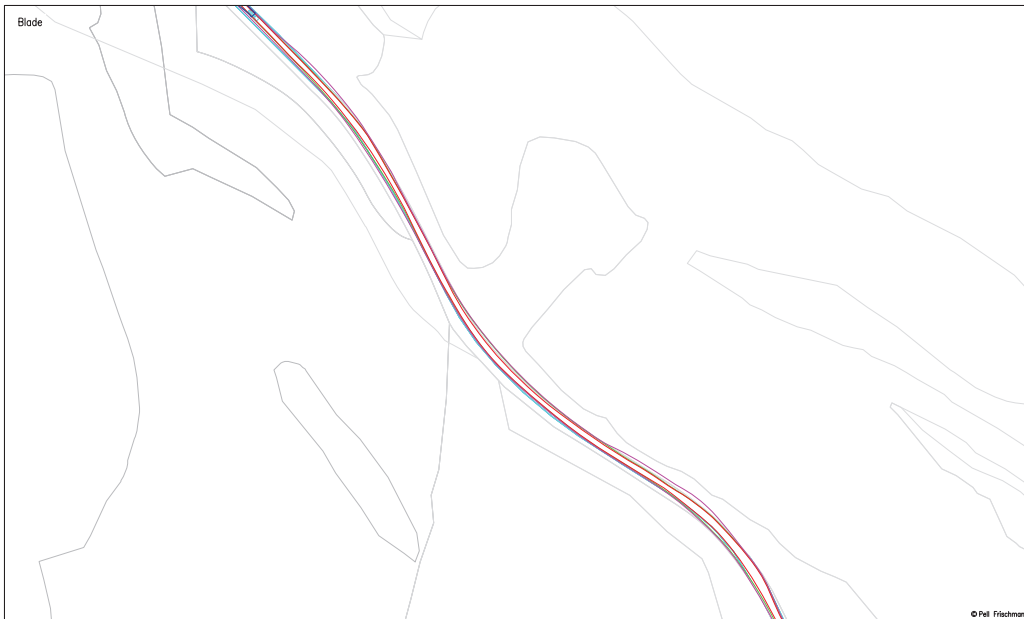
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Name	Date	Scale																
Drawn	GLJ 24/04/2023	1:2000 @ A3																
Designed	GLJ 24/04/2023	File No: 230424 Loch Liath SG155 Tracking.dwg																
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Revision																		
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Key																		
Wheel SPA																		
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Load SPA																		
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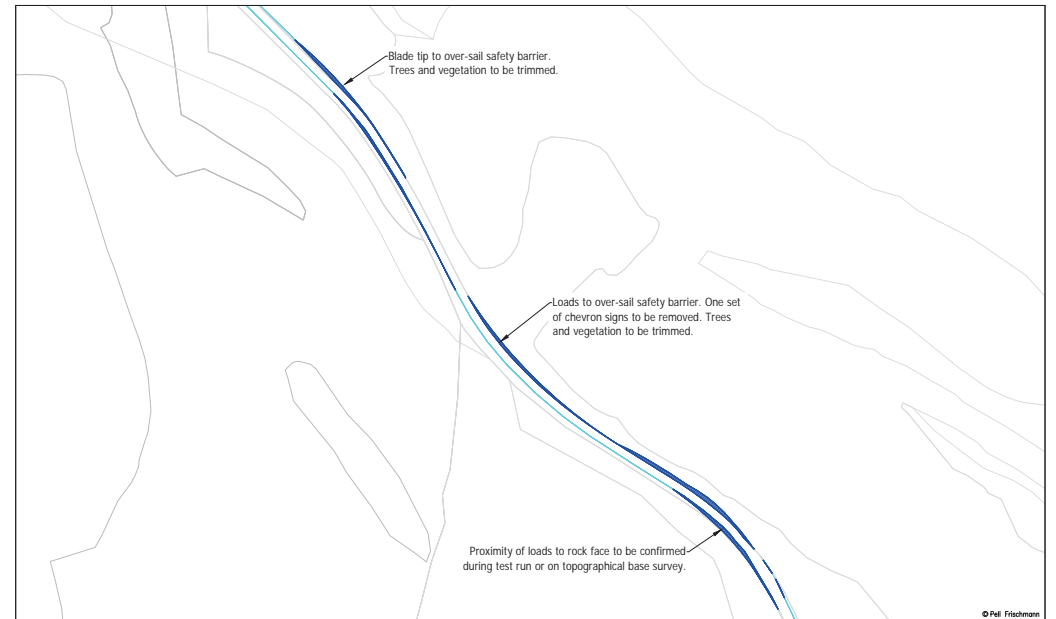
Pell Frischmann <small>18 Victoria Road, Glasgow G12 9JG Tel: +44 (0)1235 526200 Email: info@pellfrischmann.com www.pellfrischmann.com</small>		Project		Name		Date	Scale	1:1250 @ A3	
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Client		Statkraft		Designed	GLJ	24/04/2023	Checked	SWG	24/04/2023
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SPA Location		A87 An Cnapach		Revision	1				



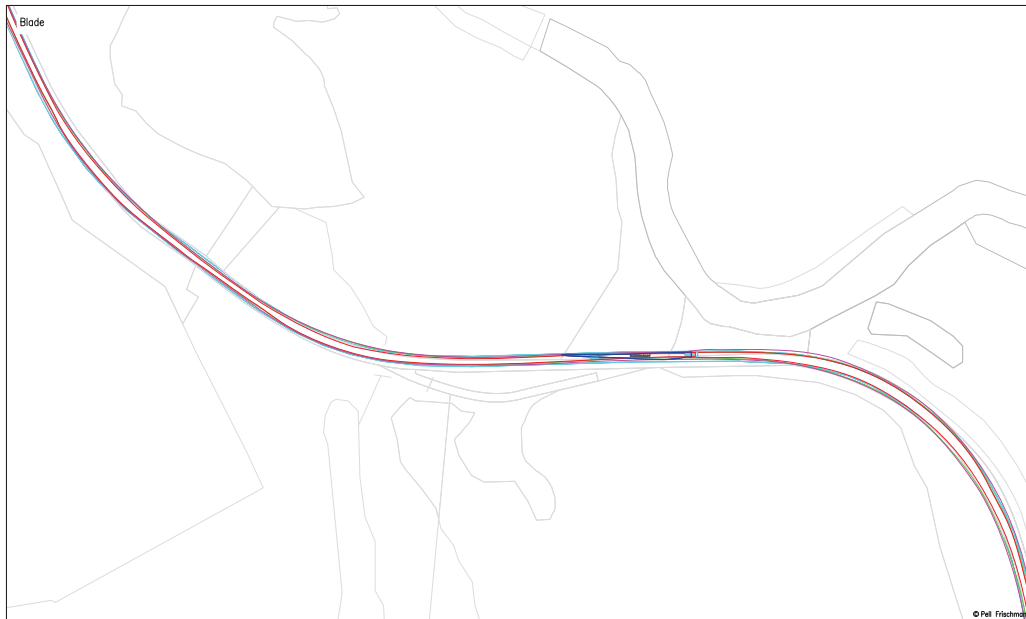
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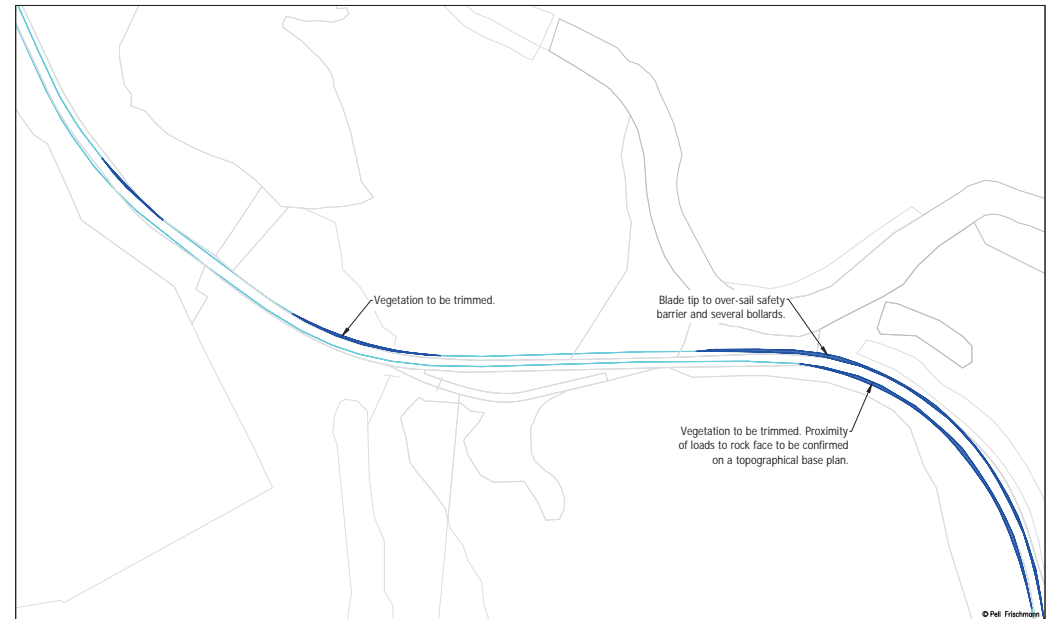
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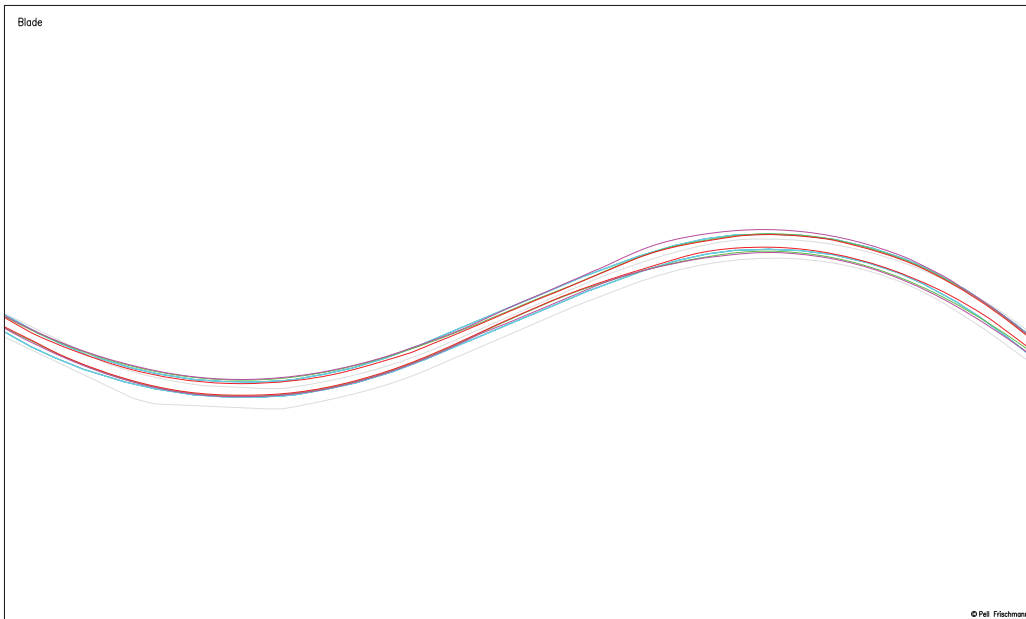
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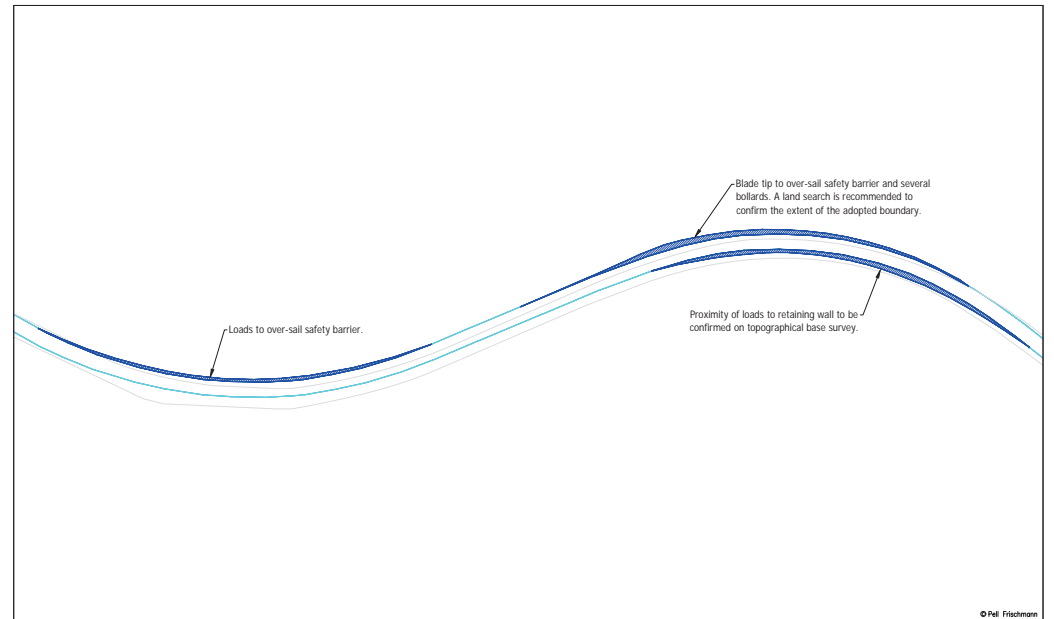
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Designed	GLJ	24/04/2023																								
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Point of Interest	18	Drawing Status																								
Drawing No.	SK09	Revision																								
		1																								
Client Statkraft		Drawing Title Siemens SG155 Blade		File No. 230424 Loch Liath SG155 Tracking.dwg																						
Key 		SPA Location A87 south of Loch Shiel		Notes 1. All alterations to be subject to confirmation through a leaf run. 2. This is not a construction drawing and is intended for illustration purposes only.																						



