FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 13

Traffic and Transportation

Appendix 13.1 – TDR Report

Appendix 13.2 – Trip Generation

Appendix 13.3 – Visibility at Site Entrance

Appendix 13.4 – Road Safety Audit Stage 1/2

APPENDIX 13.1

TDR Report

Pell Frischmann

Drehid Wind Farm

Route Survey Report

December 2024

10109576

Report Ref.	**241218 Drehid Rsr**
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02		Issue – client requested alterations	14/10/2024	G Buchan	T Lockett	G Buchan
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Ref. reference. Rev revision. Suit suitability.

Prepared for

North Kildare Wind Farm Limited

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by North Kildare Wind Farm Limited to undertake an route access review of the potential delivery route for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Drehid Wind Farm, located southeast of Kilshanroe, Co. Kildare.

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

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between PF and North Kildare Wind Farm Limited at this point in time.

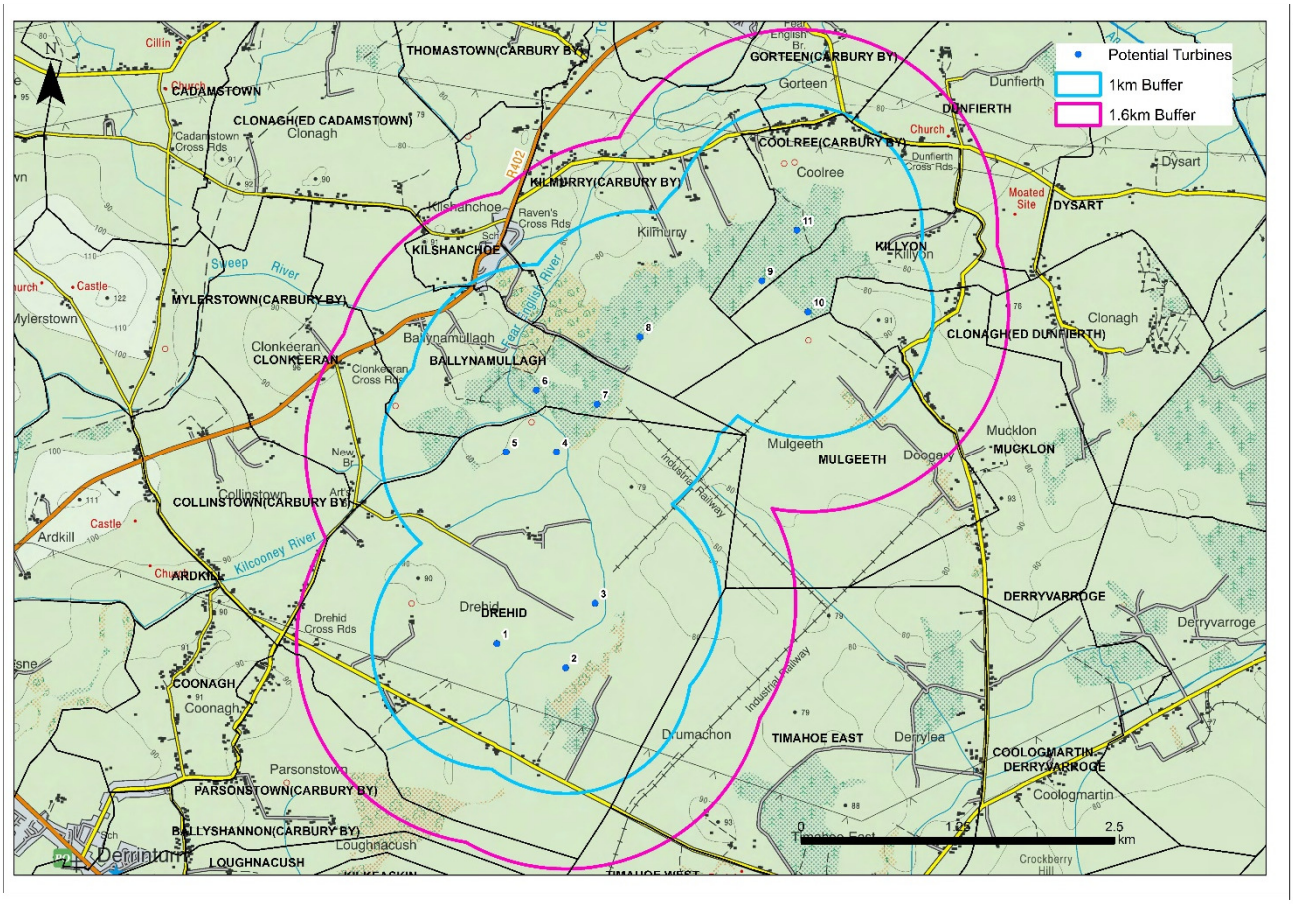
It is the responsibility of the wind turbine supplier to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction. The turbine supplier will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety consideration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

2 Site Background

2.1 Sites Location

The development site is located to the southeast of Kilshanroe, Co. Kildare. Figure 1 illustrates the general site location.

Figure 1: Site Location Plan



2.2 Candidate Turbine

North Kildare Wind Farm Limited have indicated that they wish to consider the use of a Nordex N133 on a TS 100 tower. This assessment has considered the N133 blade (total length of 65.5m) and a worst-case tower section (26.9m in length x 4.3m in diameter) to consider access for all components.

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

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

Figure 2: Super Wing Carrier Trailer

Figure 3: Tower Trailer

Where access constraints are extreme, it is proposed that the blade would be transferred from the Super Wing trailer to a blade lifting trailer. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints and shortening the length plan view. An example trailer is illustrated in Figure 4.

Figure 4: Example Blade Lifting Trailer

To undertake the transfer between trailers, a blade transfer area will need to be constructed. The area of land required will need to be circa 175m x 60m and will need to include two crane pads. Storage for up to six blades should also be available, with all infrastructure designed in accordance with turbine supplier standards.

The proposed location for the transfer station is the southern development area of the proposed wind farm and as such, no additional third party land areas are required.

3 Access Route Review

3.1 Proposed Access Route

As requested by North Kildare Wind Farm Limited, access has been considered from the M4 motorway. Access from the port to the M4 will be undertaken once the turbine haulier has been engaged by the developer, post planning determination.

Access to the site will be taken from the south for all loads. Access from the south to the northern turbine locations is not possible using internal access tracks, so all northern turbine components will need to access the southern junction where blades will be transferred to a blade lifting trailer (required to overcome physical constraints) at a blade transfer area. Tower and all other loads will undertake a U turn in the southern area, and will then backtrack until the R402 Raven Junction, where they will turn right for the northern access junction.

The proposed access route is as follows:

- Loads will depart the M4 at Junction 9 and will join the R402, southbound;
- Loads will pass through Johnstown Bridge and Kilshancoe;
- All loads will turn off the R402 onto the L5025, turning left at The Sweep Crossroads junction;
- Loads will continue on the L5025 heading southeast to the site access junction. At the site access junction, loads will turn left into a purpose designed junction;
- Blade loads for the northern turbines will be transferred onto a blade lifting trailer. All other northern turbine loads will undertake a U-turn and will rejoin the L5025, proceed northwest;
- Northern turbine loads will turn right onto the R402 and will proceed northbound;
- At the Raven Junction, loads will turn right onto Kilshanroe Road and will continue eastbound to the northern access junction.

The proposed access route from the M4 to the development site access junctions is shown in Figure 5 for the southern access. Figure 6 illustrates the route from the blade transfer area to the northern access junction.

Figure 5: Proposed Access Route from M4 to Southern Access Junction

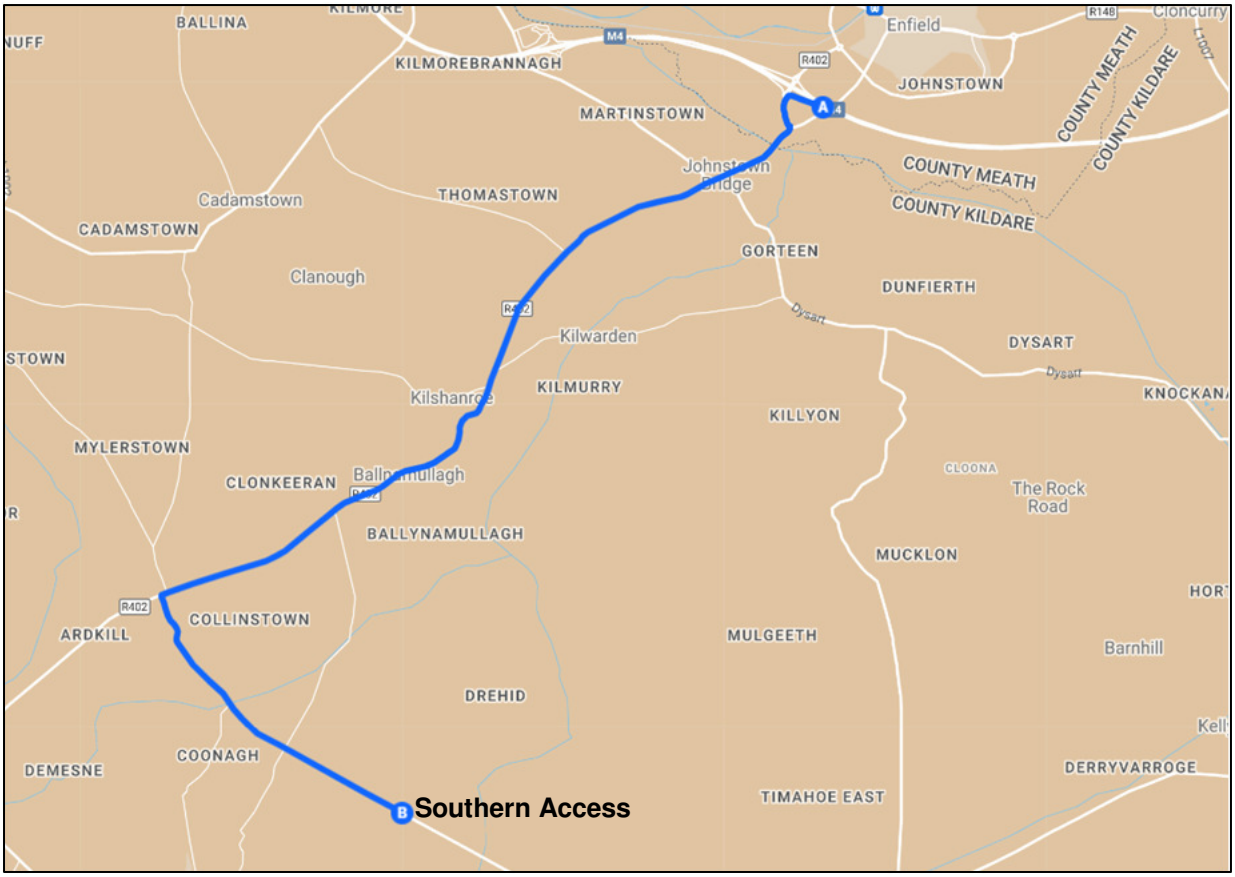
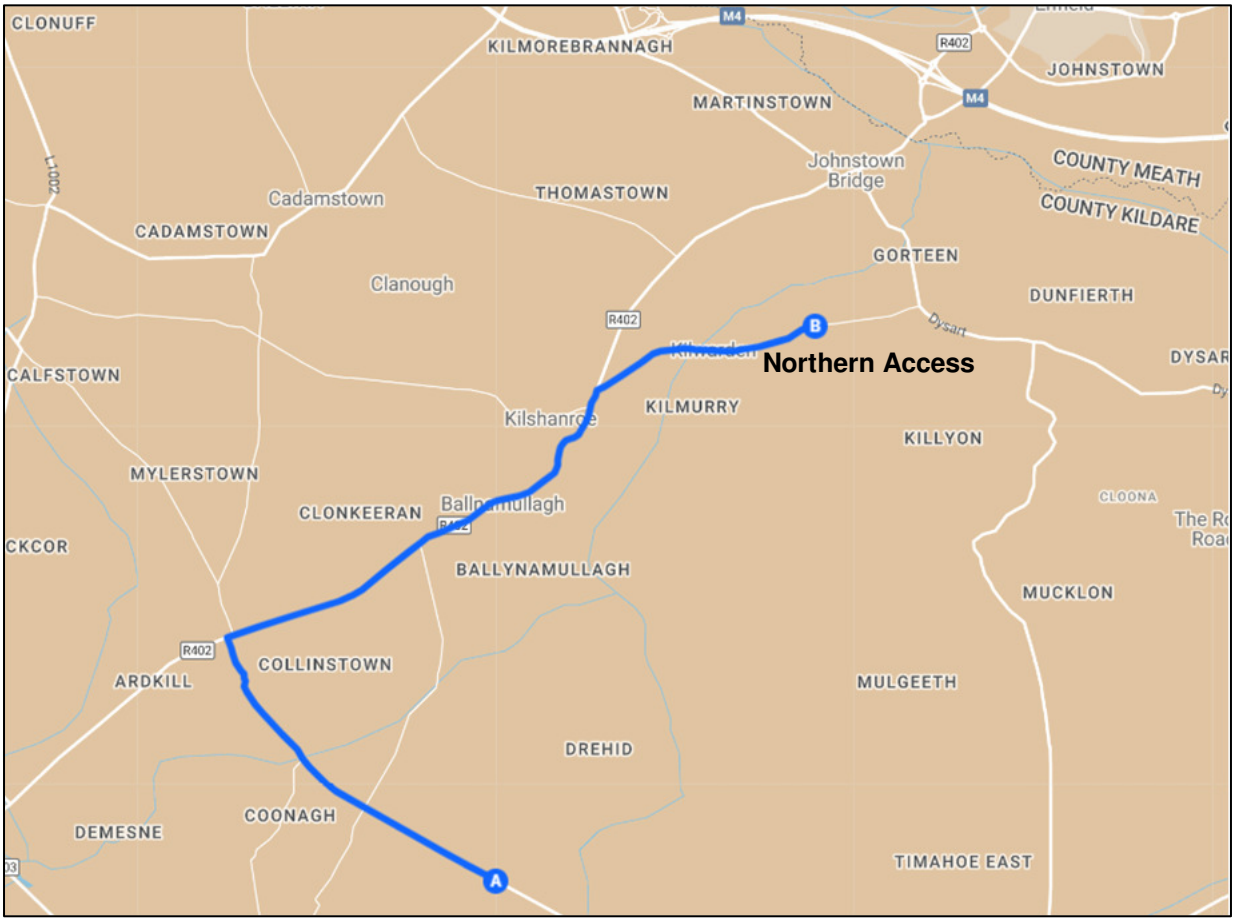


Figure 6: Proposed Access Route from Blade Transfer Area to Northern Access



3.2 Route Constraints

The constraints noted during the access route review are provided in the tables below. These cover all constraints from the M4 through to the proposed site entrance. No consideration of the transport issues within the port or development site have been undertaken and this includes the design of the site access junction.

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

Table 3-1: Constraint Points and Details

POI	Key Constraint	Details
1	**M4 Junction 9 Slip Road** 	Loads will depart the M4 at Junction 9 and will take the first exit at the roundabout with the R402 (southbound). A swept path assessment has been undertaken and indicates that loads will oversail the entry verge where two road signs should be removed. Loads will require an over-run surface on the central island of the roundabout where one chevron sign should be removed. On exiting the junction, loads will over-run the splitter island where three road signs should be removed. Verge vegetation trimming is required on the exist.
2	**R402 / Johnstown Road Roundabout** 	Loads will continue southbound on the R402. At the roundabout with Johnstown Road, loads will take the second exit and will continue southbound on the R402. A swept path assessment has been undertaken and indicates that loads will over-run the entry splitter island, central island and exit splitter island of the roundabout. Load bearing surfaces are required. Two road signs on the entry splitter island, two chevron signs on the central island and two signs on the exit splitter island should be removed. Following the roundabout, loads will continue southbound, heading through Johnstown Bridge and Kilshanroe. Loads will need to exercise care passing through both villages and oncoming traffic should be held back to allow loads access to both lanes in sinuous sections. Care should be exercised when passing over traffic calming measures noted on the road.
3	**R402 / L5025 Access Junction** 	**Southern Access Route** Loads will turn left onto the L5025 and will continue eastbound to reach the southern access junction. A swept path assessment has been undertaken and indicates that loads will oversail the inside of the junction where two road signs and a barrier should be removed. It is recommended that the load suspension settings are increased to account for any changes in vertical clearance on the L5025. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads will turn right at this junction. The swept path assessment also covers this movement. All overhead utilities on the L5025 should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.

POI	Key Constraint	Details
4	**L5025 Bend 1** 	**Southern Access Route** Loads will proceed ahead on the L5025. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads continue ahead. The swept path assessment also covers this movement. All overhead utilities on the L5025 should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
5	**L5025 Bend 2**  	**Southern Access Route** Loads will proceed ahead on the L5025, passing through the two bends. A swept path assessment has been undertaken at this location and indicates that loads will oversail both sides of the road. Hedge trimming works will be required in the western verge along with an area of load bearing surfacing. Tree canopy trimming is required. A minor area of load bearing surface is required in the eastern verge along with the removal of a utility pole stay wire. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads continue ahead. The swept path assessment also covers this movement. All overhead utilities on the L5025 should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
6	**L5025, north of the River Kilooney Bridge** 	**Southern Access Route** Loads will proceed ahead on the L5025. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads continue ahead. The swept path assessment also covers this movement. All overhead utilities on the L5025 should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.

POI	Key Constraint	Details
7	**L5025, south of the River Kilooney Bridge** 	**Southern Access Route** Loads will proceed ahead on the L5025. A swept path assessment has been undertaken at this location and indicates that that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads continue ahead. The swept path assessment also covers this movement. All overhead utilities on the L5025 should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
8	**Southern Site Access Junction** 	**Southern Access Route** Loads will turn left into a new site access junction. A swept path assessment has been undertaken at this location and indicates that loads will require the removal of a section of fence, access gate and hedge to enable the construction of the access junction. **Northern Access Route** Loads that are destined for the northern access will have turned at the facilities accessed from the southern junction. When travelling back on the L5025, loads will turn right out of the site. The swept path assessment also covers this movement. All overhead utilities on the L5025 and inside the access site should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
9	**R402 Raven Junction** 	**Northern Access Route** Loads for the northern access junction will turn right at the junction. A swept path assessment has been undertaken at this location and indicates that loads will oversail the inside of the junction where verge vegetation trimming is required. It is recommended that the load suspension settings are increased to account for any changes in vertical clearance on the Kilshanroe Road.
10	**Kilshanroe Road Bend 1** 	**Northern Access Route** Loads for the northern access junction will proceed ahead on Kilshanroe Road. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.

POI	Key Constraint	Details
11	**Kilshanroe Road Bend 2** 	**Northern Access Route** Loads for the northern access junction will proceed ahead on Kilshanroe Road. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
12	**Kilshanroe Road Bend 3** 	**Northern Access Route** Loads for the northern access junction will proceed ahead on Kilshanroe Road. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. A section of verge hedge should be trimmed on the northern verge. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
13	**Kilshanroe Road Bend 4** 	**Northern Access Route** Loads for the northern access junction will proceed ahead on Kilshanroe Road. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. Two lengths of hedge should be trimmed on the northern verge. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.
14	**Kilshanroe Road Bend 5** 	**Northern Access Route** Loads for the northern access junction will proceed ahead on Kilshanroe Road. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. A minor area of load bearing surface is required in the northern verge. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road.

POI	Key Constraint	Details
15	**Northern Site Access** 	**Northern Access Route** Loads will turn right into a new site access junction. A swept path assessment has been undertaken at this location and indicates that trees should be removed to enable the construction of the site access junction. A swept path assessment has been undertaken at this location and indicates that loads will oversail both verges. Tree canopy trimming to accommodate the raised blade will be required. All overhead utilities on Kilshanroe Road should be lowered or relocated to enable the raised blade for the northern turbines to pass along the road. Engagement on with the power line operator is recommended.

3.3 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.

3.4 Overhead Constraints

Overhead utilities will foul the raised blade when this is carried in the upright position. Where the blade is raised, these will need to be relocated, lowered or removed. It is assumed in this assessment that the blade tip is raised from the southern access junction, through to the northern access junction. As such, all overhead utilities would need to be removed.

A detailed overhead utility review is required prior to loads being transported and engagement with utility providers will be required.

Overhead utilities on the R402 should also be removed. It may be possible, depending upon the views of the Garda and haulier to lower the blade on straight sections of the R402 and early engagement with both is recommended.

3.5 Summary Issues

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

- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- That any verge vegetation and tree canopies which may foul loads is trimmed prior to loads moving;
- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;

- That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect the developer from spurious damage claims.

4 Summary

4.1 Summary of Access Review

PF has been commissioned by North Kildare Wind Farm Limited to prepare a Route Survey Report to examine the issues associated with the transport of AIL turbine components to Drehid Wind Farm.

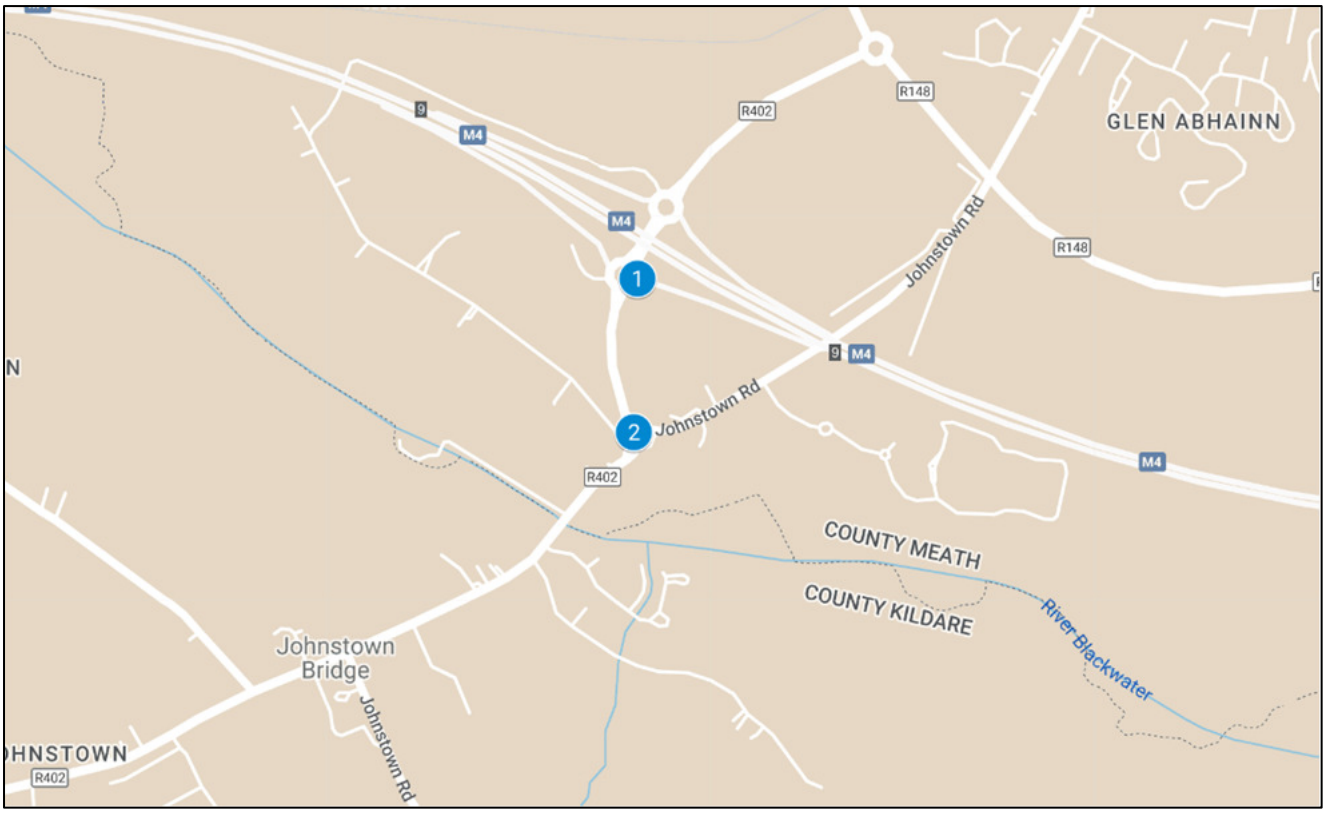
This report identifies the key points and issues associated with the proposed routes and outlines the issues that will need to be considered for successful delivery of components.

