Annex C Route Survey Report

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Knockcronal Wind Farm

Abnormal Indivisible Load Route Survey



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Contents

1	Introduction	1
1.1	Purpose of the Report	1
2	Site Background	2
2.1	Site Location	2
2.2	Candidate Turbines	2
2.3	Proposed Delivery Equipment	3
3	Access Route Review	4
3.1	Access Route	4
3.2	Proposed Access Route	4
3.2.1	Route 1	4
3.2.2	Route 2	5
3.3	Route Constraints	7
3.3.1	Proposed Access Route 1	7
3.3.2	Route 2	.28
3.4	Swept Path Assessment Results and Summary	.34
3.5	Weight Review	.34
3.6	Land Ownership	.34
3.7	Access Junction Considerations	.34
3.8	Summary Issues	.35
3.9	Mitigation Summary	.35
4	Summary	.38
4.1	Summary of Access Review	.38
4.2	Further Actions	.38

Figures

Figure 1: Site Location Plan	2
Figure 2: Super Wing Carrier Trailer	.3
Figure 3: Tower Trailer	.3
Figure 5: Proposed Access Route 1	5
Figure 6: Proposed Access Route 2	6

Tables

Table 1: SG155 Turbine Dimensions	2
Table 2: Route 1 Constraint Points and Details	7
Table 3: Diversion Route Constraint Points and Details for Non Blade Components	16
Table 4: Route 1 Constraint Points and Details Continued	18
Table 5: Route 2 Constraint Points and Details	28
Table 4: Mitigation Works Summary	35

Appendices

Appendix	Α-	Points	of Inter	est Loca	ations
Appendix	в-	Swept	Path As	sessme	ents

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.

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

Table 1: SG155 Turbine Dimensions

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.
	1	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.
	T	Blades will oversail the northern central reserve where escorts should hold oncoming vehicles during load movements.
	Sharp alou	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

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.
	T	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.
	2/	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.

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.

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

POI	Key Constraint	Details
34	Kirkland Street – Tower Only Image: 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 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.

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.

Table 4: Route 1 Constraint Points and Details Continued

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	41 B7023 Cloyntie Bridge	Loads will continue through the crossroads on Cross Hill Road.
C. LEW & MILLION MALLINE	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.	
	and the second sec	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	<image/>	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. <u>There is a forestry access at this point which</u> <u>departs to the left of the road. Further work is</u> <u>recommended to assess the feasibility of</u> <u>utilising this junction to access the proposed site</u> <u>via upgraded forestry tracks. This would be a</u> <u>separate piece of work to this current</u> <u>commission.</u> 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.
	Nult	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.

POI	Key Constraint	Details
41,	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	<section-header></section-header>	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	<image/>	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.

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			

Table 6: Mitigation Works Summary

POI	Works within Adopted Boundary	Land Search Required	Third Party Land Required	Topographical Survey Required
13	Х			
14	Х			
15	Х			
16	Х			
17	Х			
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	Х			
31			X	
32	Х			
33	X			
34	X			
35			X	X
36	Х			
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		Х		
57		Х		
58		X	X	
59		X	X	
60		Х		
61		X		
62			X	X
63		X	X	
64	Х			
65	Х			
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





























Appendix B Swept Path Assessments



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Key	SPA Location Kings Inch Drive Roundabout 3	Drawing No. SK03

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Blade	Mitigation
	Escorts to hold oncoming
	vehicles during the movements.
	I wo traffic signal heads, one call
	One bollard to be oversailed.
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	Pedestrian call post to be set down.
	One VMS road sign to be
	removed. One road sign, one
	lighting column to be removed.
	Third Party Land Required.
	© Pell Frischmann
Pell Frischmann Project	Name Date Scale 1:1000 @ A3
93 GEORGE STREET. EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Knockcronal Wind Farm	Drawn JS 27/01/2021 Designed CB 27/01/2021 File No. Knockcronal SG155 Tracking dwg
Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Checked GB 27/01/2021 Drawing Status
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Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail Kings Inch Drive / Mayo Av	venue Junction 2. This is not a construction drawing and is intended for illustration purposes only.

