

8 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 loaded onto a dolly clamp trailer to reduce the need for mitigation in constrained sections of the route, shown in **Figure 8-1**.



Figure 8-1: Dolly Clamp Trailer

Towers would be loaded onto a 4+7 clamp adaptor style trailer shown in **Figure 8-2**, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.



Figure 8-2: Tower Clamp Trailer

These configurations are subject to confirmation by the chosen haulier at the time of their commissioning.
As the loads are classified as Special Order, due to a rigid length in excess of 30 m, a full Police Escort would be required along the full length of the route.

9 Route Constraints

9.1 Route Constraint Assessment

The constraints noted during the review are provided in **Table 9-1** below. These cover all constraints from the port access gate through to the site access junction and are classified in terms of risk to delivery as follows (N.B. the below list is not exhaustive):

High Risk

- Building / overbridge conflict
- Third-party land owner(s) access permission
- Permanent road works
- Reprofilling / ground works
- Bridge upgrades
- Overhead line removal / relocation
- Tree clearance

Medium Risk

- Land searches to confirm extent of available adopted land
- Topographical survey
- Detailed junction / access track design
- Structural assessment / overbridging
- Overhead line survey
- Vertical elevation check
- Bridge parapet removals
- Street furniture removals
- Tree / vegetation pruning
- Vegetation clearance
- Use of dedicated abnormal load bypass / access track
- Shunt / contraflow manoeuvre
- Trailer interchange
- Carriageway surface repairs

Low Risk

- Temporary load bearing surface to be laid
- Existing load bearing surface to be utilised
- Parking restrictions
- Loads to be raised above obstruction using trailer hydraulics

Risk has been assessed in terms of enabling works time, potential cost and complexity.

Full details of the mitigation measures are shown on the SPA drawings included in **Appendix B**.

9.2 Route Constraint Tables

Tables 9-1 detail constraints from the KGV Dock access gate through to the proposed site access junction on the route.

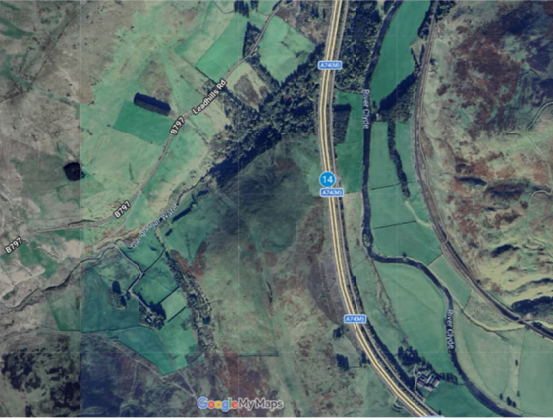
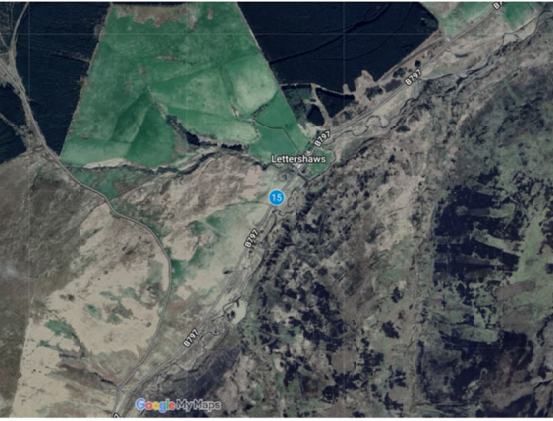
Table 9-1: Route Constraint Points and Details (Dolly Clamp and Tower Clamp Trailers)

POI	Key Constraint	Details	
1		<u>Direction of travel</u>	
		Loads will exit KGV Dock and take the third exit at the roundabout onto Kings Inch Drive northbound.	
		<u>Document reference</u>	<u>Doc. No.</u>
		Swept path assessment	SPA-01
2, 3	 	<u>Mitigation measures</u>	<u>Risk level</u>
		Street furniture removals	Medium
		Contraflow manoeuvre	Medium
		Storage area to be cleared	Low
4		<u>Direction of travel</u>	
		Loads will take the second exit at the roundabout to continue on Kings Inch Drive westbound.	
		<u>Document reference</u>	<u>Doc. No.</u>
		Swept path assessment	SPA-03
		<u>Mitigation measures</u>	<u>Risk level</u>
		No mitigation measures required	N/A

POI	Key Constraint	Details	
5	 	<u>Direction of travel</u>	
		Loads will turn left onto M8 Jct 25A slip road southbound.	
		<u>Document reference</u>	<u>Doc. No.</u>
		Swept path assessment	SPA-03
6		<u>Mitigation measures</u>	<u>Risk level</u>
		Street furniture removals	Medium
		Tree / vegetation pruning	Medium
		Contraflow manoeuvre	Medium
7		<u>Direction of travel</u>	
		Loads will exit M8 at Junction 22 and merge onto M74(M) eastbound.	
		<u>Document reference</u>	<u>Doc. No.</u>
		N/A	N/A
		<u>Mitigation measures</u>	<u>Risk level</u>
		No mitigation measures required	N/A

