Cloiche Wind Farm

Route Survey Report – Vestas V136 Turbine

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Appendices

1 INTRODUCTION

Report Purpose

1.1 WYG were commissioned by SSE Renewables (hereinafter referred to as SSER) to undertake a route review for the delivery of abnormal loads associated with the proposed Cloiche Wind Farm (the Site) near Fort Augustus, Highland.

1.2 This report reviews the constraints associated with the transportation of Vestas V136 wind turbine components from ports considered most feasible, selected after a review of potential port facilities available, to the existing Stronelairg/Glendoe access junction on the B862 east of Fort Augustus which shall be used as the Cloiche Wind Farm access junction (the Site access junction).

1.3 This report has been prepared in accordance with instructions from SSER on the above project details. No liability is accepted for the use of all or part of this report by third parties.

1.5 WYG were commissioned to prepare this route survey report as a source of guidance. The report identifies the key points and issues associated with the routes that may require remedial works to accommodate the predicted loads. The detailed designs of these remedial works, however, are beyond the agreed scope of works. It is the responsibility of the turbine supplier (depending on contract) to ensure the access route from the Point of Entry (POE) to the Site access junction is fit for purpose and appropriate consideration for all road users has been made in accordance with the relevant health and safety legislation and ruling transport requirements.

Report Structure

1.6 Following this introduction, the proceeding chapters of the report are structured as follows:

- Chapter Two describes the location of the proposed wind farm development, the proposed candidate turbine and a summary of potential transportation options;

- Chapter Three provides a review of the nearest port facilities and associated access routes along with the identification of the preferred access strategy;
- Chapter Four provides a detailed review of the preferred access routes along with areas of potential significant constraints;
- Chapter Five details a framework for the Abnormal Load Traffic Management Plan; and
- Chapter Six provides a summary of the report and an outline of suggested further works, actions and recommendations for consideration by SSER.

2 PROPOSED WIND FARM LOCATION, CANDIDATE TURBINE AND TRANSPORT EQUIPMENT OPTIONS

Site Description and Location

2.1 Cloiche Wind Farm is located to the south east of Fort Augustus, Highland. The Site is being developed by SSER. The Site location and Proposed Development boundary are illustrated below in Figure 2.1.

Figure 2.1: Site Location

2.2 Access to the Cloiche Wind Farm shall be taken from the B862 and will utilise the Glendoe Estate junction which was first modified for the Glendoe Hydro project and then further improved for the Stronelairg Wind Farm project. This junction (the Site access junction) will be upgraded to suit the turbine manufacturers transport guidelines for the selected turbine.

Candidate Turbine

2.3 A number of candidate turbines have been identified by SSER as being suitable for Cloiche Wind Farm based on the maximum turbine tip height and nominal turbine rotor and hub height put forward in the Environmental Impact Assessment Report (EIAR). The final turbine selection will be determined through the process of competitive tender at a later date. For the purposes of this assessment, SSER have requested the consideration of a Vestas V136 turbine at 82m hub height.

2.4 The dimensions of the proposed loads are indicated within Table 2.1 detailing the components assessed within this study.

