

APPENDIX B-3

Drumnaough Wind Farm

Turbine Delivery Route

Assessment Report

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Malachy Walsh and Partners Consulting Engineers



Drumnahough Wind Farm

Turbine Delivery Route Assessment Report



Client: SSE Renewables / Coillte CGA

Project	Document	Revision	Prepared	Checked	Date
19715	6013	A	Paddy Curran	Eoin Doyle	22 May 2020
19715	6013	B	Paddy Curran	Eoin Doyle	10 August 2020

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1 Turbine Delivery Route Assessment

1.1 Project and Delivery Route Overview

The proposed Drumnahough Wind Farm development (hereafter “the proposed development”) is located in County Donegal, Ireland and will consist of 12 No. wind turbines. As a worst case scenario, a blade length of 71m has been considered.

Malachy Walsh and Partners (MWP) have been requested to provide a study on the viability of delivering components for this class of turbine to the proposed development.

The components for each turbine are expected to be delivered in approximately 10 No. deliveries (approximately 120 No. deliveries in total). Due to their abnormal size, blades and towers will be delivered at night to avoid disruption to daytime traffic. The turbine blades will be the longest components to be transported from port to site at approximately 71m in length. The components are expected to be delivered to Killybegs Port by sea and transported to site along the national, regional and local road network. The proposed route goes through the existing Meentycat and Cark Extension Wind Farms in order to minimise the length of the route along public roads, utilise existing wind farm access tracks where possible and minimise the impacts on local communities. See Figure 1-1 below.

Discussions have been undertaken at pre-planning stage with Donegal County Council’s Roads Department with regard to the proposed delivery route. In advance of construction commencement, a permit for moving abnormal loads to the wind farm site will be sought from An Garda Síochána and Donegal County Council on the selected haulage route. A detailed transportation plan with a breakdown of the timing of deliveries will be established at construction stage.

Pre and post-construction surveys will be carried out to ensure the structural integrity of the selected haulage route as per Donegal County Council and Transport Infrastructure Ireland (TII) requirements. Repairs will be carried out on the public road network, as necessary, during the construction phase, to ensure that the condition does not deteriorate below a standard that could affect the use of the roads. Following completion of construction, the condition of the public road network will be of at least the same standard as it was prior to commencement of construction.

1.2 Proposed Route

The proposed delivery route for oversized loads from Killybegs Port to the eastern site entrance at Drumnahough is shown on Figure 1-1.

The route is as follows:

- Starting at Killybegs Port;
- Travelling northbound along the Shore Rd (R263) to the junction between R263 to N56;
- Follow the N56 eastbound to the junction with the N15 near Donegal town;
- Follow the N15 north / northeast to the junction with the N14 in Lifford;
- Follow the N14 north / northwest to the junction with the N13;
- Follow the N13 west and then south to the junction with the L2744 local road;
- Follow L2744 westbound to the entrance of the existing Meentycat Wind Farm main access;
- Follow existing windfarm roads through the Meentycat and Cark Extension Wind Farms to the L10142.
- Follow the L10142 westbound to the site entrance.

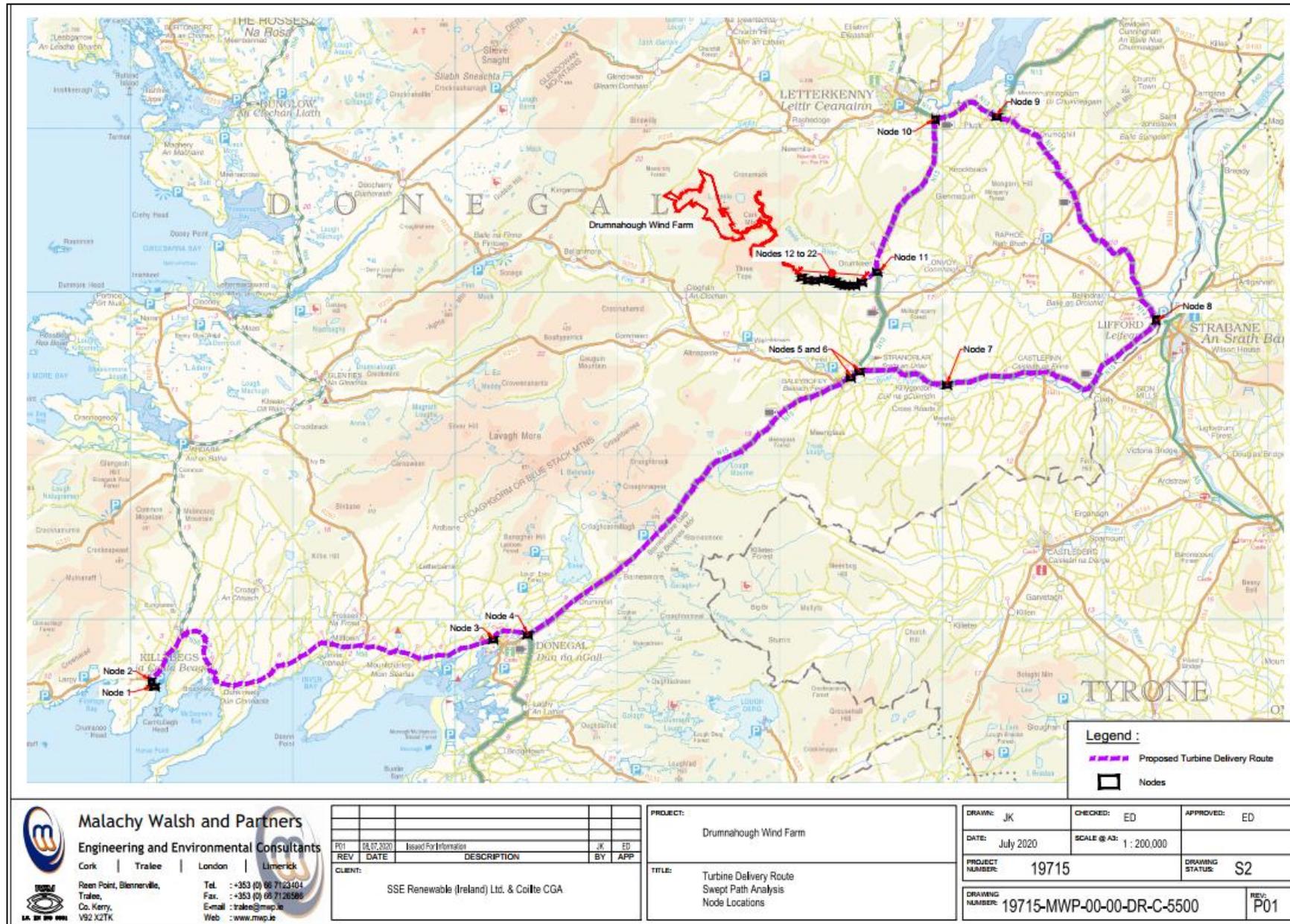


Figure 1-1 Turbine Delivery Route

1.3 Swept Path Analysis

A Swept Path Analysis (SPA) was completed using Autodesk Vehicle Tracking (formally called AutoTrack) software.

Pinch points along the route were identified using aerial photography, topographical survey information where available and site visits. As a fundamental element of this report, all identified pinch points were assessed with the turbine blade configuration shown in Figure 1-2. The turbine blade component is the most onerous to deliver to a wind farm site due to its significant length.

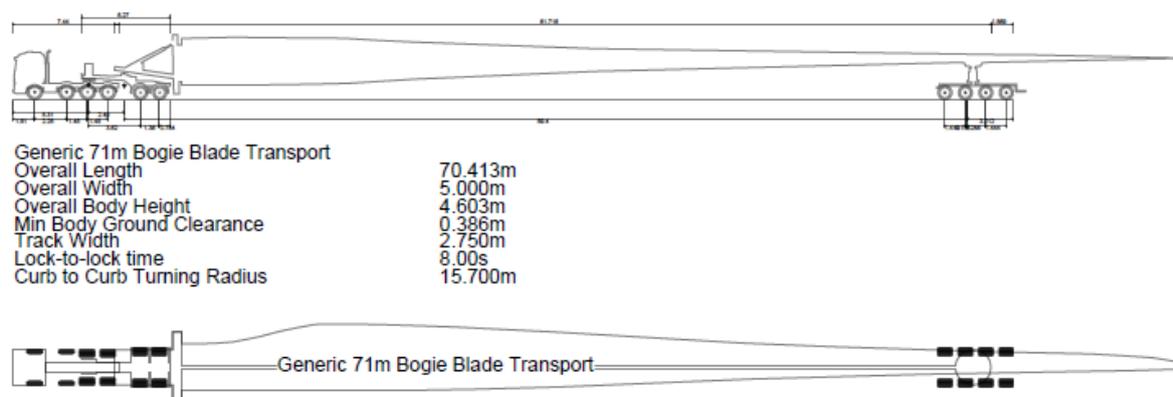


Figure 1-2 AutoTrack Delivery Vehicle Configuration for a 71m Blade

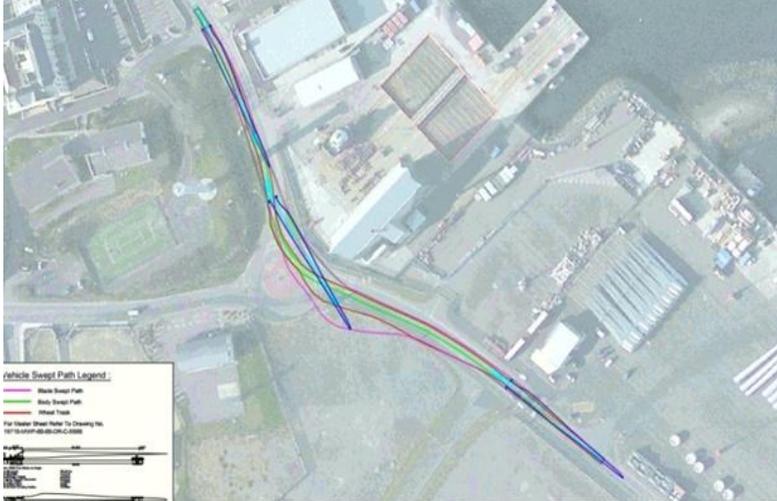
An AutoTrack model was developed for a 71m long blade with a 12m overhang on a bogie trailer in accessing the route from Killybegs to Drumnahough. The type of trailer proposed for blade transportation is commonly available from turbine transport companies.

