Pell Frischmann

Knockcronal Wind Farm

Transport Assessment

November 2021

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Prepared for

ITPEnergised

ITPEnergised
4th Floor
Centrum House
108-114 Dundas Street
Edinburgh
EH3 5QG

Prepared by

Pell Frischmann

93 George Street
Edinburgh
EH2 3ES

Pell Frischmann

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by ITPEnergised on behalf of Stratkraft Ltd (the Applicant) to undertake a Transport Assessment (TA) for the proposed Knockcronal Wind Farm (hereafter the Proposed Development), located to the south of Straiton, South Ayrshire.

This Technical Appendix has been prepared to accompany Chapter 12 in Volume 1 of the Knockcronal Wind Farm EIA Report. The report identifies the key transport and access issues associated with the Proposed Development, including routes for abnormal loads. The TA identifies where the Proposed Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report.

1.2 Report Structure

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

- 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; and
- Chapter Nine summarises the findings of the TA and outlines the key conclusions.

2 Proposed Development

2.1 Site Location

The proposed development is located approximately 4.8km south of Straiton, 11.3km south-west of Dalmellington and 17.4km east of Girvan, within the South Ayrshire Council area.

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

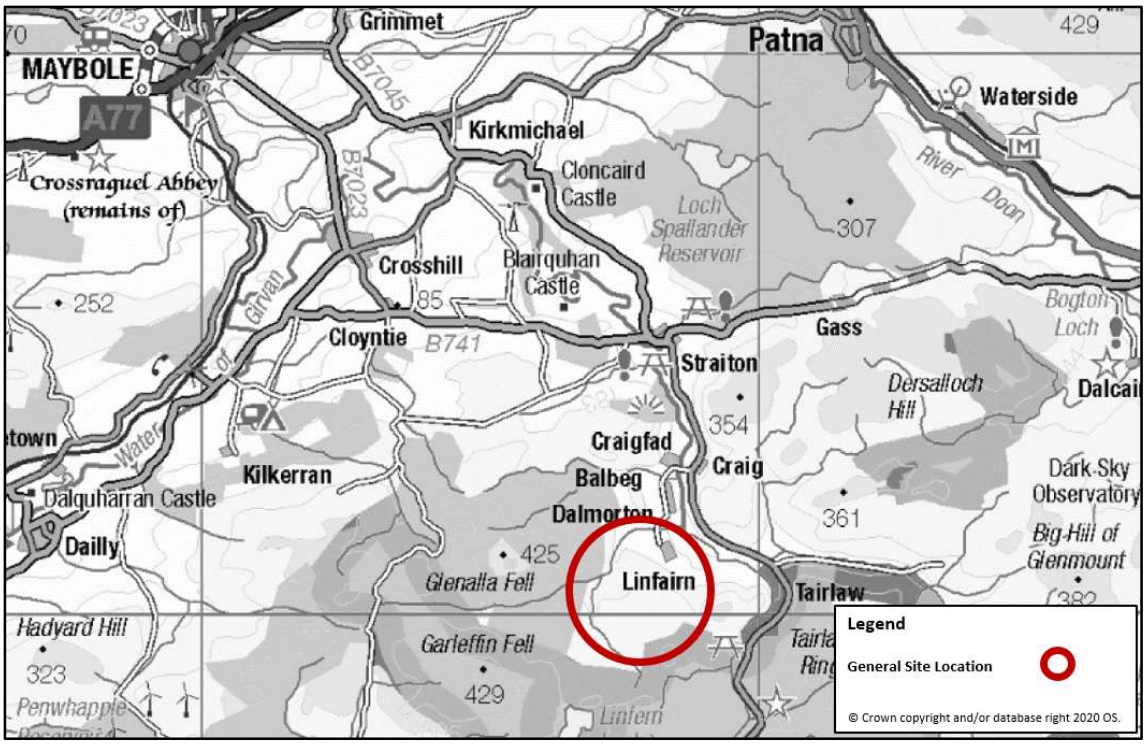


Figure 1 General Site Location

The site is approximately 540 hectares (ha) in area and comprises moorland in the south and west, and farmland in the north-east. To the east and north-east of the site, land consists of open moorland, farmland and a number of individual properties. National Forest Estate's commercial forest plantation is located further to the north-west, west, south and south-east.

2.2 Proposed Development

The Proposed Development will comprise nine stand-alone turbines, with the three most eastern turbines at maximum tip height of 180 m and six turbines a maximum tip height of 200 m, and associated on-site energy storage. The site layout is presented in Figure 1.1 Volume 2 of the EIA Report.

The proposals also include ancillary infrastructure which includes:

- Turbine foundations;
- Crane hardstandings;
- Site entrance and access tracks;
- On-site access tracks between turbines and from the point of access to the turbines;
- On-site substation and maintenance building with welfare facility;
- Energy storage system;
- On-site electrical cabling between the wind turbines and the substation and energy storage system;
- Temporary construction compound, gatehouse compound and concrete batching plant;
- Borrow pit search areas; and
- Permanent Meteorological mast.

The operational life of the proposed development is anticipated to be for a period of at least 30 years.

2.3 Planning Background

The site previously formed part of the Linfairn Wind Farm application which was withdrawn in 2018. Consultee responses for Linfairn Wind Farm were considered when determining the design and site boundary of the Proposed Development.

A Scoping Request was sent to the Scottish Government in December 2020 which included a scheme for twelve wind turbines with a tip height up to 200 m. Following additional studies, as well as consultations with local communities, it was decided to reduce the number of turbines from twelve to nine. This Transport Assessment will therefore consider the traffic impacts associated with the revised scheme comprising nine wind turbines.

2.4 Candidate Turbines

The indicative turbine considered is the Siemens SG155 at a tip height between 180m and 200m. Details of the turbine components are outlined in the Route Survey Reports Annex C.

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 slightly vary from those assumed as part of the route assessments.

Examples of the vehicles and trailers that are likely to transport the loads are shown in Figure 2 and 3.

Figure 2 Super Wing Carrier with Loaded Turbine Blade

Figure 3 Typical Tower Transport 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

3.2.1 The Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment (IEA), 1993)

The Guidelines for the Environmental Assessment of Road Traffic outlines rules for the screening process to define the scale and extent of the assessment:

"Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and

Rule 2: Include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more."

3.2.2 Scottish Planning Policy

The Scottish Planning Policy (SPP) was developed to set out the national planning policies which demonstrates the priorities of Scottish Ministers' for the operation of the planning system as well as for the development and use of land. The document notes that:

"Where a new development or a change of use is likely to generate a significant increase in the number of trips, a transport assessment should be carried out. This should identify any potential cumulative effects which need to be addressed."

In relation to the construction of new developments, the SPP notes:

"Consideration should be given to appropriate planning restrictions on construction and operation related transport modes when granting planning permission, especially where bulk material movements are expected, for example freight from extraction operations".

3.2.3 National Planning Framework 3 (2014)

Scotland's National Planning Framework (NPF3) sets the context for development planning in Scotland and provides a framework for the spatial development of Scotland as a whole. It sets out the Scottish Government's development priorities over the next 20 to 30 years and identifies national developments which support the development strategy. Scotland's third NPF was laid in the Scottish Parliament on 23 June 2014.

3.2.4 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."

3.2.5 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

3.3.1 South Ayrshire Local Development Plan (2014)

In relation to Wind Energy, the South Ayrshire Local Development Plan (LDP) states that:

"South Ayrshire has above-average wind speeds and is an attractive area for generating wind energy and, in particular, as a location for wind farms. The Scottish Government has set a target for the equivalent of 100% of Scotland's electricity to be generated from renewable sources by 2020, and onshore wind power is one of the main sources of renewable energy.

Given the Government's target, we have a responsibility to find wind farm locations that would contribute to the overall national supply, while taking any effects on the environment into account. Local benefits arising from wind farms can be important to the economic future of rural communities."

The LDP's Land Use and Transport Policy notes that development proposals should:

- *"align with the Regional Transport Strategy and our Local Transport Strategy;*
- *take appropriate measures to keep any negative effects of road traffic on the environment to a minimum;*
- *ensure accessibility to local services is maintained and improved by the integration of transport networks linking services to local communities;*
- *where otherwise in accordance with the LDP and where required to facilitate development, provide interventions to the strategic transport network to maintain the efficiency of the transport network for both users and operators;*
- *where possible, closely link to existing and proposed walking, cycling and public transport networks;*
- *ensure essential use of the private car is accommodated within the context of an integrated approach to transport;*
- *safeguard existing car parking facilities, particularly strategic car parking facilities and those identified in the LDP strategy maps;*
- *provide parking that reflects the role of the development, the location in which it is situated and the projected capability of existing parking facilities;*
- *ensure roadside facilities for drivers, including snack bars, are directed to settlements, and especially town centres, with a preference for the use of permanent structures rather than mobile or temporary ones which are to be used on a long-term basis;*
- *encourage freight to be transported by rail, sea or air rather than by road; and*
- *meet the costs of new transport infrastructure and services (in cases where these would not be provided commercially) which are needed as a result of their development."*

3.3.2 South Ayrshire Local Development Plan (LDP2)

South Ayrshire Council is currently in the process of preparing a replacement for the LDP. Once adopted, the LDP2 will become the planning policy framework against which all development proposals will be assessed.

South Ayrshire Council anticipates that they will be in a position to adopt the LDP2 in late autumn 2021.

3.4 Policy 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 the three aforementioned 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, these may potentially cause 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.

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

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

4.3 Scoping Discussions

The Applicant submitted a request for scoping opinion to the Scottish Ministers in respect of the Environmental Impact Assessment which included a section considering traffic and transport.

A full review of that scoping opinion is provided in the EIA Report Volume 1: Chapter 12 and in Volume 4: Appendix 4.2.

5 Baseline Conditions

5.1 Access Arrangement

There are currently two potential access points being considered to the site. Only one access point will be chosen for the turbine load deliveries. It should be noted that the final choice on the accesses will be agreed with South Ayrshire Council post consent and secured by planning condition.

The locations of the access points from the local road network are presented in Figure 4 as Western Access (Option A) and Northern Access (Option B).

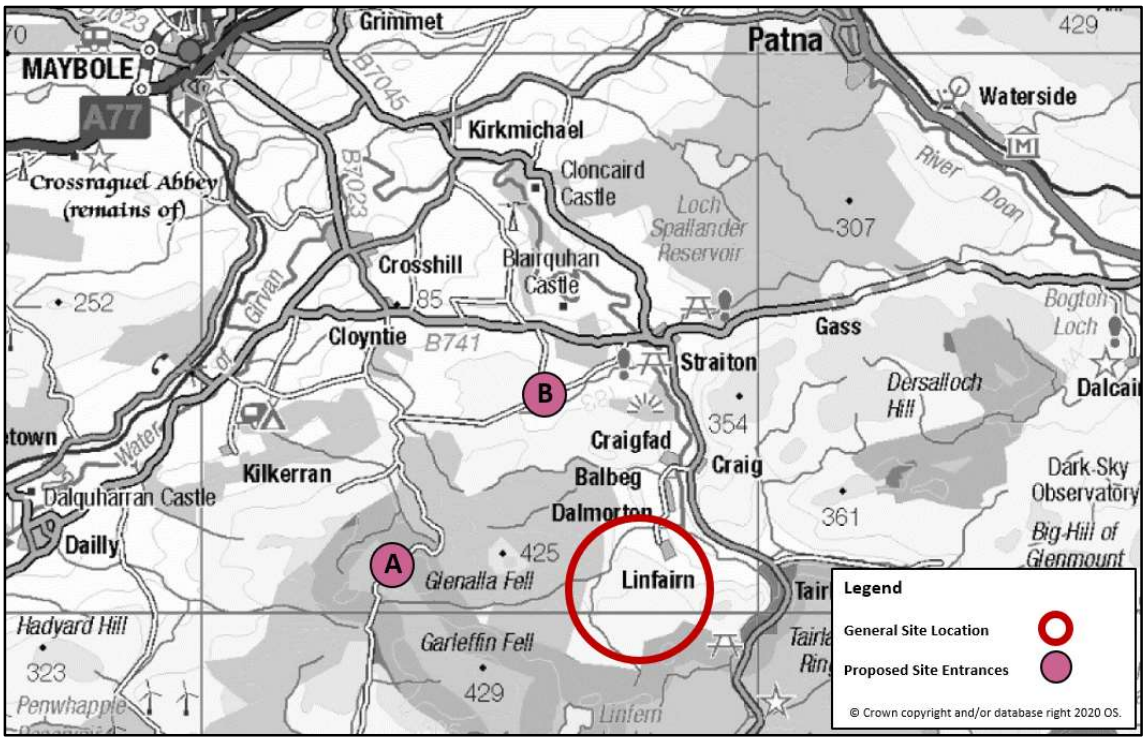


Figure 4 Entrance Locations

The proposed entrance location of Western Access and Northern Access are shown in Figure 5.

Figure 5 Google Street View Images of Entrance Points A and B, respectively

The Western Access would be taken directly from Hill Road to the south of Cloyntie, using an upgraded forestry access junction. Visibility splays of 160m in both directions with a set-back distance of 4.5 m from the centre of the access junction will be provided.

The Northern Access would be taken from an unclassified road approximately 2 km to the south-west of Straiton. A new access junction will be built to meet the standards of the turbine manufacturer and Ayrshire Road Alliance. Visibility splays of 160 m in both directions with a set-back distance of 4.5 m from the centre of the access junction will be provided.

The proposed access junctions will use upgraded forestry access tracks and new access links to provide access to the turbine locations.

It is proposed that all vehicular traffic would use one of these accesses, including Abnormal Indivisible Loads (AIL). A detailed Route Survey Report supports the application (and will identify the necessary access improvements that will be required to enable loads to access the site. Copies of the site access junction layouts are provided in Annex A and B.

5.2 Study Area Determination

Scoping was undertaken with SAC and Transport Scotland on the likely scope of the TA to establish a Study Area.

Strategic access to the site is provided by the A77 trunk road which is located to the north east of the site. Local road access to the site is subsequently available via the B7045, B7023, Dalhowan Street and southbound via Hill Road to the Western Access.

The Northern Access is reached by joining the B741 after Cloyntie Bridge and turning onto the unclassified road unofficially signposted as Bennan's Farm.

As the abnormal loads associated with the wind turbines have two potential access points, the final choice on the access route from the A77 will be agreed with SAC post consent and secured by planning condition. The Route Survey Report (RSR) contained in Annex C assesses both options.

The Study Area includes local roads that are likely to experience increased traffic flows resulting from 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.

The Study Area for the assessment has therefore been assumed to be:

- Hill Road to the south of Cloyntie;
- Unclassified road to the south-west of Straiton (unofficially signed as Bennan Farm);
- Along the B741 to the east of Cloyntie;
- B7023 to the south of Maybole;
- B7045 between the A77 and link road to B7023; and
- A77 between Maybole and Nether Auchendrane.

This route will also provide access to the site for all construction materials, turbine components, site staff and visitors. Locally sourced material will be used where feasible and traffic will avoid impacting local communities, as far as possible.

The Study Area network is presented in Figure 6.

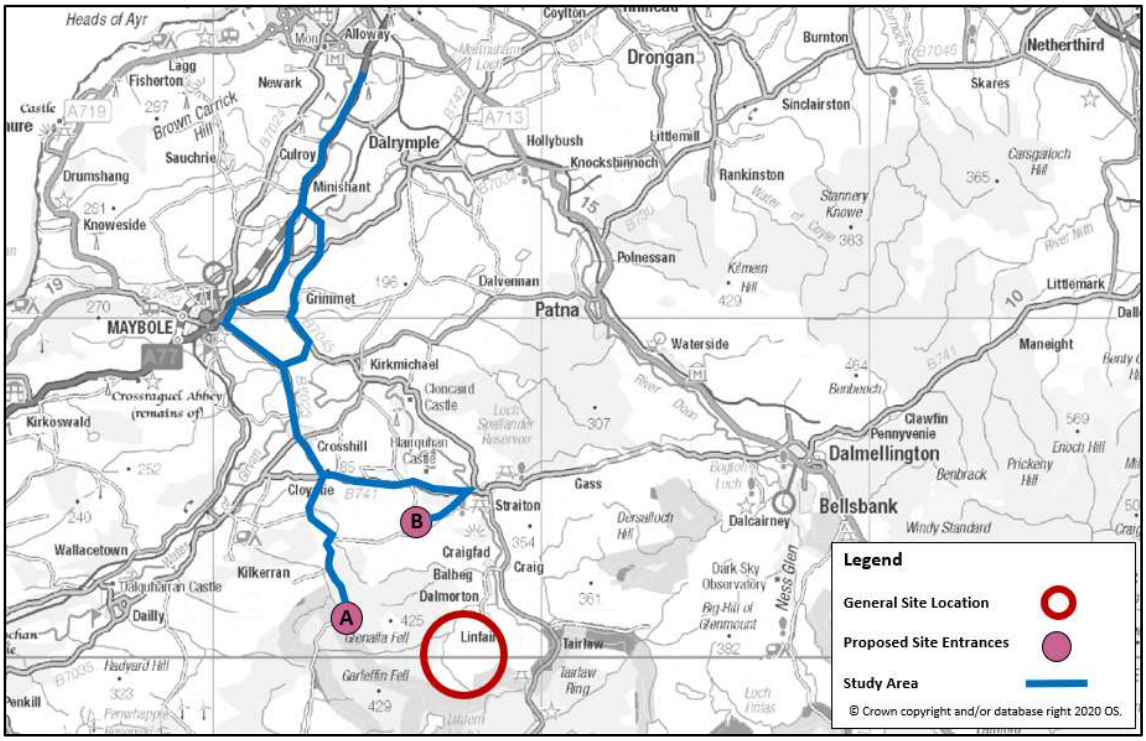


Figure 6 Study Area

5.3 Pedestrian and Cyclist Networks

Figure 7 shows the locations of core paths / rights of way (depicted by red lines) in relation to the site location (shown in green hatching).The two access route options are not included in this figure.

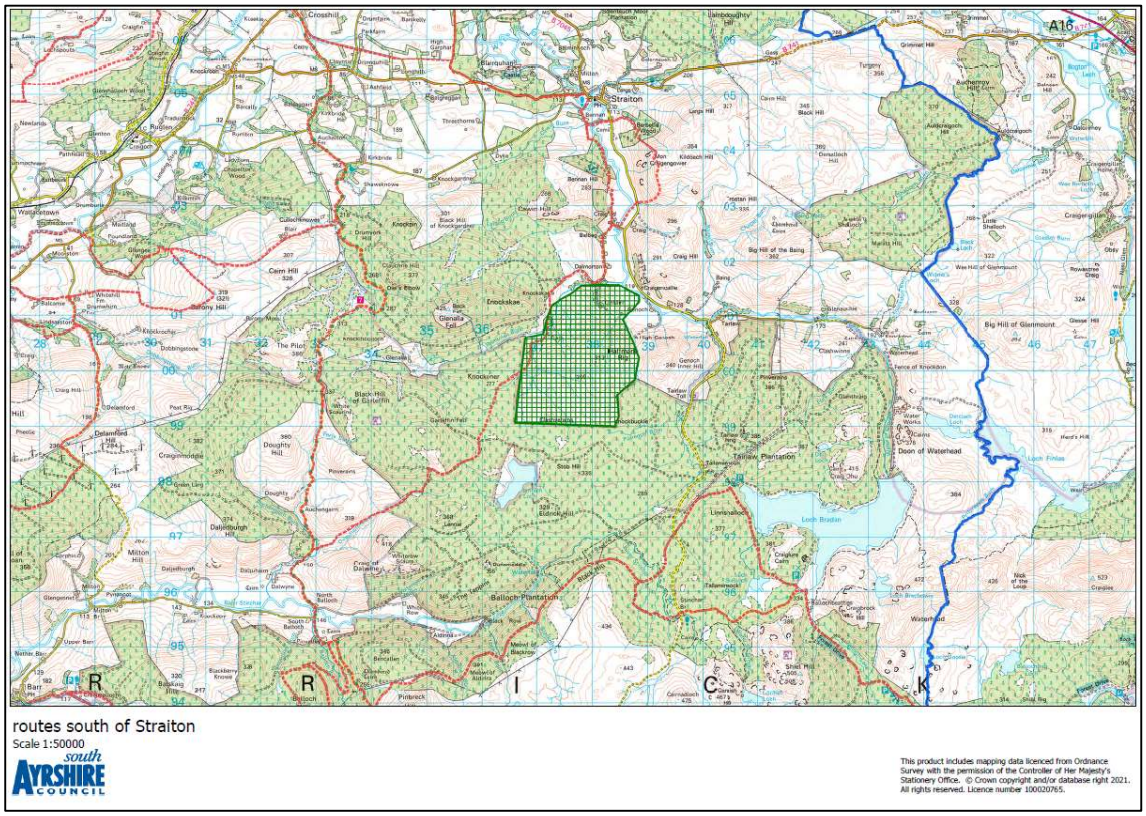


Figure 7 Core Path Plan (SAC and Ordnance Survey © Crown copyright and/or database right 2021)

Core Path SA47 / Right of Way SKC7 pass through the north-western section of the site.

Core Path SA47 links Straiton via Bennan to Knockskae and the Dalquairn Burn linking to the National Cycle Route 7 at Sally Pollocks Bridge while local Right of Way SKC7 links Straiton to Dalwhyne.

It should also be noted that SKC7 is a route of historic interest outlined in Scotways' Heritage Paths project as well as being a highlighted route in Scotways' Scottish Hill Tracks publication.

In the vicinity of the access locations, Core Path SA1 runs along Hill Road on the route from Crosshill to the Western Access and continues south along Hill Road. Core Path SA39 is located along the eastern section of the B741 between Laigh Garphar Wood and Straiton along the Northern Access route.

National Cycle Network route number 7 (NCR 7) is located approximately 2.75 km to the west of the site as shown in Figure 8.

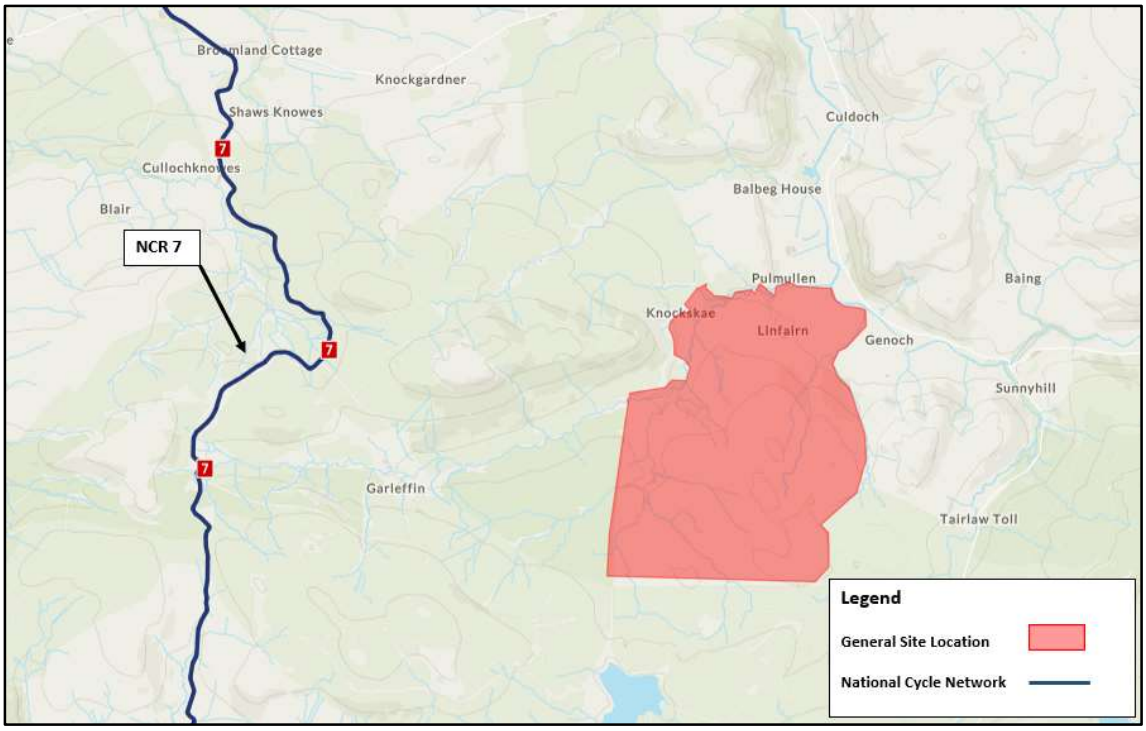


Figure 8 National Cycle Network (National Cycle Network and © OpenStreetMap)

In the vicinity of the Western Access, the NCR 7 forms part of the on-road on the National Cycle Network. NCR 7 is over 540 miles long and connects Sunderland and Inverness.

5.4 Road Access

As noted in Section 5.1, access to the site will be taken from two possible locations. The Western Access would be taken directly from Hill Road to the south of the village of Cloyntie, using an upgraded forestry access junction and the Northern Access junction would comprise a new access junction which will be taken from an unclassified road approximately 2 km to the south-west of Straiton.

The first 15 m will be surfaced in a bituminous macadam and appropriate junction markings and reflective junction markers shall be provided at the access bell-mouth. The throat of the new junction shall be widened to a minimum of 5.5 m to ensure that opposing vehicles can pass safely.

Hill Road is a local road maintained by Ayrshire Roads Alliance and is approximately 3.5 m – 4 m in width. The road is subject to a weight limit of 3 tonnes which is assumed to be in place to prevent heavy forestry traffic further down the road. There are a number of residential and farm accesses along the northern section of road near Cloyntie while along the southern section of road there are mainly accesses to fields and forestry.

The unclassified road where the second access junction is to be located is unofficially signed as an access route to "Bennan Farm" from the B741. The road is maintained by Ayrshire Roads Alliance and is approximately 2.75 m

in width. There are a number of field accesses along the road as well as a small number of farm and residential accesses.

The B741 is a local road maintained by Ayrshire Roads Alliance and is approximately 5.5 m – 6 m in width. The road is mainly bound by trees and hedgerows and it also comprises a number of field accesses along its length.

The B7023 is a local road maintained by Ayrshire Roads Alliance and is approximately 5.75 m in width. The road is mainly subject to the national speed limit, however this reduces to 30 mph when travelling through Crosshill Village. The road is predominantly bound by trees and hedgerows and it also comprises a number of field accesses and along its length. There are also a small number of farm and residential accesses from the B7023.

The B7045 is a local road maintained by Ayrshire Roads Alliance and is approximately 6 m in width. Approximately 360 m from the priority junction with the A77, there is a bridge which is subject to a height limit of 15.0". The road is mainly bound by trees and hedgerows. There are a number of priority junctions along the length of road as well as direct accesses to dwellings, farms and fields.

The A77 forms part of the trunk road network and is maintained by Amey on behalf of Transport Scotland. The A77 is predominantly subject to the national speed limit however to the north of the priority junction with the B7045, the A77 is subject to a reduced speed limit of 30 mph upon entering Minishant Village.

5.5 Existing Traffic Conditions

Automatic Traffic Count (ATC) surveys were undertaken between Saturday 28th of August and Friday 3rd of September 2021 at the following locations:

1. Hill Road, near the Western Access;
2. Unclassified road (unofficially signed as Bennan's Farm), near the Northern;
3. B7023, north of Crosshill; and
4. B7045, north of Grimmet;

Additional traffic data was obtained from existing traffic sources from the UK Department for Transport (DfT) database. The traffic data sourced from the DfT database comprised 2019 data. National Road Traffic Forecasts (NRTF) low growth factors were applied to the 2019 data to estimate 2021 flows (2019/2021 = 1.016). The locations for DfT traffic survey sites are as follows:

5. DfT Count Point 930171, B741, east of Cloyntie; and
6. DfT Count Point 10751, A77, near Nether Auchendrane.

The locations of the traffic survey sites are illustrated in Figure 9.

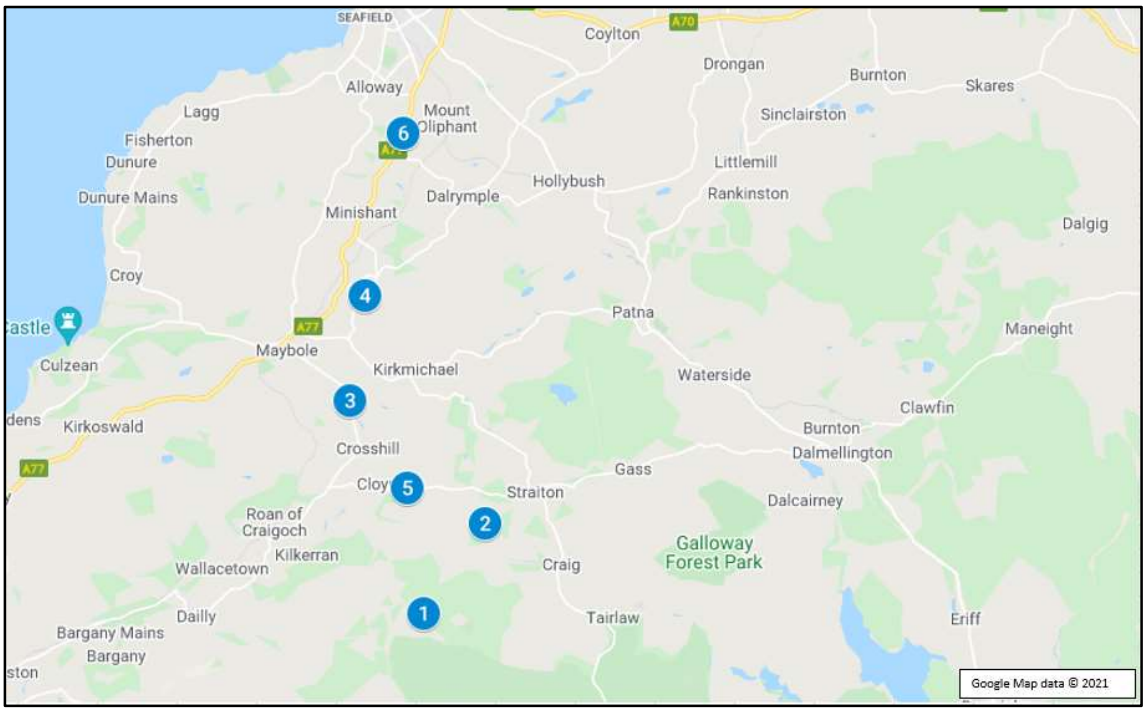


Figure 9 Traffic Information Site Locations

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 Chapter 12: Volume 1 of the EIA Report.

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

Table 1 summarises the 24-hour average daily traffic data estimated at the count sites over a seven-day period.

Table 1 24-hour Average Traffic Data (2021)

Survey Location	Cars & Lights	HGV	Total
Hill Road, near Western Access	32	22	54
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	17	13	30
B7023, north of Crosshill	1,907	433	2,340
B7045, north of Grimmet	2,065	430	2,495
B741, east of Cloyntie	557	49	606
A77, near Nether Auchendrane	12,654	1,233	13,888

The ATC sites used to provide traffic volume data were also used to collect speed statistics. The two-way five day average and 85th percentile speeds observed at the count locations are summarised in Table 2.

Table 2 Speed Summary (2021)

Survey Location	Mean Speed (mph)	85%ile Speed (mph)	Speed Limit (mph)
Hill Road, near Western Access	28.6	34.4	60.0
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	25.6	28.9	60.0
B7023, north of Crosshill	48.1	56.5	60.0
B7045, north of Grimmet	50.9	58.4	60.0
B741, east of Cloyntie	Data not available		60.0
A77, near Nether Auchendrane			60.0

The speed survey data which is presented in Table 2 suggests that there is compliance with the existing speed limits within the Study Area.

5.6 Accident Review

Road traffic accident data for the three-year period commencing 1 January 2018 through to the 31 December 2020 was obtained for the A77, B7045, B7023, B741 and Hill Road within the Study Area. This information was sourced from the online resource CrashMap.co.uk which uses data collected by police about road traffic crashed occurring on British roads where an accident occurred.

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.

A summary analysis of the accidents indicates that:

- A total of 11 accidents were recorded within the study area roads within the three-year period;
- Of those 11 accidents, six were classified as "Serious" and five were classified as "Slight";
- None of the accidents involved a pedestrian casualty;
- No accidents were recorded in the vicinity of the proposed site accesses;
- A motorcycle was involved in two separate accidents which were both classified as "Serious" incidents;
- Young drivers were involved in three incidents of which one was classified as "Serious" and two were classified as "Slight";
- There were no reported incidents involving a pedal cycle in the study area;
- Two accidents were recorded to involve a bus which resulted in two separate "Serious" incidents; and
- Two separate accidents involved an HGV and one was recorded as "Serious" and the other was recorded as "Slight".

The local road network within the study area has a low accident rate and low HGV incidents.

5.7 Baseline Traffic Conditions

Construction of the project could commence during 2024 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 construction and typical operational phase, base year traffic flows were determined by applying a National Road Traffic Forecast (NRTF) low growth factor to the DfT traffic flows.

The NRTF low growth factor for 2021 to 2024 is 1.016. These factors were applied to the DfT traffic flows to estimate the 2024 traffic flows in Table 3. This will be used in the Construction Peak Traffic Impact Assessment.

Table 3 Baseline 2024 24-hour Average Traffic Data

Survey Location	Cars & Lights	HGV	Total
Hill Road, near Western Access	33	22	55
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	17	13	30
B7023, north of Crosshill	1,938	440	2,378
B7045, north of Grimmet	2,098	437	2,535
B741, east of Cloyntie	566	50	6
A77, near Nether Auchendrane	12,857	1,253	14,110

6 Trip Generation and Distribution

6.1 Construction Phase

6.1.1 Trip Derivation

As there are two potential options to access the site, the subsequent trip generation section assesses the impact of all construction related traffic entering the site through either Western Access via (Western Access Route) or Northern Access (Northern Access Route) in order to provide a robust assessment.

During the 18-month construction period, the following traffic will require access to the 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 also a heavy lift crane.

Average monthly traffic flow data were used to establish the construction trips associated with the site 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 27 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 32 vehicle trips (16 inbound and 16 outbound) 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 4.

It is anticipated that each turbine is to comprise the following elements:

Table 4 Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

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 34 convoys on the network, with a total of 202 escort journeys (101 trips in and 101 trips out).

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

6.1.4 General Deliveries

Throughout the construction phase, general deliveries will be made to the site by HGV. These would include fuel, site office supplies and staff welfare. At 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 will need to be delivered to site to form the site-based infrastructure. At the outset, HGV deliveries will deliver plant and initial material deliveries to the site to enable the formation of the site compound and to delivery construction machinery.

In order to provide a robust assessment, it is assumed that all concrete will be delivered to the site as ready-mix concrete which will originate at concrete plants to the north-east of the site near Ochiltree. However, it should be noted that the site is large enough to warrant on-site batching of concrete and an on-site batching plant may be established to replace or supplement the imported ready-mix concrete.

The total volume of concrete required on site is estimated to be 7002 m^3. The individual deliveries associated with the ready-mix concrete have been estimated and result in inbound trips of 30 cement tankers, 444 sand & aggregate tippers and 178 water tankers.

Foundation reinforcement calculations for the turbine bases and the met mast foundation are detailed in Table 5 below.

It should be noted that in order to provide a robust assessment, the concrete and reinforcement foundation calculations are based on nine turbines with a maximum blade tip height of 200 m.

Table 5 Reinforcement Deliveries

Element	Weight / Installation (t)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Turbine Foundation	70	630	30	21	42
Met Mast Foundation	10	10	30	1	2

The on-site access tracks and crane hardstands will be constructed from crushed rock and the material would be obtained from the site via the proposed borrow pit or when creating the cuttings and other earthworks.

The access tracks would generally be 5 m in width and would be designed to accommodate 13 tonne axle loads. In addition to the roads, crane pads will be constructed to enable the turbine erection process. The tracks, crane pads and compounds will require geotextile in the foundations.

To provide a robust assessment of potential traffic impact, it has been assumed that 50 % of the material for tracks, hardstanding's and compound areas will be imported to the site. This represents an overestimate, with the expectation that the borrow pit will be more than adequate source for material. The assessment is therefore an over-estimate and is considered robust.

The estimate of imported material is detailed in Table 6.

Table 6 Track Material Deliveries

Element	Volume / Installation (m³)	Total Weight (t)	Lorry Capacity (m³)	Inbound Trips	Total Journeys
Assumed 50% of required stone	51,250	112,750	20	5,638	11,276

Geotextile will be delivered to site in rolls. A total of 178 large rolls may be required at site and would be delivered by HGV.

Cables will connect each turbine to the internal substation and control building. Trip estimates for the cable materials are provided below in Tables 7 and 8.

Three cables are to be provided within each cable trench and would be backfilled with cable sand. The cable materials would be likely sourced from the Central Belt and would access the site via the A77 and subsequently by the local road network.

Table 7 Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Cables	9,000	500	18	2	4

Table 8 Cable Sand Trip Estimate

Element	Volume / Installation (m³)	Total Weight (t)	Lorry Capacity (m³)	Inbound Trips	Total Journeys
Cable Sand	1,519	2,430	20	122	244

A substation building will be constructed on the site. This will require deliveries of building materials and structural elements and would result in 46 journeys. Storage battery deliveries will result in a further 50 HGV journeys. The exact storage technology will be selected post-consent.

In order to accommodate the access to the turbine development area, it is anticipated that forestry extraction will be required on-site which will result in an additional 30 HGV trips.

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. Table 9 illustrates the trip generation throughout the construction programme.

Table 9 Construction Traffic Profile

Activity	Month								
	1	2	3	4	5	6	7	8	9
Site Establishment	50	50							
General Site Deliveries	40	40	40	40	40	40	40	40	40
Imported Stone		1410	1410	1410	1410	1410	1410	1410	1410
Reinforcement						11	11	11	11
Concrete Deliveries				93	93	93	93	93	93
Cable and Ducting Deliveries								1	1
Cabling Sand								41	41
Geotextile Deliveries				5		5		5	
Substation Building							12	12	12
Cranes								18	
Energy Storage									
Forestry Extraction		15	15						
Turbine Deliveries									
AIL Escorts									
Commissioning									

Staff	193	386	772	772	772	772	772	772	772
Total HGV	90	1515	1465	1547	1543	1558	1565	1629	1607
Total Cars / LGV	193	386	772	772	772	772	772	772	772
Total Movements	283	1901	2237	2319	2315	2330	2337	2401	2379
Total HGV per Day	4	69	67	70	70	71	71	74	73
Total Cars / LGV per Day	9	18	35	35	35	35	35	35	35
Total per Day	13	86	102	105	105	106	106	109	108

Continued Table

Activity	Month								
	10	11	12	13	14	15	16	17	18
Site Establishment								50	50
General Site Deliveries	40	40	40	40	40	40	40	40	40
Imported Stone									
Reinforcement									
Concrete Deliveries	93								
Cable and Ducting Deliveries	1	1	1	1					
Cabling Sand	41	41	41	41					
Geotextile Deliveries	5								
Substation Building	12								
Cranes		18							
Energy Storage			25	25					
Forestry Extraction									
Turbine Deliveries	64	64	64	64					
AIL Escorts	51	51	51	51					
Commissioning						22	22	22	22
Staff	772	772	772	772	772	772	772	386	386
Total HGV	254	163	170	170	40	40	40	90	90
Total Cars / LGV	823	823	823	823	772	772	772	386	386
Total Movements	1077	986	993	993	812	812	812	476	476
Total HGV per Day	12	7	8	8	2	2	2	4	4
Total Cars / LGV per Day	37	37	37	37	35	35	35	18	18
Total per Day	49	45	45	45	37	37	37	22	22

The peak of construction occurs in Month 8 with 109 journeys (35 Car / Lights and 74 HGV journeys).

6.1.6 Distribution of Construction Trips

The distribution of 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 would be as follows:

- Deliveries associated with the delivery of ready-mix concrete will arrive via A77, and subsequently reach the site entrance via the B7045, B7023 and either the B741 or Hill Road depending on which access option is chosen i.e. Western Access or Northern Access.
- Sand and aggregate requirements will be sourced from local quarries. For the purposes of the assessment, it is assumed that all material will be taken from the quarry located to the north-east of the site, near Ochiltree and delivery vehicles would travel westbound along the A70 and then join the A77 to continue to

the site entrance via the B7045 and B7023 towards the site entrance. The Balance of Plant (BoP) contractor will confirm final quarry and material sourcing with South Ayrshire Council in the Construction Traffic Management Plan (CTMP).

- HGV deliveries associated with the HV electrical installation, control buildings, batteries, etc will arrive via the A77, B7045 and B7023 towards the site entrance.
- Staff working at the site are likely to be based locally. It is assumed that 50% will come from Maybole and 50% will come from Ayr, but a worst case scenario would see all staff using the same route.
- General site deliveries will be via A77, B7045 and B7023 to the site entrance. These are generally smaller rigid HGV vehicles.

Loads relating to the turbine components would be delivered from both the Port of Ayr and King George V (KGV) Dock, Glasgow as shown in Figure 11.

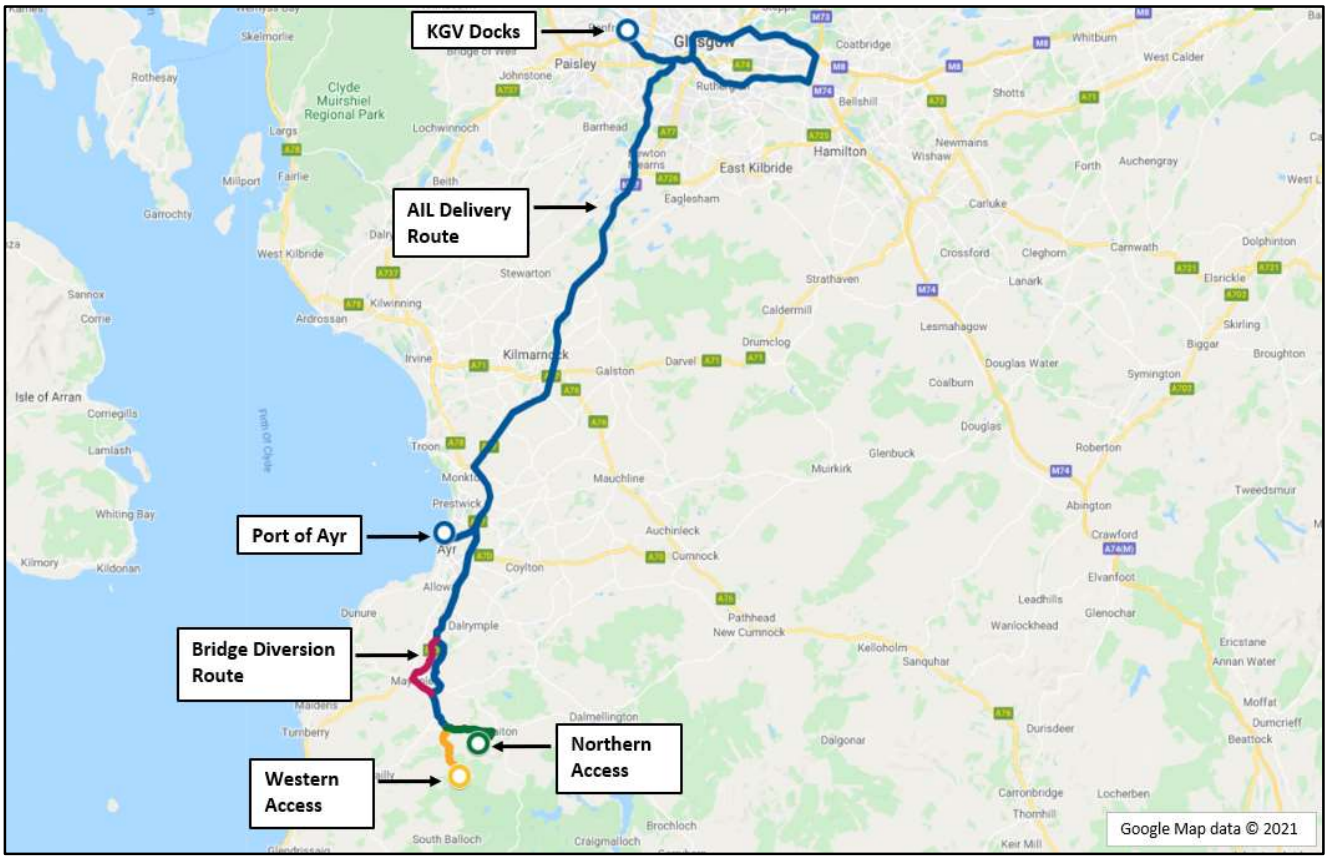


Figure 10 AIL Delivery Route

Due to the size of the SG155 components it is not considered possible to transport blade components through the Port of Ayr. It is therefore proposed that blade components will be transported into KGV Dock, Glasgow. All other components will be landed at the Port of Ayr and continue to the proposed site entrance.

It should be noted that both the Port of Ayr and KGV Docks in Glasgow have been used extensively for wind turbine component deliveries such as Assel Valley, Arecleoch, Kype Muir and Kellburn Wind Farms.

It is proposed that there will be a diversion for higher loads such as towers and nacelles due to a low bridge located along the B7045. High loads will continue on the A77 into Maybole village before turning left onto Kirkland Street and subsequently joining the B7023 towards the site entrance. All other traffic will depart the A77 to the south of Minishant and turn left onto the B07045 before turning right onto the Crosshill Road and then left onto the B7023 towards the site entrance.

Two potential access routes to the site have been reviewed as part of the Route Survey Report (Annex) which is dependent on whether the Western Access or Northern Access is determined as the site entrance.

The AIL route for both access routes is the same from the Port of Ayr and KGV Docks until the delivery vehicles reach the village of Cloyntie, as shown by the blue line in Figure 12, and at this point the route diverges towards each access location.

6.1.7 Peak Construction Traffic – Western Access

The peak construction traffic flows have been developed and are illustrated in Table 10 for the Western Access route.

Table 10 Peak Construction Traffic – Western Access

Survey Location	Cars & Lights	HGV	Total
Hill Road, near Western Access	35	74	109
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	0	0	0
B7023, north of Crosshill	35	74	109
B7045, north of Grimmet	18	74	92
B741, east of Cloyntie	0	0	0
A77, near Nether Auchendrane	18	74	92

6.1.8 Peak Construction Traffic – Northern Access

Table 11 presents the peak construction traffic flows for the Northern Access route.

Table 11 Peak Construction Traffic – Northern Access

Survey Location	Cars & Lights	HGV	Total
Hill Road, near Western Access	0	0	0
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	35	74	109
B7023, north of Crosshill	35	74	109
B7045, north of Grimmet	18	74	92
B741, east of Cloyntie	35	74	109
A77, near Nether Auchendrane	18	74	92

6.2 Committed Developments

A review of surrounding wind farm developments has been undertaken. There are no further known wind farm applications that would be accessed from either the B7023 or B7045 that have planning permission.

Nearby consented developments such as Kirk Hill, Benbrack Variation and South Kyle Wind Farms are proposed to be accessed through different access routes and as such their respective construction traffic will have no effect on the Study Area for Knockcronal.

Should other developments located close to the Proposed Development be consented, any crossover of traffic with the proposed development flows would be addressed via a traffic management plan. The inclusion of further traffic flows in the base line (i.e. including non-consented traffic) will dilute the potential impact that the Knockcronal Wind farm proposals will have. As such, the approach taken is considered to be an overly robust assessment.

No other significant planning applications have been consented and as such, there are no committed development flows to be included in the assessment.

6.3 Decommissioning Phase

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

7 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. Traffic Impact Assessment

7.1 Construction Impact

The peak month traffic data was combined with the anticipated year of construction (2024) traffic data to allow a comparison between the baseline results to be made.

7.1.1 Construction Impact – Western Access

Table 12 shows the increase in traffic volumes in percentage increases for each class of vehicle for the Western Access route.

Table 12 2024 Peak Month Daily Traffic Data – Western Access

Survey Location	Car & Lights	HGV	Total Traffic	Car & Lights % Increase	HGV % Increase	Total Traffic % Increase
Hill Road, near Western Access	68	96	164	107.96%	331.27%	198.94%
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	17	13	30	0.00%	0.00%	0.00%
B7023, north of Crosshill	1973	514	2487	1.81%	16.83%	4.59%
B7045, north of Grimmet	2116	511	2627	0.84%	16.95%	3.61%
B741, east of Cloyntie	566	50	615	0.00%	0.00%	0.00%
A77, near Nether Auchendrane	12874	1327	14202	0.14%	5.91%	0.65%

With the exception of Hill Road, near the Western Access, the total traffic movements are not predicted to increase by more than 30% on the study network.

While the uplift in traffic on Hill Road is high in percentage terms, this is due to the low baseline traffic flows which amount to a total of 109 movements (35 Cars & LGV movements and 74 HGV movements) per day.

7.1.2 Construction Impact – Northern Access

The increase in traffic volumes is illustrated in percentage increases for each class of vehicle along the Northern Access route in Table 13.

Table 13 2024 Peak Month Daily Traffic Data – Western Access

Survey Location	Car & Lights	HGV	Total Traffic	Car & Lights % Increase	HGV % Increase	Total Traffic % Increase
Hill Road, near Western Access	33	22	55	0.00%	0.00%	0.00%
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	52	87	140	203.22%	560.61%	358.09%
B7023, north of Crosshill	1973	514	2487	1.81%	16.83%	4.59%
B7045, north of Grimmet	2116	511	2627	0.84%	16.95%	3.61%
B741, east of Cloyntie	601	124	724	6.20%	149.44%	17.74%
A77, near Nether Auchendrane	12874	1327	14202	0.14%	5.91%	0.65%

With the exception of the Unclassified Road where the Northern Access is located, the total traffic movements are not predicted to increase by more than 30% on all of the study network.

The total HGV traffic movements will increase significantly on the B741, to the east of the village of Cloyntie. Whilst this increase is statistically significant, it is generally caused by the relatively low HGV flows on the B741

and will see an additional 74 HGV journeys per day (approximately 37 inbound and 37 outbound). This represents approximately three inbound HGV journeys every hour during normal 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.

7.2 Capacity Review

A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA 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.

7.2.1 Capacity Review – Western Access

The results are summarised in Table 14.

Table 14 2024 Daily Traffic (24 hr) Capacity Review Summary

Location	2024 Baseline Flow	2024 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
Hill Road, near Western Access	33	164	3360	95.12%
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	17	30	3360	99.09%
B7023, north of Crosshill	1938	2487	19200	87.05%
B7045, north of Grimmet	2098	2627	21600	87.84%
B741, east of Cloyntie	566	615	19200	96.80%
A77, near Nether Auchendrane	12857	14202	28800	50.69%

The results indicate there are no road capacity issues with the Proposed Development's traffic travelling along the Western Access Route and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

7.2.2 Capacity Review – Northern Access

The results are summarised in Table 15.

Table 15 2024 Daily Traffic (24 hr) Capacity Review Summary

Location	2024 Baseline Flow	2024 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
Hill Road, near Western Access	55	55	3360	98.37%
Unclassified road, near Northern Access (unofficially signed as Bennan's Farm)	30	140	3360	95.84%
B7023, north of Crosshill	2377	2487	19200	87.05%
B7045, north of Grimmet	2535	2627	21600	87.84%
B741, east of Cloyntie	615	724	19200	96.23%
A77, near Nether Auchendrane	14110	14202	28800	50.69%

The results indicate there are no road capacity issues with the Proposed Development's traffic travelling along the Northern Access Route and there is ample spare capacity within the trunk and local road network to accommodate construction phase traffic.

8 Framework Traffic Management Measures

8.1 Construction Phase

During the construction period, a project website, blog or Twitter feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with South Ayrshire Council.

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

- Agree AIL route modifications and improvements with South Ayrshire Council, Ayrshire Roads Alliance and other relevant stakeholders. Works will include site access junction upgrade / design, provisions of load bearing surfaces at locations along the route, vegetation trimming and the removal of bollards / signs.
- 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 South Ayrshire Council and Ayrshire Roads Alliance;
- Normal site working hours would be limited to between 0700 and 1900 (Monday to Friday) and between 0700 and 1300 (Saturday) though component delivery and turbine erection may take place outside these hours;
- Appropriate traffic management measures would be put in place on the site access road 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 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 Crosshill village.
- 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.

It is anticipated that South Ayrshire Council and Ayrshire Roads Alliance will request that an agreement to cover the cost of abnormal wear on its network is made.

Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction phase. Any necessary repairs would be coordinated with South Ayrshire Council and Ayrshire Roads Alliance. 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.

To formalise the surveys, a Section 96 Agreement would be entered into between the applicant and the Ayrshire Roads Alliance to ensure that construction traffic did not have a detrimental impact on the roads and that any costs would be at the applicant's expense. 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 review and any debris and mud would be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

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

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

8.2 Abnormal Load 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 relevant 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.

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 12. 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.

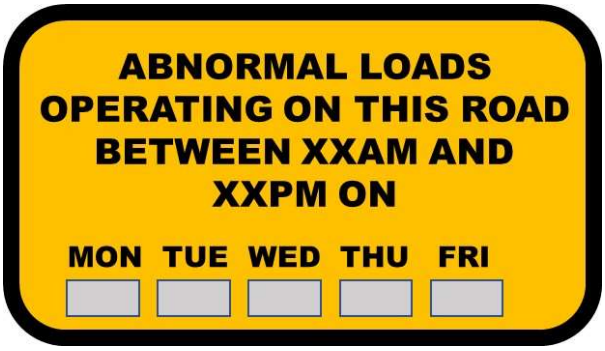


Figure 11 Example Information Sign

This signage will assist in helping improve driver information and will 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 Traffic Management Proposal for the project.

The Abnormal Load Transport Management Plan would also include:

- Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events.
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and

- Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

8.3 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.

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

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

An SMS texting service may also be developed to help keep residents aware of movements.

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

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

9 Summary & Conclusions

Pell Frischmann has been commissioned by ITPEnergised on behalf of Stratkraft Ltd (the Applicant) to undertake a Transport Assessment for the proposed Knockcronal Wind Farm, located to the south of Crosshill, South Ayrshire.

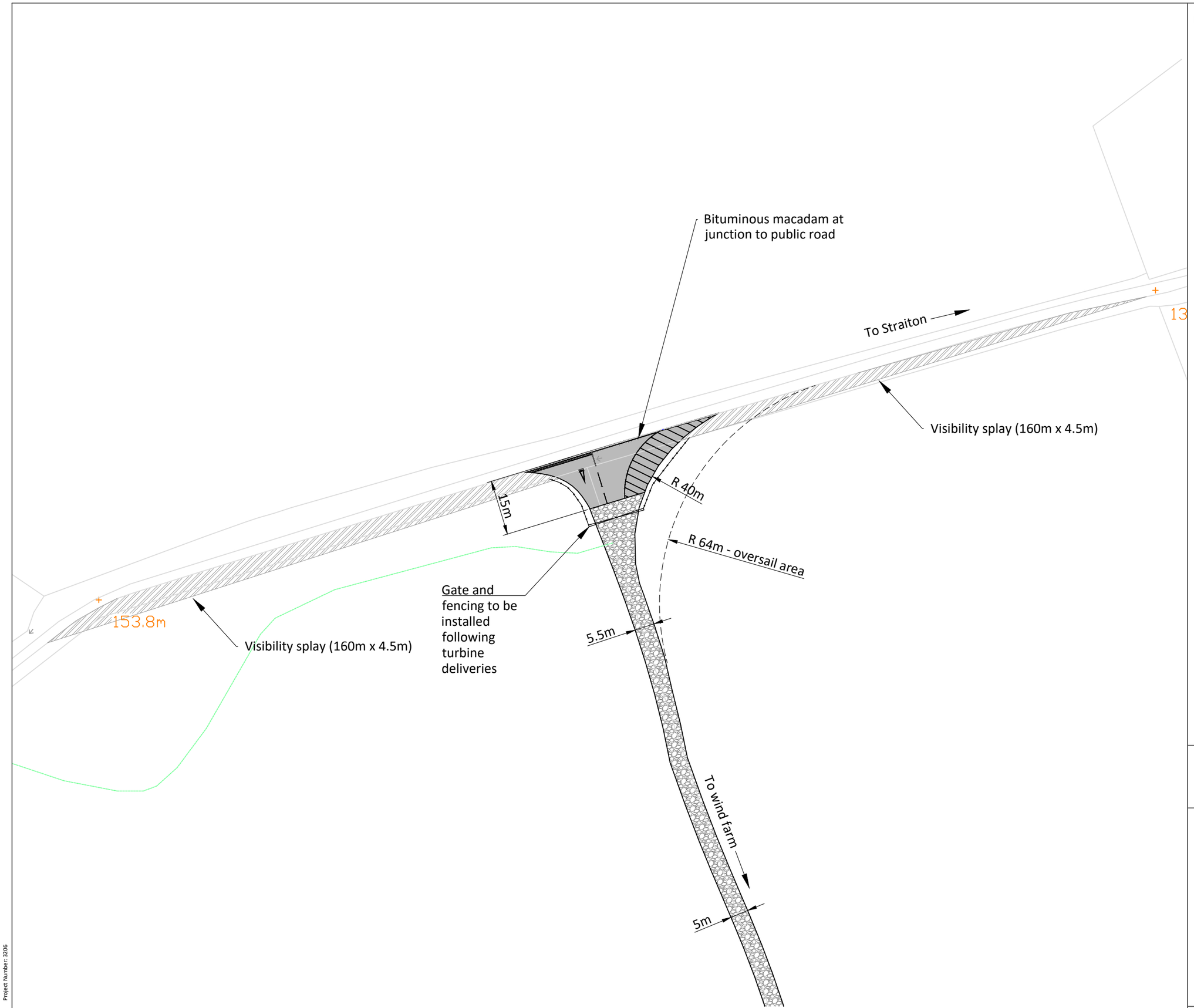
Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

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 construction programme. During this month, an average of 74 HGV movements is predicted per day and it is estimated that there would be a further 35 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 both the construction and operational 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 and are transitory.

Annex A Site Access – Hill Road



NOTES

Indicative only.

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Statkraft ITPENERGISED

Knockcronal Wind Farm
Environmental Impact Assessment Report

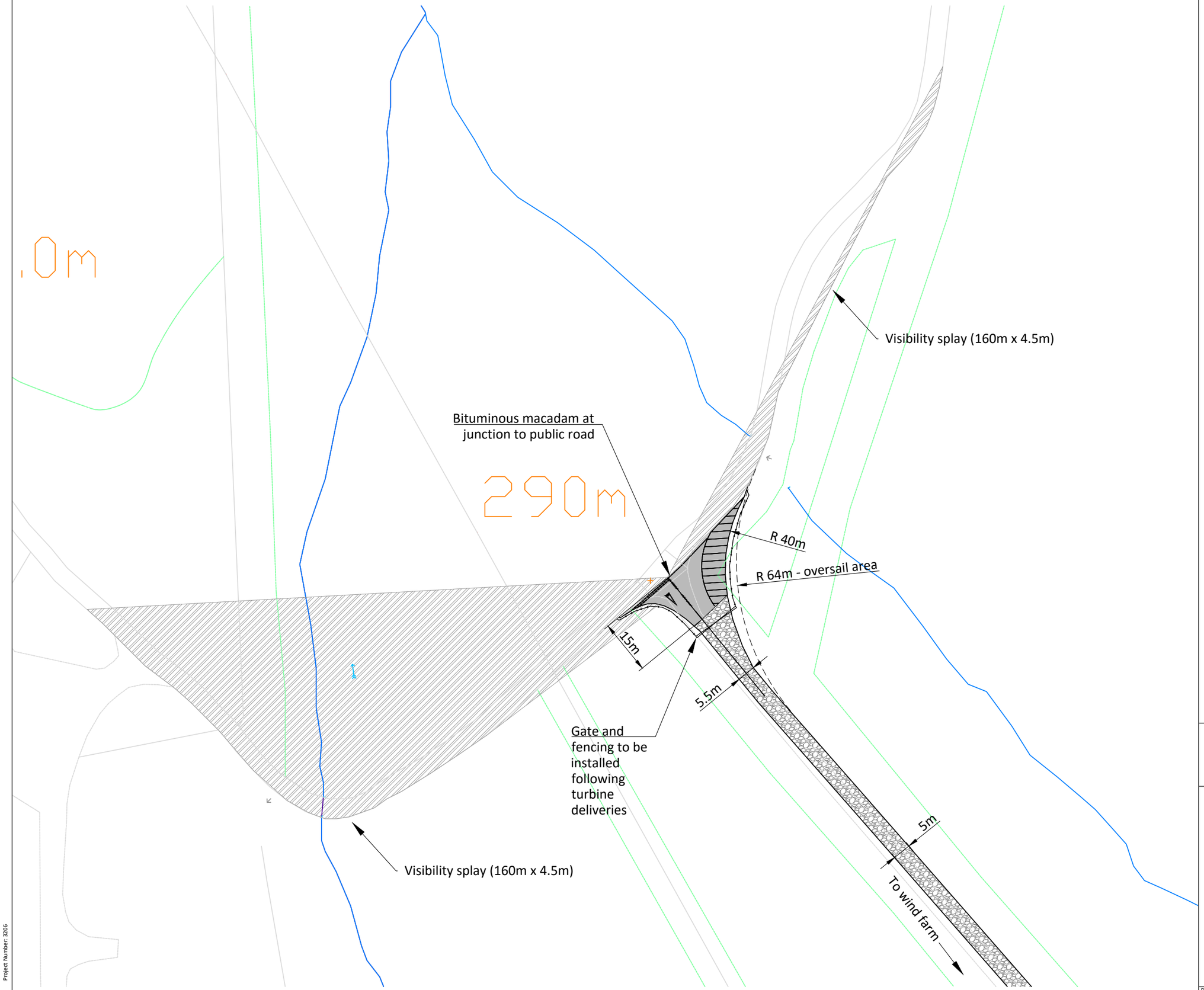
Figure A.1

Site Access - Hill Road

Date:	Drawn by:	Checked by:	Version:
08/11/2021	RB	AP	V1

Project Number: 3206

Annex B Site Access – Unclassified Road (Approx. 2km south-west of Straiton)



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Indicative only.

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Knockcronal Wind Farm
Environmental Impact Assessment Report

Figure B.1

Site Access - Unclassified Road
(Approx. 2km south-west of Straiton)

Date:	Drawn by:	Checked by:	Version:
08/11/2021	RB	AP	V1

Project Number: 3206

Annex C Route Survey Report

Pell Frischmann

Knockcronal Wind Farm

Abnormal Indivisible Load Route Survey

104441
January 2021

Revision Record					
Rev	**Description**	**Date**	**Originator**	**Checker**	**Approver**
A	Draft	20/01/21	J Stirrat	T Lockett	G Buchan

Prepared for:

ITPEnergised
7 Dundas Street
Edinburgh
EH3 6QG

Prepared by:

Pell Frischmann
93 George Street
Edinburgh
EH2 3ES

ITPENERGISED
Earth. Smart. Solutions

Pell Frischmann

Contents

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Appendices

1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by ITPEnergised UK Limited (ITPEnergised) to undertake an access study of potential delivery routes for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Knockcronal Wind Farm, located to the south of Crosshill, South Ayrshire.

The Route Survey Review (RSR) has been prepared to help inform ITPEnergised on the 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 designs of any remedial works are beyond the agreed scope of works between PF and ITPEnergised at this point in time.

No site visit had been undertaken at this time. A site visit will be required to confirm the results of this report.