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Client ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Intere Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run C	Wer-sail M8 Junction 25a Slip Road	SK05

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Pell Frischmann	Project	
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Client ITPEnergised	Drawing Title	Checked Point of Intere
Key /////	Siemens SG155 Blade and Tower	Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	Dutch House Roundabout	51.00

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SANDYI TOLL ROUND	ABUUT	One set of chevron signs to be removed.	
			© Pell Frischmann
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	One traffic signal to be removed.	
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Project Knockcronal Wind Farm	Drawn Designed Checked
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GB	27/01/2021	File No. Knockcronal SG155 Track	king.dwg
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st	16	5 Draft	
Notes:			Revision
1. All mitiga 2. This is n	ation is subject to c ot a construction dr	onfirmation through a test run. awing and is intended for illustration purposes only.	XXX

	Blade tip to oversail pedestrian barrier. Two lighting columns to be removed.	
Pell Frischmann	Project	
Client	Knockcronal Wind Farm	Drawn Designed Checked Point of Interes
Key	Siemens SG155 Blade and Tower	Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	A77 Holmston Roundabout	

Name	Date	Scale 1:500 @ A3	
JS	27/01/2021		
GB	27/01/2021	File No. Knockcronal SG155 Track	king.dwg
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erest	16	S Draft	
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Blade		Tower			
Pell Frischmann	Project		awn	Name JS	Date Scale 27/01/2021 1:1000 @ A3
Tel: +44 (0) 131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Knockcronal Wind Farm	De	esigned	GB	27/01/2021 File No. Knockcronal SG155 Tracking.dwg
Client ITPFnorgicod	Drawing Title	Ch Po	ecked oint of Interes	GB st	17 Drawing Status Draft
	Siemens SG155 Blade and Tower	Dro	awing No.	Notes: 1. All mitig	ation is subject to confirmation through a test run.
Wheel SPA Body SPA Load SPA Indicative Over-run	Wer-sail SPA Location A77 Bankfield Roundabout		SK12	2. This is r	not a construction drawing and is intended for illustration purposes only. XXX



			©	Pell Frischmann
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Notes:				Revision
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	Load bearing surface to be laid. Vegetation to be cleared and land search recommended to confirm the extent of adopted boundary. Load bearing surface to be laid. Vegetation to be cleared and land search recommended to confirm the extent of adopted boundary.
Pell Frischmann ⁹³ GEORGE STREET. EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Emoil: pfedinburgh@pellificchmann.com	nd Farm Drawn Designed
Client ITPEnergised Drawing Title	Plade and Tower

bearing surface laid. Two road and a traffic d to be removed.

Vegetation to be cleared. **Third party land required.**

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	egetation a b allow over and.	and trees to be removed ersail into third party	be laid. ed.
		©	Pell Frischmann
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GB	27/01/2021	Drawing Status		
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Blade		tage		
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P	ell Frischmann 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Project Knockcronal Wind Farm	Drawn Designed Checked	
Client	ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Interest	
Key	— — <i>— [//////</i>	SPA Location	SK18	
Wheel SPA Bod	y SPA Load SPA Indicative Over-run Over-sail	B7045 Grimmet — Blade Only		



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terest	24	5	Draft	
. Notes: 1. All mitigo 2. This is n	ition is subject to c ot a construction dr	onfirmation th awing and is	rrough a test run. intended for illustration purposes only.	Revision XXX



Load bearing surface to be laid and vegetation to be cleared. Utilise existing layby. Land search recommended.

				(© Pell Frischmann
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Blade + 54.5m		Mitigation + +	54.5m
Pell Frischmann 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfischmann.com	Project	Knockcronal Wind Farm	Drawn Designed
Client ITPEnergised	Drawing Title	Siemens SG155 Blade and Tower	Checked Point of Intere
Key /////	SPA Location	P7045 South of Harbigston Pridage Plade Only	Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		B7045 South of Harkieston Bridge — Blade Only	





Load bearing surface to be laid. Fence and hedge to be removed. Topographical survey required to confirm the exact location of a high voltage pylon. **Third party land** required.