An automatic steering principle within the software was used where possible but otherwise a manual override system is used with a conservative maximum steering angle of 30° to help alter the path of the bogie past constraints at pinch points.

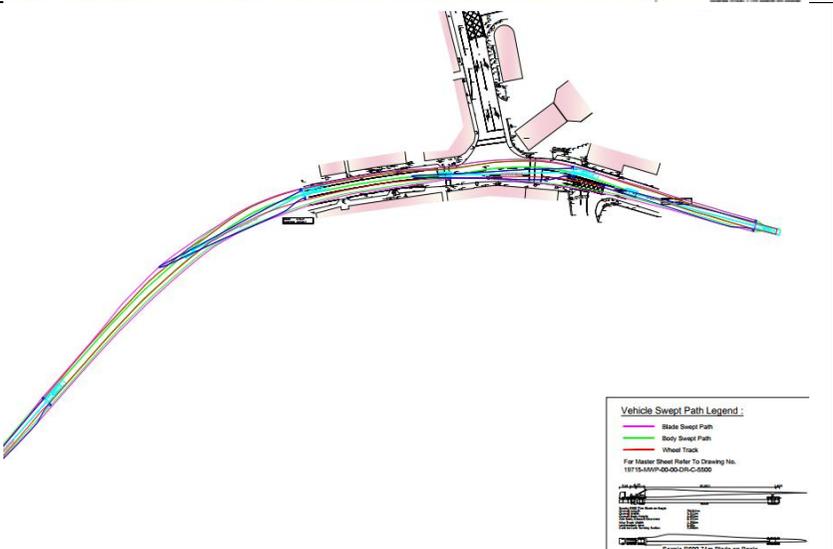
The Swept Path Analysis output is illustrated in the drawings included in Appendix A. This shows the extents of the wheel swept path, vehicle body swept path and blade swept path as the delivery truck manoeuvres around each pinch point. This information highlights areas that require widening or clearance along the route. See Table 1-1 for an overview of works required to public roads along the turbine delivery route.

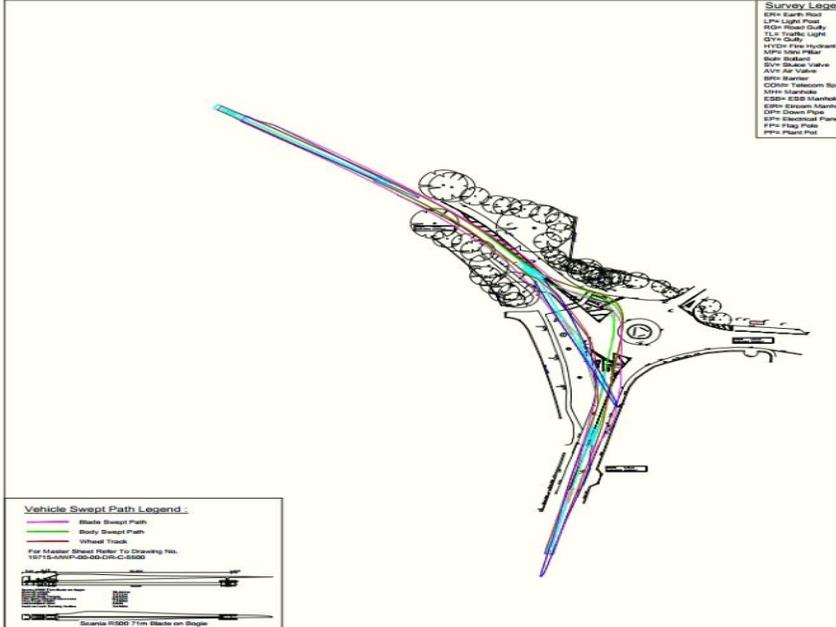
Minor works will be required within the existing Meentycat and Cark Wind Farm tracks. These will entail hardening of soft verge with compacted granular material. Existing drains to be piped. The extents of the works are minor and are shown on planning drawings 19715-MWP-00-00-DR-C-5007, 5008, 5013, 5014 and 5015.

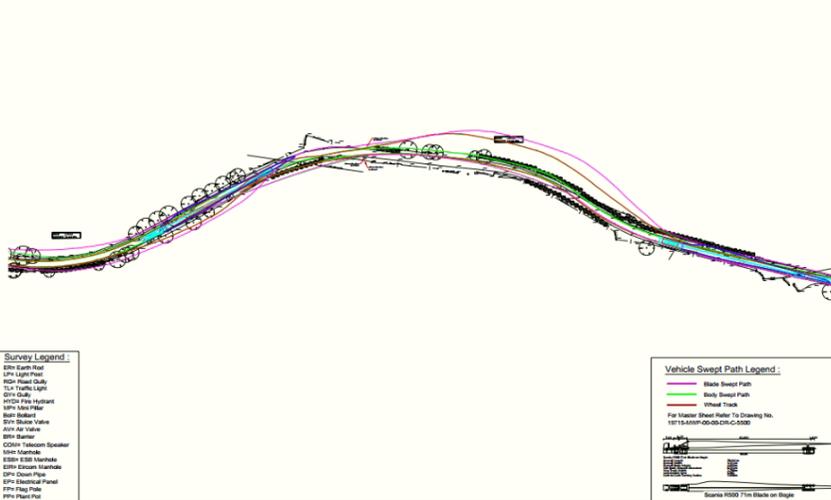
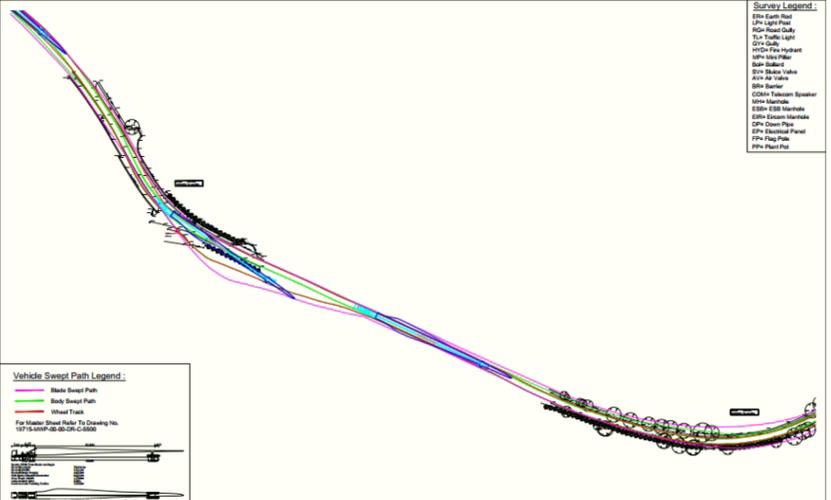
Table 1-1 Overview of Works along Turbine Delivery Route

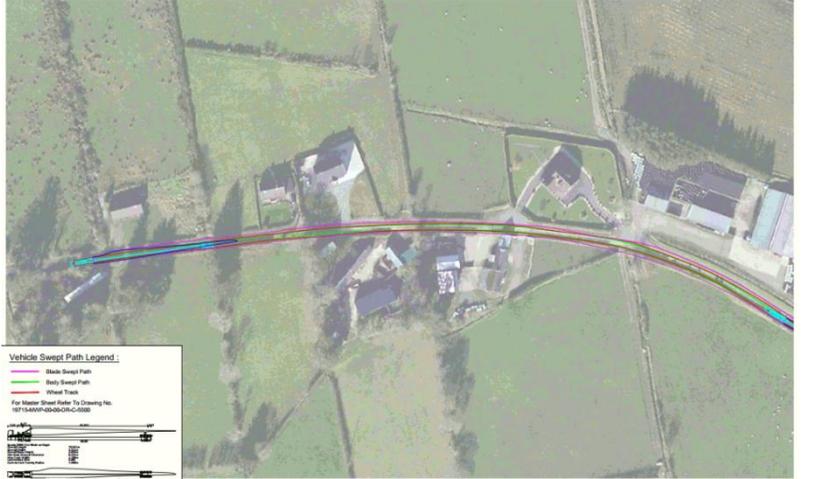
NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
1	N56 Roundabout near Killybegs	Temporary removal of fences, lighting poles, telecoms poles, signs and other street furniture		19715-MWP-00-00-DR-C-5501-P01
2	N56 bend near Killybegs	Temporary removal of fences, lighting poles, telecoms poles, signs and other street furniture		19715-MWP-00-00-DR-C-5502-P01

NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
3	N56 Roundabout on Western Side of Donegal Town	Temporary removal of fences, lighting poles, telecoms poles and other street furniture.		19715-MWP-00-00-DR-C-5503-P01
4	N56 Roundabout on Eastern Side of Donegal Town	Temporary removal of fences, lighting poles, telecoms poles, signs and other street furniture.		19715-MWP-00-00-DR-C-5504-P01

NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
5	N15 Ballybofey/Stranorlar Bridge	Temporary removal of lighting poles, telecoms poles, signs and other street furniture.		19715-MWP-00-00-DR-C-5505-P01
6	N15 Stranorlar - Street through town	Temporary removal of lighting poles, telecoms poles, signs and other street furniture.		19715-MWP-00-00-DR-C-5506-P01

NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
7	N15 – Killygordon	Temporary removal of lighting poles, telecoms poles, signs and other street furniture.		19715-MWP-00-00-DR-C-5507-P01
8	N14 - Lifford – Roundabout	Temporary removal of lighting poles, telecoms poles, signs and other street furniture.		19715-MWP-00-00-DR-C-5508-P01

NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
15	L-2744	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily	 <p>Survey Legend : S100 Earth Road S101 Light Point S102 Road Study S103 Traffic Light S104 Cable S105 15kV Free Hydrant S106 15kV Meter S107 Street S108 Drain S109 Drain Valve S110 Air Valve S111 Barrier S112 Telecom Resistor S113 Masthead S114 15kV Masthead S115 15kV Masthead S116 15kV Masthead S117 15kV Masthead S118 15kV Masthead S119 15kV Masthead S120 15kV Masthead</p> <p>Vehicle Swept Path Legend : Blade Swept Path Body Swept Path Wheel Track</p> <p>For Master Sheet Refer To Drawing No. 10175-MWP-00-DR-C-5515</p> <p>Scale: 1:1000 7mm Block on Stage</p>	19715-MWP-00-00-DR-C-5515-P01
16	L-2744	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Existing bank to the north of the road to be removed locally. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily	 <p>Survey Legend : S100 Earth Road S101 Light Point S102 Road Study S103 Traffic Light S104 Cable S105 15kV Free Hydrant S106 15kV Meter S107 Street S108 Drain S109 Drain Valve S110 Air Valve S111 Barrier S112 Telecom Resistor S113 Masthead S114 15kV Masthead S115 15kV Masthead S116 15kV Masthead S117 15kV Masthead S118 15kV Masthead S119 15kV Masthead S120 15kV Masthead</p> <p>Vehicle Swept Path Legend : Blade Swept Path Body Swept Path Wheel Track</p> <p>For Master Sheet Refer To Drawing No. 10175-MWP-00-DR-C-5516</p> <p>Scale: 1:1000 7mm Block on Stage</p>	19715-MWP-00-00-DR-C-5516-P01

NODE REF NO	LOCATION	BRIEF DESCRIPTION OF WORKS	IMAGE	DRAWING REF
19	L-2744	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Widening of embankment to the south of the road into a field. Telecoms poles, electrical poles, overhead cables, fences to be removed temporarily		19715-MWP-00-00-DR-C-5519-P01
20	L-2744	Minor works to harden areas of soft verge with granular fill. Any existing drains in areas requiring stone to be piped. Fence to be removed temporarily on north side of road. Some trees to be removed.		19715-MWP-00-00-DR-C-5520-P01

2 Conclusions

A conservative swept path analysis has been carried out on all the identified potential pinch points on the route from Killybegs Port to the site of the proposed development.

The delivery of a 71m blade to the site is feasible with some modifications to existing boundaries and temporary widening. Temporary works including widening by placing hardcore or other suitable material over existing grass verges is required at a number of locations along the proposed route and is included as part of the proposed development as set out in Table 1-1 and illustrated in the drawings in Appendix A.

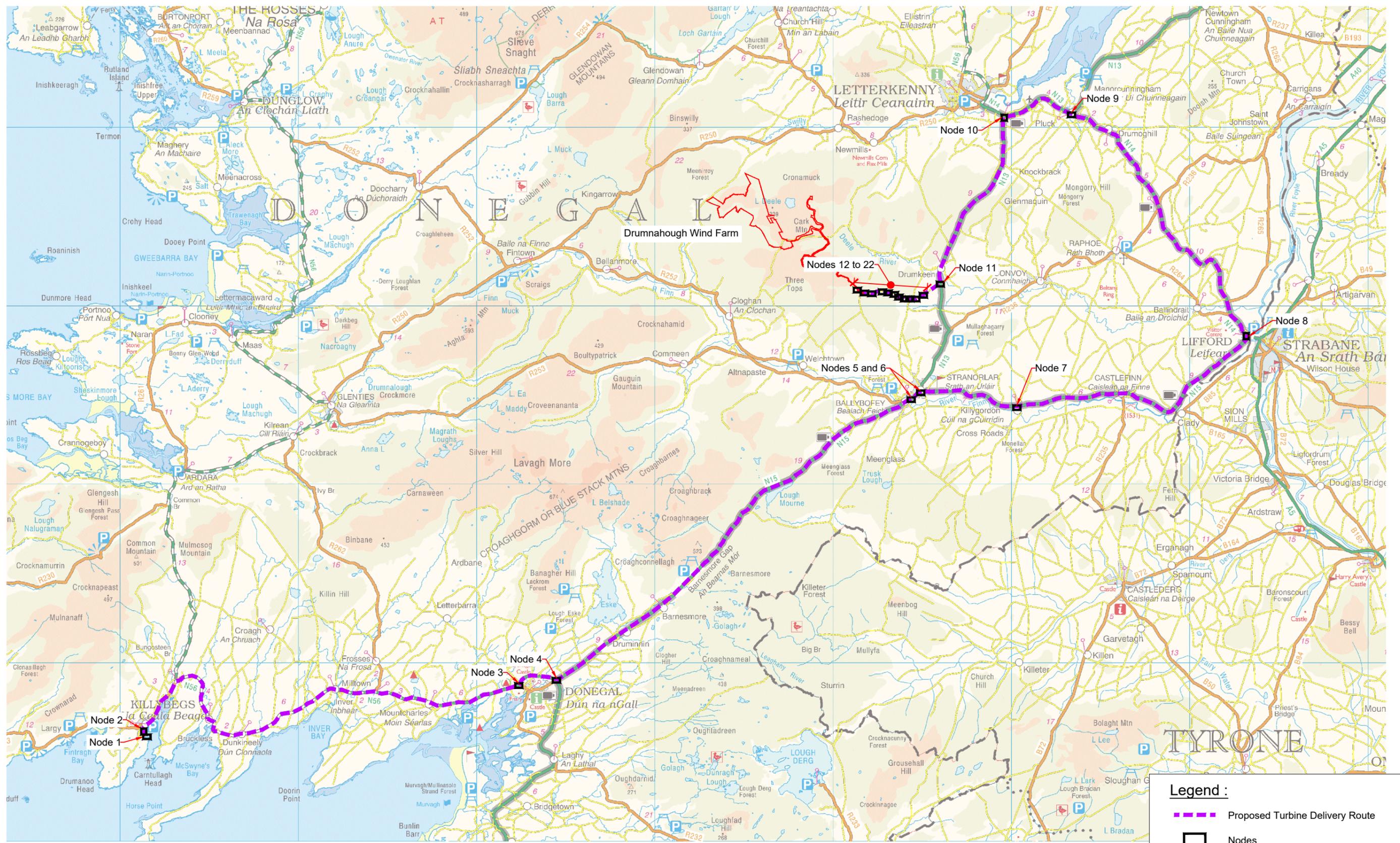
3 Recommendations

It is recommended that the following is carried out as early as possible post-consent:

- A schedule of street furniture alterations required will be compiled and formally agreed with DCC and Transport Infrastructure Ireland (TII).
- Consultation with all relevant authorities such as DCC and An Garda Síochána regarding possible traffic restrictions when transporting components.
- A utility survey should be completed to confirm the predictions in this EIAR regarding clearance requirements for turbine components along the transport route which should include public streetlight, telephone poles and overhead lines. Consultation should be made with Eir and ESB Networks about temporary removal of their services during delivery if necessary.

Appendix A

TURBINE DELIVERY ROUTE ASSESSMENT DRAWINGS



Legend :