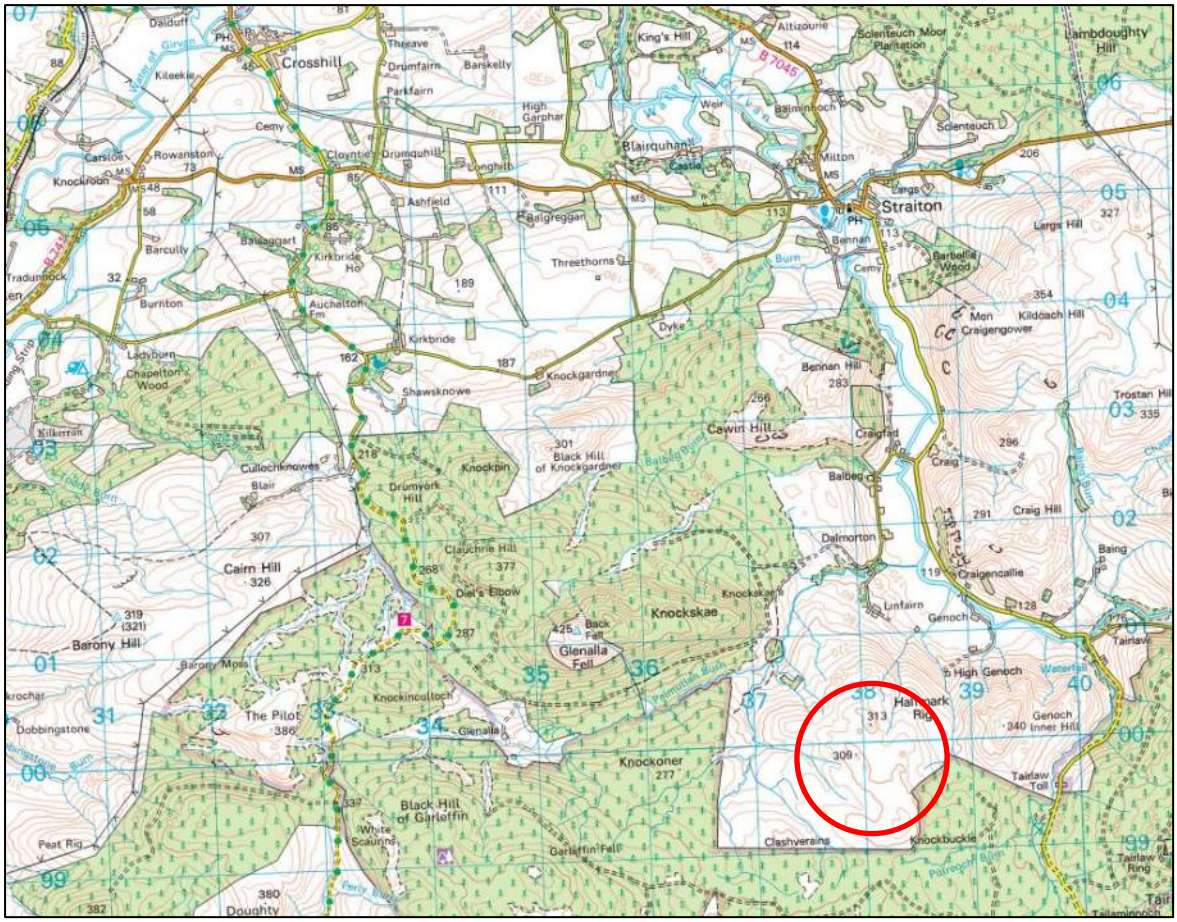
It is the responsibility of the wind turbine supplier to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction. The turbine supplier will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety consideration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

2 Site Background

2.1 Site Location

The development site is located to the south of Crosshill, in South Ayrshire. Figure 1 illustrates the general site location.

Figure 1: Site Location Plan



2.2 Candidate Turbines

ITPEnergised has indicated that they wish to consider the Siemens SG155 at a tip height between 180m and 200m. Tower and blade dimensions have been supplied by Siemens and are indicated below in Table 1.

Table 1: SG155 Turbine Dimensions

Section	Length (m)	Width (m)	Height (m)	Weight (t)
Blade	76.000	4.500	4.100	21.400
Tower 1	14.034	4.800	4.800	84.400
Tower 2	19.880	4.800	4.800	84.300
Tower 3	22.400	4.800	4.794	73.900
Tower 4	28.560	4.794	4.102	72.000
Tower 5	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 Nooteboom Super Wing trailer to reduce the need for mitigation in constrained sections of the route.

Tower sections 1 and 2 would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing and tower section 3 would be carried on a six axle step frame trailer.

Figure 2: Super Wing Carrier Trailer

Figure 3: Tower Trailer

3 Access Route Review

3.1 Access Route

All results described below are based upon a desk top assessment of the access route as agreed with ITPEnergised and due to travel restrictions associated with the Covid 19 outbreak. Previous experience of sections of the route has been utilised as part of the assessment. A full site visit will be required to confirm that all constraints have been noted on the route.

Due to the size of the SG155 components it is not considered possible to transport blade components through the Port of Ayr. As such, it is proposed that blade components will be transported into KGV Dock, Glasgow. All other components will be landed at the Port of Ayr and continue to the proposed site entrance.

Both the Port of Ayr and KGV Docks in Glasgow have been used extensively for wind turbine component deliveries such as Assel Valley, Arecleoch, Kype Muir and Kellburn Wind Farms.

Loads can be offloaded by geared vessels or onshore mobile cranes.

3.2 Proposed Access Route

ITPEnergised have requested that two potential routes to site are reviewed. Both routes will involve a diversion for higher loads such as towers and nacelles due to a low bridge at POI 20.

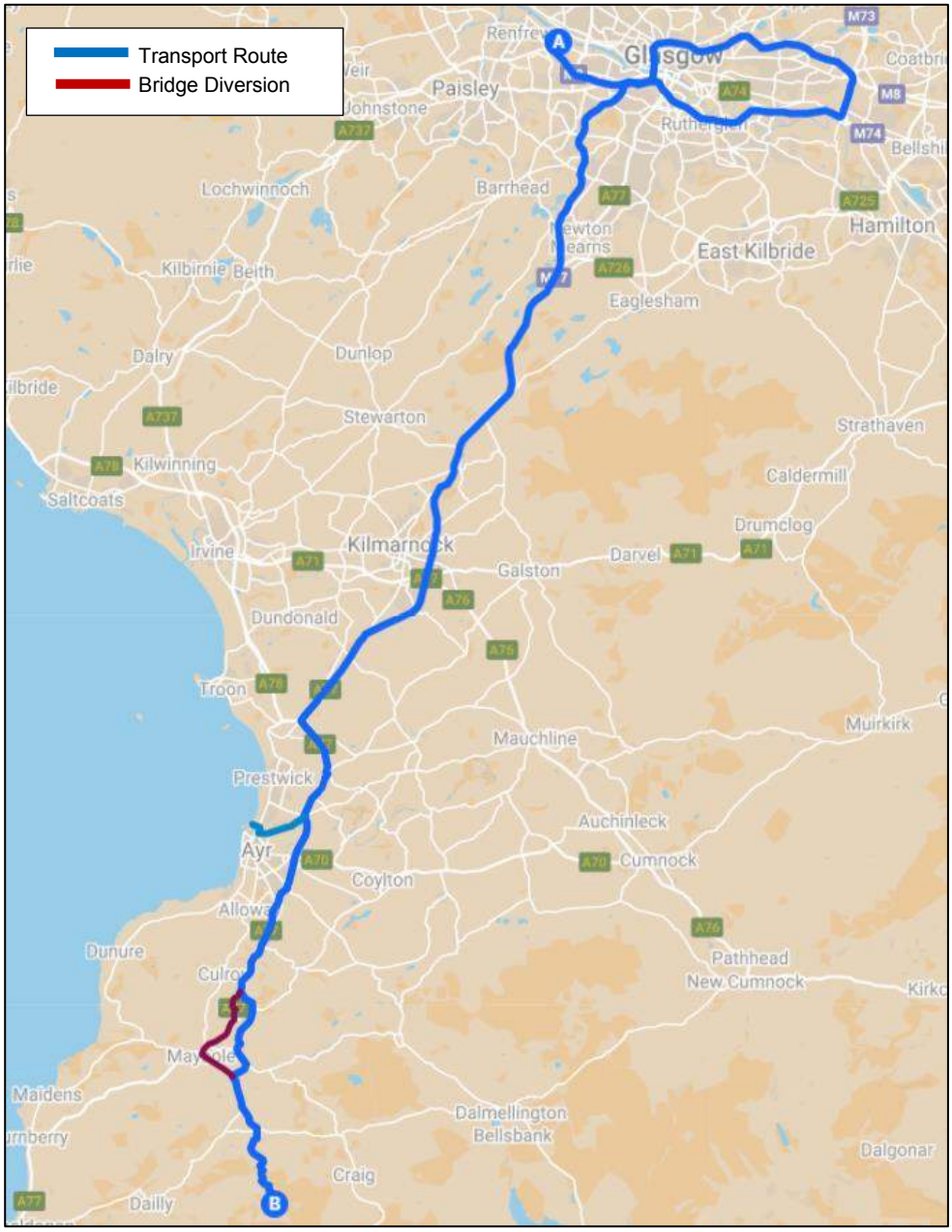
3.2.1 Route 1

The proposed access route to the site entrance is as follows;

- Blades would depart KGV Dock and travel west on Kings Inch Drive before turning left onto Mayo Avenue;
- Blades would join the eastbound M8 and continue to Junction 8;
- Blades would leave the M8 and join the M73 travelling south;
- At Junction 4, loads would join the westbound M74;
- Blades would depart the M74 at Junction 1 and join the M8 westbound before leaving at Junction 22 and join the M77 travelling southbound; and
- Blades would continue south onto the A77 to Whitletts Roundabout east of Ayr.
- High loads would depart the Port of Ayr onto Waggon Road travelling east;
- High loads would turn right onto Allison Street before turning left onto Whitletts Road;
- High loads would join the A77 by turning right at Whitletts Roundabout;
- Blade loads would depart the A77 to the south of Minishant and turn left onto the B7045;
- *In order to avoid a low bridge railway bridge on the B7045, high loads such as the tower will continue on the A77 into Maybole village before turning left onto Kirkland Street;*
- *High loads would then turn left onto the B7023 and continue towards Ballochbroe where they would rejoin the blade loads and continue to the site;*
- Blade loads would continue east from the A77 on the B7045 before turning right onto the Crosshill Road and then left onto the B7023;
- All loads would continue south on the B7023 to Crosshill;
- Loads would turn right onto Dalhowan Street to Cloyntie;
- Loads would continue south through the crossroads onto Hill Road;
- Loads would continue south on Hill Road to the proposed site entrance.

Proposed access Route 1 is illustrated in Figure 5.

Figure 4: Proposed Access Route 1



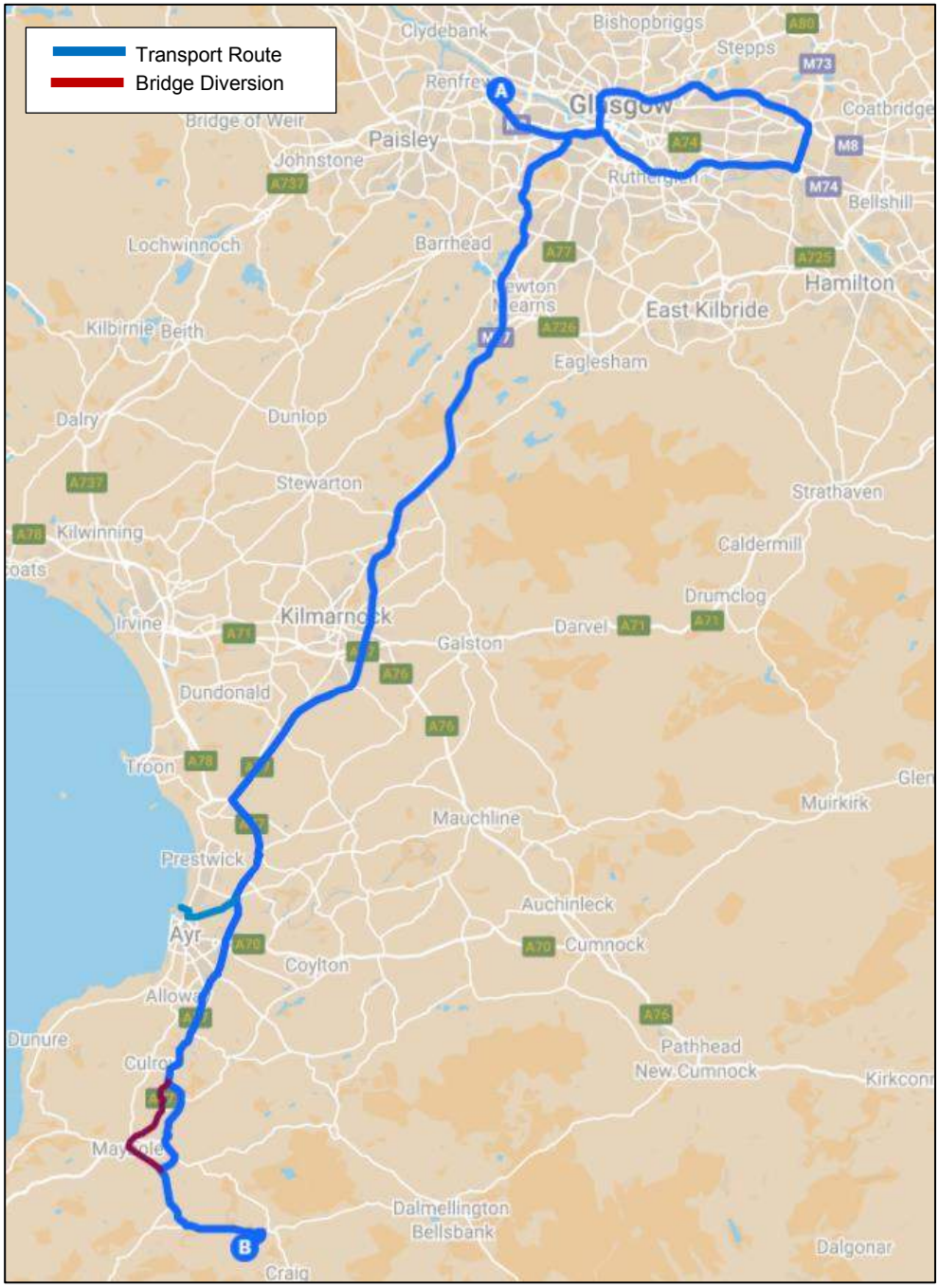
3.2.2 Route 2

The proposed access route to the site entrance is as follows;

- Loads would follow the same route as Route 1 to the village of Cloyntie;
- Loads would turn left onto the B741 travelling east; and
- Loads would turn right onto the unclassified road and continue to site.

Proposed access Route 2 is illustrated in Figure 6.

Figure 5: Proposed Access Route 2



3.3 Route Constraints

The constraints noted in the review for both access options are detailed in Tables 2, 3 & 4. These cover all constraints from the Port of Ayr through to the site access junctions. No consideration of the transport issues within the ports or within the development site have been undertaken and this includes the design of the site access junction.

Plans illustrating the location of the constraints and a detailed list of POI are provided in Appendix A.

3.3.1 Proposed Access Route 1

Table 2: Route 1 Constraint Points and Details

POI	Key Constraint	Details
1	**Kings Inch Drive Roundabout 1 - Blade Only** 	Blades will exit the port via the AIL access gate onto Kings Inch Drive. Blades will oversail the southern verge on exiting the port. Blades will cross the central island of the junction where the existing overrun should be utilised and will proceed westbound. Two road signs on the exit splitter island would need to be removed to enable over-sail. Swept path assessment SK01 is included in Appendix B.
2	**Kings Inch Drive Roundabout 2 - Blade Only** 	Blades will proceed ahead taking the second exit onto Kings Inch Drive. Blades will oversail the southern verge on the approach arm where one lighting column should be removed. Blades will oversail the north eastern verge and footway on the approach arm. Blades will oversail the southern edge of the central island and southern verge of the exit arm, but no works are required. Swept path assessment SK02 is included in Appendix B.

POI	Key Constraint	Details
3	**Kings Inch Drive Roundabout 3 - Blade Only** 	Blades will proceed ahead at the junction, taking the second exit. No physical mitigation works are required however, loads will require access to all lanes. Swept path assessment SK03 is included in Appendix B.
4	**Kings Inch Drive / Mayo Avenue Junction - Blade Only** 	Blades will turn left at the junction and will enter the M8 spur road. Blades will oversail the northern central reserve where escorts should hold oncoming vehicles during load movements. Blades will oversail the splitter island where two traffic signal heads, one call post and guardrail should be removed. One bollard will be oversailed. Blades will oversail the eastern verge where one VMS road sign, one road sign, one lighting column and one pedestrian call post should be removed. Vegetation should be cleared back. **Third party land required.** Swept path assessment SK04 is included in Appendix B.
5	**M8 Junction 25a Slip Road - Blade Only** 	Blades will continue on the M8 at this location. Loads will oversail the north eastern verge where the ground clearance for load over the safety barrier should be confirmed during the test run. Swept path assessment SK05 is included in Appendix B.
6	**M8 / M73 Slip Road - Blade Only** 	Blades will take the slip road and join the M73 at this location. No physical mitigation works are required however, loads will require access to all lanes.

POI	Key Constraint	Details
7	**M73 / M74 Bend - Blade Only** 	Blades will proceed ahead at this location. No physical mitigation works are required however, loads will require access to all lanes.
8	**M77 Slip Road - Blade Only** 	Blades will take the slip road and join the M77 at this location. No physical mitigation works are required however, loads will require access to all lanes.
9	**Dutch House Roundabout - Blade Only** 	Blades will take the first exit at the roundabout. No physical mitigation works are required however, loads will require access to all lanes. Swept path assessment SK06 is included in Appendix B.
10	**Sandyford Toll Roundabout - Blade Only** 	Blades will take the second exit at the roundabout. Blades will oversail the central reserve on the entry arm where the blade tip will oversail the bollards and safety barrier. Blades will oversail the eastern verge where the three lighting columns should be removed. Blades will oversail the eastern splitter island, but no works are required. Blades will oversail the eastern side of the central island where one set of chevron signs should be removed. Swept path assessment SK07 is included in Appendix B.

POI	Key Constraint	Details
11	**Port of Ayr Exit Gate - Tower Only** 	Loads will exit the Port of Ayr and continue onto Waggon Road.
12	**Waggon Road / Allison Street Junction - Tower Only** 	Loads will turn right onto Allison Street. It is proposed that loads will contraflow the junction. No physical mitigation works are required however, loads will require access to all lanes. Swept path assessment SK08 is included in Appendix B.
13	**Allison Street / Whitletts Road Junction - Tower Only** 	Loads will turn left onto Whitletts Road. Loads will overrun and oversail the central reserve where a load bearing surface should be laid and one lighting column removed. Loads will oversail the footway on the inside of the left turn. Swept path assessment SK09 is included in Appendix B.
14	**Whitletts Road Railway Bridge - Tower Only** 	There is a historic weight restriction crossing Whitletts Road Railway Bridge. Consultation with Network Rail and the Ayrshire Road Alliance should be completed to confirm whether the proposed loads will be affected by the restrictions.

POI	Key Constraint	Details
15	**A77 Whitletts Roundabout** 	Blades will continue through the roundabout taking the second exit heading south. It is proposed that towers coming from Ayr will take continue round the junction taking the fourth exit. Blades will oversail the eastern verge of the northern entry arm where one traffic signal should be removed. Towers will navigate the roundabout utilising all lanes but no physical mitigation is required. Swept path assessment SK10 is included in Appendix B.
16	**A77 Holmston Roundabout** 	Loads will continue straight through the roundabout. Loads will oversail the eastern verge on the approach to the roundabout where the blade tip will oversail the pedestrian barrier and two lighting columns should be removed. Loads will oversail the eastern edge of the roundabout island, however no physical works are required. Swept path assessment SK11 is included in Appendix B.
17	**A77 Bankfield Roundabout** 	Loads will proceed ahead at the roundabout. Loads will oversail the eastern verge on the entry to and through the roundabout where one lighting column should be removed. Loads will overrun and oversail the south eastern edge of the roundabout island where a load bearing surface should be laid, and one lit chevron sign should be removed. Vegetation should be trimmed. Loads will oversail the southern verge and edge of the exit road splitter island where one lit and one non lit sign should be removed. Loads will oversail the south eastern verge of the exit arm. Swept path assessment SK12 is included in Appendix B.

POI	Key Constraint	Details
18	**A77 Minishant** 	All traffic islands through the village of Minishant should be cleared of street furniture to allow loads to oversail.
19	**A77 / B7045 Roundabout** 	**It is proposed that blade loads and any loads that can negotiate a 4.57m (15 foot) height restriction will turn left on the B7045. All other loads will continue straight on.** Loads will overrun and oversail the verge on the inside of the left turn where a load bearing surface should be laid and two road signs and a traffic bollard should be removed. Loads will overrun and oversail the south western verge and oversail the north eastern verge through the following bends. Load bearing surfaces should be laid and vegetation cleared. It is recommended that land searches are completed to confirm the extent of adopted boundary through the section. Loads will oversail the north eastern verge of the B7045 where vegetation should be cleared. **Third party land is required.** Swept path assessment SK13 is included in Appendix B.
20	**B7045 Railway Underbridge** 	The B7045 travels underneath a railway bridge with a marked height restriction of 4.57m (15 feet). Hauliers to ensure that blades are loaded and suspension settings are rigged to meet this restriction. Higher loads such as tower and nacelle components will not be able to utilise this section of the route and must follow the diversionary route provided.

POI	Key Constraint	Details
21	**B7045 Cassillis Gate Bridge – Blade Only** 	Loads will oversail the eastern verge into **third party land** on approach to the bridge where vegetation and trees should be removed. The height clearance for oversail of the western bridge parapet should be confirmed during the test run. **Third party land required.** Loads will overrun and oversail the eastern verge on exit from the bridge where a load bearing surface should be laid and one utility pole should be removed. Swept path assessment SK14 is included in Appendix B.
22	**B7045 Blairbowie Wood – Blade Only** 	Loads will continue through the right bend. Loads will oversail both verges through the bend however no physical mitigation is required. Swept path assessment SK15 is included in Appendix B.
23	**B7045 Blairbowie – Blade Only** 	Loads will continue through the left / right bends. Loads will oversail both verges through the initial left bend and both verges through the following right bend however no physical mitigation is required. Swept path assessments SK16 & SK17 are included in Appendix B.
24	**B7045 Grimmet – Blade Only** 	Loads will continue south on the B7045. Loads will continue through the left bend. Loads will oversail both verges through the bend where an area of load bearing surface is required on the eastern verge and vegetation should be cleared. Fences and trees should be removed. **Third party land is required.** Early engagement with the land owner is strongly recommended. Swept path assessment SK18 is included in Appendix B.

POI	Key Constraint	Details
25	**B7045 Grimmet – Blade Only** 	Loads will continue through the right bend. Loads will overrun and oversail both verges through the bend where load bearing surfaces should be laid. A culvert is required in the western verge and **third-party land** is required. Loads should utilise the existing layby area within the south eastern verge. It is recommended that a land search is completed to confirm the extent of the adopted boundary. Swept path assessment SK19 is included in Appendix B.
26	**B7045 Grimmet – Blade Only** 	Loads will continue through the left bend. Loads will oversail both verges through the bend where trees should be trimmed. A utility pole should be removed from the northern verge on the outside of the bend. Swept path assessment SK20 is included in Appendix B.
27	**B7045 South of Harkieston Bridge – Blade Only** 	Loads will continue south through the right / left bend section. Loads will oversail both verges through the bend. The fence and vegetation should be removed on the eastern verge and **third party land is required.** The land should be reprofiled to allow oversail. Swept path assessment SK21 is included in Appendix B.

POI	Key Constraint	Details
28	**B7045 / Crosshill Road Junction – Blade Only** 	Loads will depart the B7045 and turn right onto Crosshill Road. Loads will oversail both verges on approach to the junction. Loads will oversail the splitter island where one road sign should be removed. Loads will overrun and oversail into **third party land** to the east of the road through the following right bend where a load bearing surface should be laid and the fence and hedge should be removed. The exact location of the high voltage pylon should be confirmed on a topographical base plan. Loads will oversail the verge on the inside of the right bend where vegetation should be cleared. A load bearing surface should be laid in the western verge on the inside of the right bend where vegetation should be removed. Swept path assessment SK22 is included in Appendix B.
29	**Crosshill Road East of Attiquin – Blade Only** 	Loads will continue through the right bend. Loads will overrun and oversail both verges through the right bend where load bearing surfaces should be laid and one road sign should be removed. **Third party land** is required. Fencing and vegetation should be removed. Swept path assessment SK23 is included in Appendix B.
30	**Crosshill Road East of Attiquin – Blade Only** 	Loads will continue through the right bend. Loads will oversail both verges through the bend however no physical mitigation measures are required. Swept path assessment SK24 is included in Appendix B.

POI	Key Constraint	Details
31	**Crosshill Road / B7023 Junction – Blade Only** 	Loads will turn left on the B7023 at the junction. Loads will oversail the north eastern verge on approach to the junction. Loads will overrun and oversail into **third party land** on the inside of the left bend where a load bearing surface should be laid. The drainage ditch should be culverted. The hedge, fence, one traffic sign and one utility pole should be removed and the land will need to be reprofiled. Swept path assessment SK25 is included in Appendix B.

Table 3: Diversion Route Constraint Points and Details for Non Blade Components

POI	Key Constraint	Details
32	**A77 Smithston Bridge – Tower Only** 	It is proposed that high loads which are unable to negotiate the height restriction at POI 20 will continue on the A77 towards Maybole. *It should be noted that a new bypass of Maybole is proposed and one new roundabout will be constructed prior to this location. It will be necessary for a swept path assessment to be completed on 'as built' drawings to confirm the required mitigation.* Loads should travel through the centre of the arch bridge which has a noted height restriction of 5.02m. No mitigation is required although loads will require access to the entire carriageway. Swept path assessment SK26 is included in Appendix B.
33	**A77 / Kirkland Street – Tower Only** 	Loads will depart the A77 and turn left onto Kirkland Street. Loads will oversail the south eastern footway on the inside of the turn however no physical mitigation is required. Swept path assessment SK27 is included in Appendix B.

POI	Key Constraint	Details
34	**Kirkland Street – Tower Only**  	Loads will continue south west along Kirkland Street. Loads will oversail the western footway buildout where they will oversail the pedestrian guardrail. Parking should be temporarily suspended. The street furniture should be removed from the traffic island. Swept path assessment SK28 is included in Appendix B.
35	**Kirkland Street / B7023 Junction – Tower Only** 	Loads will turn left onto the B7023 at the junction. It is strong recommended that the swept path assessment is repeated on a topographical survey due to minimal clearance being available for the proposed loads. Loads will overrun and oversail the north western footway on entry and south western footway on exit from the junction where load bearing surface should be laid and one lighting column should be removed. Loads will oversail into **third party land** on the inside of the turn where one lit road sign should be removed and clearance to the building should be confirmed on the topographical survey base. Swept path assessment SK29 is included in Appendix B.

Table 4: Route 1 Constraint Points and Details Continued

POI	Key Constraint	Details
36	**B7023 Crosshill** 	Loads will continue through the village of Crosshill. Loads will oversail the western footway on approach to the left bend. Loads will overrun and oversail the south western verge where a load bearing surface should be laid and parking should be suspended throughout. Swept path assessment SK30 is included in Appendix B.
37	**B7023 Crosshill** 	Loads will continue south through the right bend. Loads will oversail the verge on the inside of the bend. Parking should be temporarily suspended to ensure loads can access the entire carriageway width. Swept path assessment SK31 is included in Appendix B.
38	**B7023 Dalhowan** 	Loads will continue right onto Dalhowan Street. Loads will oversail the eastern footway on approach to the bend where parking should be suspended. Loads will overrun the western verge and oversail into **third party land**. A load bearing surface should be laid, and the hedge and fence removed. The exact location of the utility pole should be confirmed on a topographical survey base. Loads will oversail both verges through the following left bend. Swept path assessment SK32 is included in Appendix B.

POI	Key Constraint	Details
39	**B7023 Dalhowan** 	Loads will continue south east on Dalhowan Street. Loads will oversail and overrun into **third party land** on the outside of the left bend where a load bearing surface should be laid and the hedge and fence should be removed. The drainage ditch should be culverted. Loads will oversail into **Third party land** on the inside of the bend where trees, vegetation and fence should be removed. Loads will oversail both verges following the bend however no physical mitigation is required. Swept path assessment SK33 is included in Appendix B.
40	**B7023 Cloyntie Bridge** 	Loads will continue through a chicane section. Loads will oversail and overrun into **third party land** on the south western verge where load bearing surfaces should be laid, and the fence removed. Trees and vegetation should be trimmed. Verge reprofiling is required. Loads will oversail the north eastern verge where the height clearance for load oversail of the verge should be confirmed during the test run. The hedge should be trimmed and potential **third party land** is required to enable reprofiling works. Loads will overrun and oversail the eastern verge where a load bearing surface should be laid, and the drainage ditch should be culverted. Vegetation and trees should be removed. Swept path assessment SK34 is included in Appendix B.

POI	Key Constraint	Details
41	**B7023 Cloyntie Bridge** 	Loads will continue through the crossroads on Cross Hill Road. *A 3t weight restriction sign was noted at this location which is suspected to be in place to prevent heavy forestry traffic. Confirmation of the exact reason should be sought from the Ayrshire Roads Alliance to ensure that the road is suitable for the proposed abnormal loads.* Loads will oversail both verges on approach to the crossroads where vegetation and two road signs should be removed. Loads will oversail and overrun the western verge of the entry road where a load bearing surface should be laid, and trees should be removed. **Third party land** is required. Loads will overrun the eastern verge of the exit road where a load bearing surface should be laid, and one road sign should be removed. The verge should be reprofiled. Loads will oversail into **third party land** on the western verge of the exit arm where the vegetation, trees and one road sign should be removed. Swept path assessment SK35 is included in Appendix B.
42	**B7023 Gallow Knowe** 	Loads will oversail both verges through the section where vegetation should be cleared. *The road at this point reduces in width. It will be necessary for the road to be widened to a minimum of 5m from this point to the proposed site entrance. An indicative 5m road widening has been provided and all mitigation works beyond this edge have been identified.* *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Swept path assessment SK36 is included in Appendix B.

POI	Key Constraint	Details
43	**B7023 Balsaggart** 	Loads will continue through the left bend at Balsaggart. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will overrun and oversail beyond the indicative 5m widening throughout the bend. Load bearing surfaces should be laid. Vegetation and trees should be removed on the eastern verge and **third party land** is required. Swept path assessment SK37 is included in Appendix B.
44	**B7023 Auchalton Toll** 	Loads will oversail beyond the indicative 5m widening on approach to the bridge and left bend. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail into **third party land** on both sides of the road through the left bend where trees and two utility poles should be removed. The blade tip will oversail the northern bridge parapet. The swept path assessment should be repeated on a topographical survey to confirm the proposed mitigation. Swept path assessment SK38 is included in Appendix B.

POI	Key Constraint	Details
45	**B7023 Auchalton Toll** 	The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail both verges beyond the indicative 5m widening. Swept path assessment SK39 is included in Appendix B.
46	**B7023 Auchalton** 	The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* The road should be widened to a minimum of 5m. Loads will overrun and oversail into **third party land** on both sides of the road through the initial right / left bend where trees removed. Loads will continue to overrun and oversail both verges through the following left bend where load bearing surfaces should be laid the drainage ditch culverted. Confirmation of the extent of adopted boundary should be sought. Swept path assessment SK40 is included in Appendix B.

POI	Key Constraint	Details
47	**B7023 Auchalton Meadows** 	Loads will continue south through Auchalton Meadow where the road narrows further. *It will be necessary for the road to be widened to a minimum of 5m from this point to the proposed site entrance. An indicative 5m road widening has been provided and mitigation works beyond this edge have been identified.* *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail into **third party land** on both sides of the road through the section where vegetation and trees should be cleared. One road sign, one utility pole and the fence should be removed. The swept path assessment should be repeated on a topographical survey base. Swept path assessment SK41 is included in Appendix B.
48, 49	**B7023 West of Shawsknowe**  	Loads will continue through the right left bends west of Shawsknowe. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail into **third party land** beyond the 5m widening on both sides of the road. Trees / vegetation should be removed along with a utility pole and the fence. Loads will overrun and oversail into **third party land** on the inside of the left bend where a load bearing surface should be laid. Trees / vegetation, one road sign and the fence should be removed. The drainage ditch should be culverted. The swept path assessment should be repeated on a topographical survey base. Swept path assessment SK42 is included in Appendix B.

POI	Key Constraint	Details
50, 51	**B7023 West of Shawsknowe**  	Loads will continue south on the unclassified road. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail both verges through the initial left bend where the drainage ditch should be culverted to facilitate the required widening of the road to 5m. Trees / vegetation should be removed. **Third party land** is required on the eastern verge. Loads will oversail the eastern verge through the following right bend and overrun and oversail the western verge where **third party land** will be required. Trees / vegetation should be removed and a load bearing surface laid. The drainage ditch should be culverted and the fence removed. Swept path assessment SK43 is included in Appendix B.
52	**B7023 East of Cullochknowes** 	Loads will continue south to the east of Cullochknowes. *There is a forestry access at this point which departs to the left of the road. Further work is recommended to assess the feasibility of utilising this junction to access the proposed site via upgraded forestry tracks. This would be a separate piece of work to this current commission.* *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail to the west of the road. Trees / vegetation should be cleared. Loads will oversail the verge on the inside of the bend into **third party land**. The drainage ditch will need to be culverted as part of the road widening work. Swept path assessment SK44 is included in Appendix B.

POI	Key Constraint	Details
53, 54	**B7023 Drumyork Hill**  	Loads will continue through a sinuous section of road passing Drumyork Hill. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will overrun both verges through the initial right bend. Oversail into **third party land** will be required. Load bearing surfaces should be laid and trees / vegetation should be cleared. The fence and a traffic sign should be removed and the drainage ditch culverted as part of the 5m widening. Loads will overrun and oversail the eastern verge through the following left bend where a load bearing surface should be laid and the drainage ditch culverted. The cattle grid should be replaced with a load bearing surface and **third party land** will be required. The bank will need to be reprofiled. Swept path assessment SK45 is included in Appendix B.
55	**B7023 Craigens** 	Loads will oversail both verges on approach to the right bend. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail into **third party land** beyond the required widening to 5m on both sides of the road through the right bend. Vegetation should be removed throughout. Swept path assessment SK46 is included in Appendix B.
56	**B7023 West of Clauchrie Hill** 	Loads will continue south to the west of Clauchrie Hill. Loads will oversail both verges throughout the section. Vegetation should be cleared and it is recommended that land searches are completed to confirm the extent of adopted boundary available through the section. Swept path assessment SK47 is included in Appendix B.

POI	Key Constraint	Details
57	**B7023 West of Clauchrie Hill** 	Loads will continue south through a chicane section. Loads will oversail both verges throughout the section. Vegetation should be cleared and it is recommended that land searches are completed to confirm the extent of adopted boundary available through the section. Swept path assessment SK48 is included in Appendix B.
58	**B7023 West of Clauchrie Hill** 	Loads will continue south through a left / right section. Loads will oversail both verges throughout the section. Vegetation should be cleared and it is recommended that land searches are completed to confirm the extent of adopted boundary available through the section. Verge to the east to be reprofiled to allow oversail. Vegetation should be removed and **third party land** is required on the western verge through the first bend. Swept path assessment SK49 is included in Appendix B.
59, 60	**B7023 Deli's Elbow**  	Loads will oversail the northern verge on approach to the initial right bend. Loads will overrun and oversail into **third party land** on the outside of the right bend where load bearing surfaces should be laid and the verge will need to be reprofiled to facilitate oversail and overrun. The drainage ditch should be culverted and trees / vegetation should be removed. Loads will oversail into **third party land** on the inside of the right bend where trees / vegetation should be removed. Loads will oversail both verges through the following right bend. Vegetation should be cleared and it is recommended that land searches are completed to confirm the extent of adopted boundary available through the bend. Swept path assessment SK50 is included in Appendix B.

POI	Key Constraint	Details
61	**B7023 South of Deli's Elbow** 	Loads will oversail both verges throughout the section. Vegetation should be cleared and it is recommended that land searches are completed to confirm the extent of adopted boundary available through the section. Swept path assessment SK51 is included in Appendix B.
62	**Proposed Site Entrance** 	Loads will depart the unclassified road and turn left into the existing forestry track entrance. Loads will oversail the western verge north of the junction where vegetation should be cleared, and **third party land** is required. The junction will need to be upgraded to meet manufacturer and Ayrshire Road Alliance standards. **Third party land** will be required. Swept path assessment SK52 is included in Appendix B.

3.3.2 Route 2

Loads will follow the same route as Route 1 to Cloyntie (POI 41) where they will turn left onto the B741 as detailed below.

Table 5: Route 2 Constraint Points and Details

POI	Key Constraint	Details
41, 53	**B7023 Cloyntie Bridge** 	Loads will turn left onto the B741. Loads will oversail both verges on approach to the junction with **third party land** required in the western verge where trees should be removed, and a load bearing should be laid in the western verge. One road sign should be removed along with vegetation on the east. Loads will oversail the verge on the inside of the left bend where one road sign should be removed, and a land search completed the confirm the extent of adopted boundary. Loads will overrun and oversail into **third party land** to the south of the B741 where a load bearing surface should be laid, and the fence and hedge removed. Loads will continue to oversail the southern verge on the inside of the following right bend. Swept path assessment SK53 is included in Appendix B.

POI	Key Constraint	Details
64, 65, 66	**B741 Drumquhill Bends**   	Loads will continue east on the B741. Loads will oversail both bends through the series of bends where vegetation should be cleared. Swept path assessment SK54 is included in Appendix B.
67, 68	**B741 Balgreggan Bends**  	Loads will continue east. Loads will both verges through the bends section however no physical mitigation measures are required. Swept path assessment SK55 is included in Appendix B.

POI	Key Constraint	Details
69	**B741 West of Girvan Lodge** 	Loads will continue east through the bends west of Girvan Lodge. Loads will oversail the northern verge where vegetation should be cleared. Loads will overrun and oversail the southern verge where a load bearing surface should be laid. Swept path assessment SK56 is included in Appendix B.
70	**B741 Girvan Lodge** 	Loads will continue through the right bend at Girvan Lodge. Loads will oversail the southern verge on the inside of the right bend but no works are required. Swept path assessment SK57 is included in Appendix B.
71	**B741 The Cloisters** 	Loads will continue south east on the B741. Loads will oversail the south eastern verge however no physical mitigation is required. Swept path assessment SK58 is included in Appendix B.
72	**B741 The Cloisters** 	Loads will continue south east on the B741. Loads will oversail both verges through the section where vegetation should be cleared. Swept path assessment SK59 is included in Appendix B.

POI	Key Constraint	Details
73, 74	**B741 Craigens**  	Loads will continue east through the left / right bend section. Loads will oversail into **third party land** on both sides of the road through the initial left bend where trees should be removed. Loads will oversail both verges through the following right bend however no physical mitigation is required. Loads will oversail the northern verge through the third bend. Loads will overrun and oversail the southern verge where a load bearing surface should be laid. Swept path assessment SK60 is included in Appendix B.
75, 76	**B741 / Unclassified Road Junction**  	Loads will turn right from the B741 onto the unclassified road leading to site. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail both verges on approach to the right turn. Loads will overrun and oversail into **third party land** on the inside of the right turn where a load bearing surface should be laid and the ditch culverted. Trees and the stone wall should be removed. *The road from this point to the proposed site entrance should be widened to 5m running width. An indicative 5m widening line has been shown on the drawings for illustration only with mitigation shown beyond this line. All proposed works should be confirmed during the test run or during detailed design.* Loads will overrun and oversail both verges through the following bends where load bearing surfaces should be laid, and the vegetation cleared. Ditch should be culverted. Swept path assessment SK61 is included in Appendix B.

POI	Key Constraint	Details
77, 78	**Unclassified Road Bennan** 	Loads will continue south on the unclassified road. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* The road should be widened to 5m running width. Loads will oversail and overrun both verges through the bends section where load bearing surfaces should be laid and the ditch culverted. Vegetation should be cleared throughout. **Third party land** will be required for oversail on the inside of the last right bend in the section where the stone wall / fence should be removed and the land reprofiled. It is recommended that the swept path assessment is repeated on a topographical base plan to confirm the proposed mitigation works. Swept path assessment SK62 is included in Appendix B.
79, 80	**Unclassified Road East of Dyke**  	Loads will continue south through the left / right bends. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail both verges through the section. A load bearing surface should be laid within the north western verge through the initial left bend and the drainage ditch should be culverted. The road should be widened to 5m throughout. Swept path assessment SK63 is included in Appendix B.

POI	Key Constraint	Details
81	**Unclassified Road Dyke** 	Loads will pass the farm at Dyke heading south west. *OS mapping does not identify the road edge through this section. An indicative road edge has been provided for illustration only and should be confirmed on a topographical base plan.* Loads will oversail into **third party land** on the inside of the initial right bend where trees and the fence should be removed. Loads will overrun and oversail the southern verge where a load bearing surface should be laid. Swept path assessment SK64 is included in Appendix B.
82	**Unclassified Road – Proposed Site Entrance** 	Loads would turn left into a new access junction. A new access junction should be built to meet the turbine manufacturer and Ayrshire Road Alliance standards. Minimum visibility splays of 4.5m x 160m should be provided however this should be confirmed with the Ayrshire Roads Alliance. Swept path assessment SK65 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.

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

3.5 Weight Review

No weight assessment has been carried out at this time as the client has informed PF that the site is not yet fully in the public domain. As such it is recommended that a full weight review is carried out using the ESDAL system once the site becomes public.

3.6 Land Ownership

The limits of road adoption can vary depending upon the location of the site and the history of the road agencies. The adopted area is generally defined as land contained within a defined boundary where the road agency holds the maintenance rights for the land from the original land owner. 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 / hedges lines or a maximum 2m from the road edge. This can vary between areas and location.

3.7 Access Junction Considerations

The access junction into the site would need to be built to accommodate the proposed physical size of loads and the number of trips predicted during the construction phase.

The design and form of the junction would need to be discussed with the Ayrshire Road Alliance. The design of the junctions should take into account the requirement for provision of visibility splays at a maximum of 4.5m x 160m in both directions.

The junction would also need to be built in accordance with the turbine supplier design criteria.

3.8 Summary Issues

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

- That a full site visit is completed and the RSR is updated to ensure that all constraints have been noted;
- That any necessary topographical surveys are undertaken and the swept path results repeated;
- A review of axle loading on structures along the entire access route with the various road agencies;
- 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.

3.9 Mitigation Summary

Streetworks, third party land reviews and or agreements will be required at the locations summarised in Table 4.

Table 6: Mitigation Works Summary

POI	Works within Adopted Boundary	Land Search Required	Third Party Land Required	Topographical Survey Required
1	X			
2	X			
3	X			
4			X	
5	X			
6	X			
7	X			
8	X			
9	X			
10	X			
11	X			
12	X			

POI	Works within Adopted Boundary	Land Search Required	Third Party Land Required	Topographical Survey Required
13	X			
14	X			
15	X			
16	X			
17	X			
18	X			
19		X		
20	X			
21			X	X
22	X			
23	X			
24			X	
25		X	X	X
26	X			
27			X	
28			X	X
29			X	
30	X			
31			X	
32	X			
33	X			
34	X			
35			X	X
36	X			
37	X			
38			X	X
39			X	
40			X	
41			X	
42	X			
43			X	X
44			X	X
45	X			
46			X	X
47			X	X
48			X	X
49			X	X
50			X	

POI	Works within Adopted Boundary	Land Search Required	Third Party Land Required	Topographical Survey Required
51			X	
52			X	
53			X	
54			X	
55			X	
56		X		
57		X		
58		X	X	
59		X	X	
60		X		
61		X		
62			X	X
63		X	X	
64	X			
65	X			
66	X			
67	X			
68	X			
69	X			
70	X			
71	X			
72	X			
73			X	
74	X			
75			X	
76	X			
77	X			
78			X	
79	X			
80	X			
81			X	
82			X	

4 Summary

4.1 Summary of Access Review

PF has been commissioned by ITPEnergised to prepare a desk based Route Survey Report to examine the issues associated with the transport of AIL turbine components to the development site.

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

The access review has been based upon Siemens SG155 components.

The report is presented for consideration to ITPEnergised. Various third party land arrangements, road modifications and interventions are required to successfully access the site. If these are assessed, approved and undertaken, access to the consented wind farm site is considered potentially feasible.

4.2 Further Actions

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

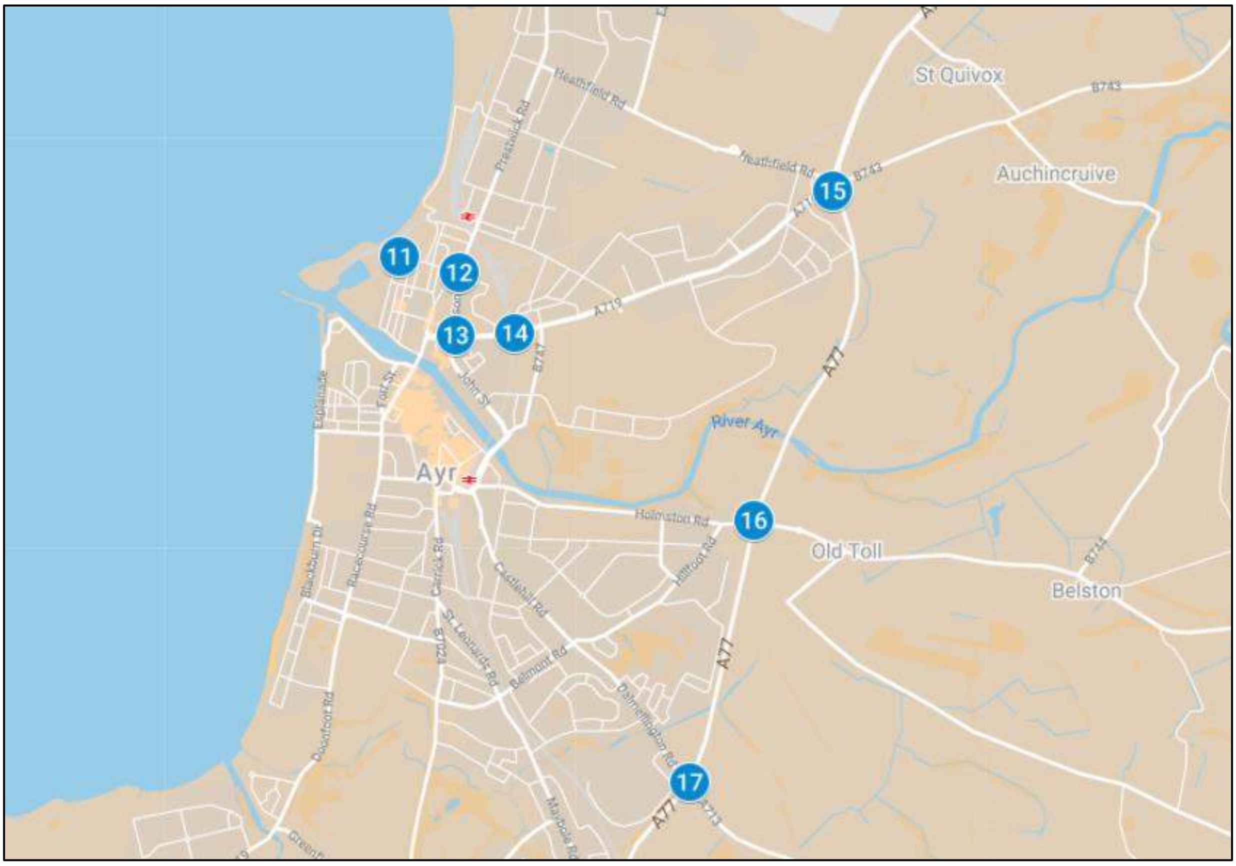
- Undertake a full site visit and update the route survey report for the proposed site;
- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Obtain the necessary land options;
- Undertake discussion with the affected utility providers and roads agencies;
- 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.

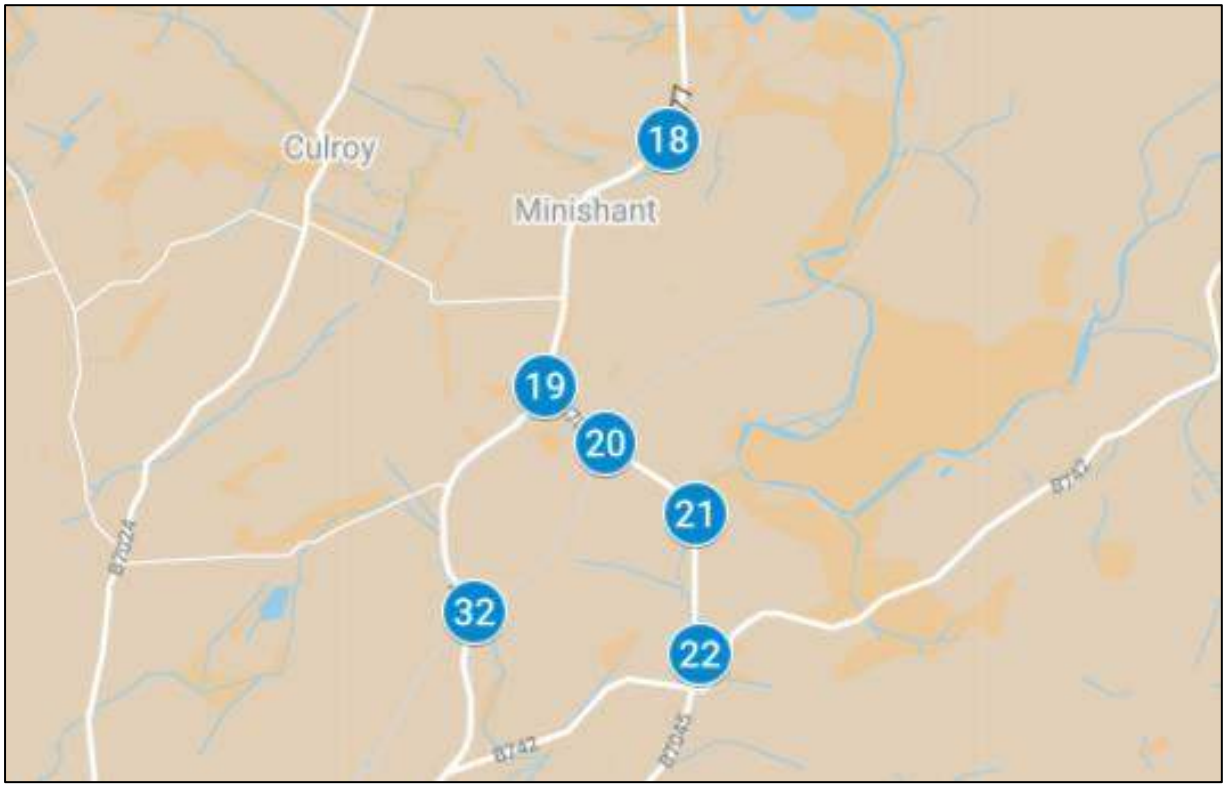
Appendix A
Points of Interest Locations

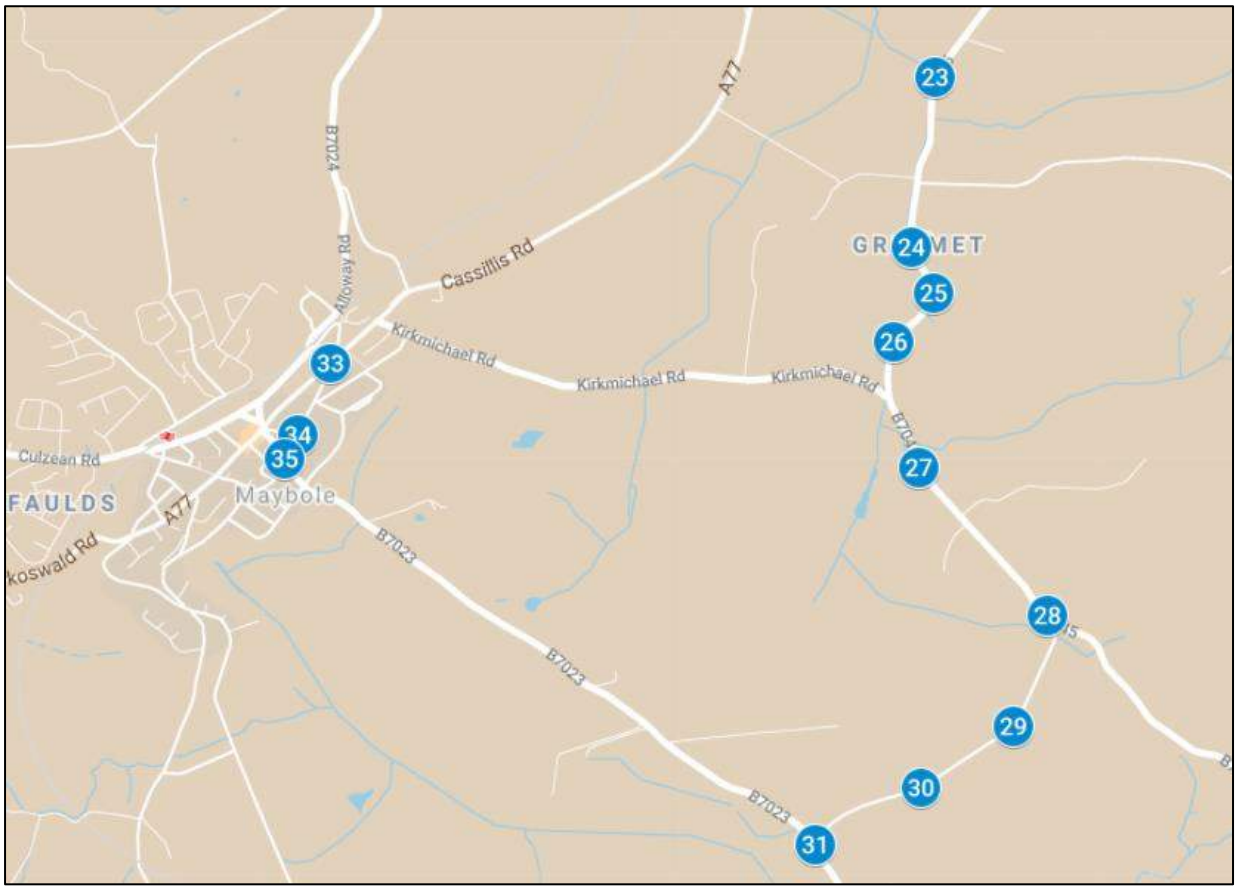

King's Inch Rd
Old Govan Rd
Glasgow Rd
SHIELDHALL
Kings Inch Dr
Hillington Rd
Renfrew Rd
M8
26
1
2
3
4
5

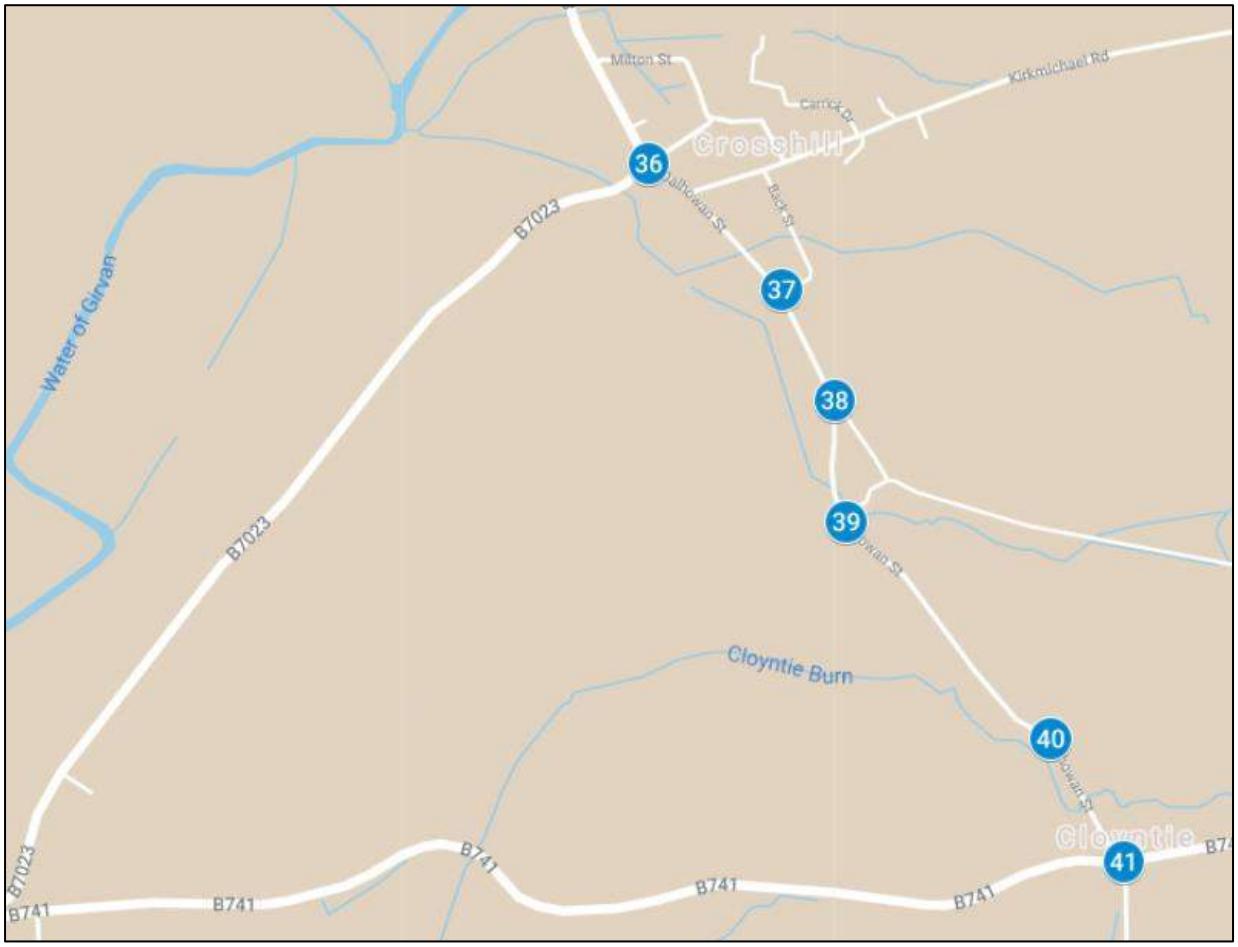

Cardowan
Gartcosh
M73
M80
M8
HILLHEAD
PARTICK
FINNIESTON
Glasgow
GOVAN
IBROX
River Clyde
Laurieston
BRIDGETON
PARKHEAD
BAILLIESTON
Bargeddie
GORBALS
A74
M77
GOVANHILL
M74
Ruthergien
SHAWLANDS
Cambuslang
Uddingston
6
7
8


A78
A77
9
A79
Kilmarnock Rd
Monkton
B739
A79
A77
Glasgow
Prestwick
Airport
B739
A79
Shawfarm Rd
A719
Main St
10
A719
B742
Prestwick


St Quivox
B743
Heathfield Rd
Prestwick Rd
Heathfield Rd
B743
15
Auchincruive
11
12
13
14
A719
B747
A77
John St
Esplanade
River Ayr
Ayr
Holmston Rd
16
Old Toll
Belston
B744
Blackburn Rd
Racecourse Rd
Carrick Rd
Castlehill Rd
Hillfoot Rd
St Leonards Rd
Belmont Rd
B7024
A77
Dalmellington Rd
Doonfoot Rd
17
A77
A713
Maybole Rd


Culroy
Minishant
18
19
20
21
22
32
A77
B7024
B7042
B747
B7045


A77
B7024
Cassillis Rd
Kirkmichael Rd
Kirkmichael Rd
Kirkmichael Rd
B7045
Culzean Rd
FAULDS
Maybole
A77
B7023
B7023
B7023
23
24
25
26
27
28
29
30
31
33
34
35


Milton St
Kirkmichael Rd
Crosshill
36
B7023
Water of Girvan
37
38
39
B7023
Cloyntie Burn
40
Cloyntie
41
B7023
B741
B741
B741
B741
B741