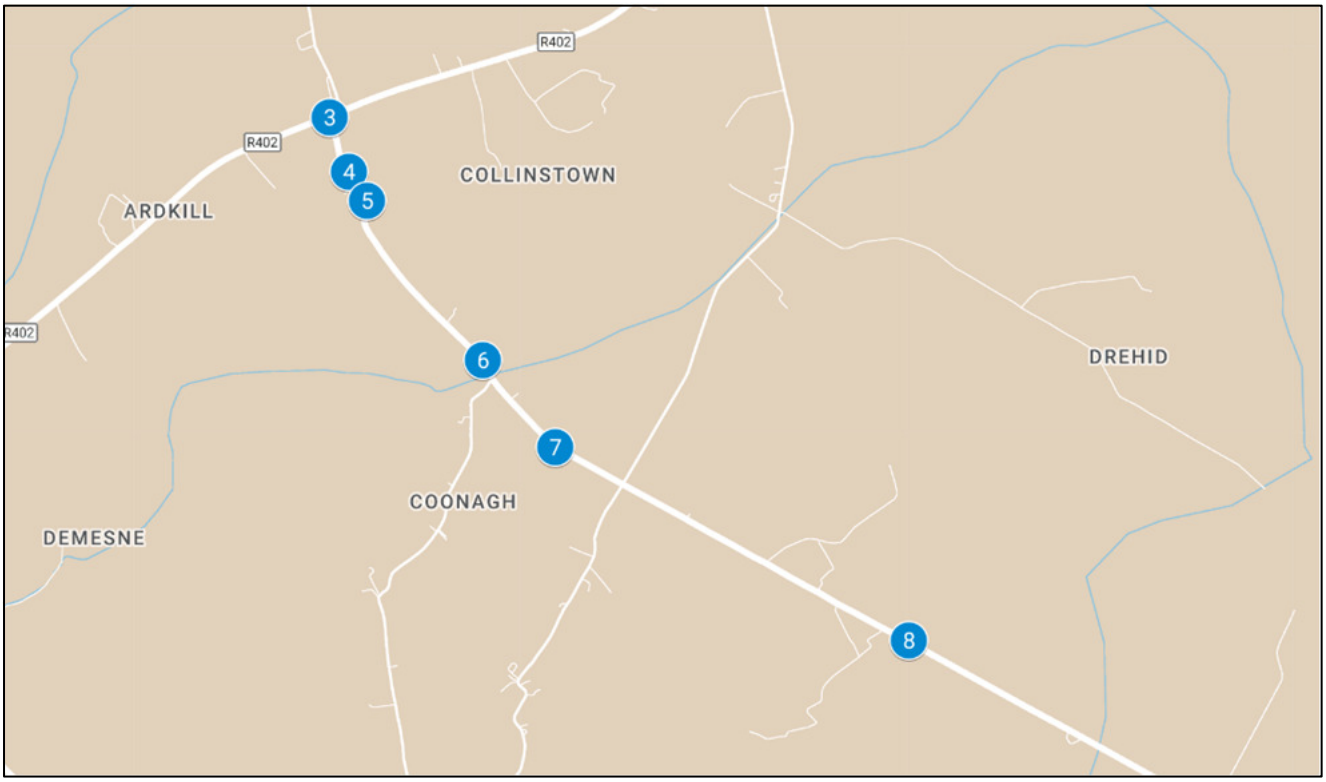
This report has been based upon a worst case of Nordex N133 turbine sections and has been undertaken on the basis of a Superwing Carrier blade trailer, transferring to a blade lifting trailer for access to the northern development area.

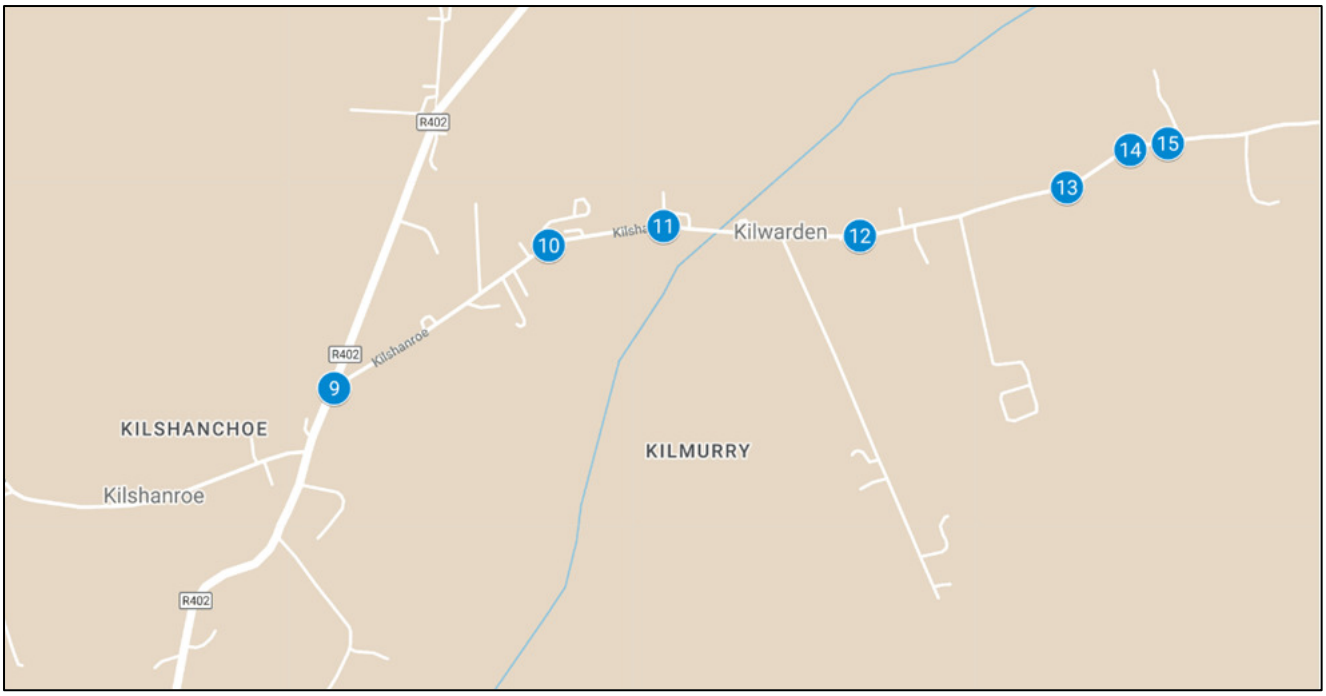
The report is presented for consideration to North Kildare Wind Farm Limited. Various road modifications and interventions are required to successfully access the site.

Appendix A Points of Interest

An electronic version of the POI plan can be found here:
https://www.google.com/maps/d/edit?mid=1Vm6M6mS4QLn5zg9k91_iL_p2v2ojopw&usp=sharing






R402
R402
R402
Kilshanroe
Kilshanroe
KILSHANCHOE
KILMURRY
Kilwarden
9
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14
15

Appendix B Swept Path Assessment Drawings

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

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Designed	GB	18/12/2024
Checked	TL	18/12/2024
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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: 00

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Project: DREHID WIND FARM

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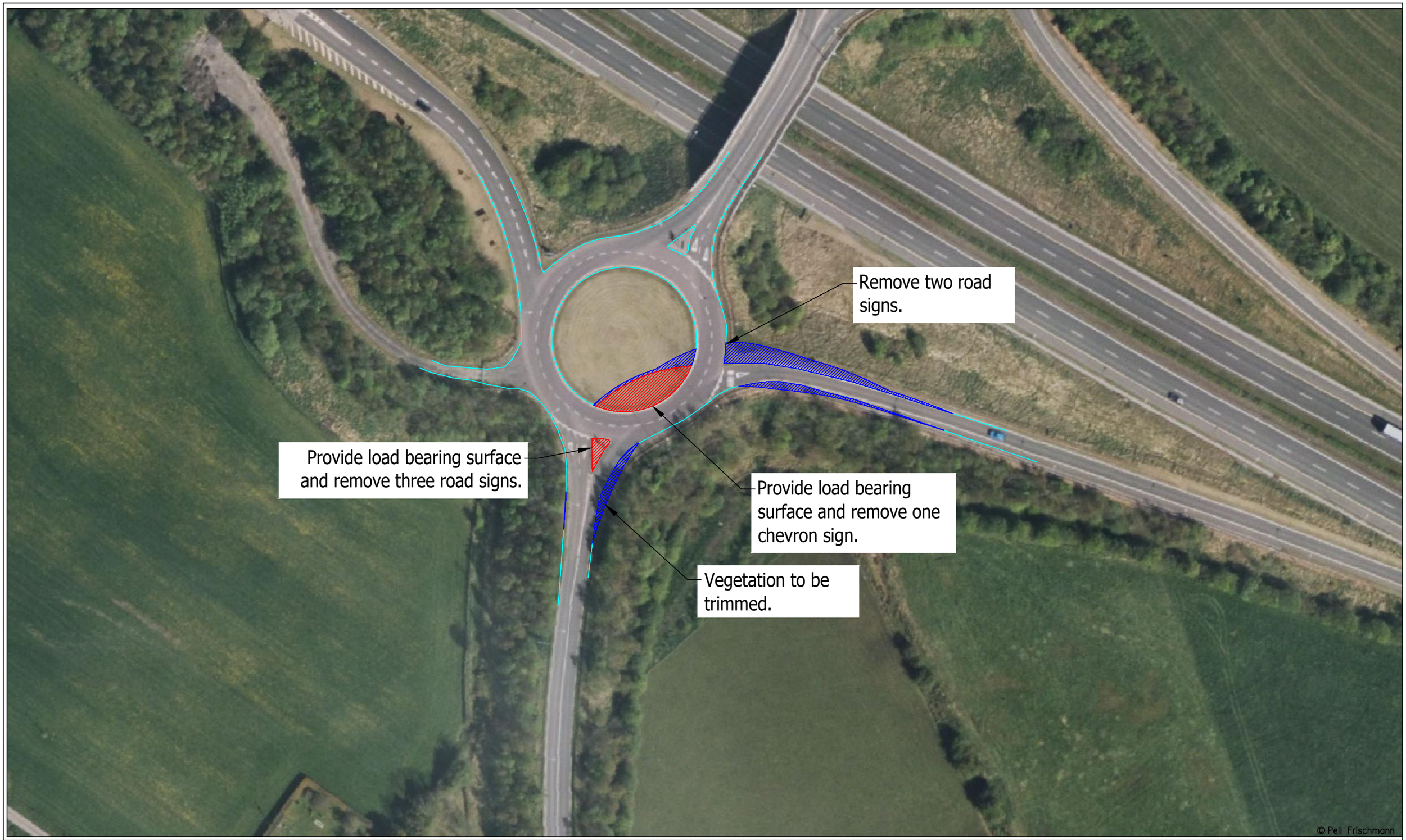

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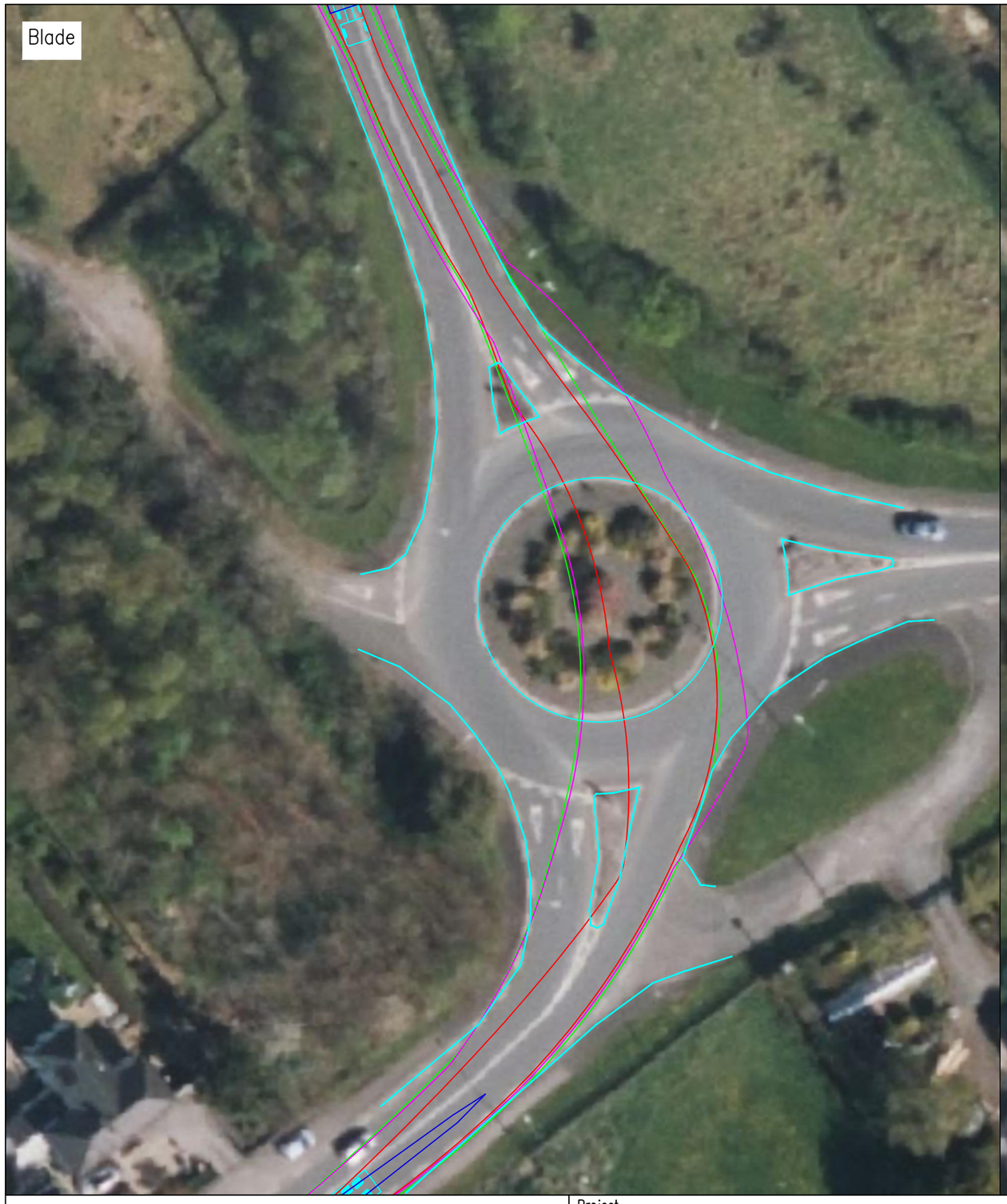

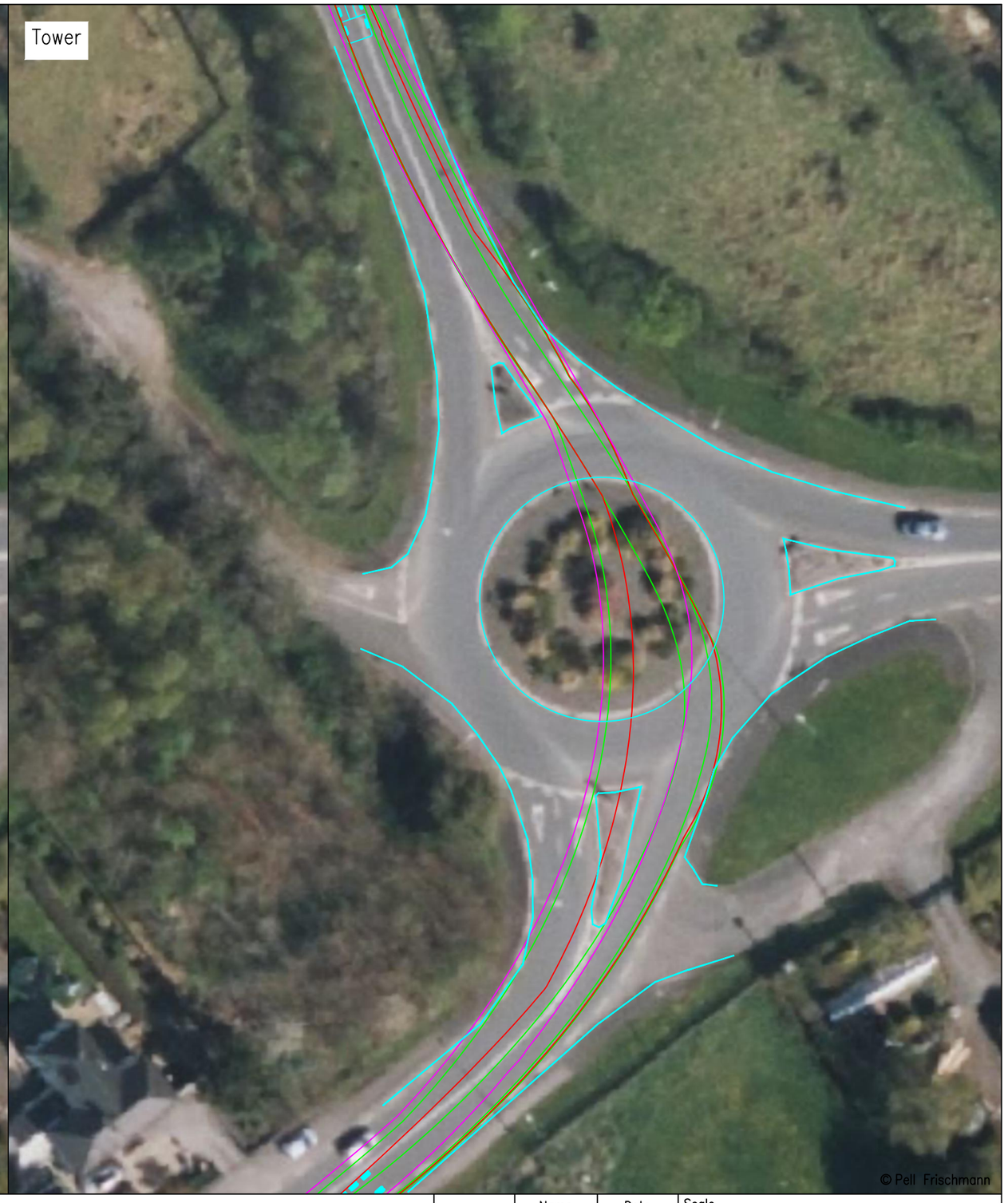

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 / Johnstown Road Roundabout

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Designed	GB	18/12/2024
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Drawing Status: Draft

Drawing No.: SK02

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 / Johnstown Road Roundabout

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Designed	GB	18/12/2024
Checked	TL	18/12/2024
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Drawing Status: Draft

Drawing No.: SK02A

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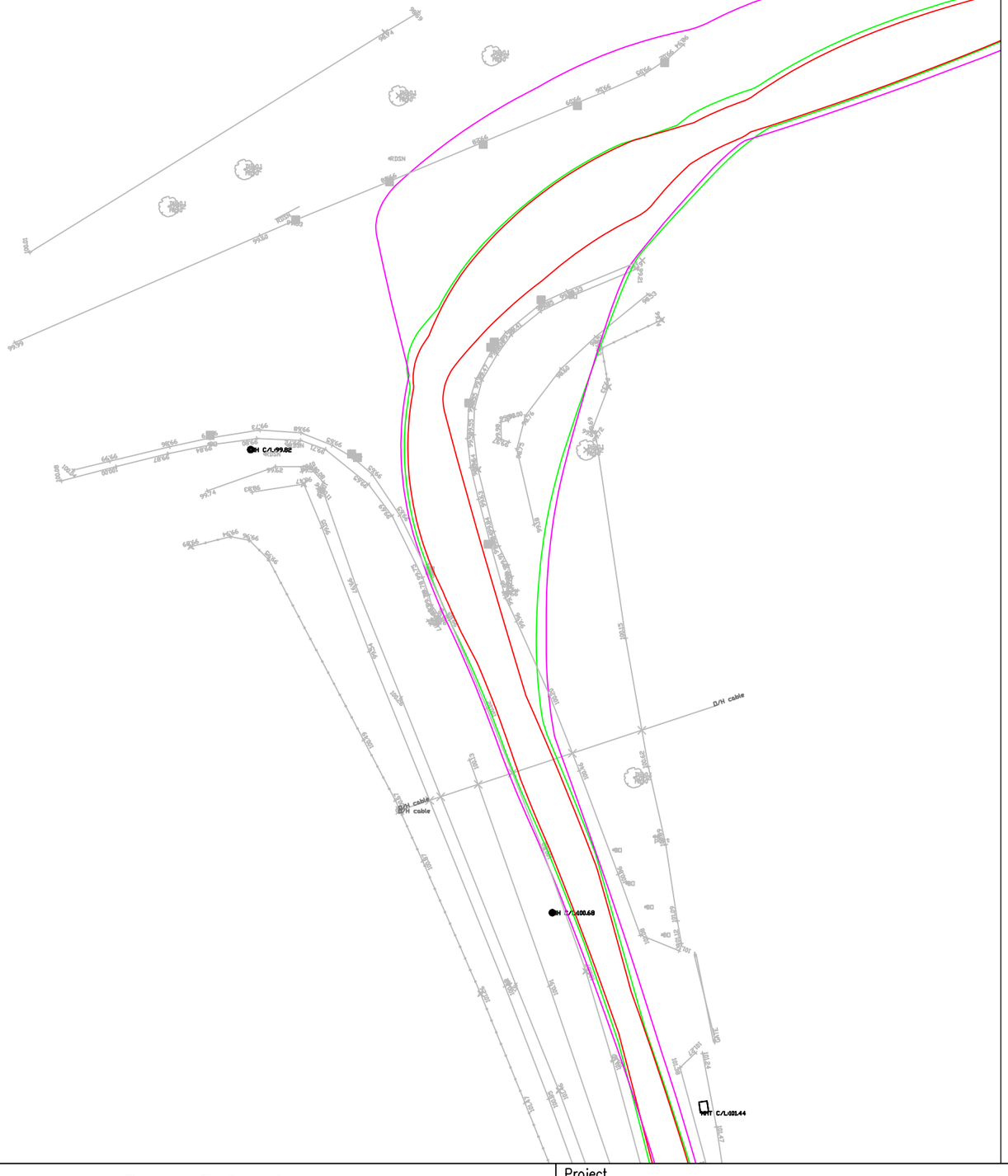
Revision: 00

Blade



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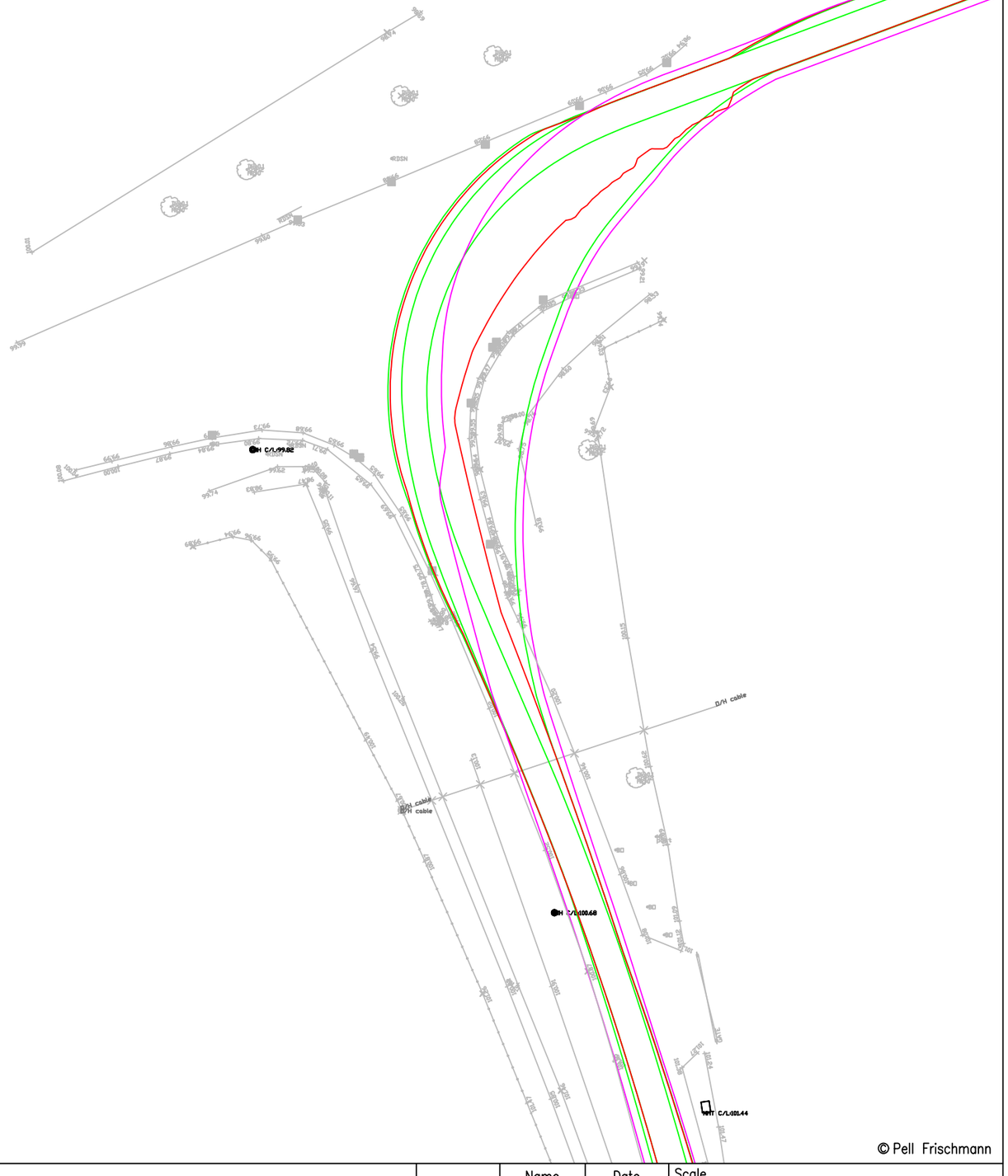

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 / L5025 Junction

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Designed	GB	18/12/2024
Checked	TL	18/12/2024
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Drawing Status: Draft