- - - Proposed Turbine Delivery Route
- Nodes



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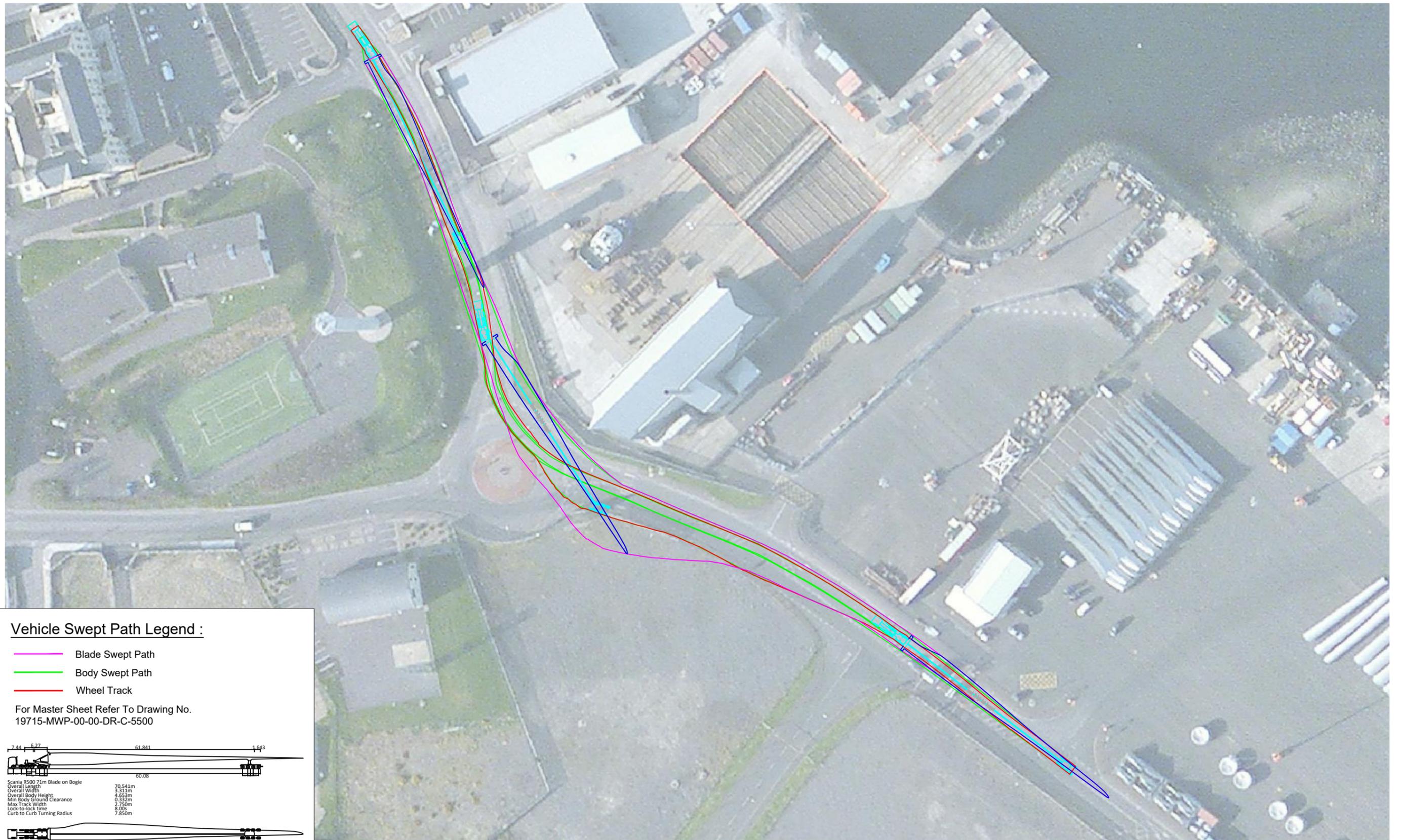
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PROJECT: Drumnahough Wind Farm

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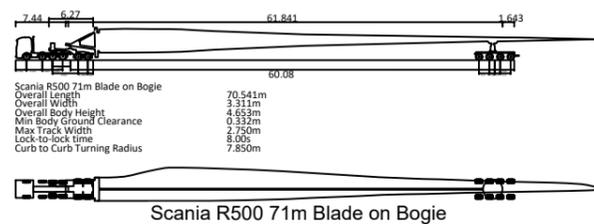
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Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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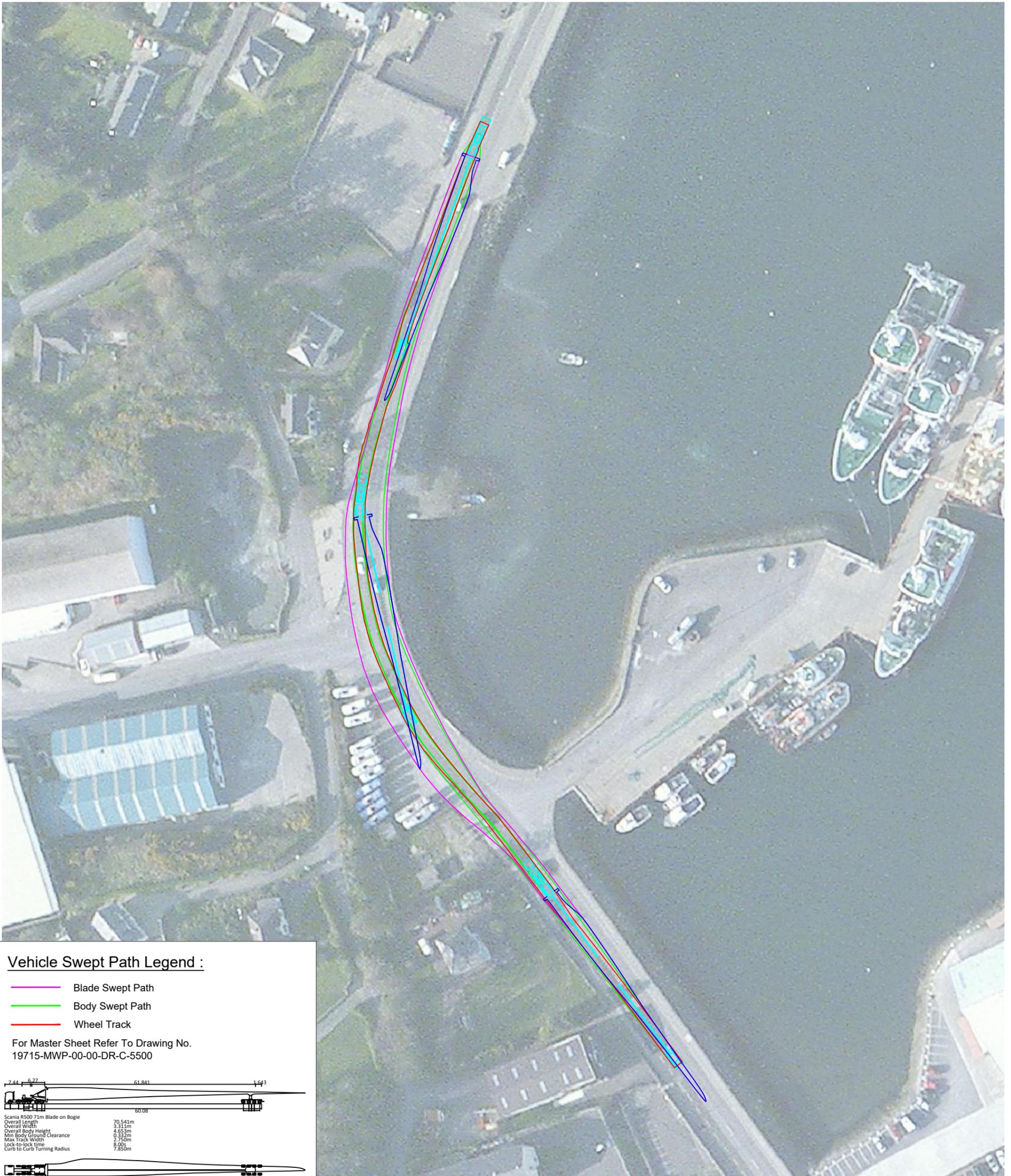
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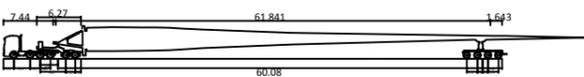
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Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



Scania R500 71m Blade on Bogie
 Overall Length 70.541m
 Overall Width 3.311m
 Overall Body Height 4.653m
 Min Body Ground Clearance 0.332m
 Max Track Width 2.750m
 Lock-to-lock time 8.00s
 Curb to Curb Turning Radius 7.850m

Scania R500 71m Blade on Bogie

REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT:
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PROJECT:
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TITLE:
Turbine Delivery Route
Swept Path Analysis
Node No.2



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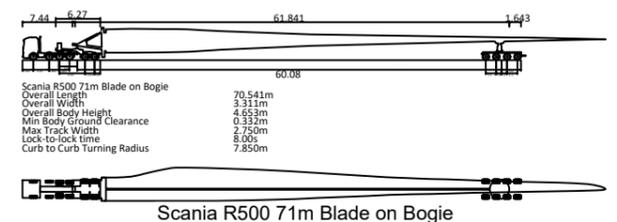
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Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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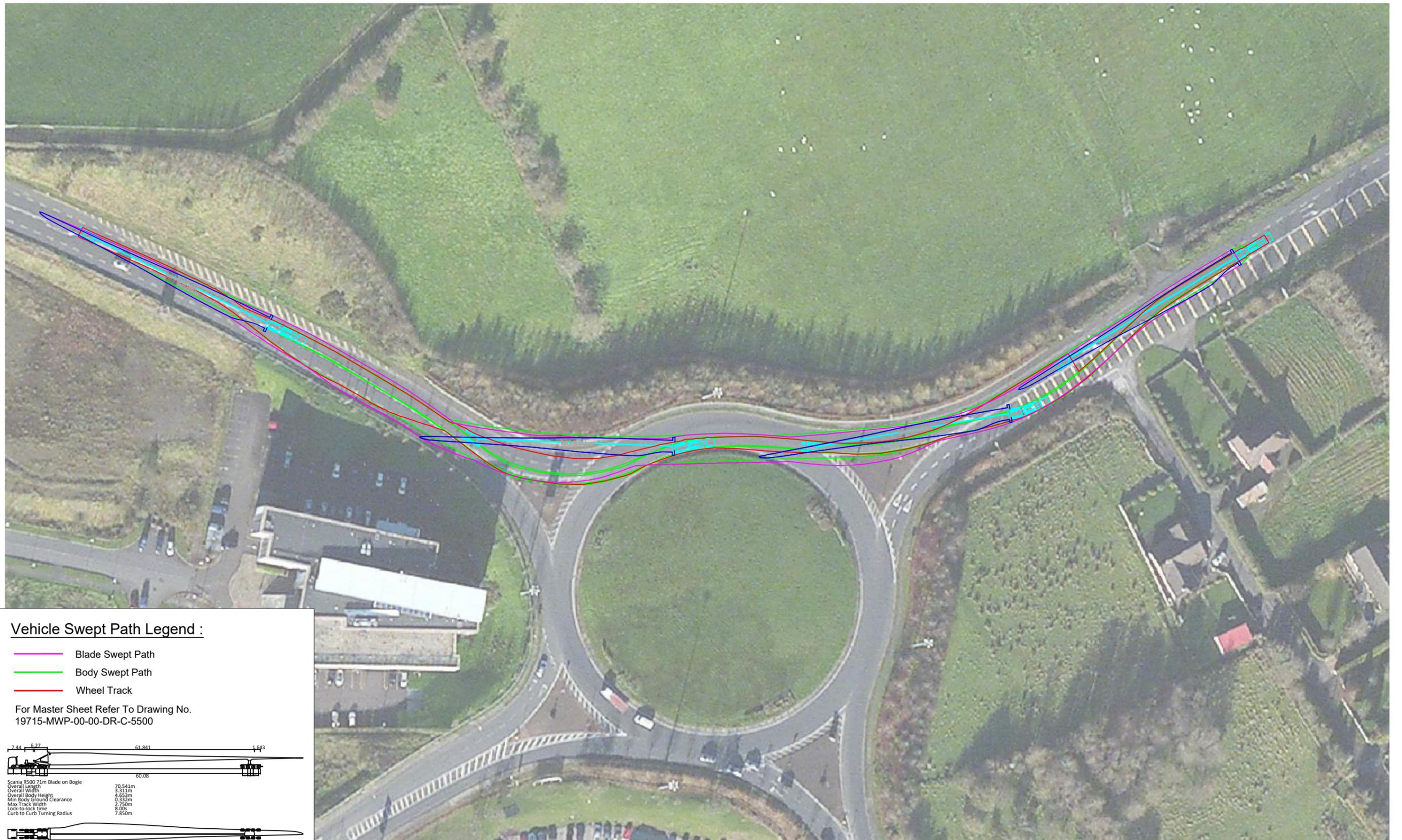
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P01	08.07.2020	Issued For Information	JK	ED