42
43
44
45
46


47
48
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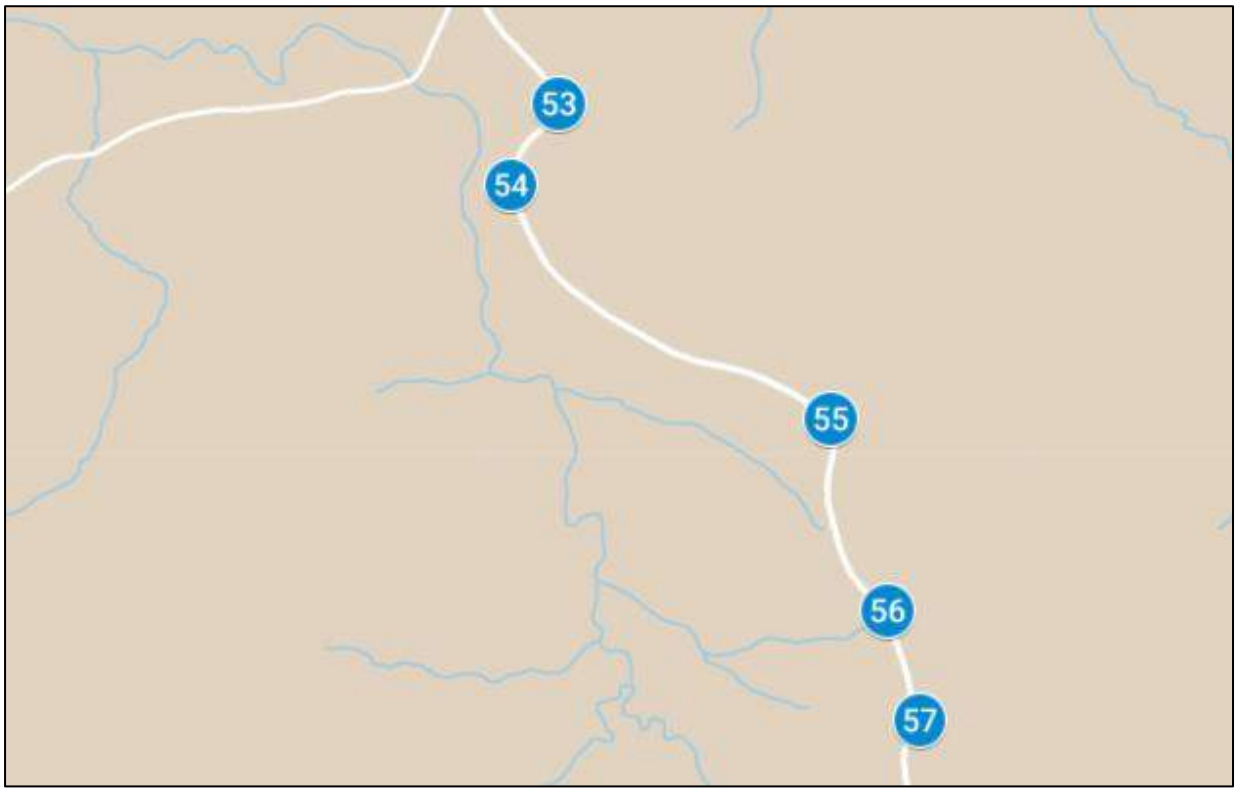
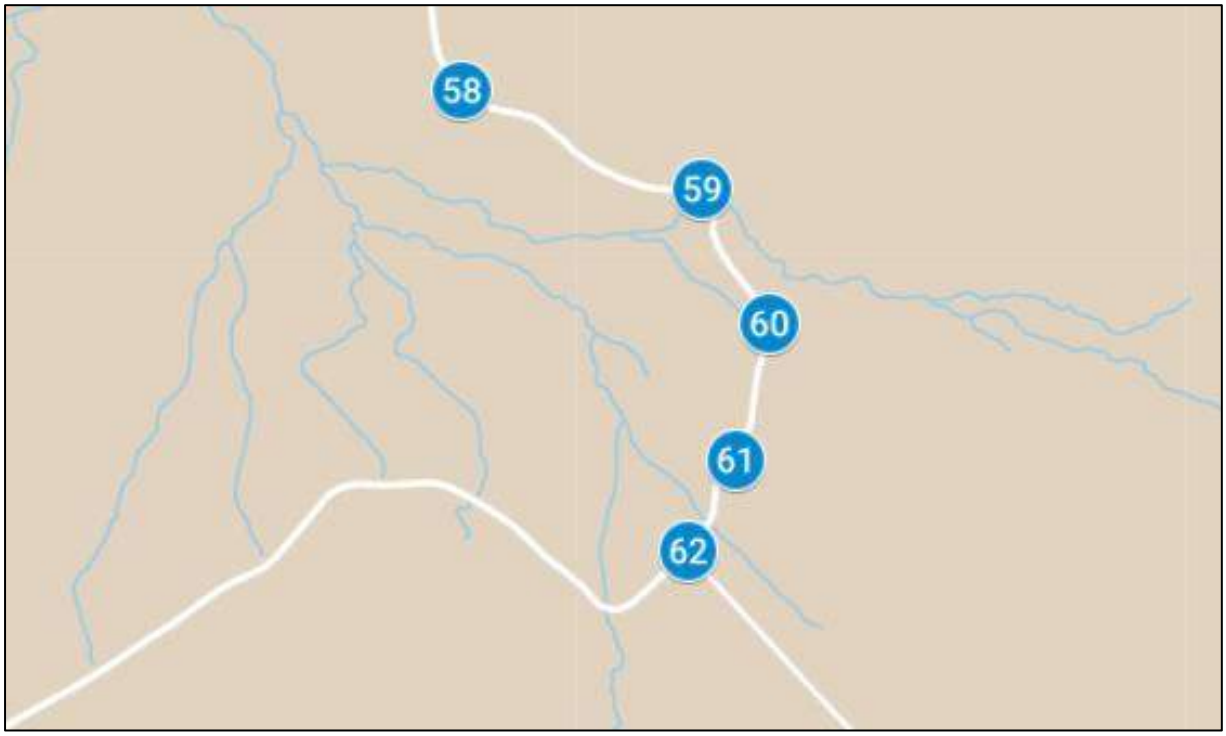
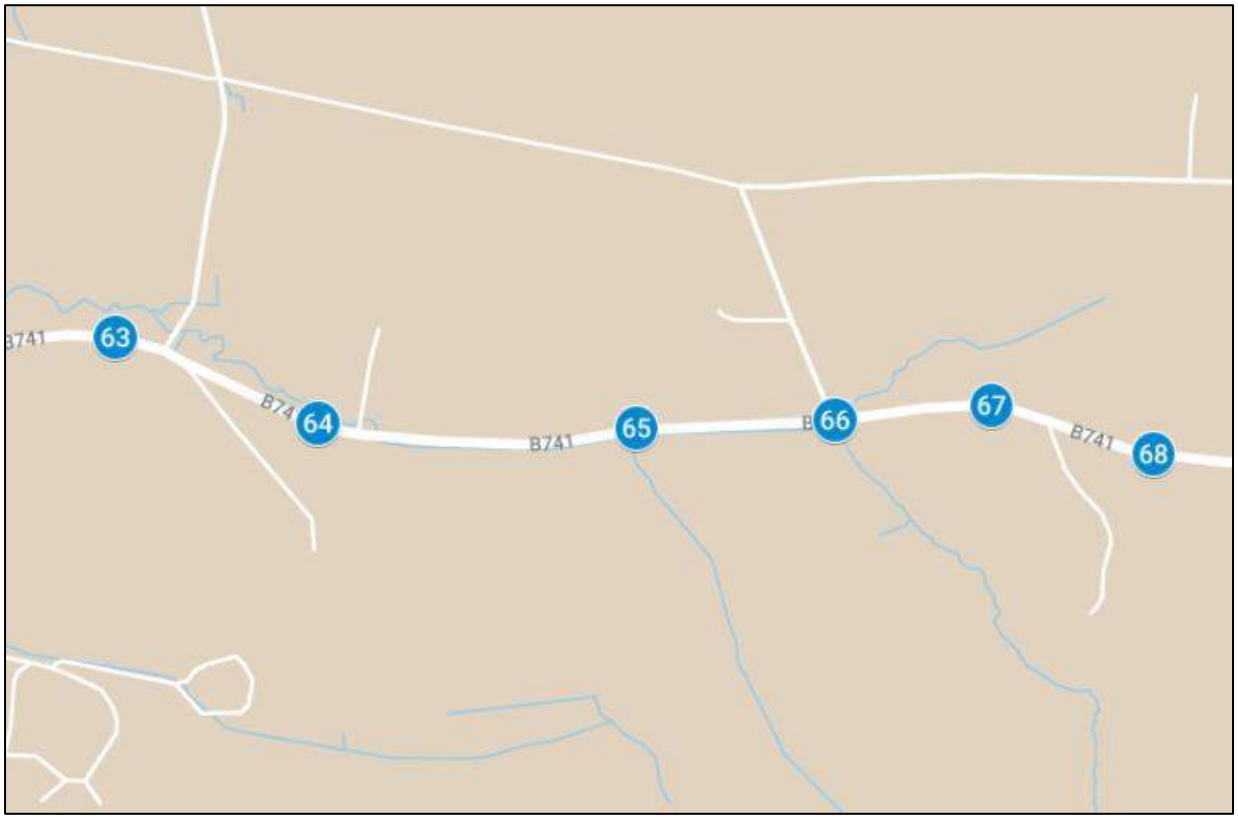
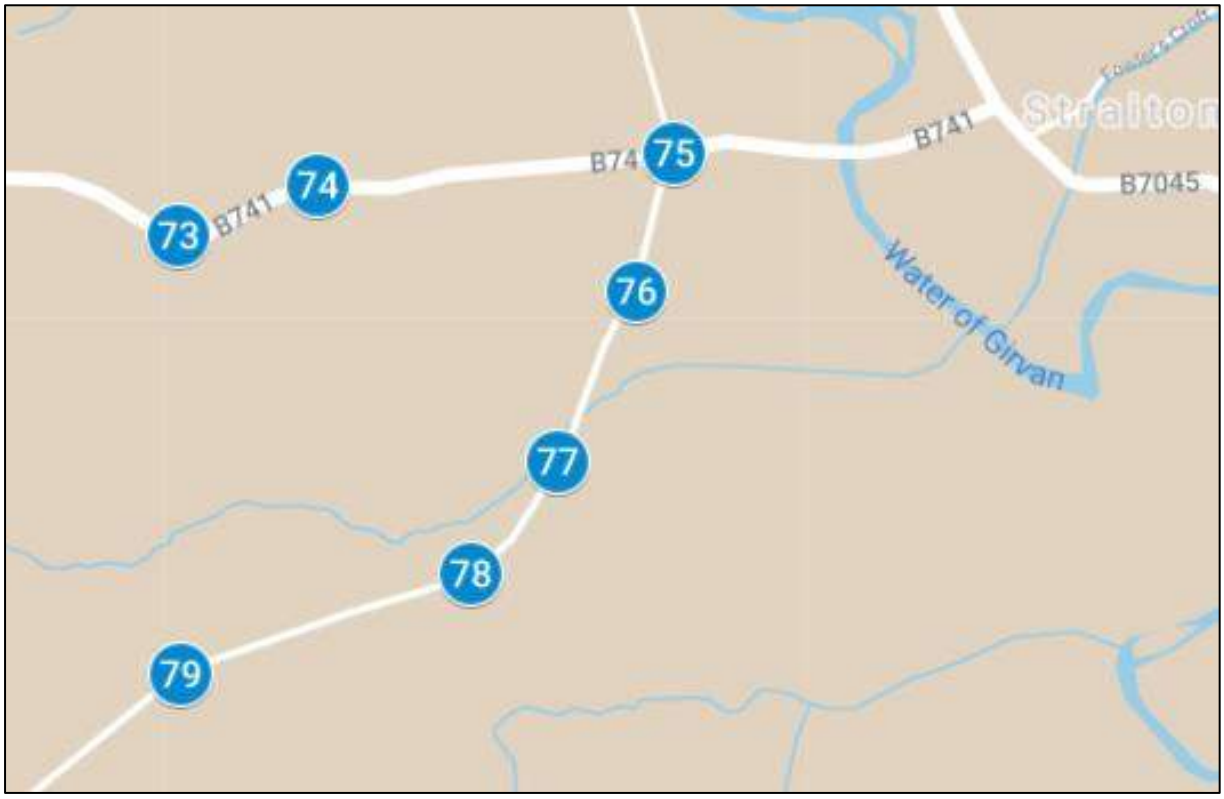
51
52

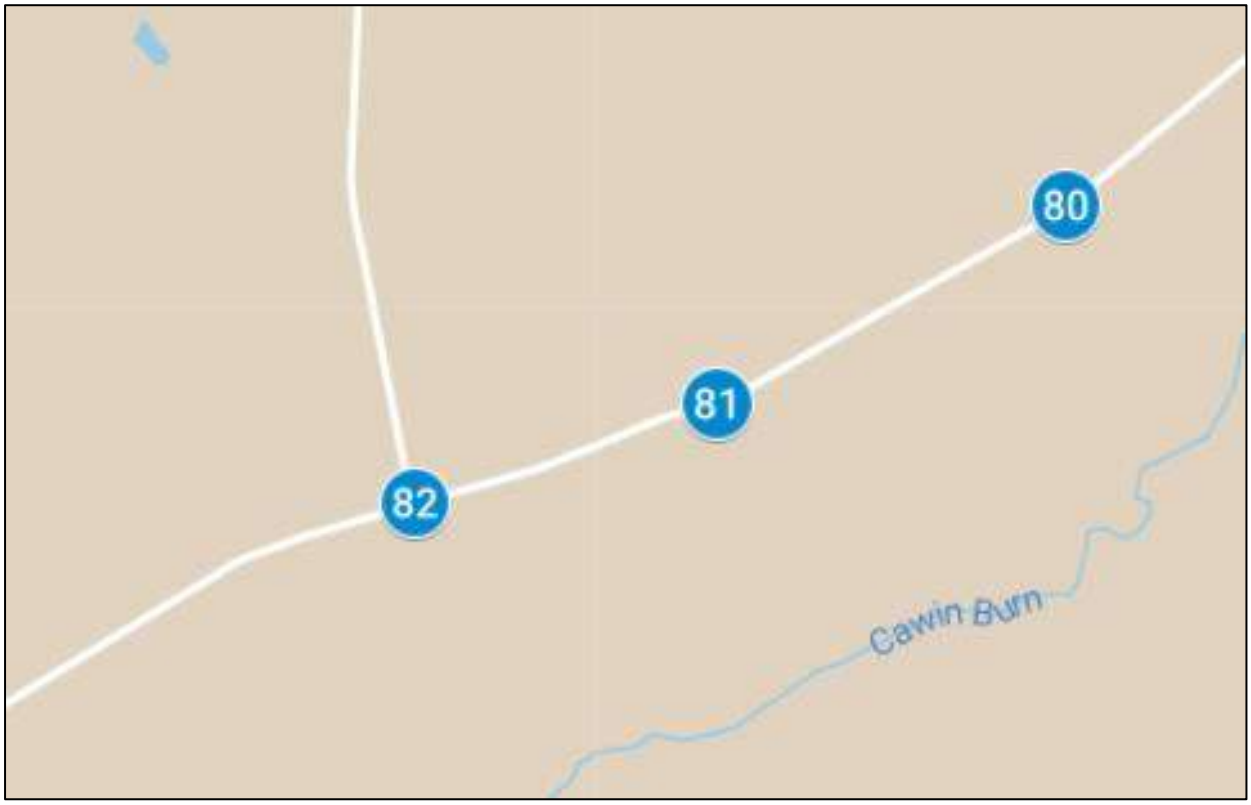

53
54
55
56
57


58
59
60
61
62


B741
63
B74
64
B741
65
66
67
B741
68

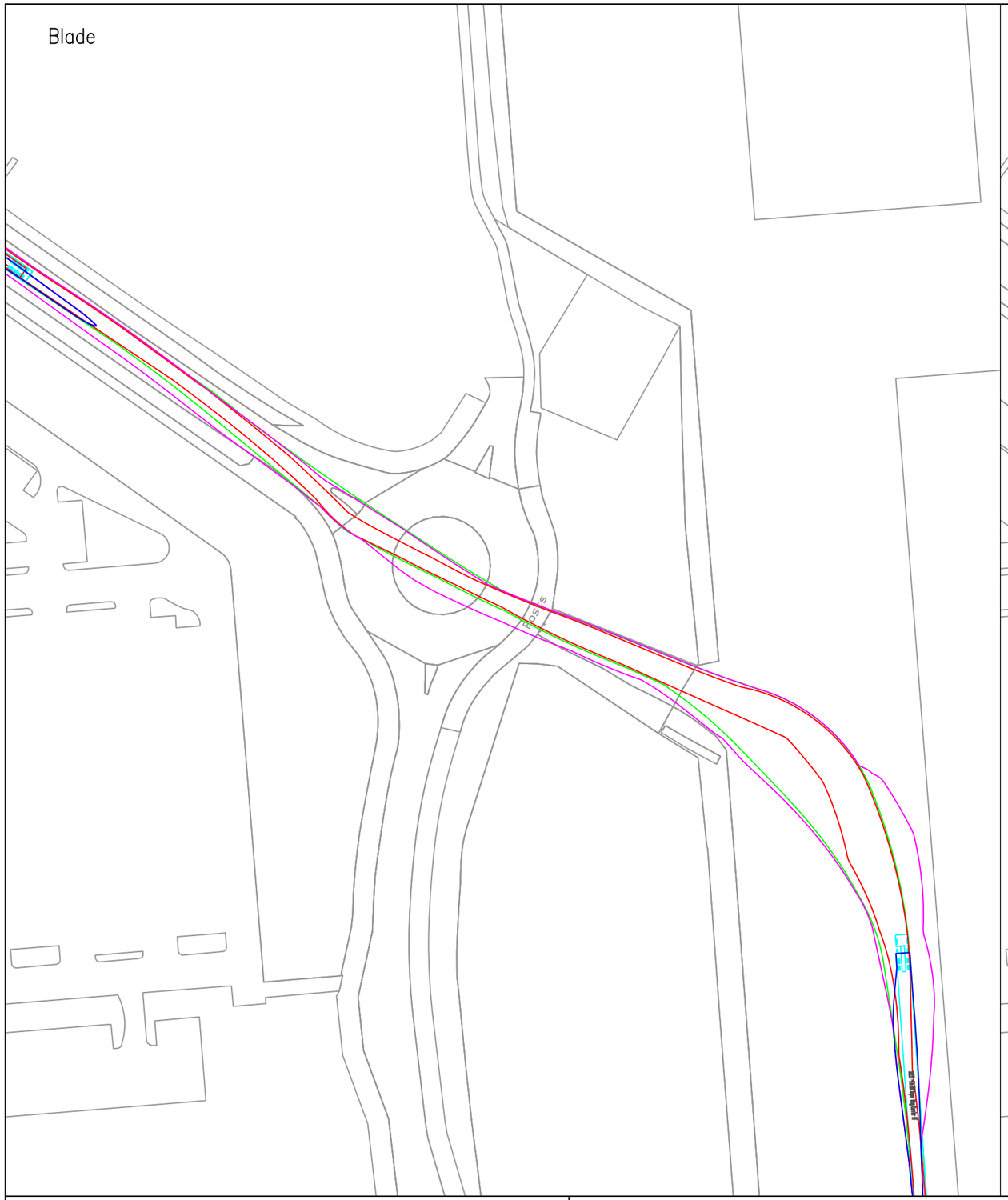

Blairquhan
70
B741
69
71
72
B741


B74
75
B741
Straiton
B7045
73
B741
74
76
Water of Girvan
77
78
79


80
81
82
Cawin Burn

Appendix B
Swept Path Assessments

Blade



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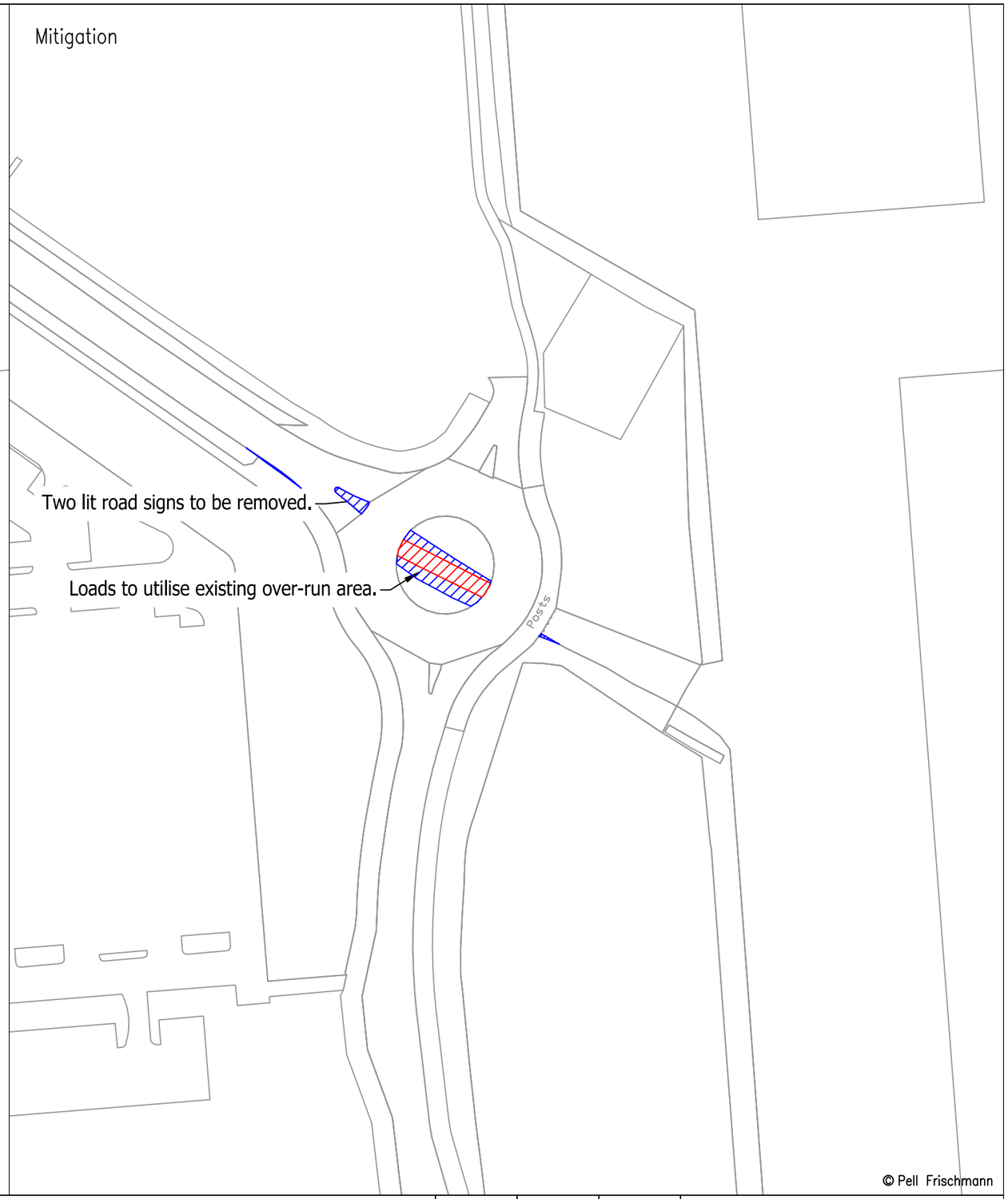


Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Kings Inch Drive Roundabout 1

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		1

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

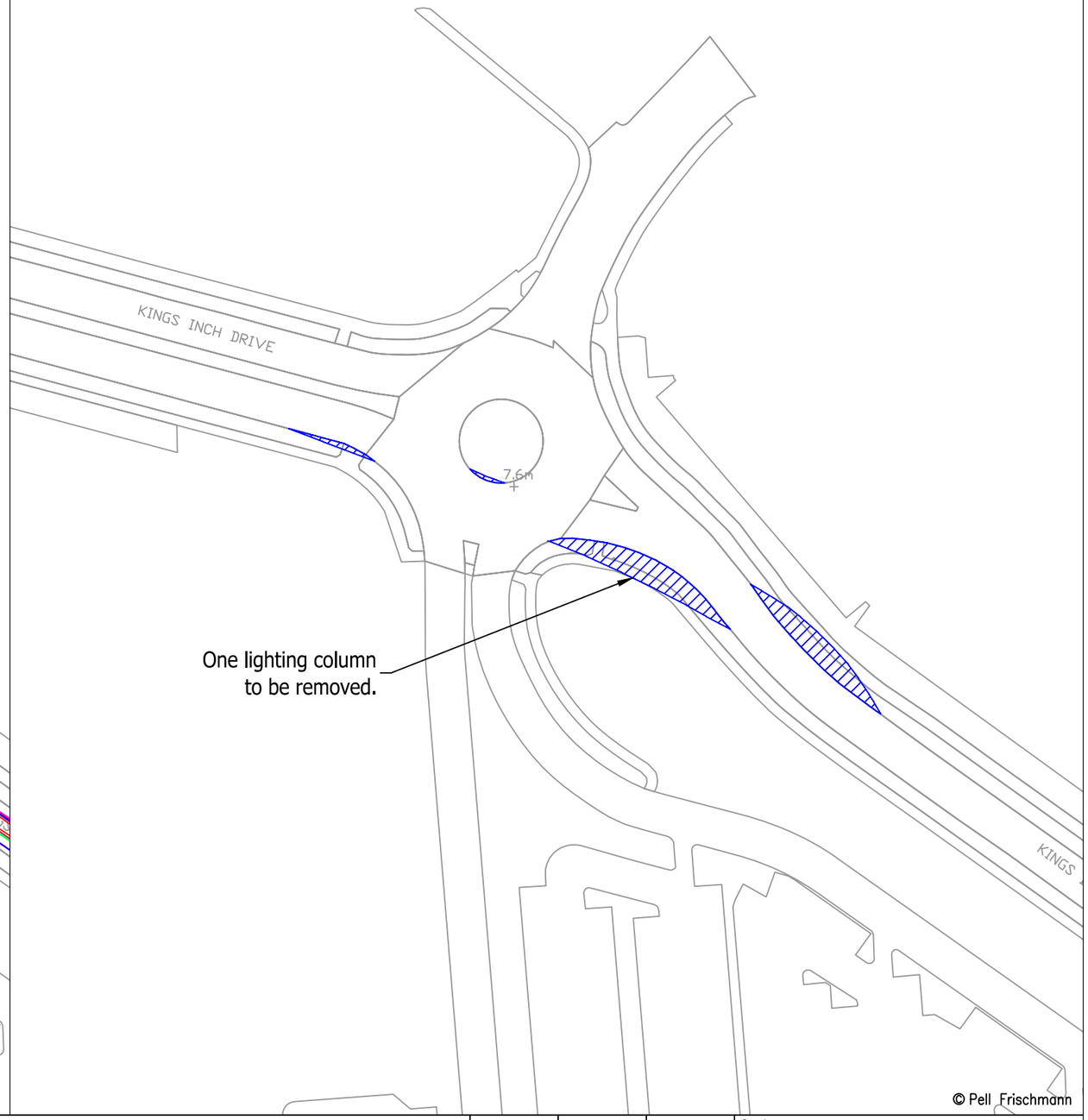
Drawing No.: SK01

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

Revision: XXX

Blade

Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Kings Inch Drive Roundabout 2

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		2

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK02

Notes:
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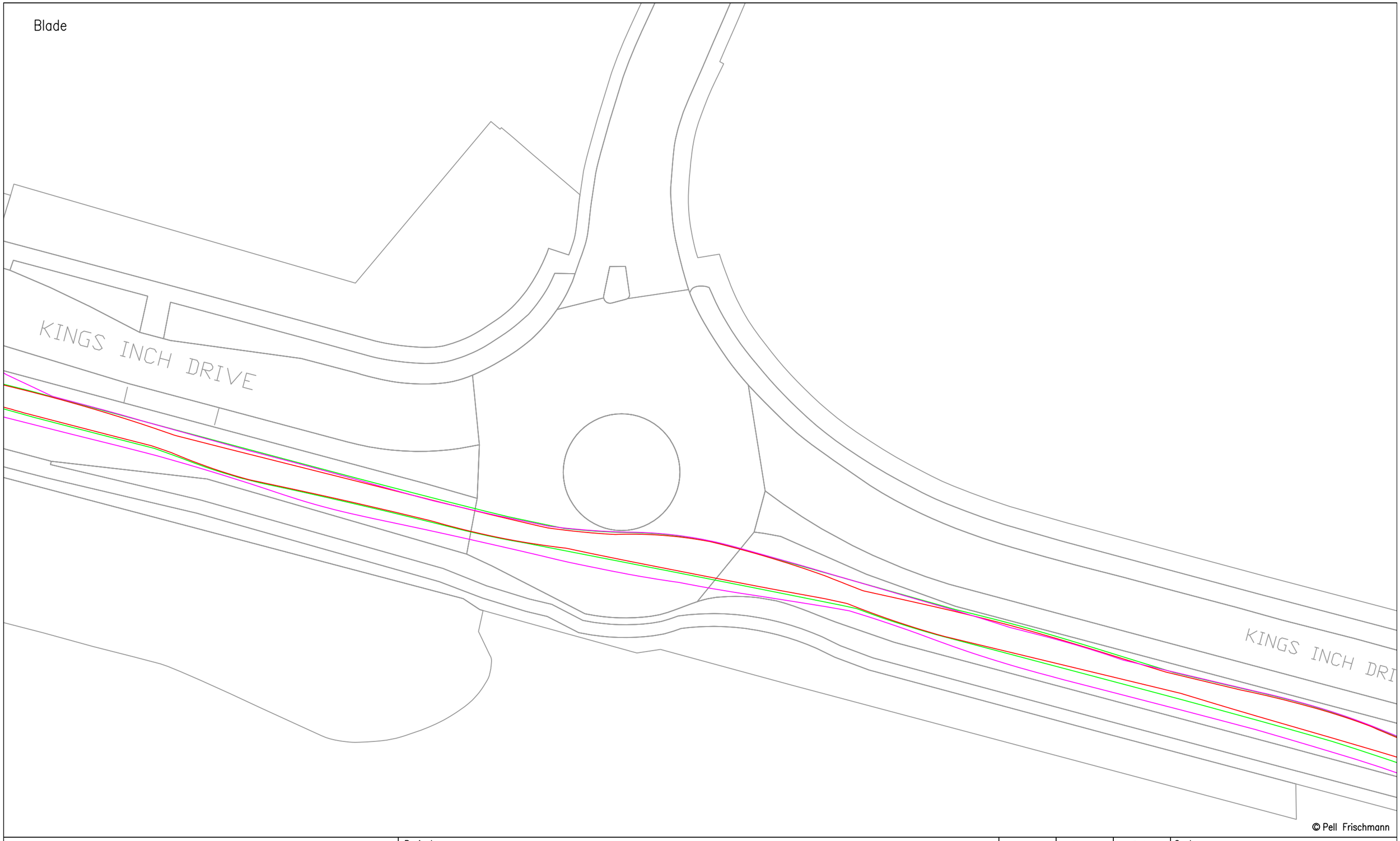

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93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower — NO MITIGATION

SPA Location: Kings Inch Drive Roundabout 3

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		3

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK03

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

Revision: XXX

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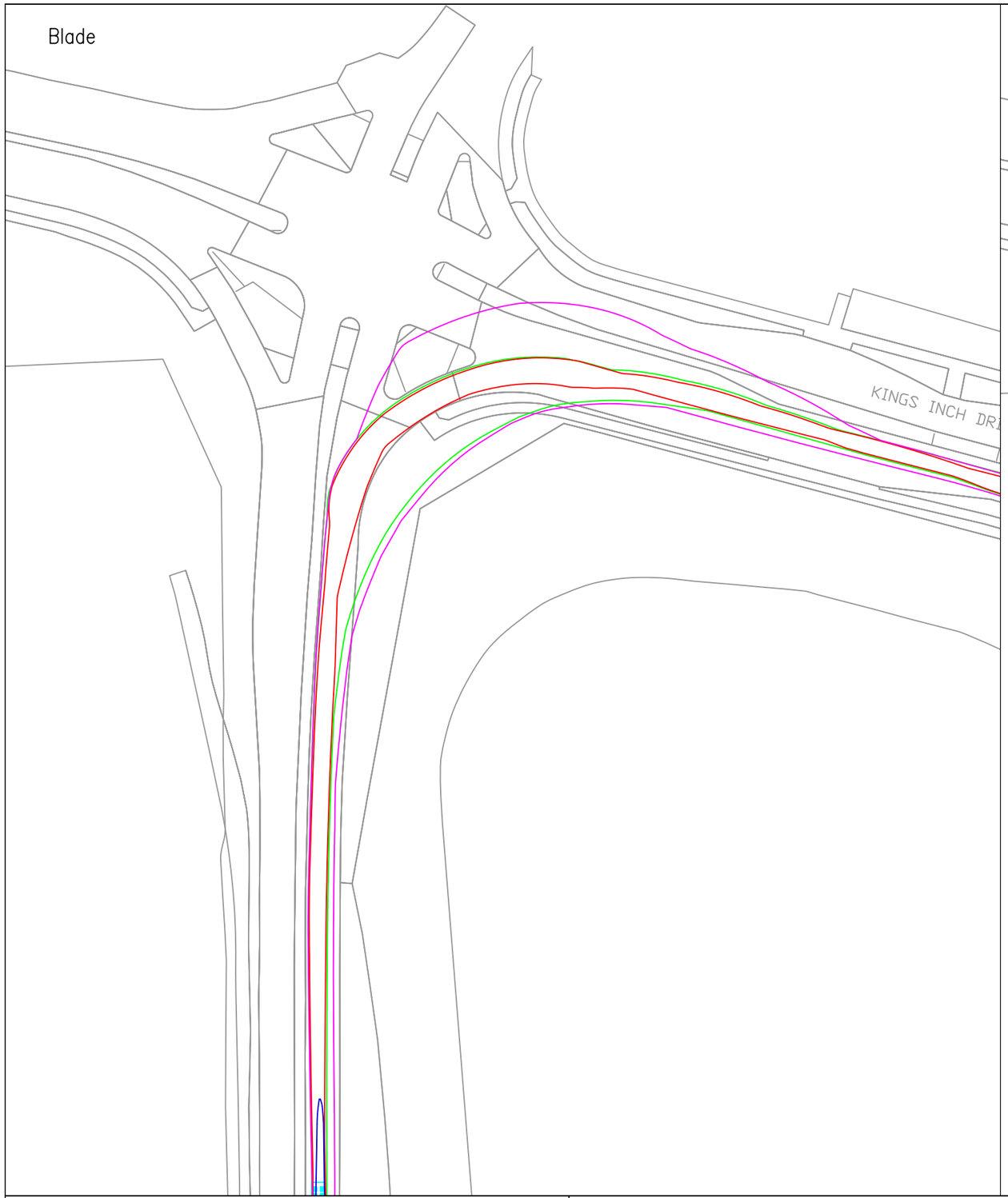

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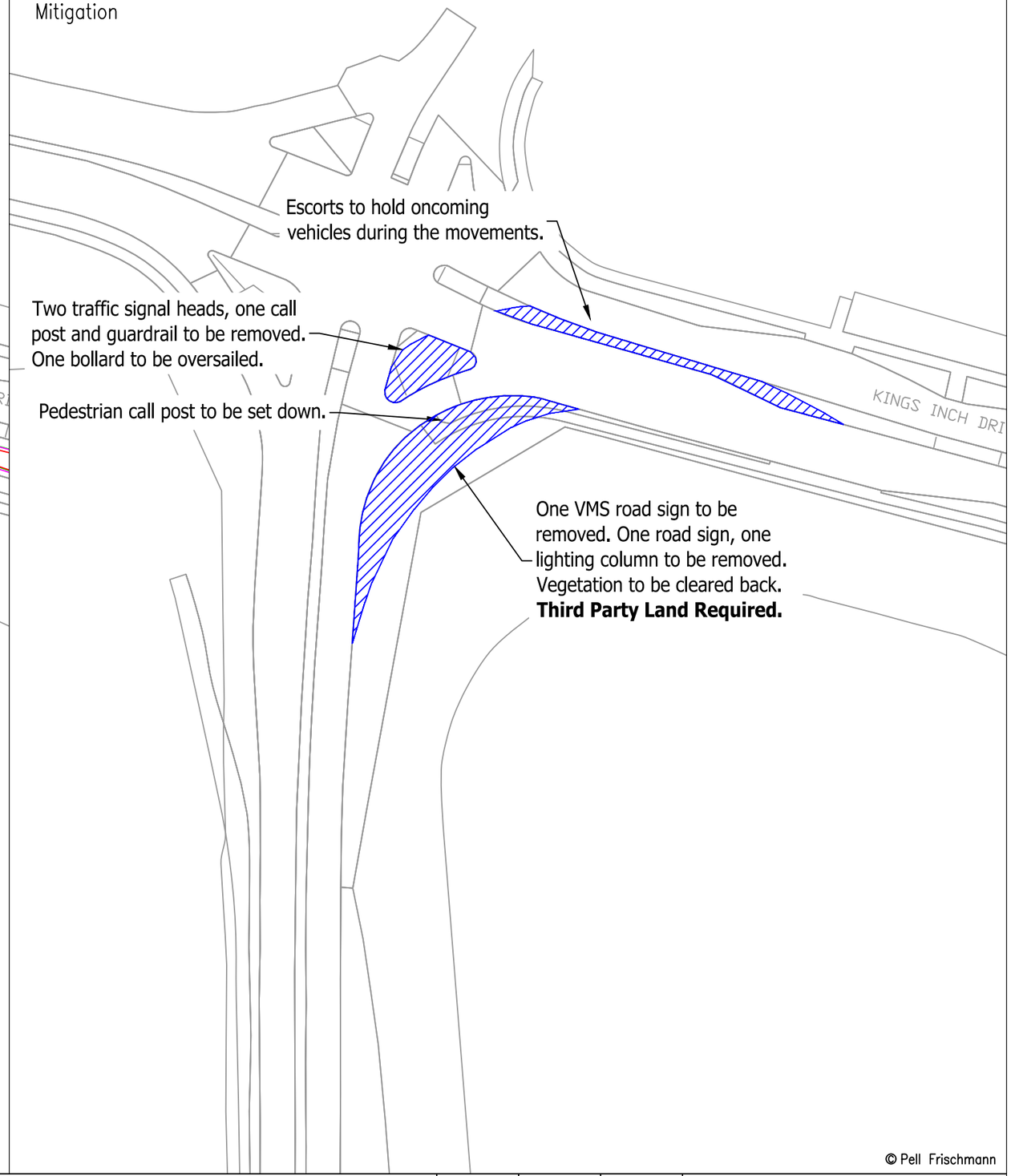

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Kings Inch Drive / Mayo Avenue Junction

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		4

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK04

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

Revision: XXX

Blade

Mitigation

Ground clearance for loads over the safety barrier should be confirmed during the test run.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: M8 Junction 25a Slip Road

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		5

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK05

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

Revision: XXX

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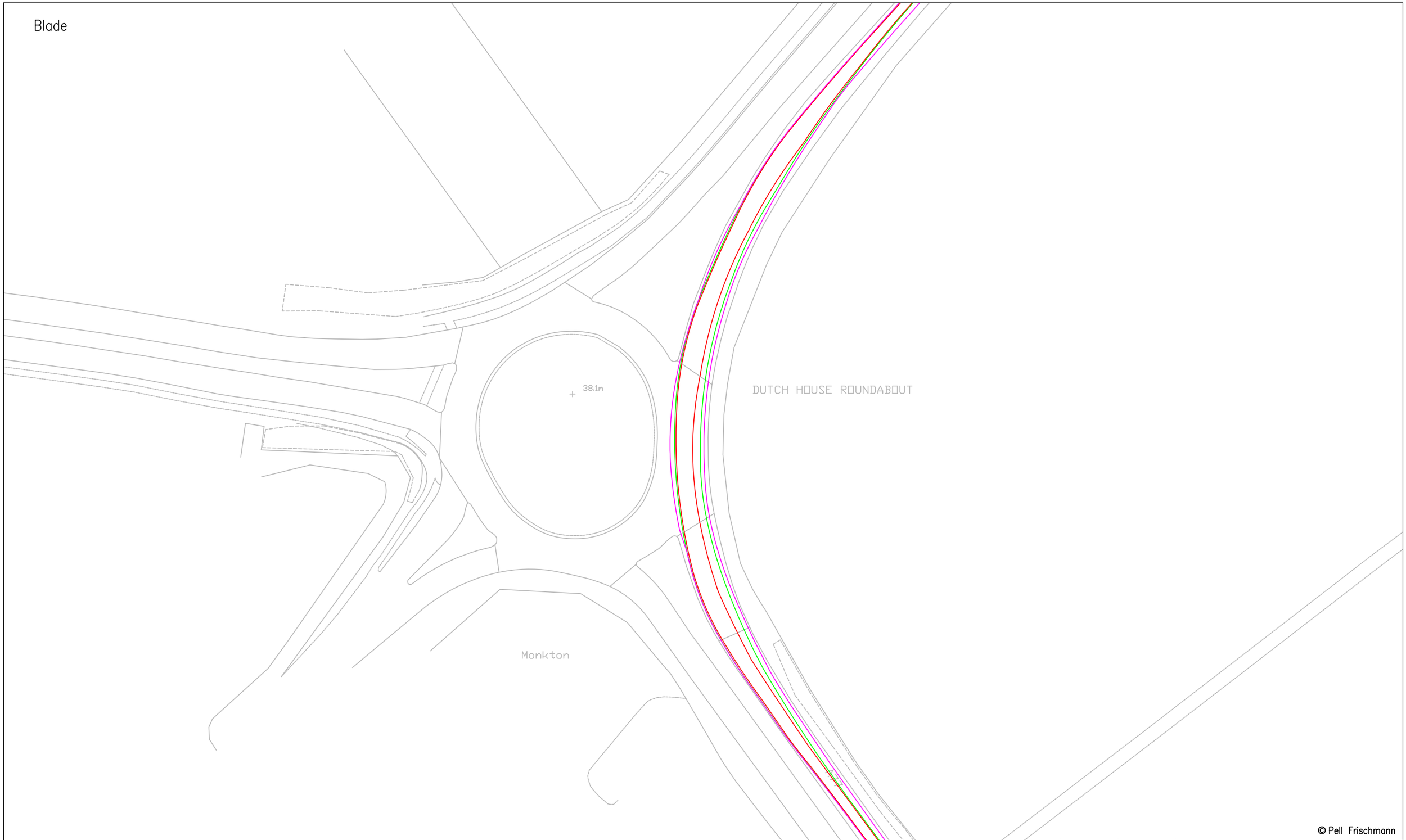

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower — NO MITIGATION

SPA Location: Dutch House Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		9

Scale: Custom @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK06

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

Revision: XXX

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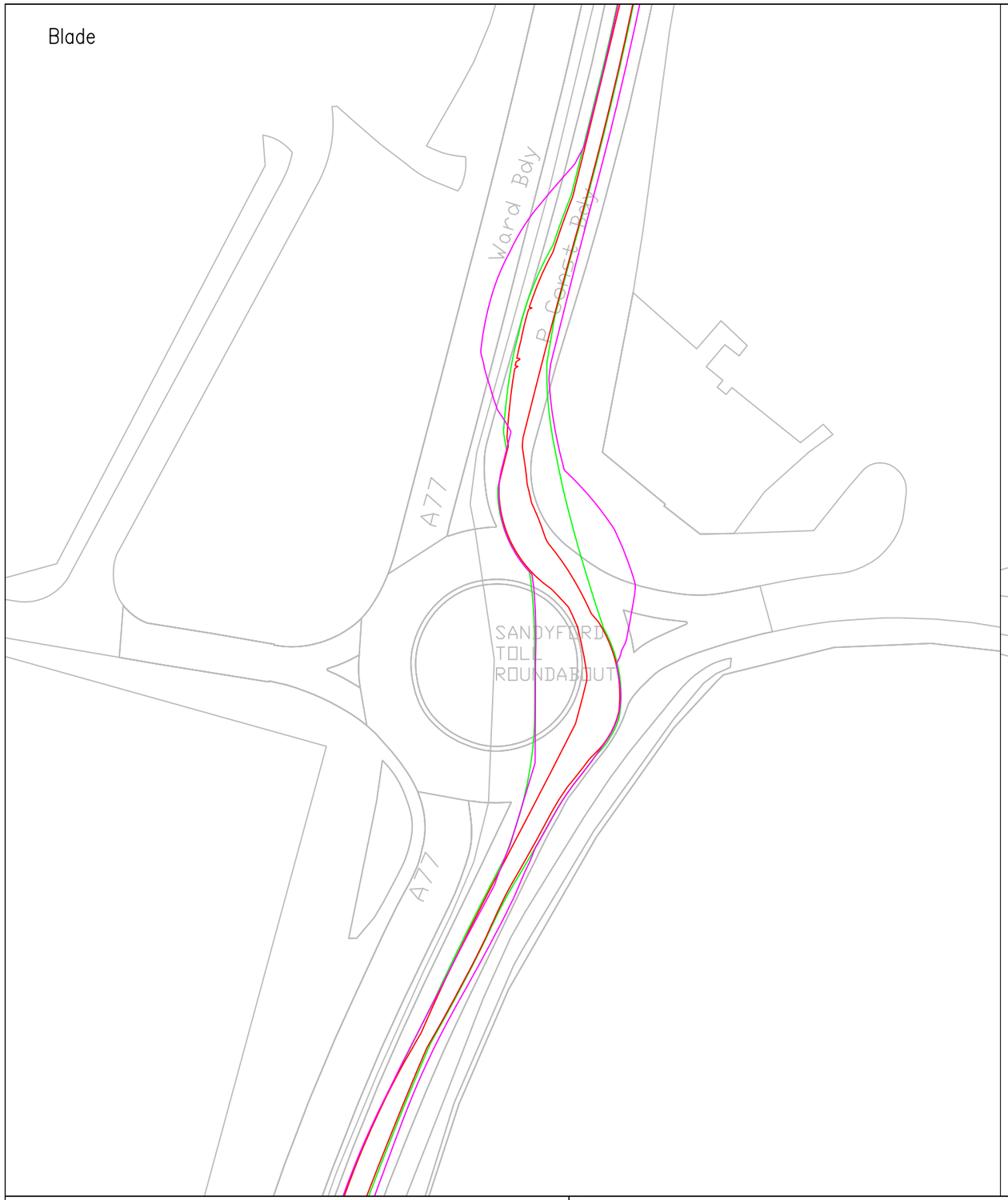
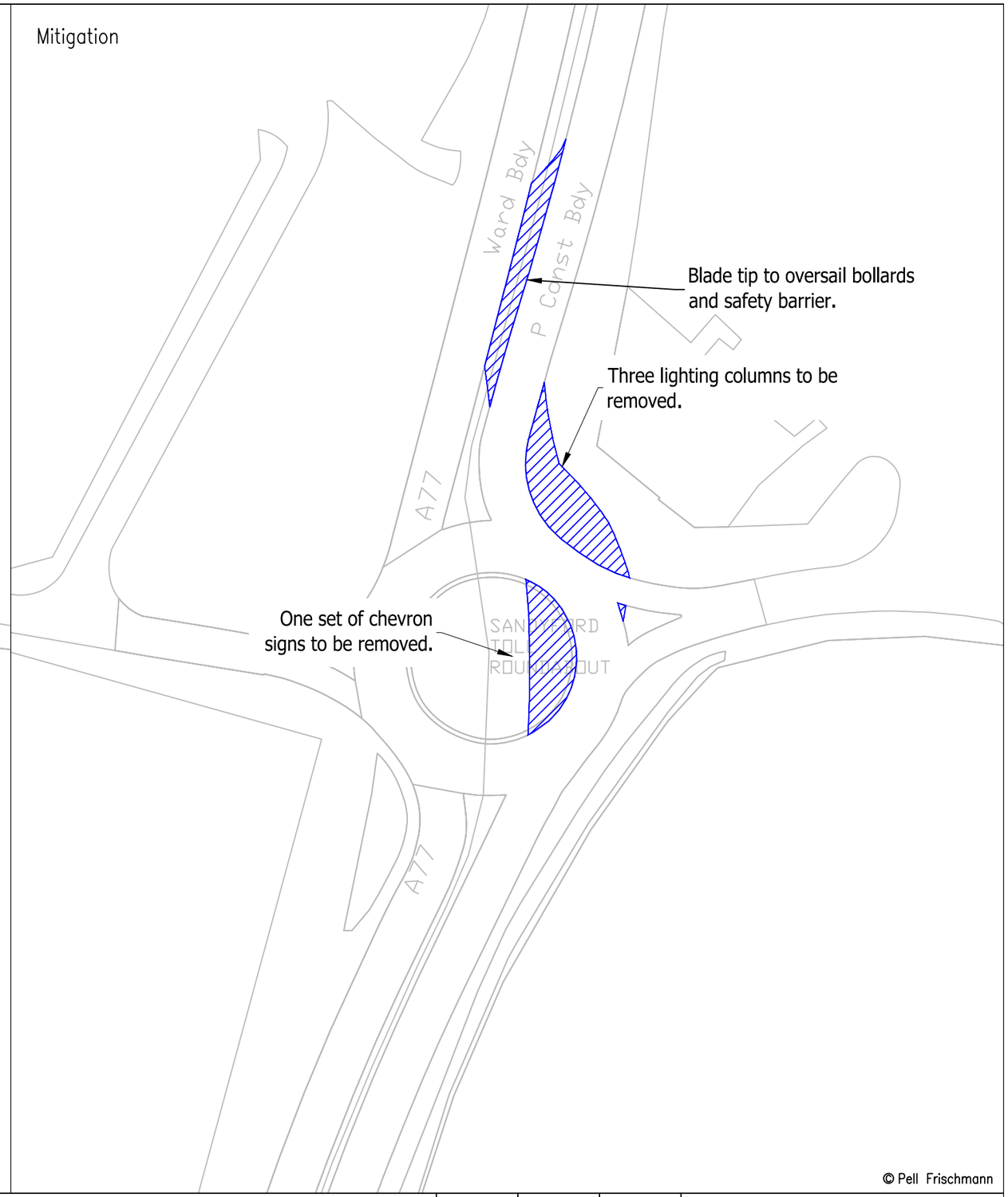


Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Sandyford Toll Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		10

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK07

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

Revision: XXX

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Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Waggon Road / Allison Street Junction

NO MITIGATION REQUIRED

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		12

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK08

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

Revision: XXX

Tower

ALLISON STREET

7.7m

Mitigation

ALLISON STREET

Load bearing surface to be laid in over-run area. One lighting column to be removed.

7.7m

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Allison Street / Whitletts Junction

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		13

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

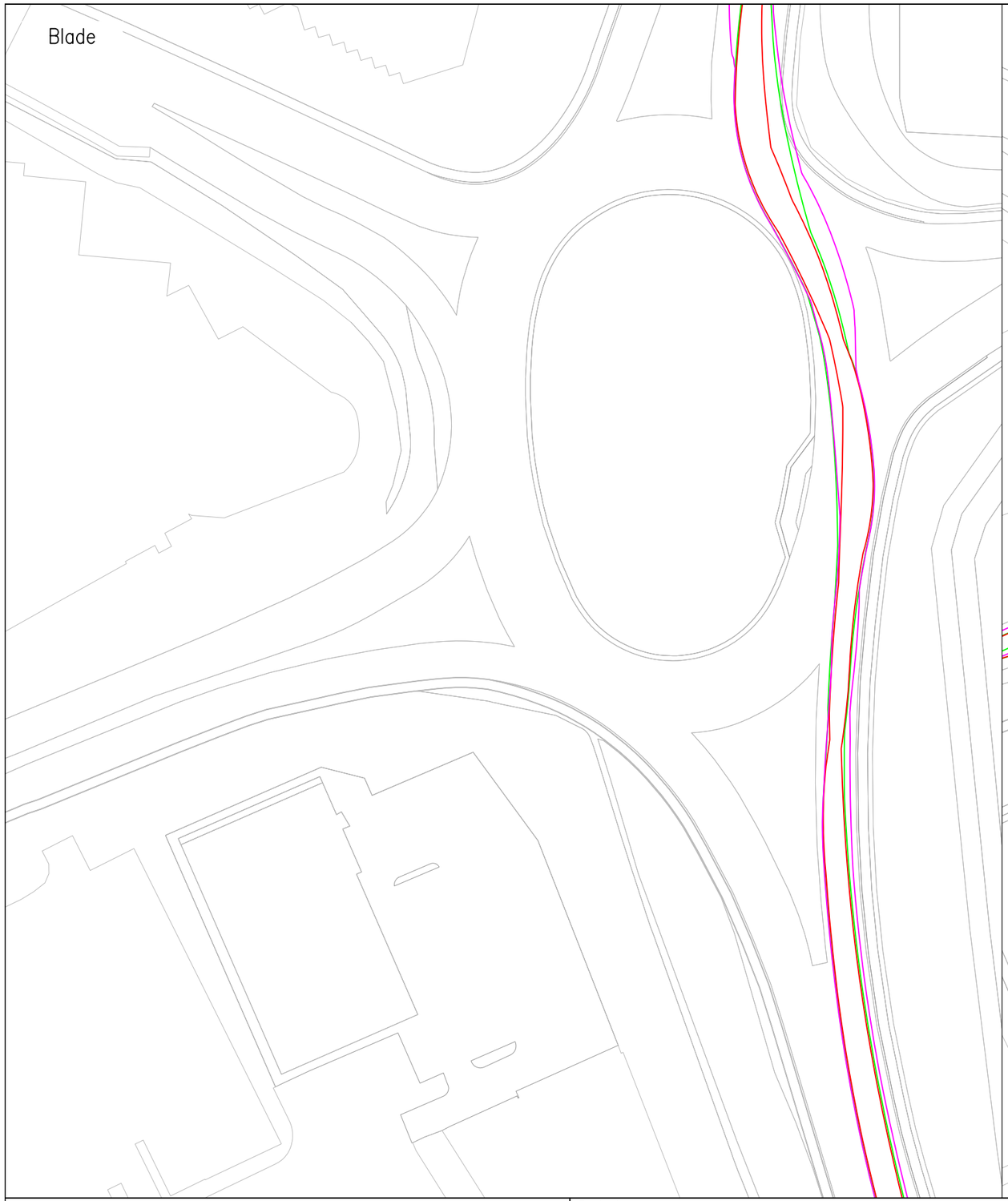
Drawing Status: Draft

Drawing No.: SK09

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

Revision: XXX

Blade



Tower

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Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Whitletts Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		15

Scale: 1:1000 @ A3

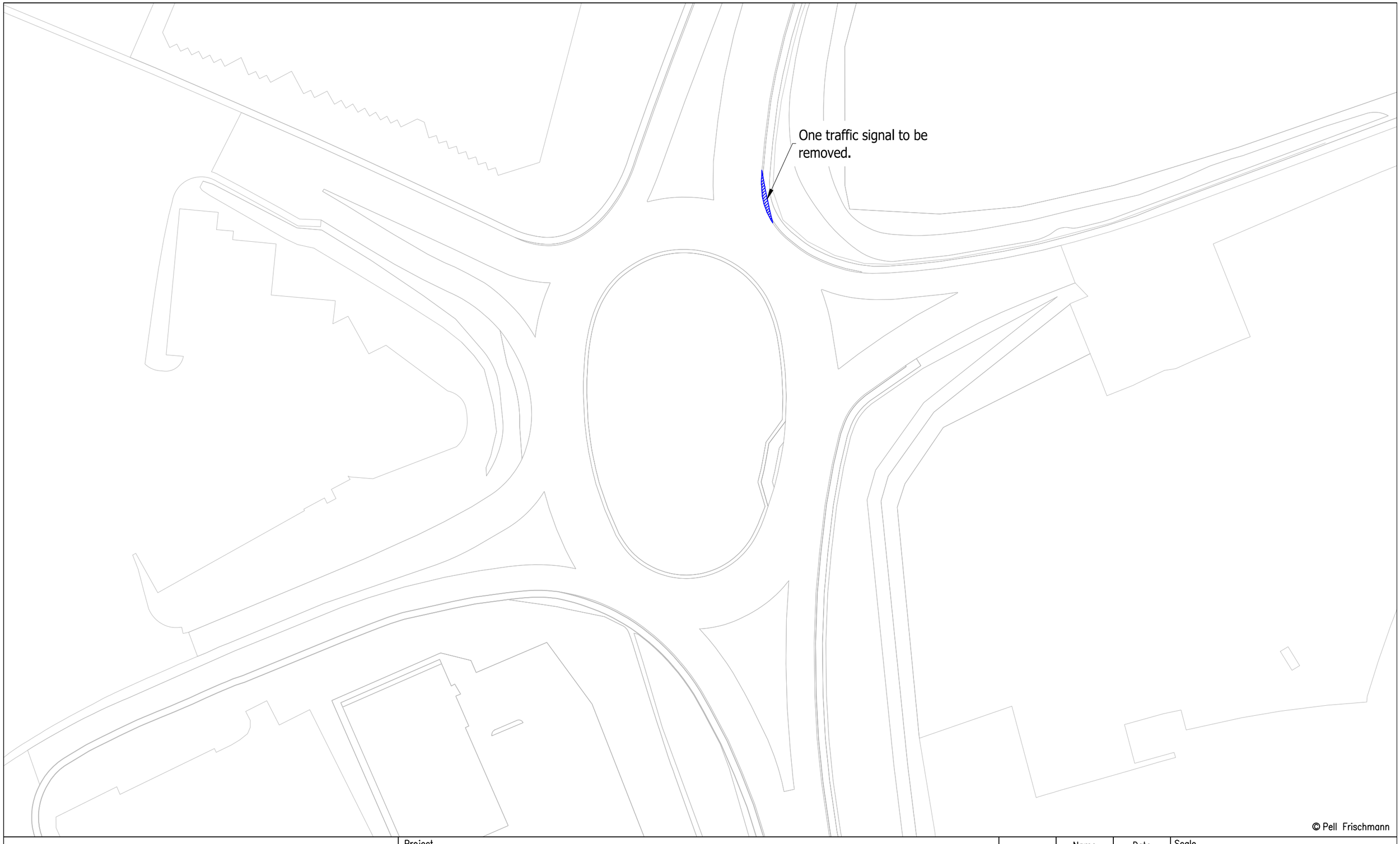
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK10

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Whitletts Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		15

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

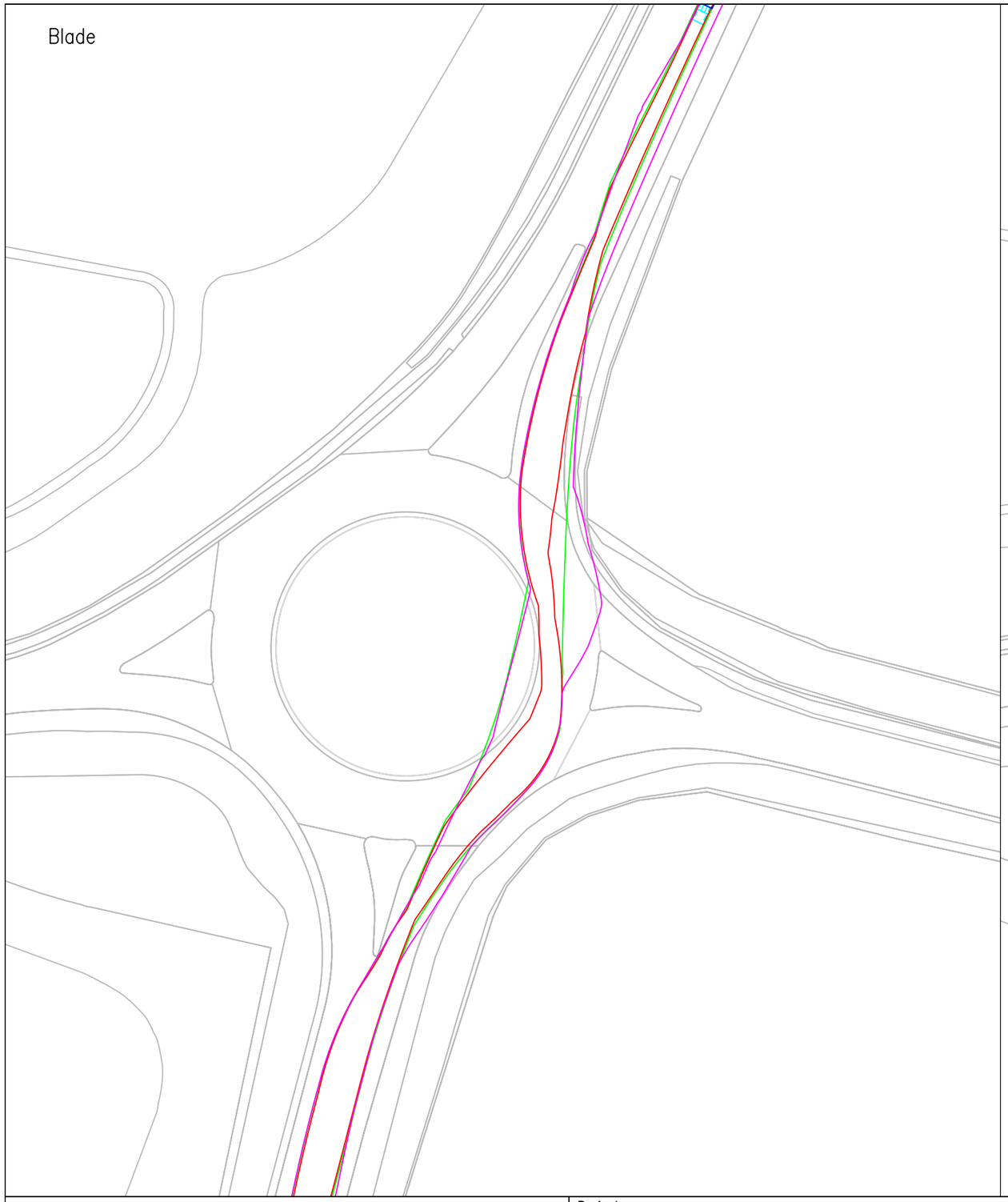
Drawing Status: Draft

Drawing No.: SK10A

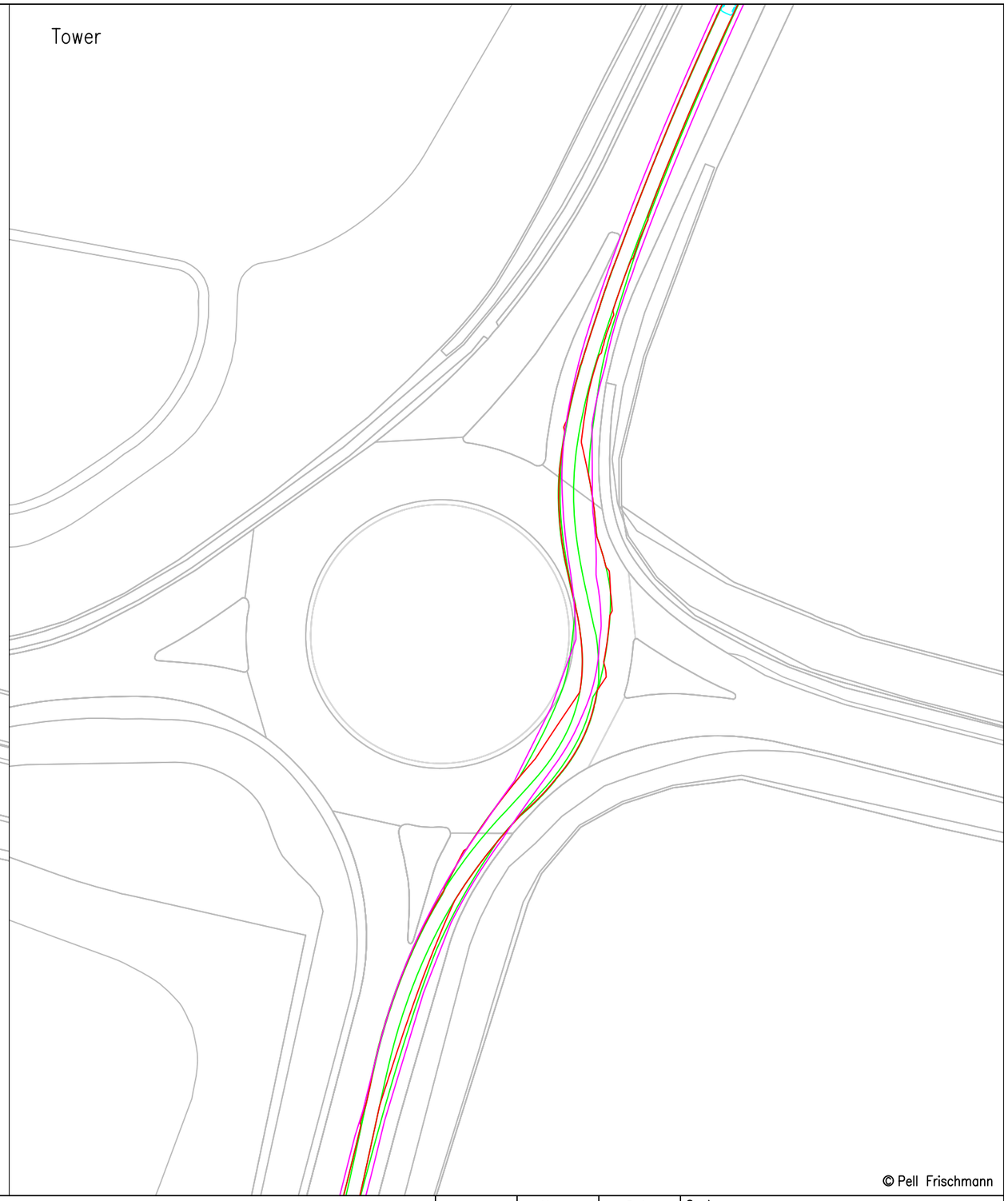
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Holmston Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		16

Scale: 1:1000 @ A3

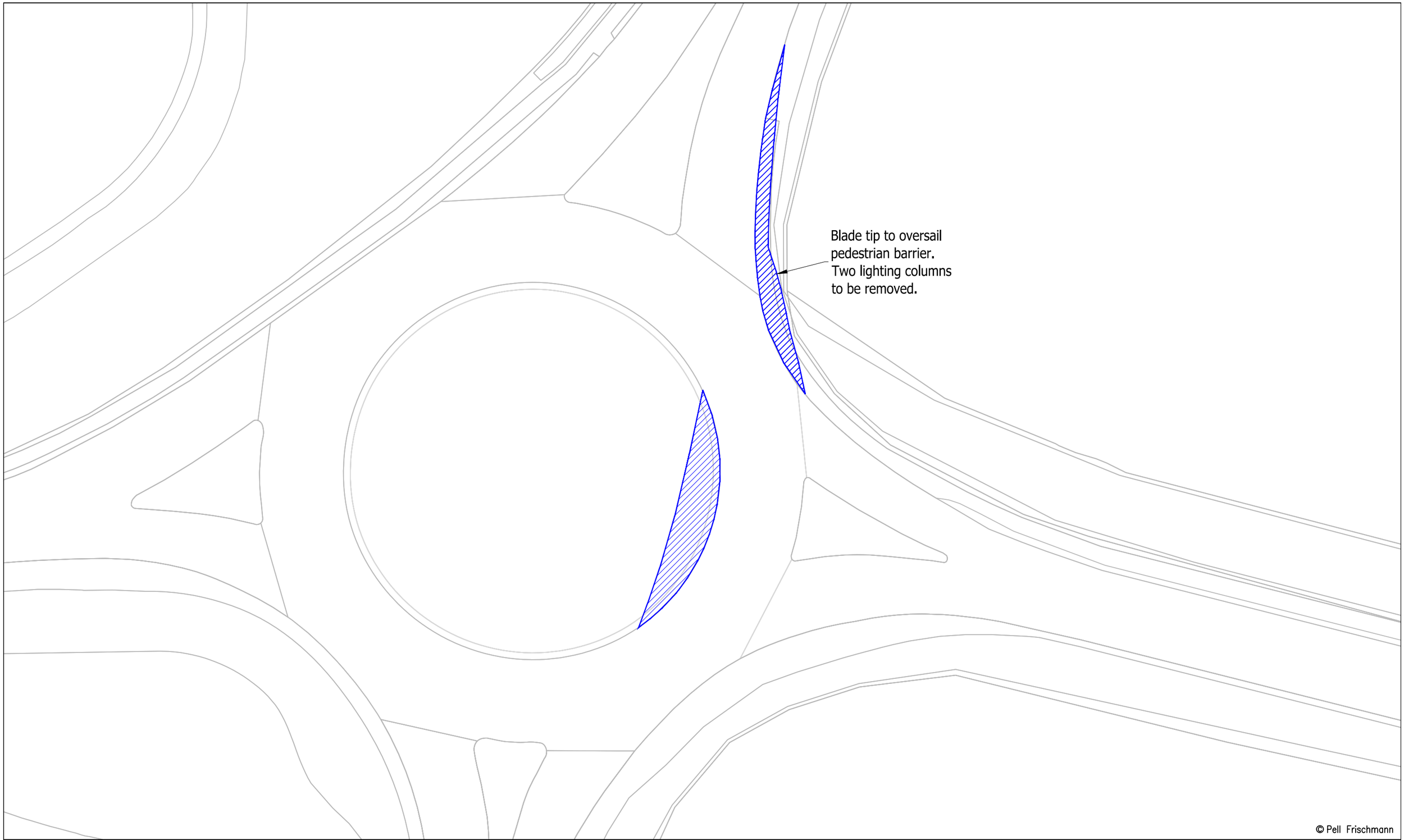
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK11