Drawing No.: SK03

Notes:
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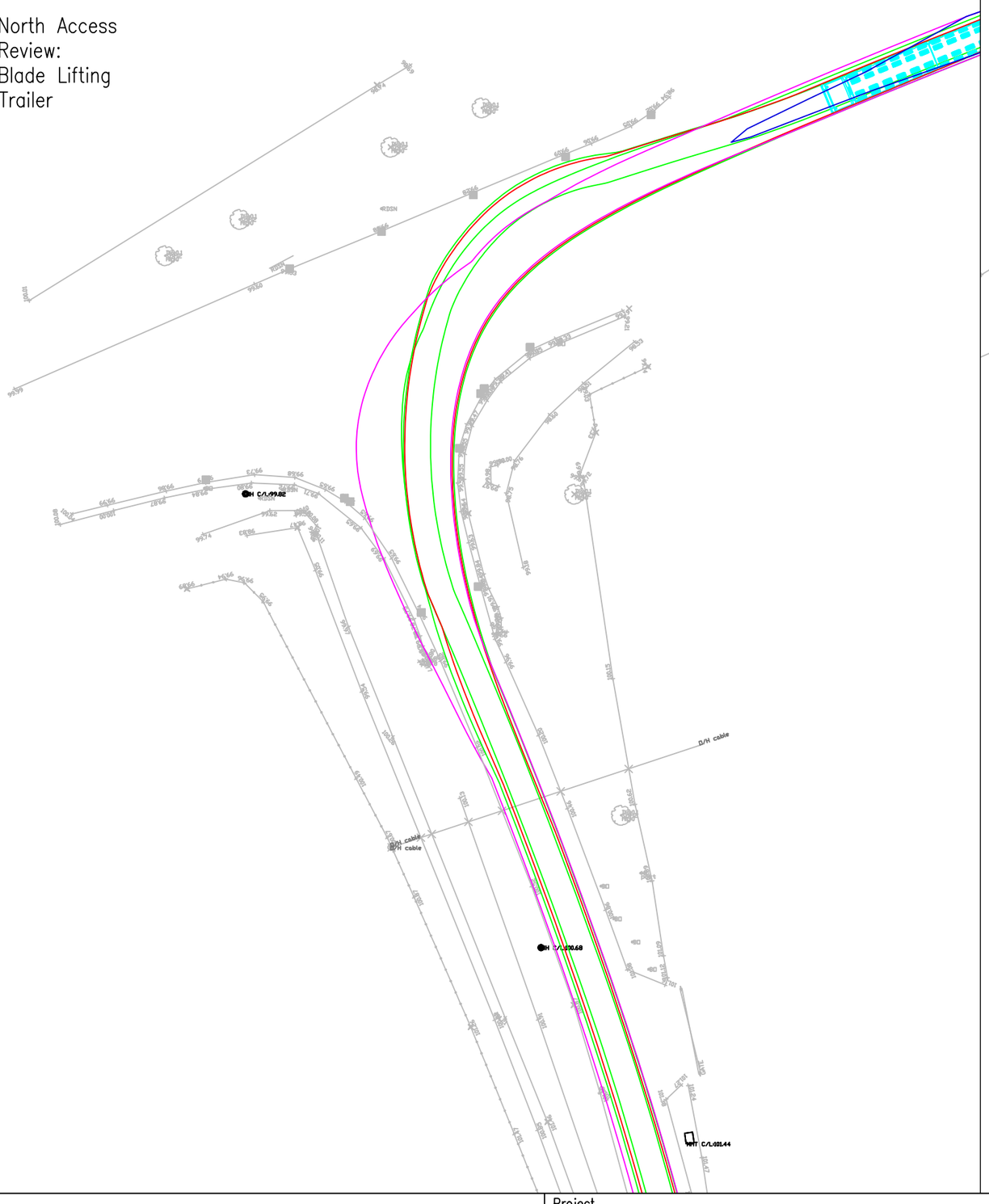
Revision: 00

North Access
Review:
Blade Lifting
Trailer



North Access
Review:
Tower

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SPA Location: R402 / L5025 Junction

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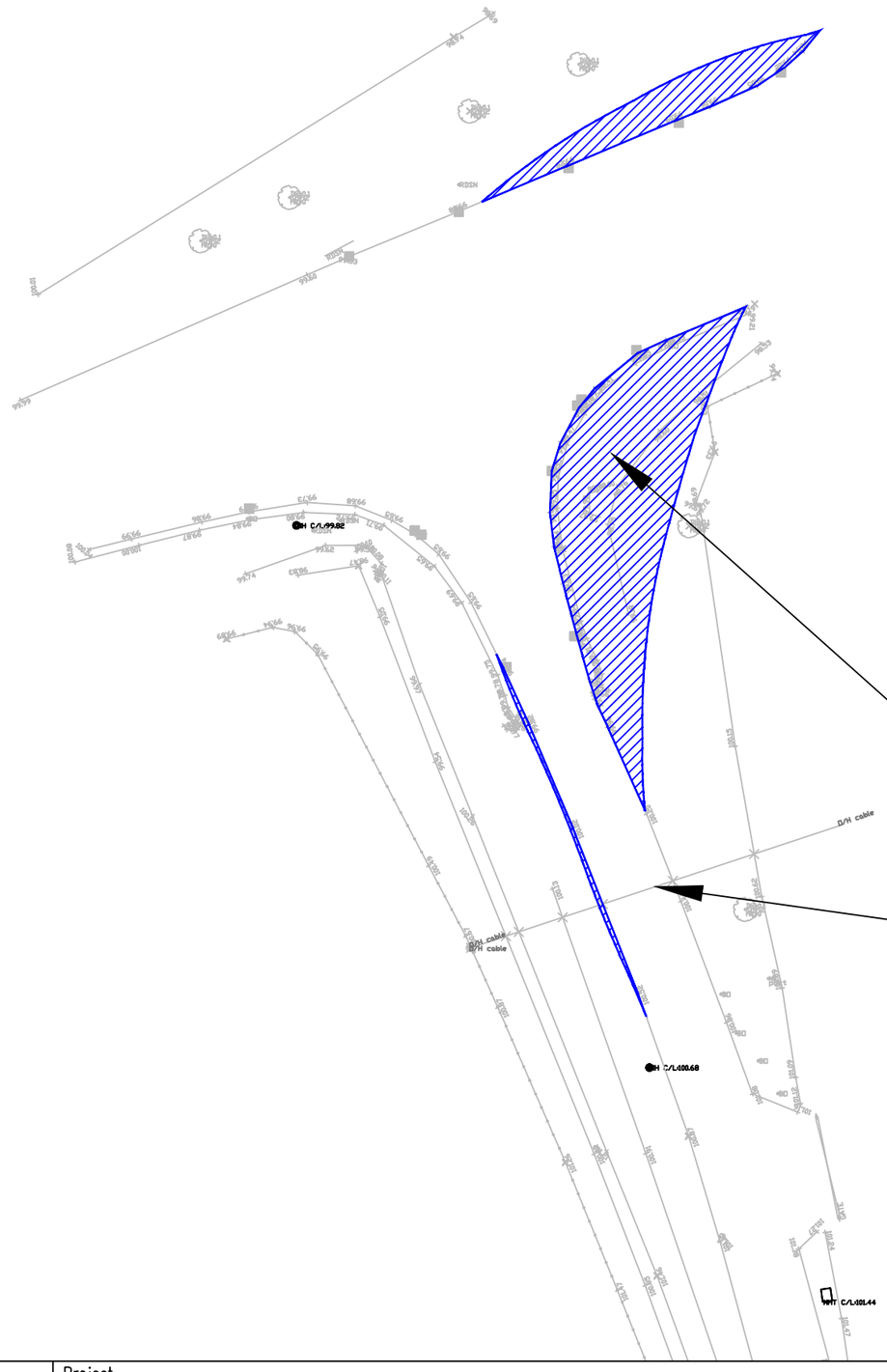
Drawing No.: SK03A

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: 00



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Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 / L5025 Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		3

Scale: 1:500 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

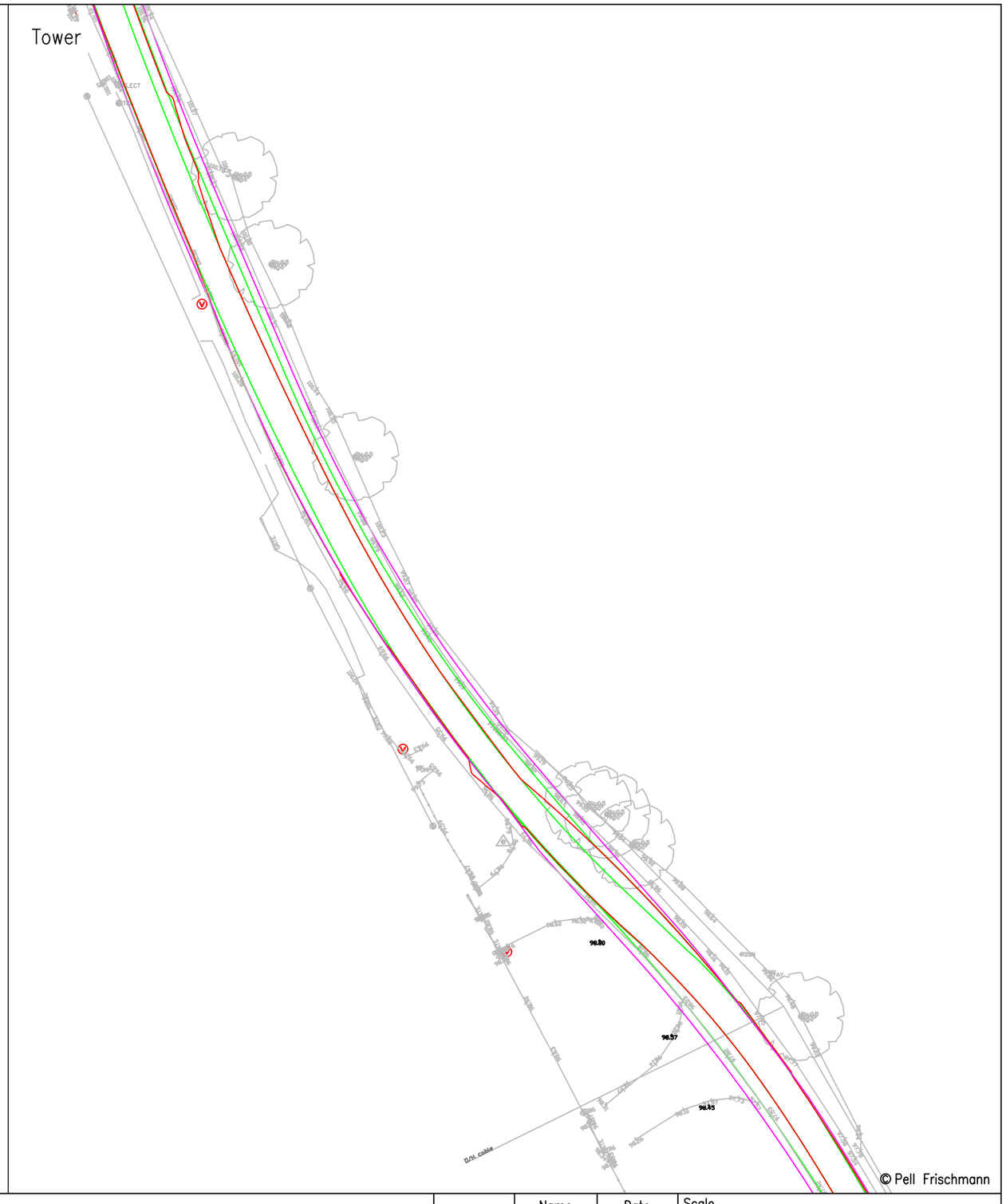
Drawing No.: SK03B

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: 00

Blade

Tower



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www.pellfrischmann.com

Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 1

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		4

Scale: 1:500 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

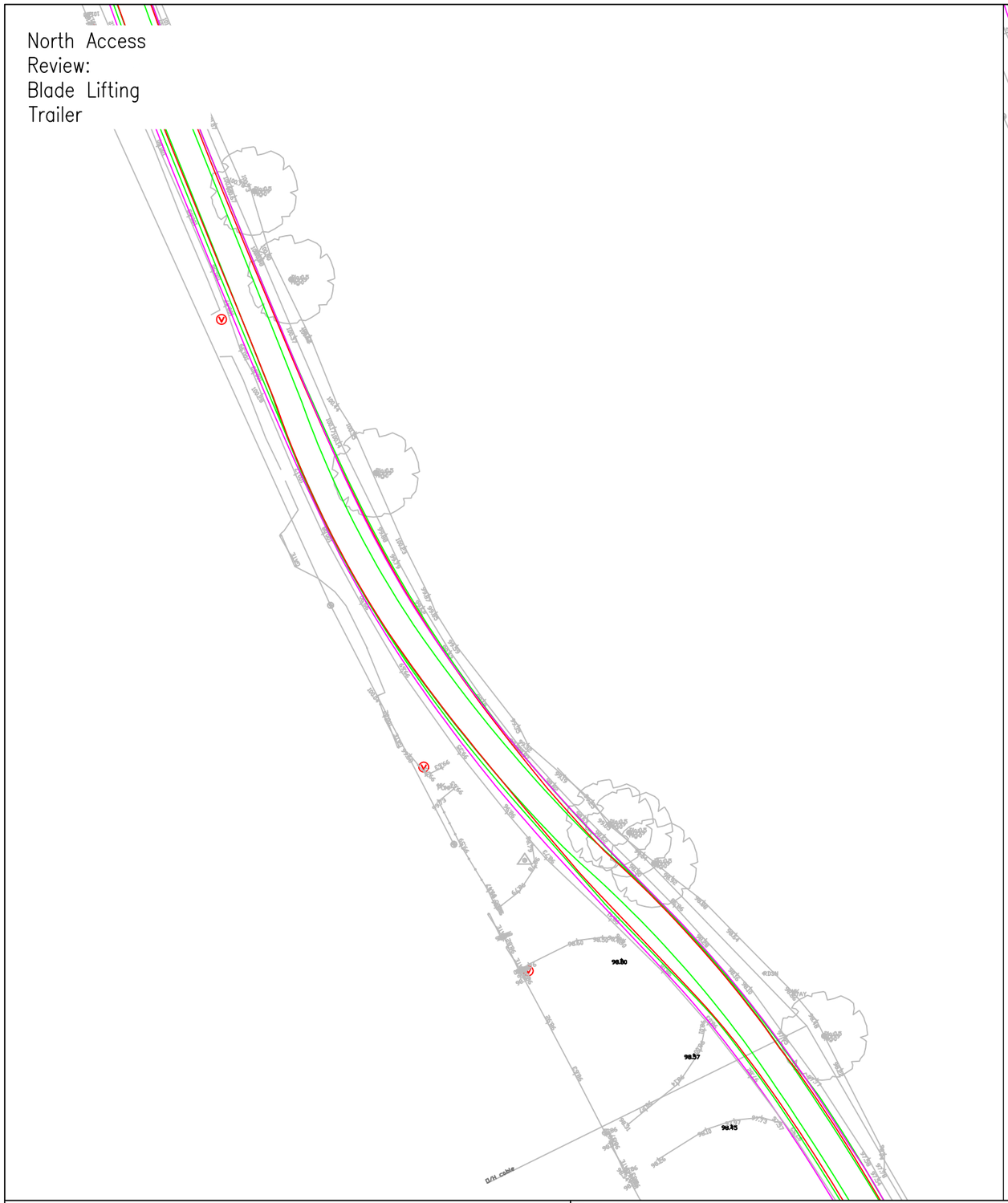
Drawing Status: Draft

Drawing No.: SK04

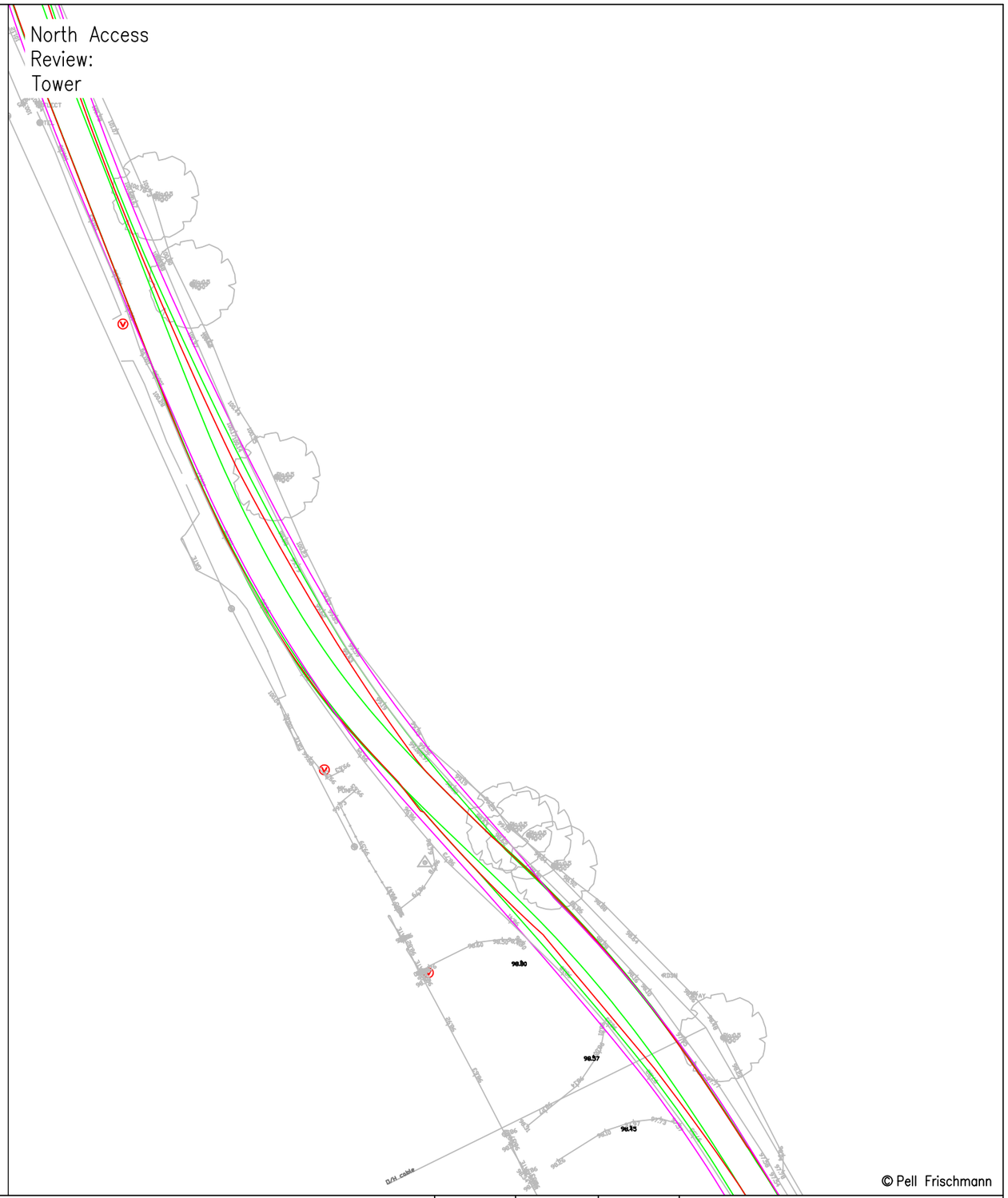
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 00

North Access
Review:
Blade Lifting
Trailer



North Access
Review:
Tower



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www.pellfrischmann.com

Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 1

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		4

Scale: 1:500 @ A3

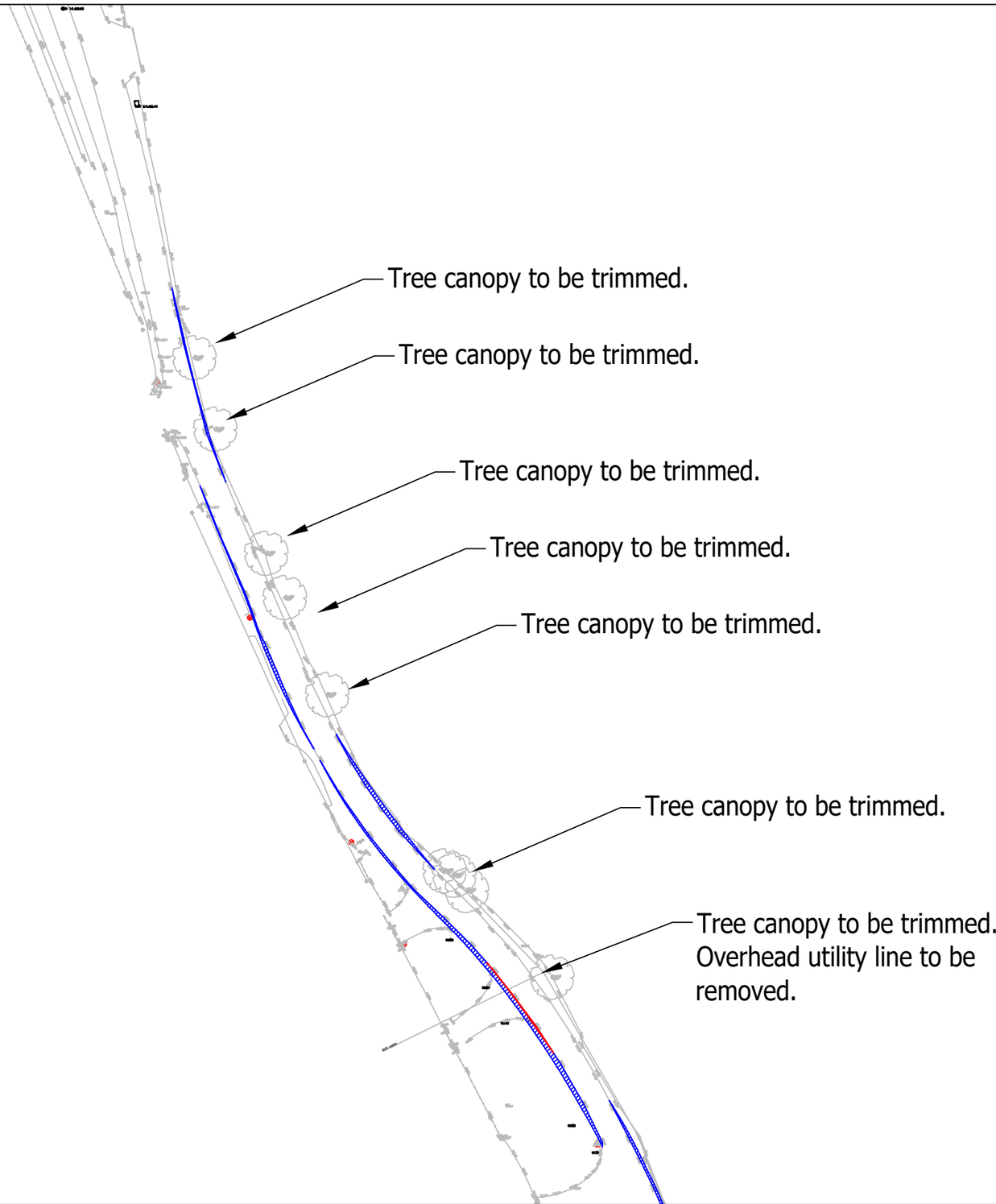
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK04A