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PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.3

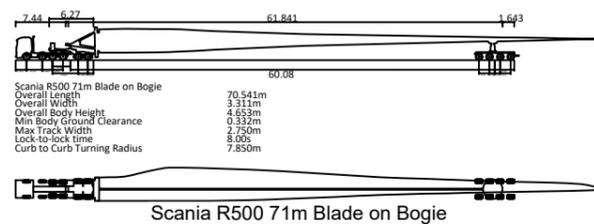
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Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.4

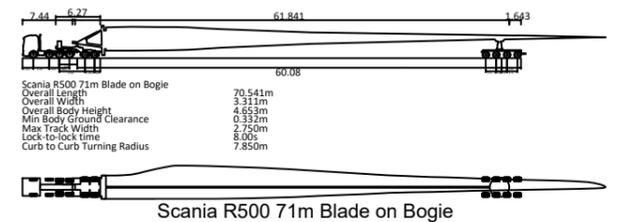
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Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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CLIENT:
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PROJECT:
Drumnahough Wind Farm

TITLE:
Turbine Delivery Route
Swept Path Analysis
Node No.5

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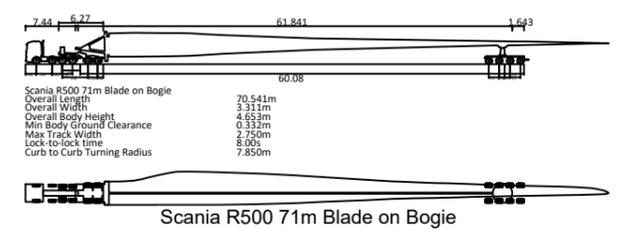
- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.6

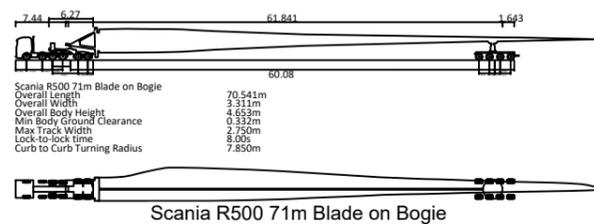
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Vehicle Swept Path Legend :

- Blade Swept Path
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- Wheel Track

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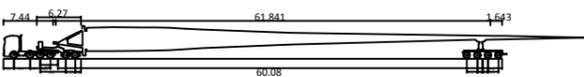
- ER= Earth Rod
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- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



Scania R500 71m Blade on Bogie	70.541m
Overall Length	3.311m
Overall Body Height	4.653m
Min Body Ground Clearance	0.332m
Max Track Width	2.750m
Lock-to-lock time	8.00s
Curb to Curb Turning Radius	7.350m



Scania R500 71m Blade on Bogie

P01	08.07.2020	Issued For Information	JK	ED
REV	DATE	DESCRIPTION	BY	APP

CLIENT:
SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT:
Drumnahough Wind Farm

TITLE:
Turbine Delivery Route
Swept Path Analysis
Node No.8



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DRAWN: JK	CHECKED: ED	APPROVED: ED
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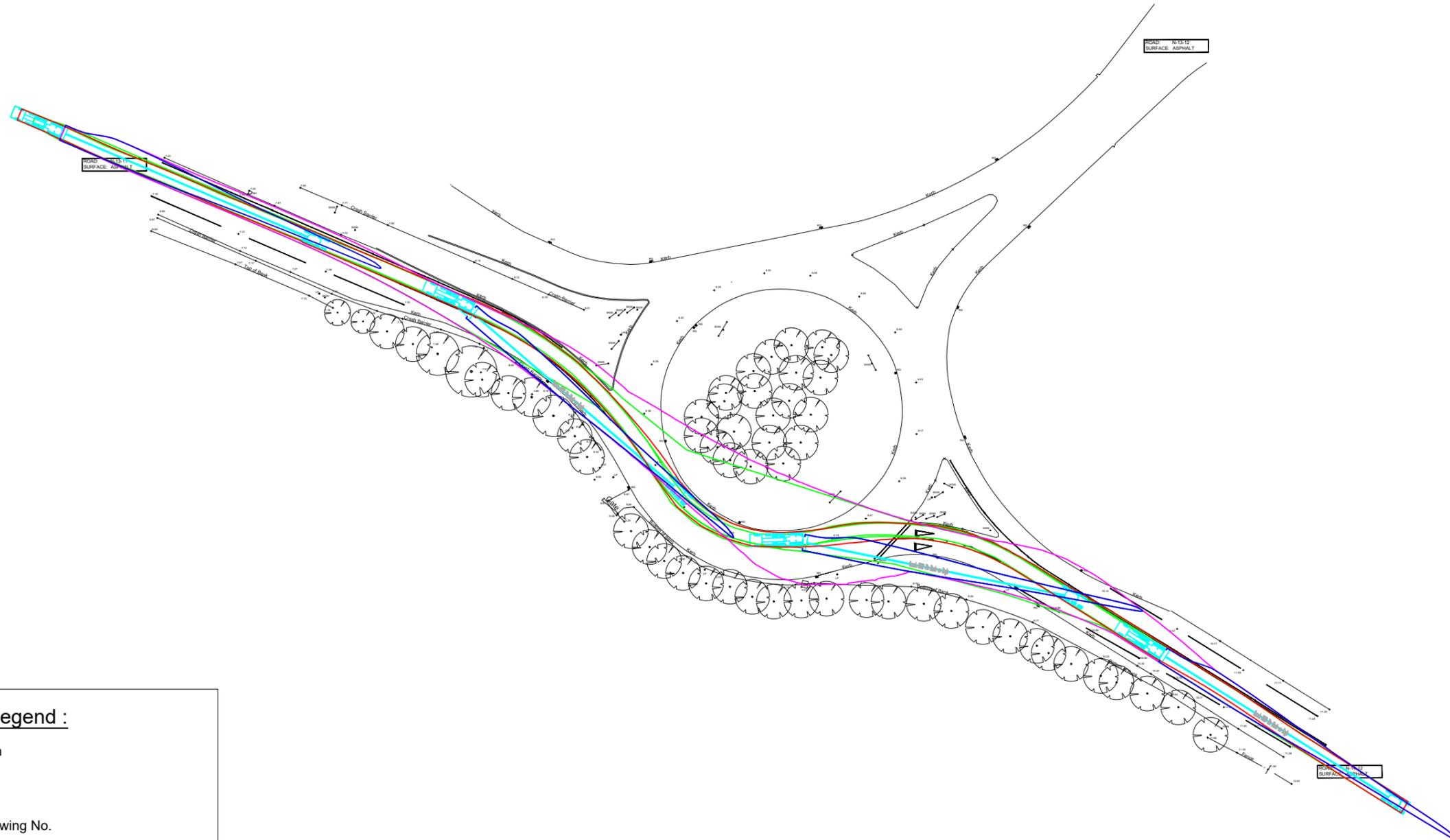
DATE: July 2020	SCALE @ A3: 1 : 1,000	
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PROJECT NUMBER: 19715	DRAWING STATUS: S2
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DRAWING NUMBER: 19715-MWP-00-00-DR-C-5508	REV: P01
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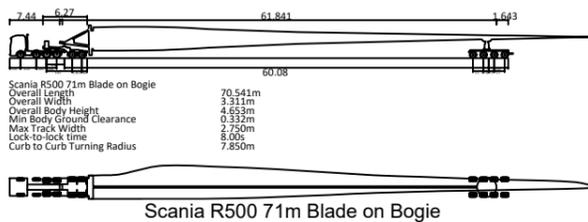
- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