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Holmston Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		16

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK11A

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

Revision: XXX

Blade

Tower

A77

A77

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Bankfield Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		17

Scale: 1:1000 @ A3

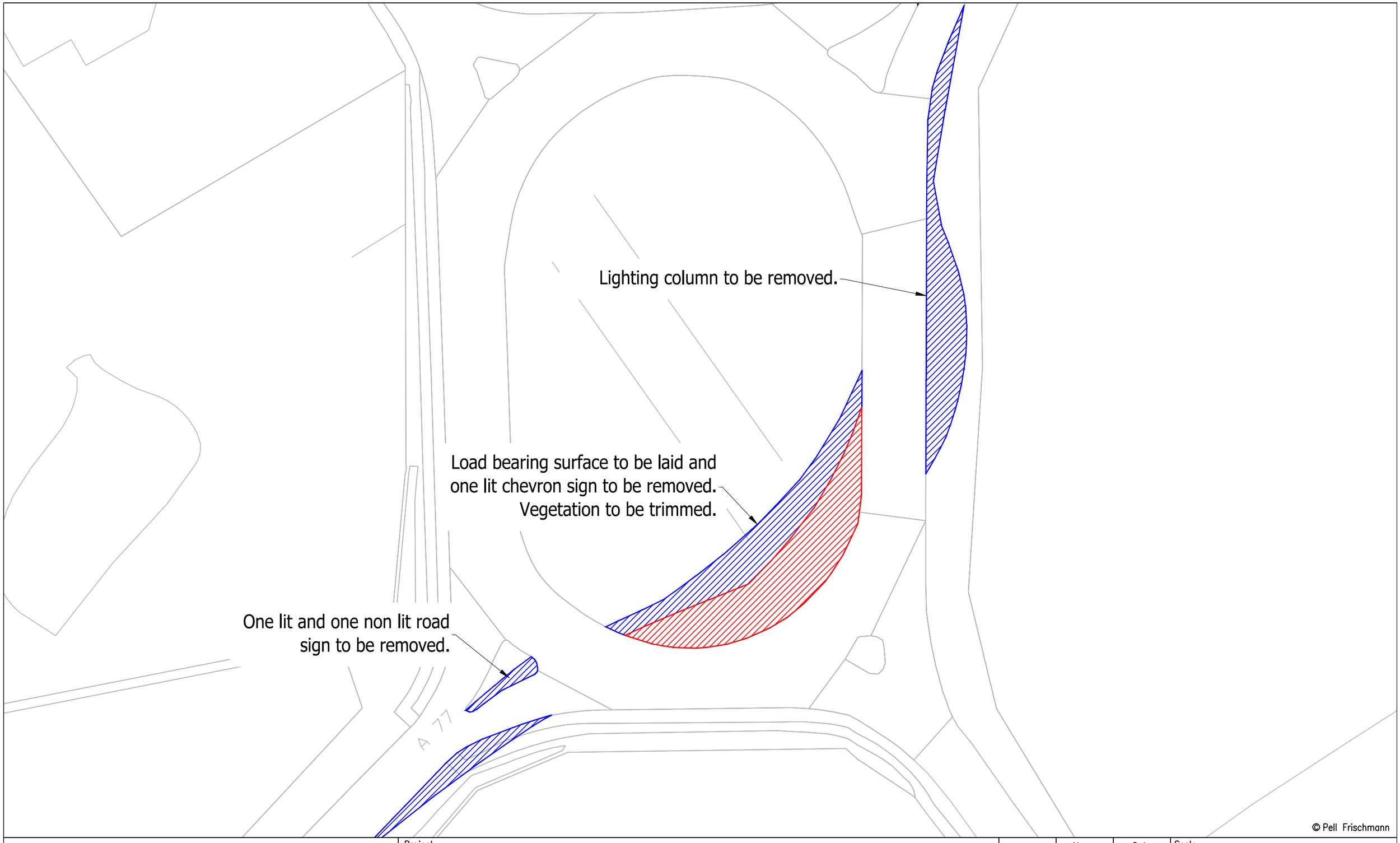
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK12

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Bankfield Roundabout

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		17

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

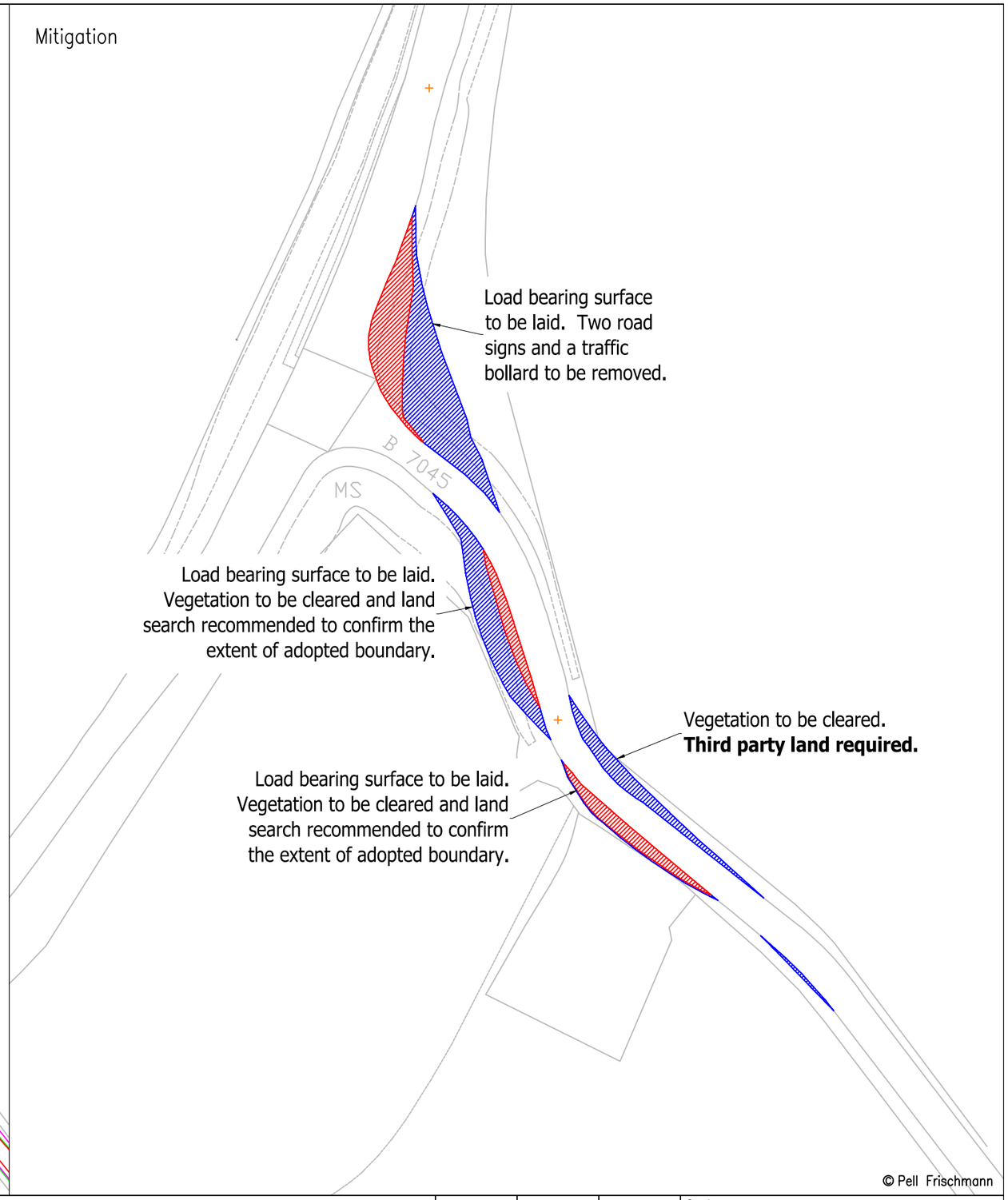
Drawing No.: SK12A

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

Revision: XXX

Blade

Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 / B7045 Junction – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		19

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

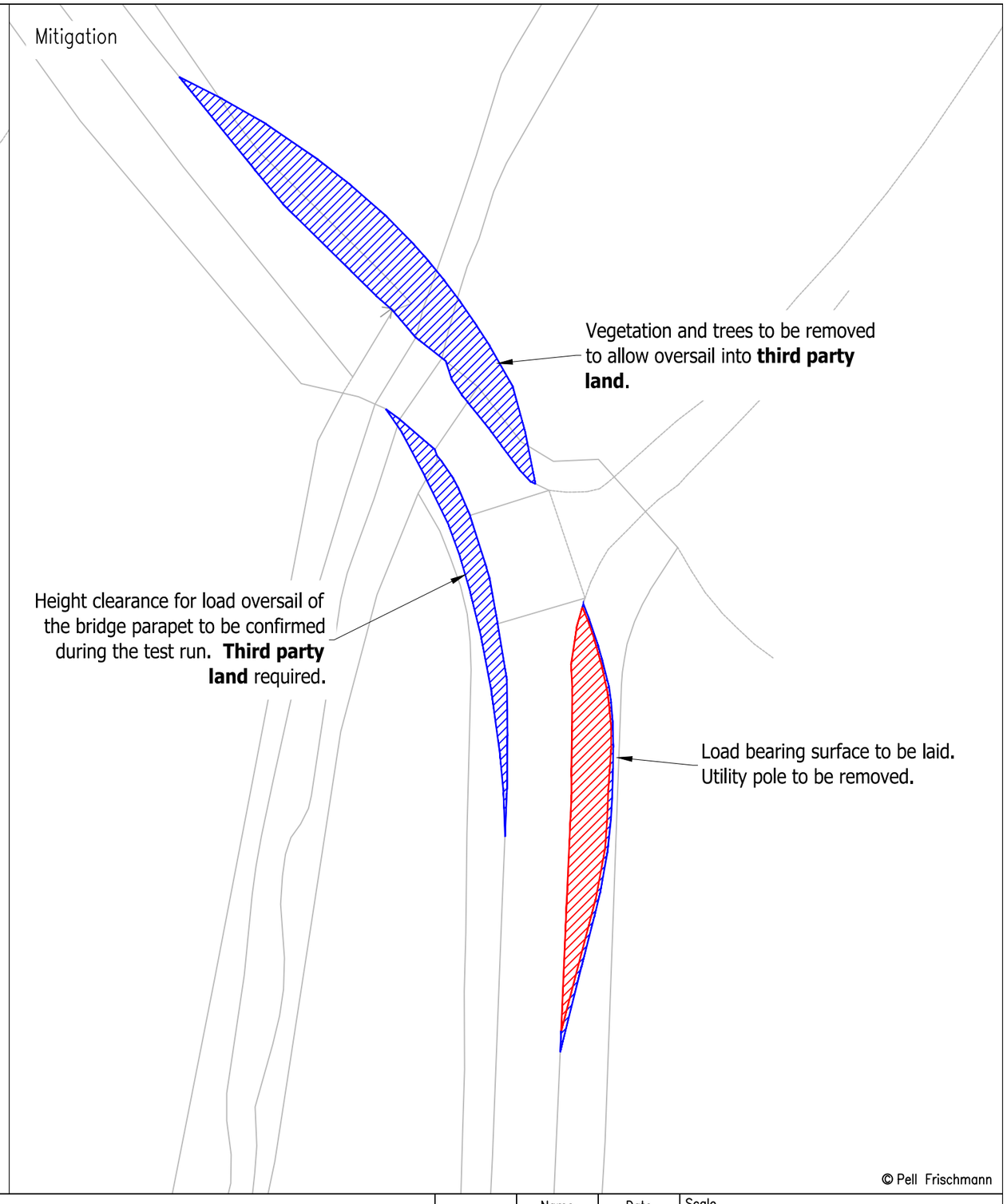
Drawing No.: SK13

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

Revision: XXX

Blade

Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Cassillis Gate Bridge – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		21

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

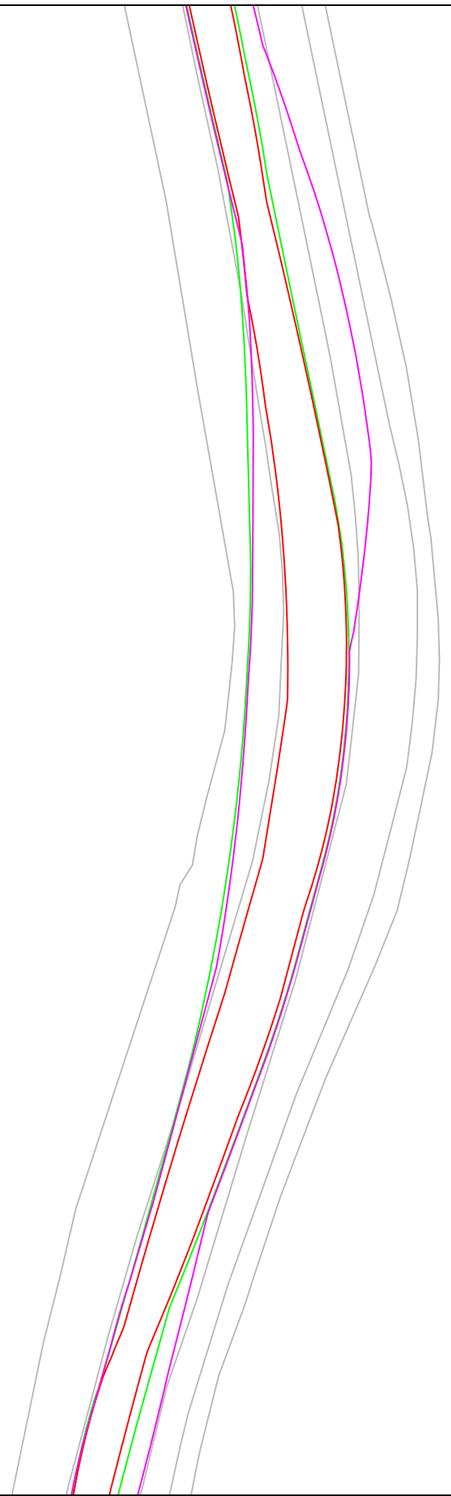
Drawing Status: Draft

Drawing No.: SK14

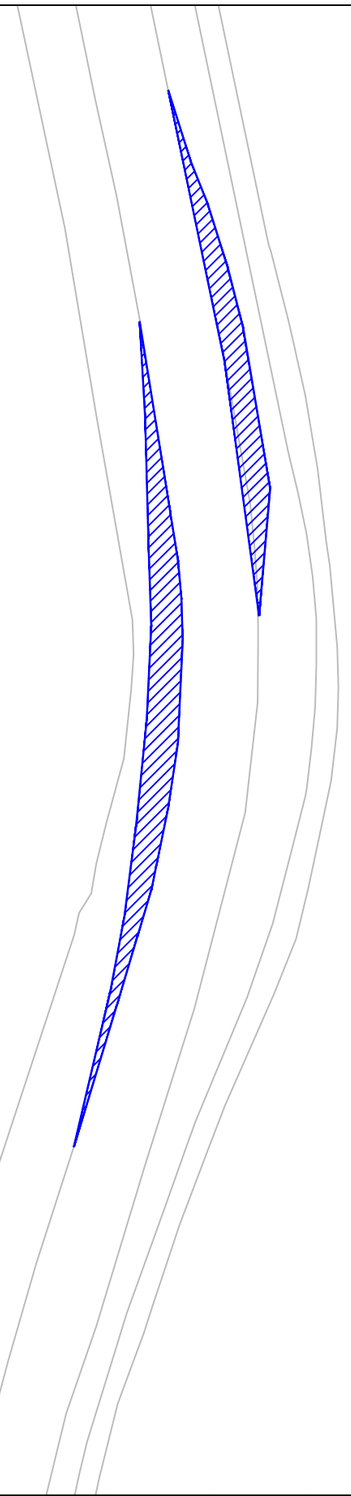
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Blairbowie Wood – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		22

Scale: Custom @ A3

File No.: Knockcronal SG155 Tracking.dwg

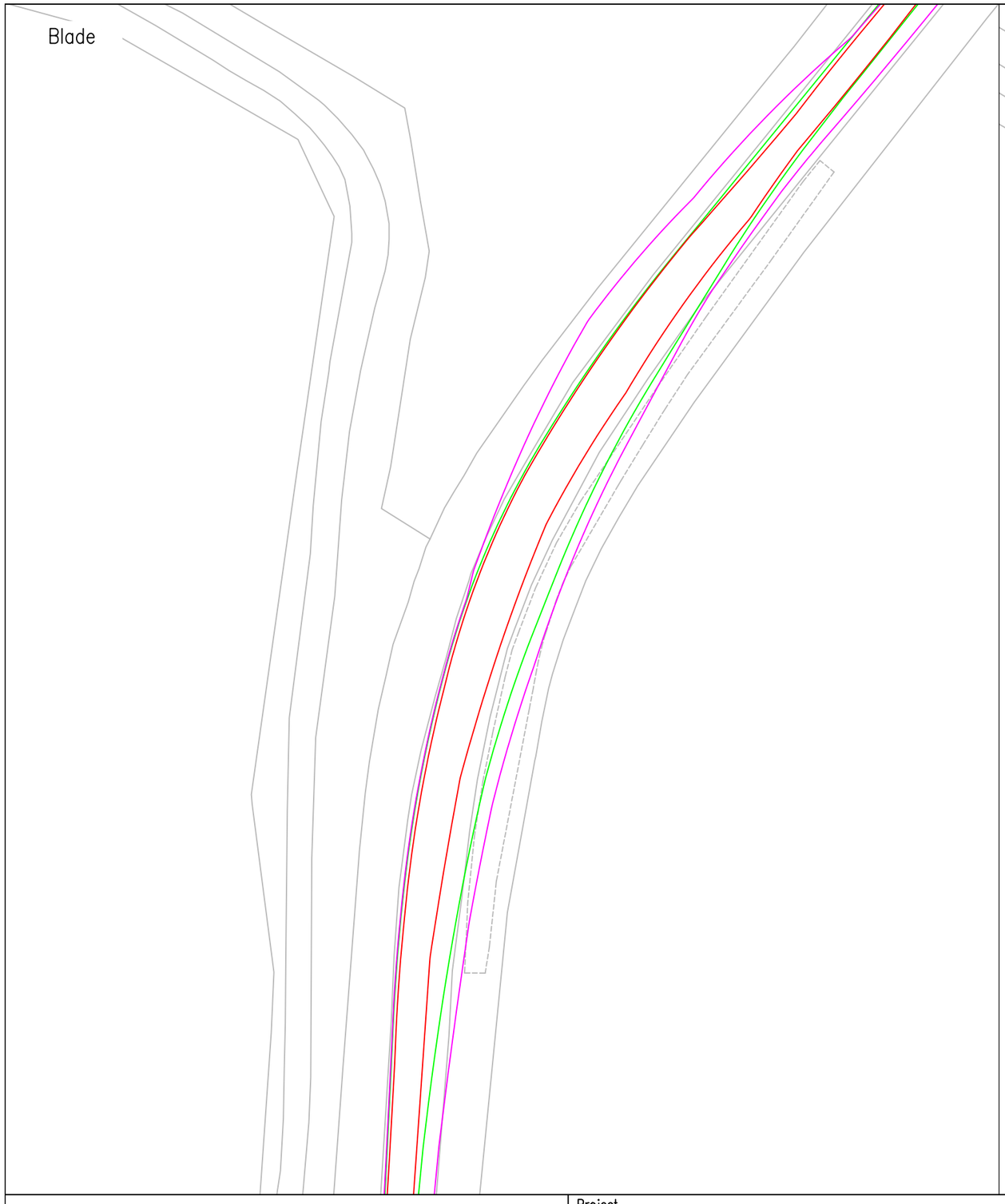
Drawing Status: Draft

Drawing No.: SK15

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

Revision: XXX

Blade



Mitigation

Pell Frischmann
93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
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www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Blairbowie – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		23

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

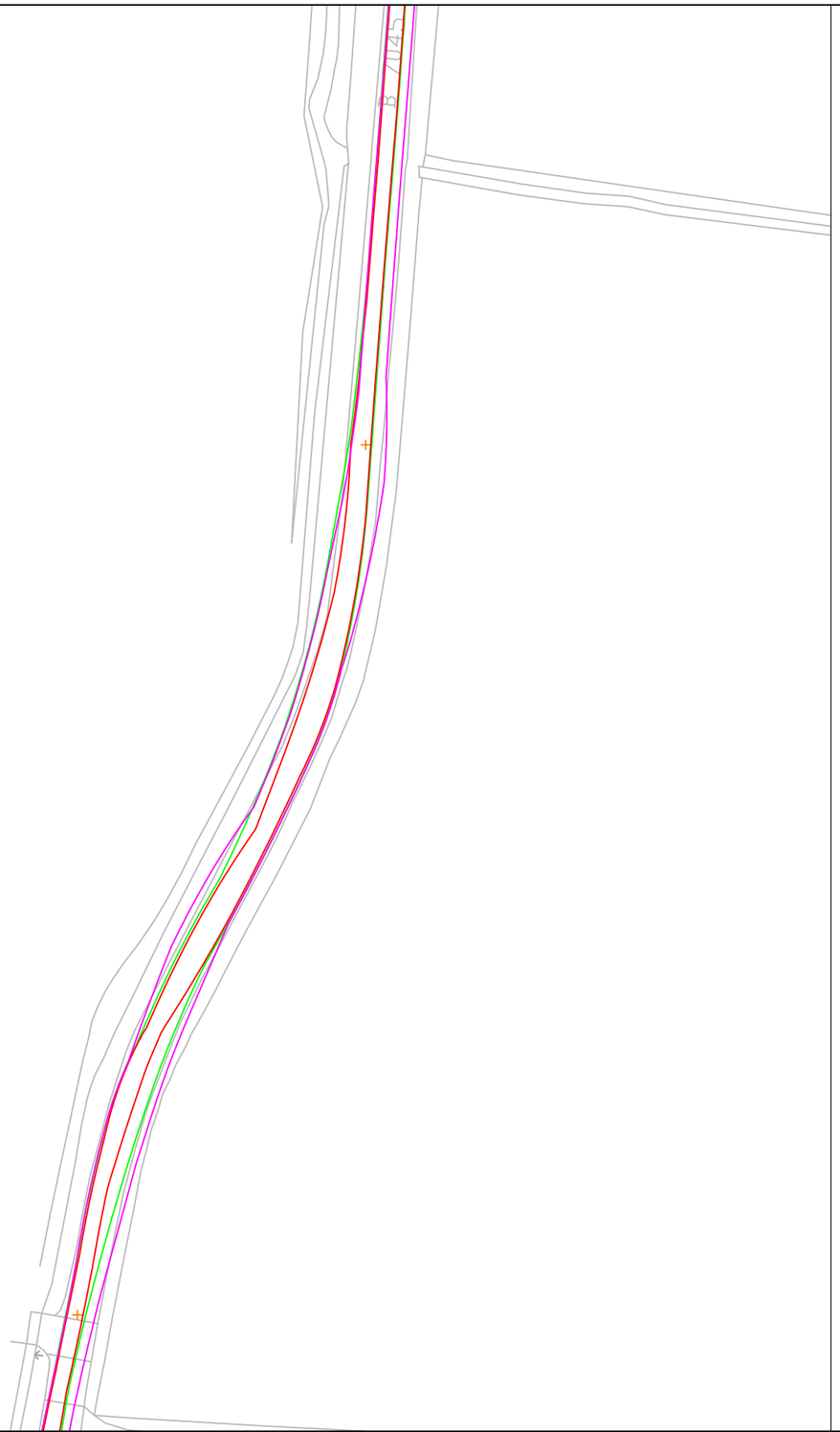
Drawing Status: Draft

Drawing No.: SK16

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

Revision: XXX

Blade



Mitigation

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Blairbowie contd. – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		23

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

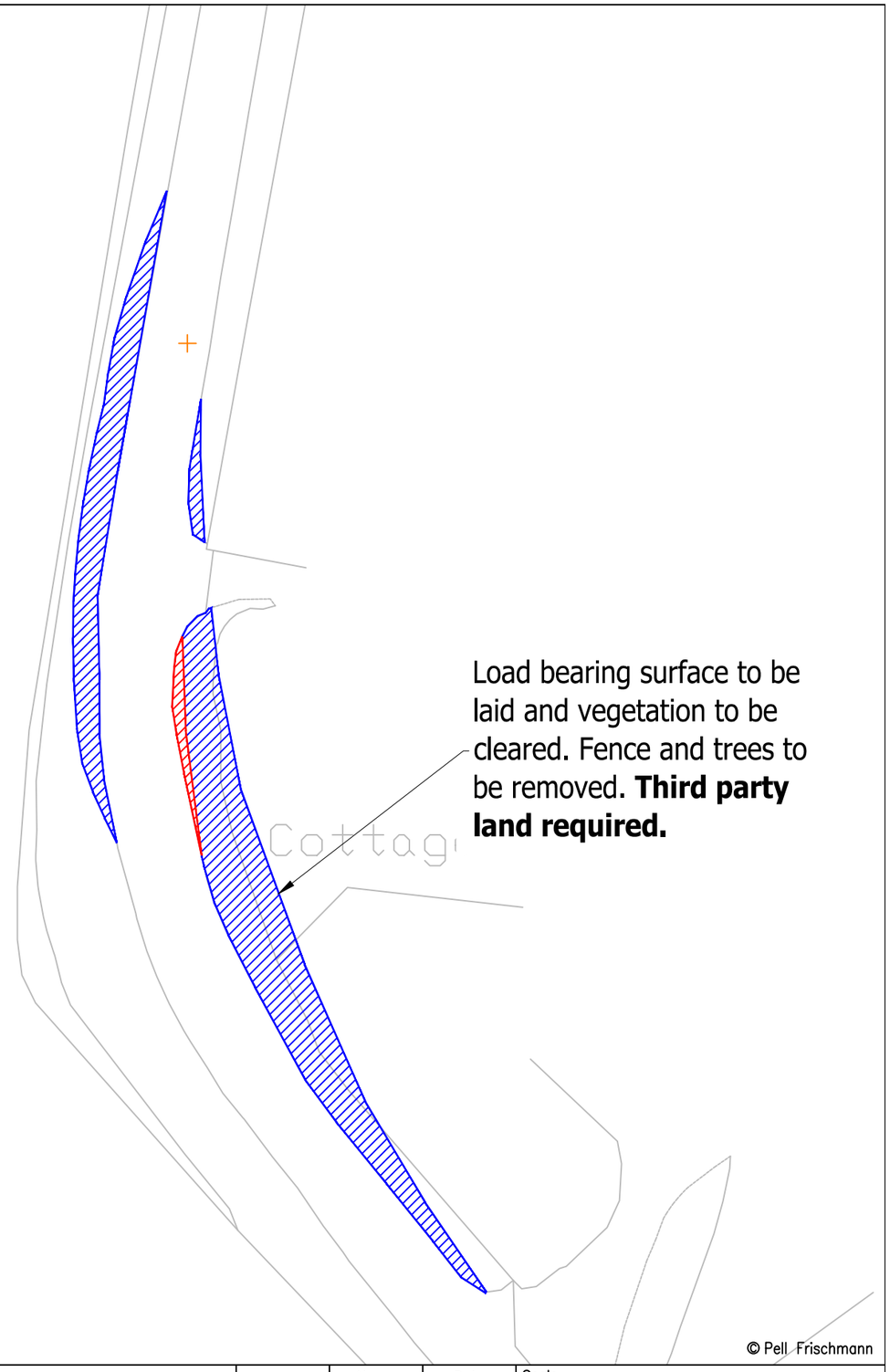
Drawing No.: SK17

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

Revision: XXX

Blade

Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Grimmet – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		24

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

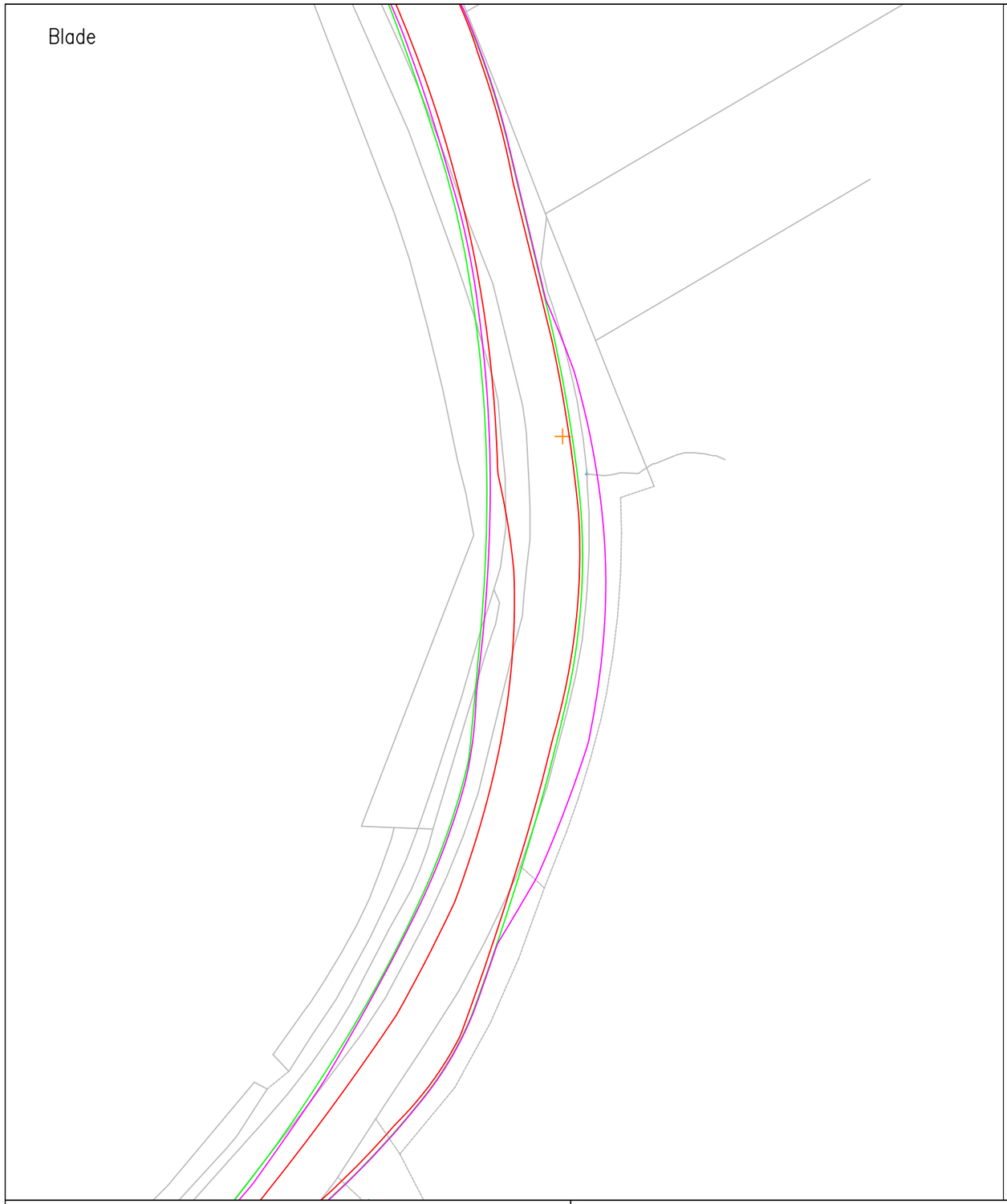
Drawing Status: Draft

Drawing No.: SK18

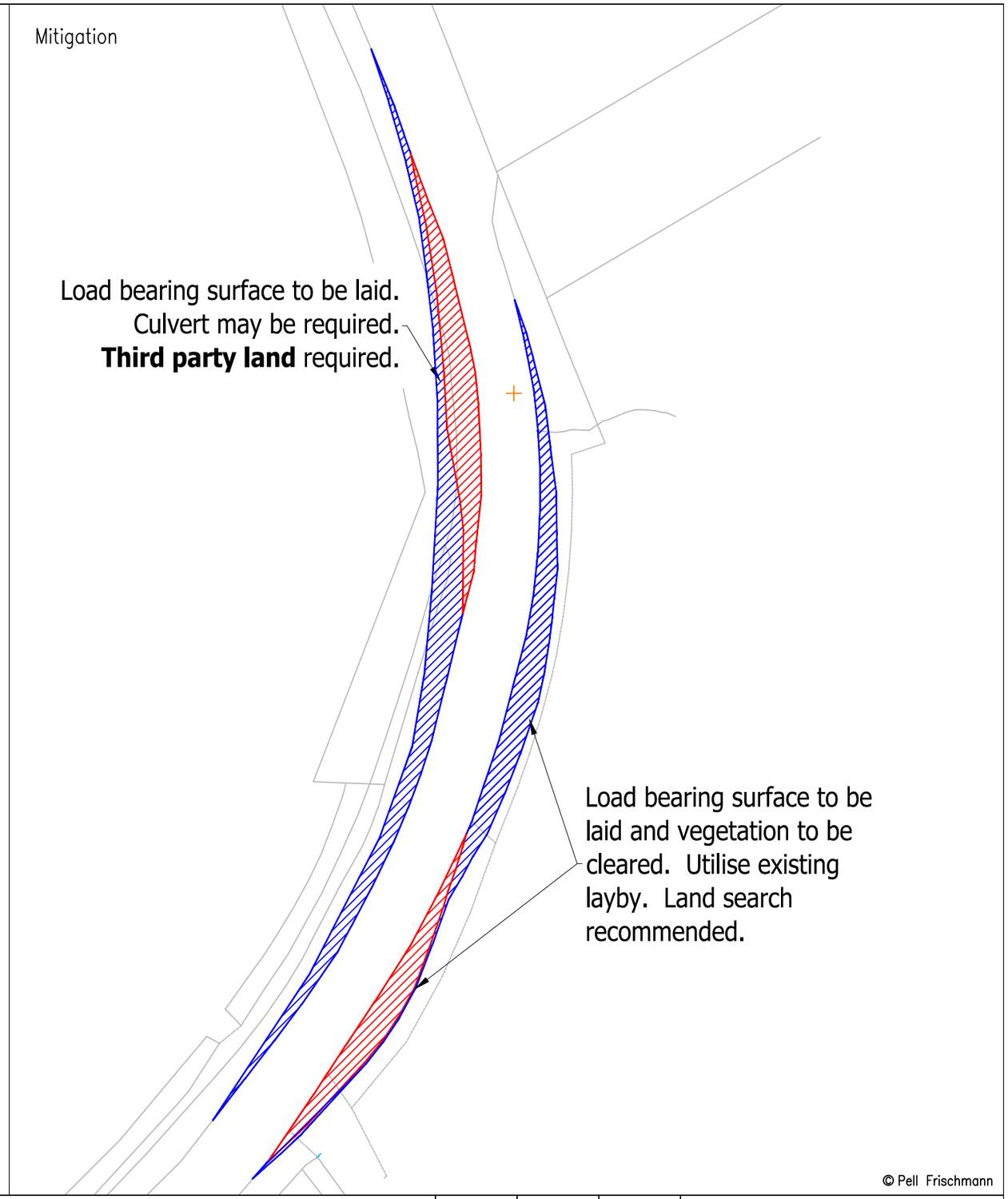
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Grimmet – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		25

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

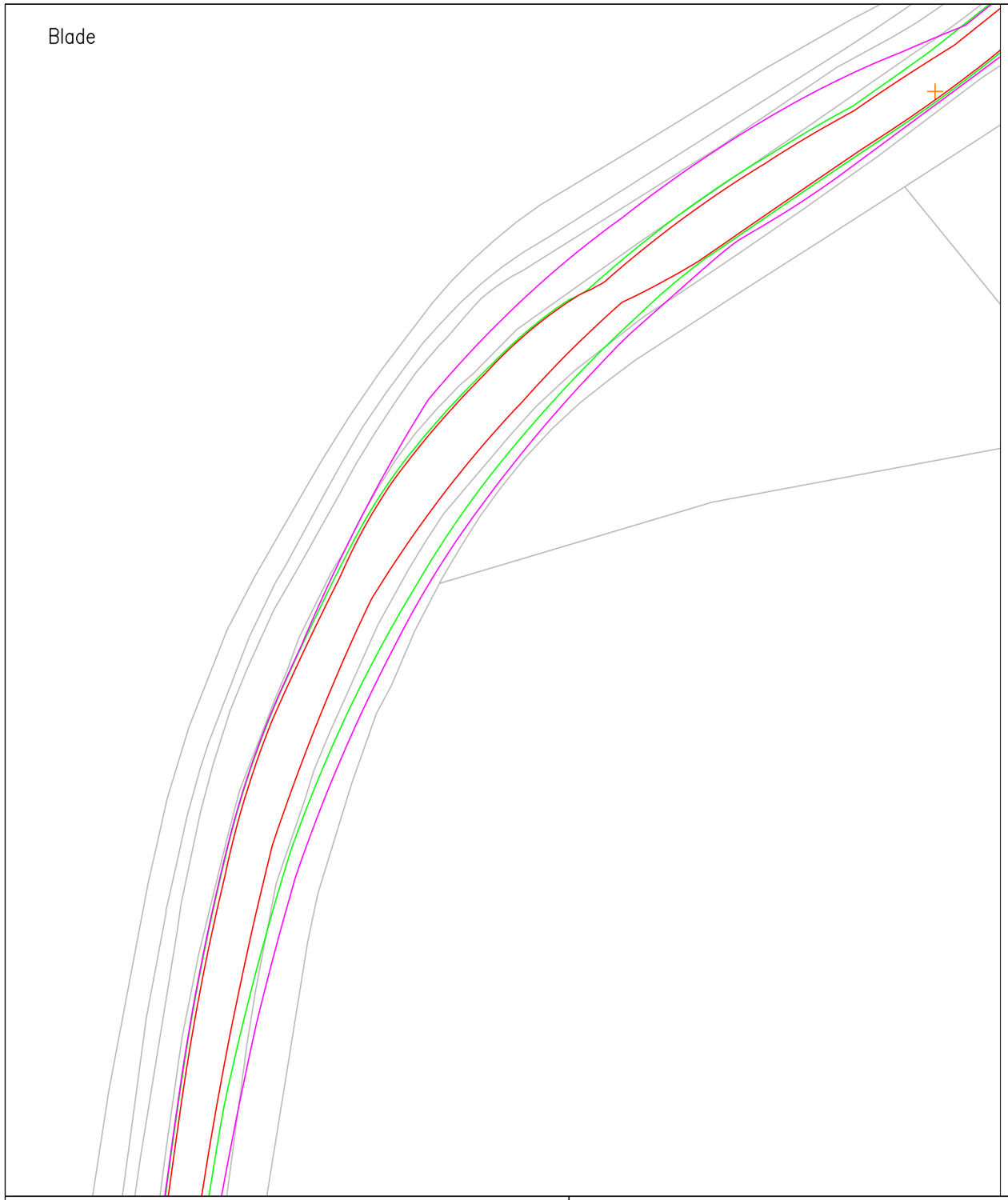
Drawing Status: Draft

Drawing No.: SK19

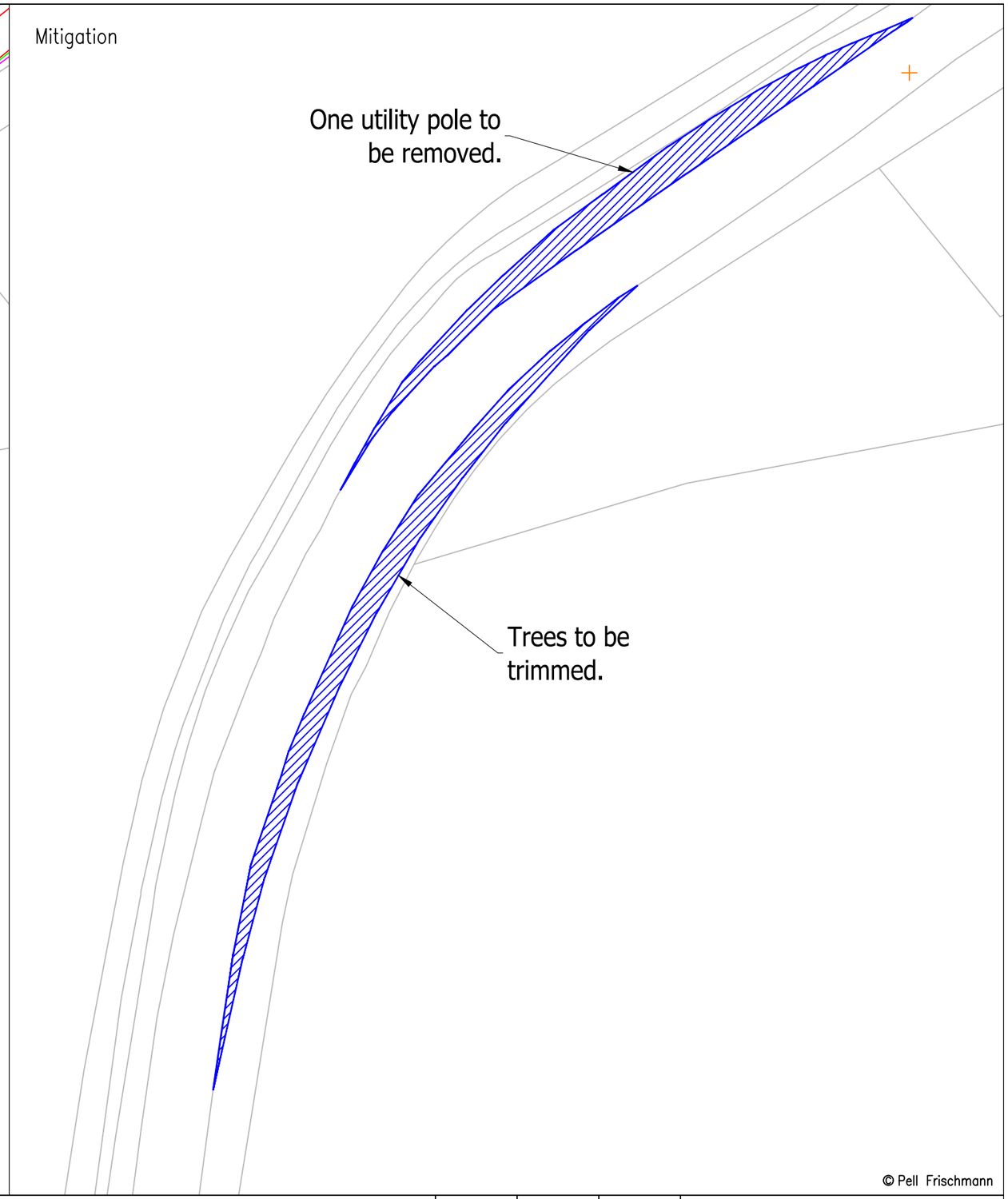
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 Grimmet – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		26

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

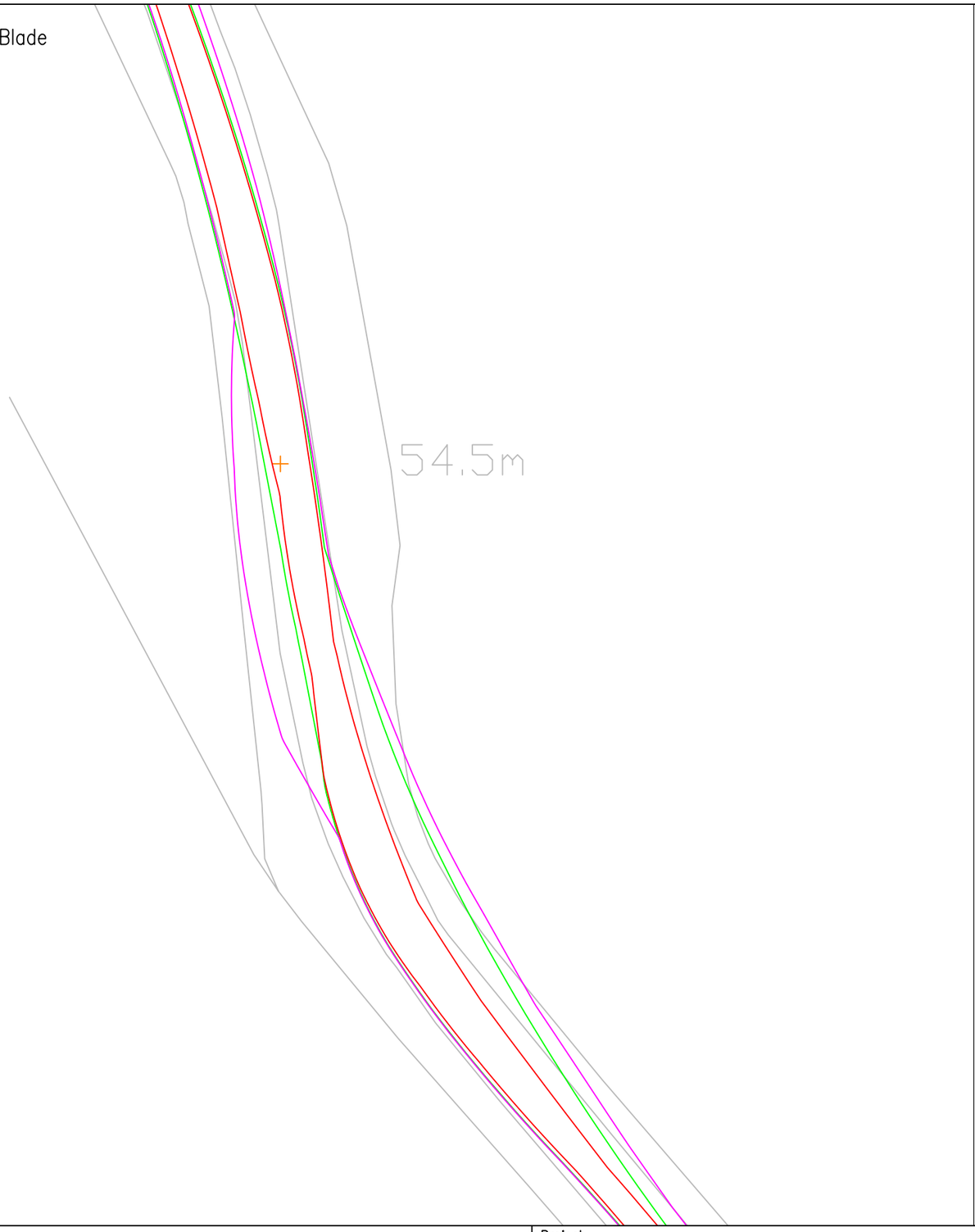
Drawing Status: Draft

Drawing No.: SK20

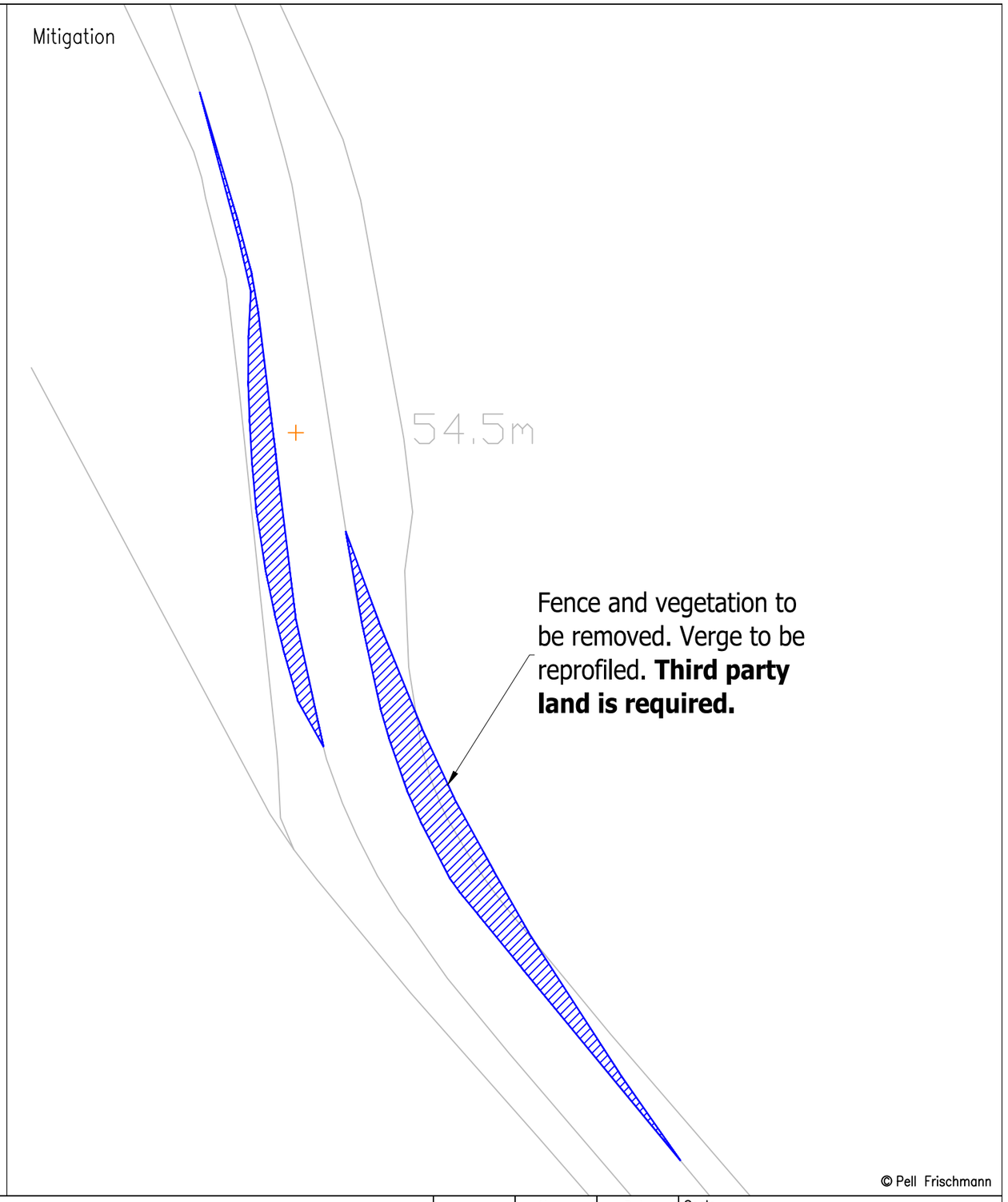
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 South of Harkieston Bridge – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		27

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

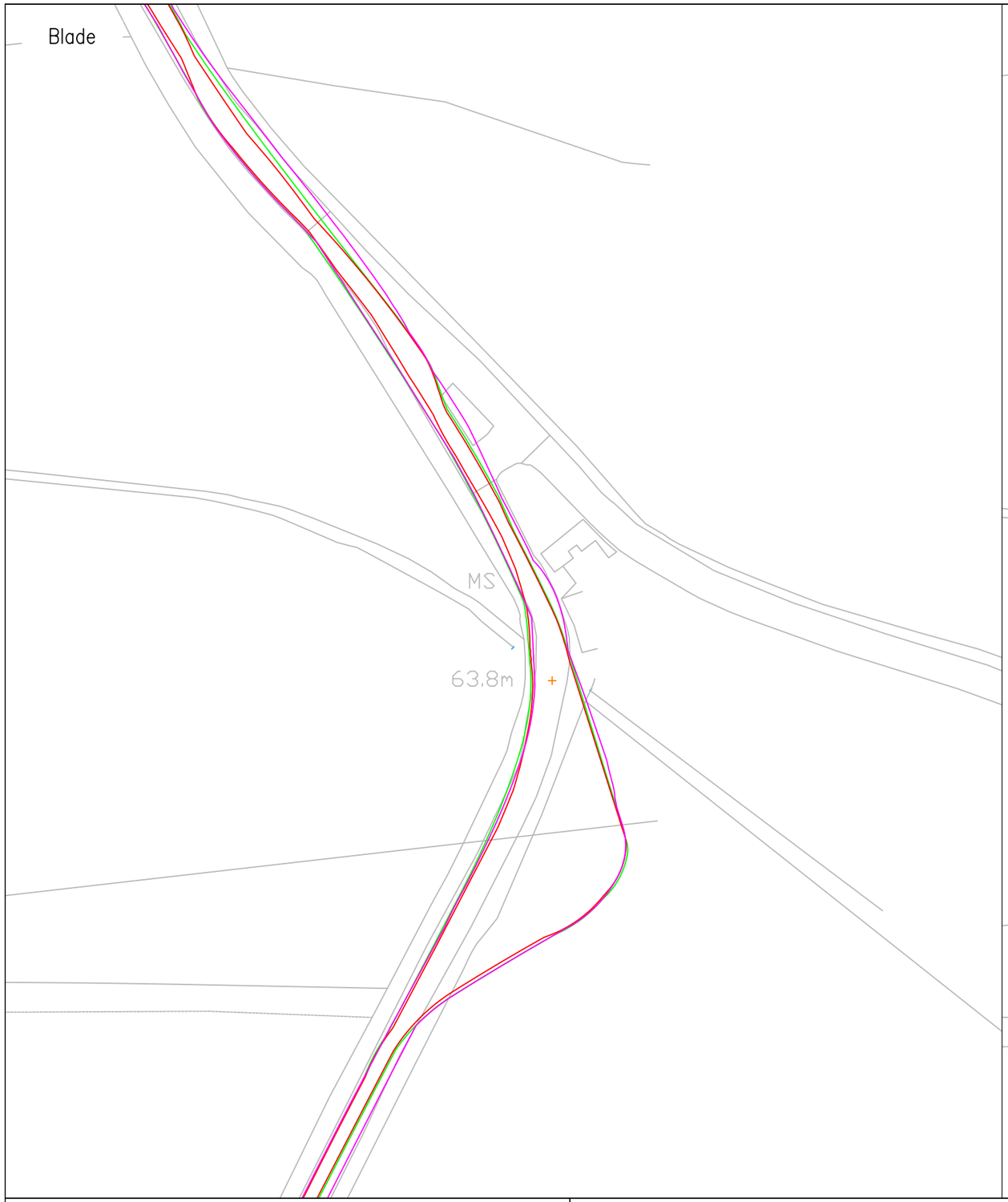
Drawing Status: Draft

Drawing No.: SK21

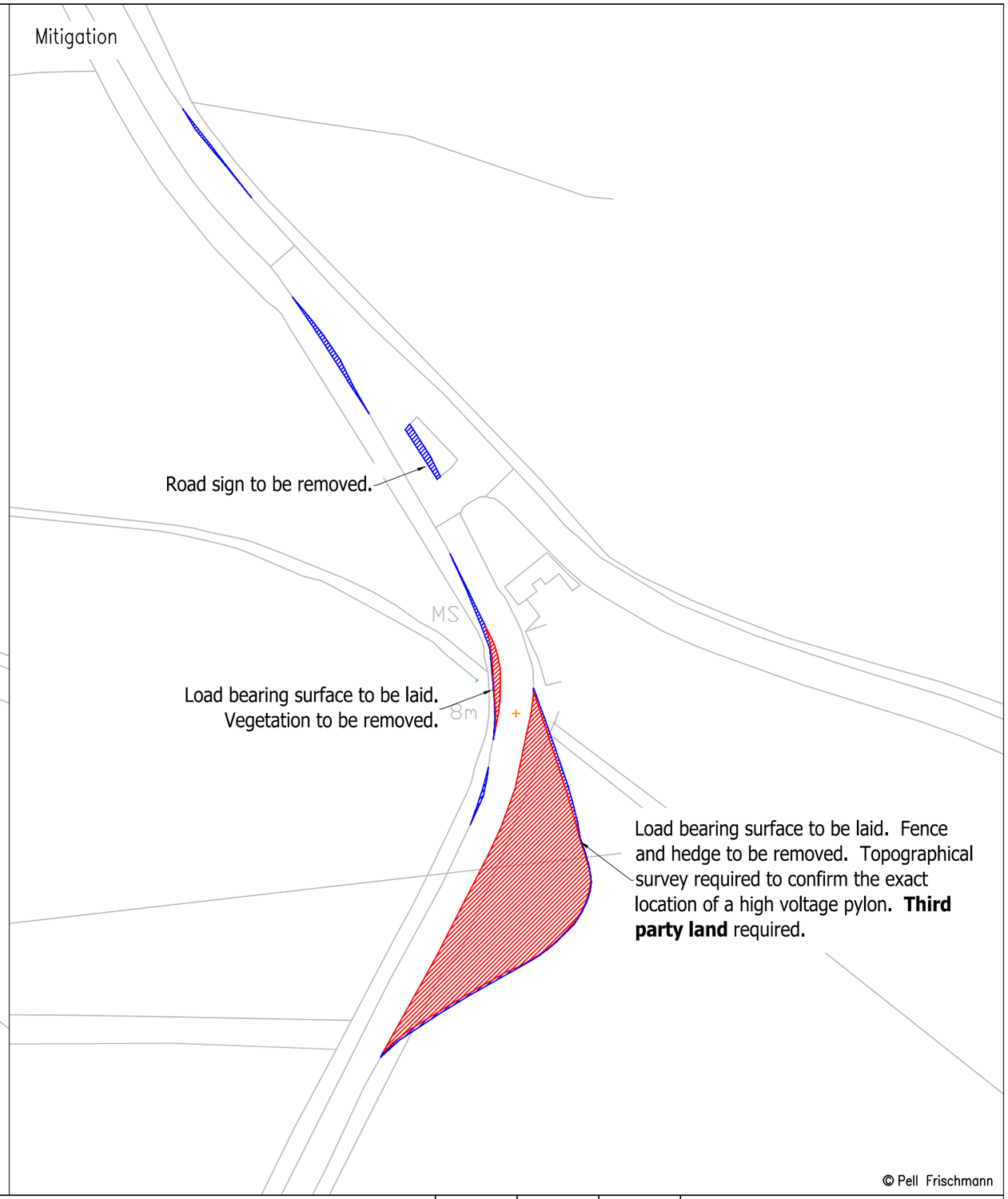
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7045 / Crosshill Road Junction – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		28

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

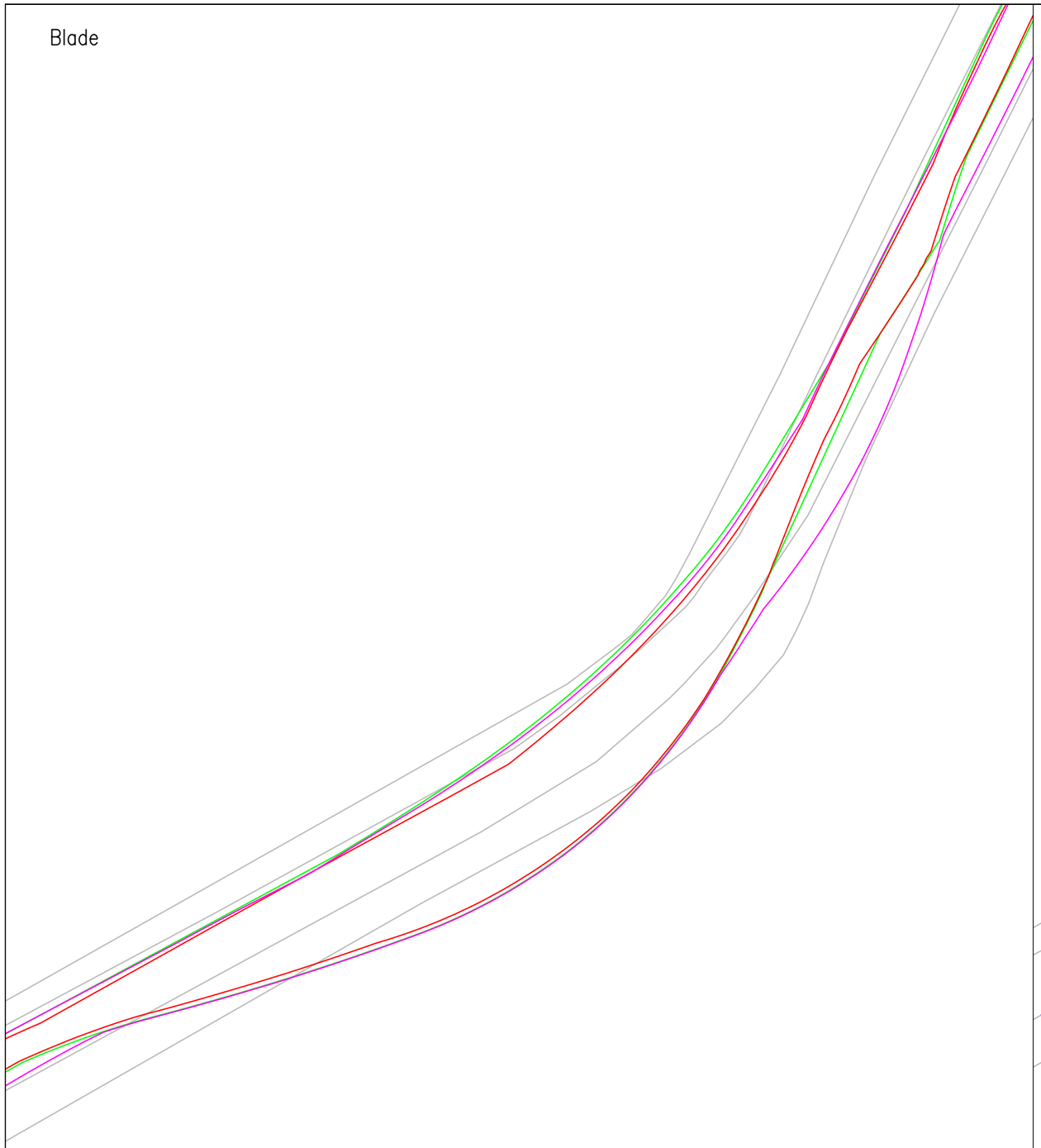
Drawing Status: Draft

Drawing No.: SK22

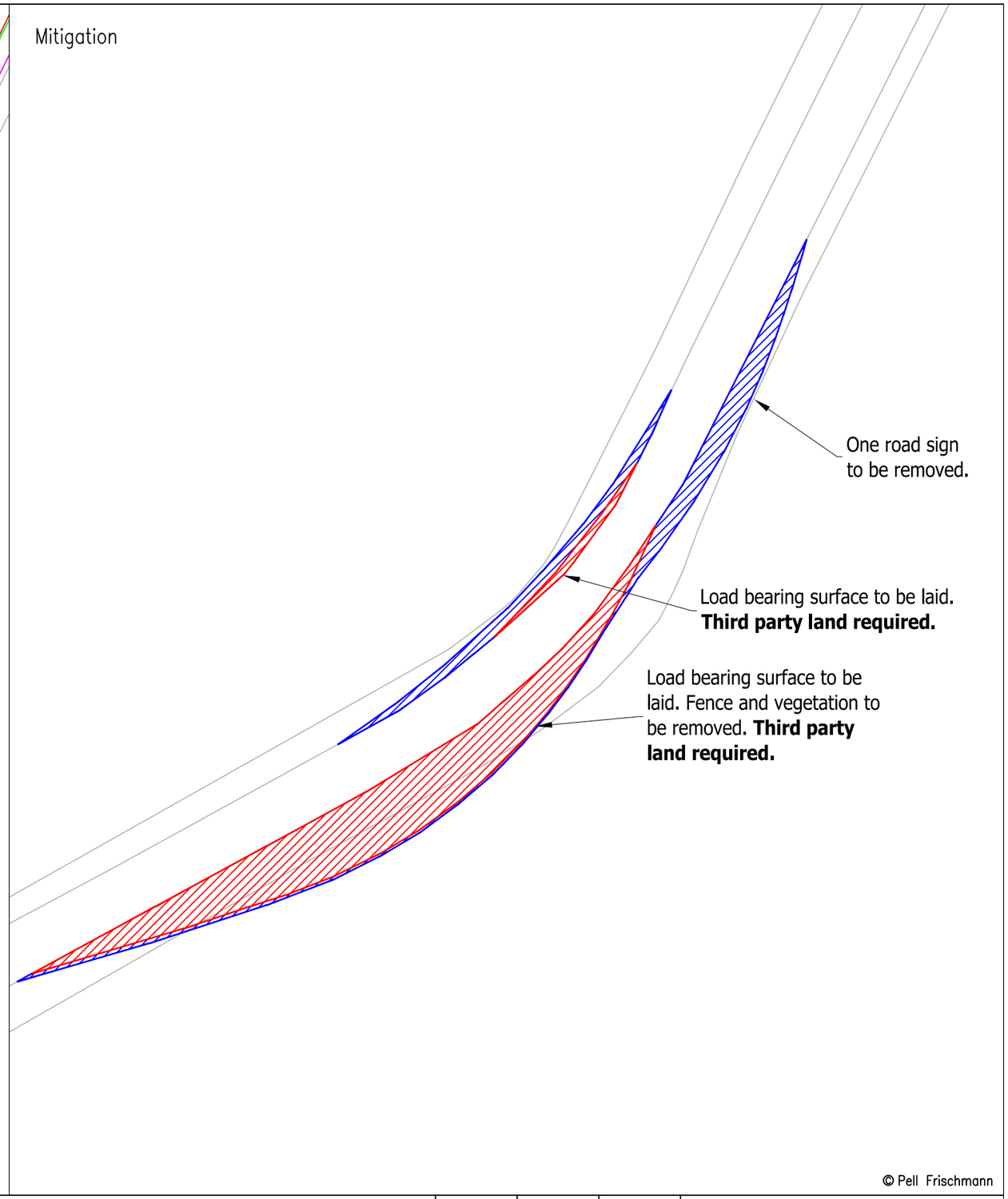
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Crosshill Road East of Attiquin – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		29