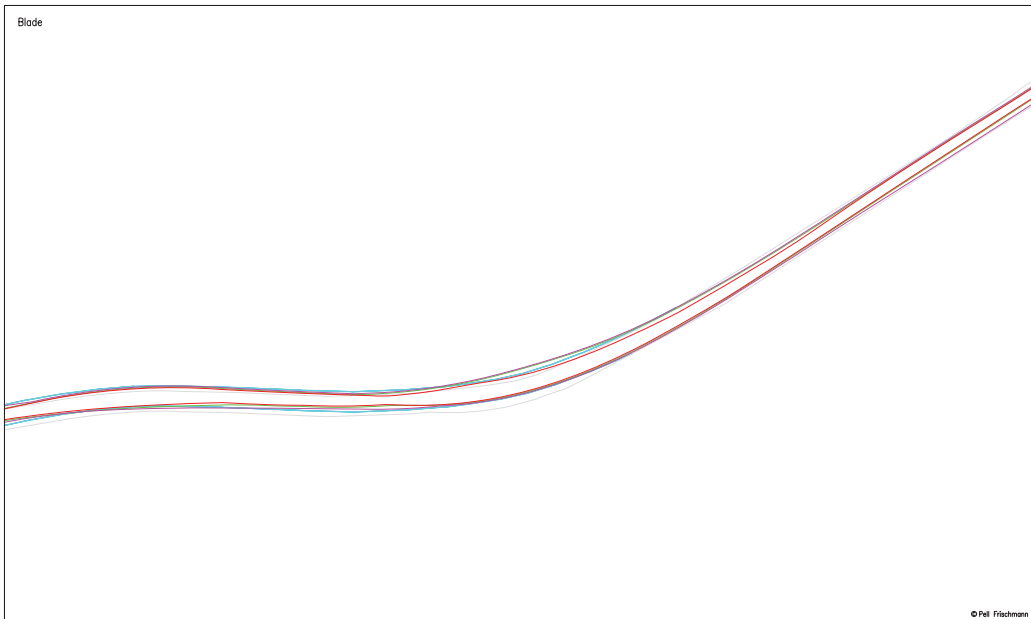
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Point of Interest	18	Drawing Status																								
Drawing No.	SK09A	Revision																								
		1																								
Client Statkraft		Drawing Title Siemens SG155 Blade		File No. 230424 Loch Liath SG155 Tracking.dwg																						
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		Project Loch Liath Wind Farm	<table border="1"> <tr> <th>Name</th> <th>Date</th> <th>Scale</th> </tr> <tr> <td>Drawn</td> <td>GLJ</td> <td>24/04/2023</td> </tr> <tr> <td>Designed</td> <td>GLJ</td> <td>24/04/2023</td> </tr> <tr> <td>Checked</td> <td>SMP</td> <td>24/04/2023</td> </tr> <tr> <td>Point of Interest</td> <td>21</td> <td>Drawing Status</td> </tr> <tr> <td>Drawing No.</td> <td>SK10</td> <td>Draft</td> </tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SMP	24/04/2023	Point of Interest	21	Drawing Status	Drawing No.	SK10	Draft	1:1000 @ A3 File No: 230424 Loch Liath SG155 Tracking.dwg
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Client Statkraft	Drawing Title Siemens SG155 Blade	SPA Location A87 west of Cnoc nan Each																				
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil	Notes: 1. All alterations to be subject to confirmation through a lead user. 2. This is not a construction drawing and is intended for illustrative purposes only.																					
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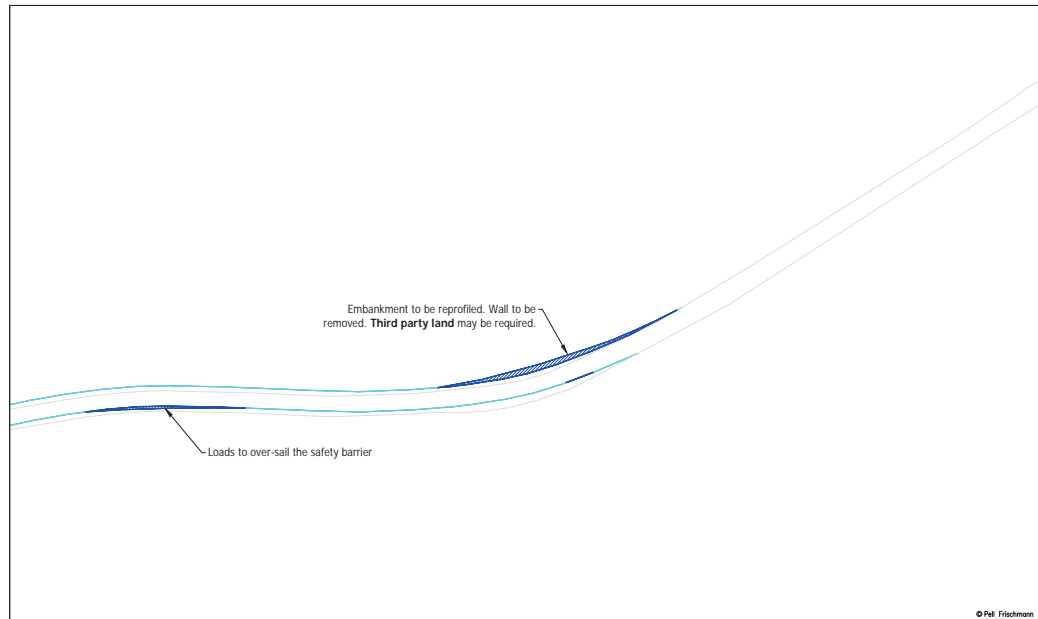