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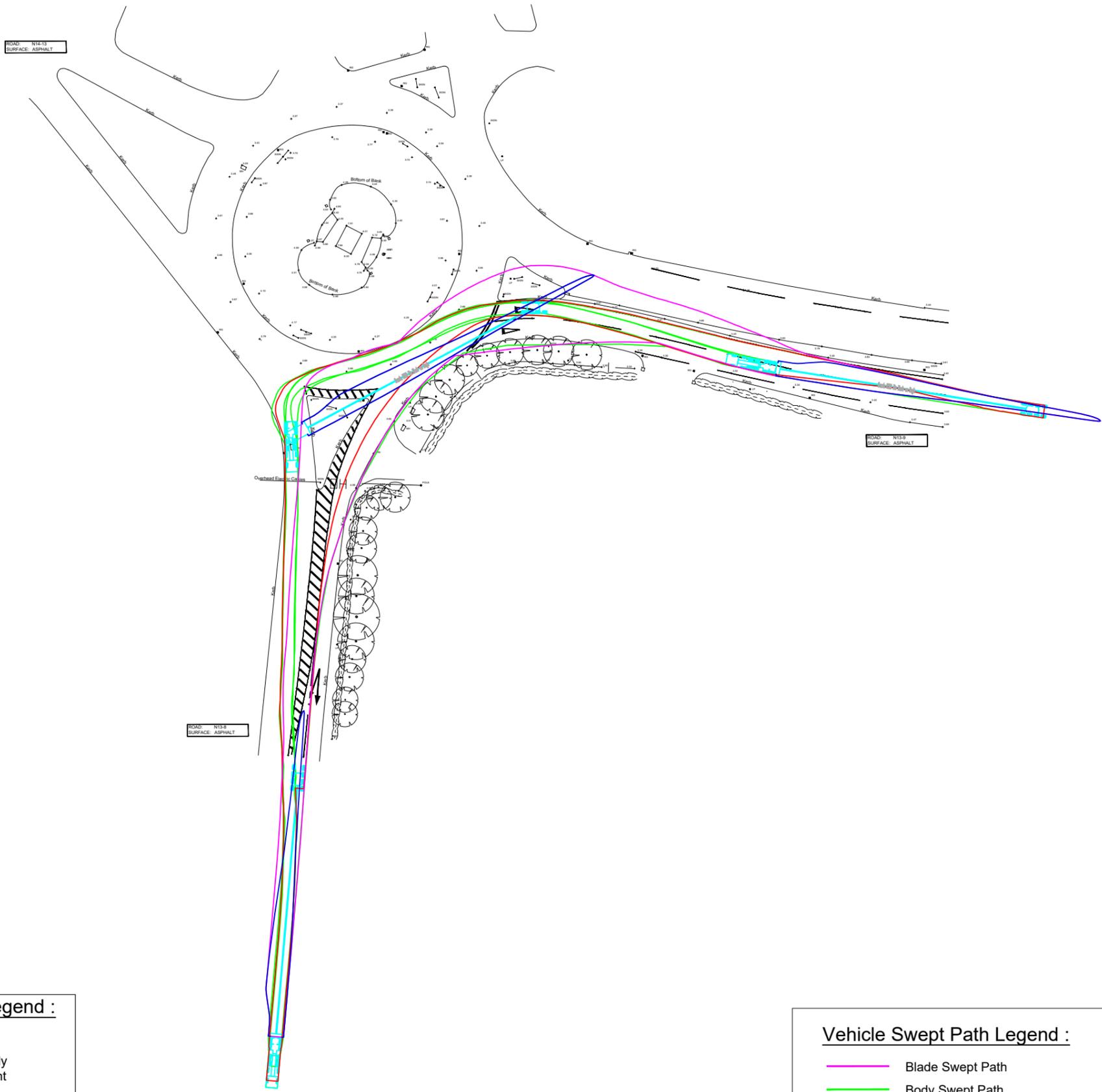
Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK

Tel. : +353 (0) 66 7123404
Fax. : +353 (0) 66 7126586
E-mail : tralee@mwp.ie
Web : www.mwp.ie

P01	08.07.2020	Issued For Information	JK	ED	
REV	DATE	DESCRIPTION	BY	APP	
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA					

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.9

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5509	REV: P01	



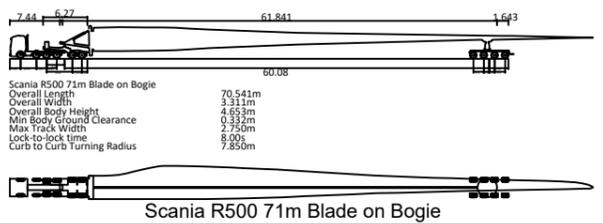
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.10

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E-mail : tralee@mwp.ie

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5510	REV: P01	



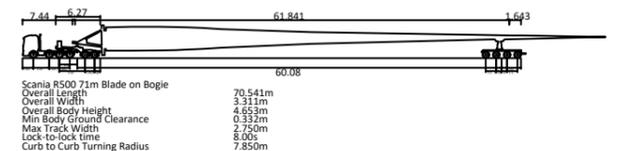
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No. 19715-MWP-00-00-DR-C-5500



Scania R500 71m Blade on Bogie
 Overall Length: 70.541m
 Overall Width: 3.311m
 Overall Body Height: 4.653m
 Min Body Ground Clearance: 0.332m
 Max Track Width: 2.750m
 Lock-to-lock time: 8.00s
 Curb to Curb Turning Radius: 7.850m

Scania R500 71m Blade on Bogie

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 E-mail : tralee@mwp.ie
 Web : www.mwp.ie

REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.11

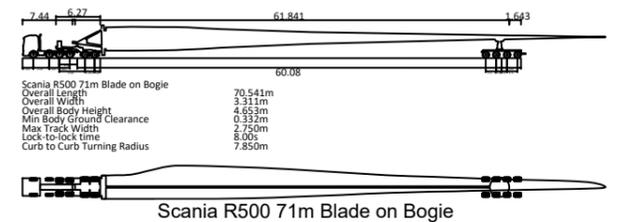
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DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5511	REV: P01	



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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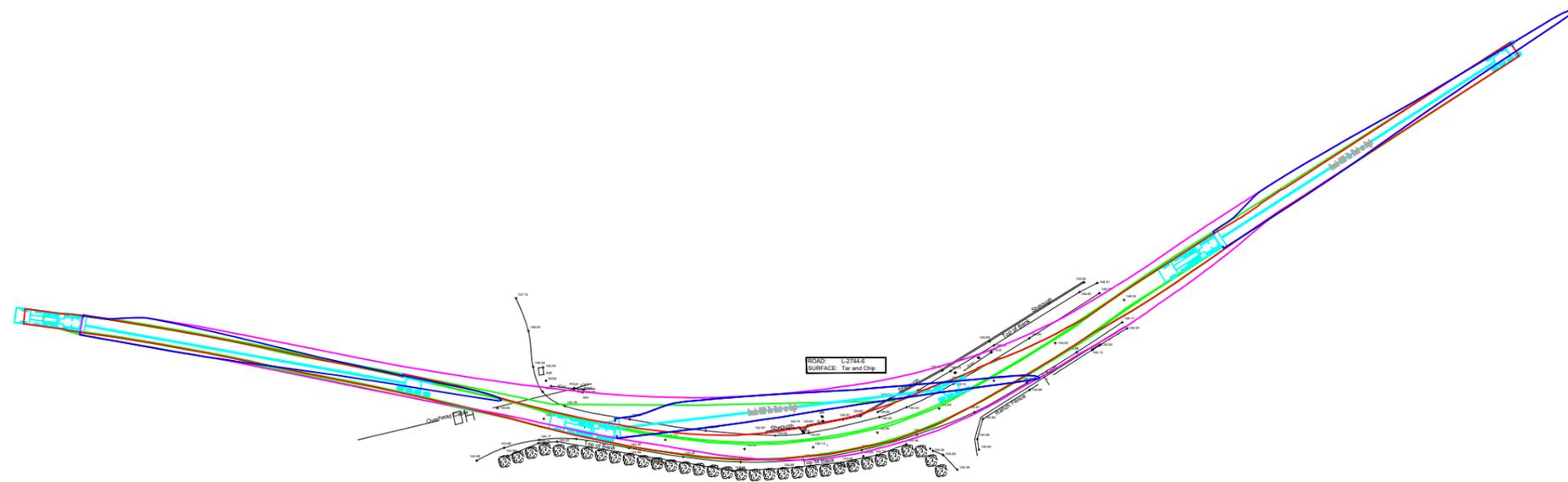
REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT:
SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT:
Drumnahough Wind Farm

TITLE:
Turbine Delivery Route
Swept Path Analysis
Node No.12

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5512	REV: P01	



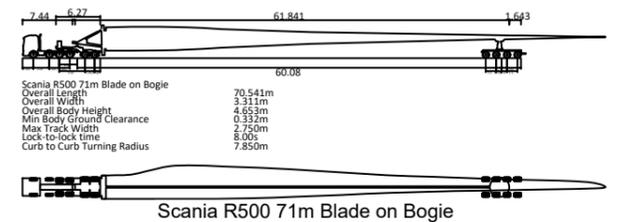
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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E-mail : tralee@mwp.ie
Web : www.mwp.ie

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CLIENT:
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PROJECT:
Drumnahough Wind Farm