Table 2.1: Worst Case Turbine Loads and Dimensions

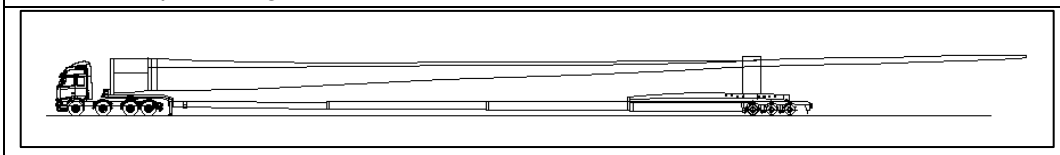
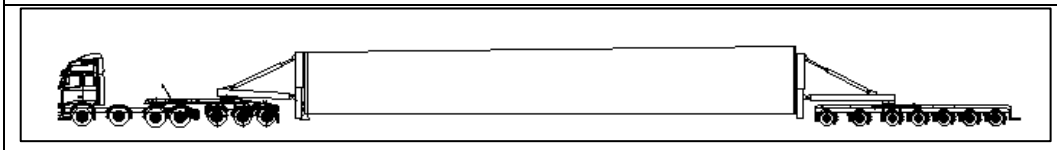
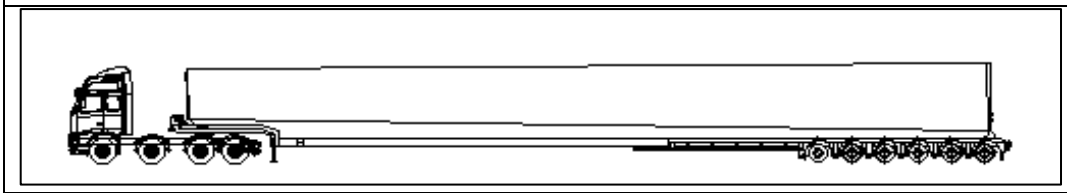
Component	Length	Maximum Width on Vehicle	Weight (kg)
Vestas V136 Blade	66.77m	4.23m	13940
Vestas V136 Base Tower	19.64m	4.31m	75000
Vestas V136 Mid Tower	29.96m	4.03m	64000
Vestas V136 Top Tower	30.00m	3.67m	45500
Vestas V136 Hub	5.50m	3.80m	3700
Vestas V136 Nacelle	12.80m	4.20m	125000

The Blade, Base and Mid towers have been selected as representing the worst-case components for inclusion within this assessment due to the combination of length and width. These worst-case components are highlighted in bold in Table 2.1.

Transport Equipment Options

2.5 The blade is assumed to be transported within a Super-wing Carrier blade trailer which allows modification of both the rear blade over-hang along with the running height to facilitate movement at constrained locations. The Base and Mid tower are both assumed to be carried by 7-axle rear clamp trailer with the top tower carried in a step frame trailer. Photos 2.1 – 2.3 illustrate wind farm trailer configurations similar to those assessed for the Site. Table 2.2 indicates a typical side profile of the standard transport configurations.

Table 2.2: Indicative Transport Side Profiles

Blade – Super-wing Carrier

Base + Mid Tower – 3x7 Clamp Trailer

Top Tower – Step Frame Trailer


2.6 Running heights on step frame trailers are between 850mm to 1000mm depending on manufacturer and in general it is not recommended that tower sections in excess of 4m width are transported by step frame due to the impact on overhead utilities along the route. The suitability of use of a step-frame trailer and the potential to impact upon overhead utilities crossing, and adjacent to, the abnormal load delivery route will be assessed in full once the competitive tender process has been concluded and the final turbine selected is known.

Photo 2.1: Indicative Super-wing Carrier Trailer Delivery Vehicle

Photo 2.2: Indicative Rear Clamp (Clamp & Clamp) Delivery Vehicle

Photo 2.3: Indicative Step Frame Trailer Delivery Vehicle

2.7 Specialist transportation options are available to facilitate the safe movement of components at locations where constraints rule out the use of the standard trailer configurations outlined in Section 2.3 and shown in Photos 2.1 - 2.3. The Scheuerle Blade Adaptor shown in Photo 2.4 allows a blade to be raised to a maximum of 60 degrees from the horizontal, allowing obstacles to be oversailed without the need for physical mitigation measures. The Scheuerle Blade Adaptor can either be operated as a self-propelled mobile unit or towed in combination with a tractor unit. Details of the similar Goldhofer Blade Adaptor are included in Appendix A.