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Name	Date	Scale																				
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Point of Interest	21	Drawing Status																				
Drawing No.	SK10A	Draft																				
Client Statkraft	Drawing Title Siemens SG155 Blade	SPA Location A87 west of Cnoc nan Each																				
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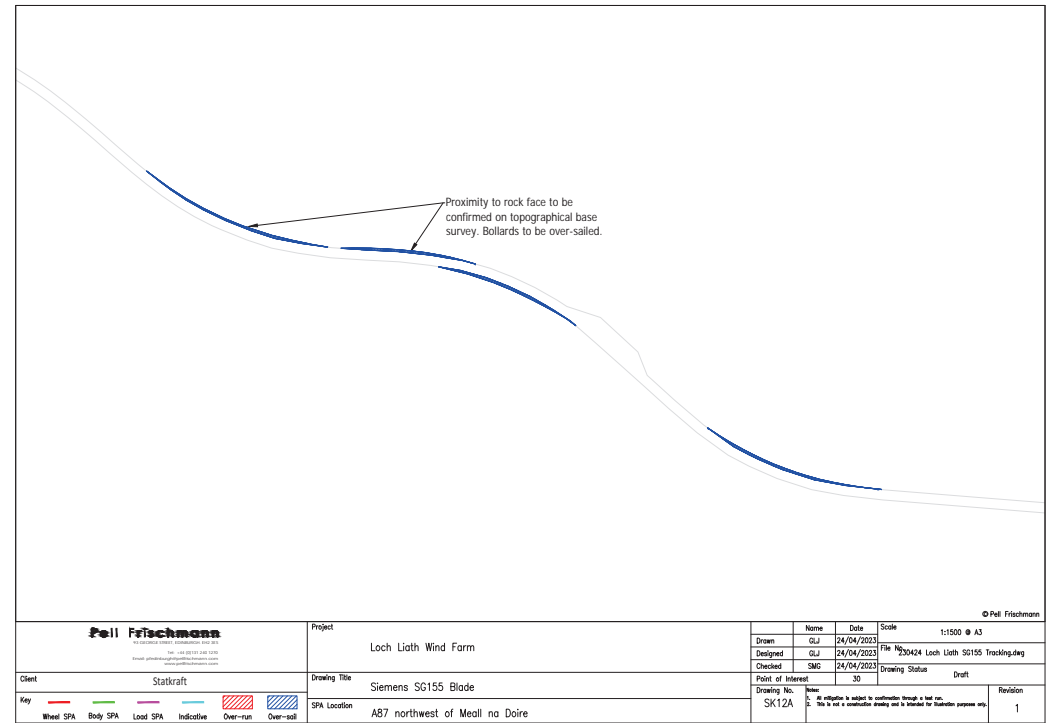
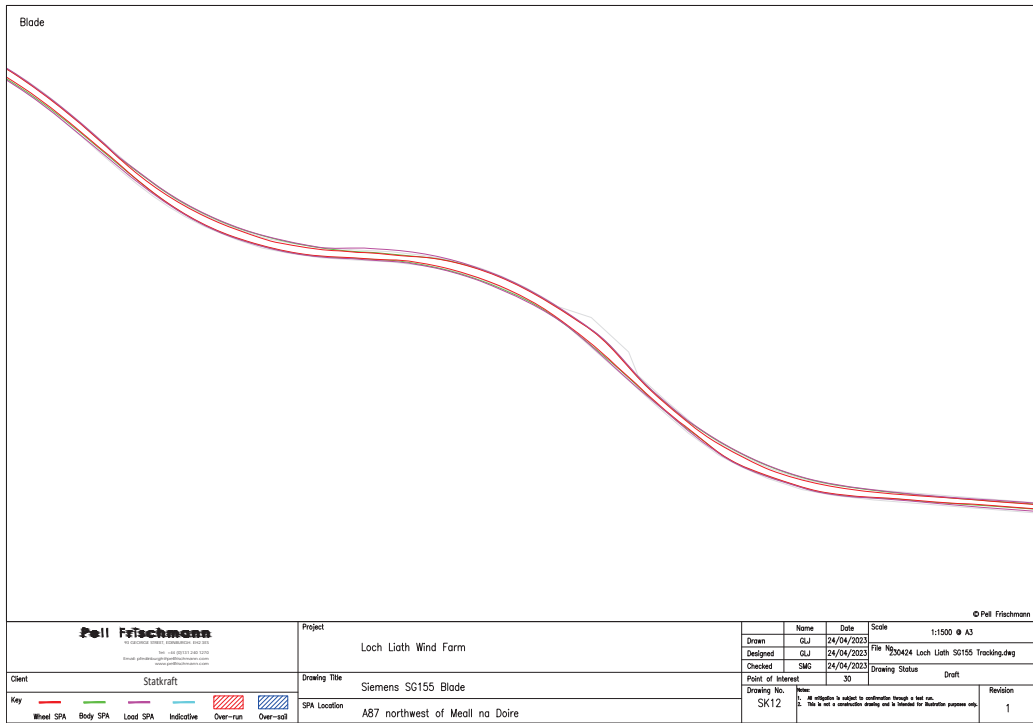
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Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A87 Eas Druim Dubh Tholloidh	Drawing No. SK11	Notes: 1. All alterations to be subject to confirmation through a lead user. 2. This is not a construction drawing and is intended for discussion purposes only.	Revision 1		



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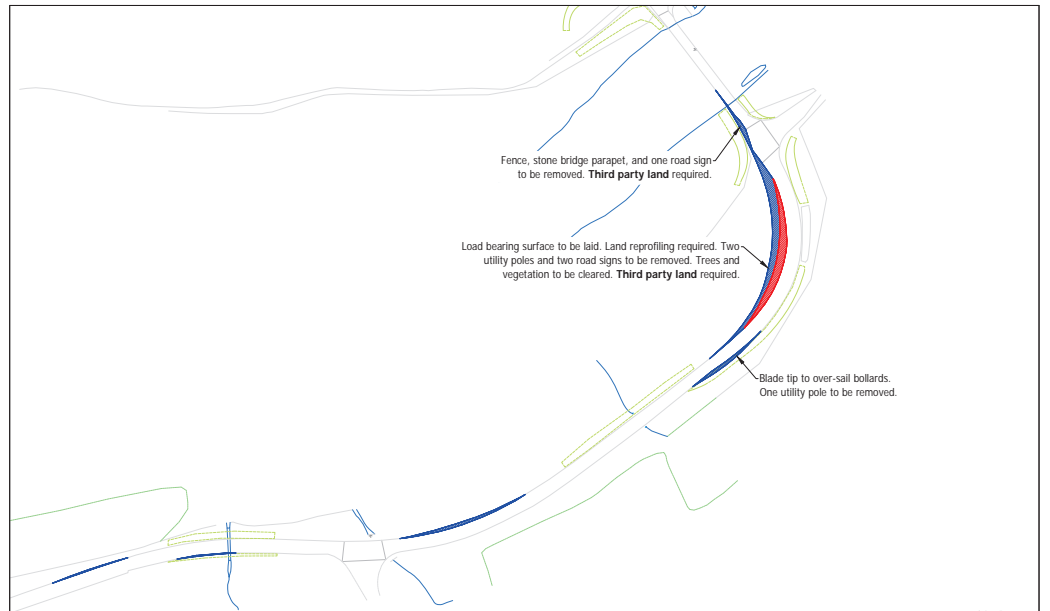
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		Checked	SMO	24/04/2023	Point of Interest	23
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A87 Eas Druim Dubh Tholloidh	Drawing No. SK11A	Notes: 1. All alterations to be subject to confirmation through a lead user. 2. This is not a construction drawing and is intended for discussion purposes only.	Revision 1		





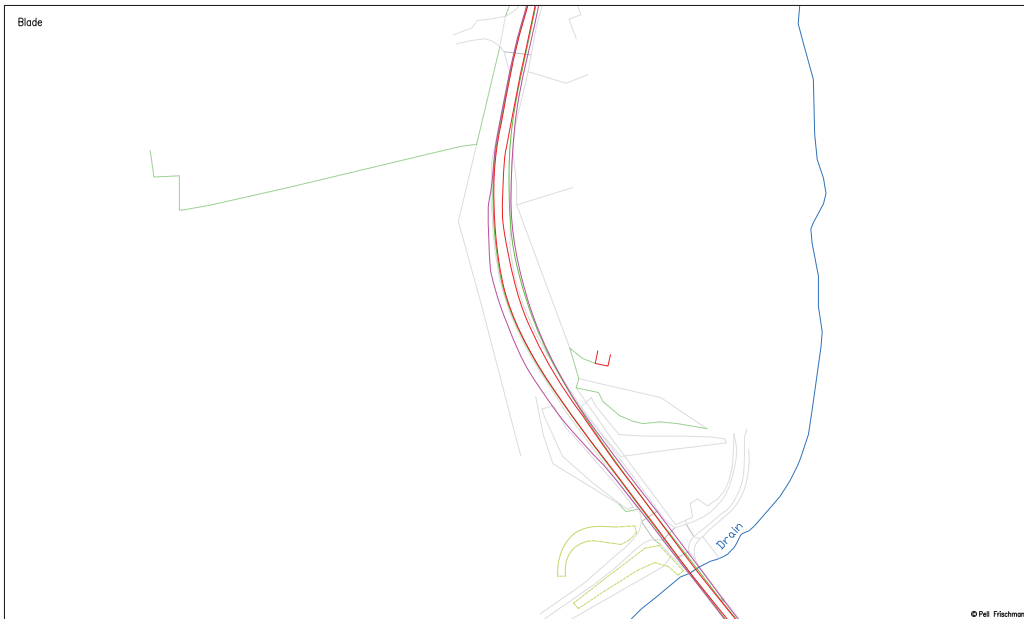
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Peil Frischmann <small>18 Victoria Road, Glasgow G12 9LQ, Scotland Tel: +44 (0)1235 336336 Email: info@peilfrischmann.com www.peilfrischmann.com</small>		Project Loch Liath Wind Farm		<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ 24/04/2023</td><td>1:1250 @ A3</td></tr> <tr><td>Designed</td><td>GLJ 24/04/2023</td><td>File No: 230424 Loch Liath SG155 Tracking.dwg</td></tr> <tr><td>Checked</td><td>SMP 24/04/2023</td><td>Drawing Status: Draft</td></tr> <tr><td>Point of Interest</td><td>41</td><td></td></tr> </table>		Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1250 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath SG155 Tracking.dwg	Checked	SMP 24/04/2023	Drawing Status: Draft	Point of Interest	41	
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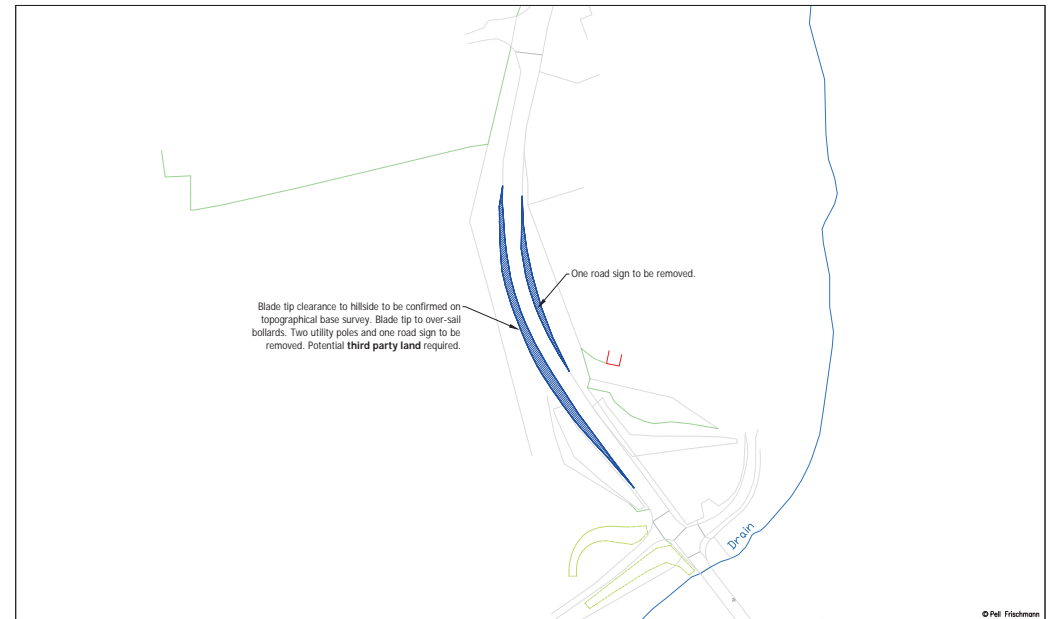