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Blode	Mitigation		
	Project		
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com	Knockcronal Wind Farm	Drawn Designed Checked	
Client ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Inte Drawing No.	erest
Key Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location Crosshill Road East of Attiquin — Blade Only	SK23	1



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Name	Date	Scale 1:500 @ A3
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erest	29	5 Draft
Notes:		Revision
2. This is n	awing and is intended for illustration purposes only.	

Blade	Mitigation	
Pell Frischmann	Project	Drawn
Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com	Knockcronal Wind Farm	Designed
	Drawina Title	Checked
	Siemens SG155 Blade and Tower	Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-	sail SPA Location Crosshill Road South of Attiquin — Blade Only	SK24

					©	Pell Frischmann
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Smithston Bridge

/	/ /			/										
		Poll	Frisch	mani	n		Project				Name	Date	Scale 1:500 @ A3	
		1011	93 GEORGE STREE	T, EDINBURGH. EH2 3	ES			Kanadana at Wind France		Drawn	JS	27/01/2021		
			Te Email: pfedinbura	el: +44 (0)131 240 12; h@pellfrischmann.co	70 m			Knockcronal Wind Farm			GB	27/01/2021	File No. Knockcronal SG155 Track	king.dwg
			ww	vw.pellfrischmann.co	m					Checked	GB	27/01/2021	Drawina Status	
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								Siemens SG155 Blade and Tower		Drawing No.	Notes:			Revision
Key							SPA Location			SK26	1. All mitig 2. This is	ation is subject to c not a construction d	confirmation through a test run. rawing and is intended for illustration purposes only.	
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail		A77 Smithston Bridge — Tower Only	NO MITIGATION REQUIRED					XXX



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Scale Date Name 1:500 @ A3 27/01/2021 27/01/2021 File No. Knockcronal SG155 Tracking.dwg JS GB 27/01/2021 Drawing Status GB Draft 33 Revision Notes: All mitigation is subject to confirmation through a test run. This is not a construction drawing and is inter XXX

Tower		Mitigation	
		Loads t guar	o oversail ped drails. Parking susp
		Loads to oversail traffic bollards.	Children Chi
Pell Frischmann	Project		Drawn
73 GEORGE STREET, EUINBURGH. EHZ 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com	Knockcronal Wind Farm		Designed
Client ITDEnargicad	Drawing Title		Checked Point of Interes
	Siemens SG155 Blade and Tower		Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-	🔀 SPA Location _{sail} Kirkland Street — Tower Only		SK28



Name	Date	Scale 1:1000 @ A3	
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st	34	Draft	
Notes:			Revision
1. All mitig 2. This is r	ation is subject to c not a construction dr	onfirmation through a test run. awing and is intended for illustration purposes only.	XXX

Tower		Mitigation
		Loads bearing surface to be laid and
		one lighting column to be removed.
		Mar
Grave NAMA		Grove V
Yord		Yound
	$\rightarrow 1.7 \text{m}$	
		+
		Loads bearing surface to be laid.
The swept path assessment should be repeated on		
clearances to buildings.		
Poll Frischmann	Project	
1 5 11 1 1 1 5 5 11 11 11 11 93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (01131 240 1270	Knockcronal Wind Farm	Drawn
Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Checked
Client ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Intere Drawina No.
Key /////	SPA Location	SK29



Blade		Tower		
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES	Project Knockcronal Wind Farm	Drawn	Name JS	Date Scale 1:500 @ A3 27/01/2021 File No. Kastionard Scales
Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com www.pellfrischmann.com		Designed Checked	GB GB	27/01/2021 Knockcronal SG155 Tracking.dwg 27/01/2021 Drawing Status
Client ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Intere Drawina No.	est Notes:	36 Uraft Revision
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location B7023 Crosshill	SK30	1. All mitig 2. This is	gation is subject to confirmation through a test run. not a construction drawing and is intended for illustration purposes only.