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 1

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		4

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

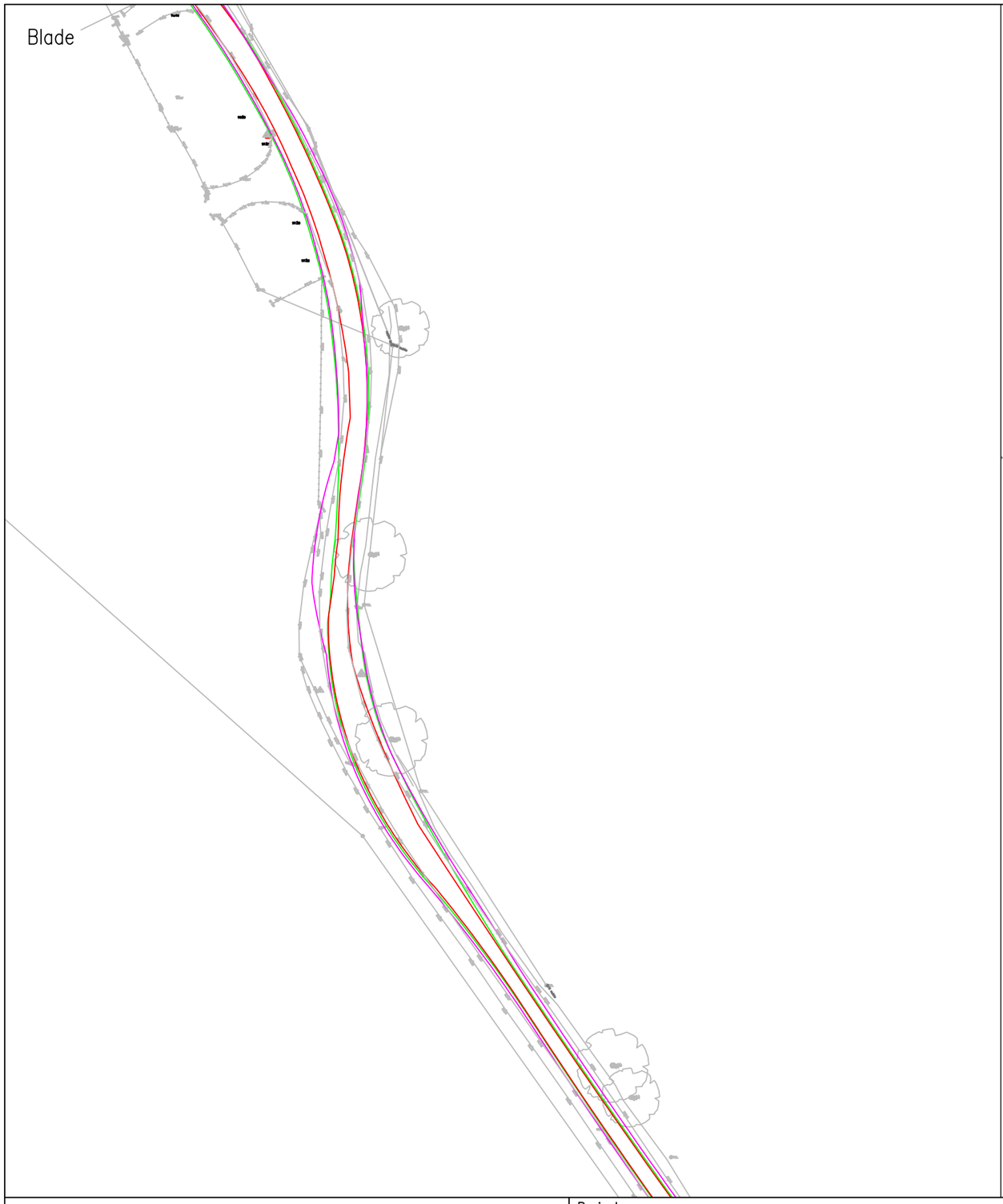
Drawing Status: Draft

Drawing No.: SK04B

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: 00

Blade



Tower

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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 2

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		5

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

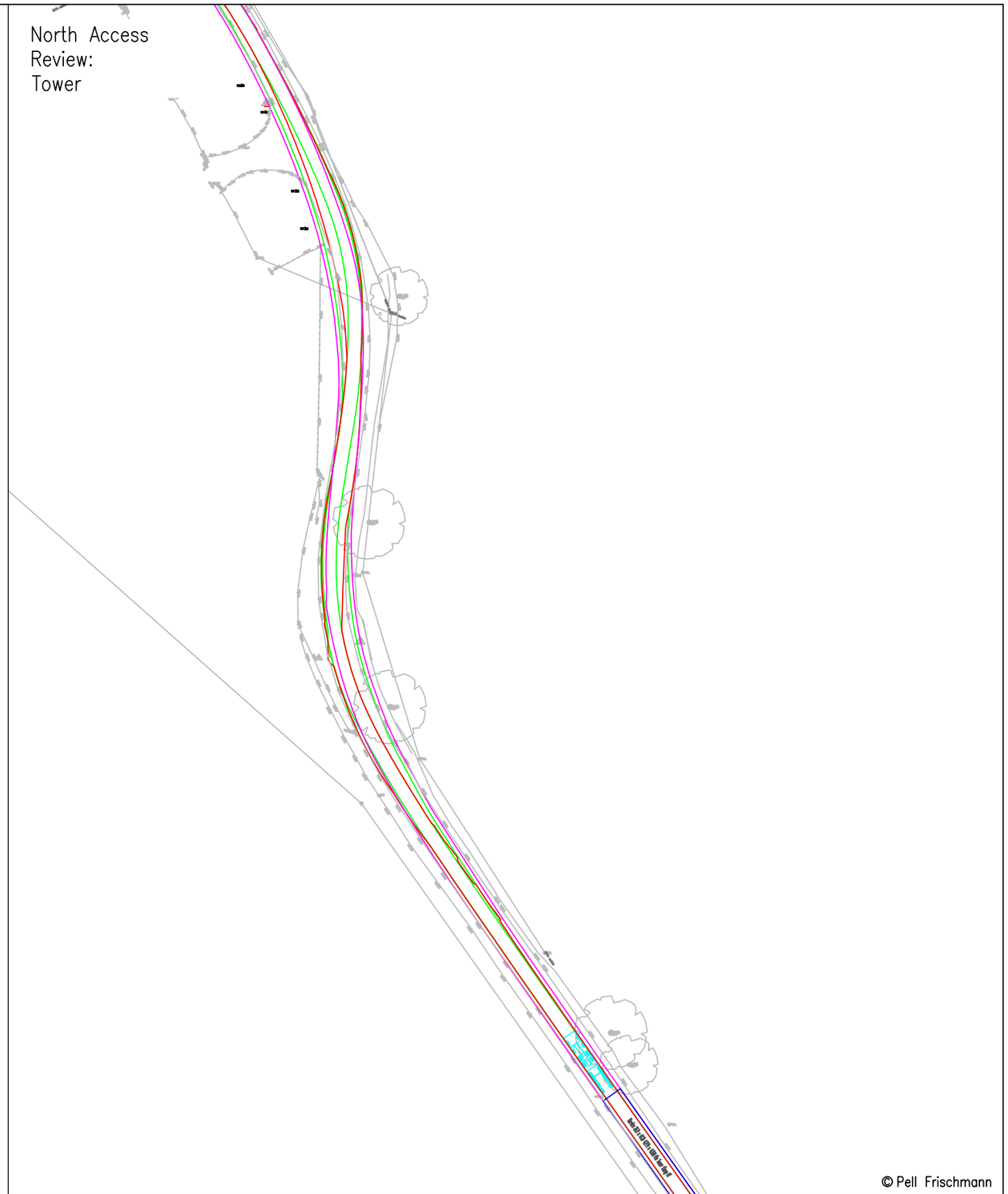
Drawing No.: SK05

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: 01

North Access
Review:
Blade Lifting
Trailer

North Access
Review:
Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 2

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		5

Scale: 1:1000 @ A3

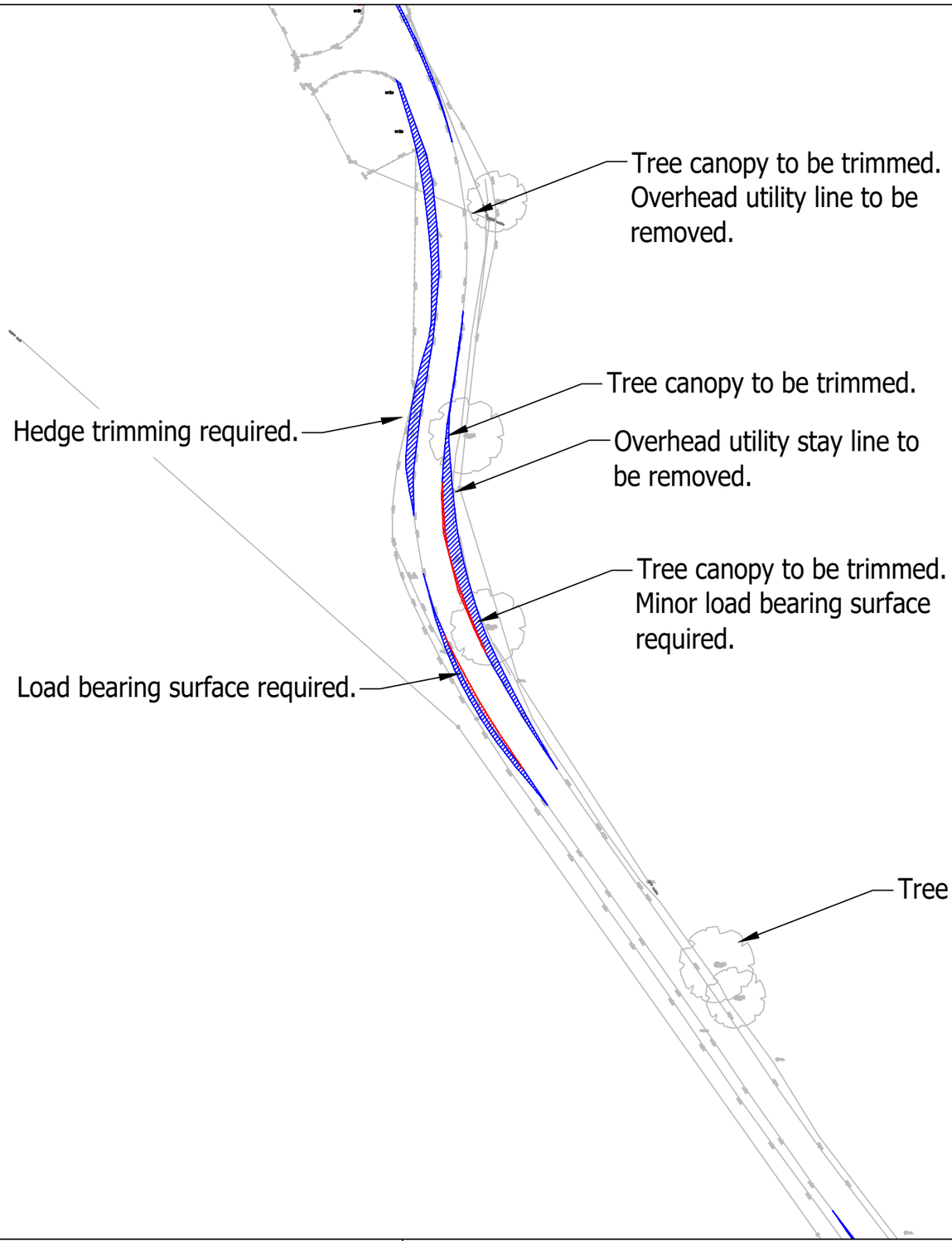
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK05A

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 Bend 2

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		5

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

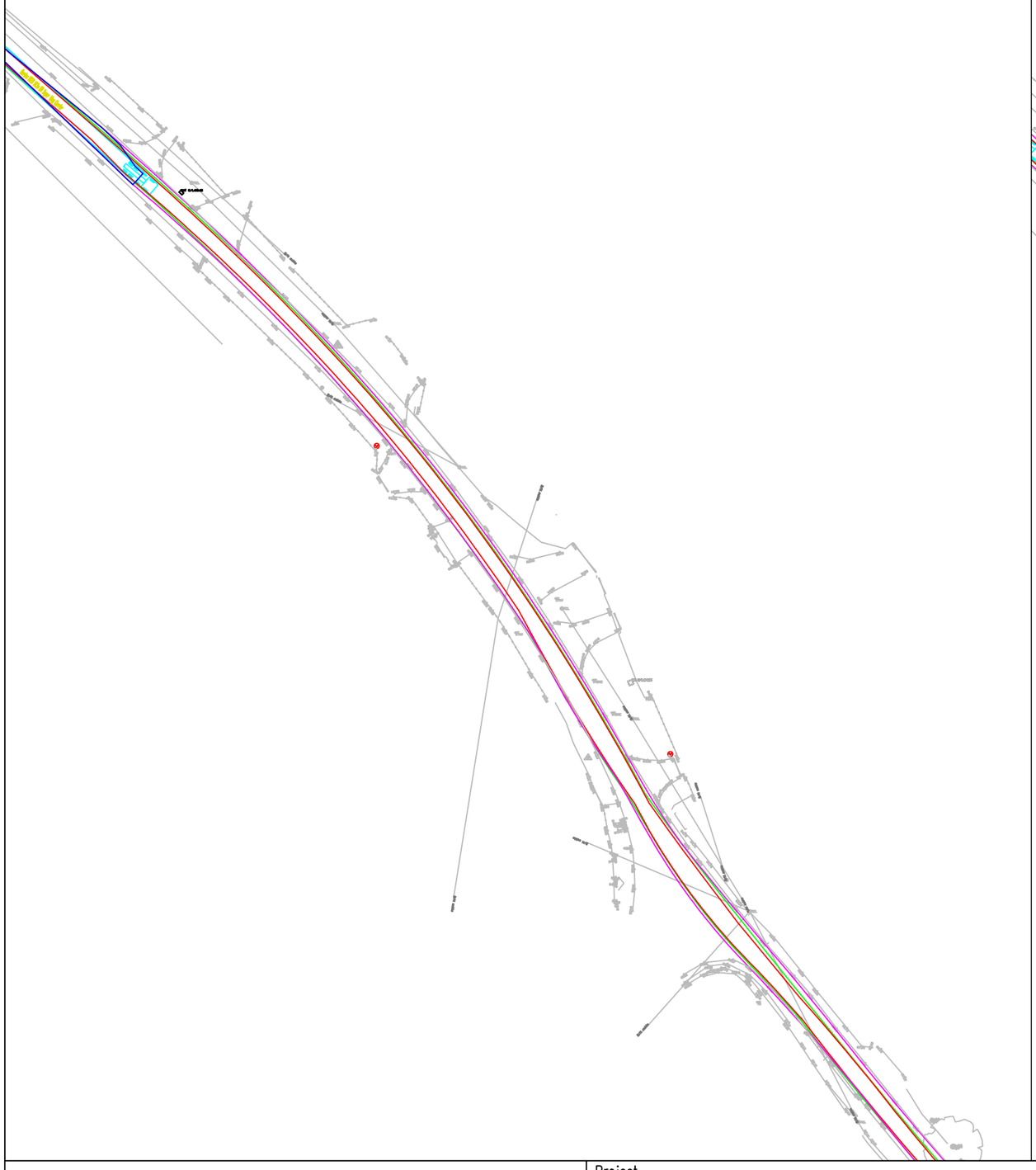
Drawing Status: Draft

Drawing No.: SK05B

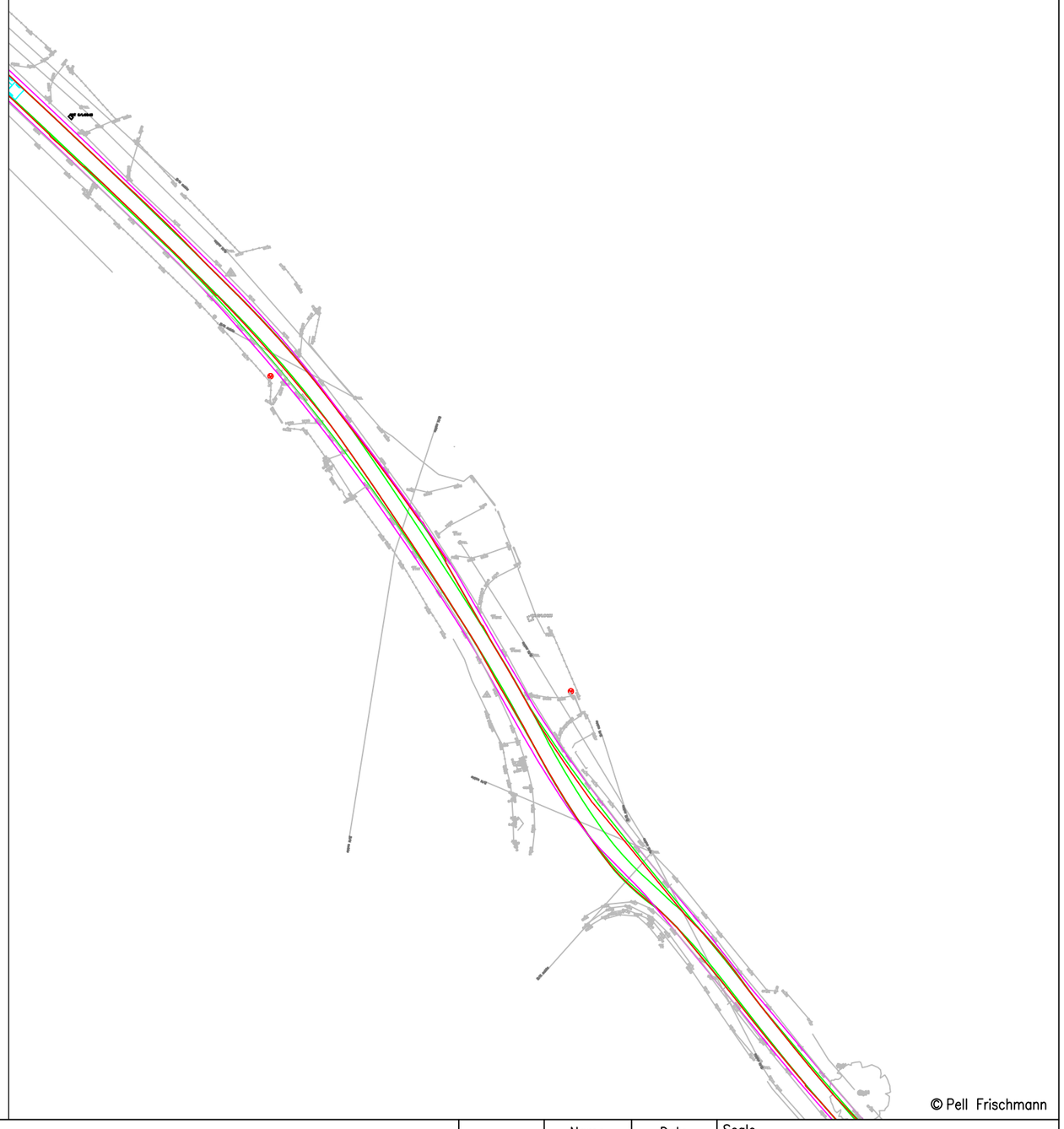
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 01

Blade



Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 North of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		6

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

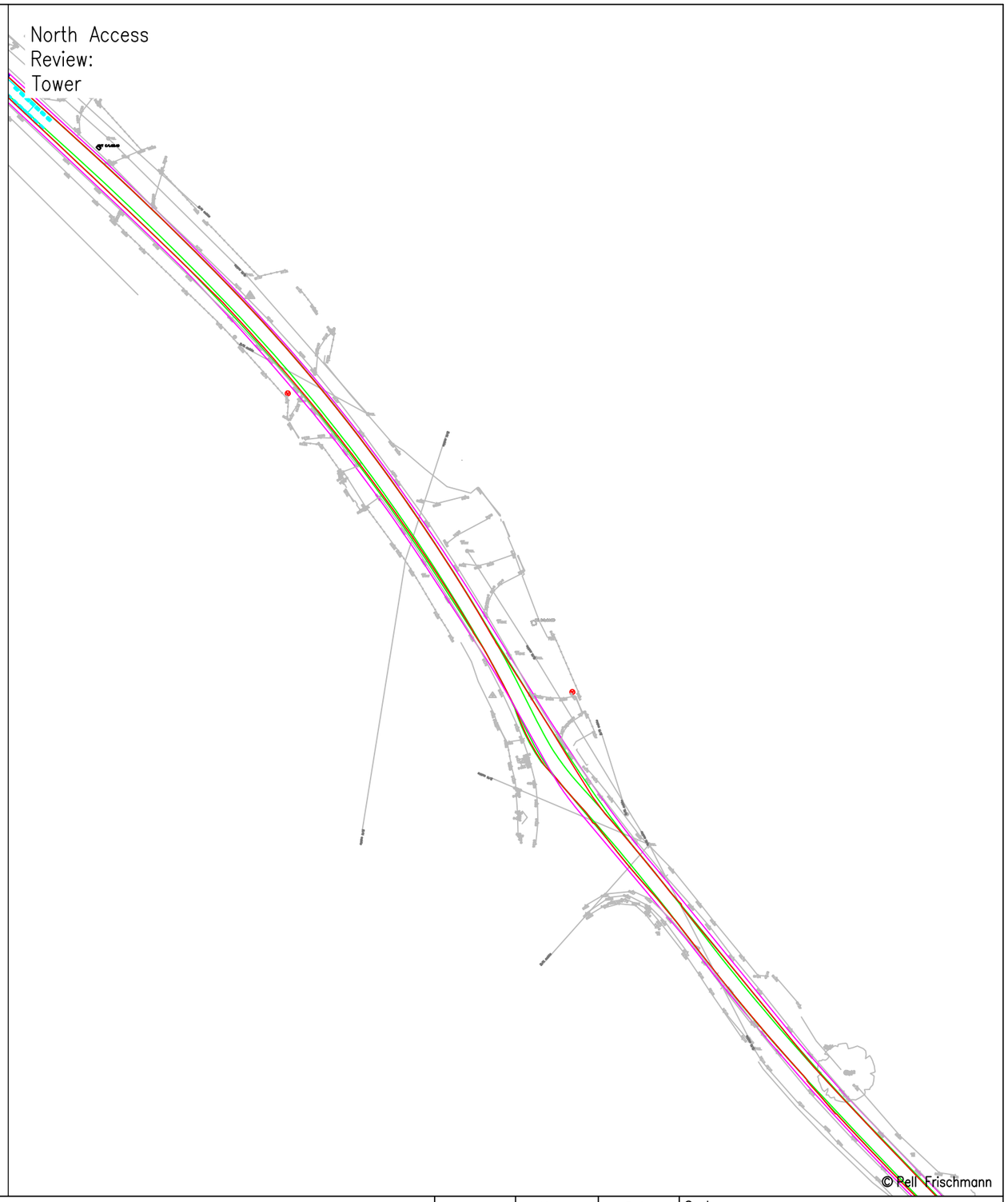
Drawing No.: SK06

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: 00

North Access
Review:
Blade Lifting
Trailer

North Access
Review:
Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 North of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		6

Scale: 1:1000 @ A3

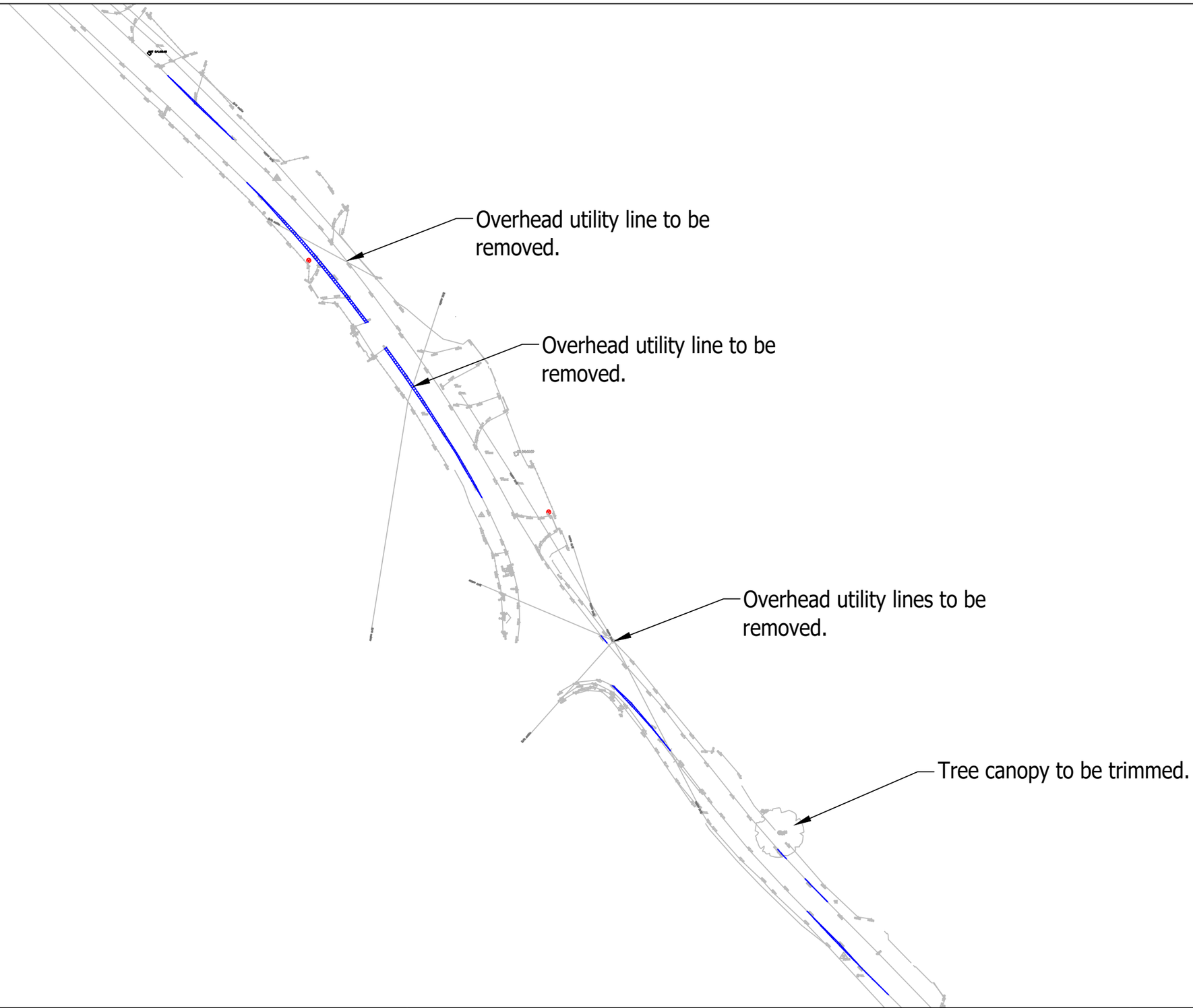
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK06A

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 North of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		6