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Peil Frischmann <small>18 Victoria Road, Glasgow G12 9LQ, Scotland Tel: +44 (0)1235 336336 Email: info@peilfrischmann.com www.peilfrischmann.com</small>		Project Loch Liath Wind Farm		<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ 24/04/2023</td><td>1:1250 @ A3</td></tr> <tr><td>Designed</td><td>GLJ 24/04/2023</td><td>File No: 230424 Loch Liath SG155 Tracking.dwg</td></tr> <tr><td>Checked</td><td>SMP 24/04/2023</td><td>Drawing Status: Draft</td></tr> <tr><td>Point of Interest</td><td>41</td><td></td></tr> </table>		Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1250 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath SG155 Tracking.dwg	Checked	SMP 24/04/2023	Drawing Status: Draft	Point of Interest	41	
Name	Date	Scale																		
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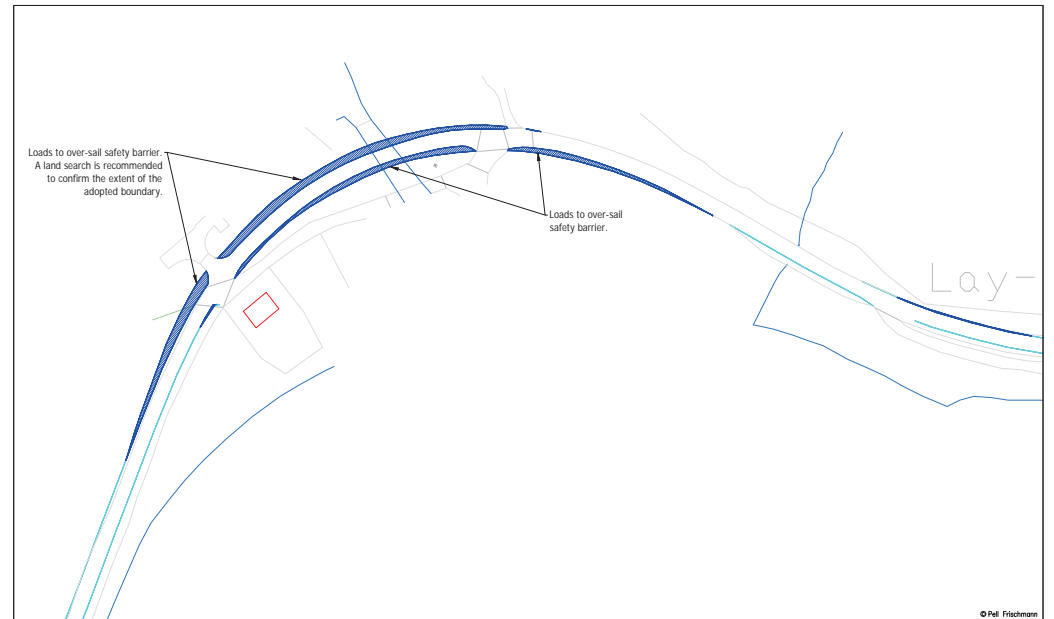
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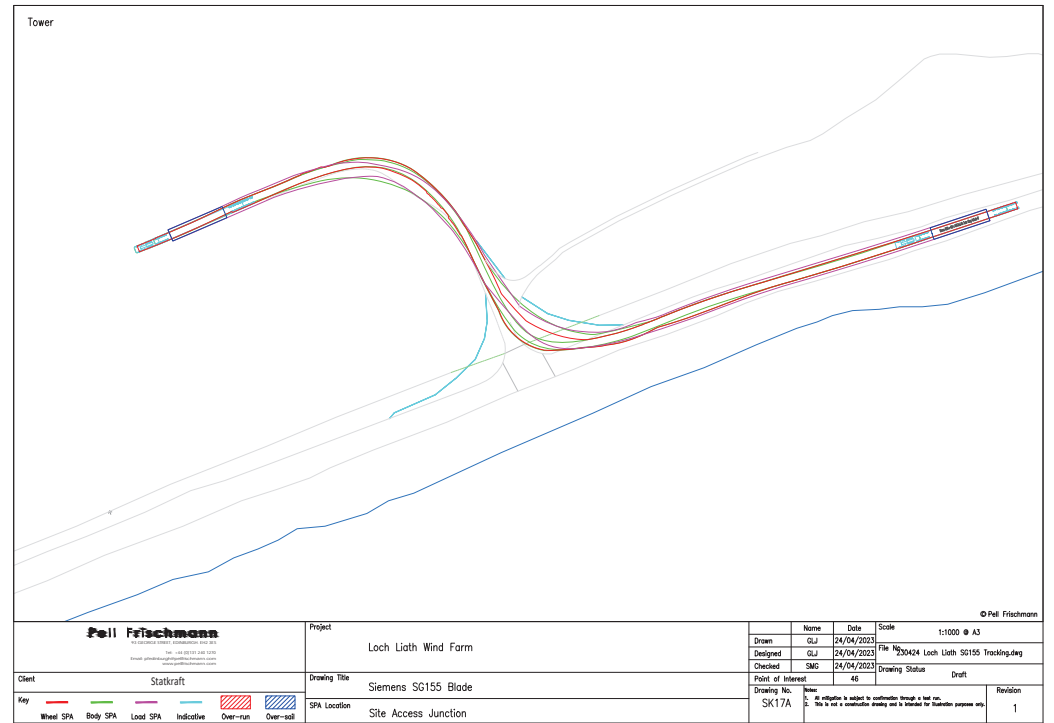
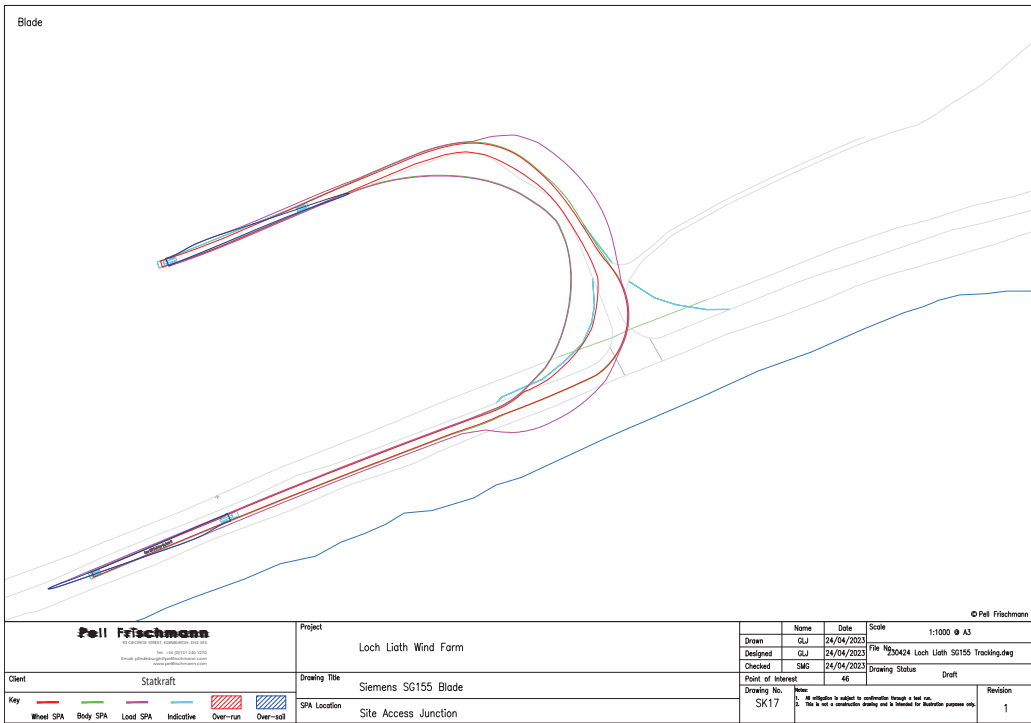
Pell Frischmann <small>18 GARDINER STREET, DUBLIN D04 R0K6 TEL: +353 (0)1 452 2200 EMAIL: info@pellfrischmann.com www.pellfrischmann.com</small>	Project	Loch Liath Wind Farm	Name	Date	Scale	1:1000 @ A3	
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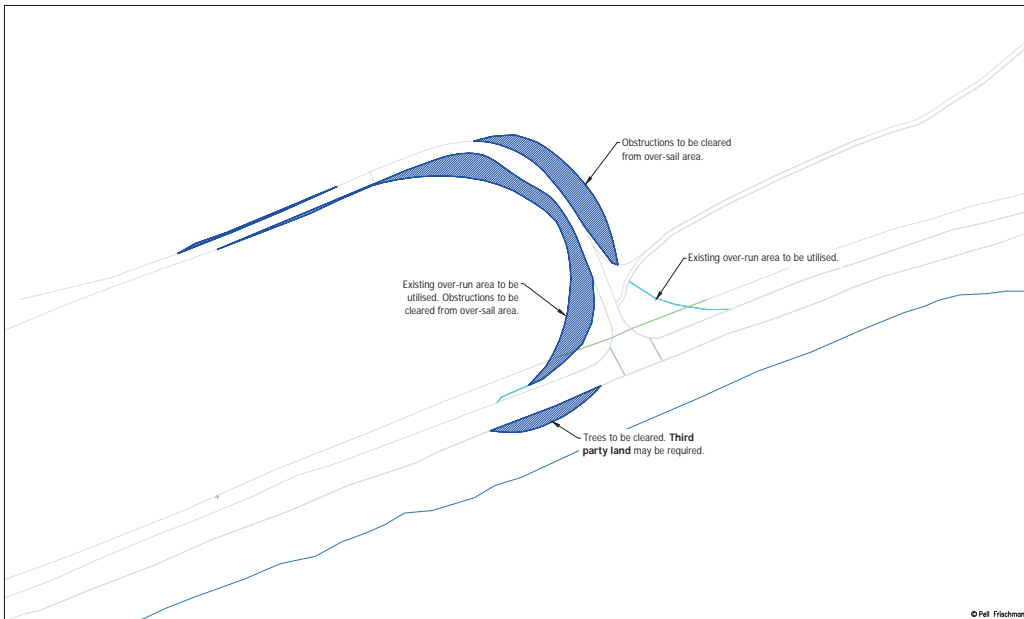