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

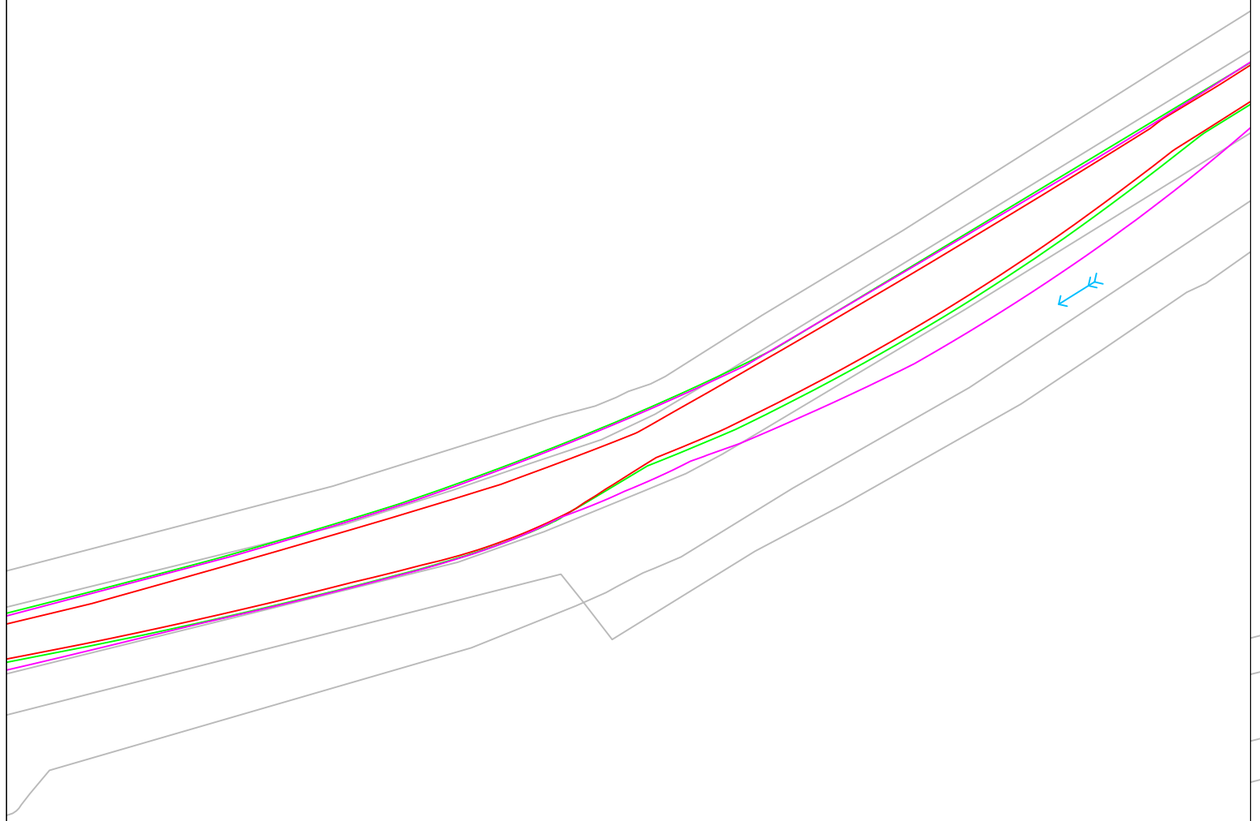
Drawing Status: Draft

Drawing No.: SK23

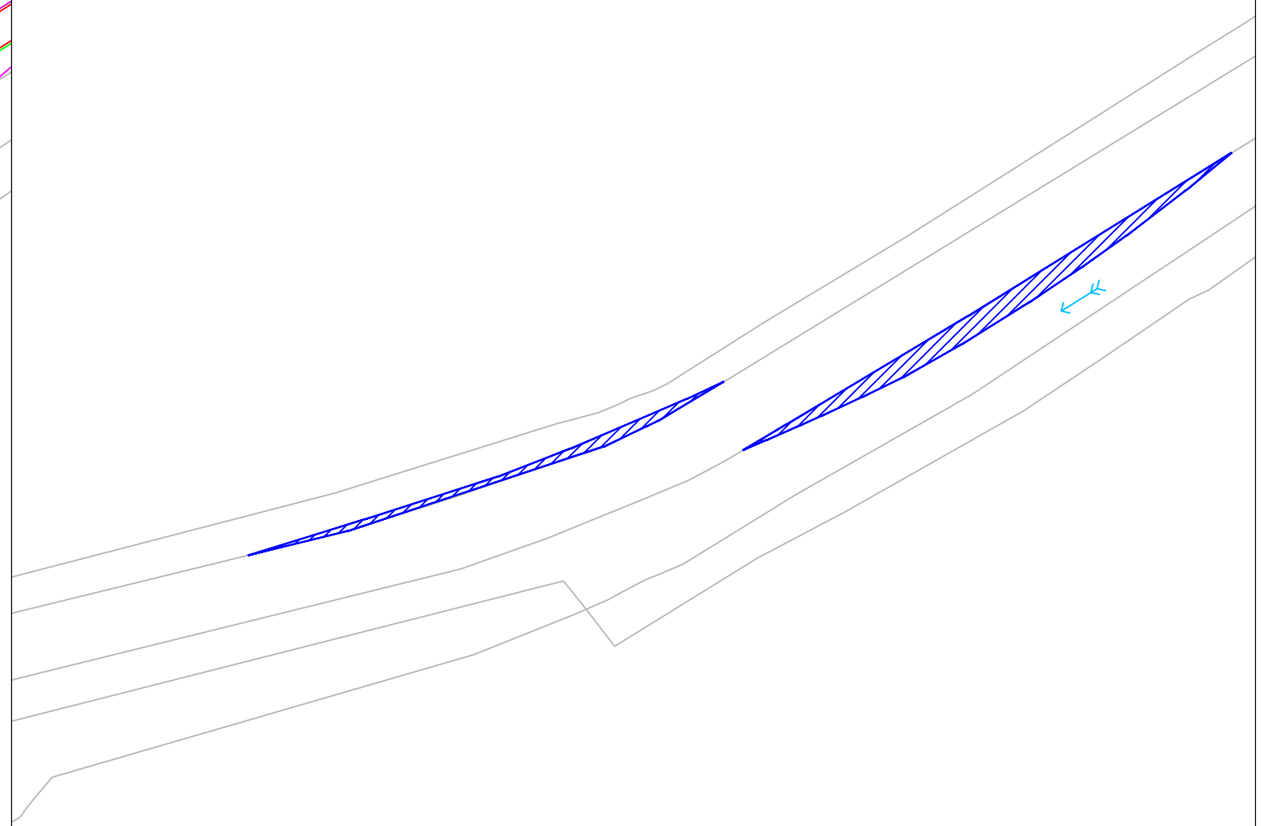
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Crosshill Road South of Attiquin – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		30

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

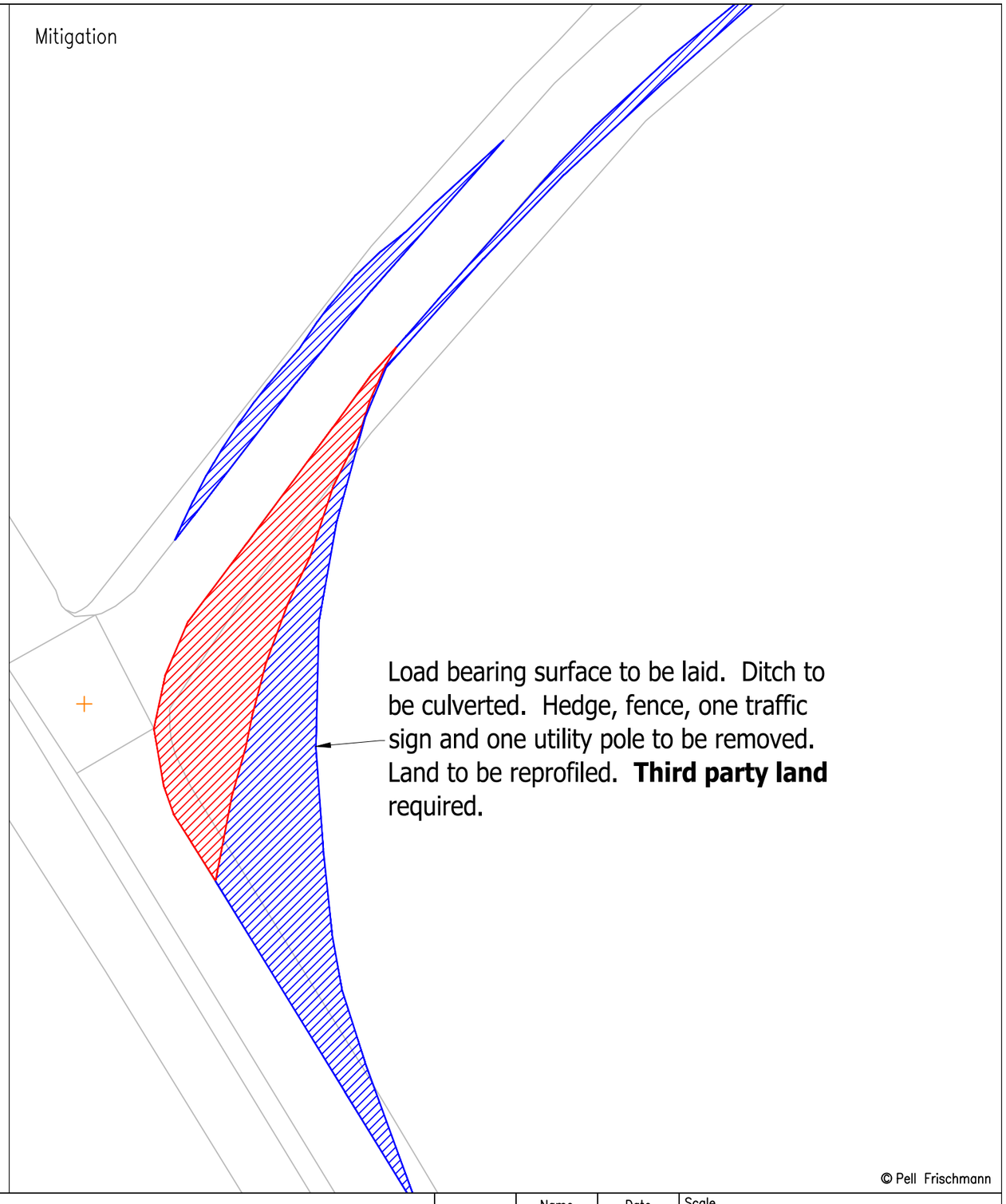
Drawing No.: SK24

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

Revision: XXX

Blade

Mitigation



Load bearing surface to be laid. Ditch to be culverted. Hedge, fence, one traffic sign and one utility pole to be removed. Land to be reprofiled. **Third party land** required.

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93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Crosshill Road / B7023 Junction – Blade Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		31

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK25

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

Revision: XXX

Tower

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 Smithston Bridge – Tower Only

NO MITIGATION REQUIRED

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		32

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

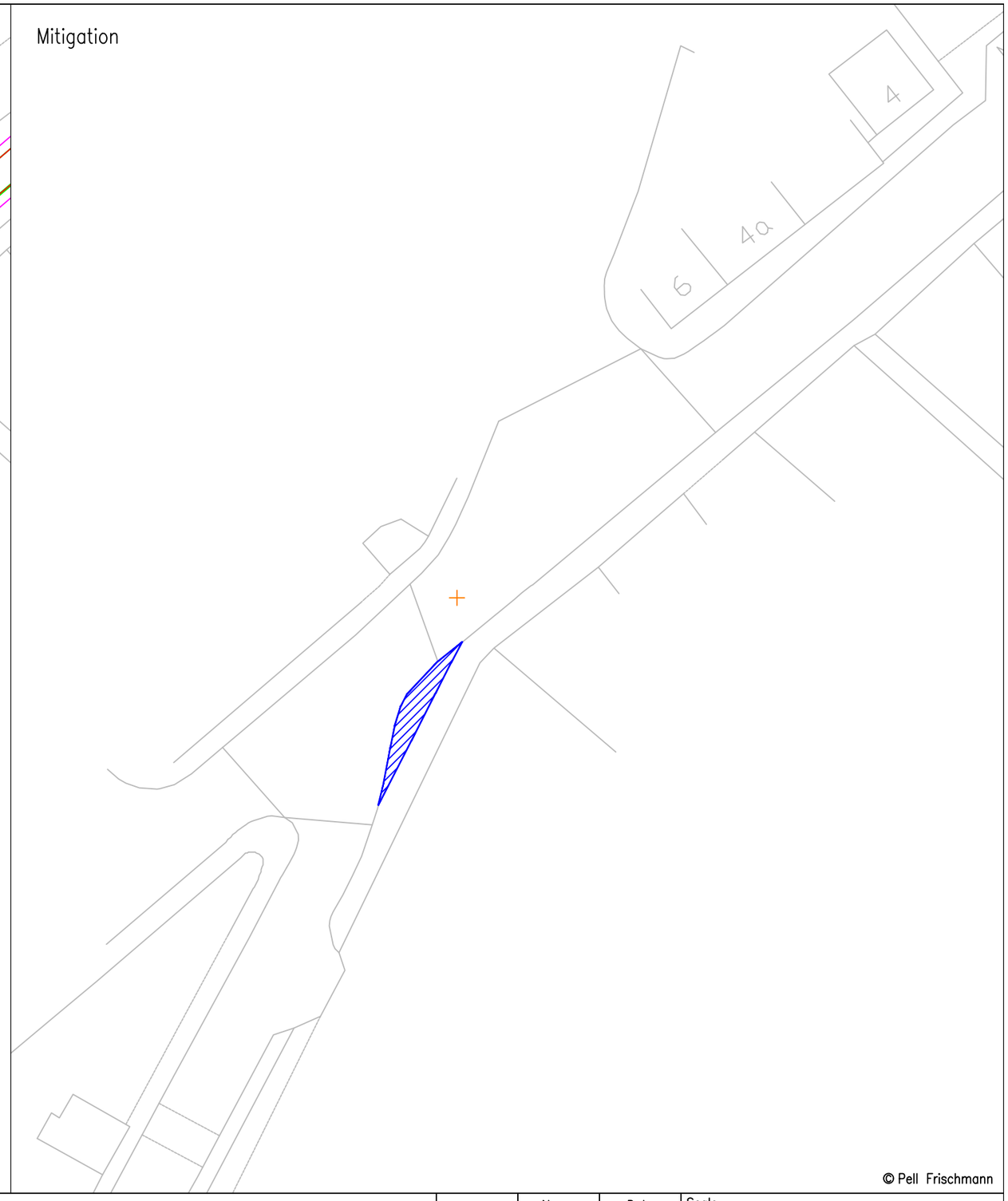
Drawing No.: SK26

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

Revision: XXX

Tower

Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over–run; Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: A77 / Kirkland Street – Tower Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		33

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

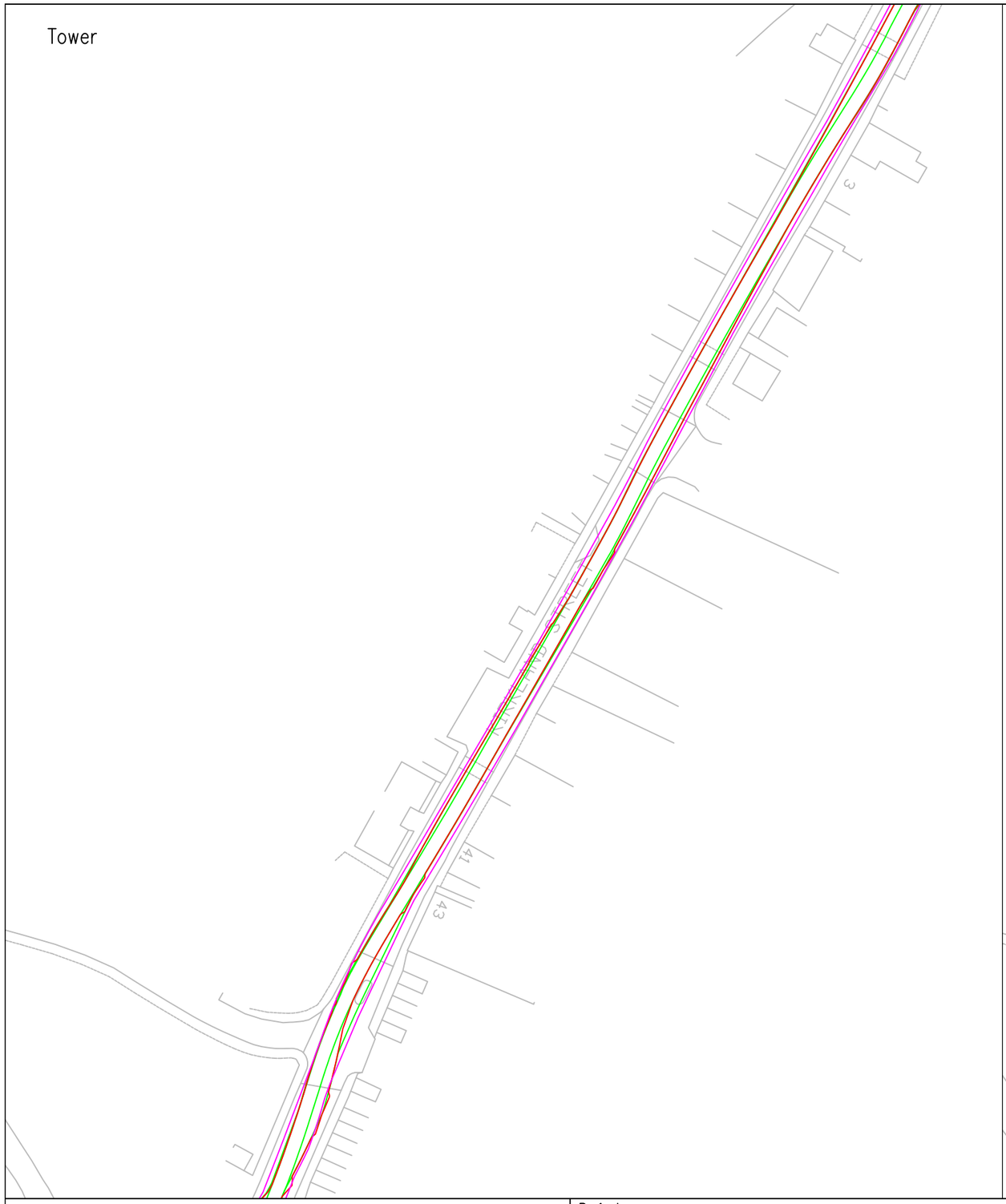
Drawing Status: Draft

Drawing No.: SK27

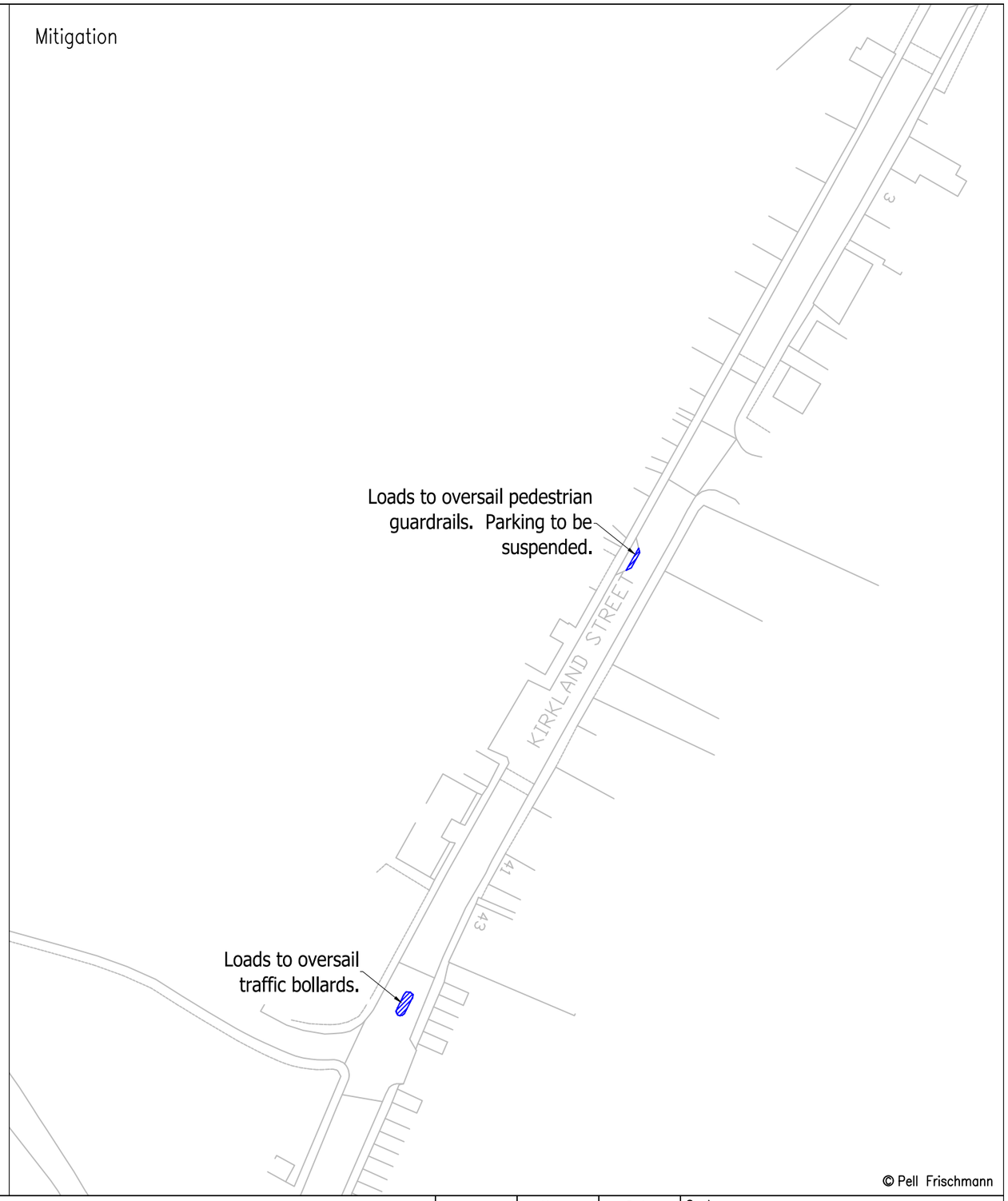
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Tower



Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Kirkland Street – Tower Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		34

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK28

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

Revision: XXX

Tower

The swept path assessment should be repeated on a topographical survey base due to the minimal clearances to buildings.

Mitigation

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Kirkland Street / B7023 Junction – Tower Only

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		35

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

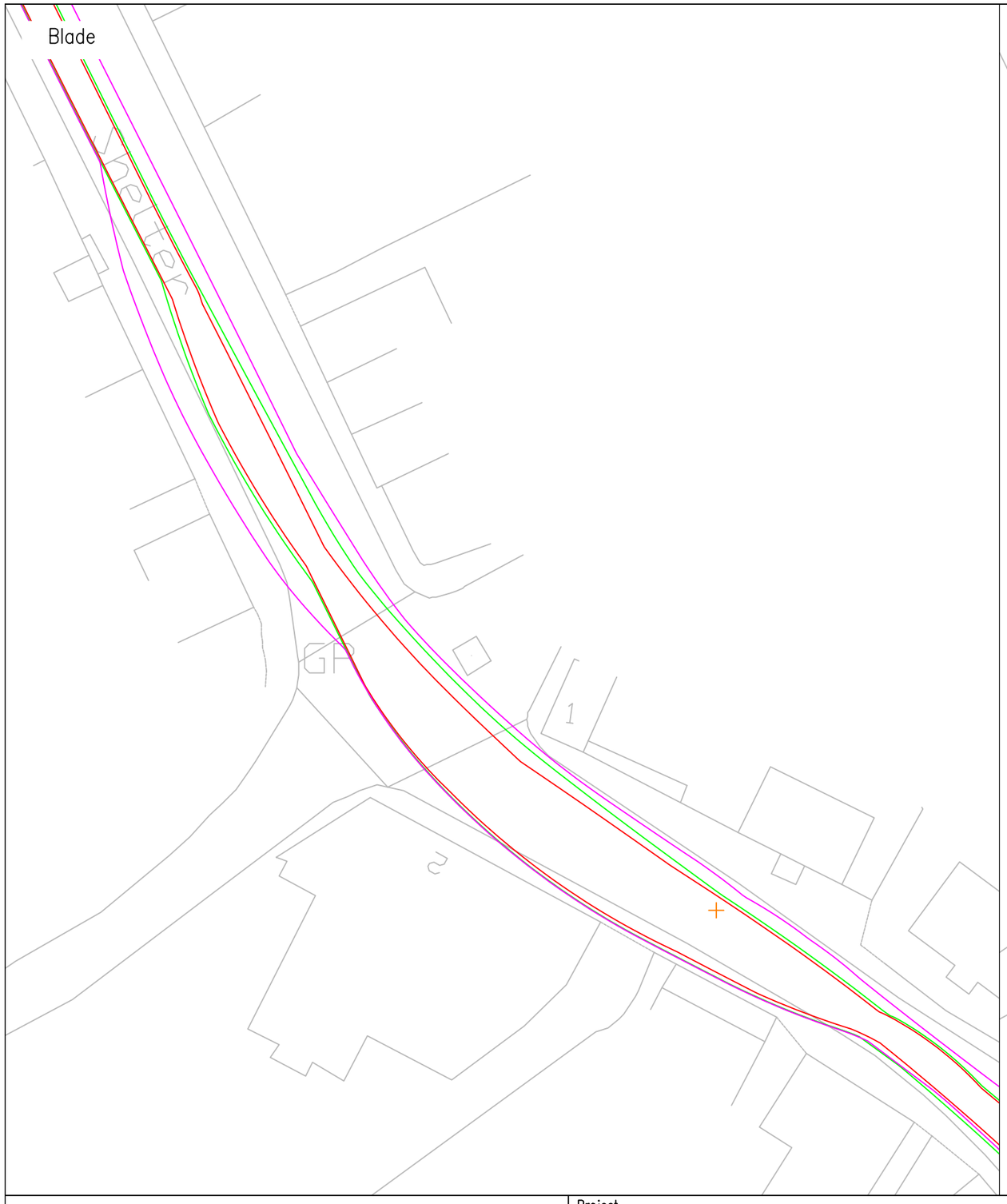
Drawing Status: Draft

Drawing No.: SK29

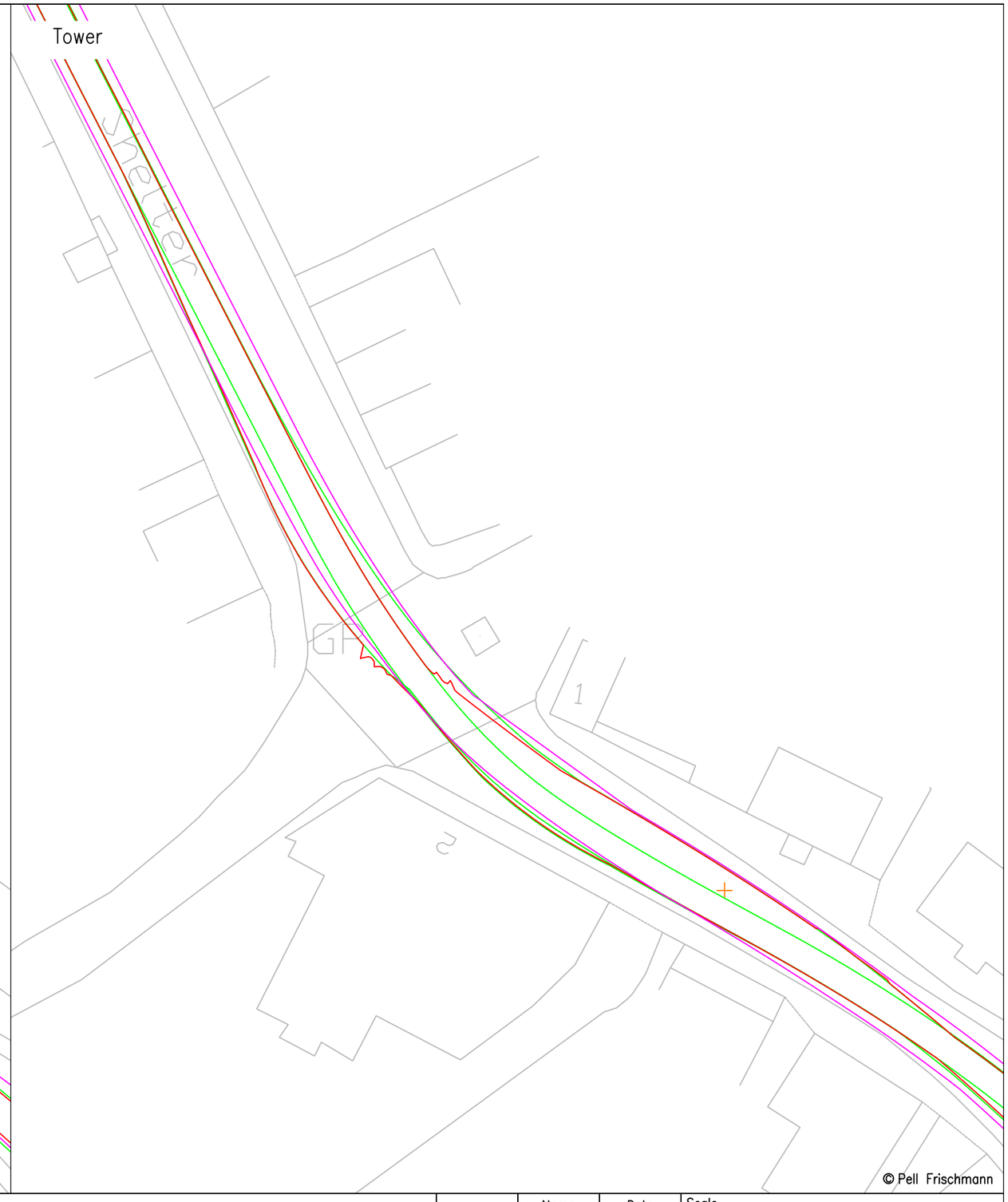
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Crosshill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		36

Scale: 1:500 @ A3

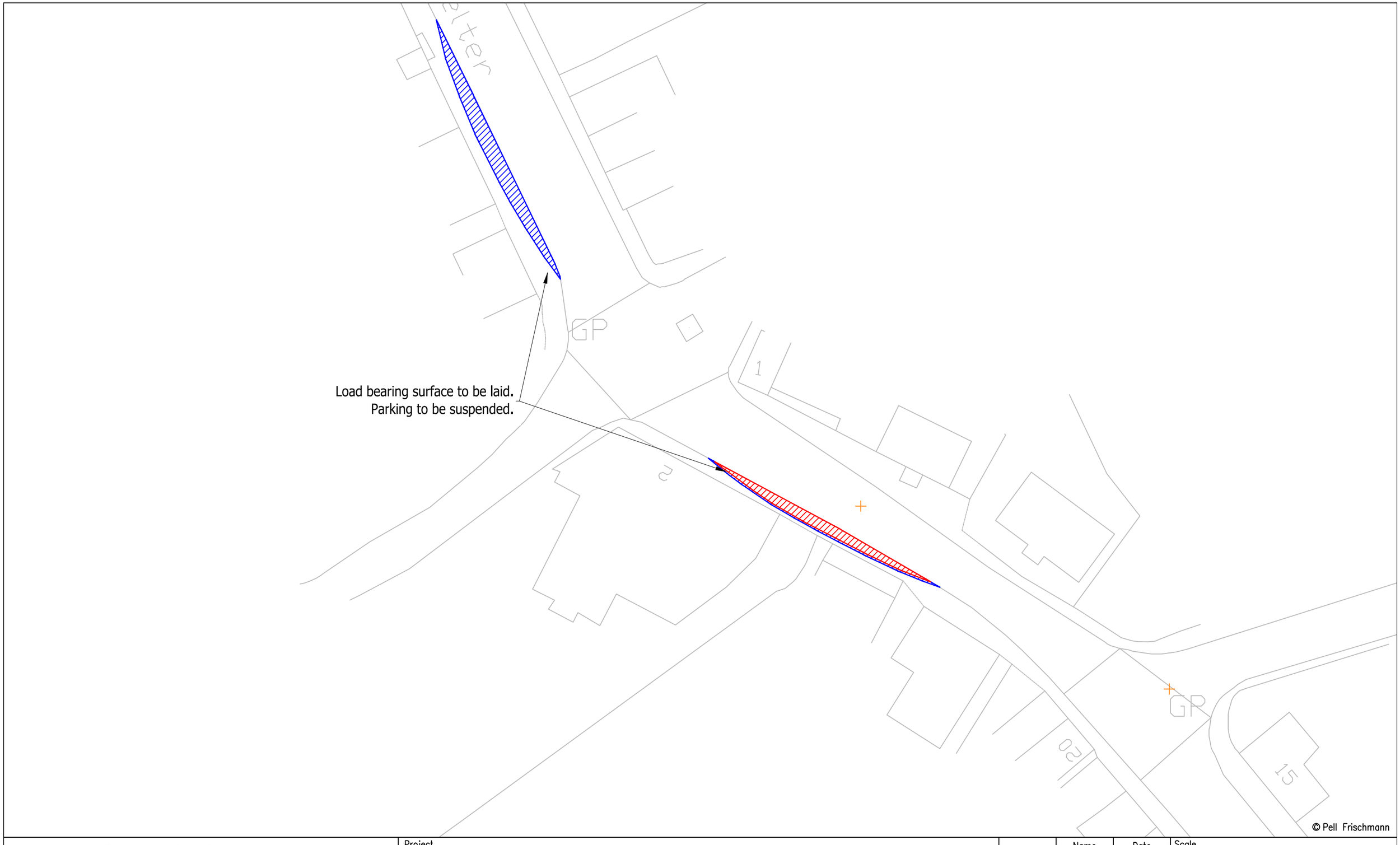
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK30

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Crosshill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		36

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK30A

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

Revision: XXX

Blade

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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Crosshill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		37

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK31

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

Revision: XXX

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Crosshill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		37

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK31A

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

Revision: XXX

Blade

Tower

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Client: ITPEnergised

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over–run; Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Dalhowan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		38

Scale: 1:1000 @ A3

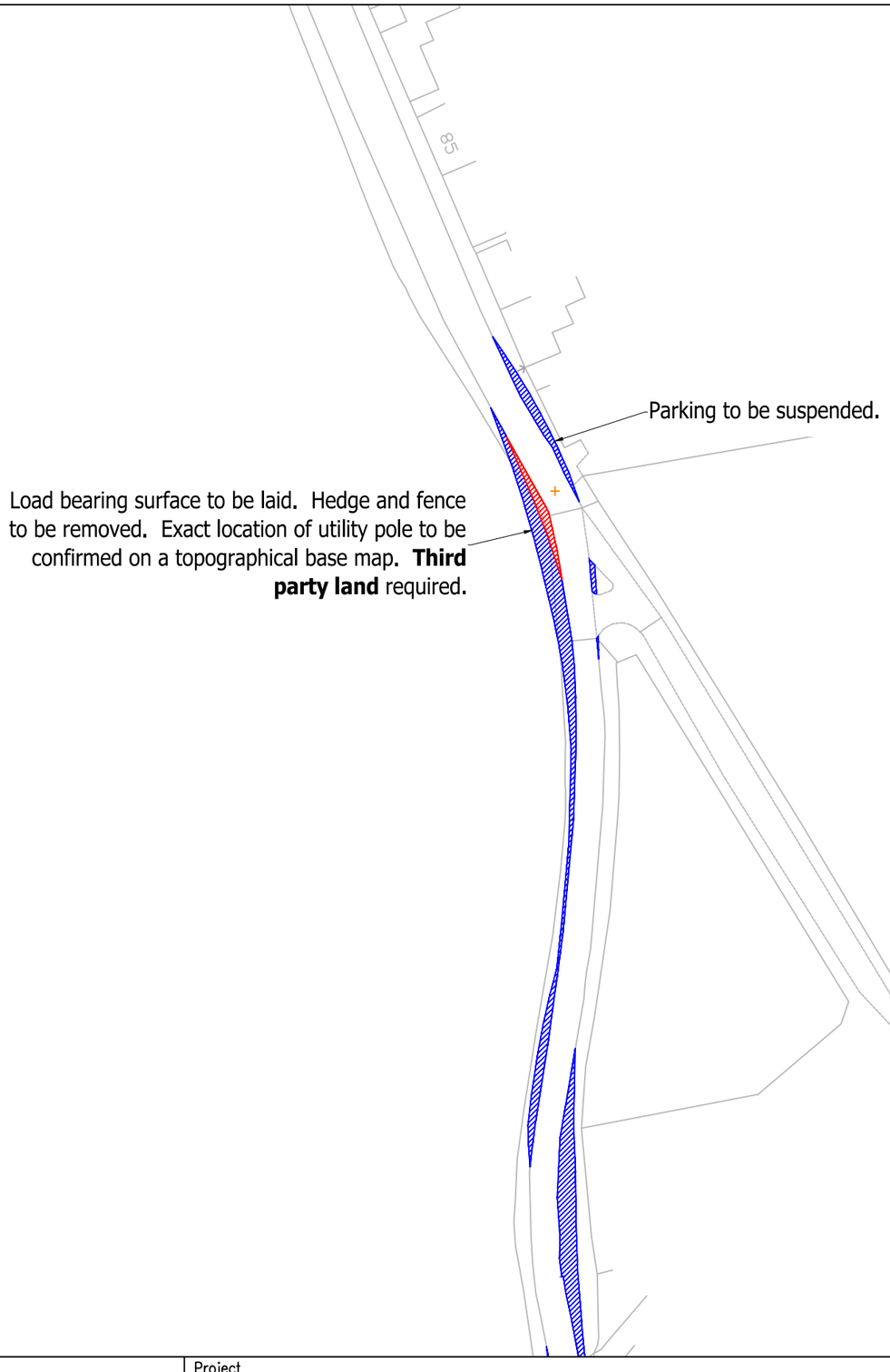
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK32

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Dalhowan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		38

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK32A

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

Revision: XXX

Blade

49.8m

Tower

49.8m

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Dalhowan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		39

Scale: 1:1000 @ A3

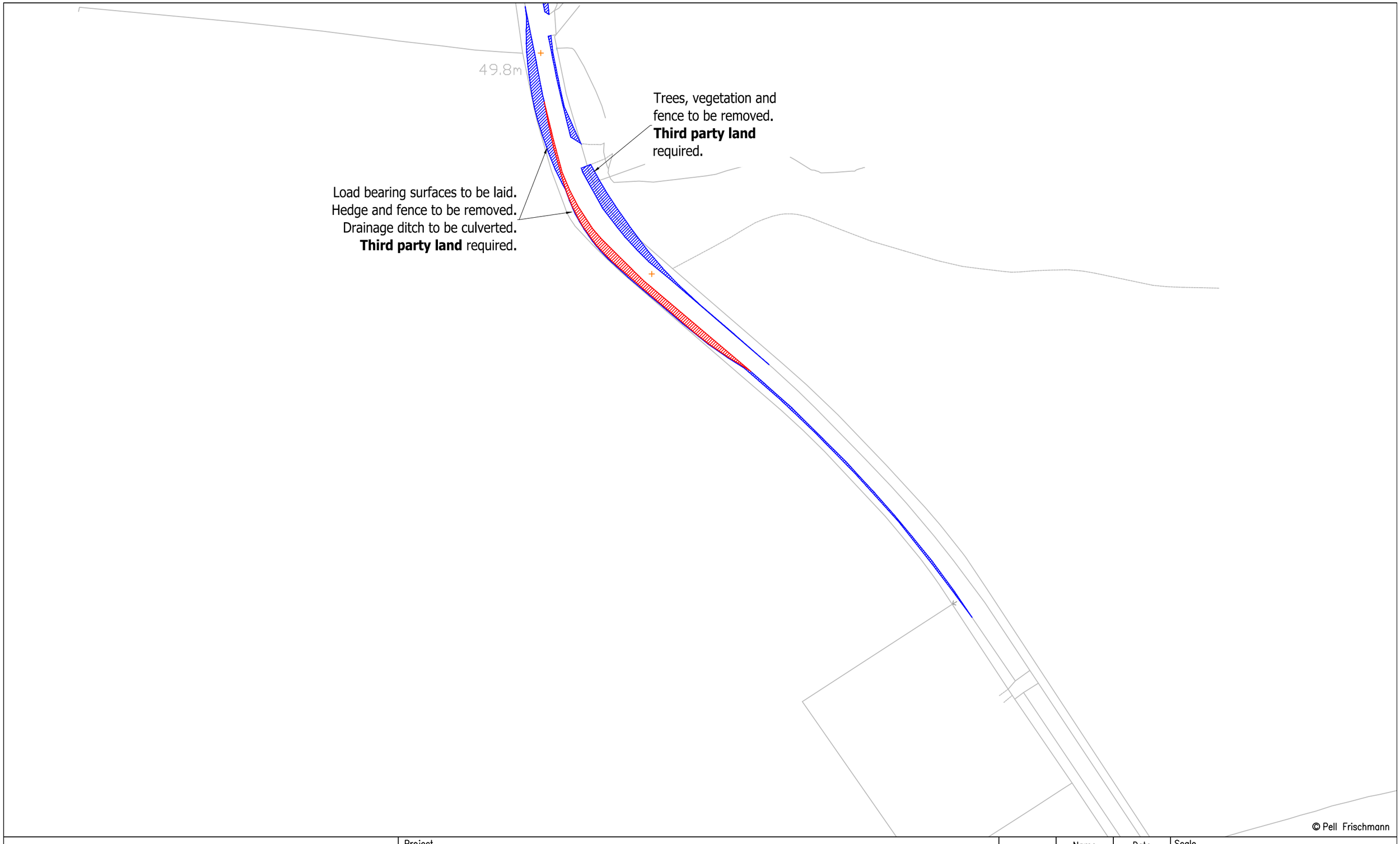
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK33

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Dalhowan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		39

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

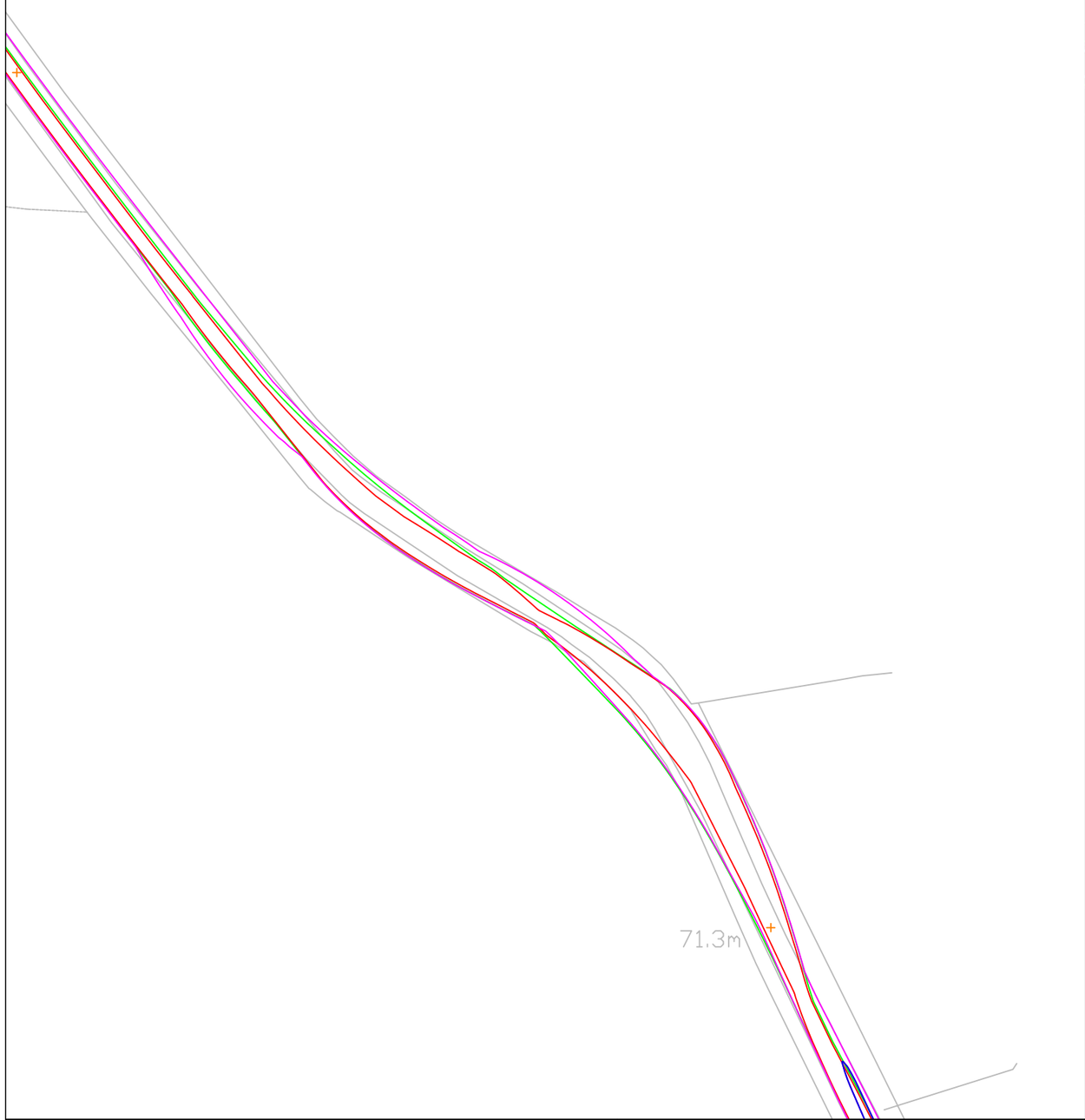
Drawing Status: Draft

Drawing No.: SK33A

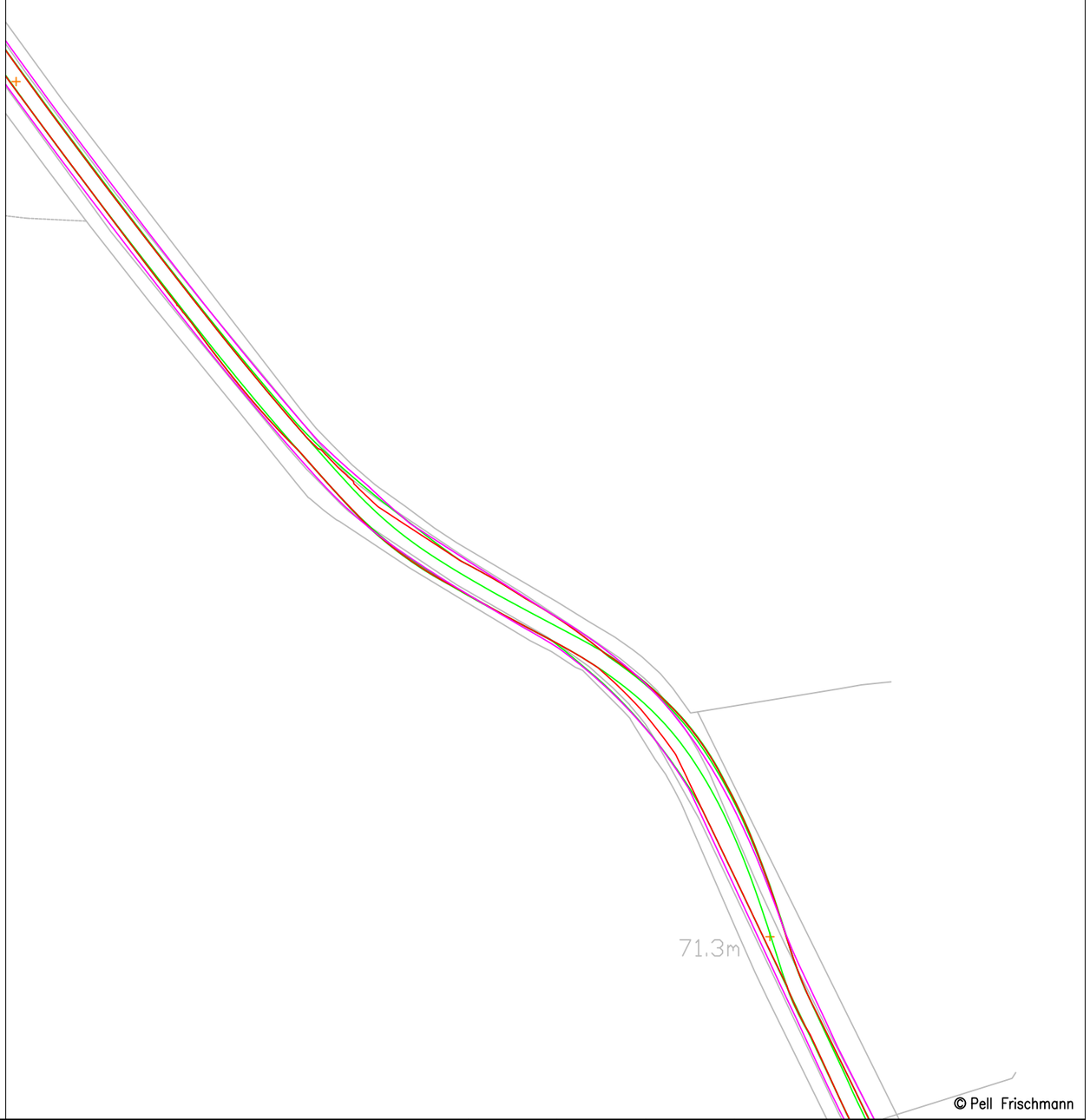
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		40

Scale: 1:1000 @ A3

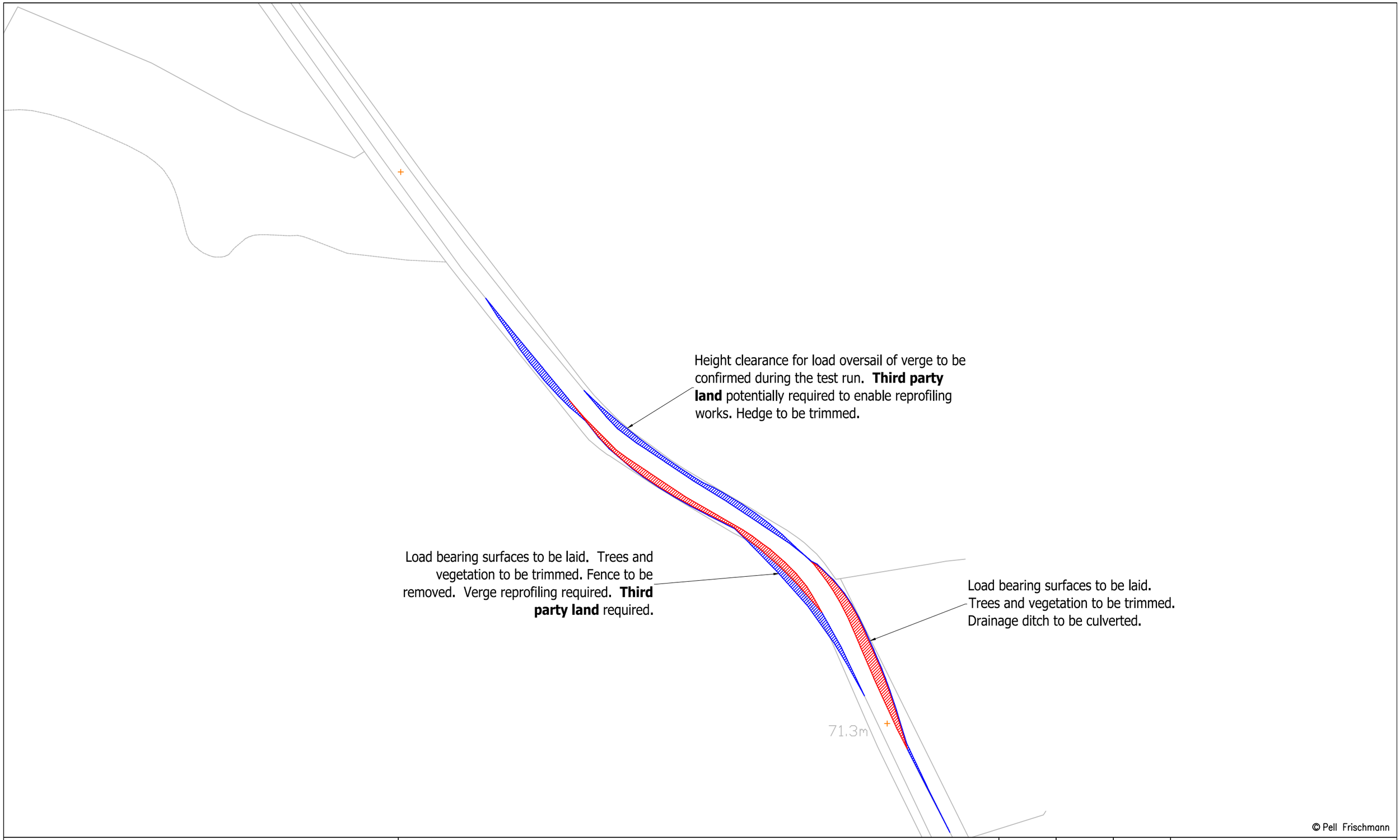
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK34

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

Revision: XXX



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		40

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK34A

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

Revision: XXX

Blade

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		41

Scale: 1:1000 @ A3

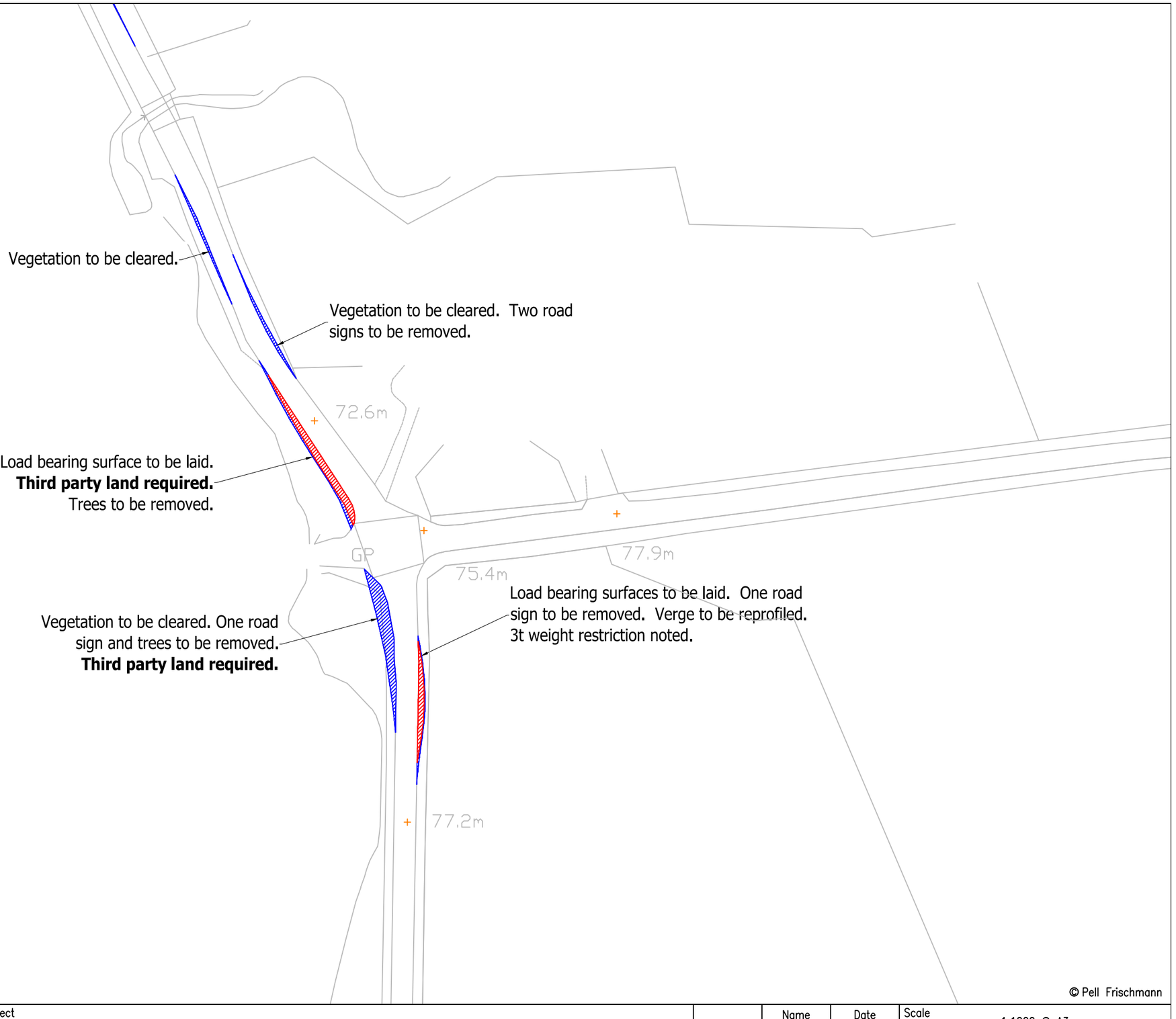
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK35

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

Revision: XXX



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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		41

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

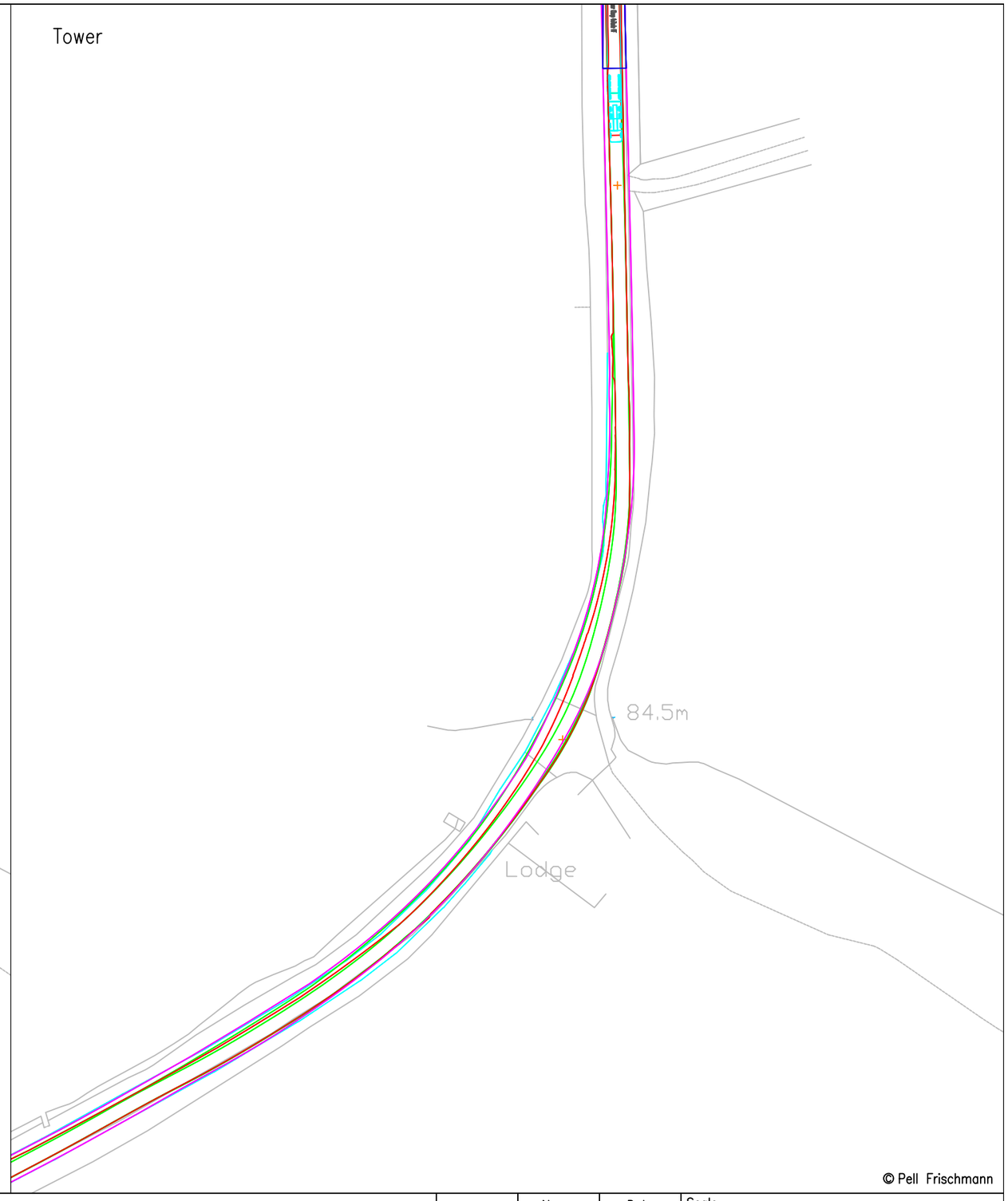
Drawing No.: SK35A

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

Revision: XXX

Blade

Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Gallow Knowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		42

Scale: 1:1000 @ A3

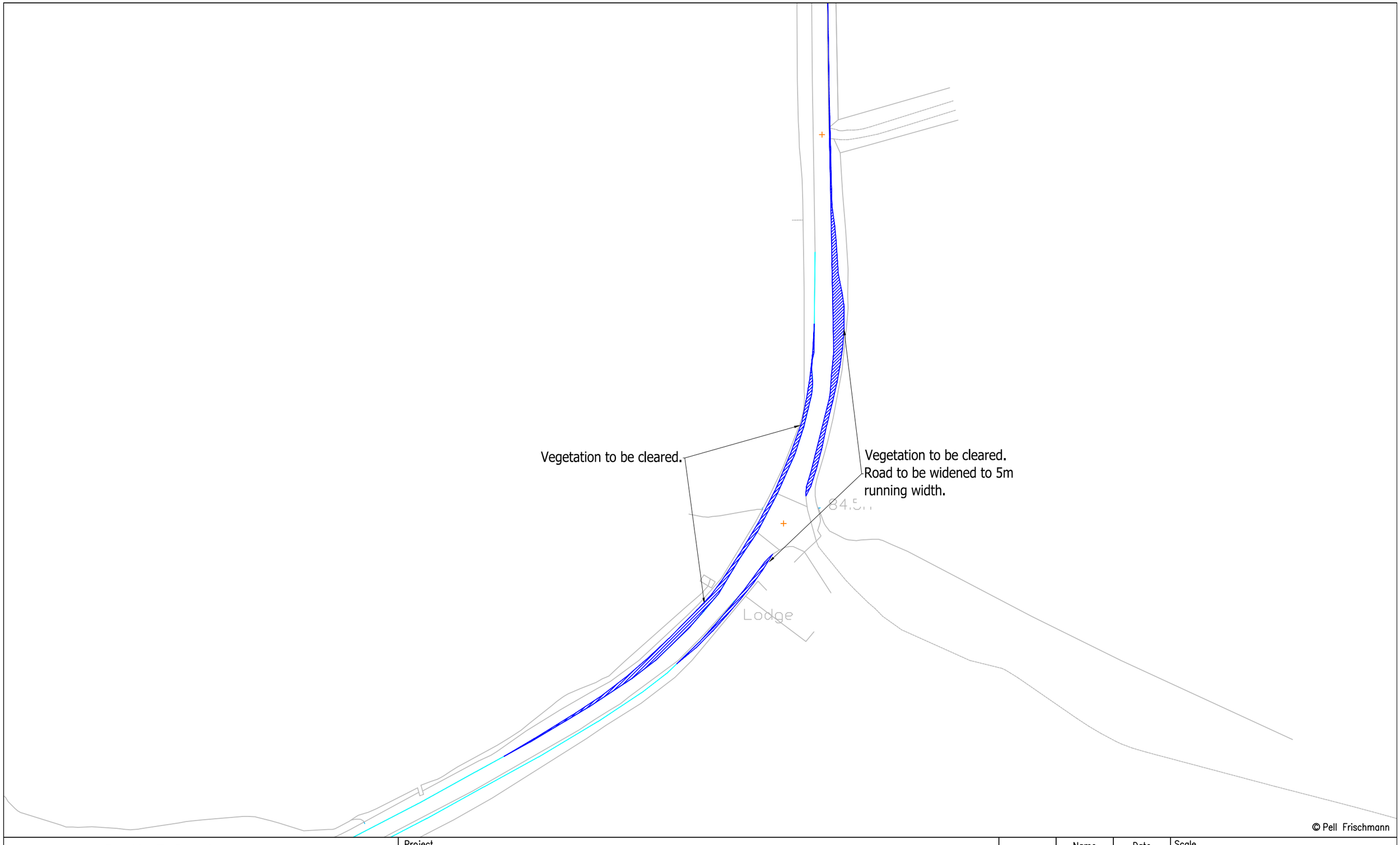
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK36