POI	Key Constraint	Details	
8	M74 6-5 75 Raith 	<u>Direction of travel</u> Loads will continue on M74 southbound over structure no. M74 6-5 75 Raith.	
		<u>Document reference</u> N/A	<u>Doc. No.</u> N/A
		<u>Mitigation measures</u> Structural caution Loads to straddle lanes 1 and 2 No other traffic on structure at same time	<u>Risk level</u> Low
9	M74 Jct 13 / A74(M) 	<u>Direction of travel</u> Loads will merge from M74 onto A74(M) southbound.	
		<u>Document reference</u> N/A	<u>Doc. No.</u> N/A
		<u>Mitigation measures</u> No mitigation measures required	<u>Risk level</u> N/A
10	A74(M) / M6 Jct 45 	<u>Direction of travel</u> Loads will merge from A74(M) onto M6 southbound.	
		<u>Document reference</u> N/A	<u>Doc. No.</u> N/A
		<u>Mitigation measures</u> No mitigation measures required	<u>Risk level</u> N/A

POI	Key Constraint	Details	
11, 12	M6 Jct 42 exit slip / Golden Fleece Interchange    	<u>Direction of travel</u> Loads will exit M6 southbound at Junction 11 Golden Fleece Interchange and take the sixth exit at the roundabout to join M6 northbound.	
		<u>Document reference</u> Swept path assessment	<u>Doc. No.</u> SPA-05
		<u>Mitigation measures</u> Tree clearance Street furniture removals Vegetation clearance	<u>Risk level</u> High Medium Medium
		Loads to oversail bridge parapet using trailer hydraulics	Low
		Loads to oversail street furniture using trailer hydraulics	Low
		Loads to oversail junction box using trailer hydraulics	Low
13	M6 Jct 45 / A74(M) 	<u>Direction of travel</u> Loads will merge from M6 onto A74(M) northbound.	
		<u>Document reference</u> N/A	<u>Doc. No.</u> N/A
		<u>Mitigation measures</u> No mitigation measures required	<u>Risk level</u> N/A

POI	Key Constraint	Details	
14		<u>Direction of travel</u>	
		Loads will exit A74(M) at the proposed access junction and travel westbound towards site.	
		<u>Document reference</u>	<u>Doc. No.</u>
		Swept path assessment	SPA-06
15		<u>Mitigation measures</u>	<u>Risk level</u>
		Third-party land owner(s) access permission	High
		Land to be reprofiled	High
		Surfacing works	High
		<u>Direction of travel</u>	
		Loads will travel westbound on the proposed access track, turn left onto B797 southbound and then turn right onto the proposed site access track.	
		<u>Document reference</u>	<u>Doc. No.</u>
		Swept path assessment	SPA-07
		<u>Mitigation measures</u>	<u>Risk level</u>
		Third-party land owner(s) access permission	High
		Land to be reprofiled	High
		Surfacing works	High
		Structure construction	High
		Site street furniture removals	Low

10 Swept Path Assessment Terminology

The detailed Swept Path Assessment (SPA) drawings for the locations assessed are provided in **Appendix B** for review. The drawings illustrate tracking undertaken for the worst-case loads at each location.

The colours illustrated on the swept paths are:

- Grey / Black – Ordnance Survey (OS) / topographical base mapping,
- Cyan – indicative road edge,
- Green – vehicle body outline (body swept path),
- Red – tracked pathway of the wheels (wheel swept path) and
- Purple – the oversail tracked path of the load where it encroaches out with the trailer (load swept path).

Where mitigation works are required, the extents of the overrun and oversail areas are illustrated and fully detailed on the SPA drawings. Additional land areas to those indicated in the SPA drawings may be required to facilitate the construction of the proposed physical mitigation measures depending on the site conditions and topography. The extent of any additional areas required to construct the mitigation works highlighted within this study and the detailed design of said mitigation works is beyond the scope of this study and should be confirmed on detailed topographical survey data.

Please note that where SPA have been undertaken using OS base mapping, AutoCAD based aerial mapping and historic topographical data, there can be errors in these data sources.

Where provided by the client, topographical data has been utilised. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping, aerial mapping, historic topographical surveys or client supplied data. Where applicable, mapping has been augmented with aerial imagery for illustration only. The accuracy of this mapping cannot be confirmed by PF.

Please note that turbine supplier guidance suggests that the minimum road width for the safe transport of ALL components is 4.5 m. All public roads and onsite access tracks should comply with this standard unless a relaxation has been agreed with suppliers.

The need to widen public roads will require engagement with the relevant road authority and may constitute permanent or temporary surfacing.