Pell Frischmann <small>18 GARDINER STREET, DUBLIN D04 R0K6 TEL: +353 (0)1 452 2000 EMAIL: info@pellfrischmann.com www.pellfrischmann.com</small>		Project Loch Liath Wind Farm	<table border="1"> <tr> <th>Name</th> <th>Date</th> <th>Scale</th> </tr> <tr> <td>Drawn</td> <td>GLJ 24/04/2023</td> <td>1:1000 @ A3</td> </tr> <tr> <td>Designed</td> <td>GLJ 24/04/2023</td> <td>File No: 230424 Loch Liath SG155 Tracking.dwg</td> </tr> <tr> <td>Checked</td> <td>SMP 24/04/2023</td> <td>Drawing Status: Draft</td> </tr> <tr> <td>Point of Interest</td> <td>44</td> <td></td> </tr> </table>	Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1000 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath SG155 Tracking.dwg	Checked	SMP 24/04/2023	Drawing Status: Draft	Point of Interest	44	
Name	Date	Scale																
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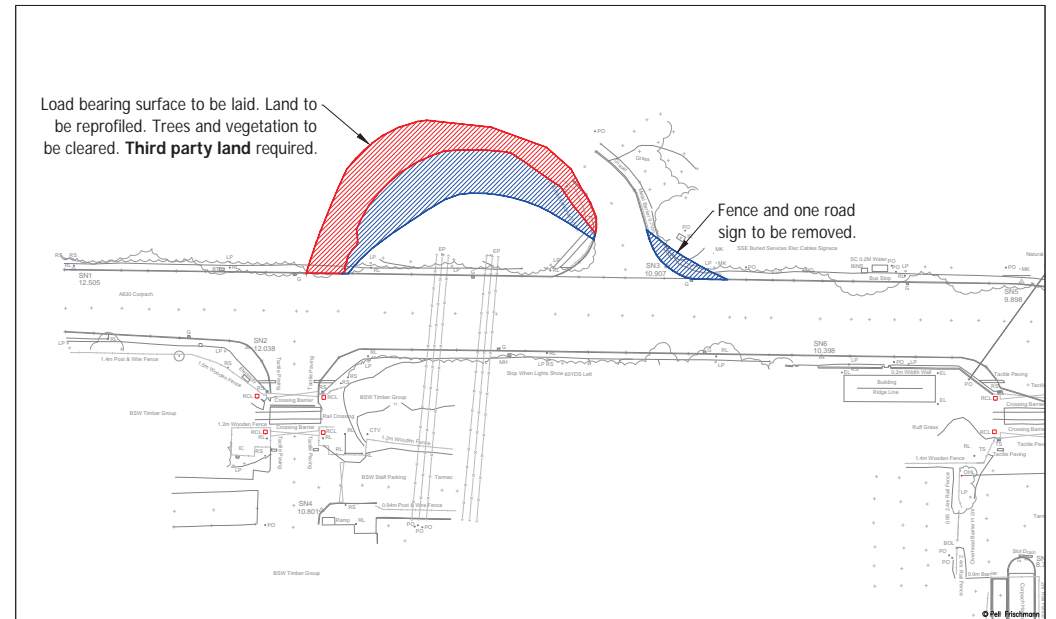


Pell Frischmann <small>18 GARDINER STREET, DUBLIN D04 R0K6 TEL: +353 (0)1 452 2000 EMAIL: info@pellfrischmann.com www.pellfrischmann.com</small>		Project Loch Liath Wind Farm	<table border="1"> <tr> <th>Name</th> <th>Date</th> <th>Scale</th> </tr> <tr> <td>Drawn</td> <td>GLJ 24/04/2023</td> <td>1:1000 @ A3</td> </tr> <tr> <td>Designed</td> <td>GLJ 24/04/2023</td> <td>File No: 230424 Loch Liath SG155 Tracking.dwg</td> </tr> <tr> <td>Checked</td> <td>SMP 24/04/2023</td> <td>Drawing Status: Draft</td> </tr> <tr> <td>Point of Interest</td> <td>44</td> <td></td> </tr> </table>	Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1000 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath SG155 Tracking.dwg	Checked	SMP 24/04/2023	Drawing Status: Draft	Point of Interest	44	
Name	Date	Scale																
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Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A887 Dundreggan Reservoir	Notes: 1. All drawings to be subject to confirmation through a lead run. 2. This is not a construction drawing and is intended for illustration purposes only.																





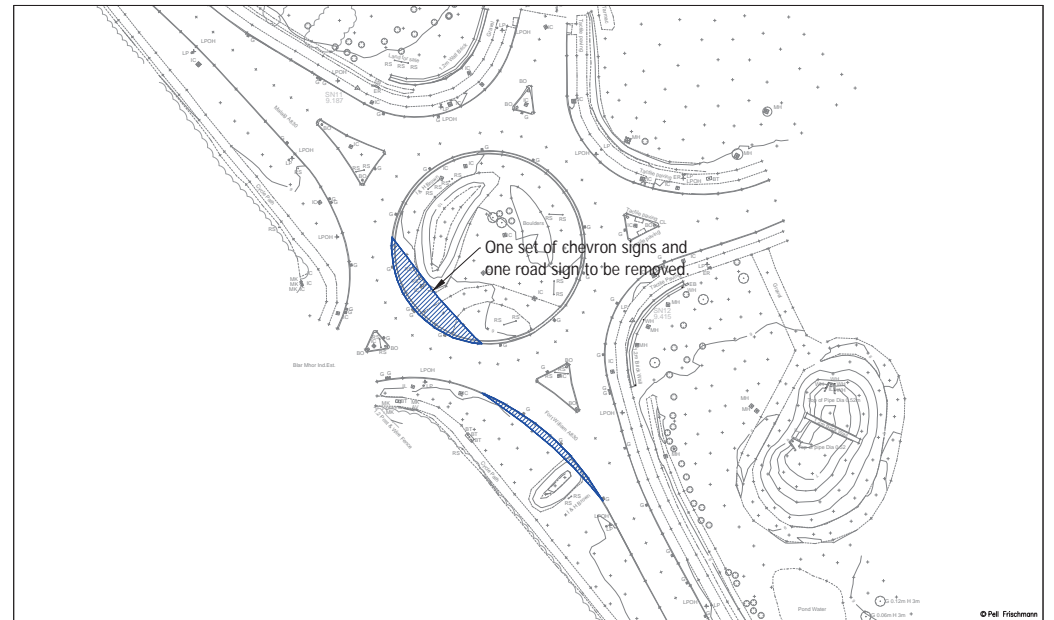
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Key 		SPA Location Site Access Junction		Point of Interest 46		Drawing Status Draft		Revision 1	



		Project Loch Liath Wind Farm		Name SK18A		Date 24/04/2023		Scale 1:500 @ A3	
Client Statkraft		Drawing Title Siemens SG155 Tower		Drawn GJ		Designed GJ		Checked SM	
Key 		SPA Location Corpach Harbour		Point of Interest 47		Drawing Status Draft		Revision 1	



Pell Frischmann <small>18 Victoria Road, Glasgow G2 3JF, Scotland Tel: +44 (0)11 225 2200 Email: info@pellfrischmann.com</small>		Project Loch Liath Wind Farm	Name Loch Liath Wind Farm	Date 24/04/2023	Scale 1:750 @ A3
Client Statkraft		Drawing Title Siemens SG155 Tower	Drawn G.J.	Designed G.J.	File No. 230424 Loch Liath Tower Tracking.dwg
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		SPA Location Blar Mhor Roundabout	Checked S.M.	Point of Interest 49	Drawing Status Draft
		Drawing No. SK19	Notes 1. All alterations to be subject to confirmation through a letter only. 2. This is not a construction drawing and is intended for illustrative purposes only.		Revision 1



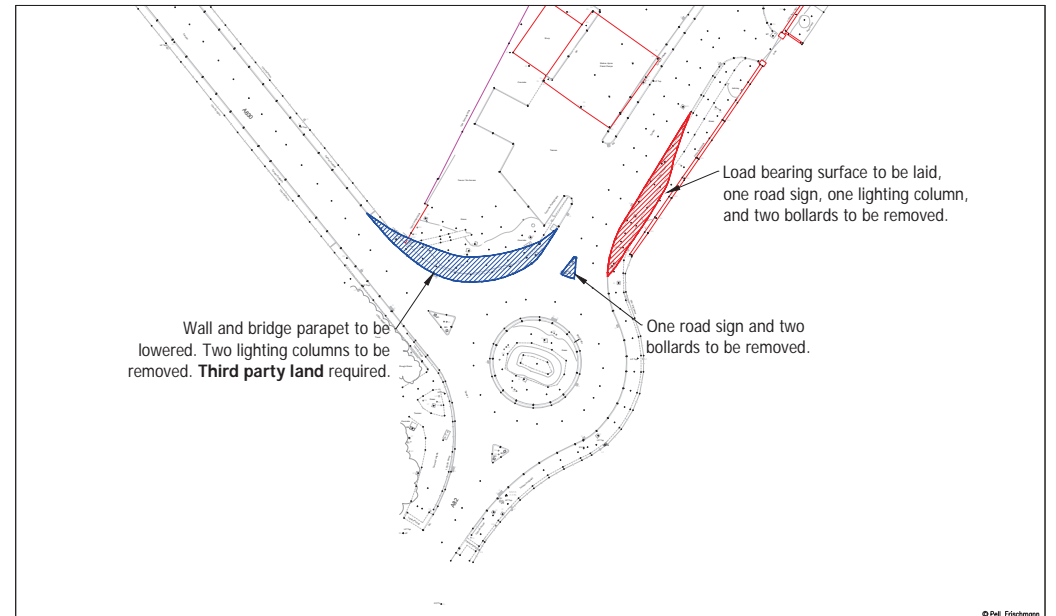
Pell Frischmann <small>18 Victoria Road, Glasgow G2 3JF, Scotland Tel: +44 (0)11 225 2200 Email: info@pellfrischmann.com</small>		Project Loch Liath Wind Farm	Name Loch Liath Wind Farm	Date 24/04/2023	Scale 1:500 @ A3
Client Statkraft		Drawing Title Siemens SG155 Tower	Drawn G.J.	Designed G.J.	File No. 230424 Loch Liath Tower Tracking.dwg
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		SPA Location Blar Mhor Roundabout	Checked S.M.	Point of Interest 49	Drawing Status Draft
		Drawing No. SK19A	Notes 1. All alterations to be subject to confirmation through a letter only. 2. This is not a construction drawing and is intended for illustrative purposes only.		Revision 1