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Gallow Knowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		42

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK36A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Balsaggart

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		43

Scale: Custom @ A3

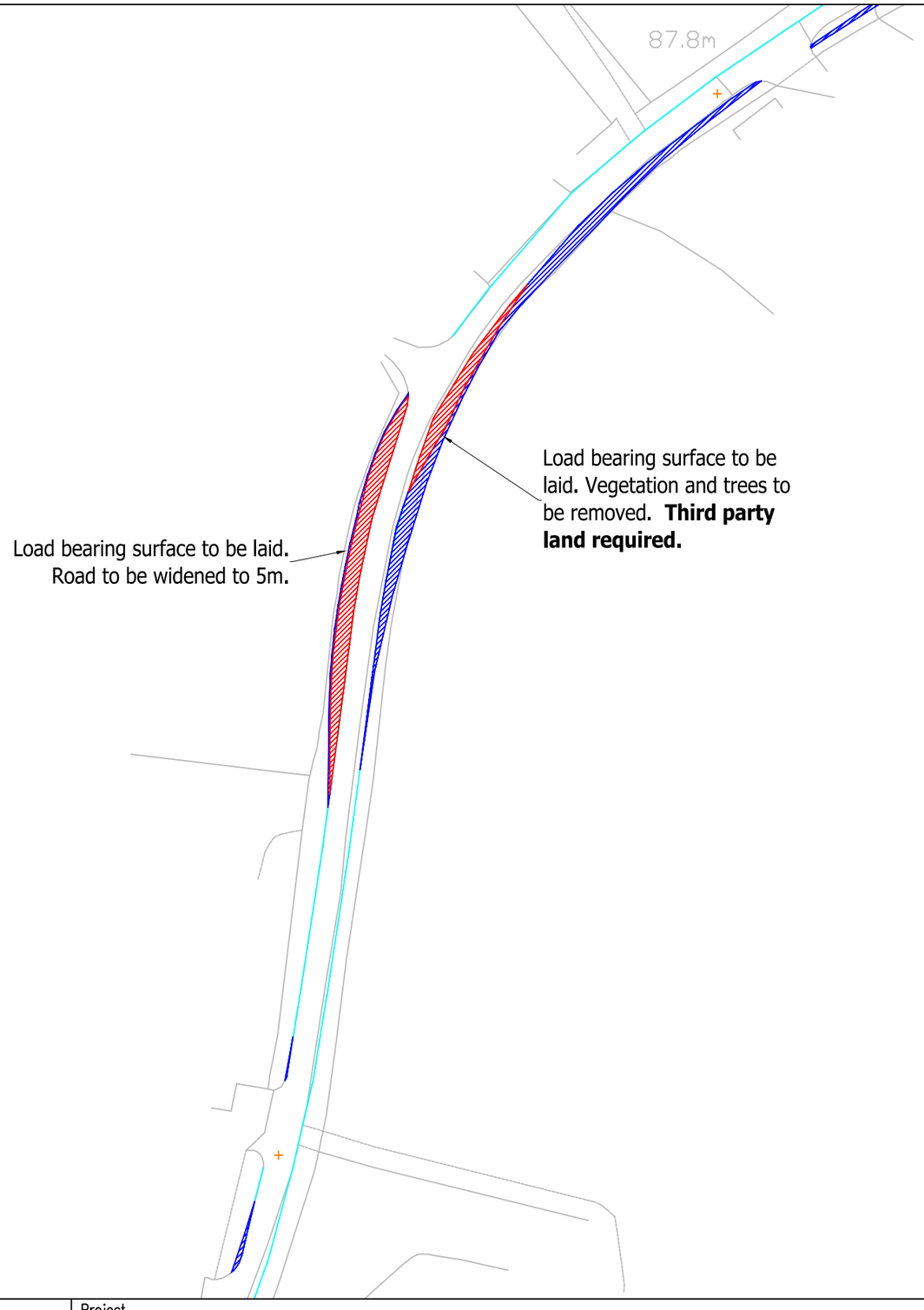
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK37

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

Revision: XXX



The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Balsaggart

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		43

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK37A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Toll

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		44

Scale: Custom @ A3

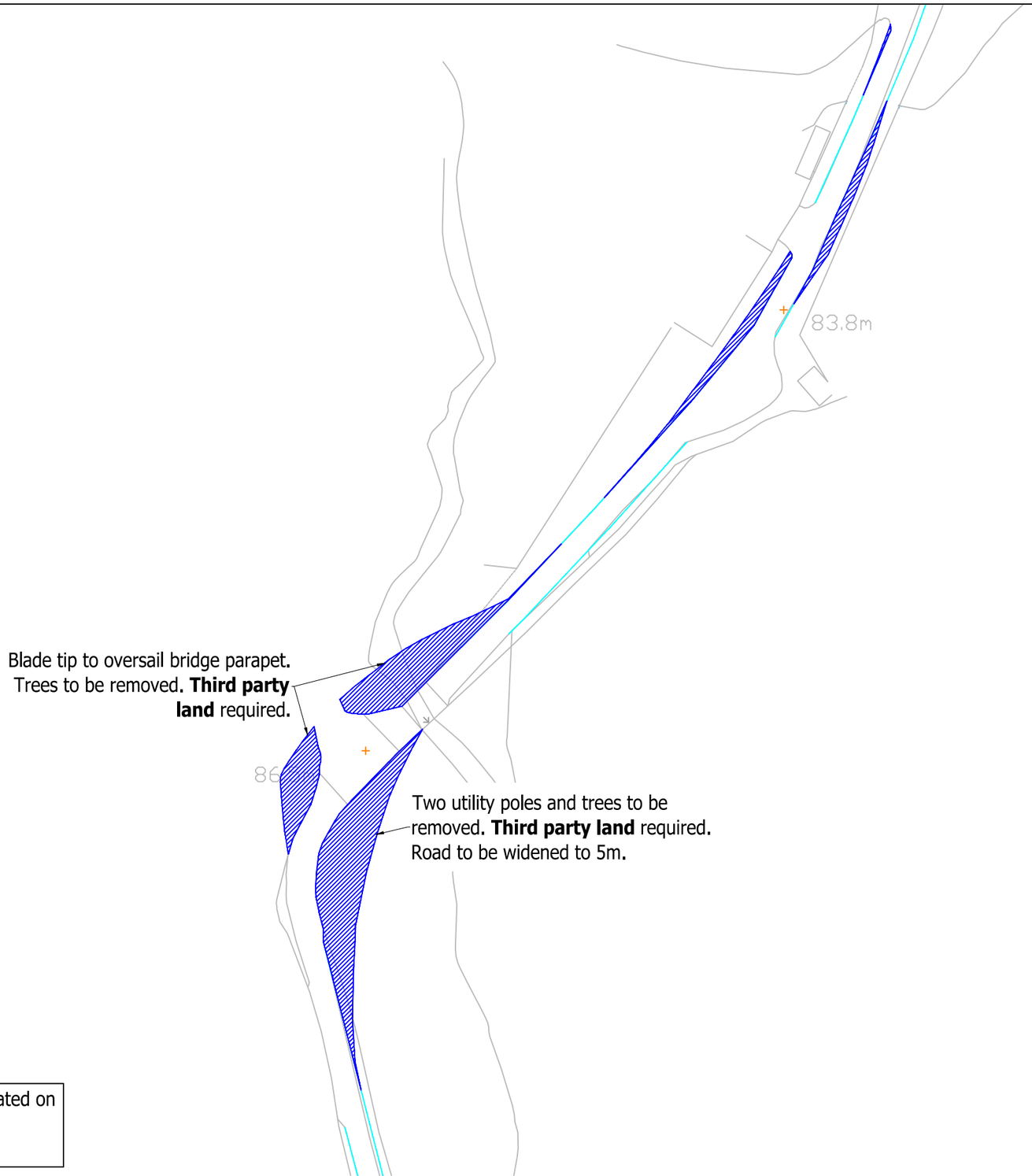
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK38

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

Revision: XXX



The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Toll

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		44

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

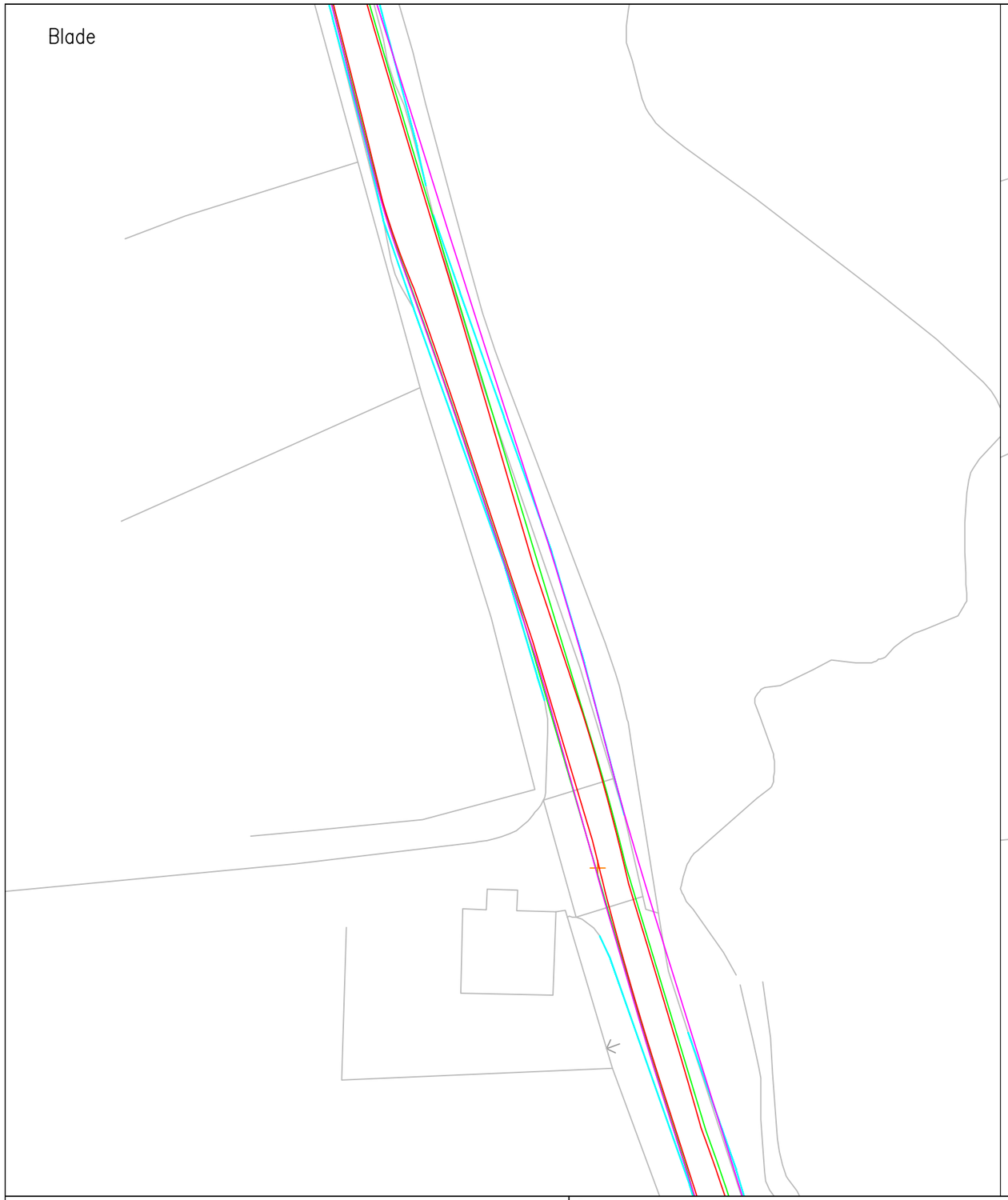
Drawing Status: Draft

Drawing No.: SK38A

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

Revision: XXX

Blade



Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Toll

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		45

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK39

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

Revision: XXX

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Toll

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		45

Scale: Custom @ A3

File No.: Knockcronal SG155 Tracking.dwg

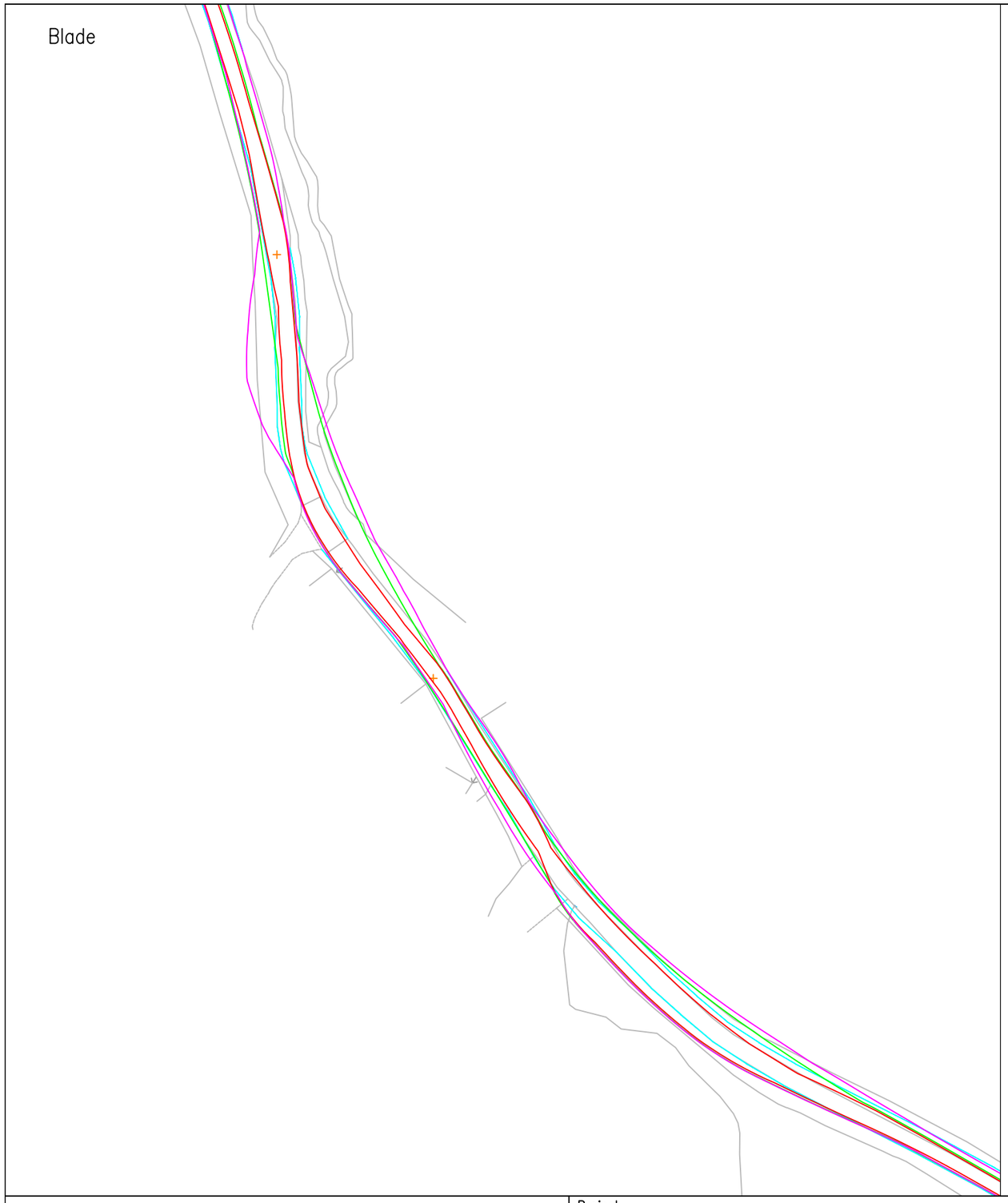
Drawing Status: Draft

Drawing No.: SK39A

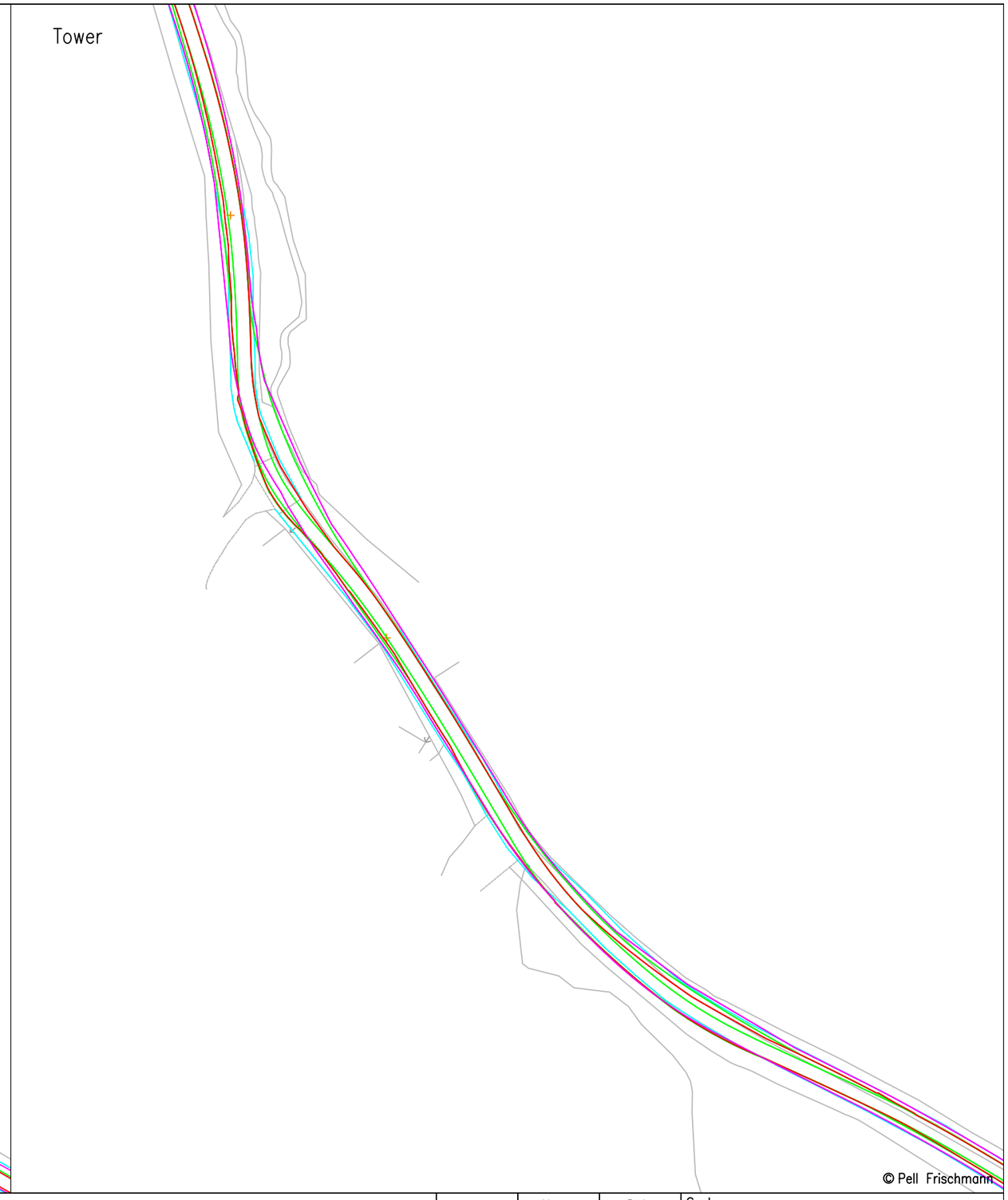
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		46

Scale: 1:1000 @ A3

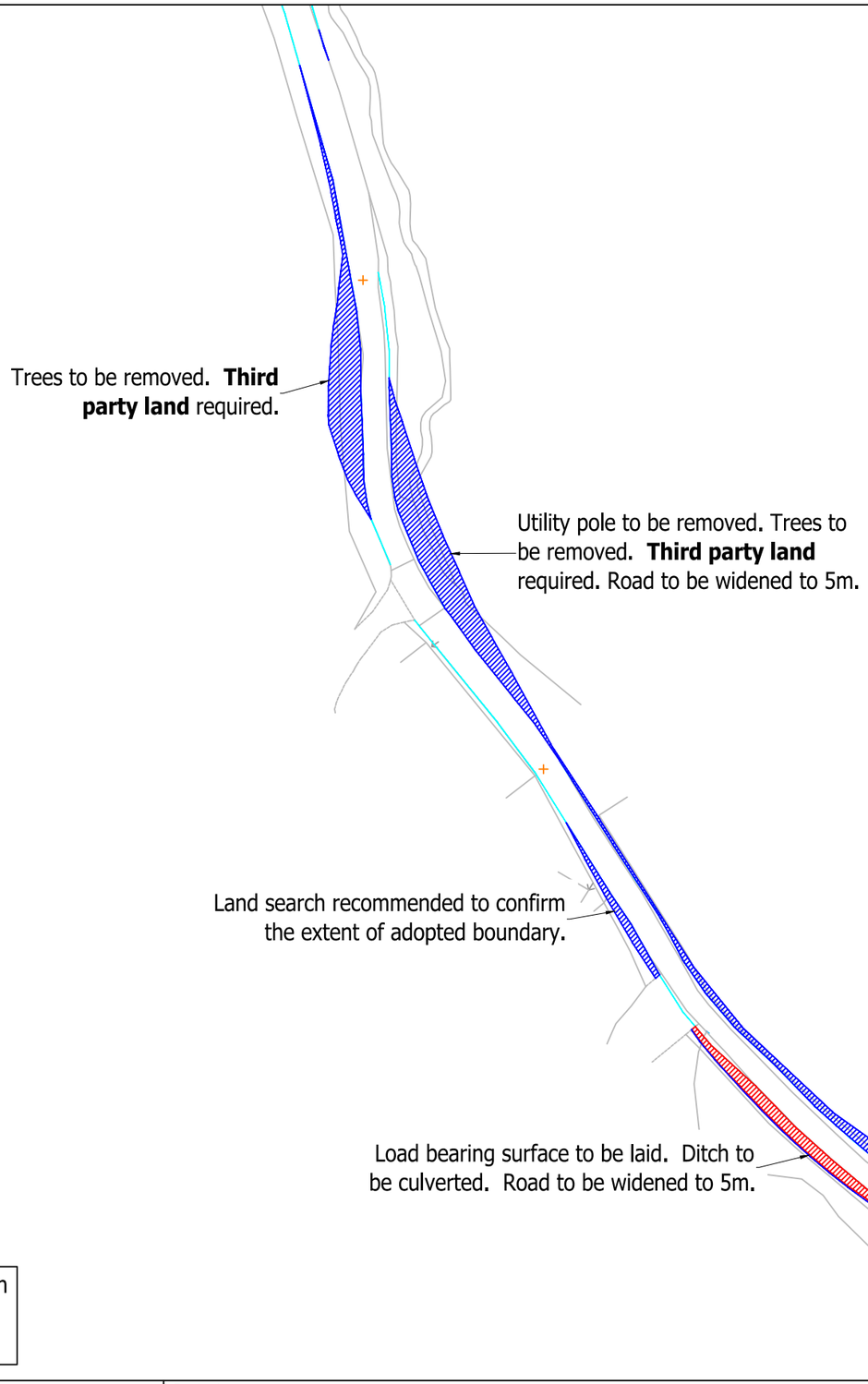
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK40

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

Revision: XXX



The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		46

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

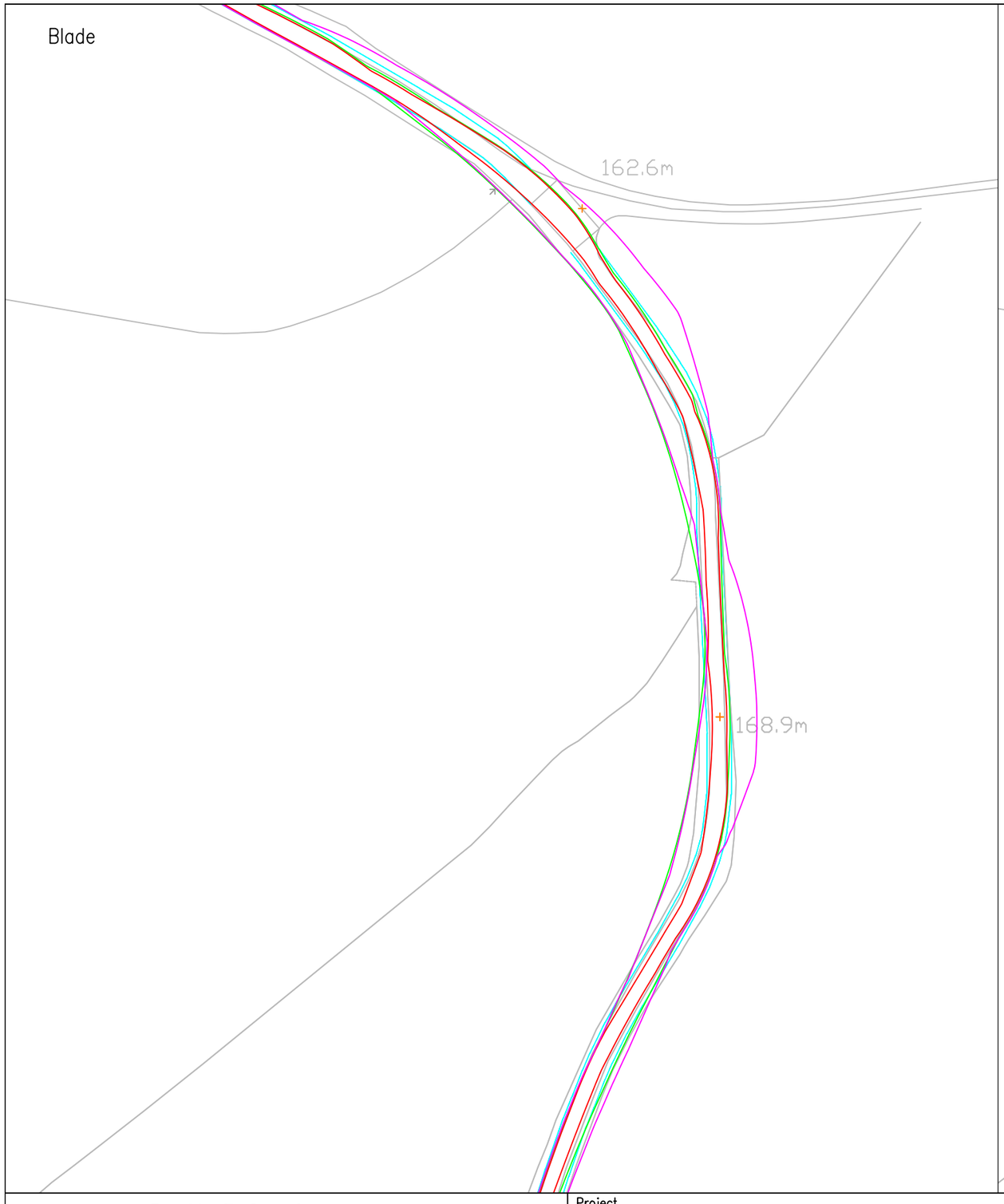
Drawing Status: Draft

Drawing No.: SK40A

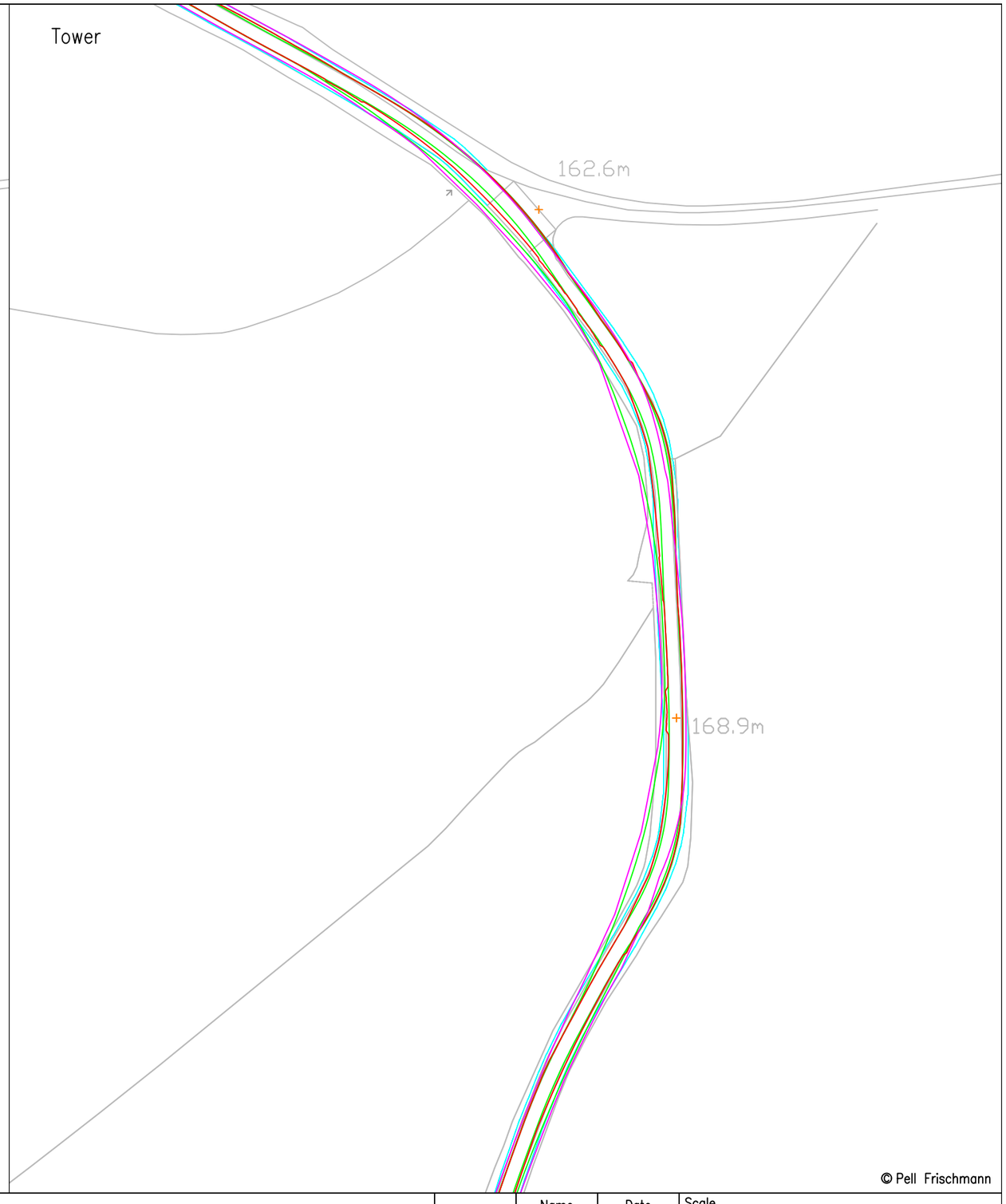
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Meadows

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		47

Scale: 1:1000 @ A3

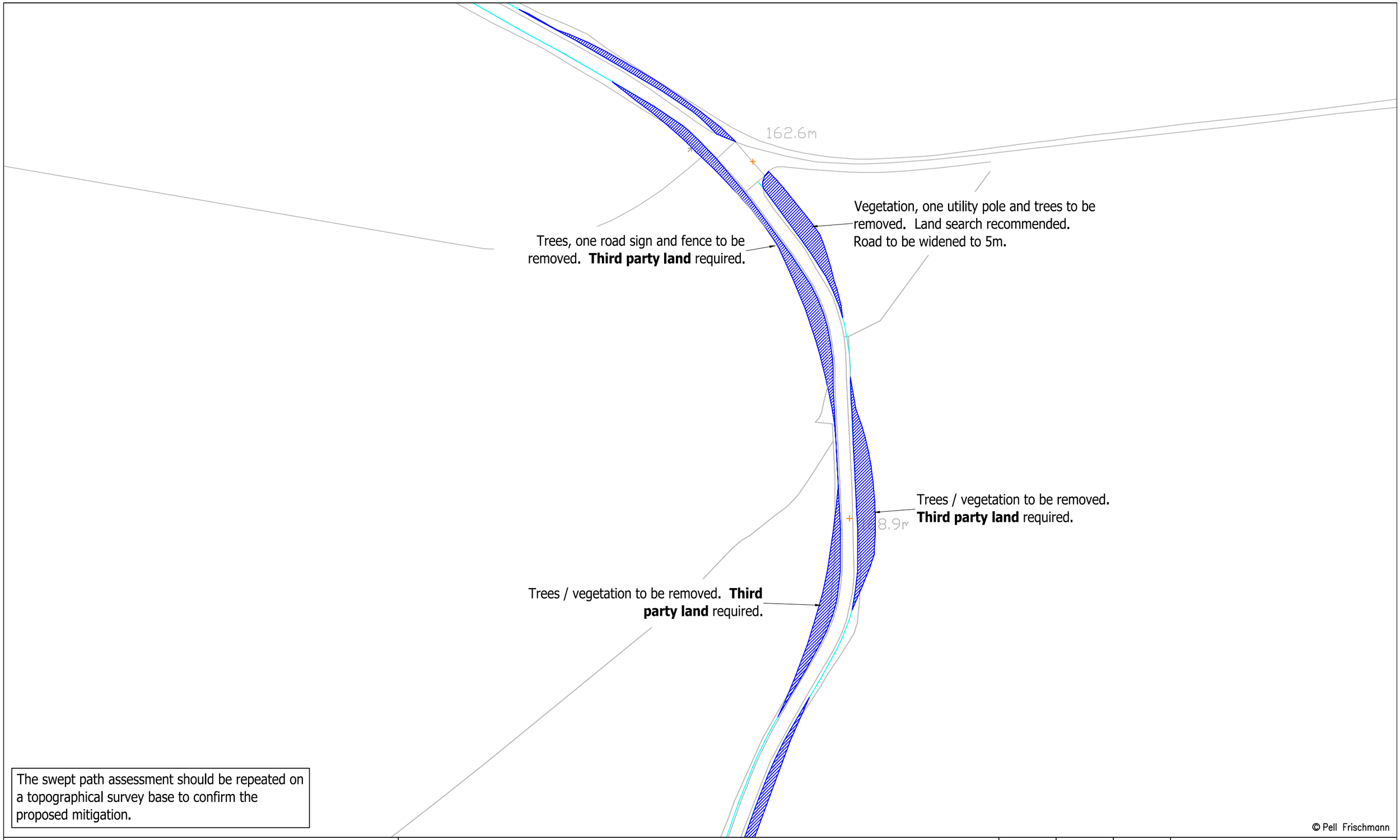
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK41

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

Revision: XXX



The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Auchalton Meadows

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		47

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

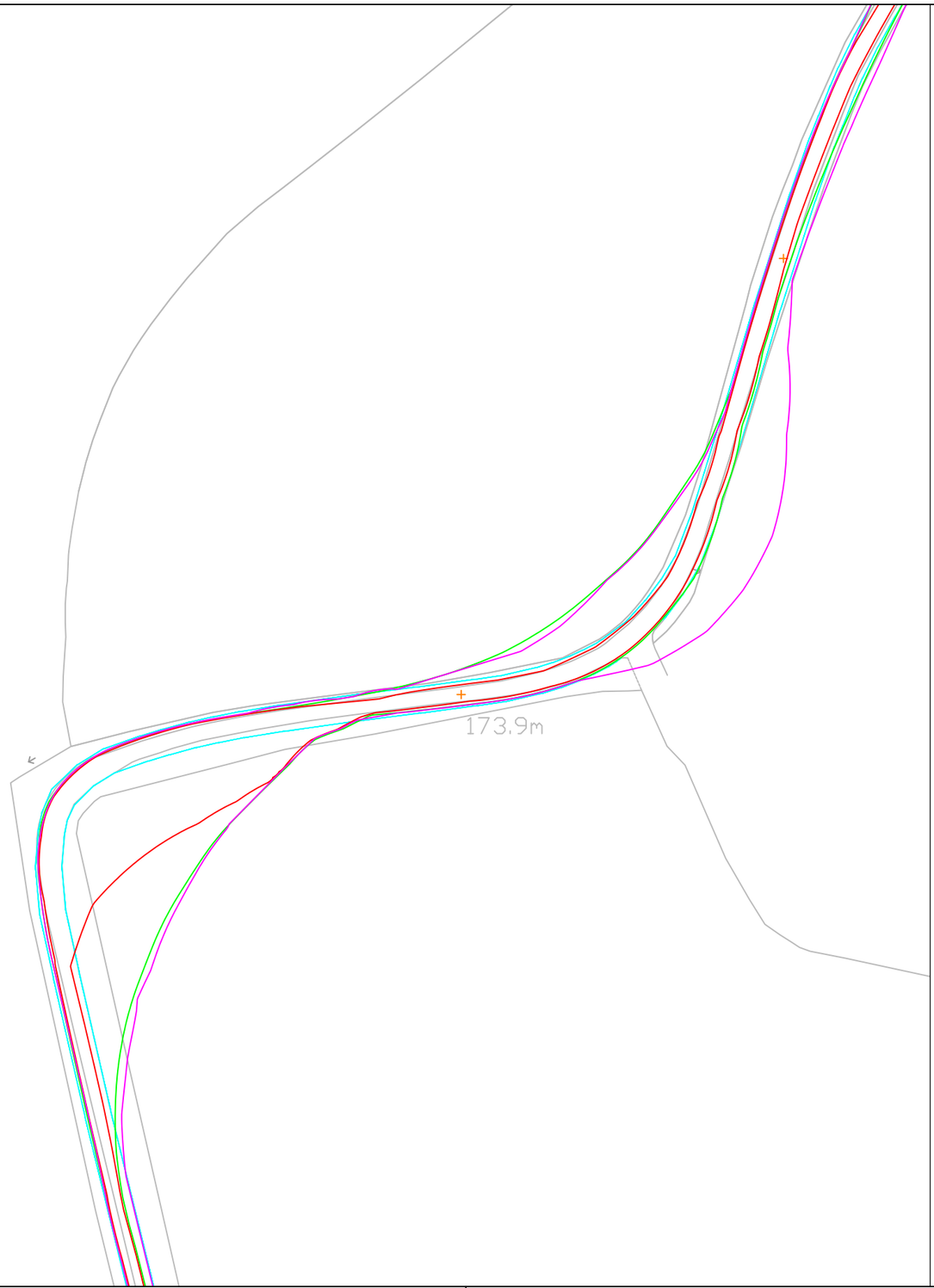
Drawing Status: Draft

Drawing No.: SK41A

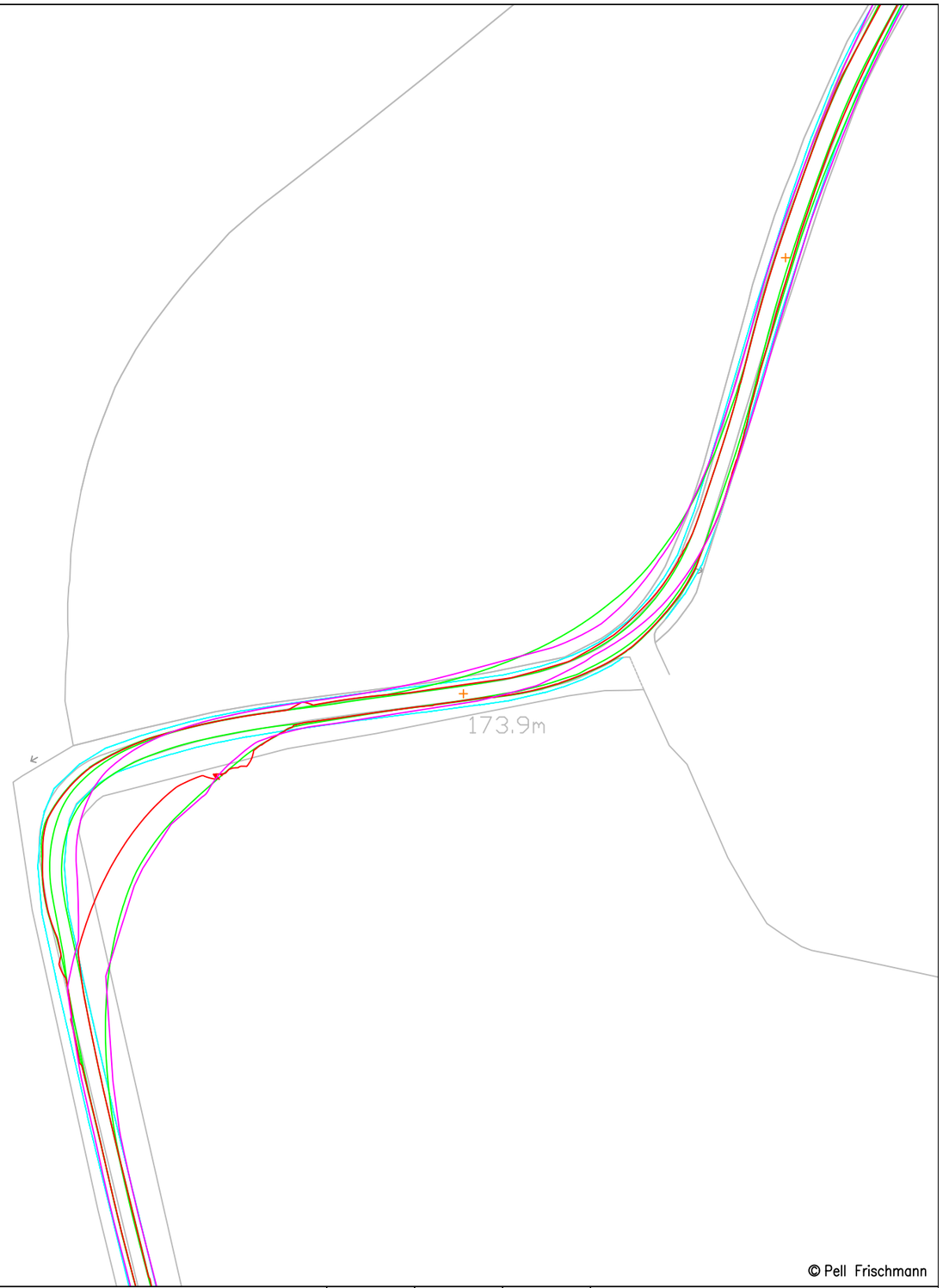
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Shawsknowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		48, 49

Scale: 1:1000 @ A3

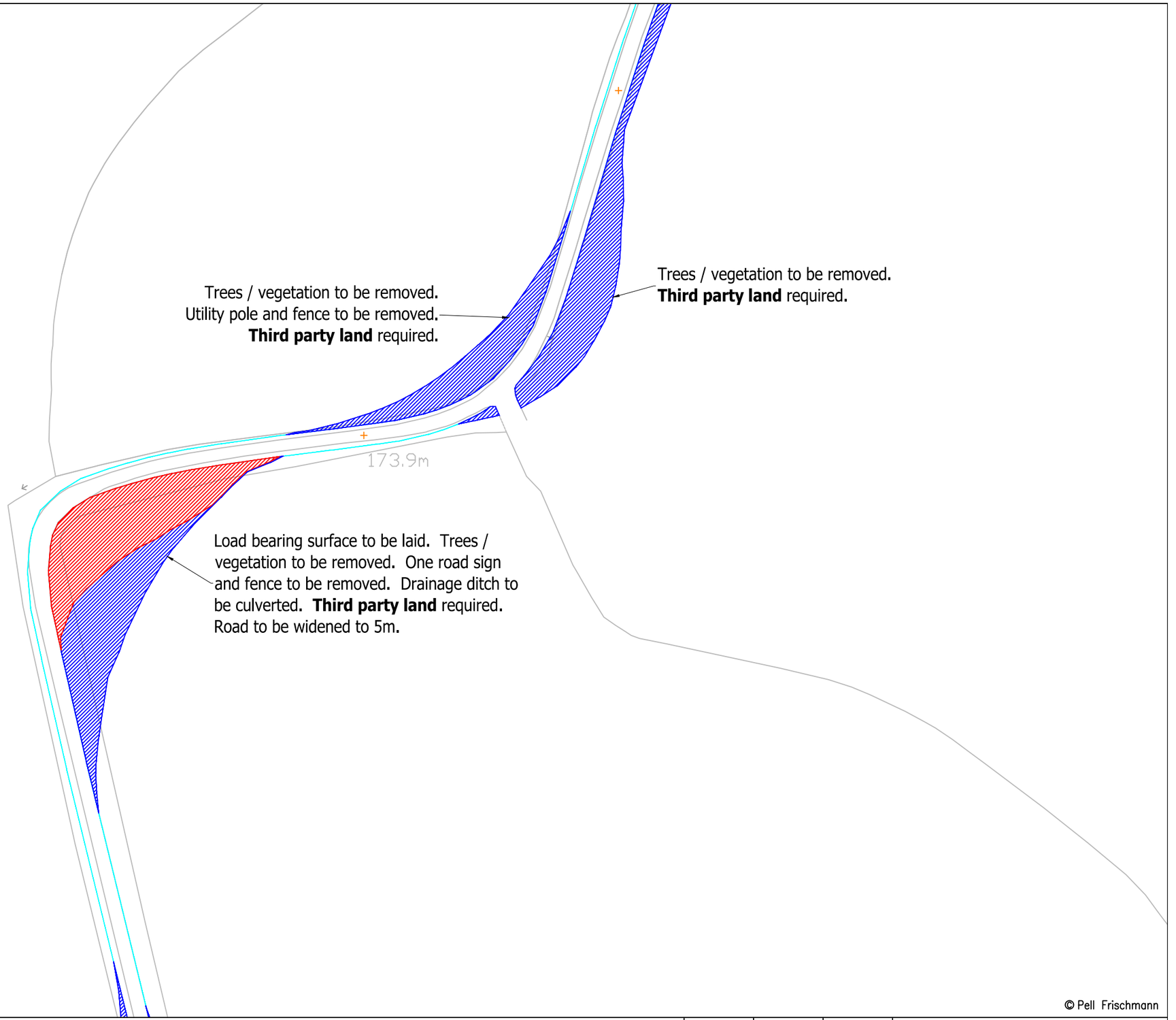
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK42

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

Revision: XXX



The swept path assessment should be repeated on a topographical survey base to confirm the proposed mitigation.

Pell Frischmann
93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Shawsknowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		48, 49

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

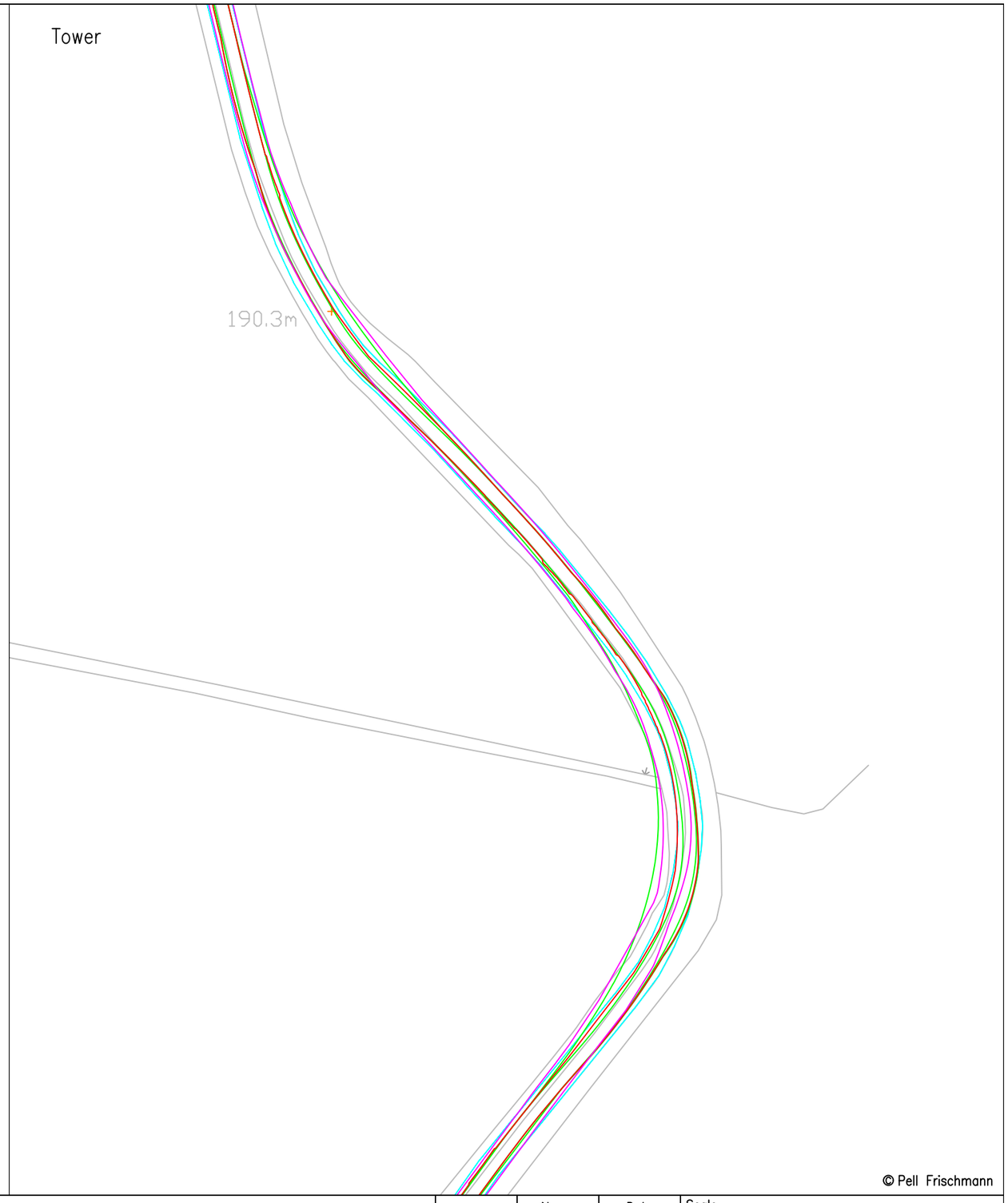
Drawing No.: SK42A

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

Revision: XXX

Blade

Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Shawsknowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		50, 51

Scale: 1:1000 @ A3

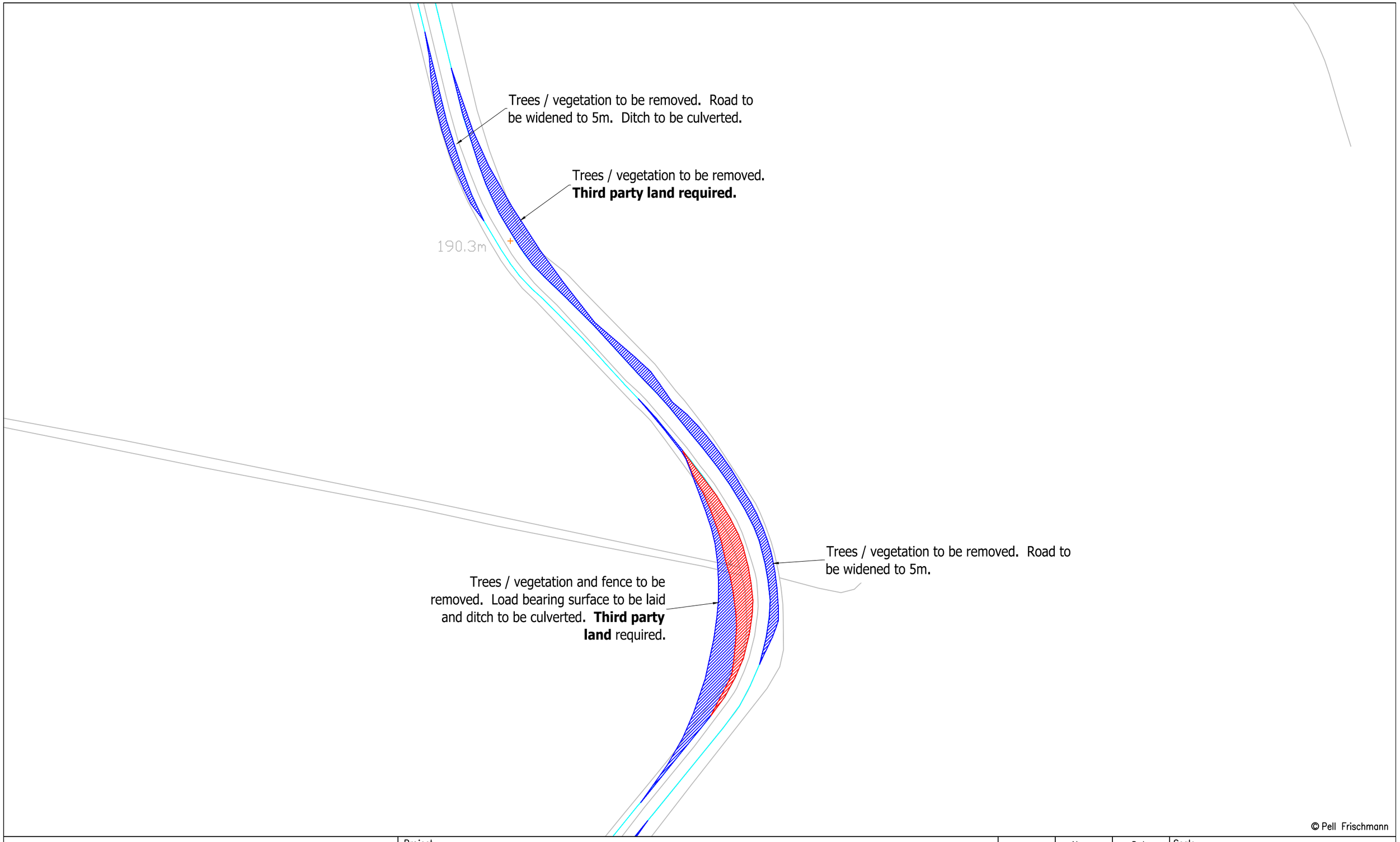
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK43

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Shawsknowe

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		50, 51

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

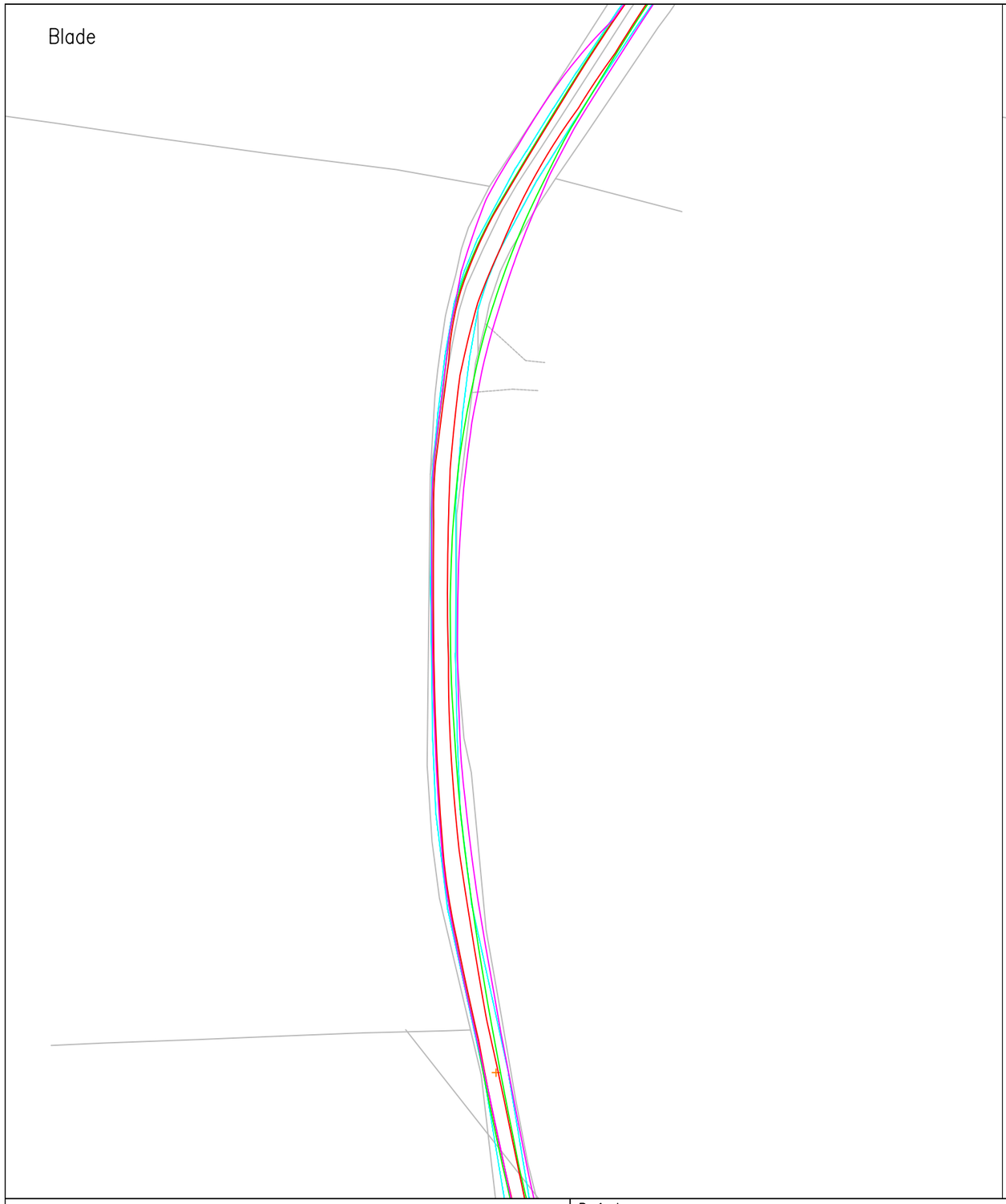
Drawing Status: Draft

Drawing No.: SK43A

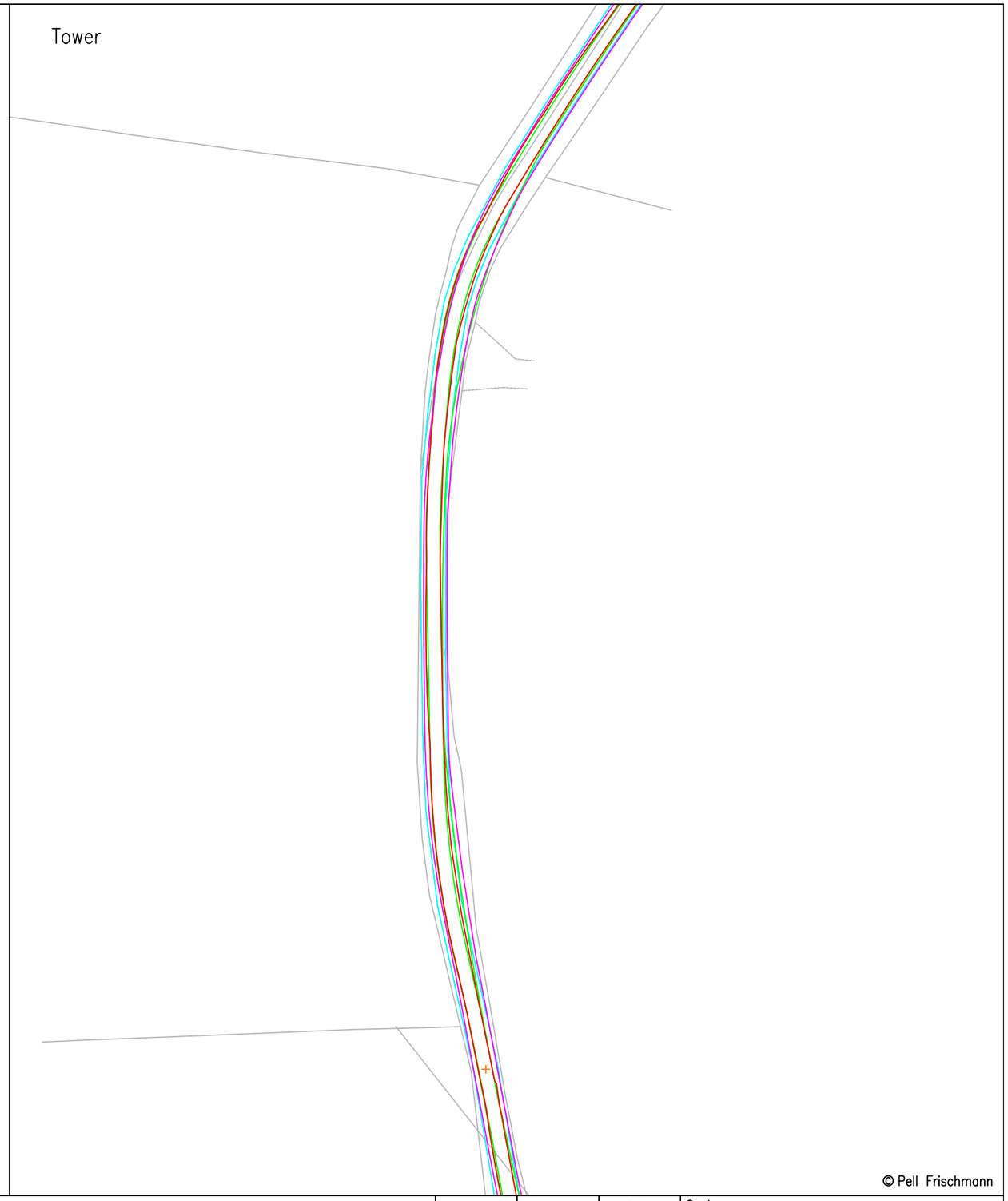
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 East of Cullochknowes