2.8 Operating as a self-propelled unit with the blade tip raised the blade adapter is likely will travel at walking speed and when towed with a tractor unit is unlikely to exceed 30mph with the blade tip lowered. Due to the limited speed of blade adaptors there would be potential delay to general traffic movement if utilised extensively for component delivery. It is therefore recommended that any blade adaptor movement with the component at an elevated angle would only be at key locations with blades either relocated onto a standard Super-Wing trailer or lowered back to horizontal and towed with a tractor unit at the earliest opportunity. The movement of a component from a blade adaptor to a Super-Wing trailer would require a suitable location to accommodate the positioning of two cranes to facilitate the movement between the two transport equipment types.

Photo 2.4: Scheuerle Blade Adaptor Delivery Vehicle

2.9 An alternative to the Scheuerle Blade Adaptor is the Broshius Quattro Blade trailer with 10m lift as illustrated in Photo 2.5. The Quattro blade trailer allow the blade tip to be lifted at key constraint locations and has the added benefit of enabling continuous transport from port to the Site access junction. The main constraint associated with this trailer is the potential instability of the blade when in the lifted position and the associated requirement to ensure that any over-run areas are flush with the existing road surface. Details of the Broshius Quattro Blade are included in Appendix A.

Photo 2.5: Broshius Quattro Blade Trailer

2.10 The final component transportation configuration should be confirmed with the haulier once selected, should this significantly differ from the configurations described within this report it is recommended a new swept path assessment be undertaken.

2.11 WYG has assumed all loads will follow the turbine manufacturer transport guidelines noting that the use of specialist transportation options will require further discussions and approvals from turbine manufacturers, relevant roads authorities and the police.

2.12 All of the transport equipment types described feature rear-wheel steering functionality.

2.13 It is anticipated that all abnormal load movements would be carried out under both Police escort and civilian escort. This shall be determined through further consultation with the relevant roads authorities through the Electronic Service Delivery for Abnormal Loads (ESDAL) process.