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Peil Frischmann <small>18 Victoria Road, Glasgow G12 9LQ, Scotland Tel: +44 (0)1235 440000 Email: info@peilfrischmann.com</small>		Project		Name		Date	Scale
		Loch Liath Wind Farm		Loch Liath Wind Farm		24/04/2023	1:750 @ A3
Client		Stalkraft		Drawing Title		File No.	
				Siemens SG155 Tower		230424 Loch Liath Tower Tracking.dwg	
Key		SPA Location		Drawing No.		Drawing Status	
				SK20		Draft	
Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		Lochybridge Roundabout		Drawing No.		Revision	
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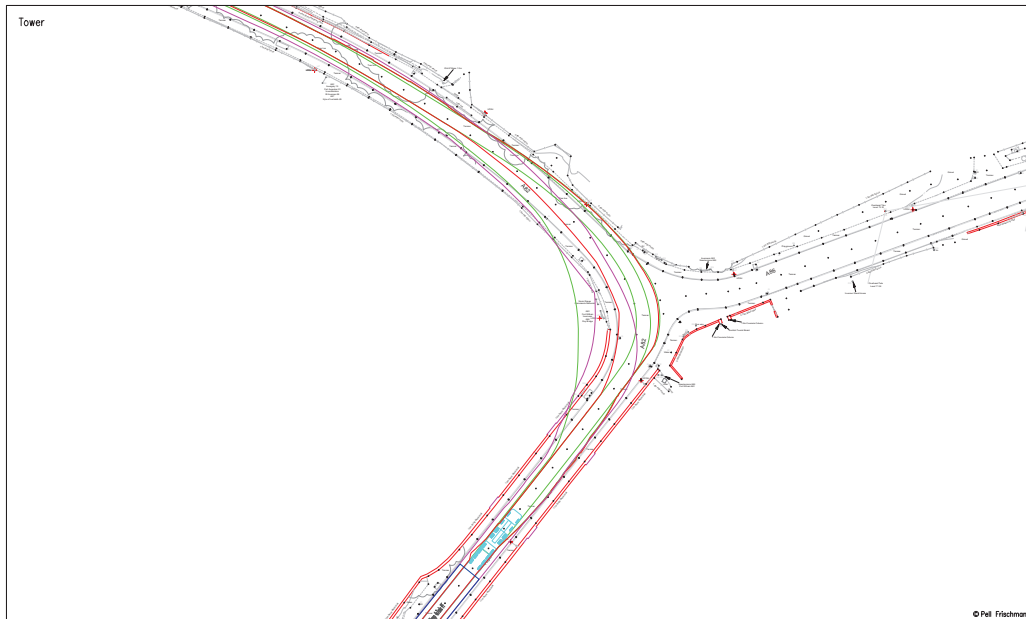
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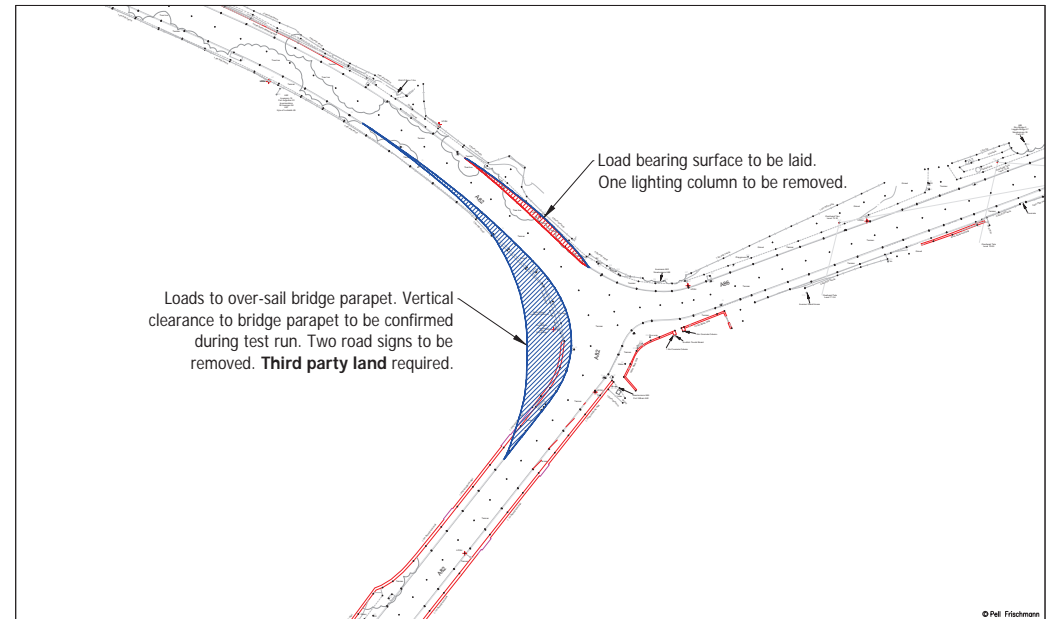
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Peil Frischmann <small>18 Victoria Road, Glasgow G12 9LQ, Scotland Tel: +44 (0)1235 440000 Email: info@peilfrischmann.com</small>		Project		Name		Date	Scale
		Loch Liath Wind Farm		Loch Liath Wind Farm		24/04/2023	1:500 @ A3
Client		Stalkraft		Drawing Title		File No.	
				Siemens SG155 Tower		230424 Loch Liath Tower Tracking.dwg	
Key		SPA Location		Drawing No.		Drawing Status	
				SK20A		Draft	
Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		Lochybridge Roundabout		Drawing No.		Revision	
				SK20A		1	

1. All alterations to be subject to confirmation through a lead van.
2. This is not a construction drawing and is intended for illustrative purposes only.



		Project Loch Lioth Wind Farm	Name Date Scale 1:500 @ A3
Client Stalkraft		Drawing Title Siemens SG155 Tower	Drawn GLJ 24/04/2023
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location A82 Spean Bridge	File No 230424 Loch Lioth Tower Tracking.dwg Designed GLJ 24/04/2023 Checked SCM 24/04/2023 Drawing Status Draft Point of Interest S1 Drawing No. SK21 Note: 1. All alterations to subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustrative purposes only.
		Revision	1

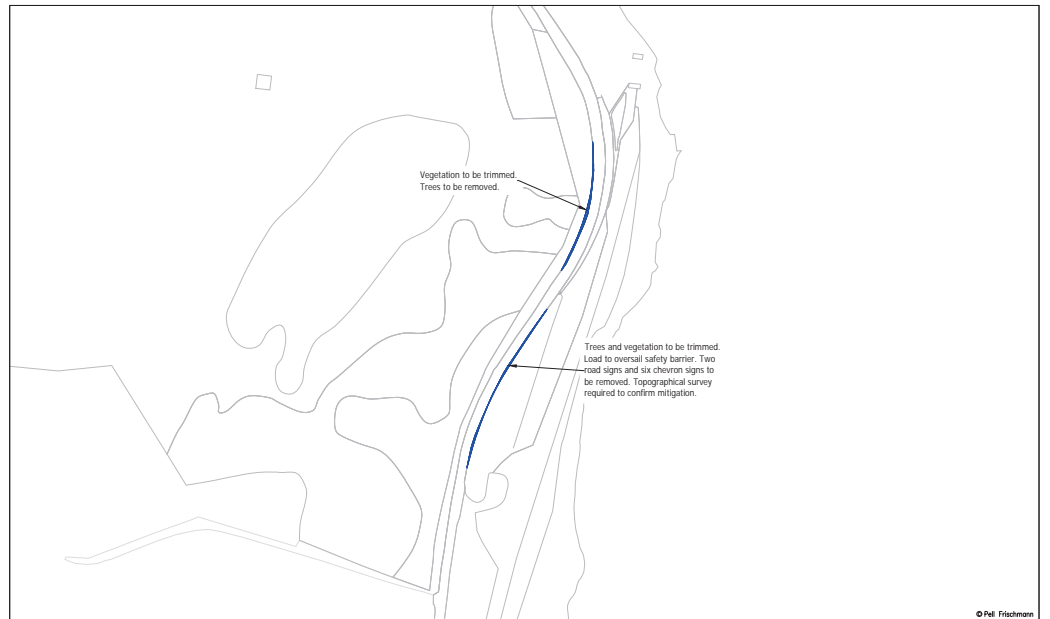


		Project Loch Lioth Wind Farm	Name Date Scale 1:500 @ A3
Client Stalkraft		Drawing Title Siemens SG155 Tower	Drawn GLJ 24/04/2023
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location A82 Spean Bridge	File No 230424 Loch Lioth Tower Tracking.dwg Designed GLJ 24/04/2023 Checked SCM 24/04/2023 Drawing Status Draft Point of Interest S1 Drawing No. SK21A Note: 1. All alterations to subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustrative purposes only.
		Revision	1