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		52

Scale: 1:1000 @ A3

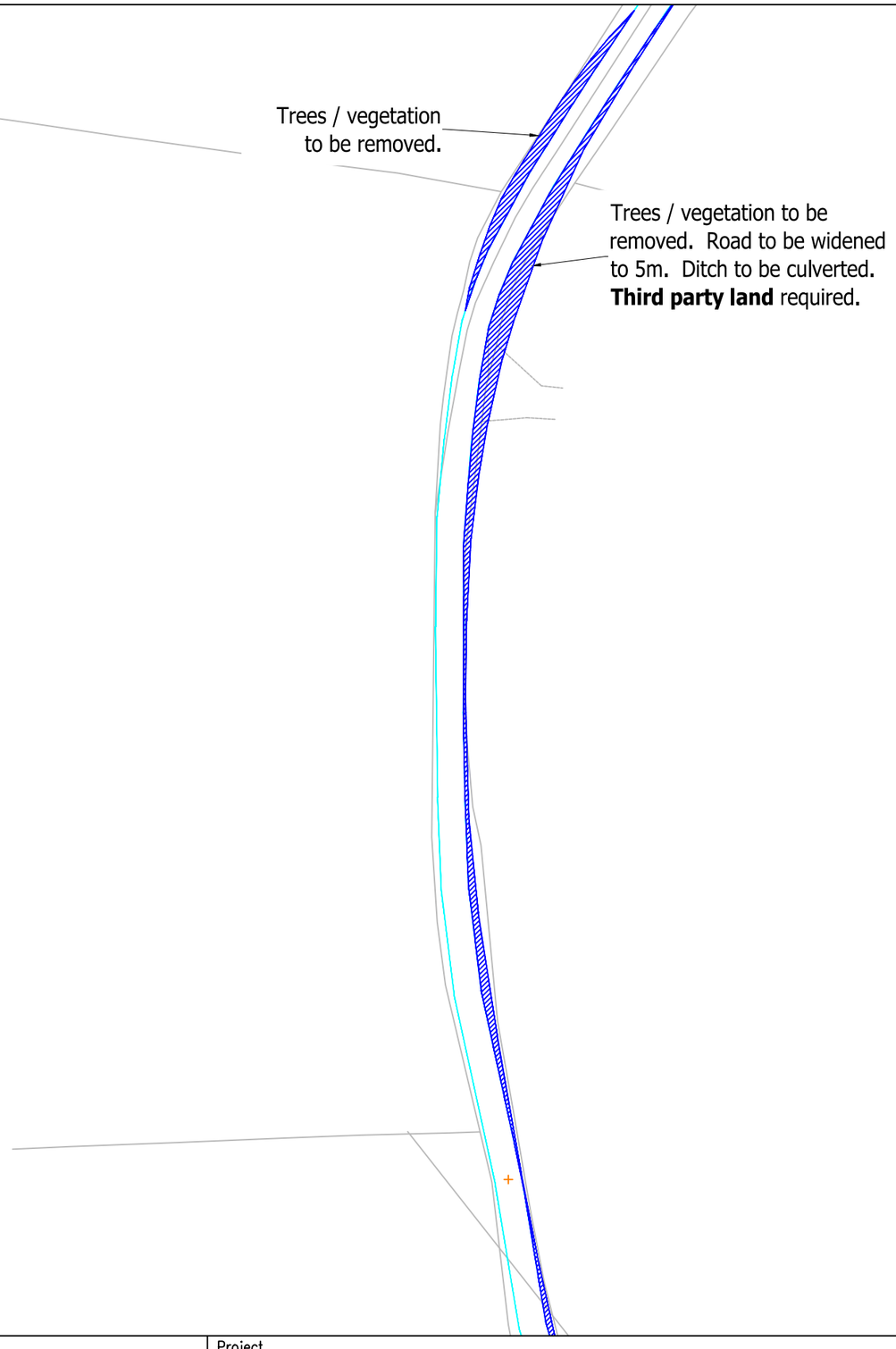
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK44

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 East of Cullochknowes

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		52

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

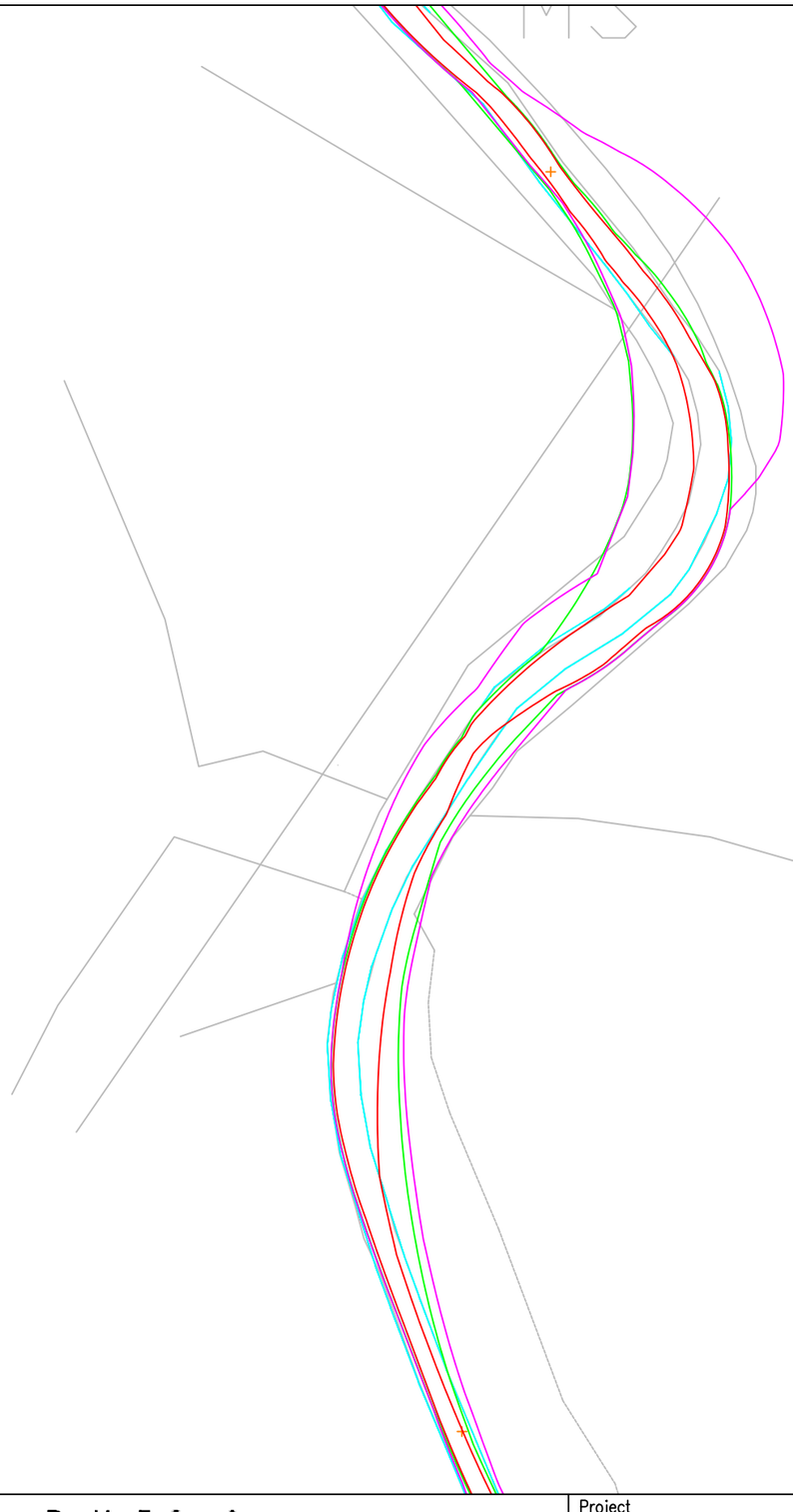
Drawing Status: Draft

Drawing No.: SK44A

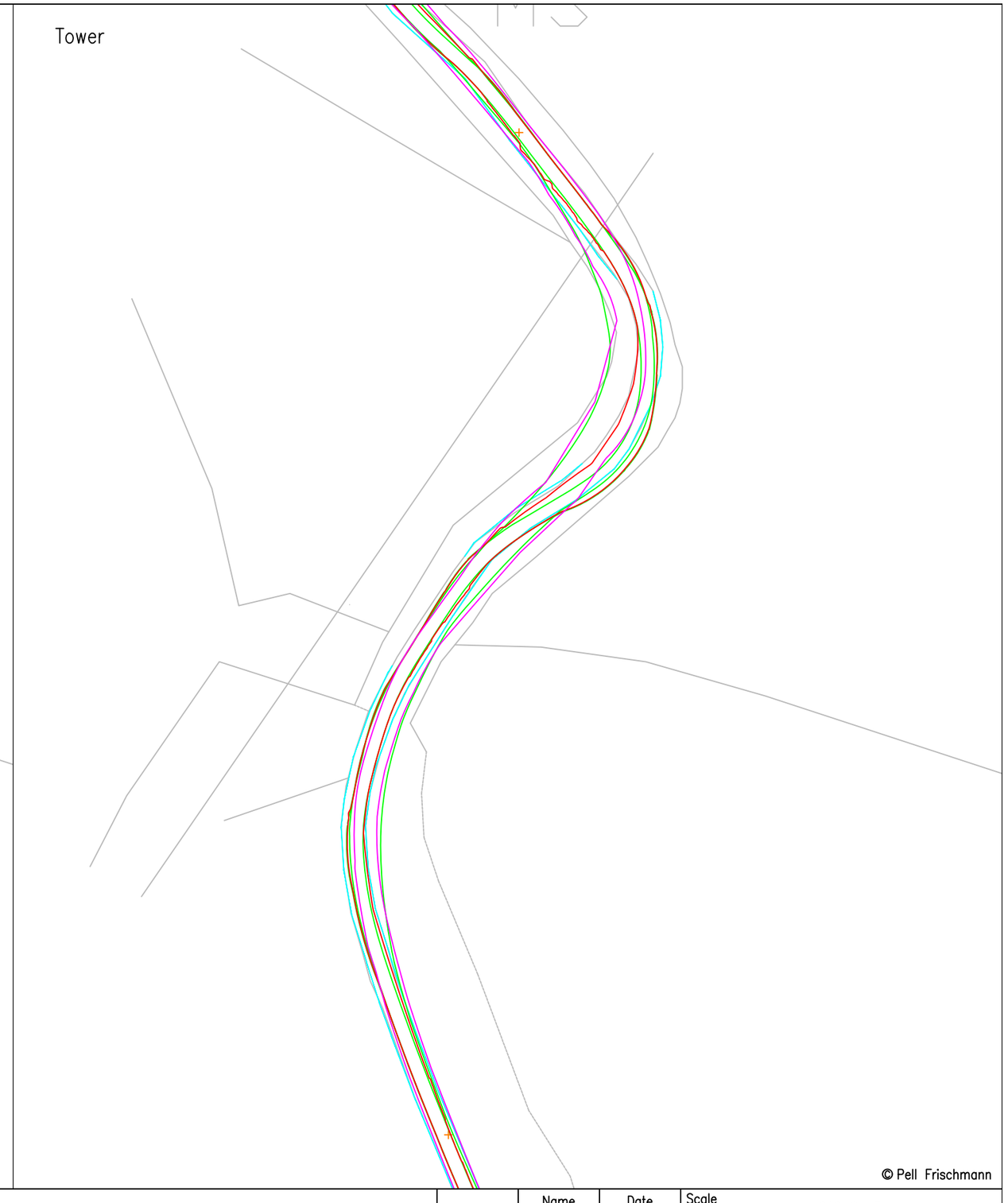
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Drumyork Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		53, 54

Scale: 1:1000 @ A3

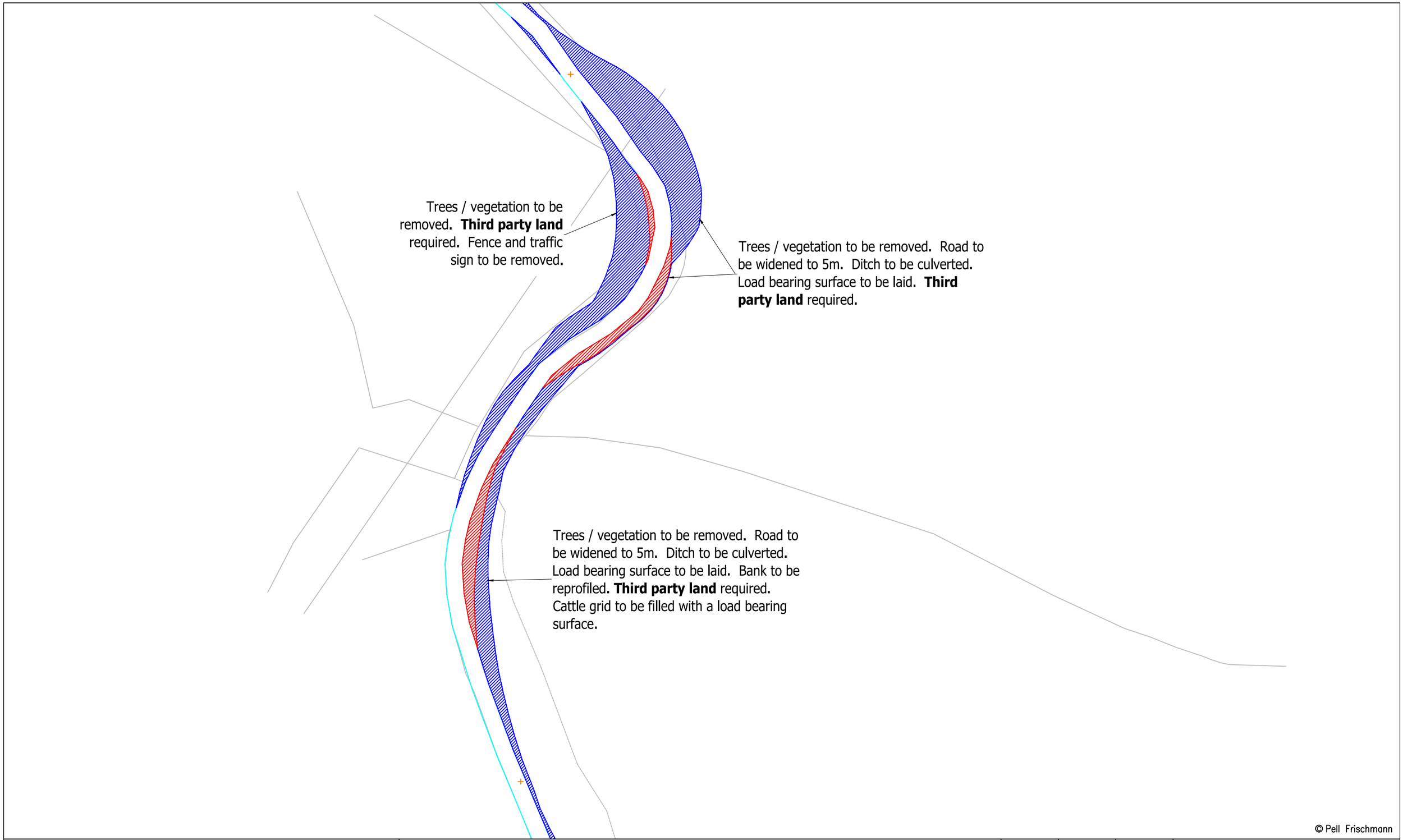
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK45

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Drumyork Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		53, 54

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK45A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		55

Scale: 1:1000 @ A3

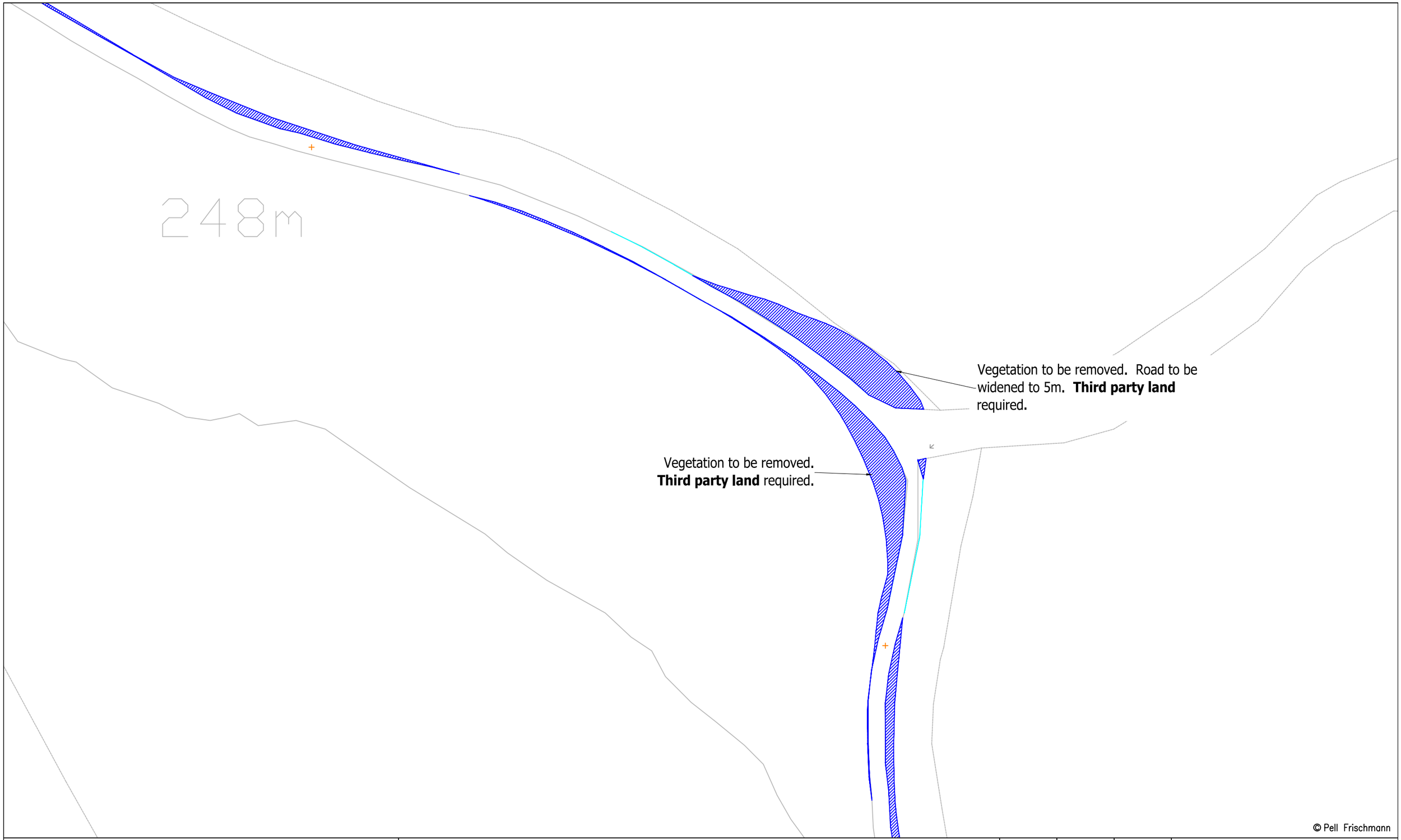
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK46

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		55

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK46A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		56

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK47

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

Revision: XXX

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		56

Scale: 1:1000 @ A3

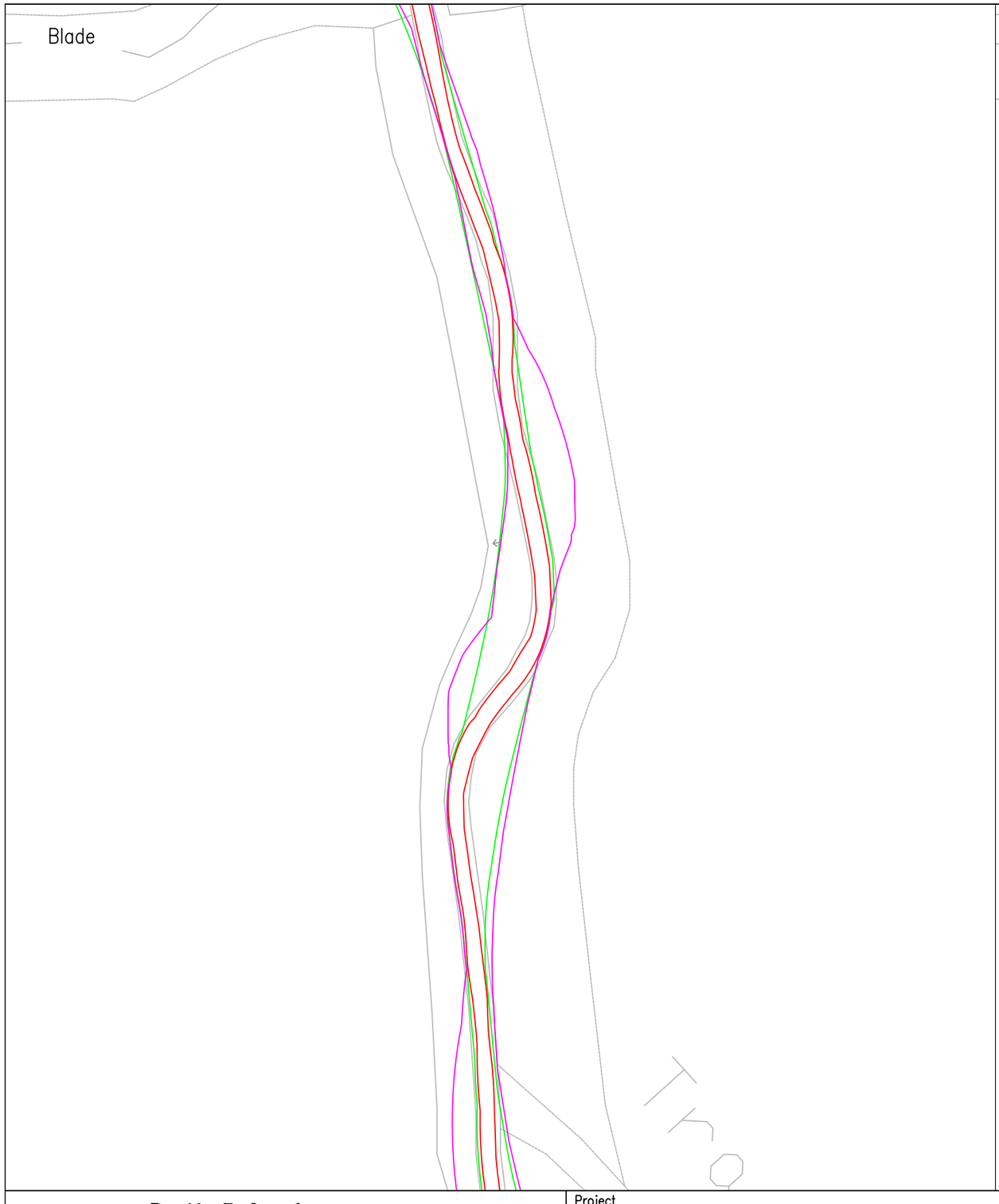
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK47A

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		57

Scale: 1:1000 @ A3

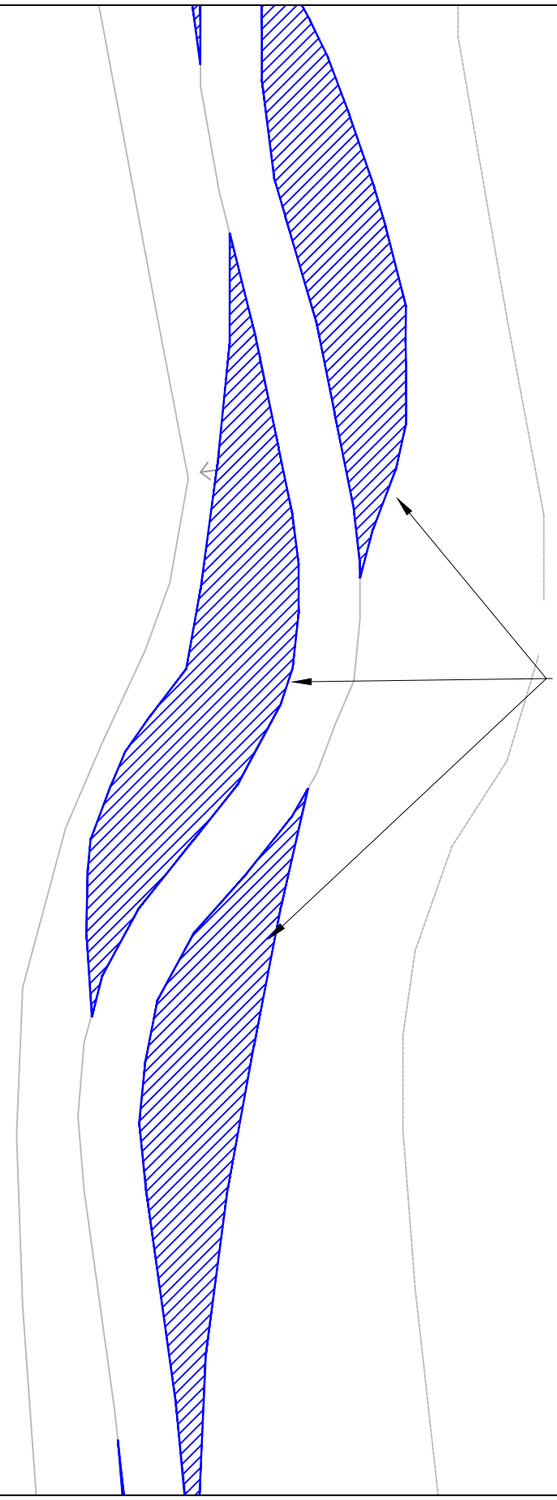
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK48

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

Revision: XXX



Vegetation to be removed. Land search to be completed to confirm the extent of adopted boundary.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		57

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

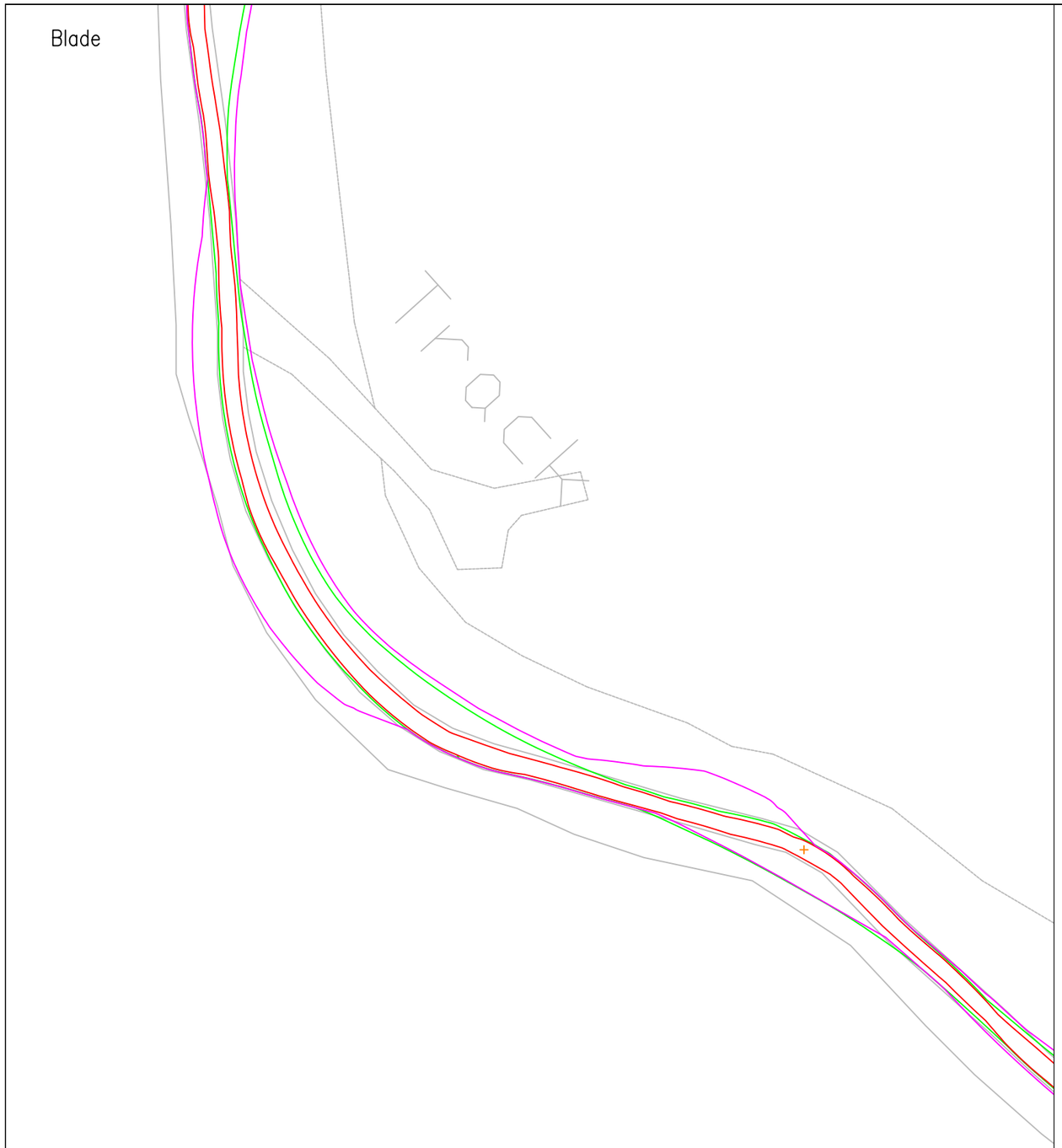
Drawing Status: Draft

Drawing No.: SK48A

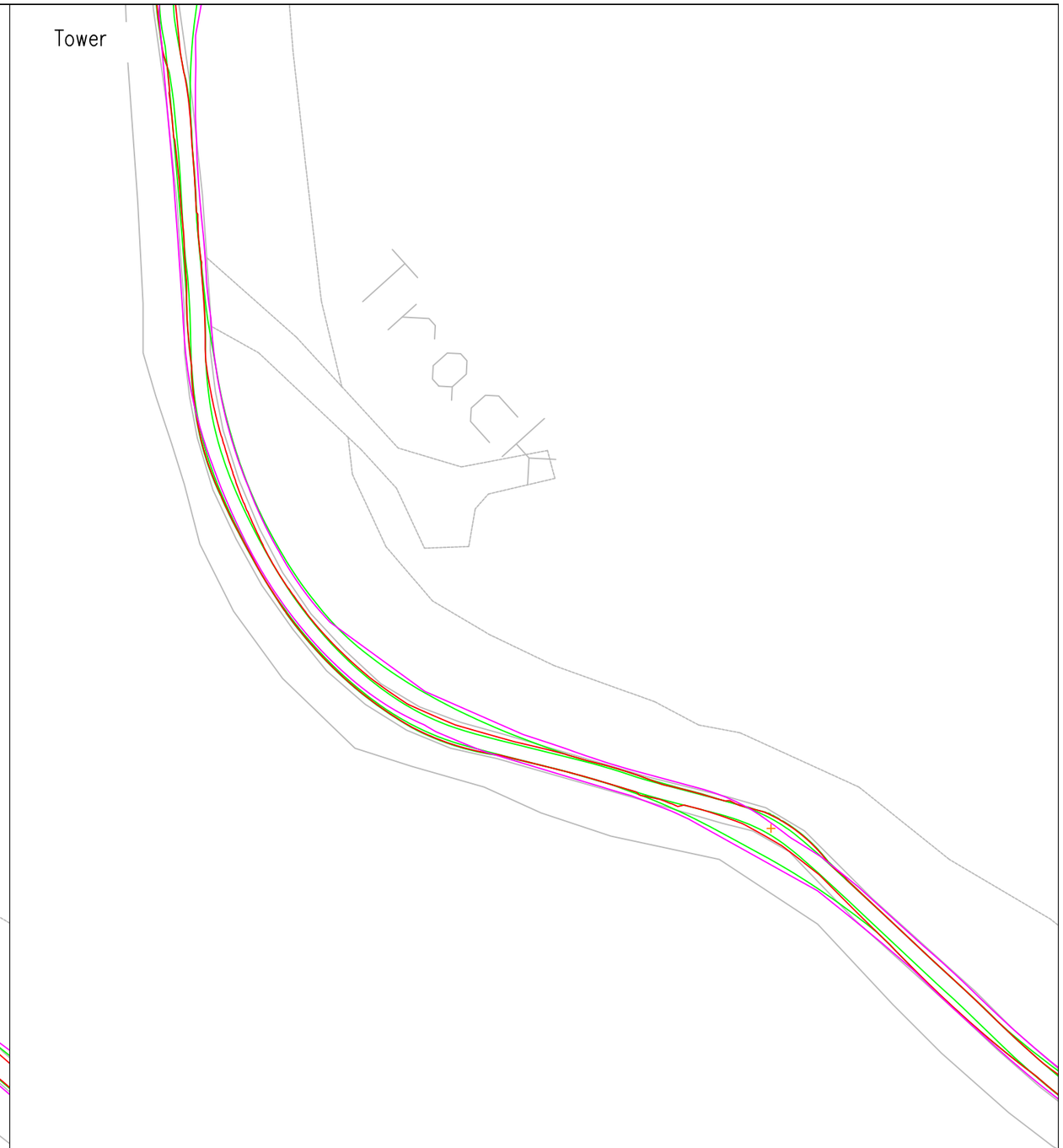
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		58

Scale: 1:1000 @ A3

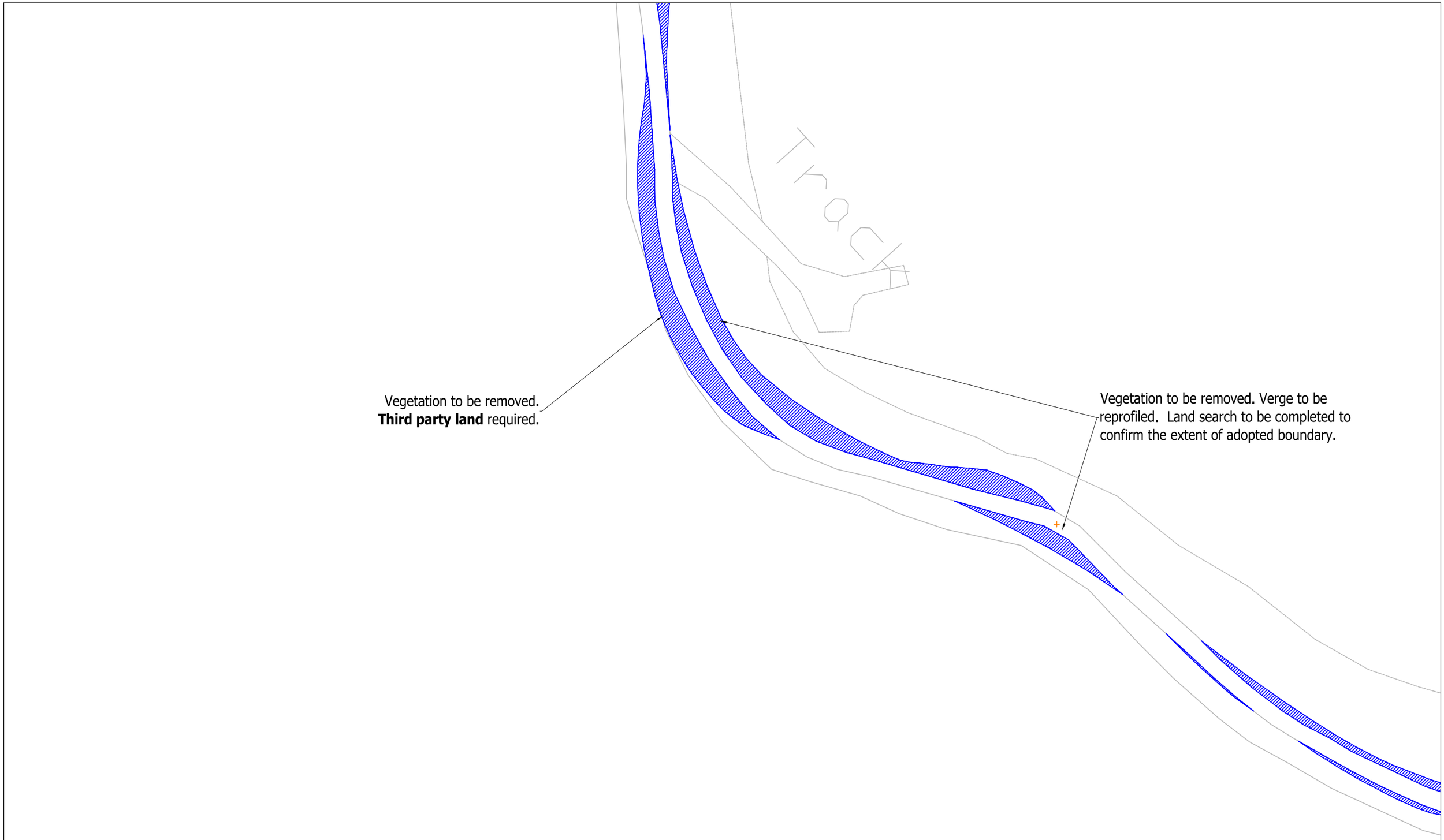
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK49

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 West of Clauchrie Hill

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		58

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK49A

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

Revision: XXX

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Deil's Elbow

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		59, 60

Scale: 1:1000 @ A3

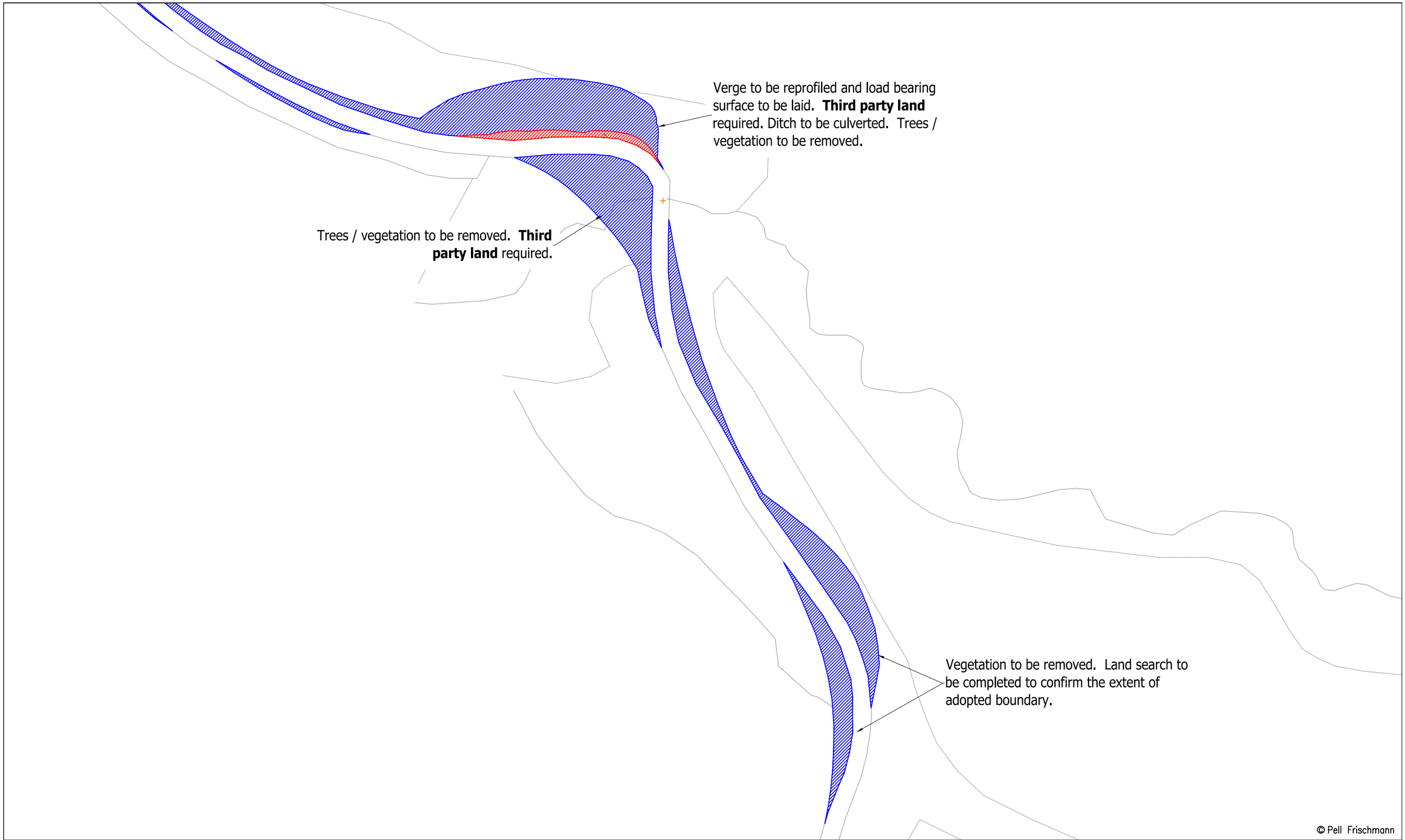
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK50

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Deil's Elbow

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		59,60

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK50A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 South of Deil's Elbow

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		61

Scale: 1:1000 @ A3

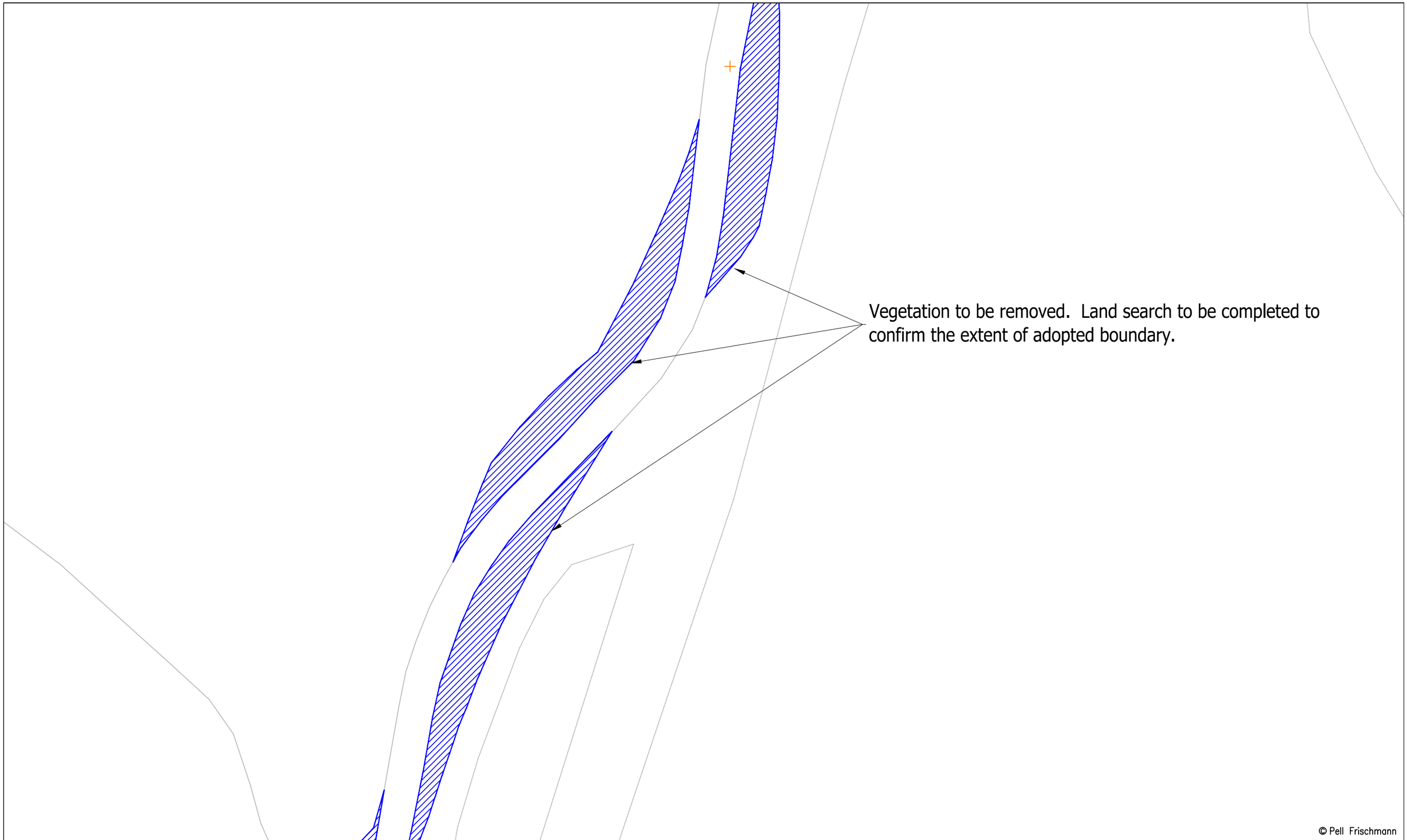
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK51

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

Revision: XXX



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 South of Deil's Elbow

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		61

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK51A

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

Revision: XXX

Blade

Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Proposed Site Entrance

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		62

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK52

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

Revision: XXX

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Proposed Site Entrance

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		62

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

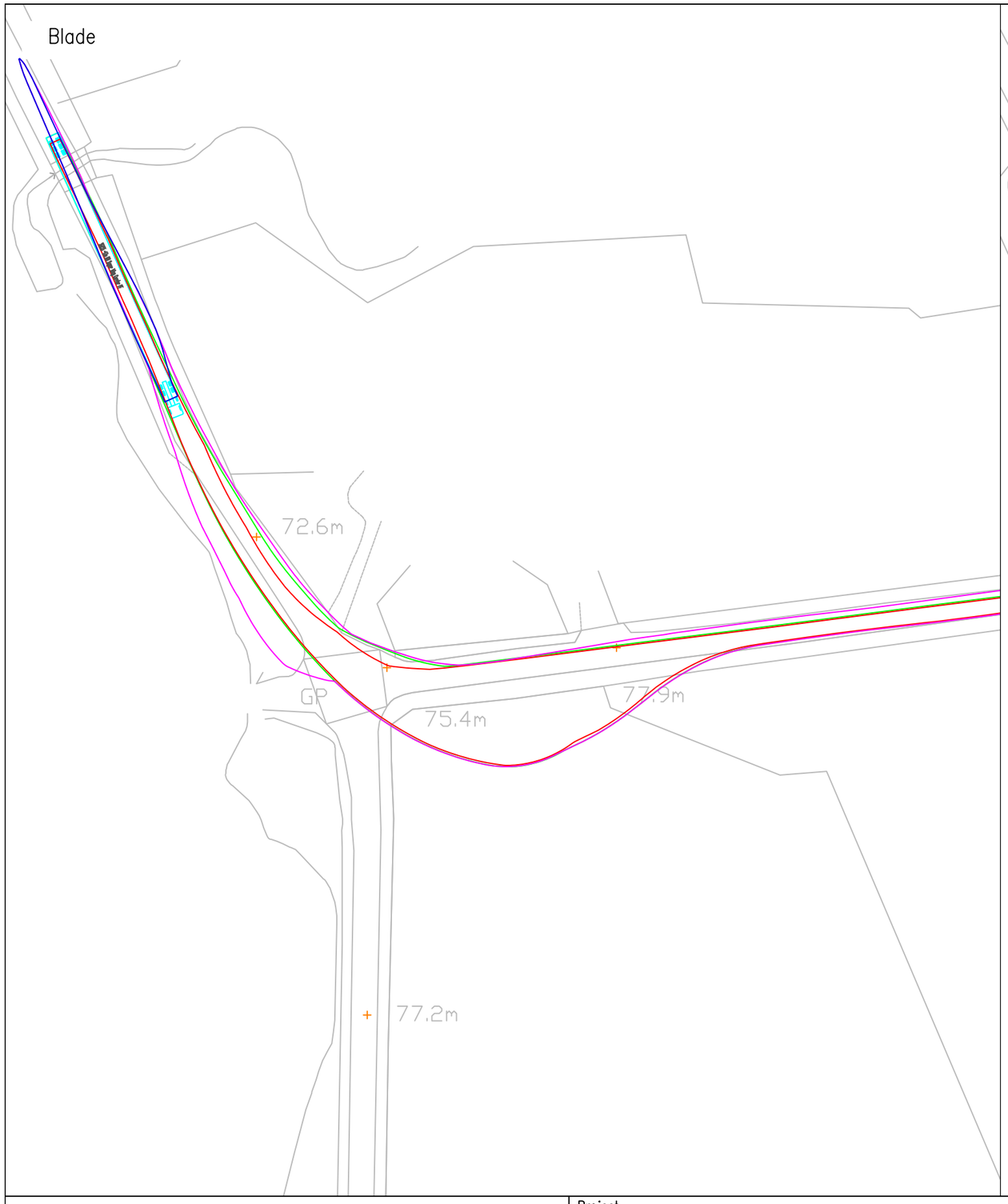
Drawing Status: Draft

Drawing No.: SK52A

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

Revision: XXX

Blade



Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		41, 63

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK53

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

Revision: XXX

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B7023 Cloyntie Bridge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		41, 63

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

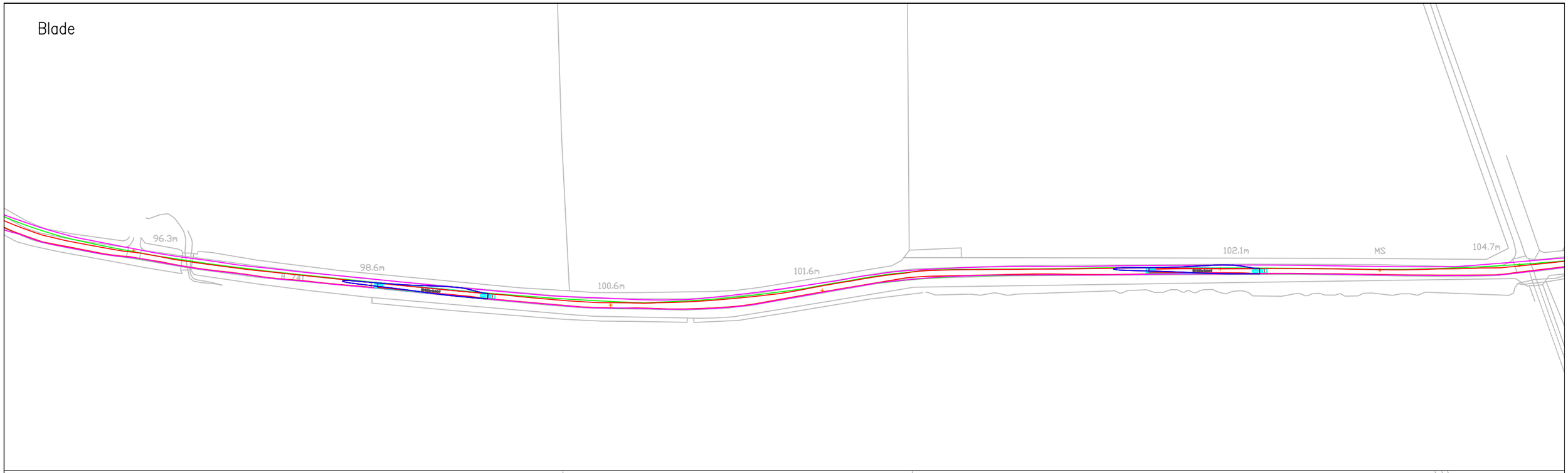
Drawing Status: Draft

Drawing No.: SK53A

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

Revision: XXX

Blade



Tower

Pell Frischmann
93 GEORGE STREET, EDINBURGH. EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Drumquhill Bends

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		64,65,66

Scale: 1:2000 @ A3

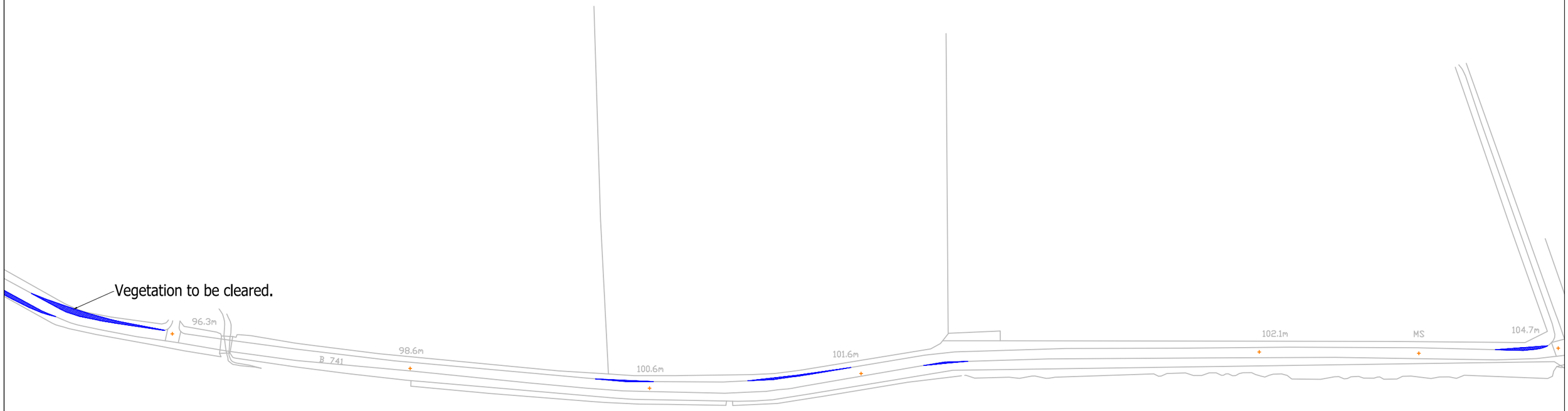
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK54

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Drumquhill Bends

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		64,65,66

Scale: 1:2000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

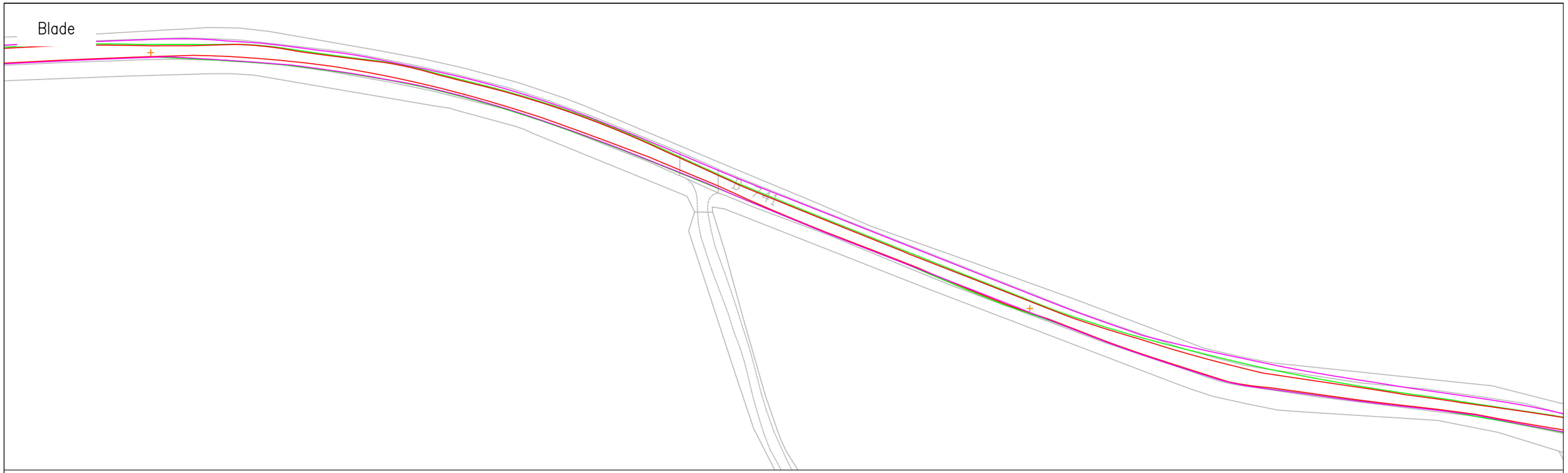
Drawing Status: Draft

Drawing No.: SK54A

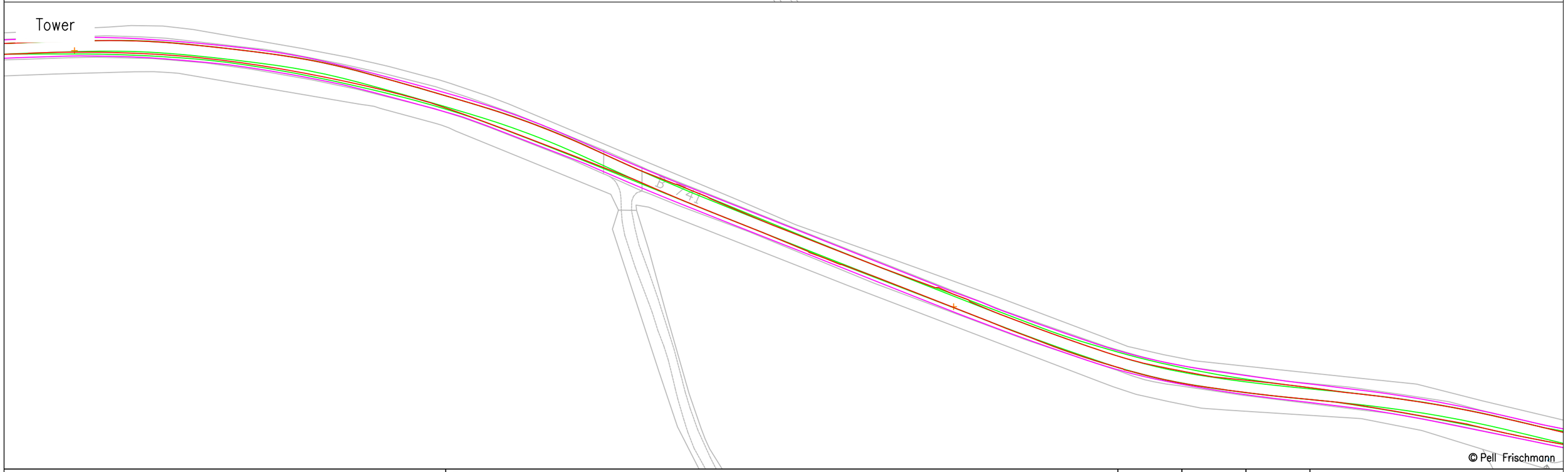
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Balgreggan Bends

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		67, 68

Scale: 1:1000 @ A3

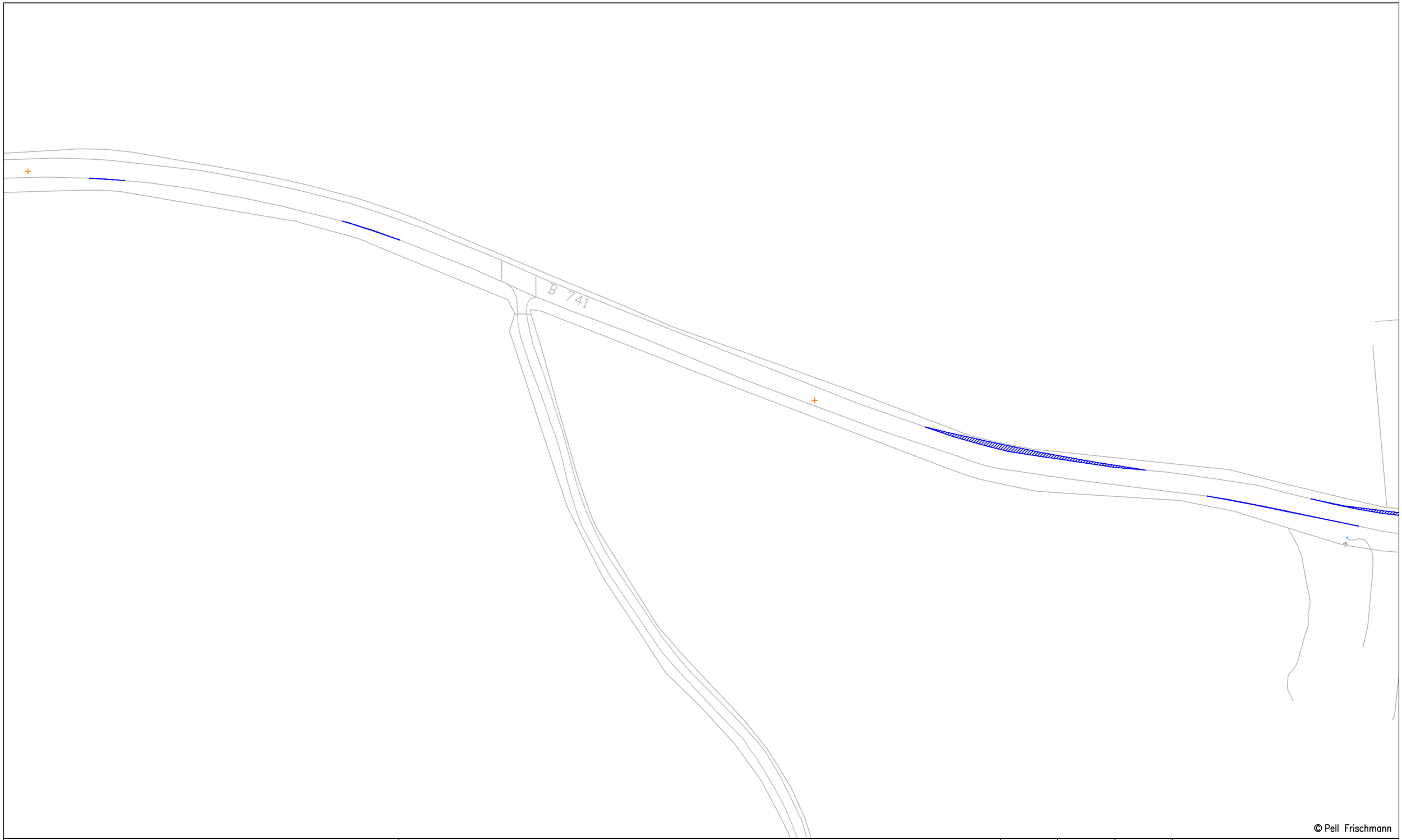
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK55

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Balgreggan Bends

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		67,68

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

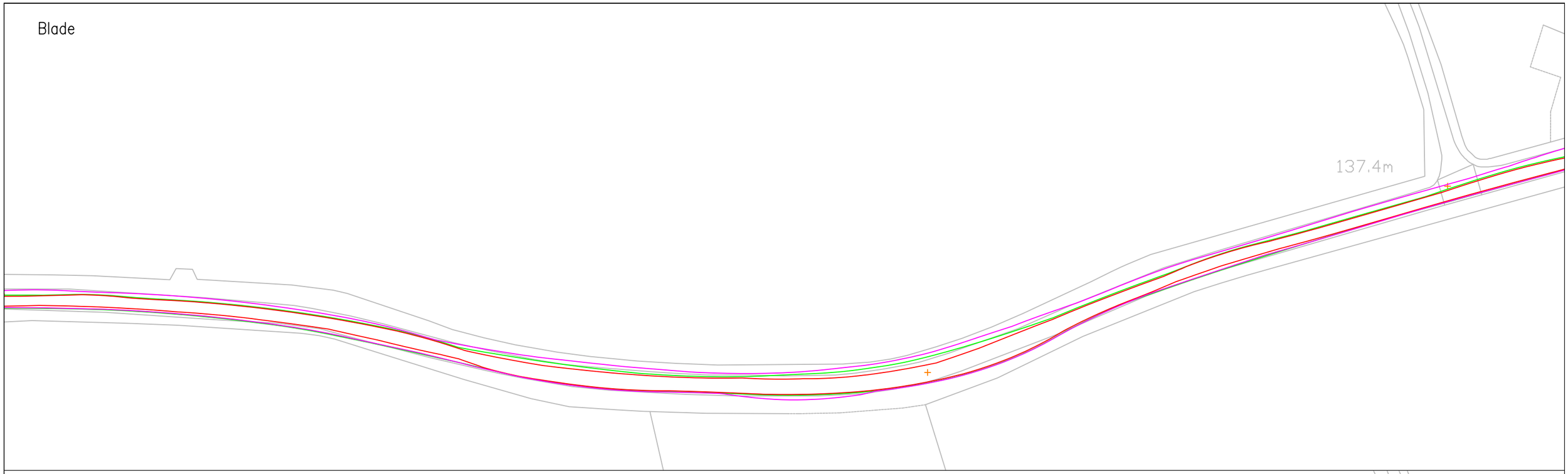
Drawing Status: Draft

Drawing No.: SK55A

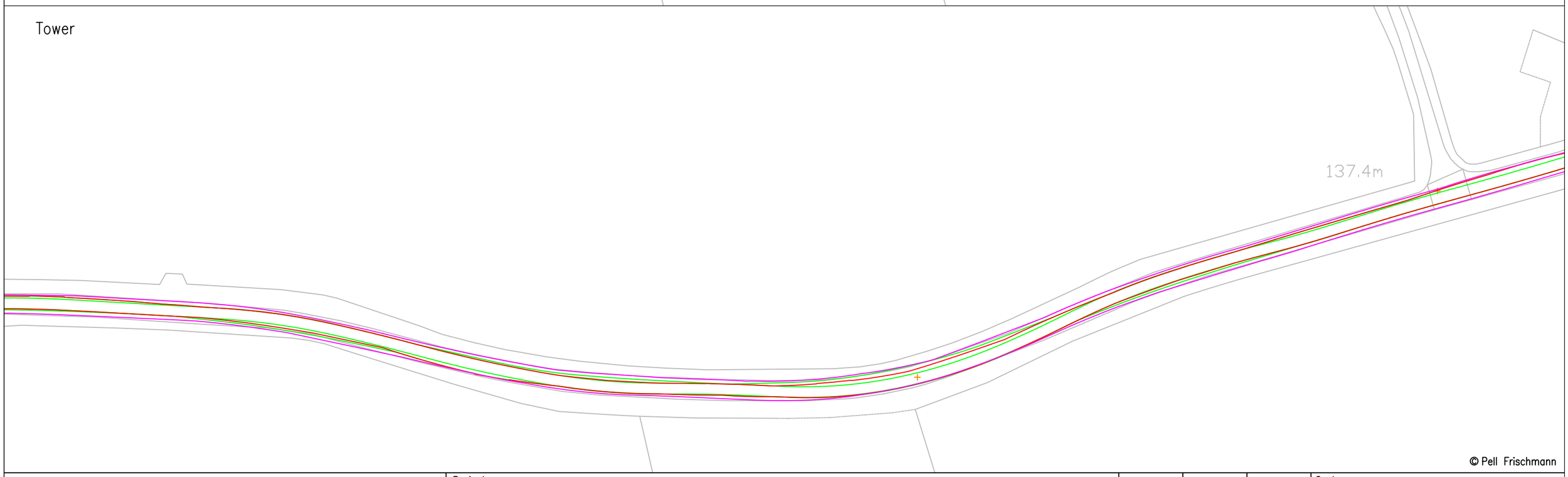
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 West of Girvan Lodge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		69