3 ACCESS STRATEGY

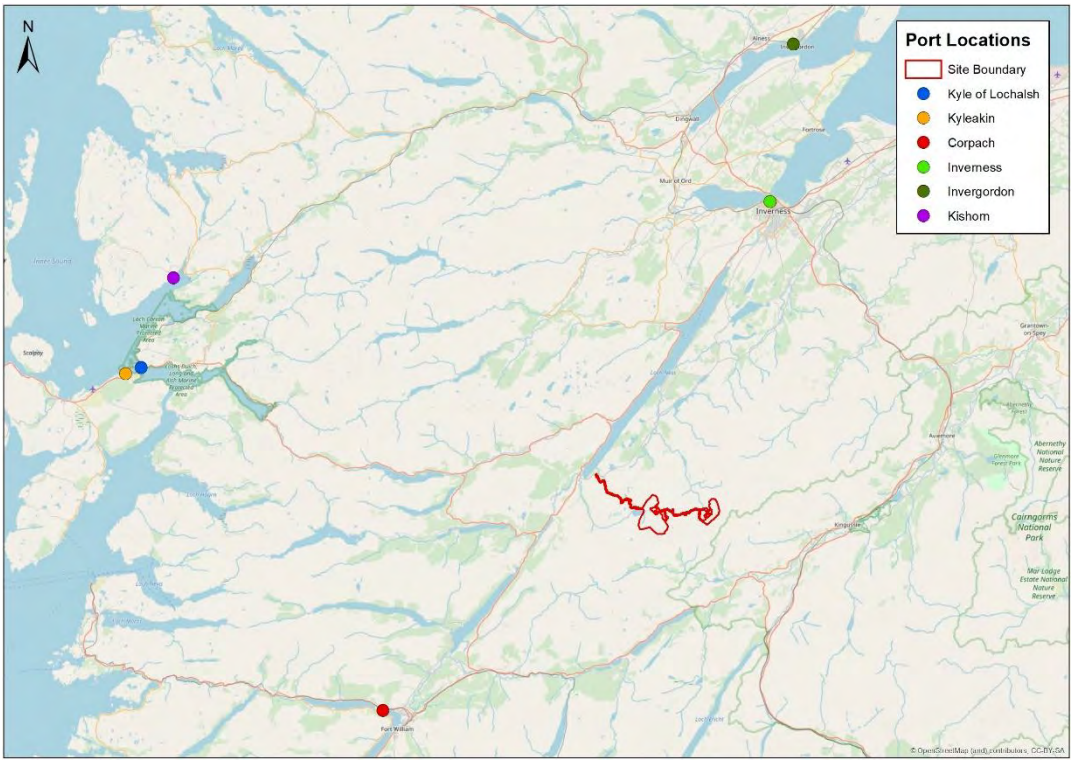
Port Review

3.1 Following an initial review, a number of ports were considered as being potentially suitable for the import of wind turbine components. This section reviews the port facilities available for use with deliveries to Site. The following ports have been identified as being potentially suitable for the import of wind turbine components to the Proposed Development:

- Kyle of Lochalsh;
- MOWI Kyleakin;
- Corpach;
- Inverness;
- Invergordon; and
- Kishorn.

The location of each of the ports is illustrated in Figure 3.2.

Figure 3.2: Port Locations



Kyle of Lochalsh

3.2 The port at Kyle of Lochalsh is operated by The Highland Council and features single pier with three potential berths, namely:

- Railway Pier (South): 60m in length;
- Railway Pier (West): 80m in length; and
- Railway Pier (East): 80m in length.

3.3 The port does not have any storage facilities within its confines, with previous projects utilising The Highland Council owned Broadford Airport on the Isle of Skye for storage. Storage facilities on the Isle of Skye would again have to be agreed to facilitate the use of Kyle of Lochalsh as port of entry. There is no dedicated heavy lift point for the port, however it has been previously used for the delivery of 57m blade components associated with Bhlaraidh and Stronelairg Wind Farms from the west side of the Railway Pier. It has also previously been utilised for the delivery of 55m blade components associated with Beinneun Wind Farm from the south side of the Railway Pier.

3.4 Previous components were delivered with ships including the 90m long Peak Bremen which due to the available quay length and water depth required to dock off the end of the pier. Details of the Peak Bremen can be found in Appendix A with Photo 3.1 illustrating the layout of the western pier and the Peak Bremen. It is likely that a similar sized ship would be required for the transport of the proposed blade components.

Photo 3.1: Kyle of Lochalsh Pier

3.5 Access from Kyle of Lochalsh is restricted by the following key constraints:

- Length of available berth combined with the width of the pier restricts the size of potential vessel and positioning of associated crane lift points; and
- The access from the pier onto the public road is restricted by the positioning of hard constraints including the railway station and RNLI building which would require the use of one of the specialist transport equipment options listed in Section 2 for the safe access onto the A87 of turbine blade components. Tower components are unable to exit the port without significant modification due to the rigid length of the vehicle and positioning of hard constraints such as the adjacent railway line.

MOWI - Kyleakin

3.6 An alternative berthing option recommended for further consideration is the new berthing facility constructed by MOWI at Kyleakin located across the Skye Bridge, 2.5km west of Kyle of Lochalsh. Notwithstanding the requirement to enter into discussions with MOWI regarding usage of the facility, confirmation would be required on the available quay length, quay depth along with the location of equipment on the pier and availability of storage before the feasibility of this as port of entry could be assessed. Photo 3.2 illustrates the positioning of equipment on the pier with an overview of the site layout contained in Appendix A.

Photo 3.2: MOWI Kyleakin Pier

Corpach

3.7 The port at Corpach is operated by Clydeboyd Fort William Limited and features a quay with a length of 120m and a water depth of 5m. The port has open storage facilities of 4ha available within the site and was previously utilised for the delivery of tower components associated with Stronelairg Wind Farm. Photo 3.3 illustrates the layout of the port and storage areas.