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

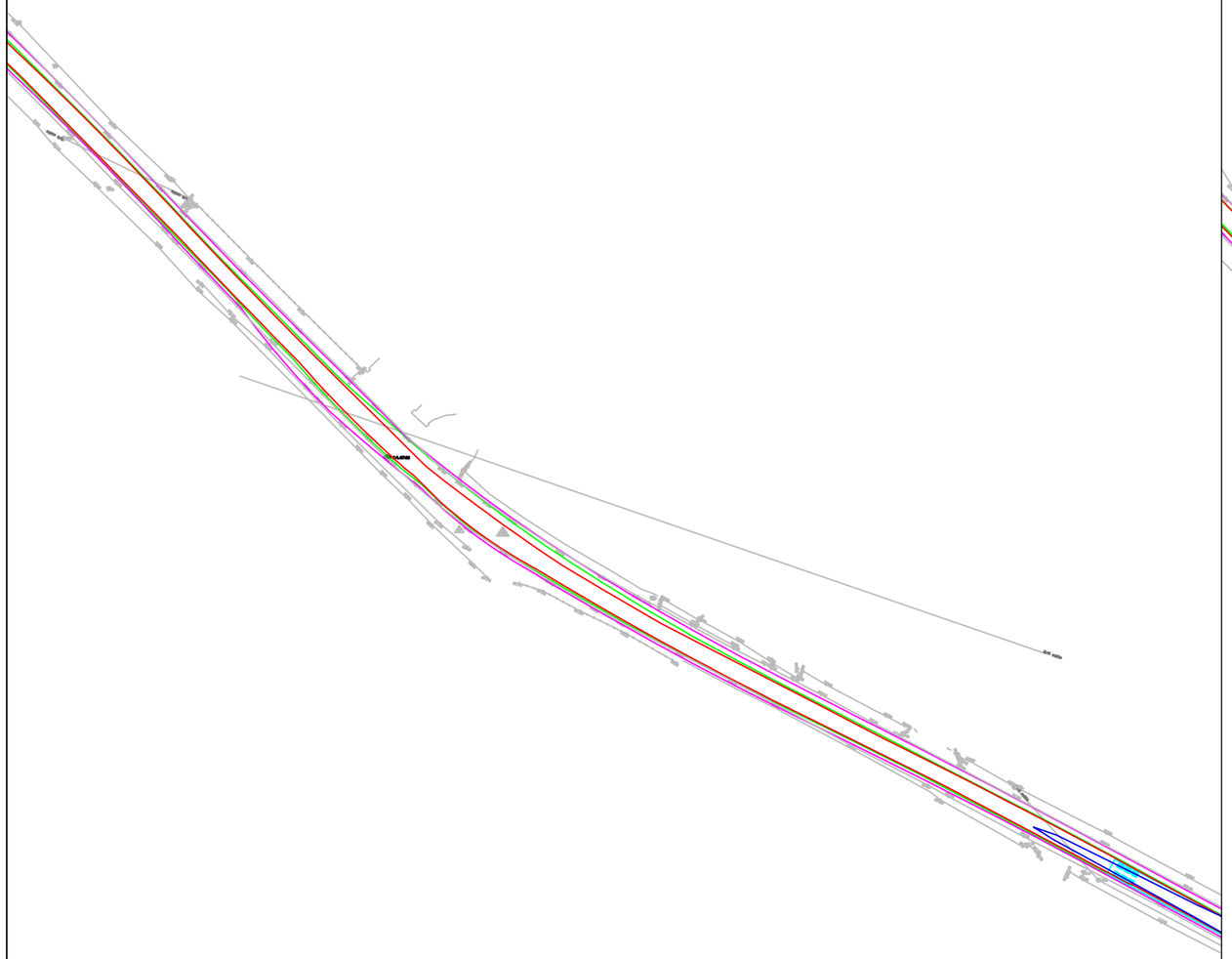
Drawing Status: Draft

Drawing No.: SK06B

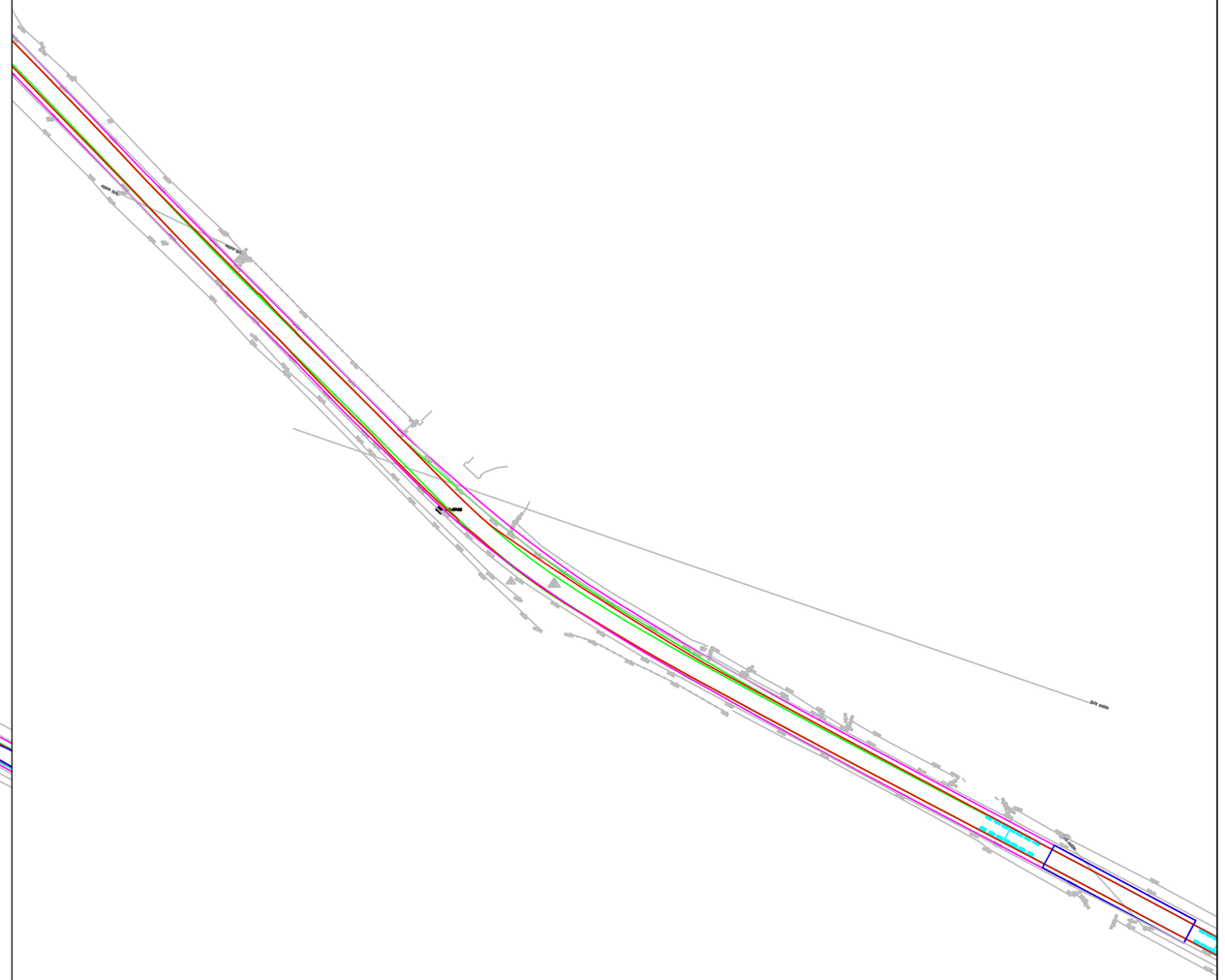
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 00

Blade



Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 South of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		7

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

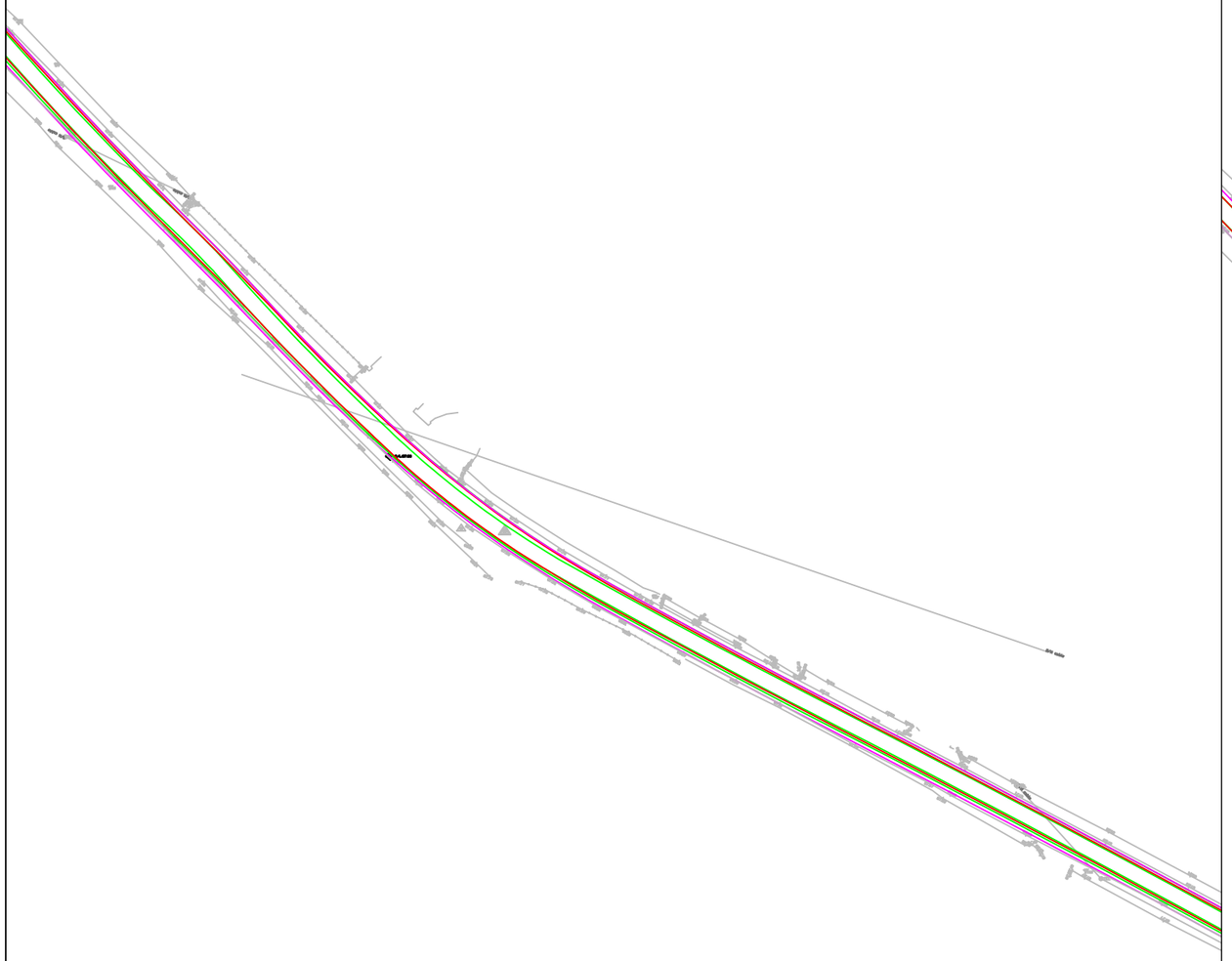
Drawing Status: Draft

Drawing No.: SK07

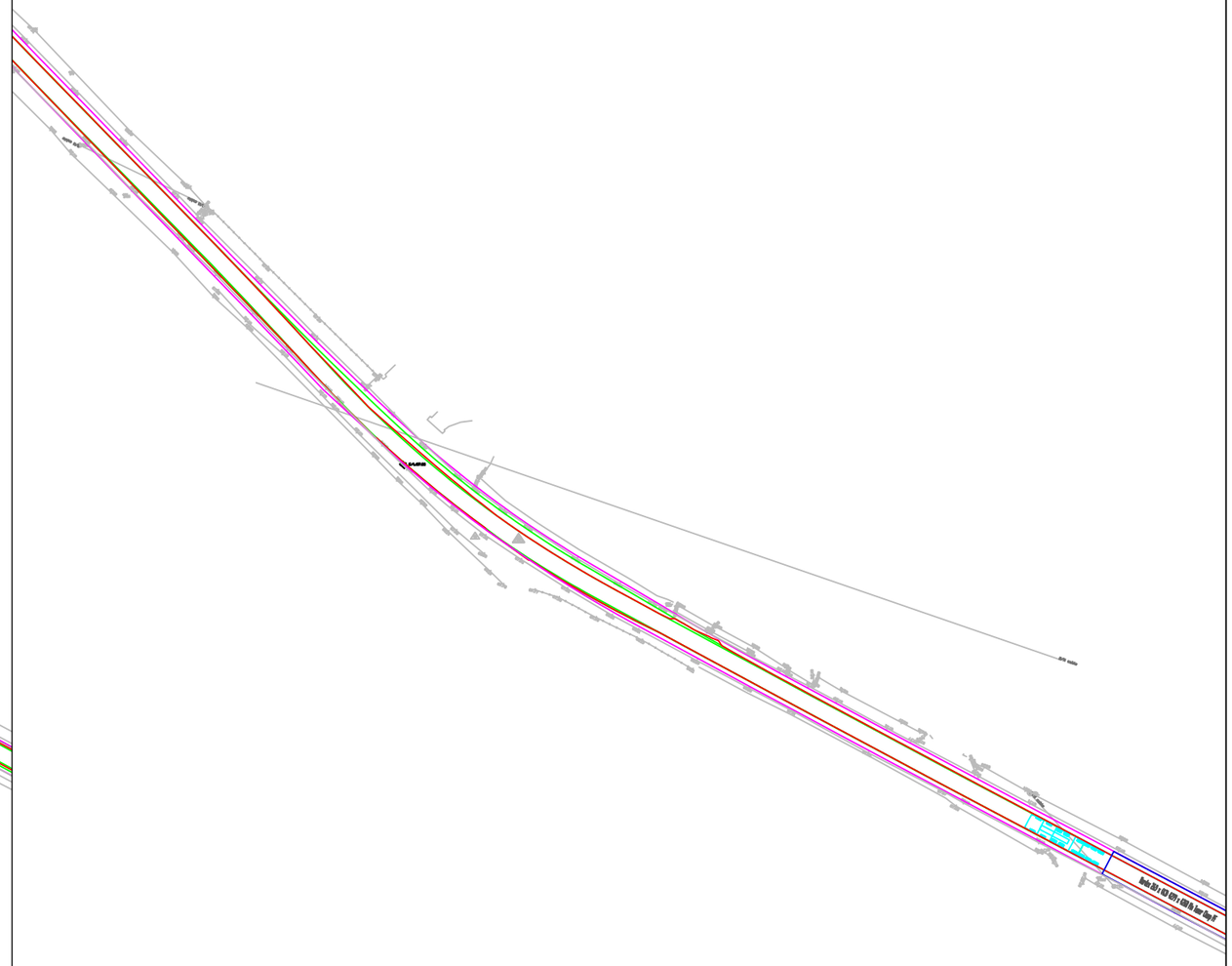
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 00

North Access
Review:
Blade Lifting
Trailer



North Access
Review:
Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 South of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		7

Scale: 1:1000 @ A3

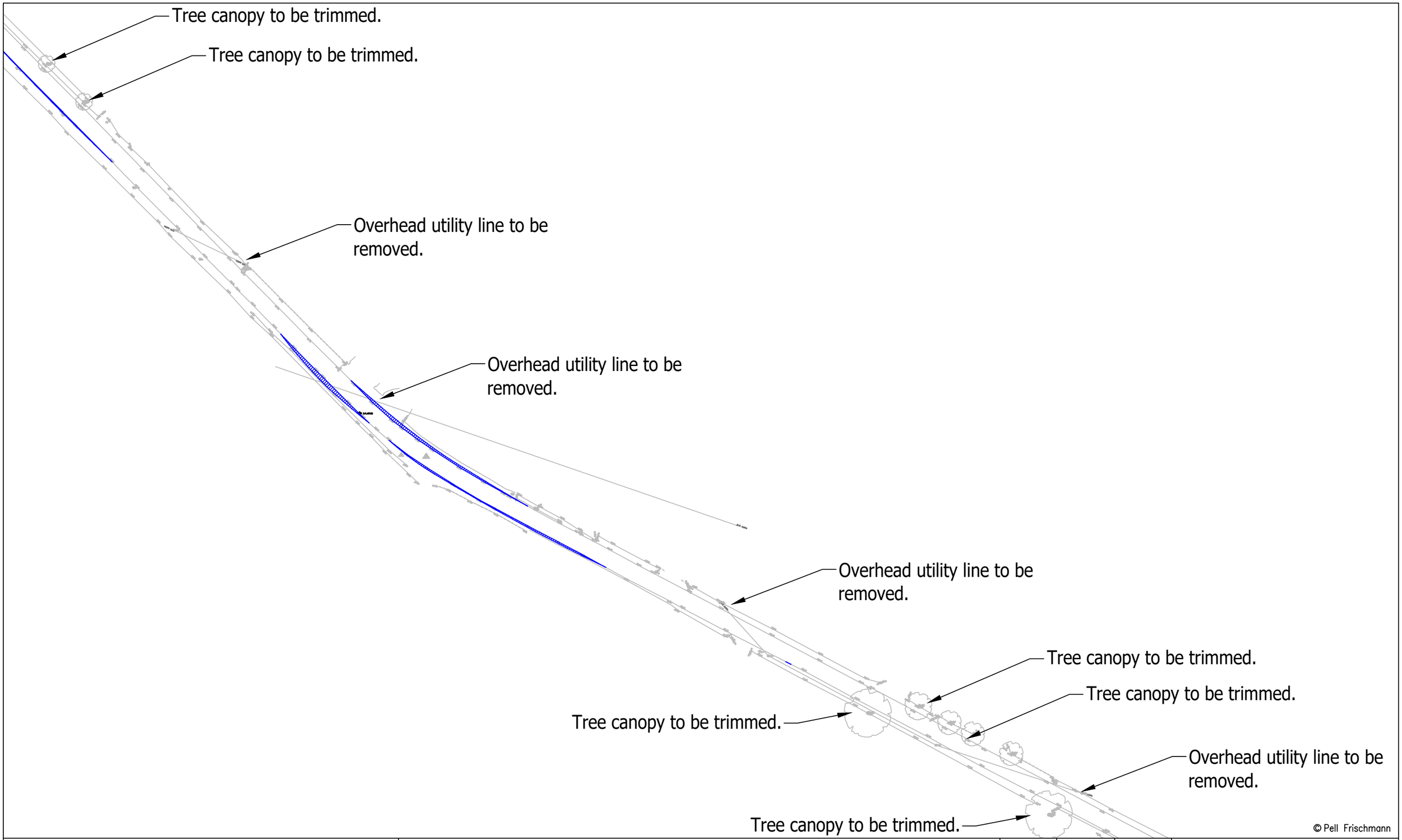
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK07A

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 South of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		7

Scale: 1:1000 @ A3

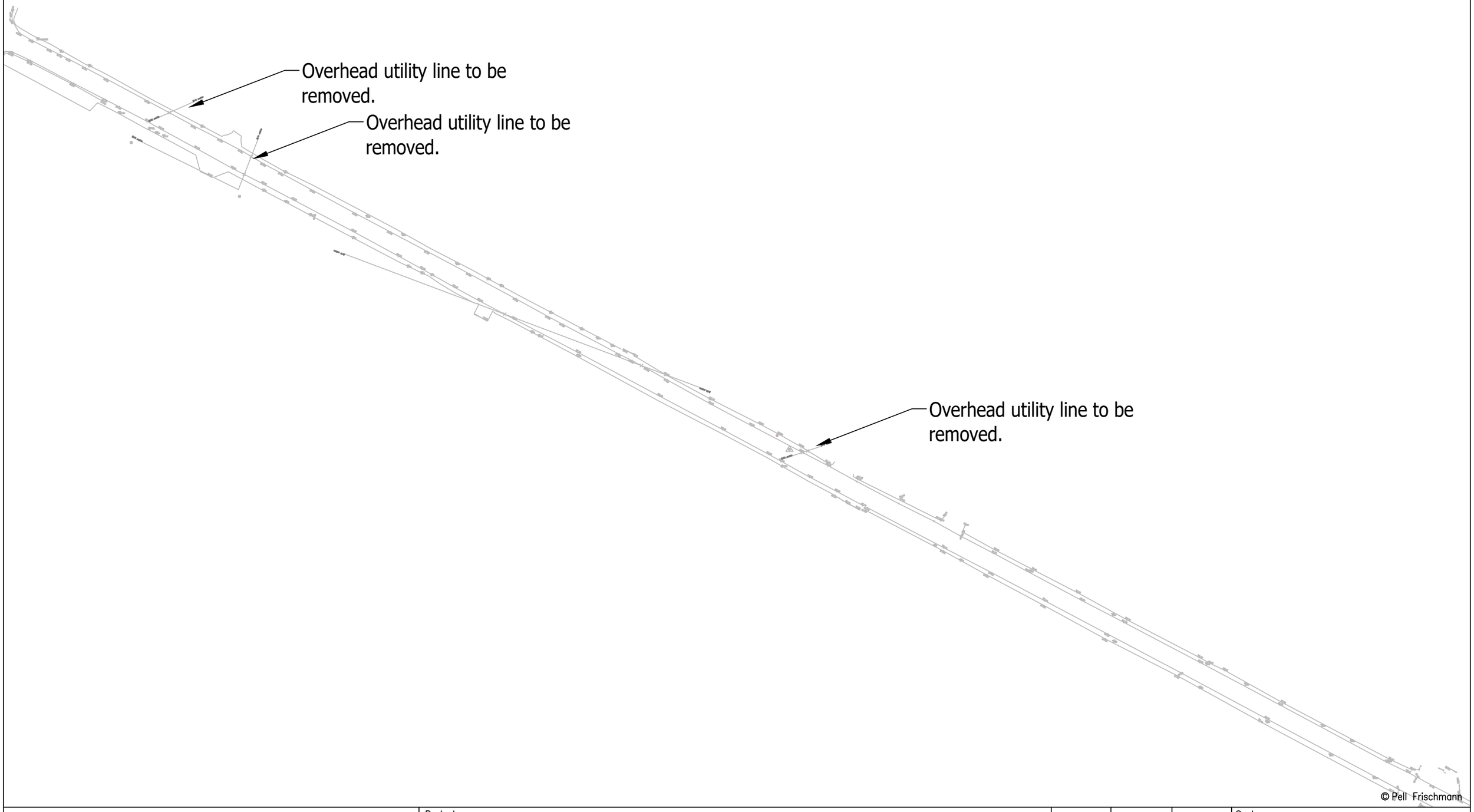
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK07B

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: 00



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www.pellfrischmann.com

Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 East of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		7

Scale: 1:1000 @ A3

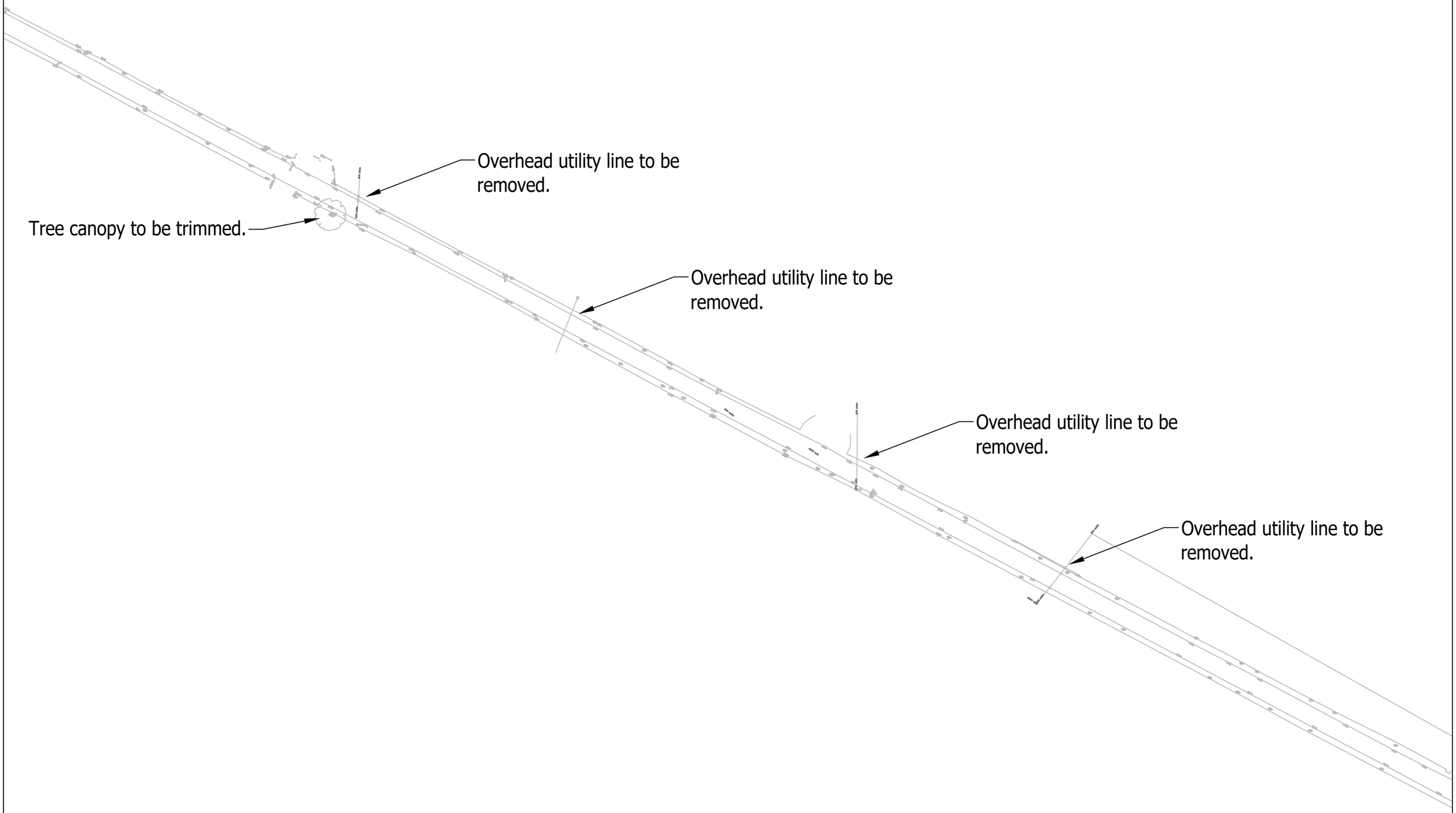
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK07C