Scale: 1:1000 @ A3

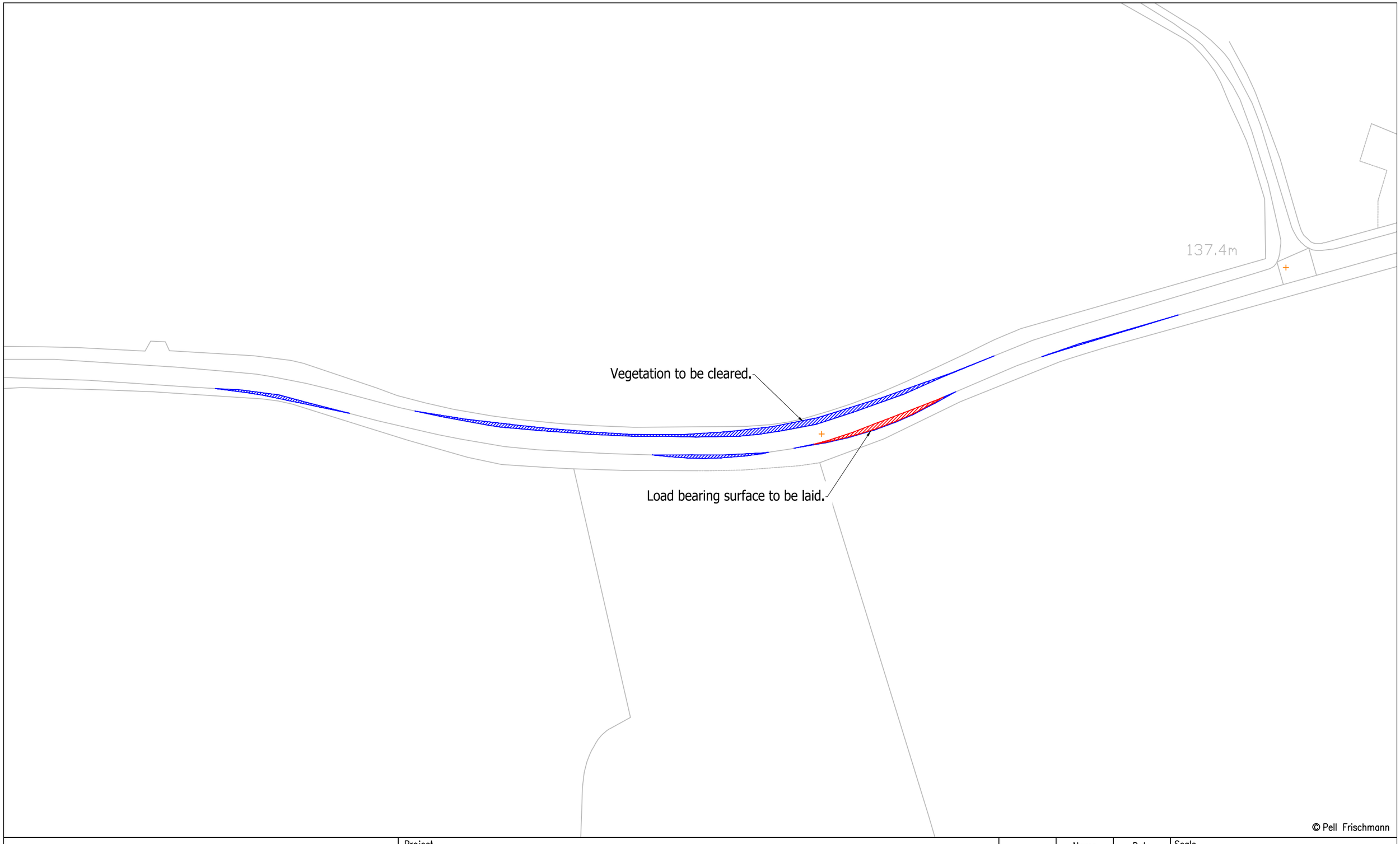
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK56

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 West of Girvan Lodge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		69

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

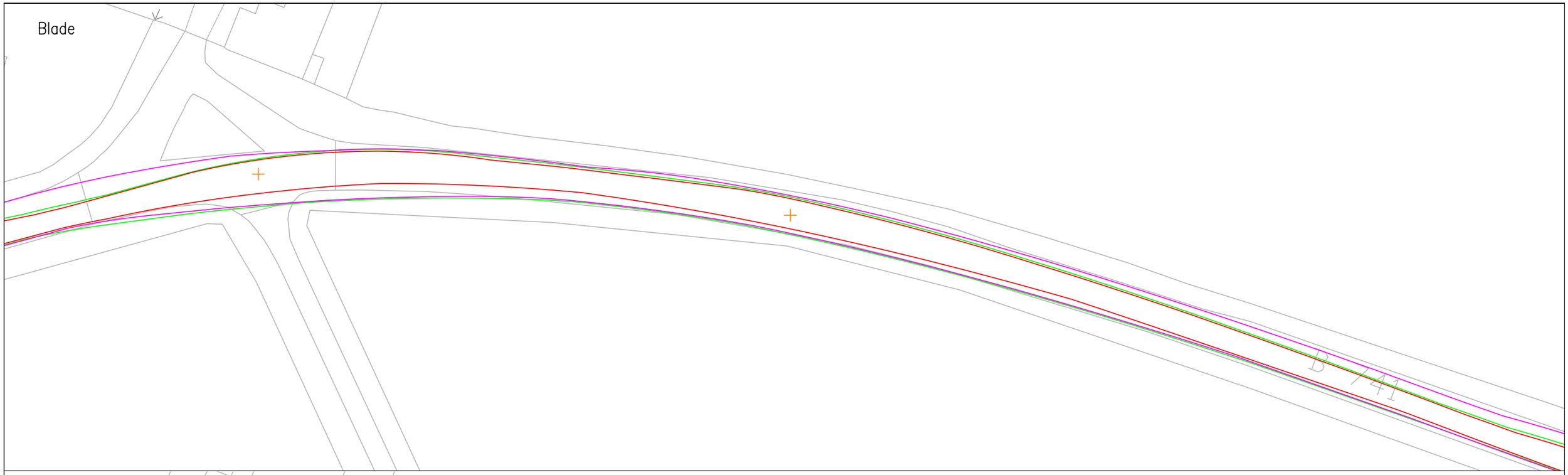
Drawing Status: Draft

Drawing No.: SK56A

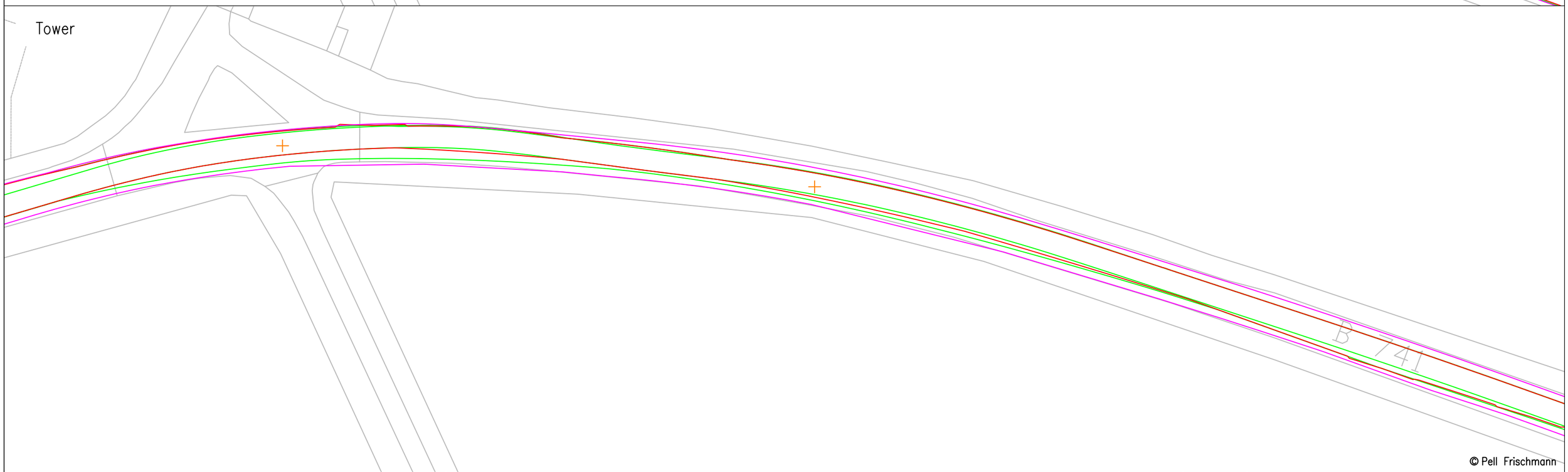
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Girvan Lodge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		70

Scale: 1:500 @ A3

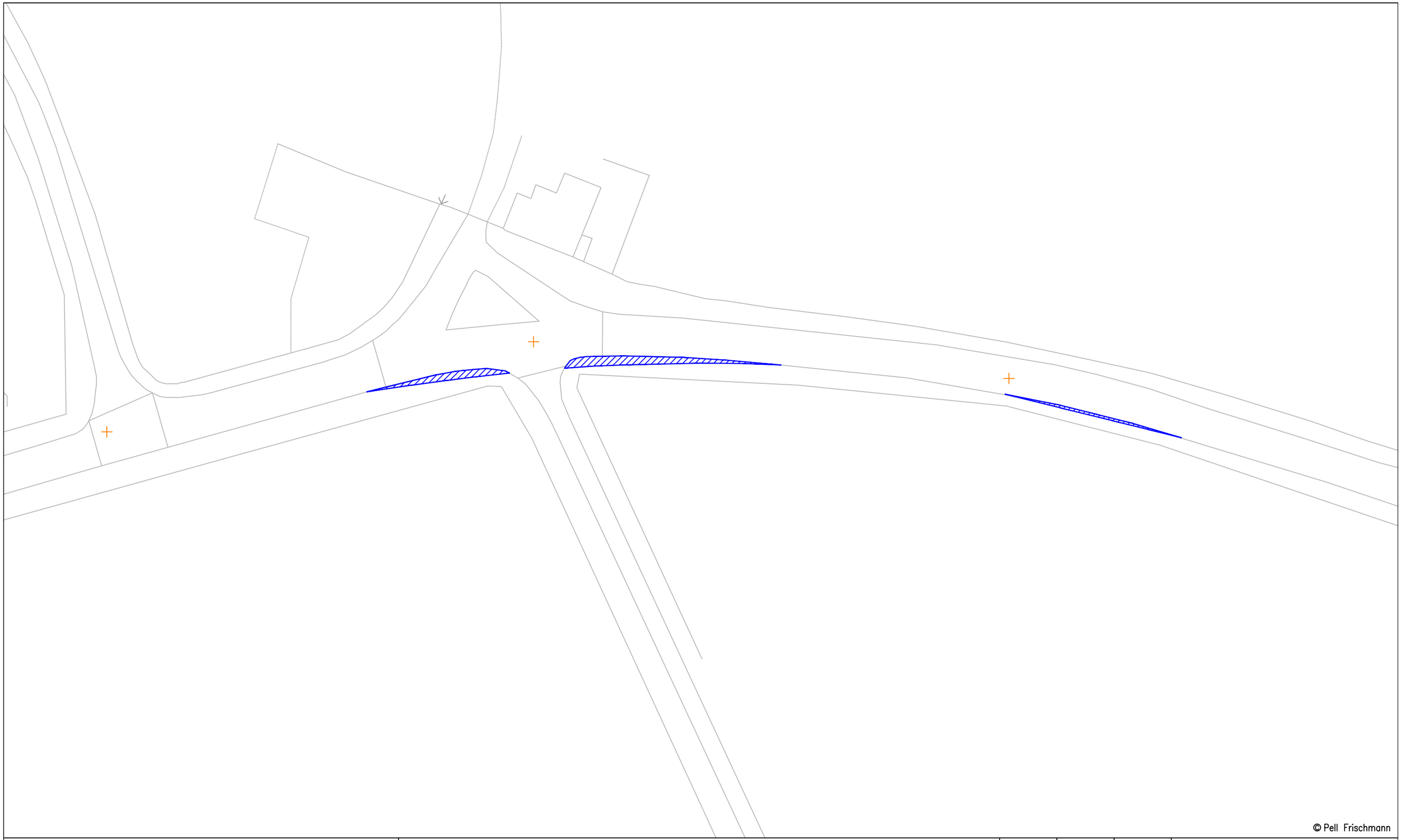
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK57

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

Revision: XXX



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Girvan Lodge

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		70

Scale: 1:500 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

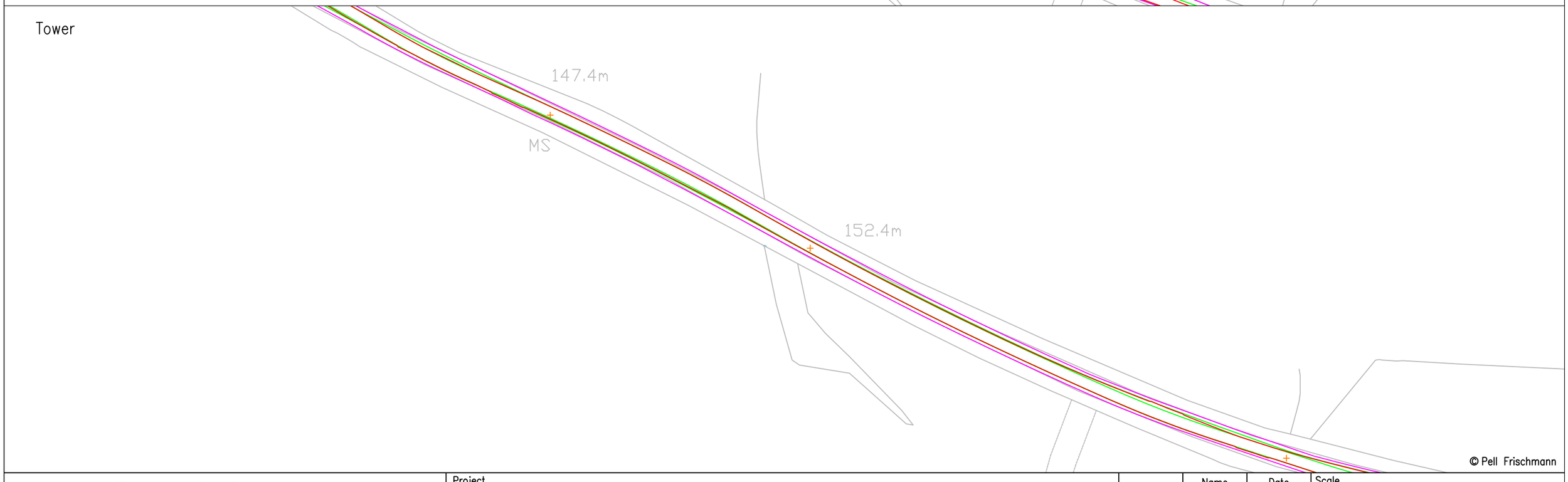
Drawing No.: SK57A

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

Revision: XXX

Blade

Tower



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 The Cloisters

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		71

Scale: 1:1000 @ A3

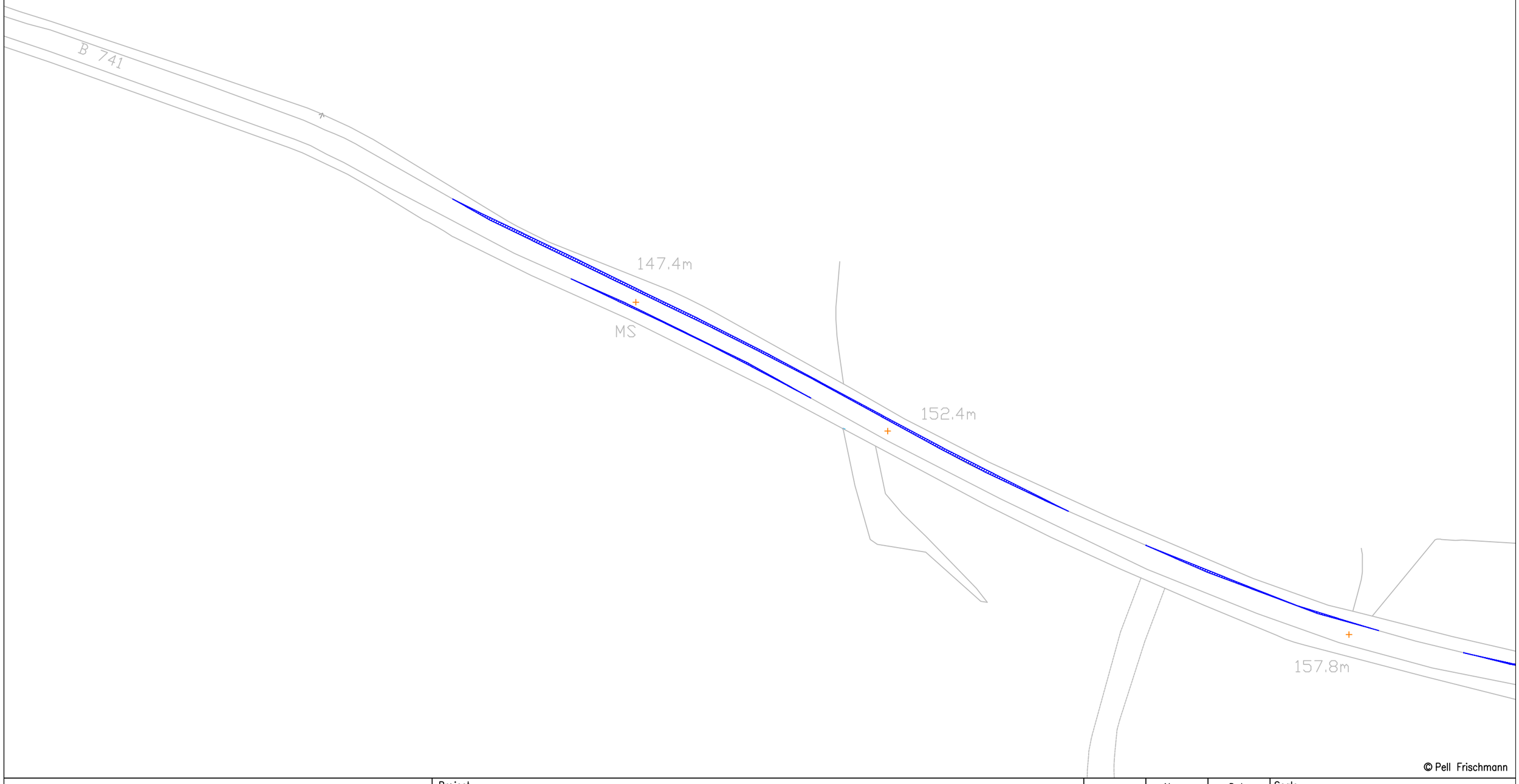
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK58

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

Revision: XXX



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 The Cloisters

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		71

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

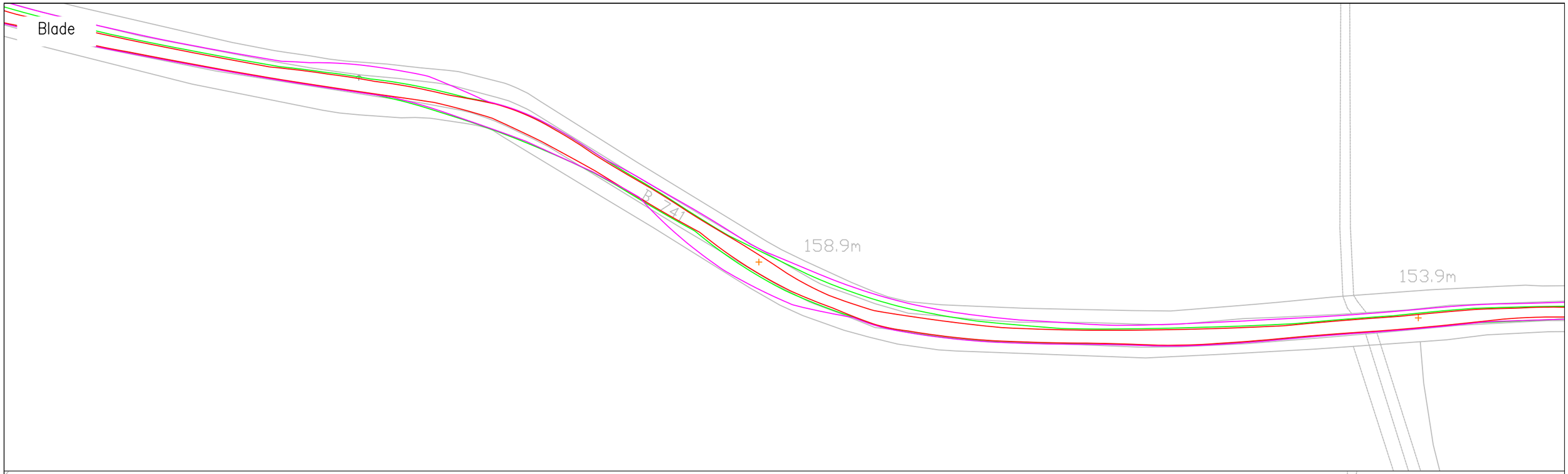
Drawing Status: Draft

Drawing No.: SK58A

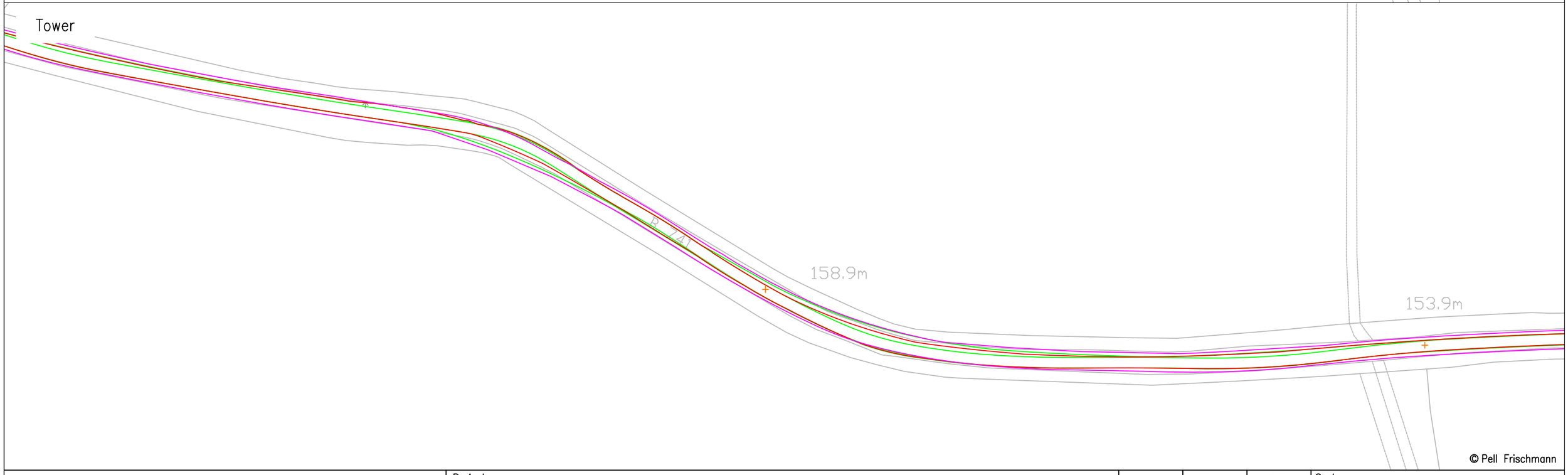
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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Email: pfedinburgh@pellfrischmann.com
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 The Cloisters

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		72

Scale: 1:1000 @ A3

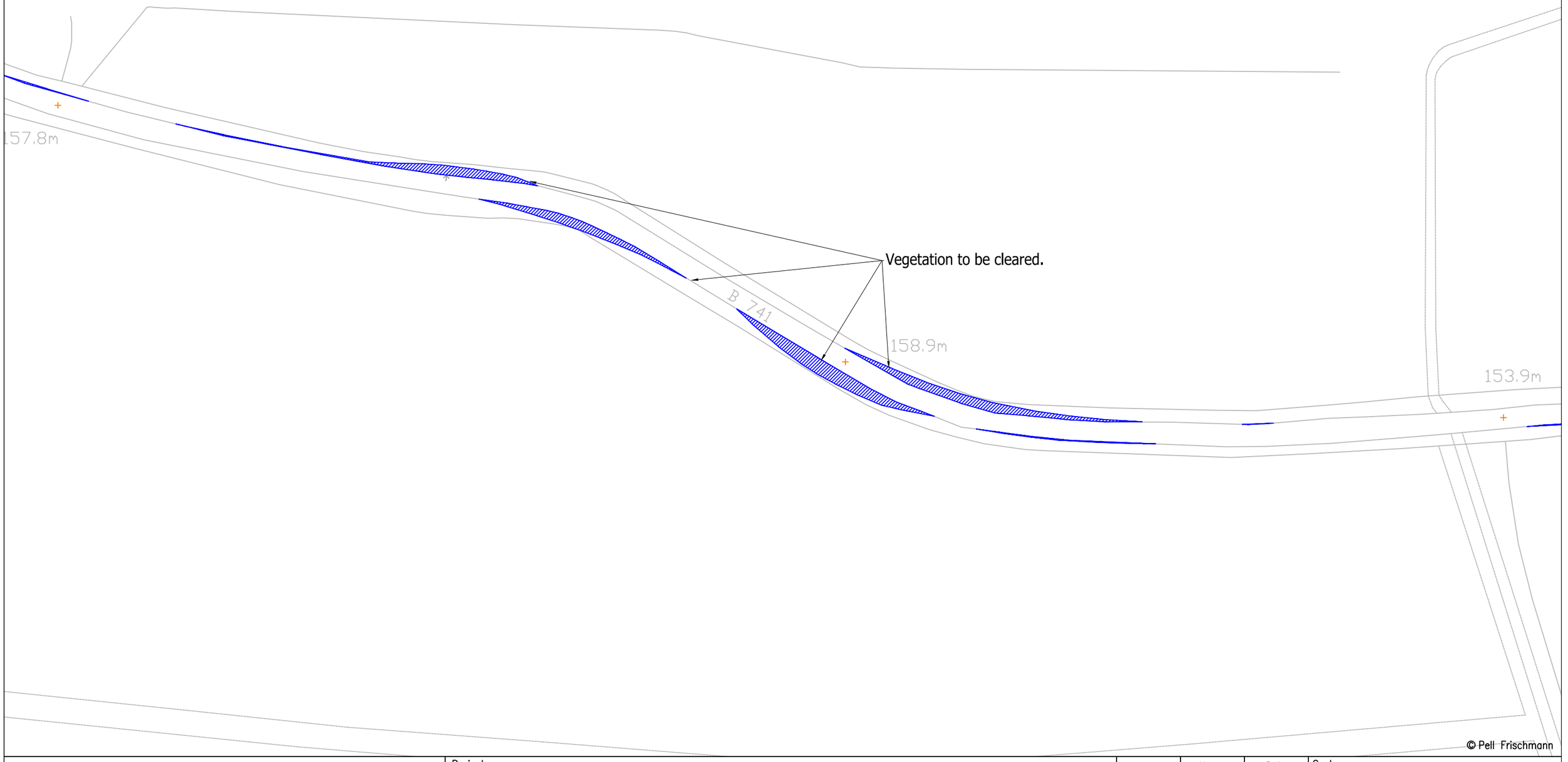
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK59

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

Revision: XXX



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Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 The Cloisters

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		72

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

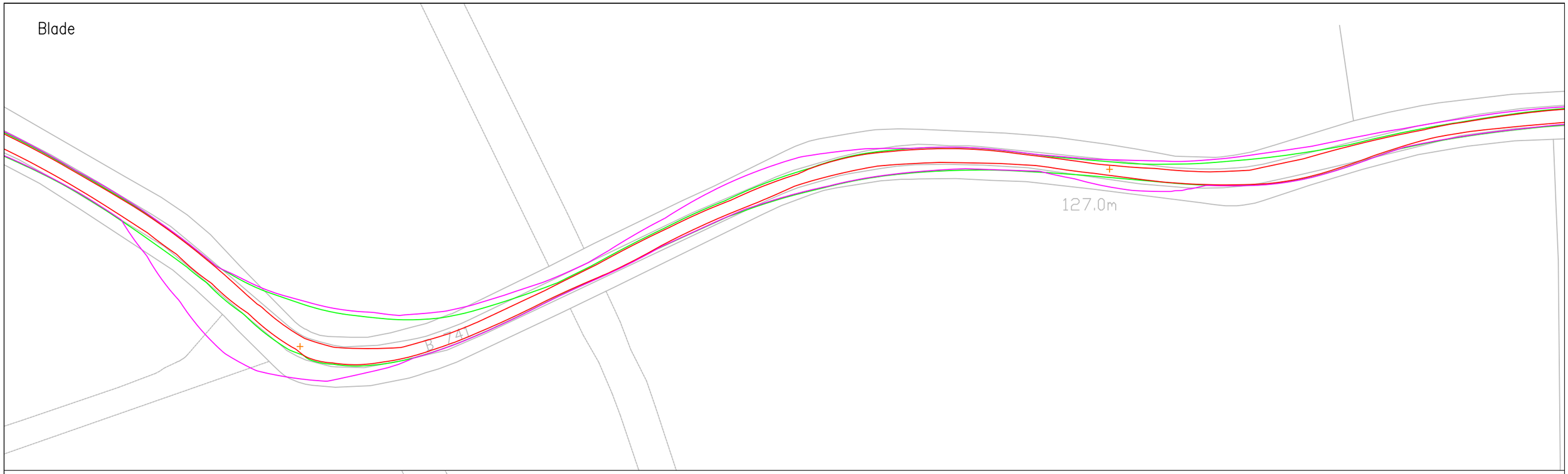
Drawing Status: Draft

Drawing No.: SK59A

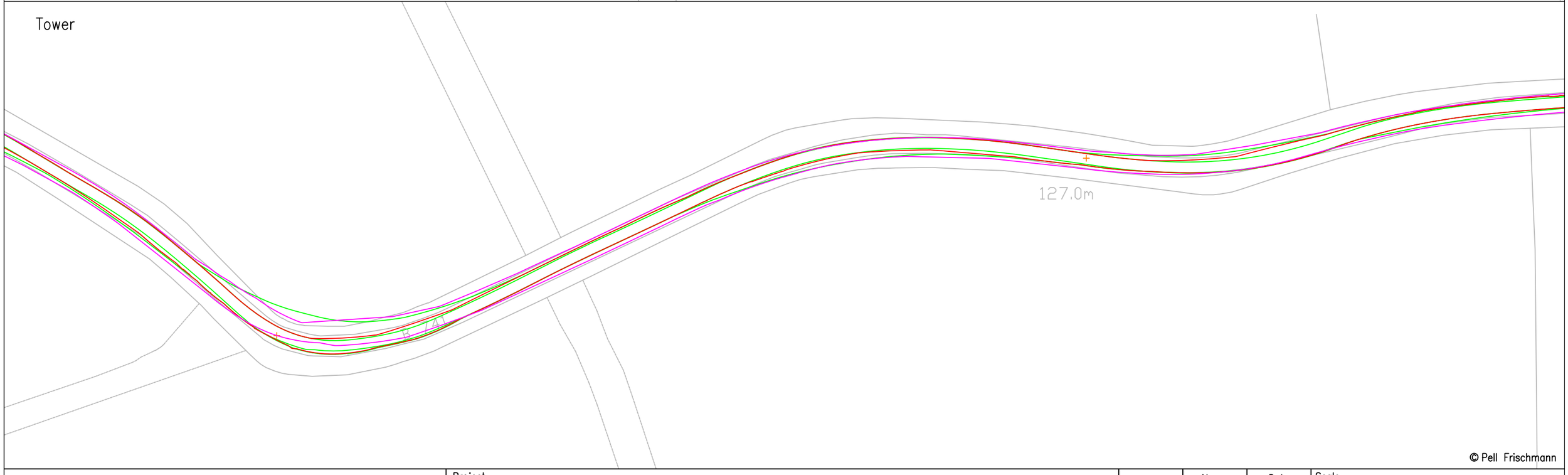
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		73,74

Scale: 1:1000 @ A3

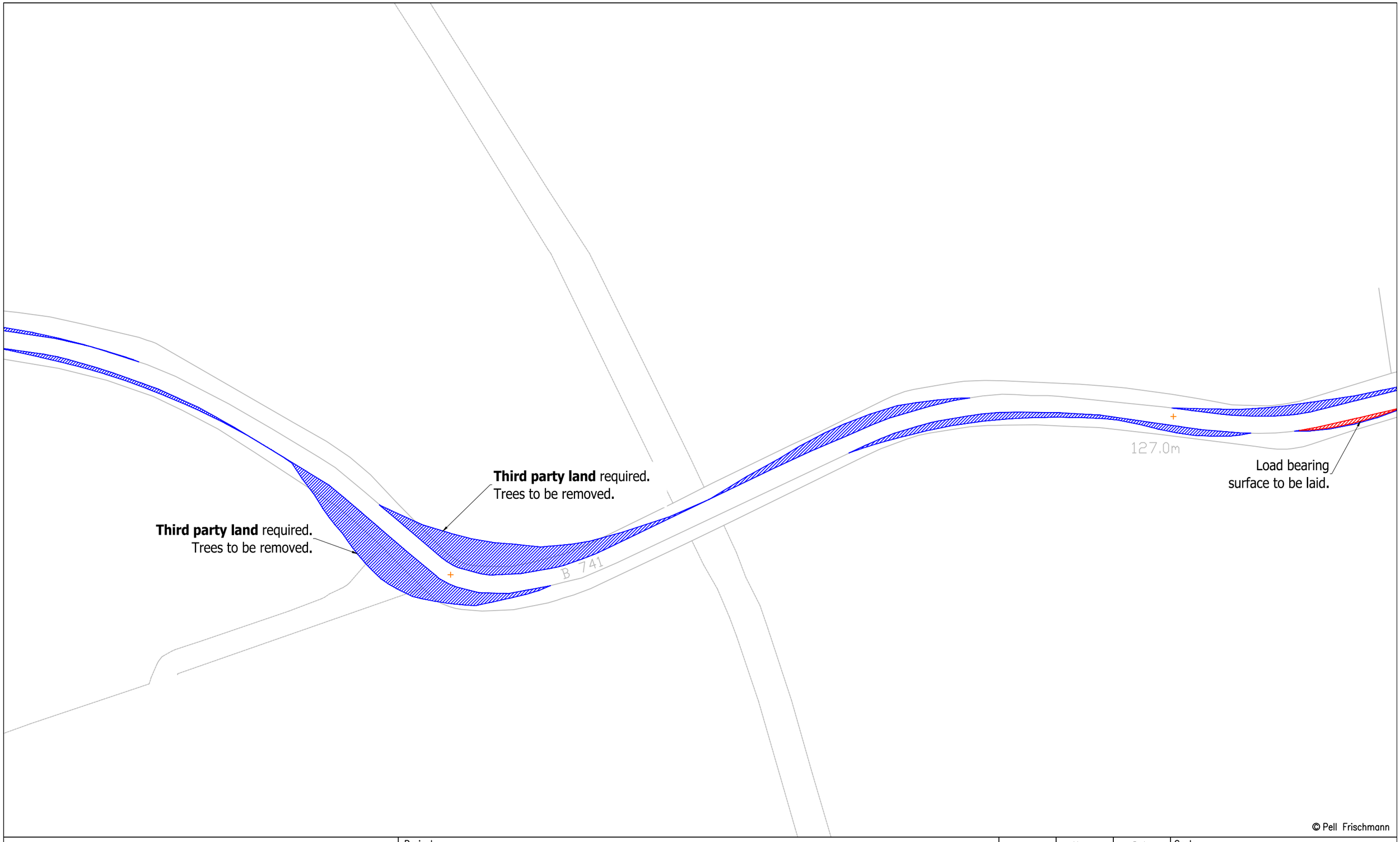
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK60

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

Revision: XXX



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		73,74

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK60A

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

Revision: XXX

Blade

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		73,74

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK61

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

Revision: XXX

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 Craigens

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		75,76

Scale: 1:1000 @ A3

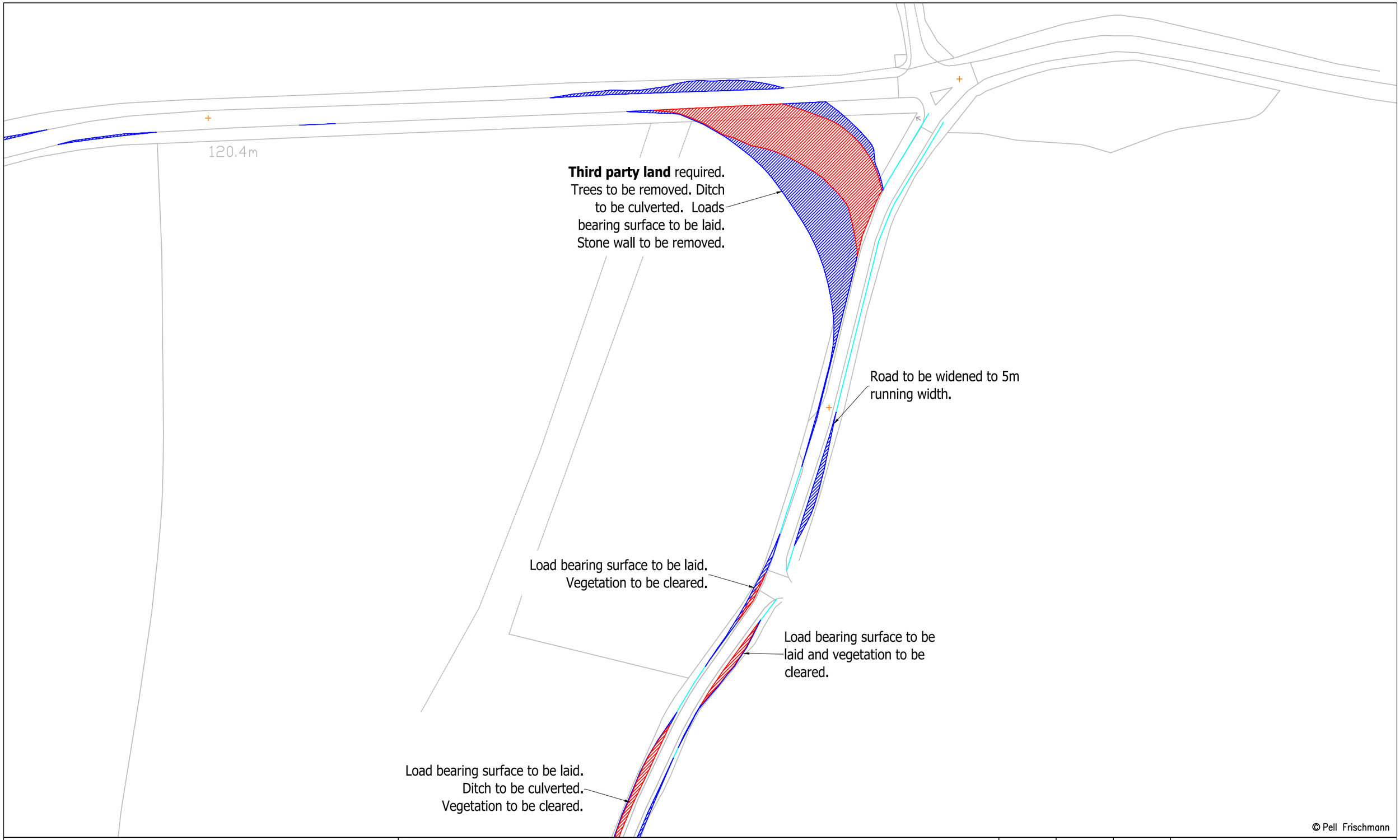
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK61A

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

Revision: XXX



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: B741 / Unclassified Road Junction

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		75,76

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

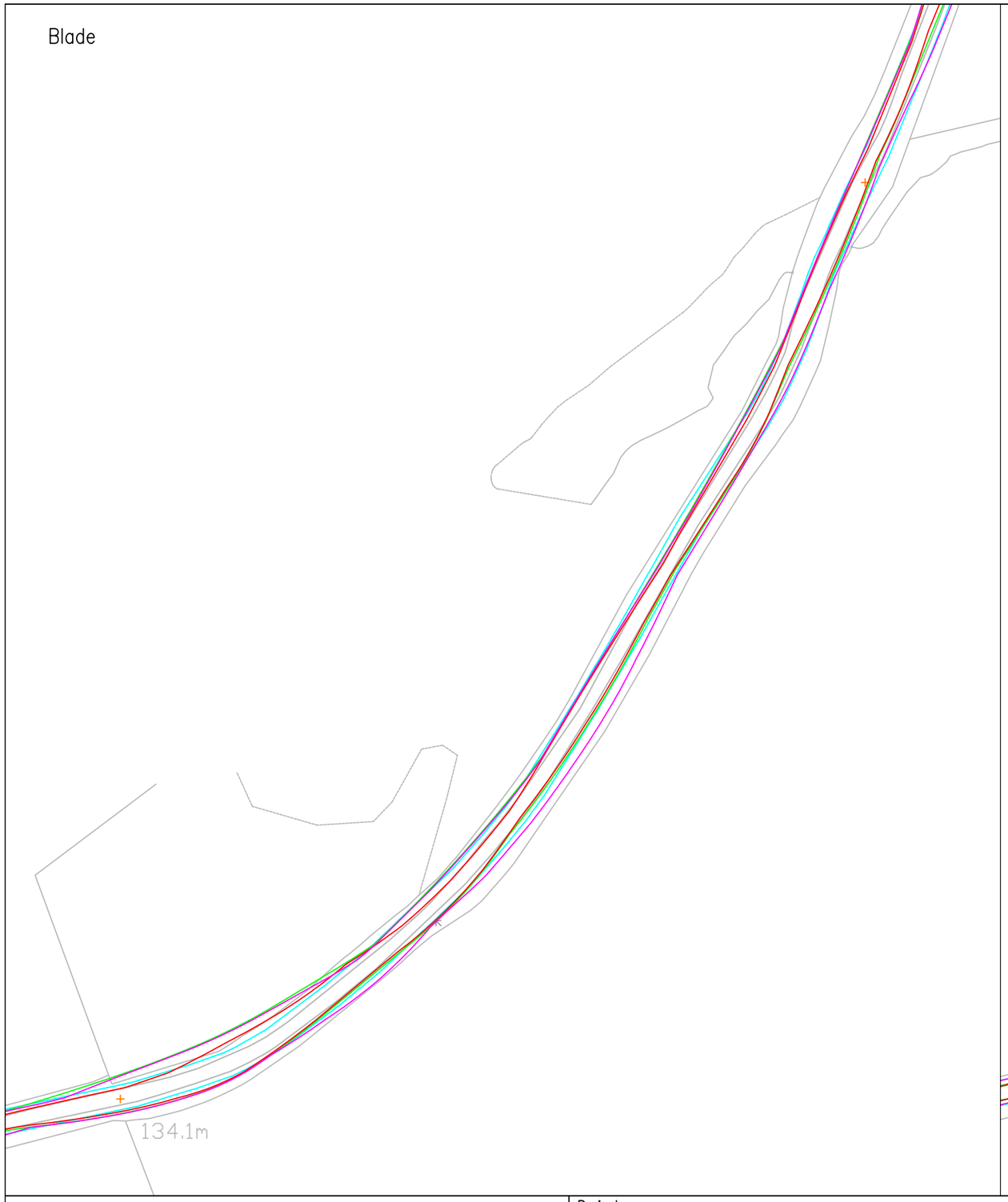
Drawing Status: Draft

Drawing No.: SK61B

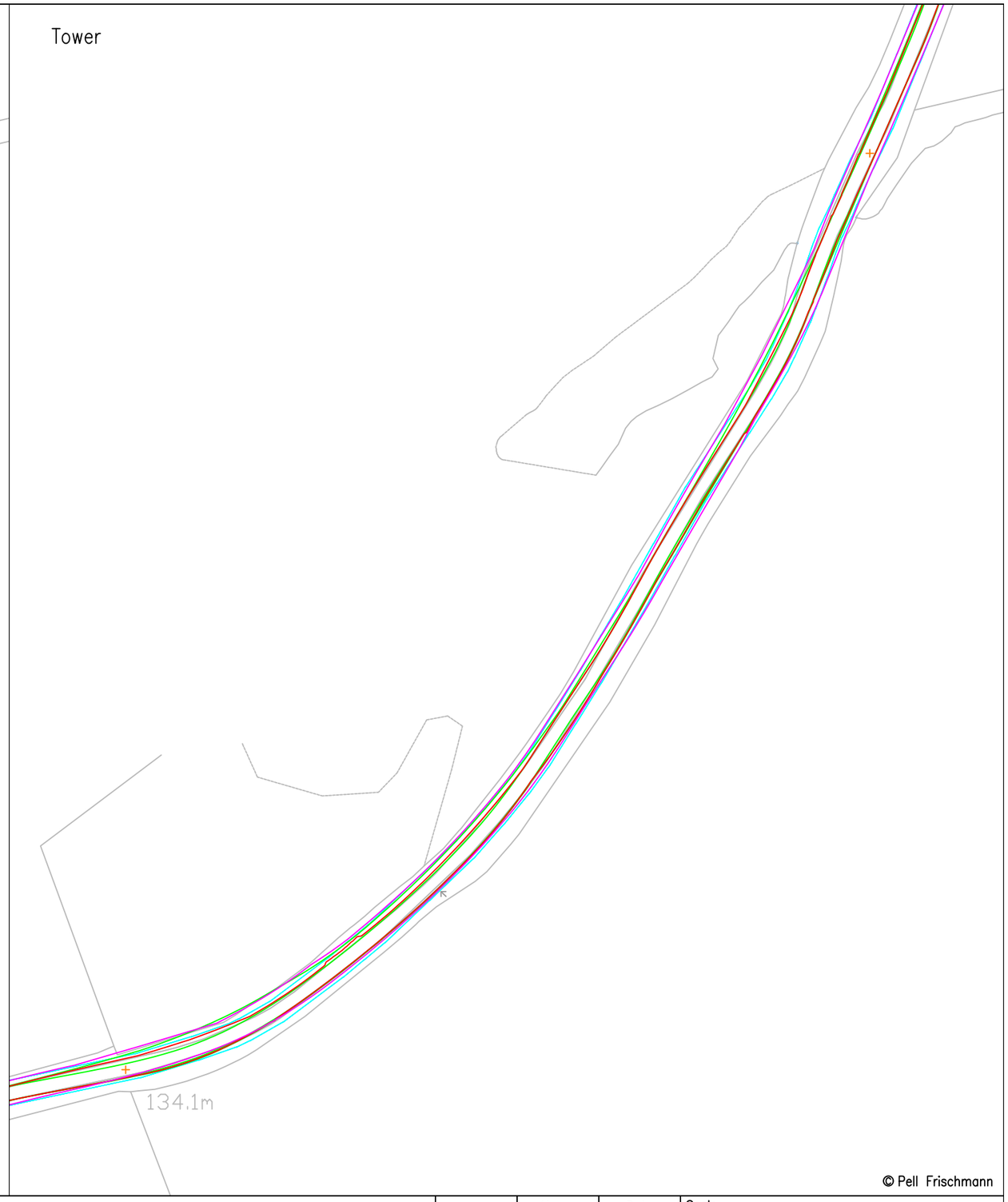
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: XXX

Blade



Tower



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road Bennan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		77,78

Scale: 1:1000 @ A3

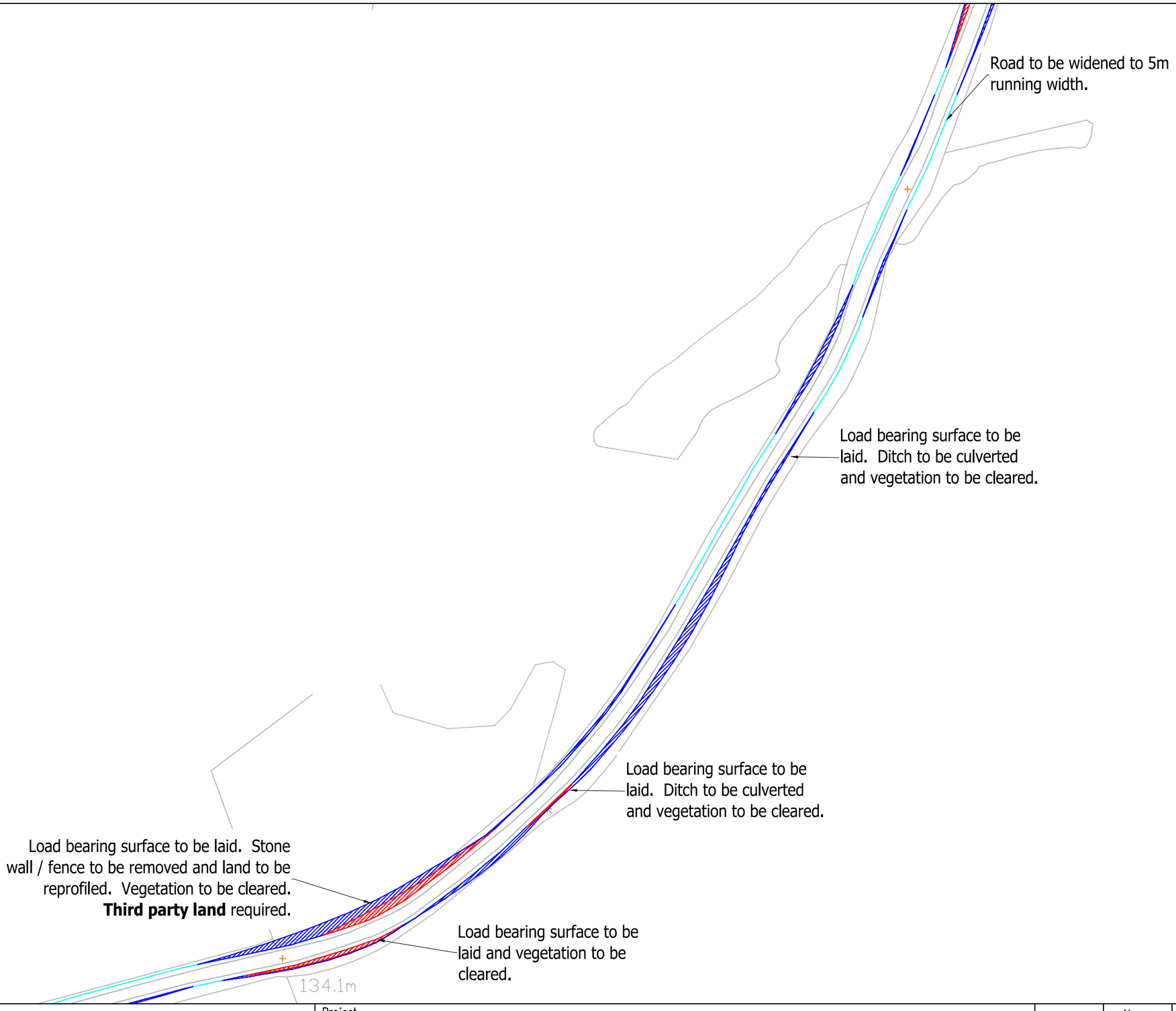
File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK62

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

Revision: XXX



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Tel: +44 (0)131 240 1270
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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road Bennan

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		77,78

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

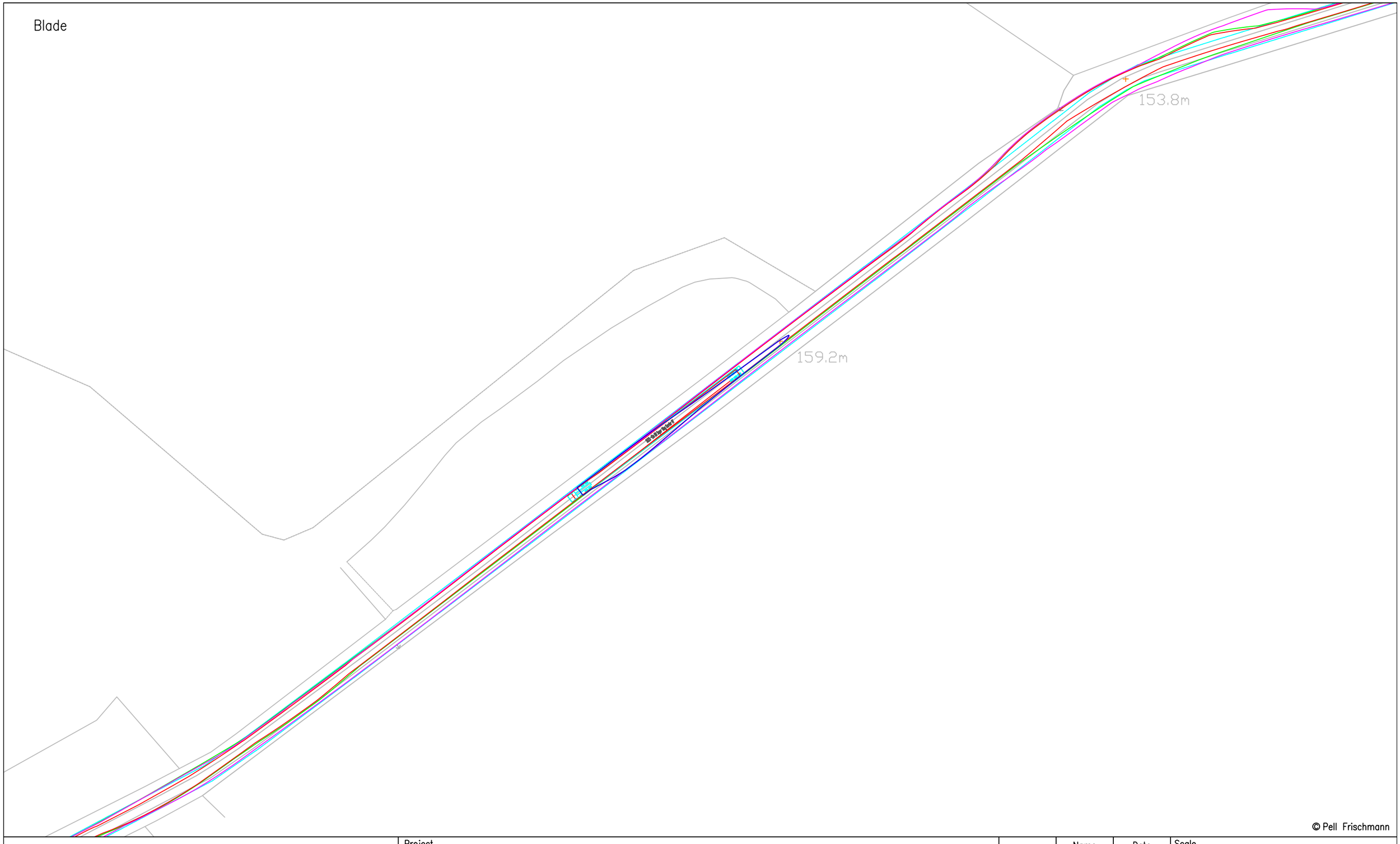
Drawing Status: Draft

Drawing No.: SK62A

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

Revision: XXX

Blade



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road East of Dyke

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		79,80

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

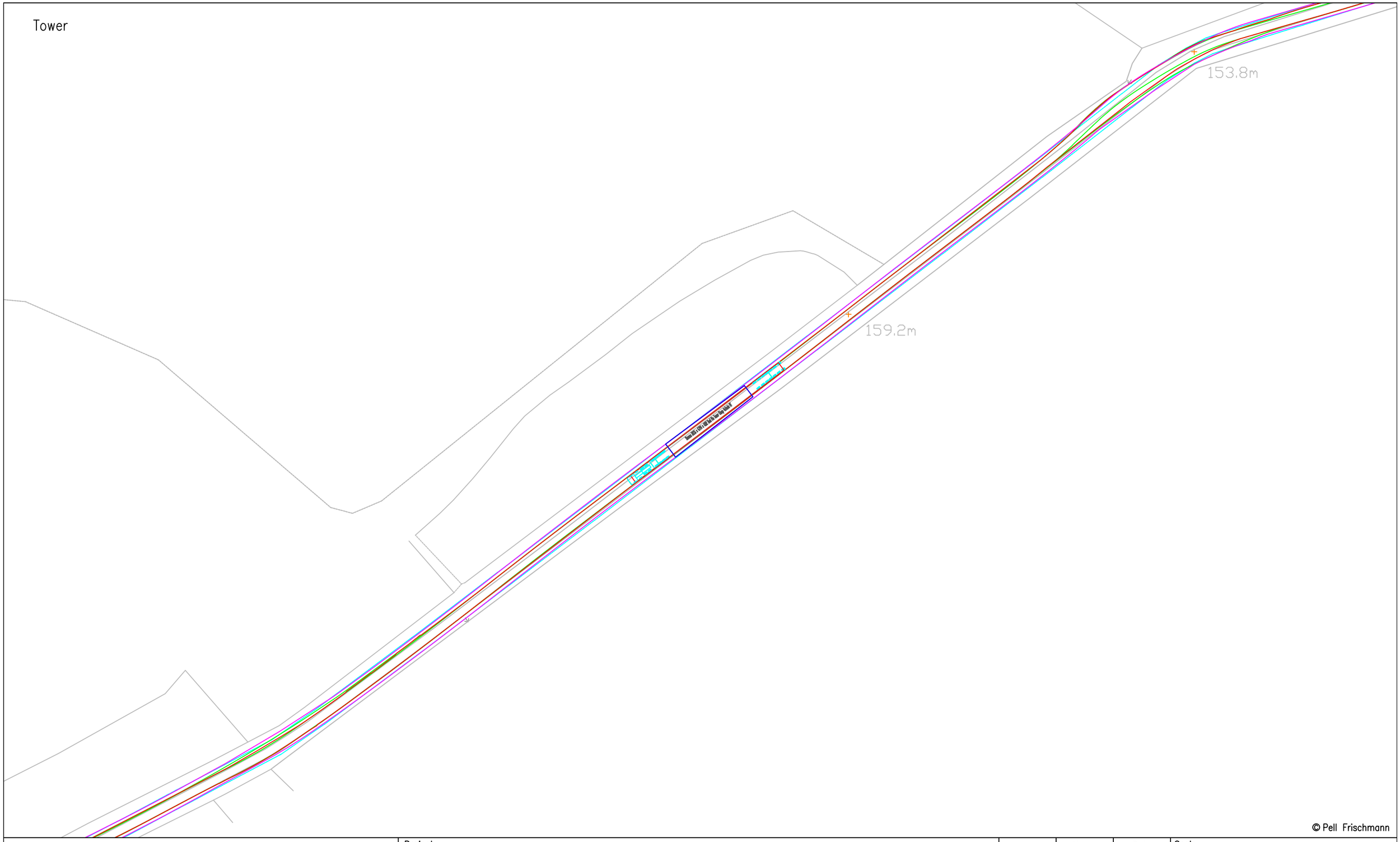
Drawing Status: Draft

Drawing No.: SK63

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

Revision: XXX

Tower



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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road East of Dyke

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		79,80

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK63A

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

Revision: XXX

Load bearing surface to be laid.
Drainage ditch to be culverted.

153.8m

159.2m

Road to be widened to 5m
running width.

Vegetation to be cleared.

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road East of Dyke

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		79,80

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

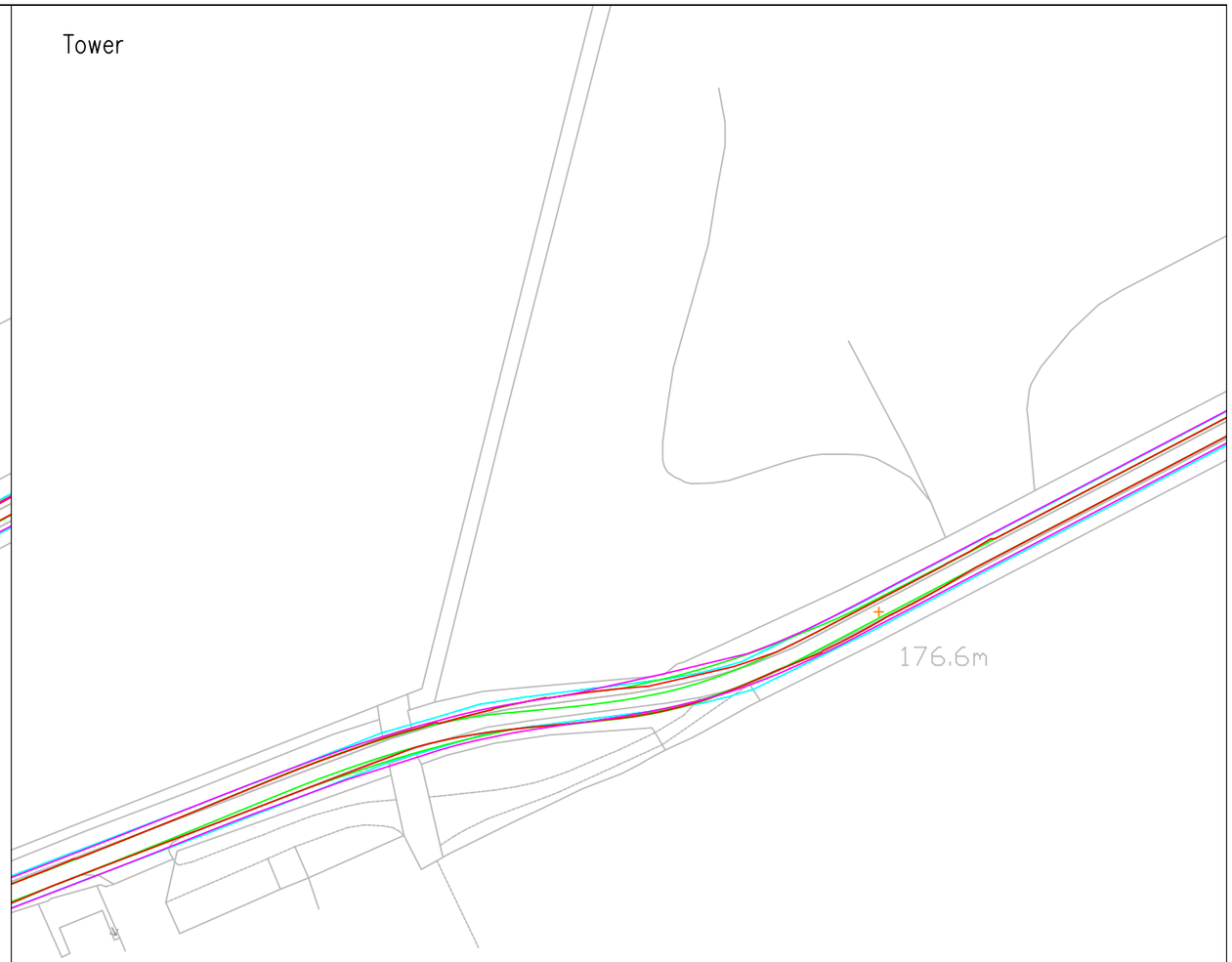
Drawing No.: SK63B

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

Revision: XXX

Blade

Tower



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Client: ITPEnergised

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over–run | Over–sail

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road Dyke

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		81

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK64

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

Revision: XXX

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road Dyke

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		81

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK64A

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

Revision: XXX

Blade

Tower

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Client: ITPEnergised

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

Project: Knockcronal Wind Farm

Drawing Title: Siemens SG155 Blade and Tower

SPA Location: Unclassified Road Indicative Site Entrance

	Name	Date
Drawn	JS	27/01/2021
Designed	GB	27/01/2021
Checked	GB	27/01/2021
Point of Interest		82

Scale: 1:1000 @ A3

File No.: Knockcronal SG155 Tracking.dwg

Drawing Status: Draft

Drawing No.: SK65

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

Revision: XXX