Photo 3.3: Corpach Port

3.8 Turbines components from Corpach would need to cross the West Highland Mainline Railway and would require the provision of an over-run area opposite the access gate to avoid conflicts with the level crossing gates. Marine access to the port is not considered problematic and storage is available.

3.9 Access from Corpach is restricted by the following key constraints:

- Access from the port onto A830 is restricted by the positioning of the level crossing gates at the port entrance which would require the use of one of the specialist transport equipment options listed in Section 2 for the safe access onto the A830 of turbine blade components.

Inverness

3.10 The port of Inverness is regularly used for the import of turbine components into The Highlands. The port has two available quays; Longman Quay (340m in length with a depth of 5.5m) and North Longman Quay (150m in length with a depth of 5m). Figure 3.3 illustrates the layout of the port. Longman Quay has a dedicated heavy lift pad already in place.

Figure 3.3: Inverness Port

3.11 The port has open storage facilities of 20,000sqm at North Longman and 16,000sqm at Longman. It also has the facility to use overspill areas next to the marina if necessary. Photos 3.4 and 3.5 illustrate the storage areas available.

3.12 Access from the Port of Inverness is constrained by the works that would be required within the port to allow blade components to exit along with potential alterations to the heavily trafficked Longman Roundabout.

Photo 3.4: Inverness Storage Facilities (Nordex N100 Blades)

Photo 3.5: Inverness Storage Facilities (Enercon E70 Nacelle and Blades)

Invergordon

3.13 Invergordon has been extensively used by the abnormal load and wind farm industries in the past. All wind farms to the north of Inverness, excluding Caithness sites, have previously used Invergordon. The port was utilised for deliveries to Lairg, Gordonbush and Lochluichart Wind Farms and has extensive storage facilities.

3.14 Access from Invergordon is constrained by the works that would be required to allow blade components to exit the port onto the A9 (S) and likely alterations to the heavily trafficked Longman Roundabout in Inverness to the south of the Kessock Bridge.

Kishorn

3.15 Kishorn is the location of a large dry dock and associated berthing facilities previously utilised for the oil and gas industry located on the northern shore of Loch Kishorn. The site has 45 Hectares of land available (including the dry dock) including the following berths:

- West Quay: 85m in length with a minimum depth of 3m;
- Piled Quay: 93m in length with a minimum depth of 3m;
- Dry Dock Quay: 120m in length with a minimum depth of 8m; and
- East Quay: 120m in length with a minimum depth of 3m.

3.16 The Kishorn site has not previously been utilised for the delivery of wind farm components and access is constrained by the narrow single-track access road leading from the port which would require to be upgraded.