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: L5025 East of River Kilooney Bridge

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		7

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK07D

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: 00

Blade

Tower

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Southern Site Access Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		8

Scale: 1:1000 @ A3

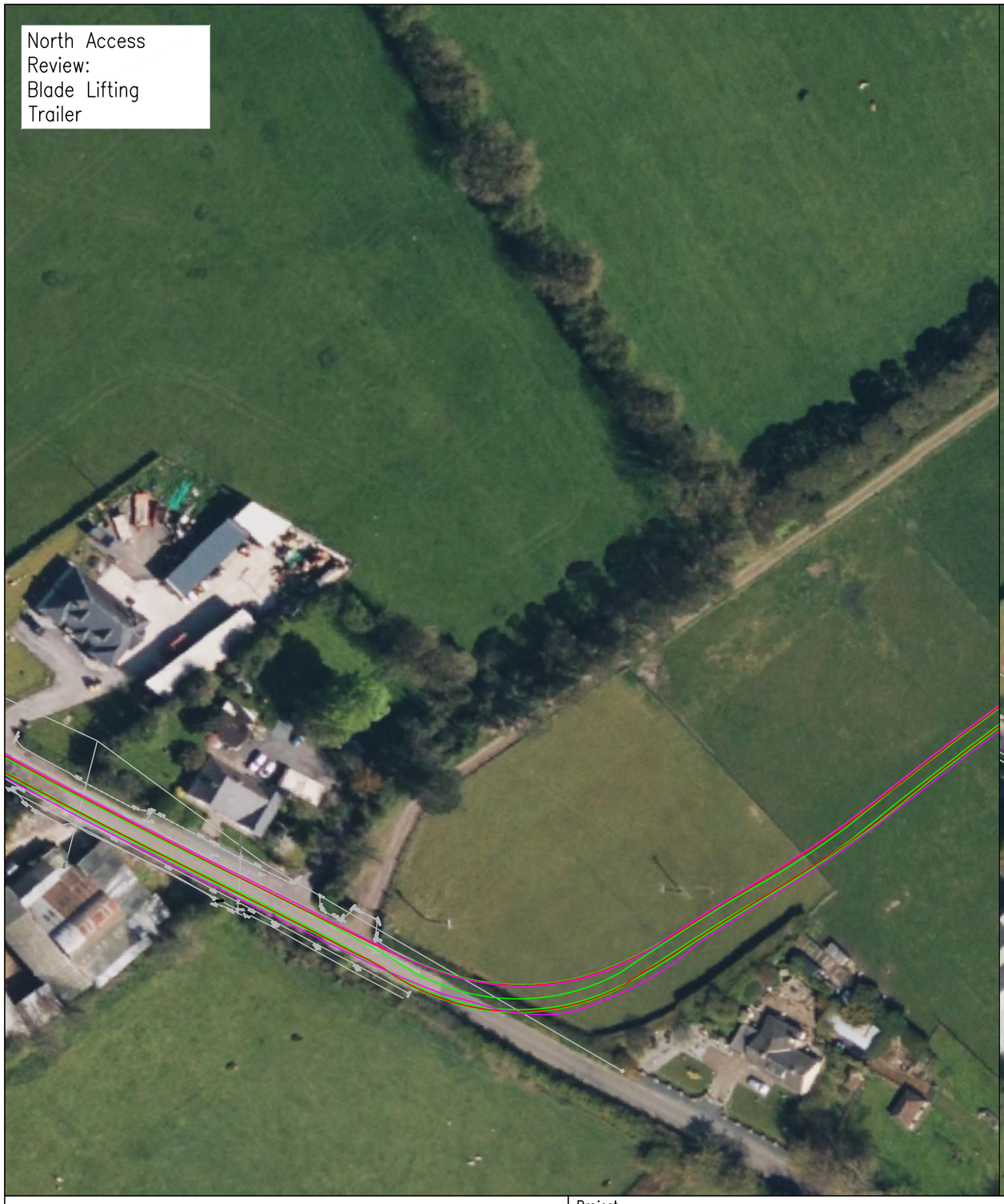
File No.: 241218 Drehid RSR Tracking.dwg

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Southern Site Access Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		8

Scale: 1:1000 @ A3

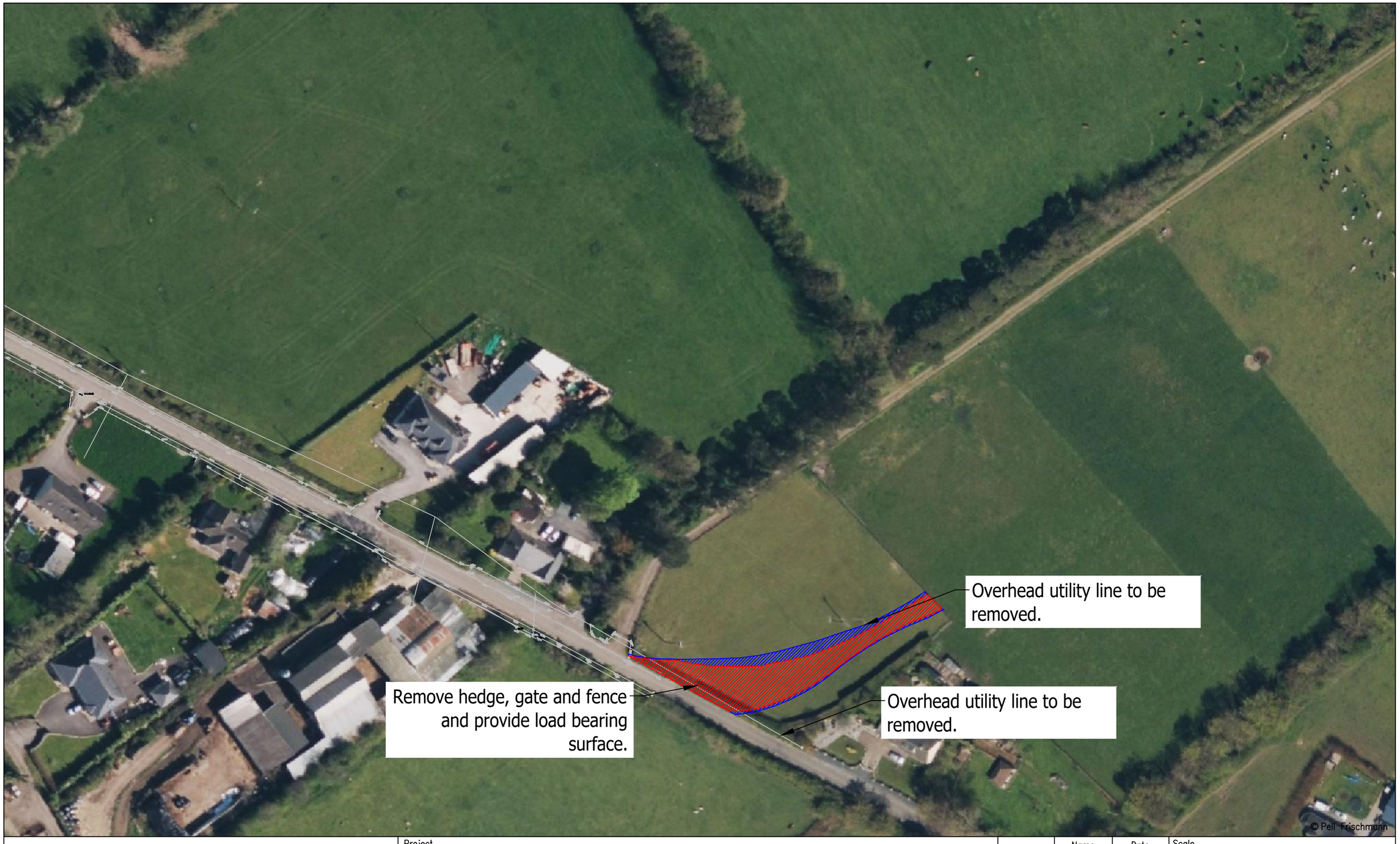
File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK08A

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: 00



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Southern Site Access Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		8

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK08B

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: 00

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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 Raven Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		9

Scale: 1:500 @ A3

File No.: 241218 Drehid RSR 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: 00

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Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: R402 Raven Junction

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		9

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK09A

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: 00

Blade

Tower

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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bends 1 & 2

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		10&11

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK10

Notes:
1. All mitigation is subject to confirmation through a test run.
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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 1&2

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		10&11

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK10A

Notes:
1. All mitigation is subject to confirmation through a test run.
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Revision: 00

Blade

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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 3

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		12

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK11

Notes:
1. All mitigation is subject to confirmation through a test run.
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Revision: 00

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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 3

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		12

Scale: 1:1000 @ A3

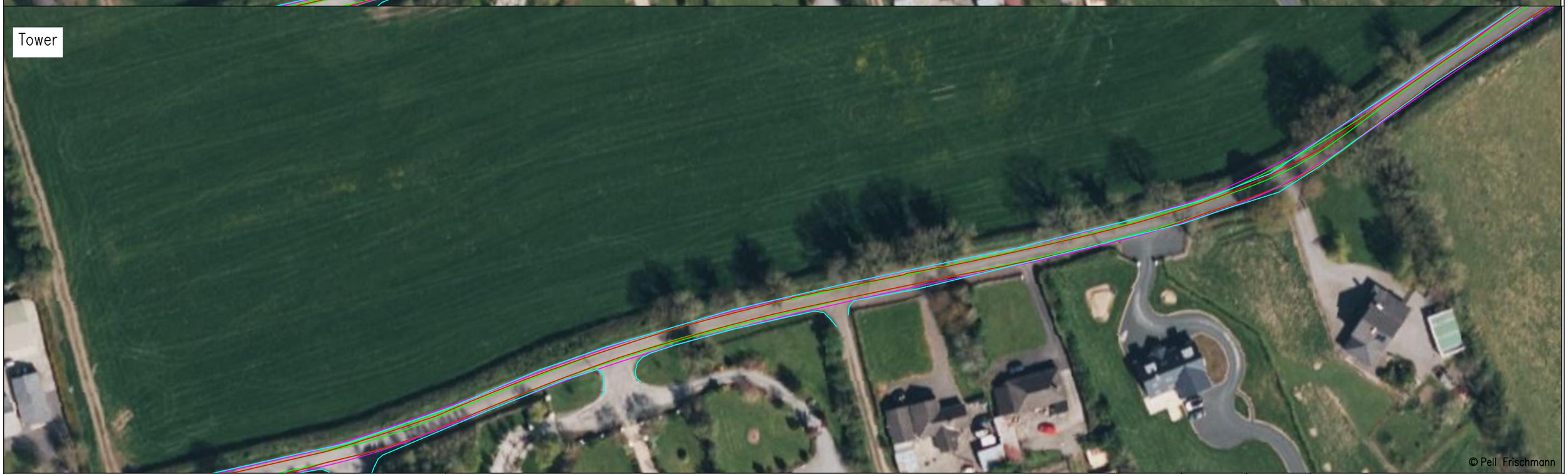
File No.: 241218 Drehid RSR Tracking.dwg

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: 00



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Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 4

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		13

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR 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: 00

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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 4

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		13

Scale: 1:1000 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

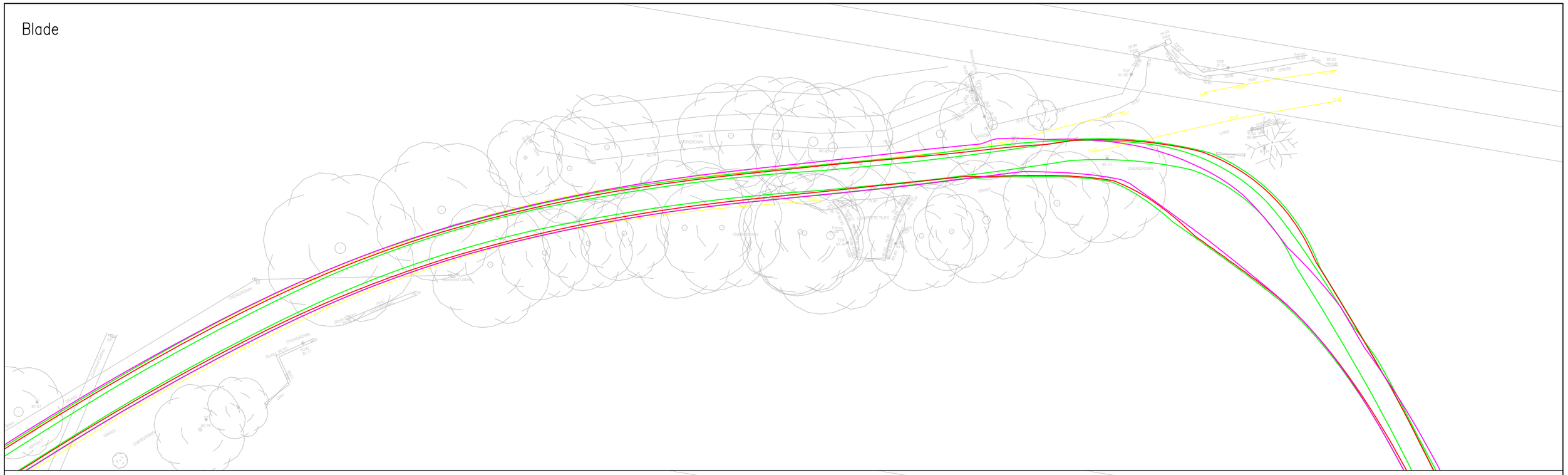
Drawing Status: Draft

Drawing No.: SK12A

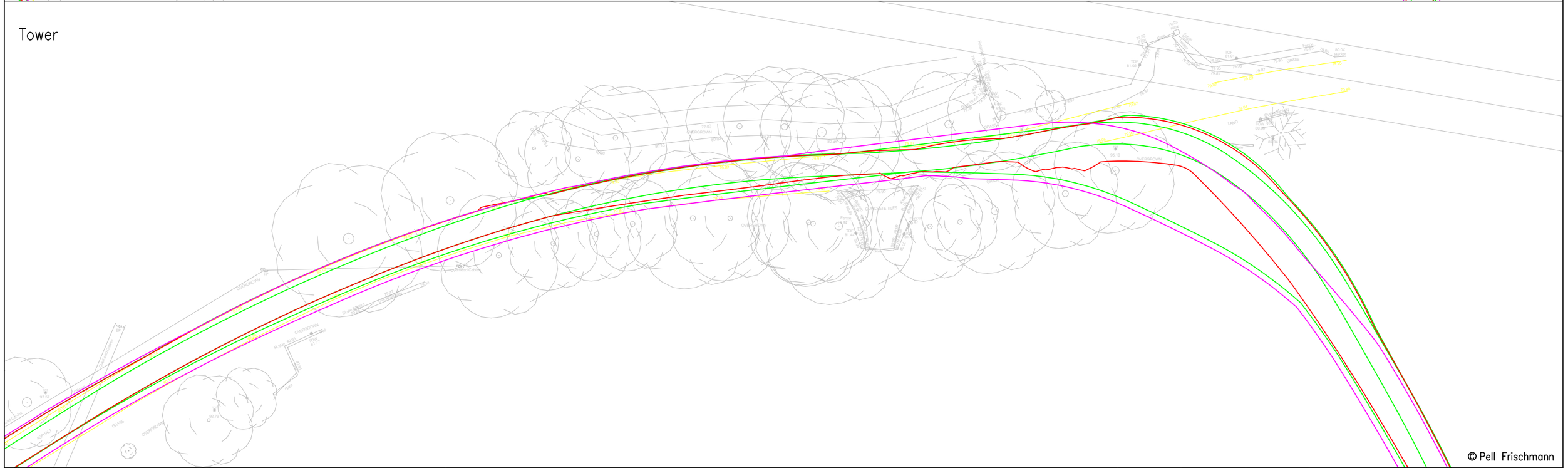
Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 01

Blade



Tower



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 5 and North Site Access

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		14&15

Scale: 1:500 @ A3

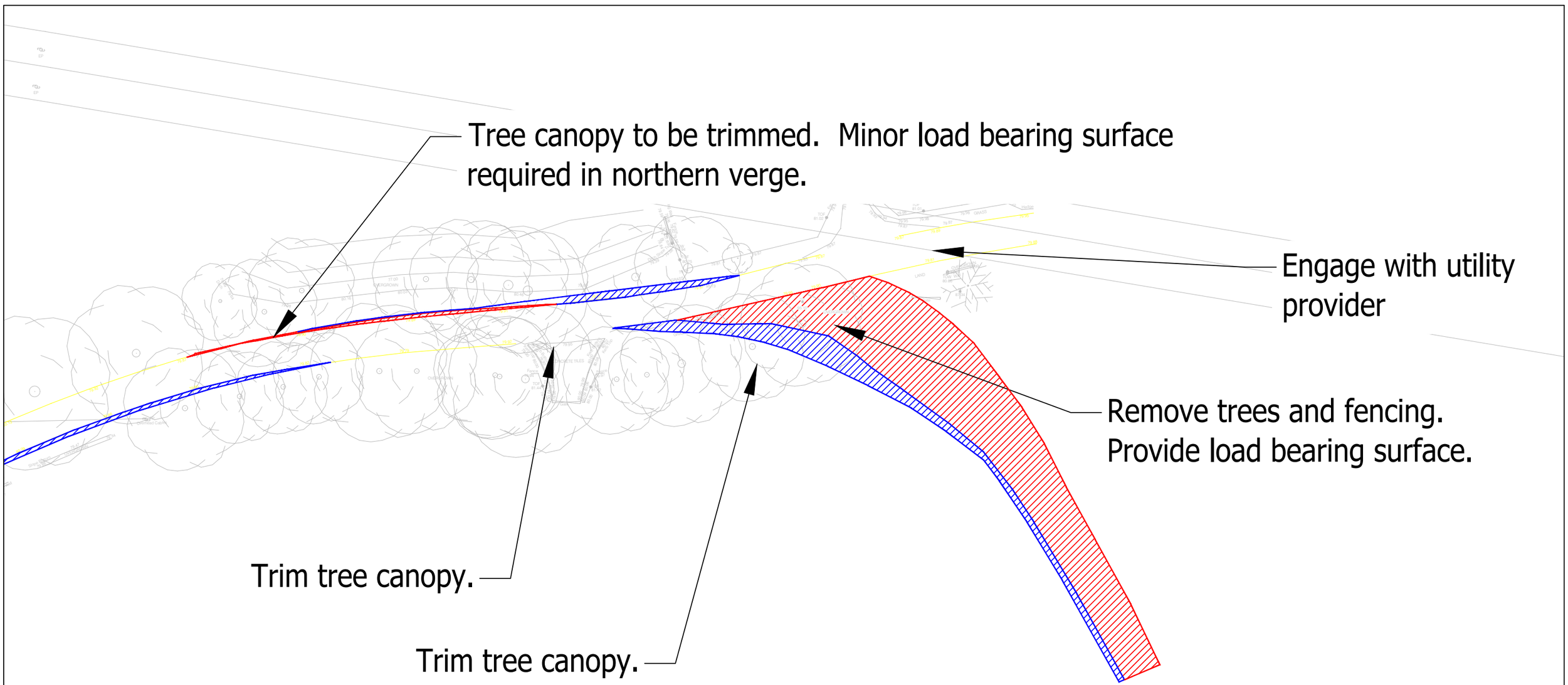
File No.: 241218 Drehid RSR Tracking.dwg

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: 01



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Client: NORTH KILDARE WIND FARM LTD.

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Overrun | Oversail

Project: DREHID WIND FARM

Drawing Title: NORDEX N133 BLADE & N133 TS100 TOWER

SPA Location: Kilshanroe Road Bend 5 and North Site Access

	Name	Date
Drawn	GB	18/12/2024
Designed	GB	18/12/2024
Checked	TL	18/12/2024
Point of Interest		14&15

Scale: 1:500 @ A3

File No.: 241218 Drehid RSR Tracking.dwg

Drawing Status: Draft

Drawing No.: SK13A

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: 01

APPENDIX 13.2

Trip Generation

Month					1				2				3			
Week					1	2	3	4	5	6	7	8	9	10	11	12
Main Construction																
Site Establishement (6wks)																
Site Roads 10251m (10wks)																
Hardstands 11no (12wks)																
Foundations 11no (12wks)																
Internal Collector System (11wks)																
Substation Construction and LILO connection (32wks)																
WTG Delivery 11no (12wks)																
WTG Install 11no (18wks)																
Comissioning (26wks)																
Site Reinstatment and Demob (5wks)																

Total	198.7	193.8	825.3	825.3	825.6	825.3	1113.1	1113.1	1113.1	1113.1	1113.1	1113.1
HV	126.7	121.8	663.3	663.3	663.6	663.3	933.1	933.1	933.1	933.1	933.1	933.1
LV	72.0	72.0	162.0	162.0	162.0	162.0	180.0	180.0	180.0	180.0	180.0	180.0

Total Vehicles	1	2	3
HV	1575.0	3193.1	3732.5
LV	468	684	720

Total 2-way	253.3	423.6	1731.6	1731.6	1732.2	1731.6	2316.2	2316.2	2316.2	2316.2	2316.2	2316.2
HV	253.3	243.6	1326.6	1326.6	1327.2	1326.6	1866.2	1866.2	1866.2	1866.2	1866.2	1866.2
LV	180	180	405	405	405	405	450	450	450	450	450	450

Total 2-way Trips/day	72.2	70.6	288.6	288.6	288.7	288.6	386.0	386.0	386.0	386.0	386.0	386.0
HV	42.2	40.6	221.1	221.1	221.2	221.1	311.0	311.0	311.0	311.0	311.0	311.0
LV	30	30	67.5	67.5	67.5	67.5	75	75	75	75	75	75

Month					4				5				6			
Week					13	14	15	16	17	18	19	20	21	22	23	24
Main Construction																
Site Establishement (6wks)																
Site Roads 10251m (10wks)																
Hardstands 11no (12wks)																
Foundations 11no (12wks)																
Internal Collector System (11wks)																
Substation Construction and LILO connection (32wks)																
WTG Delivery 11no (12wks)																
WTG Install 11no (18wks)																
Comissioning (26wks)																
Site Reinstatment and Demob (5wks)																

Total	673.1	660.2	660.2	660.2	660.2	660.2	471.8	471.8	402.7	402.7	326.9	326.9
HV	493.1	480.2	480.2	480.2	480.2	480.2	261.8	261.8	192.7	192.7	116.9	116.9
LV	180.0	180.0	180.0	180.0	180.0	180.0	210.0	210.0	210.0	210.0	210.0	210.0

Total Vehicles	4	5	6
HV	1933.7	1484.0	619.3
LV	720	780	840

Total 2-way	1436.1	1410.4	1410.4	1410.4	1410.4	1410.4	1048.6	1048.6	910.5	910.5	758.8	758.8
HV	986.1	960.4	960.4	960.4	960.4	960.4	523.6	523.6	385.5	385.5	233.8	233.8
LV	450	450	450	450	450	450	525	525	525	525	525	525

Total 2-way Trips/day	239.4	235.1	235.1	235.1	235.1	235.1	174.8	174.8	151.7	151.7	126.5	126.5
HV	164.4	160.1	160.1	160.1	160.1	160.1	87.3	87.3	64.2	64.2	39.0	39.0
LV	75	75	75	75	75	75	87.5	87.5	87.5	87.5	87.5	87.5

Month					7				8				9			
Week					25	26	27	28	29	30	31	32	33	34	35	36
Main Construction																
Site Establishement (6wks)																
Site Roads 10251m (10wks)																
Hardstands 11no (12wks)																
Foundations 11no (12wks)																
Internal Collector System (11wks)																
Substation Construction and LILO connection (32wks)																
WTG Delivery 11no (12wks)																
WTG Install 11no (18wks)																
Comissioning (26wks)																
Site Reinstatment and Demob (5wks)																