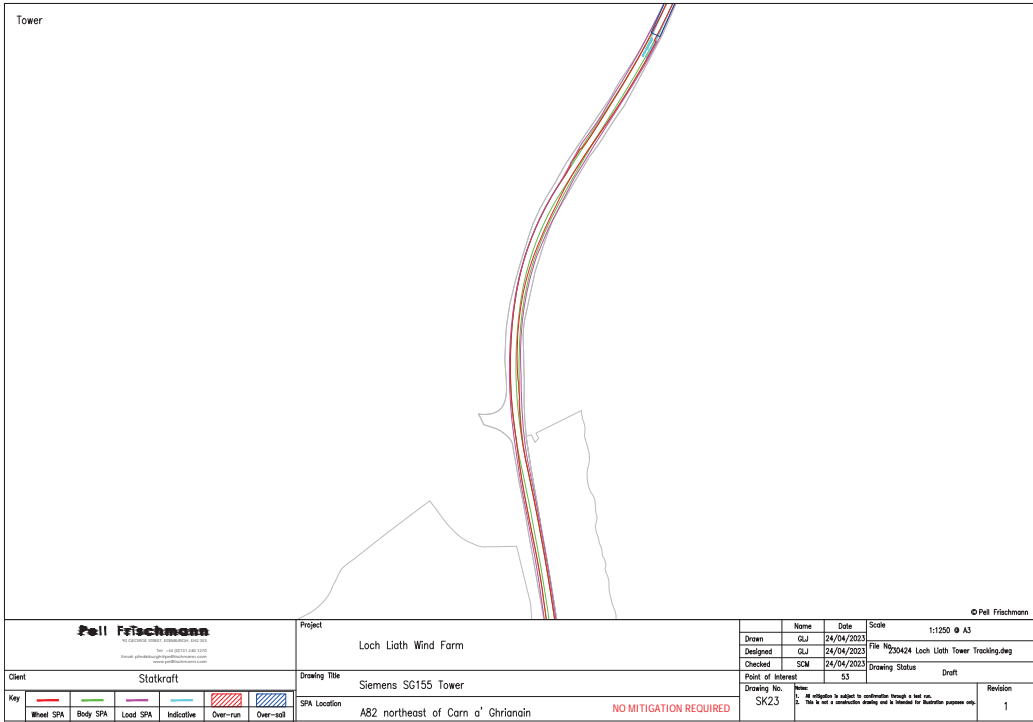
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		Project Loch Liath Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ 24/04/2023</td><td>1:1500 @ A3</td></tr> <tr><td>Designed</td><td>GLJ 24/04/2023</td><td>File No: 230424 Loch Liath Tower Tracking.dwg</td></tr> <tr><td>Checked</td><td>SCM 24/04/2023</td><td>Drawing Status: Draft</td></tr> <tr><td>Point of Interest</td><td>52</td><td></td></tr> </table>	Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1500 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath Tower Tracking.dwg	Checked	SCM 24/04/2023	Drawing Status: Draft	Point of Interest	52	
Name	Date	Scale																
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Checked	SCM 24/04/2023	Drawing Status: Draft																
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<table border="1"> <tr><th>Key</th><th>Wheel SPA</th><th>Body SPA</th><th>Load SPA</th><th>Indicative</th><th>Over-run</th><th>Over-sail</th></tr> <tr><td></td><td>[Red]</td><td>[Green]</td><td>[Blue]</td><td>[Yellow]</td><td>[Orange]</td><td>[Purple]</td></tr> </table>	Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail		[Red]	[Green]	[Blue]	[Yellow]	[Orange]	[Purple]	SPA Location A82 Lower Glenfintaig Farm	Note: 1. All alterations to 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												
	[Red]	[Green]	[Blue]	[Yellow]	[Orange]	[Purple]												



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		Project Loch Liath Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ 24/04/2023</td><td>1:1500 @ A3</td></tr> <tr><td>Designed</td><td>GLJ 24/04/2023</td><td>File No: 230424 Loch Liath Tower Tracking.dwg</td></tr> <tr><td>Checked</td><td>SCM 24/04/2023</td><td>Drawing Status: Draft</td></tr> <tr><td>Point of Interest</td><td>52</td><td></td></tr> </table>	Name	Date	Scale	Drawn	GLJ 24/04/2023	1:1500 @ A3	Designed	GLJ 24/04/2023	File No: 230424 Loch Liath Tower Tracking.dwg	Checked	SCM 24/04/2023	Drawing Status: Draft	Point of Interest	52	
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		Project Loch Liath Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Designed</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Checked</td><td>SCM</td><td>24/04/2023</td></tr> <tr><td>Point of Interest</td><td>SP</td><td></td></tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SCM	24/04/2023	Point of Interest	SP		<table border="1"> <tr><th>File No.</th><th>Drawing Status</th></tr> <tr><td>230424 Loch Liath Tower Tracking.dwg</td><td>Draft</td></tr> </table>	File No.	Drawing Status	230424 Loch Liath Tower Tracking.dwg	Draft
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Checked	SCM	24/04/2023																					
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230424 Loch Liath Tower Tracking.dwg	Draft																						
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		Project Loch Liath Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Designed</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Checked</td><td>SCM</td><td>24/04/2023</td></tr> <tr><td>Point of Interest</td><td>SP</td><td></td></tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SCM	24/04/2023	Point of Interest	SP		<table border="1"> <tr><th>File No.</th><th>Drawing Status</th></tr> <tr><td>230424 Loch Liath Tower Tracking.dwg</td><td>Draft</td></tr> </table>	File No.	Drawing Status	230424 Loch Liath Tower Tracking.dwg	Draft
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230424 Loch Liath Tower Tracking.dwg	Draft																						
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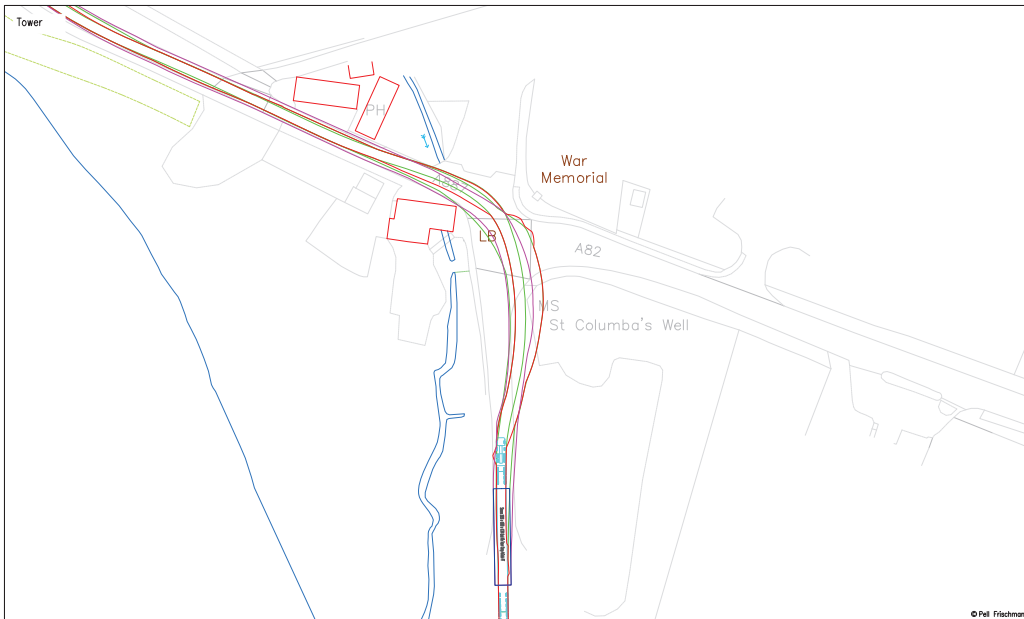
		Project Loch Liath Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Designed</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Checked</td><td>SCM</td><td>24/04/2023</td></tr> <tr><td>Point of Interest</td><td>60</td><td>Drawing Status</td></tr> <tr><td>Drawing No.</td><td>SK26A</td><td>Draft</td></tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SCM	24/04/2023	Point of Interest	60	Drawing Status	Drawing No.	SK26A	Draft	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Designed</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Checked</td><td>SCM</td><td>24/04/2023</td></tr> <tr><td>Point of Interest</td><td>60</td><td>Drawing Status</td></tr> <tr><td>Drawing No.</td><td>SK26A</td><td>Draft</td></tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SCM	24/04/2023	Point of Interest	60	Drawing Status	Drawing No.	SK26A	Draft	1:750 @ A3 File No: 230424 Loch Liath Tower Tracking.dwg
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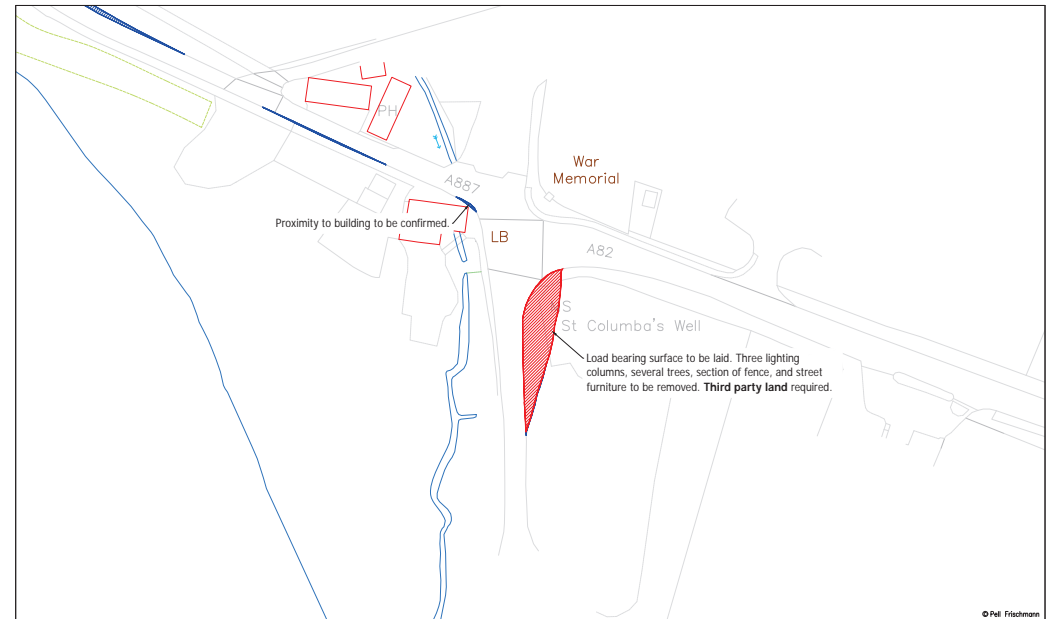
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Key 	SPA Location A82 / B862 Station Rd Junction Fort Augustus	Drawing No. SK27	Revision 1