TITLE:
Turbine Delivery Route
Swept Path Analysis
Node No.13

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5513	REV: P01	



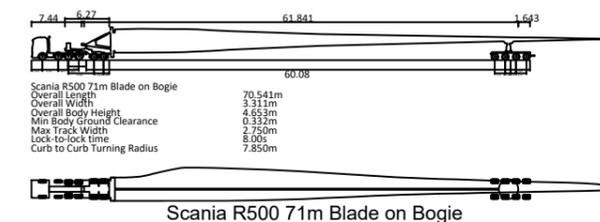
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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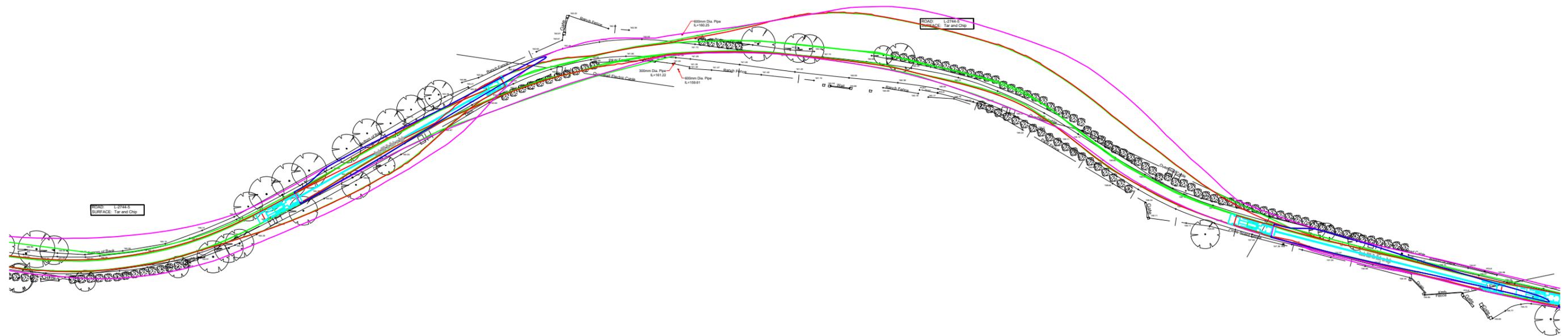
Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK
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Fax. : +353 (0) 66 7126586
E-mail : tralee@mwp.ie
Web : www.mwp.ie

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REV	DATE	DESCRIPTION	BY	APP	
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA					

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.14

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5514	REV: P01	



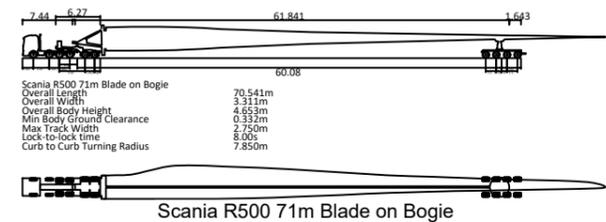
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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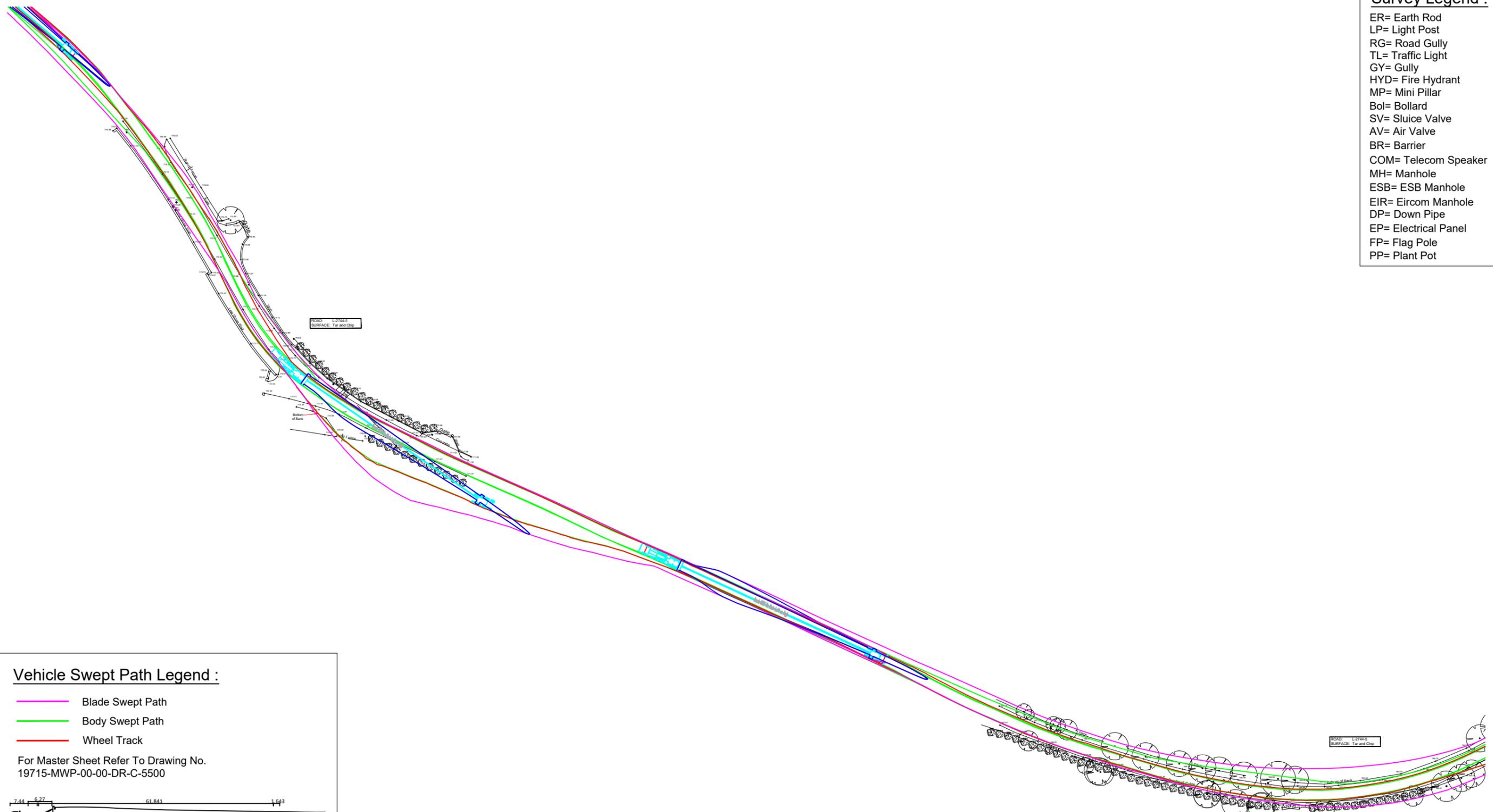
REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.15

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5515	REV: P01	



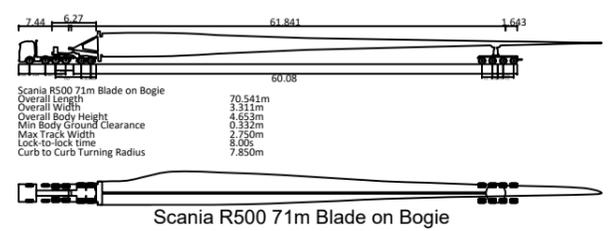
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
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- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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E-mail : tralee@mwp.ie
Web : www.mwp.ie

P01	08.07.2020	Issued For Information	JK	ED	
REV	DATE	DESCRIPTION	BY	APP	
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA					

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.16

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
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DRAWING NUMBER: 19715-MWP-00-00-DR-C-5516	REV: P01	



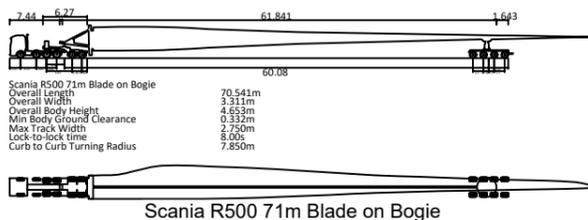
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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REV	DATE	DESCRIPTION	BY	APP	
CLIENT:			SSE Renewable (Ireland) Ltd. & Coillte CGA		

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.17

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
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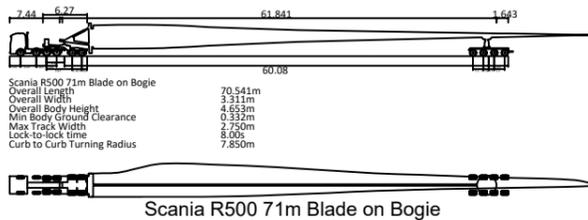
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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REV	DATE	DESCRIPTION	BY	APP	
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA					

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.18

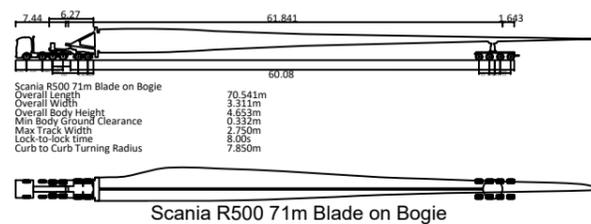
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DRAWING NUMBER: 19715-MWP-00-00-DR-C-5518	REV: P01	



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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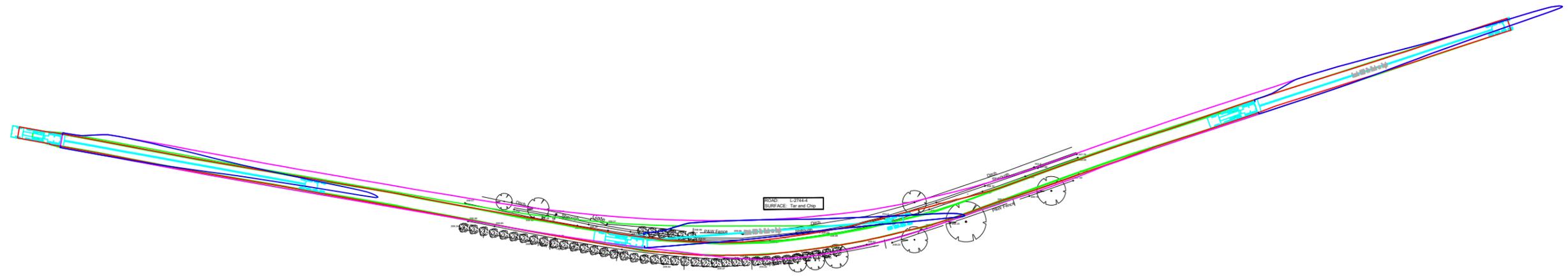
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Tel. : +353 (0) 66 7123404
Fax. : +353 (0) 66 7126586
E-mail : tralee@mwp.ie
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REV	DATE	DESCRIPTION	BY	APP	
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA					