Total	242.0	242.0	274.3	271.0	271.0	271.0	271.0	271.0	271.0	271.0	271.0	184.1
HV	62.0	62.0	46.3	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	16.1
LV	180.0	180.0	228.0	228.0	228.0	228.0	228.0	228.0	228.0	228.0	228.0	168.0

Total Vehicles	7	8	9
HV	213.3	172.2	145.2
LV	816	912	852

Total 2-way	574.0	574.0	662.5	656.1	656.1	656.1	656.1	656.1	656.1	656.1	656.1	452.1
HV	124.0	124.0	92.5	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	32.1
LV	450	450	570	570	570	570	570	570	570	570	570	420

Total 2-way Trips/day	95.7	95.7	110.4	109.3	109.3	109.3	109.3	109.3	109.3	109.3	109.3	75.4
HV	20.7	20.7	15.4	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	5.4
LV	75	75	95	95	95	95	95	95	95	95	95	70

Month					10				11				12			
Week					37	38	39	40	41	42	43	44	45	46	47	48
Main Construction																
Site Establishement (6wks)																
Site Roads 10251m (10wks)																
Hardstands 11no (12wks)																
Foundations 11no (12wks)																
Internal Collector System (11wks)																
Substation Construction and LILO connection (32wks)																
WTG Delivery 11no (12wks)																
WTG Install 11no (18wks)																
Comissioning (26wks)																
Site Reinstatment and Demob (5wks)																

Total	305.0	305.0	240.9	240.9	240.9	240.9	289.0	273.8	273.8	273.8	273.8	273.8
HV	17.0	17.0	0.9	0.9	0.9	0.9	43.0	27.8	27.8	27.8	27.8	27.8
LV	288.0	288.0	240.0	240.0	240.0	240.0	246.0	246.0	246.0	246.0	246.0	246.0

Total Vehicles	10	11	12
HV	35.8	72.6	111.1
LV	1056	972	984

Total 2-way	754.0	754.0	601.8	601.8	601.8	601.8	701.1	670.6	670.6	670.6	670.6	670.6
HV	34.0	34.0	1.8	1.8	1.8	1.8	86.1	55.6	55.6	55.6	55.6	55.6
LV	720	720	600	600	600	600	615	615	615	615	615	615

Total 2-way Trips/day	125.7	125.7	100.3	100.3	100.3	100.3	116.8	111.8	111.8	111.8	111.8	111.8
HV	5.7	5.7	0.3	0.3	0.3	0.3	14.3	9.3	9.3	9.3	9.3	9.3
LV	120	120	100	100	100	100	102.5	102.5	102.5	102.5	102.5	102.5

Month					13				14				15				
Week					49	50	51	52	53	54	55	56	57	58	59	60	61
Main Construction																	
Site Establishement (6wks)																	
Site Roads 10251m (10wks)																	
Hardstands 11no (12wks)																	
Foundations 11no (12wks)																	
Internal Collector System (11wks)																	
Substation Construction and LILO connection (32wks)																	
WTG Delivery 11no (12wks)																	
WTG Install 11no (18wks)																	
Comissioning (26wks)																	
Site Reinstatment and Demob (5wks)																	

Total	273.8	273.8	156.9	156.9	156.9	156.9	36.0	36.0	36.0	36.0	36.0	36.0	36.0
HV	27.8	27.8	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LV	246.0	246.0	156.0	156.0	156.0	156.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0

Total Vehicles	13	14	15	
HV	57.4	1.8	0.0	
LV	804	384	144	

Total 2-way	670.6	670.6	391.8	391.8	391.8	391.8	90.0	90.0	90.0	90.0	90.0	90.0	90.0
HV	55.6	55.6	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LV	615	615	390	390	390	390	90	90	90	90	90	90	90

Total 2-way Trips/day	111.8	111.8	65.3	65.3	65.3	65.3	15.0	15.0	15.0	15.0	15.0	15.0	15.0
HV	9.3	9.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LV	102.5	102.5	65	65	65	65	15	15	15	15	15	15	15

Month					16			17				18			
Week					62	63	64	65	66	67	68	69	70	71	72
Main Construction															
Site Establishement (6wks)															
Site Roads 10251m (10wks)															
Hardstands 11no (12wks)															
Foundations 11no (12wks)															
Internal Collector System (11wks)															
Substation Construction and LILO connection (32wks)															
WTG Delivery 11no (12wks)															
WTG Install 11no (18wks)															
Comissioning (26wks)															
Site Reinstatment and Demob (5wks)															

Total	36.0	36.0	36.0	36.0	36.0	36.0	100.8	64.8	64.8	64.8	64.8
HV	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	4.8	4.8	4.8
LV	36.0	36.0	36.0	36.0	36.0	36.0	96.0	60.0	60.0	60.0	60.0

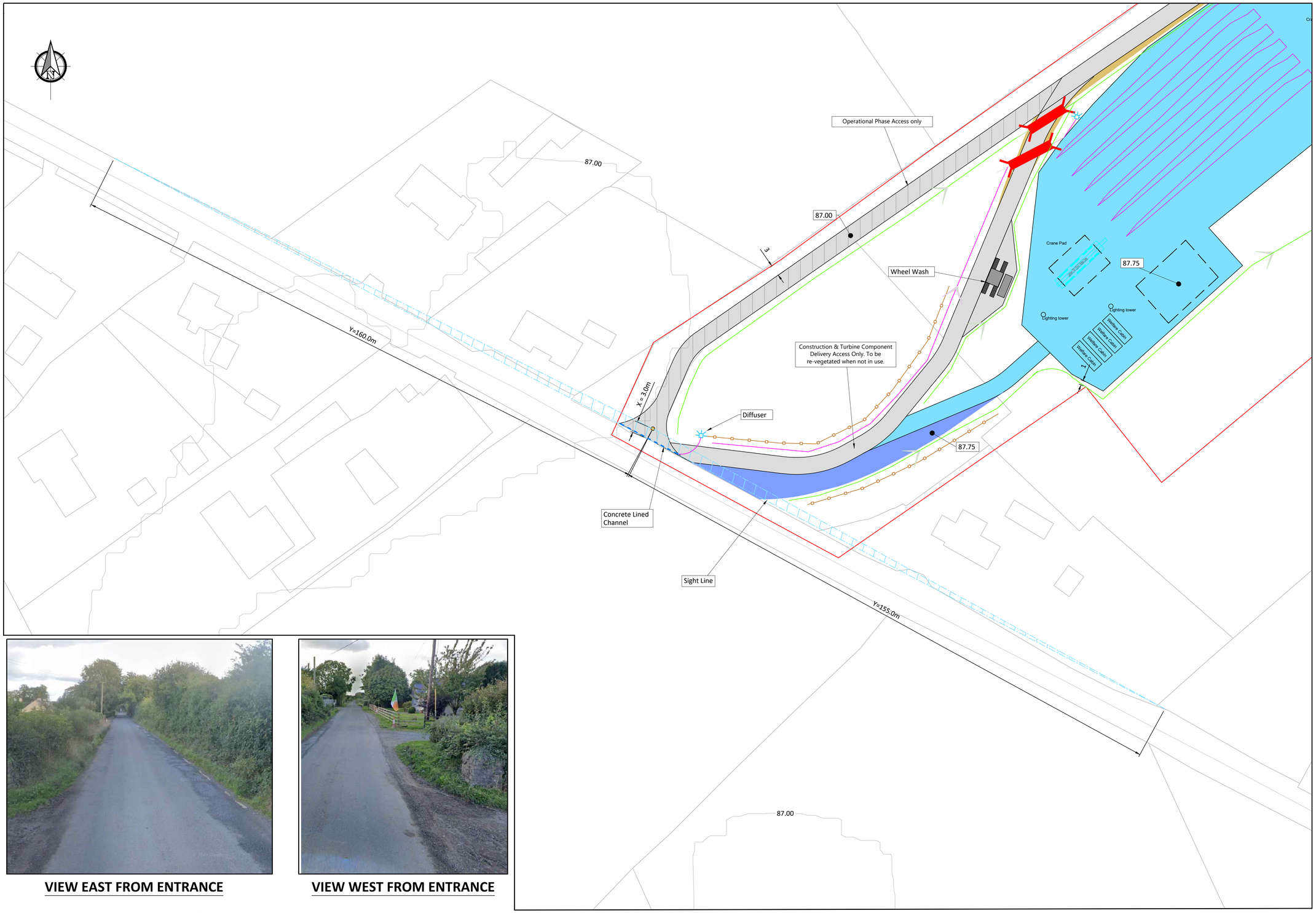
Total Vehicles	16	17	18
HV	0.0	4.8	19.3
LV	144	204	240

Total 2-way	90.0	90.0	90.0	90.0	90.0	90.0	249.6	159.6	159.6	159.6	159.6
HV	0.0	0.0	0.0	0.0	0.0	0.0	9.6	9.6	9.6	9.6	9.6
LV	90	90	90	90	90	90	240	150	150	150	150

Total 2-way Trips/day	15.0	15.0	15.0	15.0	15.0	15.0	41.6	26.6	26.6	26.6	26.6
HV	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.6	1.6
LV	15	15	15	15	15	15	40	25	25	25	25

APPENDIX 13.3

Visibility at Site Entrance



Legend

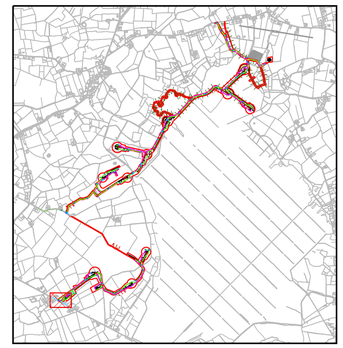
- Planning Site Boundary
- Land Holding Boundary
- Proposed Internal Access Track (Temporary Widening Areas)
- Temporary Construction Phase Surfaces (Temporary Widening Areas)
- Existing Public Road to be used for Construction and Operation Phase
- Proposed Internal Collector Cable
- Existing Ground Contour
- Interceptor Drain With Diffuse Outflow
- Roadside Swale
- Stilling Pond and Diffuse
- Proposed Culvert
- Existing Culvert
- Temporary Bridge Crossing
- Proposed Berms
- Proposed Amenity Trail
- Temporary Noise Barriers

Notes.

1. All dimensions in metres.
2. Entrance surfaces to be graded -2.5% with fall towards the development to ensure surface water does not discharge to public road.
3. Proposed entrance geometry and sight lines are designed in accordance with TII publications DN-GEO-03060 and DN-GEO-03031.
4. This entrance will be used by construction HGVs, LGVs and turbine component delivery vehicles.

VIEW EAST FROM ENTRANCE

VIEW WEST FROM ENTRANCE



KEY PLAN

0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

Scale 1:500

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Rev.	Description	App By	Date
A	ISSUE FOR PLANNING	JH	11.03.25

PROJECT	DREHID WIND FARM & SUBSTATION
CLIENT	NORTH KILDARE WIND FARM Ltd.
SHEET	SITE ACCESS MAIN ENTRANCE
Date	11.03.25
Project number	P22-242
Scale (@ A1-)	1:500
Drawn by	CS
Checked by	BC
Drawing Number	P22-242-0300-0015
Rev	A

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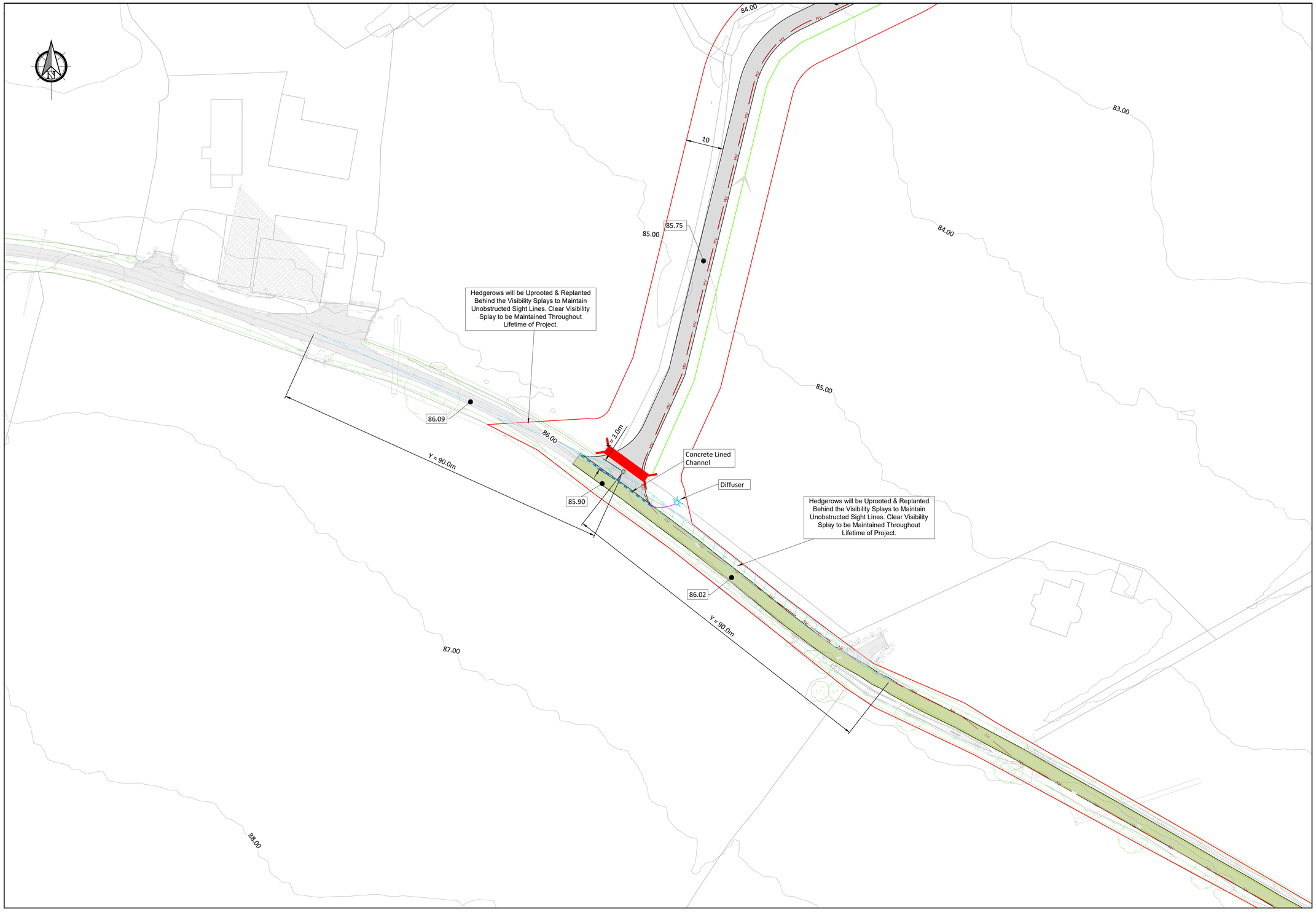
12 May 2025

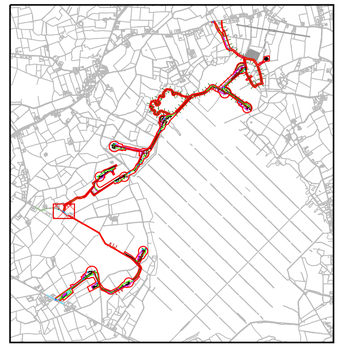


Legend

- Planning Site Boundary
- Land Holding Boundary
- Proposed Internal Access Track — Temporary Widening Areas
- Temporary Construction Phase Surfaces — Temporary Widening Areas
- Existing Public Road to be used for Construction and Operation Phase
- Proposed Internal Collector Cable
- Existing Ground Contour
- Interceptor Drain With Diffuse Outflow
- Roadside Swale
- Stilling Pond and Diffuse
- Proposed Culvert
- Existing Culvert
- Temporary Bridge Crossing

Notes.

1. All dimensions in metres.
2. Entrance surfaces to be graded -2.5% with fall towards the development to ensure surface water does not discharge to public road.
3. Proposed entrance geometry and sight lines are designed in accordance with TII publications DN-GEO-03060 and DN-GEO-03031.
4. This entrance will be used by construction HGVs & LGVs only and will not be used by turbine component delivery vehicles.



KEY PLAN

0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

Scale 1:500

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www.fehilytimoney.ie

Rev.	Description	App By	Date
A	ISSUE FOR PLANNING	JH	11.03.25

PROJECT: **DREHID WIND FARM & SUBSTATION**

CLIENT: **NORTH KILDARE WIND FARM Ltd.**

SHEET: **SITE ACCESS ENTRANCE 2**

Date: 11.03.25
Project number: P22-242
Scale (@ A1-): 1:500
Drawn by: CS
Checked by: BC
Drawing Number: **P22-242-0300-0016**
Rev: **A**

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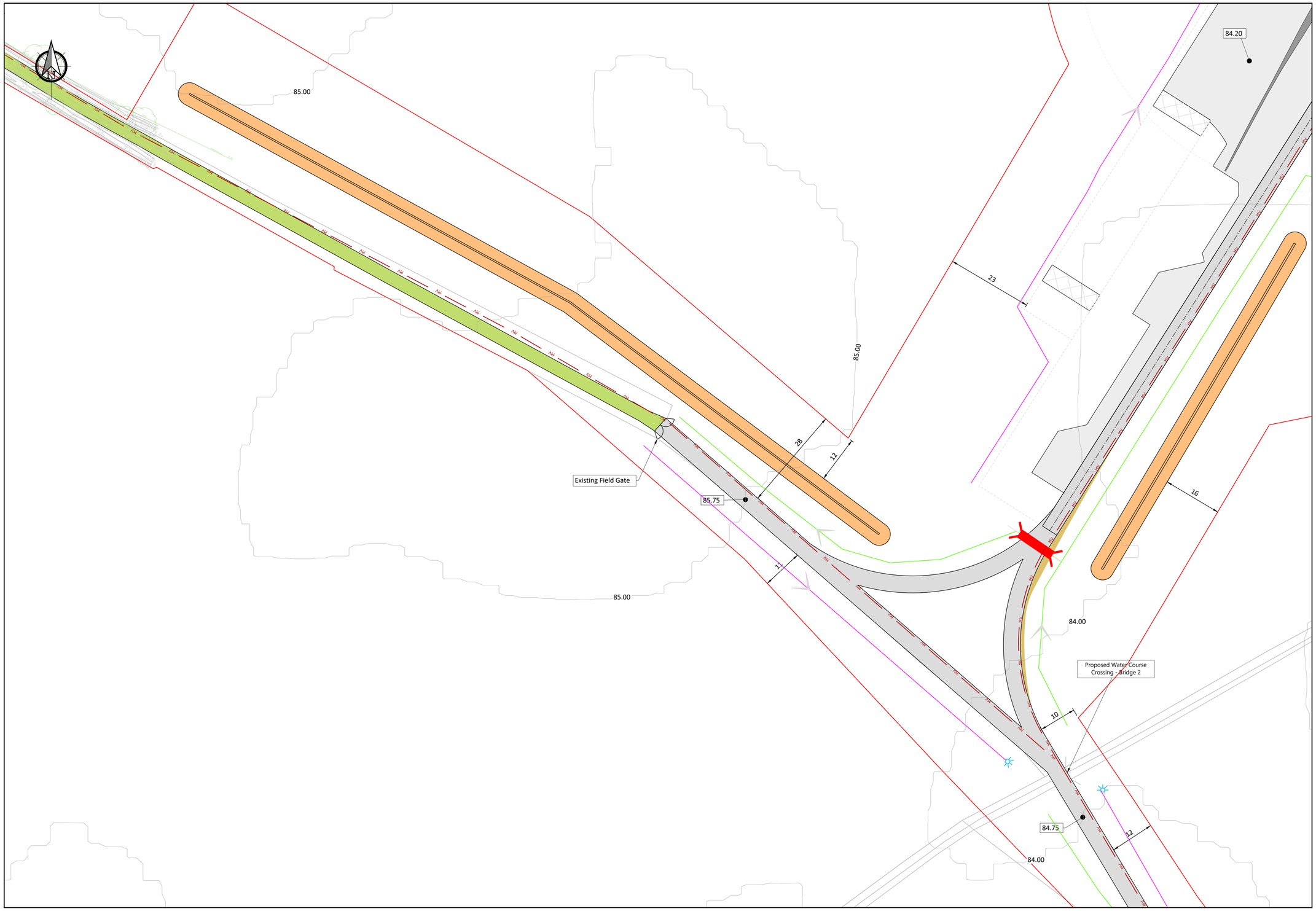
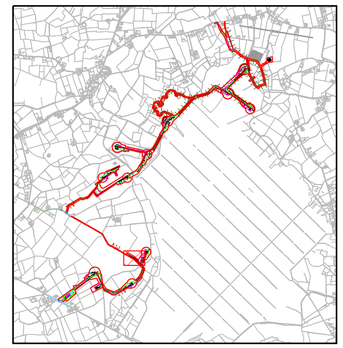
12 May 2025



Legend

- Planning Site Boundary
- Land Holding Boundary
- Proposed Internal Access Track (Temporary Widening Areas)
- Temporary Construction Phase Surfaces (Temporary Widening Areas)
- Existing Public Road to be used for Construction and Operation Phase
- Proposed Internal Collector Cable
- Existing Ground Contour
- Interceptor Drain With Diffuse Outflow
- Roadside Swale
- Stilling Pond and Diffuse
- Proposed Culvert
- Existing Culvert
- Temporary Bridge Crossing
- Proposed Berms



KEY PLAN

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Scale 1:500

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Rev.	Description	App By	Date
A	ISSUE FOR PLANNING	JH	11.03.25

PROJECT	DREHID WIND FARM & SUBSTATION
CLIENT	NORTH KILDARE WIND FARM Ltd.
SHEET	SITE ACCESS ENTRANCE 3
Date	11.03.25
Project number	P22-242
Scale (@ A1-)	1:500
Drawn by	CS
Checked by	BC
Drawing Number	P22-242-0300-0018
Rev	A

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12 May 2025

APPENDIX 13.4

Road Safety Audit Stage 1/2

ARUP

Drehid Wind Farm Development, Co. Kildare

Road Safety Assessment

March 2019

BARRY & PARTNERS consulting engineers

CIVIL • STRUCTURAL • ENVIRONMENTAL • TRANSPORTATION

Document Control Sheet

Client:	Arup
Project Title:	Kildare Wind Farm - RSA
Document Title:	Road Safety Assessment
File Name:	19616-RP-0001_RSA__P01

Table of Contents *(incl. Y/N)*	**List of Tables** *(incl. Y/N)*	**List of Figures** *(incl. Y/N)*	**Pages of Text** *(No.)*	**Appendices** *(No.)*
Y	N	N	10	2

Document Revision				**Document Verification**			
Issue Date *(DD/MM/YY)*	**Revision Code**	**Suitability Code**	**Author** *(Initials)*	**Checker** *(Initials)*	***Reviewer*** As Per PMP *(Initials)*	**Approver** *As Per PMP (Initials)*	**Peer Review** *(Initials or N/A)*
Add hyperlink to Verification Email on PIM Register for each issue							
21.03.19	P01	S3	TD, AM & PM	AM & PM	PM	LP	N/A

Table of Contents

SECTION 1: Introduction

1.1 Background

This report results from a Road Safety Assessment (RSA) of the rural network surrounding the proposed Drehid Wind Farm Development, Co. Kildare. The RSA brief and necessary information was provided by Arup Consulting Engineers on behalf of the Design Team.

The Assessment Team has examined and reported on only the road safety implications of the proposed development details submitted by the Design Team and has not examined or verified the compliance of the design to any other criteria. The members of the Road Safety Assessment Team are independent of the Design Team, and include:

Road Safety Assessment Team Leader:
Mr. Peter Morehan
BE CEng MIEI RSACert
J.B. Barry & Partners

Road Safety Assessment Team Member:
Mr. Alan Moriarty
BEng, MSc, MIEI
J.B. Barry & Partners

Road Safety Assessment Team Member:
Mr. Tim Delaney
BEng CEng MIEI
J.B. Barry & Partners

The RSA information assessed is as detailed on the document issue schedule contained in **Appendix A**. A RSA Feedback Form is contained in **Appendix B**.

1.2 Scope and Methodology

This assessment considers the proposed haulage routes from the main supply centres of materials to construct the wind farm. Refer to Figure 1.1.

The assessment process commenced with an high-level overview of the entire study area containing all the haulage routes. Then particular attention was given to those rural local routes in the vicinity of the site as the impact of the development will be greatest on these routes where. The Assessment Team visited the site and carried out windshield survey of these local roads using dash-cam recorder.

The Assessment Team considers that all National and Regional routes within the study area along with those routes in the immediate vicinity of the various suppliers identified to be of sufficient quality to continue to accommodate HGV traffic as they currently do. All quarries are subject to planning conditions and operating licences that address traffic and road safety to/from quarry. Therefore, this Road Safety Assessment concentrated on those rural roads in vicinity to the proposed wind farm which currently may not normally be subject to a significant volume of HGV traffic.