		Project Loch Liath Wind Farm	Name Date Scale 1:500 @ A3
Client Stalkraft		Drawing Title Siemens SG155 Tower	Drawn GLJ 24/04/2023 File No 230424 Loch Liath Tower Tracking.dwg Designed GLJ 24/04/2023 Checked SCM 24/04/2023 Point of Interest 61 Drawing Status Draft
Key 	SPA Location A82 / B862 Station Rd Junction Fort Augustus	Drawing No. SK27A	Revision 1



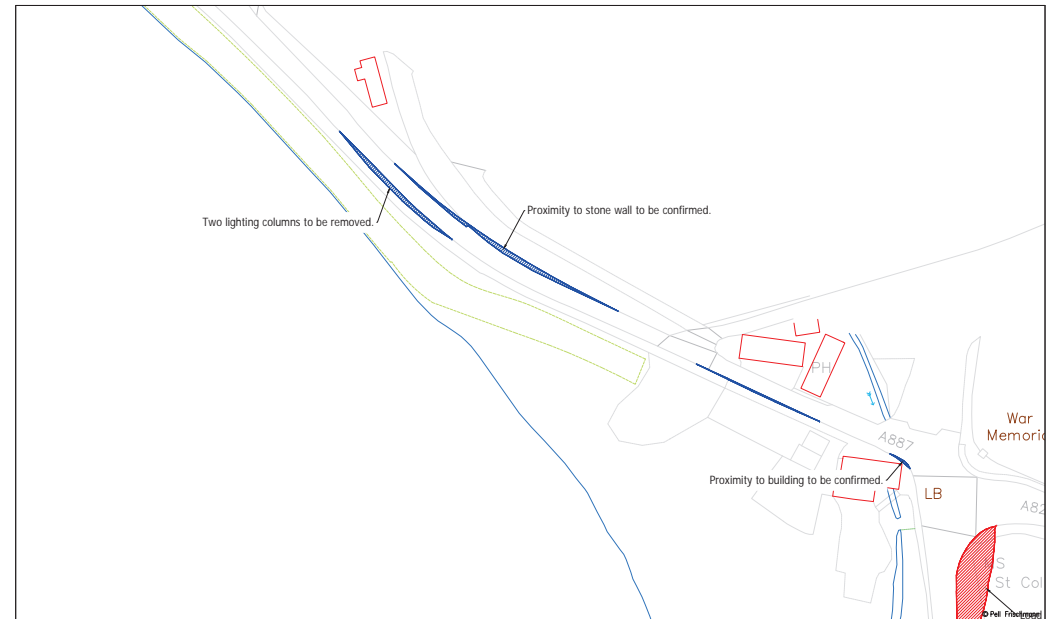
Pell Frischmann <small>18 GARDNER STREET, GARDINER TOWN, DUBLIN 4</small> <small>TEL: +353 1 251 2261</small> <small>EMAIL: info@pellfrischmann.com</small> <small>WWW.PELLFRISCHMANN.COM</small>		Project Loch Liath Wind Farm	Name Date Scale 1:750 @ A3
Client Statkraft		Drawing Title Siemens SG155 Tower	Drawn Designed Checked Point of Interest Drawing No. SK28
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		SPA Location A82 / A887 Junction Invermoriston	File No. 230424 Loch Liath Tower Tracking.dwg Drawing Status Draft Revision 1



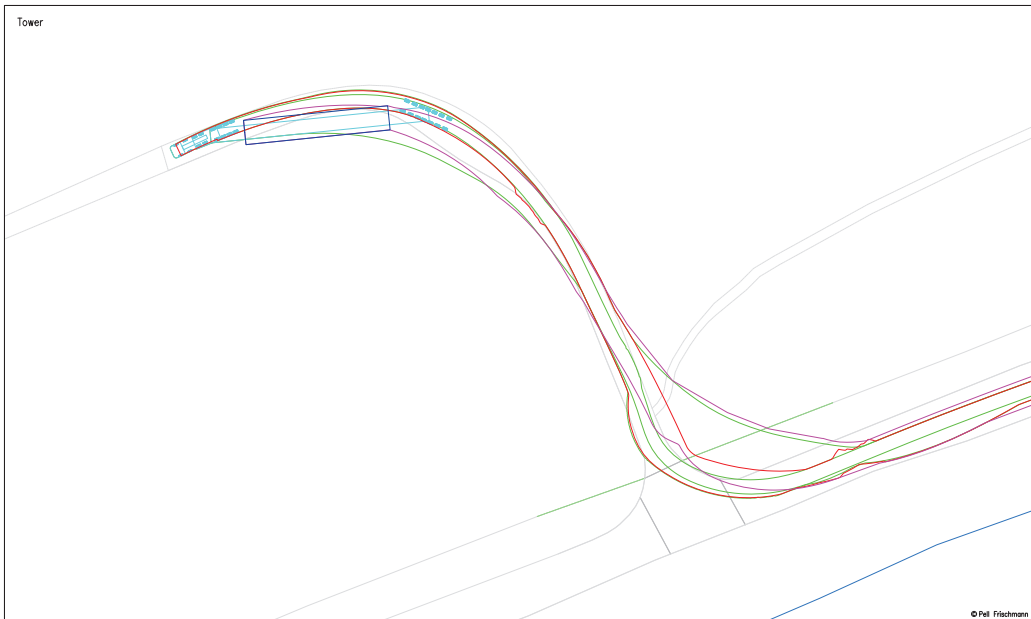
Pell Frischmann <small>18 GARDNER STREET, GARDINER TOWN, DUBLIN 4</small> <small>TEL: +353 1 251 2261</small> <small>EMAIL: info@pellfrischmann.com</small> <small>WWW.PELLFRISCHMANN.COM</small>		Project Loch Liath Wind Farm	Name Date Scale 1:750 @ A3
Client Statkraft		Drawing Title Siemens SG155 Tower	Drawn Designed Checked Point of Interest Drawing No. SK28A
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-soil		SPA Location A82 / A887 Junction Invermoriston	File No. 230424 Loch Liath Tower Tracking.dwg Drawing Status Draft Revision 1



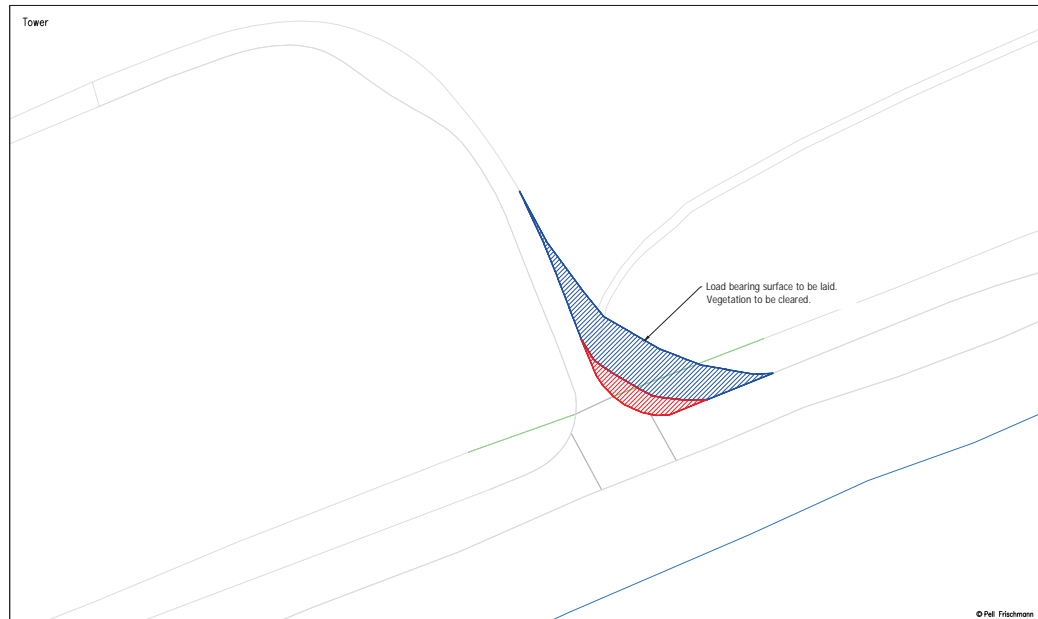
Pell Frischmann <small>18 GARDNER STREET, GARDINER TOWN, DUBLIN 4</small> <small>TEL: +353 (0)1 452 2200</small> <small>EMAIL: info@pellfrischmann.com</small> <small>WWW.PELLFRISCHMANN.COM</small>		Project Loch Liath Wind Farm	Name Date Scale 1:750 @ A3
Client Statkraft		Drawing Title Siemens SG155 Tower	Drawn GLJ 24/04/2023 File No 230424 Loch Liath Tower Tracking.dwg Designed GLJ 24/04/2023 Checked SCM 24/04/2023 Drawing Status Draft Point of Interest 83
Key 		SPA Location A82 / A887 Junction Invermoriston	Drawing No. SK29 Note: 1. All alterations to be subject to confirmation through a lead user. 2. This is not a construction drawing and is intended for illustration purposes only.
			Revision 1



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Pell Frischmann <small>18-19 Victoria Road, Glasgow G2 3JF, Scotland</small> <small>Tel: +44 (0)1235 438333</small> <small>Email: info@pellfrischmann.com</small> <small>www.pellfrischmann.com</small>		Project Loch Lioth Wind Farm	<table border="1"> <tr><th>Name</th><th>Date</th><th>Scale</th></tr> <tr><td>Drawn</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Designed</td><td>GLJ</td><td>24/04/2023</td></tr> <tr><td>Checked</td><td>SCM</td><td>24/04/2023</td></tr> <tr><td>Point of Interest</td><td>46</td><td></td></tr> </table>	Name	Date	Scale	Drawn	GLJ	24/04/2023	Designed	GLJ	24/04/2023	Checked	SCM	24/04/2023	Point of Interest	46		File No: 230424 Loch Lioth Tower Tracking.dwg Drawing Status: Draft Drawing No: SK17 Revision: 1
Name	Date	Scale																	
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Designed	GLJ	24/04/2023																	
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