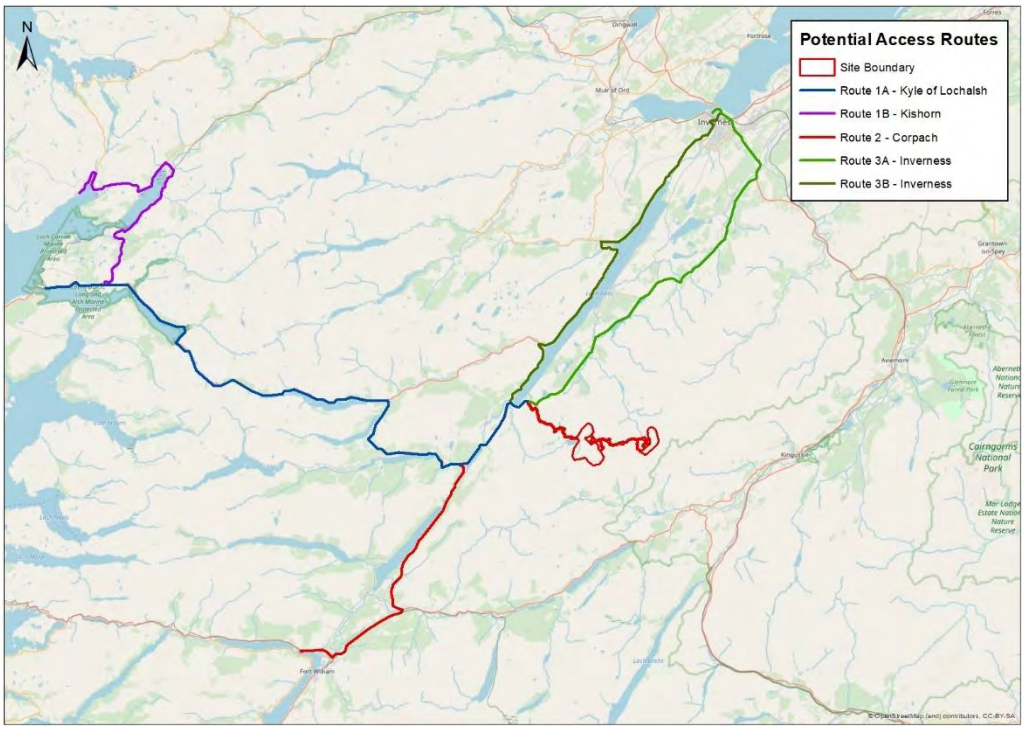
Initial Access Review

3.17 An initial access review was undertaken in order to identify suitable routes to the Site from each of the identified ports along with the key constraints in order to inform the preferred access strategy. The following routes were included within the initial review:

- Route 1a – Kyle of Lochalsh/Kyleakin (A87/A82/B862);
- Route 1b – Kishorn (A896/A890/A87/A82/B862);
- Route 2 – Corpach (A830/A82/B862);
- Route 3a – Inverness via South Loch Ness (A9/B851/B862); and
- Route 3b – Inverness via North Loch Ness (A82/B862).

3.18 Figure 3.4 illustrates each of the routes included within the initial access review.

Figure 3.4: Potential Access Routes



Route 1a - Kyle of Lochalsh

3.19 The route from Kyle Harbour to the Site access junction is as follows and was previously utilised for the transport of blade components to Stronelairg Wind Farm:

- Loads would exit Kyle Harbour turning left onto the A87 and continuing over the Skye Bridge to a storage area located on the Isle of Skye. Locations identified as being potentially feasible for storage are the Broadford Airport (used previously for Stronelairg Wind Farm) or the MOWI facility at Kyleakin;
- Loads would exit either the Broadford Airport or the MOWI facility at Kyleakin and turn left onto the A87;
- Continue on the A87 until Invergarry;
- Turn left onto the A82 to the east of Invergarry;
- Continue on the A82 before turning left onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Site access junction access.

3.20 The key constraint along the route is the exit from the Port and series of bends leading to the A87 as illustrated in Photos 3.6-3.9 below. A swept path assessment has been undertaken based on a V136 blade utilising the Broshius Quattro blade trailer with a 16m

over-hang and the Scheuerle Blade Adaptor (See Drawings SPA019 and SP020 in Appendix B).

Photos 3.6-3.9: Access Route from Railway Pier to the A87

3.21 Based on transportation of the blade on the Broshius Quattro blade trailer, the swept path indicates that loads will over-run and over-sail across Network Rail land east of the quay including the station building. This transportation option requires over-sail over a significant section of Network Rail land, including the railway line and station, and a minor area of over-run within Network Rail land for which a level load bearing surface would also need to be provided, to establish whether approval can be gained for this manoeuvre and associated mitigation it is recommended that consultation with Network Rail is initiated at the earliest opportunity. Subject to further detailed discussions with turbine suppliers on the maximum over-hang of the Broshius Quattro blade trailer a further assessment should be made of the viability of this transport option.