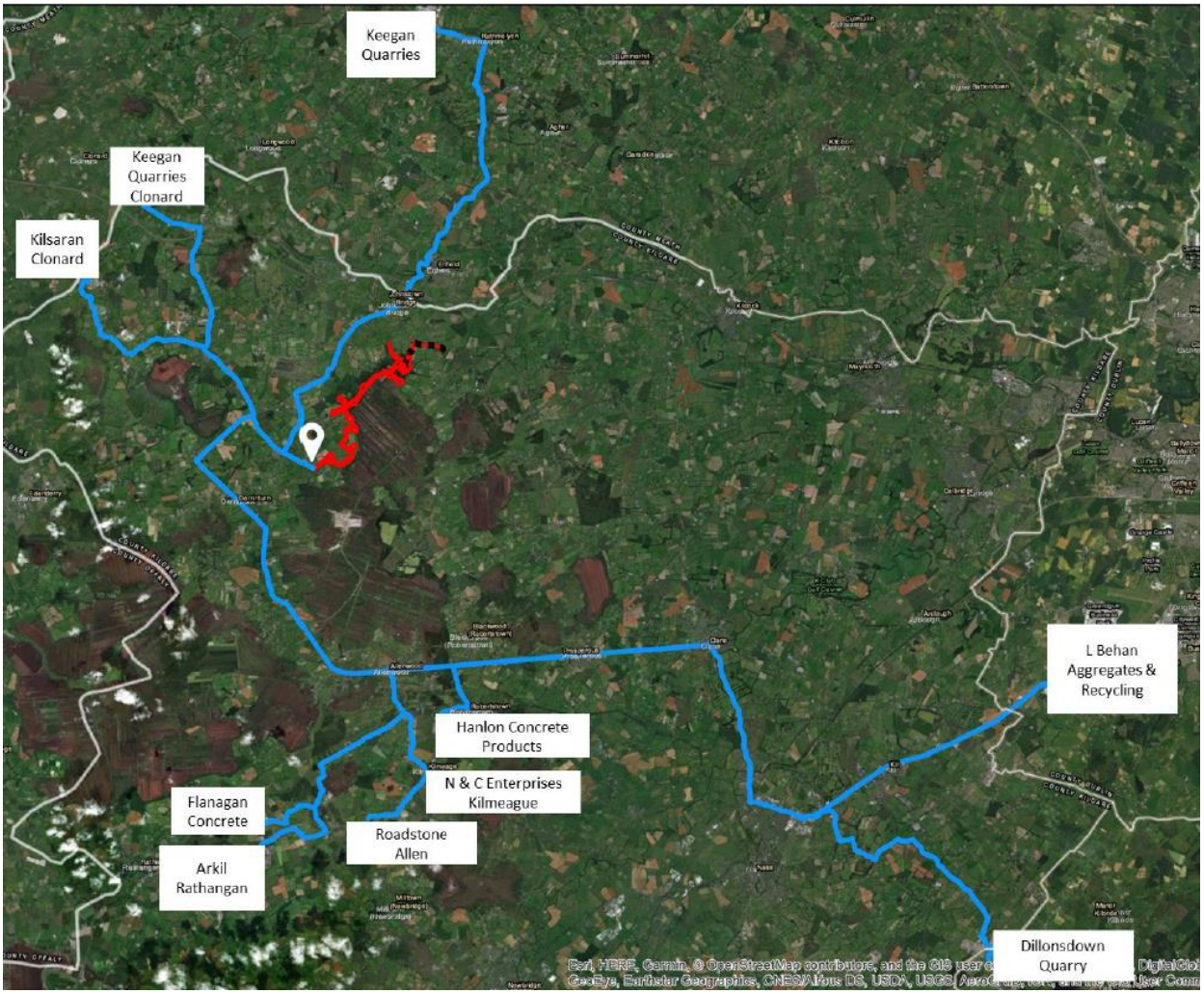


Figure 1.1: Study Area with Haulage Routes

A separate Turbine Delivery Report has been prepared by Statkraft Ireland. The assessment of the delivery routes has confirmed the suitability of the routes. Localised accommodation works will be carried out at specific areas identified as part of this assessment. Turbine component deliveries will be carried out off-peak, likely at night, and in conjunction with An Garda Síochána. This will be carried out in such a manner as to minimise effects on operation of the road network, and as such this process will not impact on road safety.

1.3 Site Visit

The assessment was carried out between Wednesday 13 March 2019 and Thursday 21 March 2019. The site visit was carried out on Friday 15 March 2019. It was sunny and dry at the time of the site visit and the road surfaces were dry.

1.4 Road Accident History

No historical road accident data for the study area was made available to the Assessment Team. An online check on the Road Safety Authority website shows that there were many recorded collisions between 2005 and 2014 on the surrounding network. Most of the accidents were minor of nature. Refer to Figure 1.2.

One serious collision involving a car occurred on the L5025 (i.e. the local road passing the site access), east of the proposed site access in 2013. No further details are known.

A total of 5 fatal collisions and a series of minor collisions occurred on the R403 between Carbury and Allenwood (via Derrinturn). Most of these collisions were recorded as single car collisions signifying possibly excessive speed and poor road alignment.

A series of minor collisions also occurred on the R402 from Johnstown Bridge as far as Kilshabroe. Again, many of these were single vehicle collisions including some heavy goods vehicles.

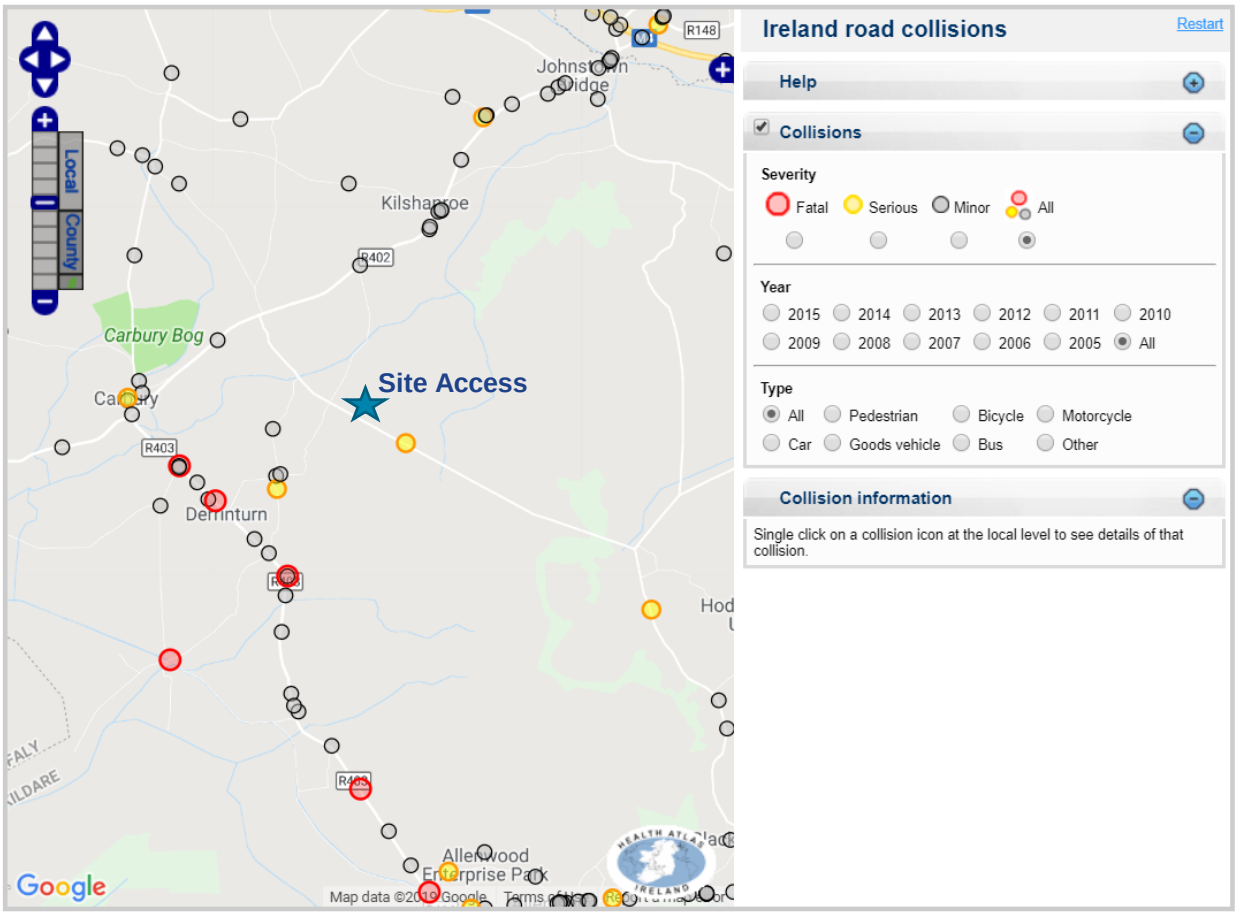
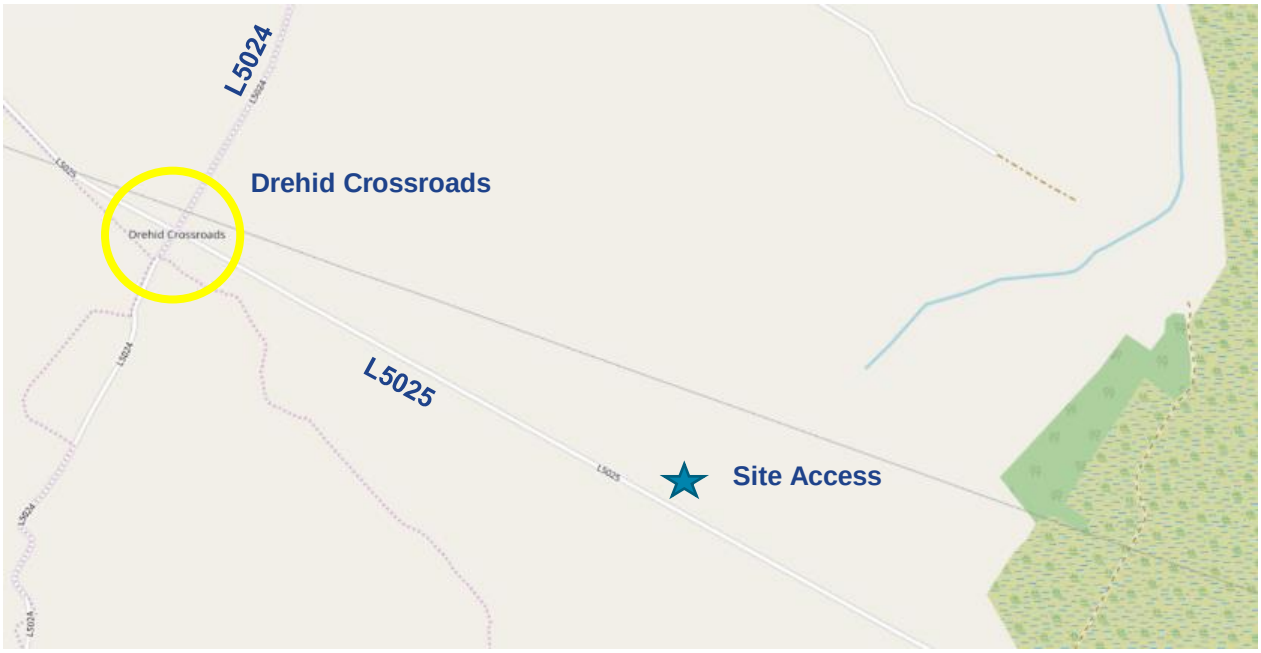


Figure 2.2: RSA collision history (2005 to 2015)

SECTION 2: Assessment Issues Identified

2.1 Poor Sightlines at Drehid Crossroads (L5024/L5025 Jnt)

Sight lines and sigh distances at the Drehid Crossroads (nearest junction to the site access) are restricted and hinder safe egress of vehicles from the L5024 increasing the risk of a side impact collision. It is proposed to use the L5024 as a haulage route.



Recommendation

As a primary measure, re-route all HGVs traveling from the Enfield direction to remain on the R402 until the L5025 turn-off and then use the L5025 to access the site. Ensure that this route is well sign posted (also refer to Safety Issue 2.2).

In addition, and as a secondary measure, to accommodate other general construction related traffic, ensure that sight lines at this junction are maximised. Ensure that all roadside hedgerows are cut back, and verges are maintained and kept low. Place additional warning signs at the junction to alert motorists on all approaches as to the close proximity of the site along with warning signs such as ‘caution’ and ‘slow’ along the L5025 in addition to the mandatory construction signs outlined in Chapter 8 of the Traffic Sign Manual.

2.2 L5024 not suitable as a Haulage Route

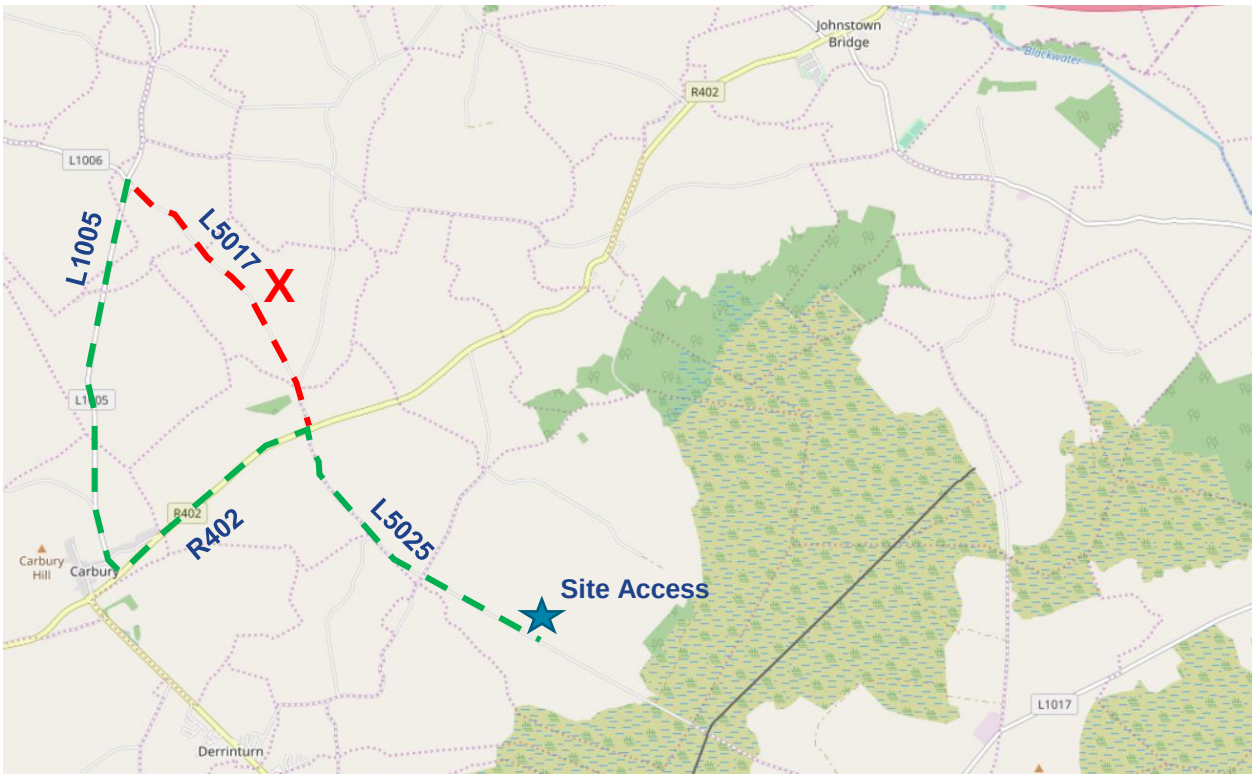
It is proposed to use the L5024 as a Haulage Route for vehicles travelling from the Enfield or Johnstown Bridge direction such as HGVs from Kilsaran and Keegan quarries in Castletown. The L5024 is generally very narrow with a sub-standard alignment, poor surface quality and with limited provision for two-way flow for opposing HGVs.

Recommendation

Similar to the recommendation of Safety Issue 2.1, re-route all HGVs to remain on the R402 until the L5025 turn-off and then use the L5025 to access the site. Ensure that this route is well sign posted (also refer to Safety Issue No. 2.1).

2.3 L5017 (and L5011) not suitable as a Haulage Route

It is proposed to use the L5017 and a shorth section of the L5011 as a Haulage Route for vehicles travelling from the Clonard direction such as HGVs to/from Kilsaran and Keegan quarries in Clonard. Both roads are generally very narrow with a sub-standard alignment, poor surface quality and with limited provision for two-way flow for HGVs.



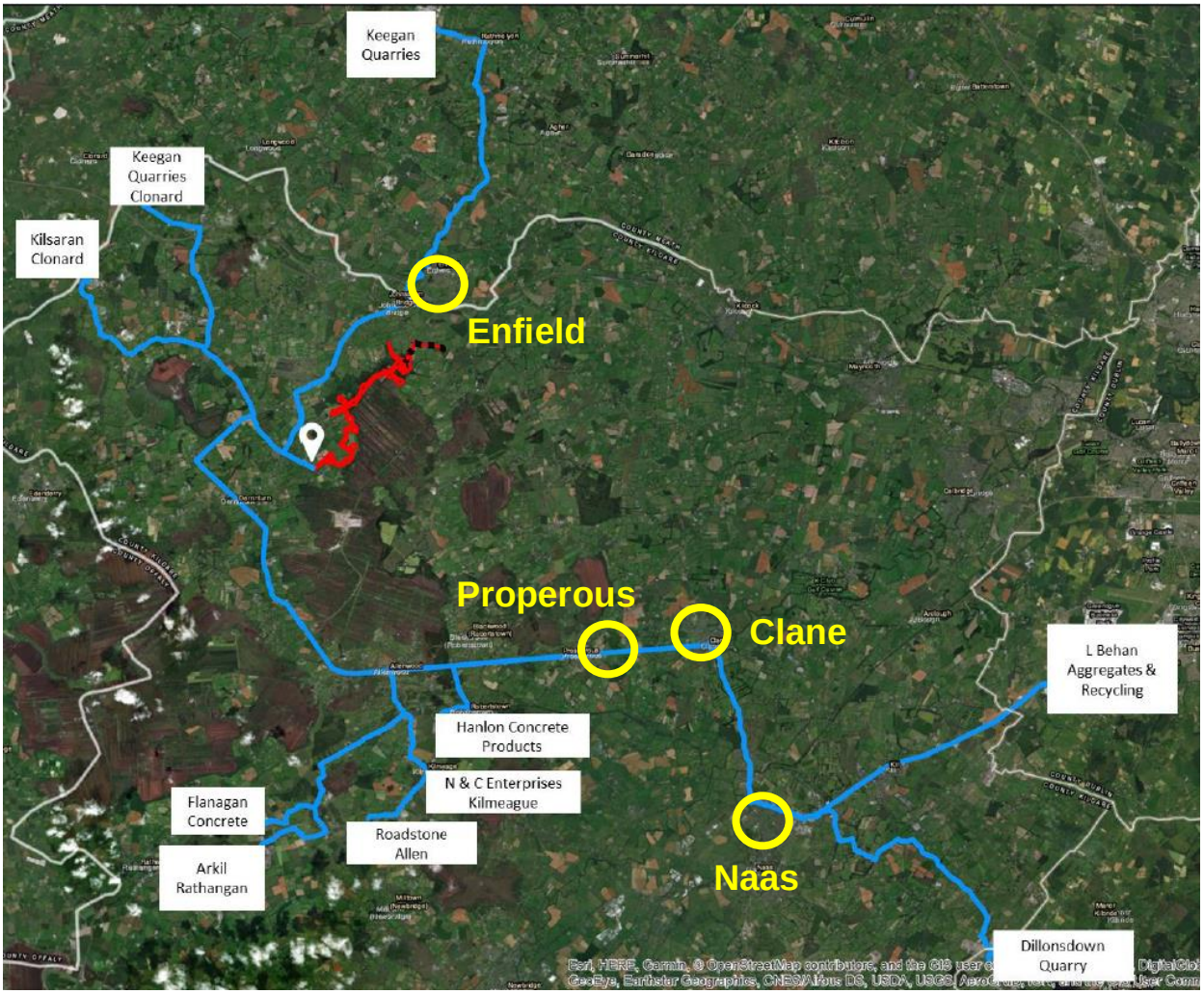
Recommendation

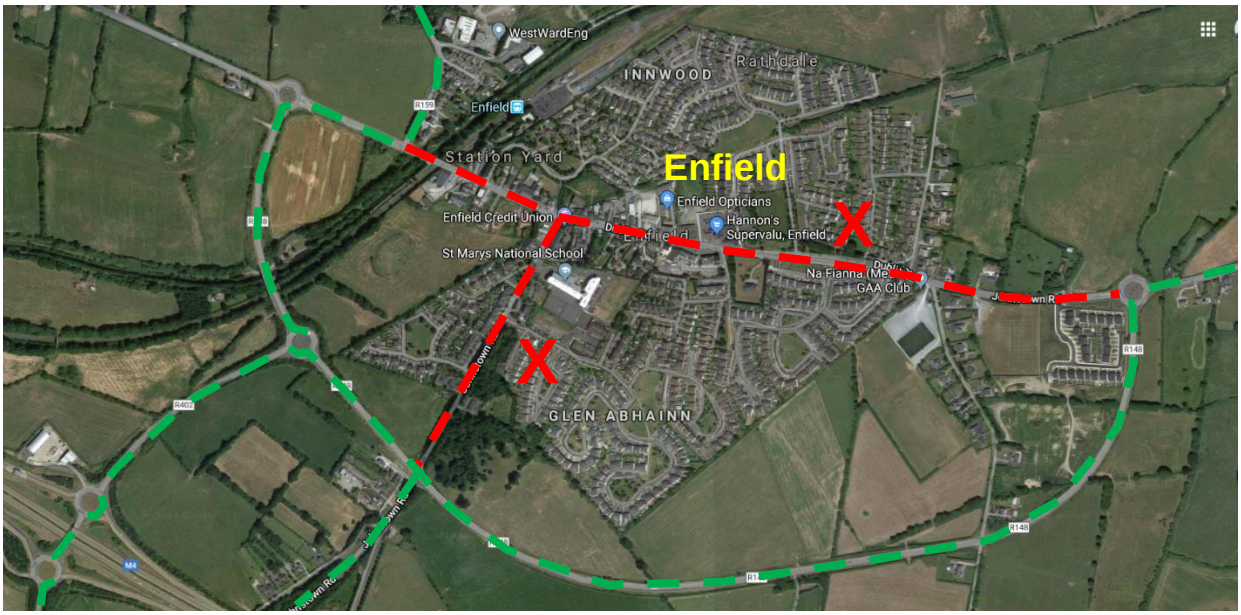
Re-route all HGVs to use the L1005 until Carbury and then the R402 until the L5025 turn-off and use the L5025 to access the site. Ensure that this route is well sign posted.

2.4 Haulage Routes through Urban Areas

It is possible the HGVs will travel through urban areas, such as Enfield, Naas, Clane, Prosperous etc, potentially creating an unsafe environment for pedestrians and cyclist on the network and increasing the

risk of accident with vulnerable road users such as the elderly, children and those with a mobility impairment..





Recommendation

A Construction Traffic Management Plan should be prepared by the main contractor ensuring the all HGV trips relating to the construction of the wind farm should avoid urban areas, where suitable alternative routes exist. The Construction Traffic Management Plan should be approved by the Design Team, the Local Authority and An Garda Síochána.

SECTION 3: Assessment Team Statement

We certify that we have examined the drawings and documents listed in the appendices to this report.

The examination and subsequent report was made with the sole purpose of identifying any features of the scheme that could be removed or modified in order to improve the safety of the proposals.

The safety issues identified have been noted in this report together with associated safety improvement suggestions, which we recommend should be studied for implementation.

No one on the Assessment Team has been involved in the initial scheme design.

Assessment Team Leader		
Name:	P. Morehan BE CEng MIEI RSACert	Signed: 
osition:	Associate Director	Date: 21.03.19
Organisation:	J.B. Barry & Partners Ltd.	
Address:	Classon House Dundrum Business Park Dundrum Road Dublin 14	

Assessment Team Member		
Name:	A. Moriarty BEng, MSc, MIEI	Signed: 
Position:	Senior Engineer	Date: 21.03.19
Organisation:	J.B. Barry & Partners Ltd.	
Address:	Classon House Dundrum Business Park Dundrum Road Dublin 14	

Assessment Team Member		
Name:	A. Moriarty BEng CEng MIEI	Signed: 
Position:	Associate	Date: 21.03.19
Organisation:	J.B. Barry & Partners Ltd.	
Address:	3 Eastgate Road Eastgate Little Island Co. Cork	

Appendix 1: Information Provided

Table A1: List of documents provided for assessment

Document Title	Document / Item No.	Issue Date
Road Safety Assessment Scope	259802-00	06/03/19
Drehid WF – TDR Report	Final	11/03/19
EIAR Chapter 12	259802-00_2018-12-05	15/03/19
Drehid Wind Farm RFI	Item 17(b)	15/03/19

Appendix 2: Feedback Form

Road Safety Assessment Feedback Form

Scheme: **Drehid Wind Farm, Co. Kildare**

Date Assessment Completed: **21 March 2019**

Paragraph No. in Report	To Be Completed by the Design Team			To Be Completed by the Assessment
	Safety issue accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measure (describe)	Alternative measure accepted by Assessors (yes/no)
2.1				
2.2				
2.3				
2.4				

Signed: …….. Designer Date……..

Signed: …….. Assessment Team Leader Date ……

Signed: …….. Client Date ……..