Load bea Par	ing surface to be laid.	
Pell Frischmann 93 George street, edinburgh. eH2 3es	Project	© Pell Frischmann Name Date Scale 1:500 @ A3 Drawn JS 27/01/2021 The state
Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfischmann.com www.pellfischmann.com	Knockcronal Wina Farm	Designed GB 27/01/2021 File No. Knockcronal SG155 Tracking.dwg Checked GB 27/01/2021 Drawing Status
Client ITPEnergised	Drawing Title Siemens SG155 Blade and Tower	Point of Interest 36 Draft
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location B7023 Crosshill	SK30A 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.

Blade		14.3m +	ower	44	.,3m
	Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfischmann.com	Project Knockcronal Wind Farm	Drawn Designed	Name JS GB	Date 27/01/2021 27/01/2021
Client		Drawing Title	Checked Point of Int	GB	27/01/2021
	ITPEnergised	Siemens SG155 Blade and Tower	Point of Int Drawing No.	Notes:	J/
Key Wheel SPA	Body SPA Load SPA Indicative Over-run Over-sail	SPA Location B7023 Crosshill	SK31	2. This is no	t a construction dra

		a	Pell Frischmann
Name	Date	Scale 1.500 @ 43	
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est	37	Draft	
Notes:			Revision
1. All mitig 2. This is r	ation is subject to c not a construction di	onfirmation through a test run. awing and is intended for illustration purposes only	XXX

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	Parking to be suspended. 44.3m +	75 02
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (01131 240 1270	Project Knockcronal Wind Farm	Drawn
Client	Drawing Title	Checked Point of Inte
Key ////////////////////////////////////	Siemens SG155 Blade and Tower	Drawing No.
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	B7023 Crosshill	

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Name	Date	Scale 1:500 @ A3	
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GB	27/01/2021	File No. Knockcronal SG155 Track	king.dwg
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Blode	Tower	
Pell Frischmann	Project	
93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburghlegellfrischmann.com www.pellfrischmann.com	Knockcronal Wind Farm	Drawn Designed Checked
Client ITPEnergised	Drawing Title	Point of Inter
Key /////	SIEMENS SUIDO BIADE AND IOWER	Drawing No. SK32
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		

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 All mitigation is subject to confirmation through a test run. This is not a construction drawing and is intended for illustration purposes only. 			nty. XXX	

Blade	49.8m		Tower 49.8m		
	Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tei: +44 (0)131 240 1270	Project Knockcronal Wind Farm	Drawn Designed	Name JS 2 GB 2	Date Scale 27/01/2021 27/01/2021 File M
	Emaii: predinburgn@peilinschmann.com www.peilfrischmann.com		Checked	GB 2	27/01/2021 Drawin
Client	ITPFnerøised	Drawing Title	Point of Intere	est	
	ווי בווכוצוזכע	Siemens SG155 Blade and Tower	Drawing No.	Notes:	
Key	BPA Body SPA Load SPA Indicative Over-sup Over still	SPA Location B7023 Dalhowan	SK33	1. All mitigation 2. This is not	n is subject to confirmation a construction drawing and
wneel S	ora body ora load ora indicative Uver-run Uver-sail			1	

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SK33	1. All mitige 2. This is r	ation is subject to co not a construction dr	onfirmation through a test run. awing and is intended for illustration purposes only.	XXX
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Name	Date	Scale 1:1000 @ A3	
JS	27/01/2021		
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st	39	Draft	
Notes:			Revision
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Blade	Tower		
	71.37		
Pell Frischmann	Project	Drawn	
93 GEORGE STREET, EDINBURGH. EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com	Knockcronal Wind Farm	Designed	L
	Drawing Title	Checked	
II PEnergised	Siemens SG155 Blade and Tower	Drawing No.	·
Key	SPA Location B7023 Cloyntie Bridge	SK34	

	71.3r	© Pell Frischmann
Name	Date	Scale 1:1000 @ A3
JS	27/01/2021	File No
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Trees and vegetation to be trimmed.

Name	Date	Scale 1:1000 @ A3	
JS	27/01/2021		
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75.4m	+ 77.9m
77.2m	© Pell Frischmann
Name Date	Scale 1:1000 @ A3
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PST 41 Notes: 1. All mitigation is subject to c 2. This is not a construction dr	onfirmation through a test run. awing and is intended for illustration purposes only.