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.19

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5519	REV: P01	



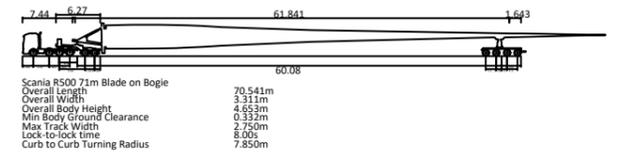
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
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- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



Scania R500 71m Blade on Bogie
 Overall Length 70.541m
 Overall Width 3.311m
 Overall Body Height 4.653m
 Min Body Ground Clearance 0.332m
 Max Track Width 2.750m
 Lock-to-lock time 8.00s
 Curb to Curb Turning Radius 7.850m

Scania R500 71m Blade on Bogie



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 Web : www.mwp.ie

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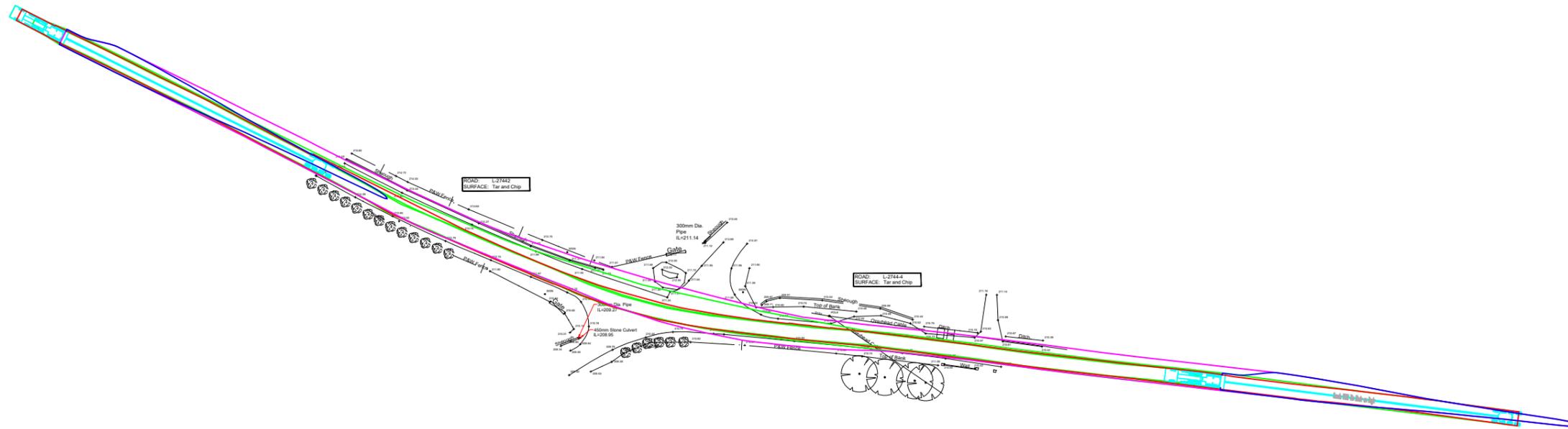
CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.20

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	

DRAWING NUMBER: 19715-MWP-00-00-DR-C-5520
 REV: P01



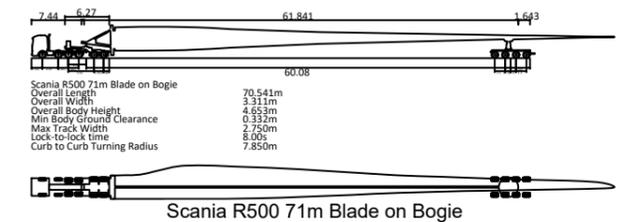
Survey Legend :

- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot

Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

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CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

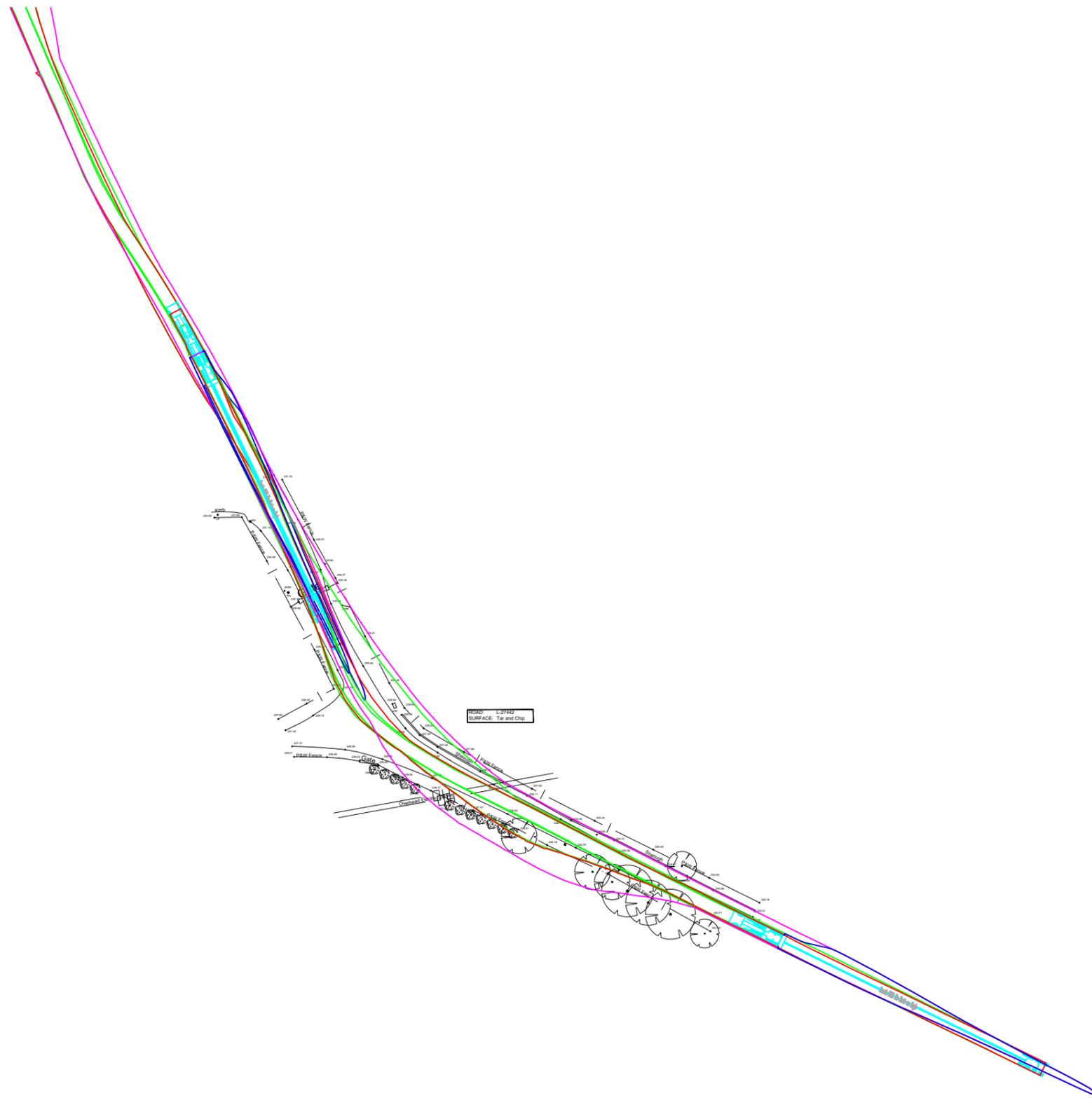
PROJECT: Drumnahough Wind Farm

TITLE: Turbine Delivery Route Swept Path Analysis Node No.21

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5521	REV: P01	

Survey Legend :

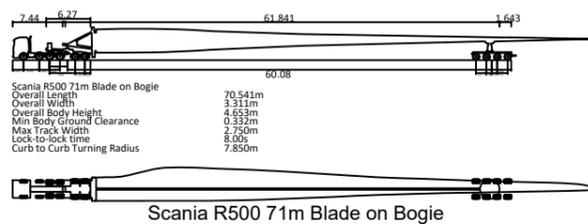
- ER= Earth Rod
- LP= Light Post
- RG= Road Gully
- TL= Traffic Light
- GY= Gully
- HYD= Fire Hydrant
- MP= Mini Pillar
- Bol= Bollard
- SV= Sluice Valve
- AV= Air Valve
- BR= Barrier
- COM= Telecom Speaker
- MH= Manhole
- ESB= ESB Manhole
- EIR= Eircom Manhole
- DP= Down Pipe
- EP= Electrical Panel
- FP= Flag Pole
- PP= Plant Pot



Vehicle Swept Path Legend :

- Blade Swept Path
- Body Swept Path
- Wheel Track

For Master Sheet Refer To Drawing No.
19715-MWP-00-00-DR-C-5500



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REV	DATE	DESCRIPTION	BY	APP
P01	08.07.2020	Issued For Information	JK	ED

CLIENT: SSE Renewable (Ireland) Ltd. & Coillte CGA

PROJECT:	Drumnahough Wind Farm
TITLE:	Turbine Delivery Route Swept Path Analysis Node No.22

DRAWN: JK	CHECKED: ED	APPROVED: ED
DATE: July 2020	SCALE @ A3: 1 : 1,000	
PROJECT NUMBER: 19715	DRAWING STATUS: S2	
DRAWING NUMBER: 19715-MWP-00-00-DR-C-5522	REV: P01	