3.22 Based on transportation of the blade on the Scheuerle Blade Adaptor loads will over-sail across the Network Rail land east of the quay including the station platform although excluding the station building. Confirmation of over-sail rights and available clearance to street furniture will be required between the pier and the A87. Once on the A87, it is assumed that blade would be lowered within a lay-by east of the Skye Bridge and then subject to Transport Scotland and Police approval transported across the Skye Bridge within the Scheuerle Blade Adaptor.

3.23 The route from the MOWI facility at Kyleakin would generally follow that described above with the exception that loads would exit the port and turn left onto the A87 before proceeding toward the Site avoiding the constraints at Kyle of Lochalsh.

Route 1b – Kishorn

3.24 The route from Kishorn to the Site access junction is as follows:

- Loads would exit the port and turn right onto an unclassified road;
- Turn left onto the A890 at Tornapress;
- Turn right onto the A890 west of Strathcarron;
- Turn left onto the A87 at Auchtertyre
- Continue on the A87 until Invergarry;
- Turn left onto the A82 to the east of Invergarry;
- Continue on the A82 before turning left onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Site access junction.

3.25 The initial constraint along the route is the 11km section of single track road between the port and Lochcarron where there are various sections of the route where the carriageway is in the region of 3.5m wide, would not meet turbine manufacturers minimum standards and would require to be upgraded.

3.26 Within Strathcarron, the A890 crosses to the railway line and turns to the south. A swept path assessment has been undertaken based on a Vestas V136 Blade utilising the Super-wing Carrier blade trailer. The swept path illustrates that areas of over-sail would be required across Network Rail land with modifications required to both the crossing and adjacent signalling equipment (See Drawing SPA009 in Appendix B).

3.27 Approximately 6km south-west of Strathcarron, the A890 passes through an avalanche shelter of with available clearances of 5.3m in both height and width. Further topographical information relating to the exact dimensions of the avalanche shelter and a swept path assessment is required in order to confirm the feasibility of transporting components along this section of the A890 although this remains potentially feasible subject to further assessment.

3.28 It is understood that a number of options for improvement of the A890 along the shore of Loch Carron have been tabled in July 2017 by AECOM to The Highland Council in a DMRB Stage 2 / STAG Report entitled, "Stromeferry Options Appraisal". A number of the

options presented would result in potentially significant alteration to the route network in this area. If any of the options presented within the DMRB Stage 2 report that result in significant alteration to the route in this area were taken forward by The Highland Council a further assessment would be made to determine the viability of the Kishorn route option.

Route 2 – Corpach

3.29 The route from Corpach Harbour to the site access is as follows:

- Loads would exit Corpach Harbour via the main gate turning right onto the A830;
- Continue on the A830 for 4.5km before turning left onto the A82:
- Continue on the A82 for 48km through Spean Bridge and Invergarry before turning right onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Site access junction.

3.30 The key constraint along the route is the left bend within Spean Bridge on the A82 as illustrated in the photo below.

Photo 3.10: Left Bend on the A82 at Spean Bridge

3.31 A swept path assessment has been undertaken based on the V136 Base and Mid towers within a clamp and clamp trailer set-up. (See Drawing SPA004 in Appendix B.)

3.32 The route is not considered suitable for blade transport due to the requirement for specialist transport equipment both at the port exit and at Spean Bridge. The 16km distance between these points would result in considerable delays to general traffic based on the speed of travel of the Scheuerle Blade Adaptor. Use of the Broshius Quattro blade trailer would require modifications to the signalling equipment on the exit of the port and modifications to the bridge at Spean Bridge.

Route 3a – Inverness via South Loch Ness

3.33 The route from Inverness Harbour to the Site access junction is as follows:

- Loads would exit Inverness Harbour via the main gate turning left onto Stadium Road;
- Turn left onto the A9 continuing south for 11km before turning right onto the B851;
- Continue on the B851 for 21km before turning left onto the B862; and
- Continue on the B862 for 25km through Errogie and Whitebridge before turning left into the Site access junction.

3.34 The route from Inverness has previously been partially utilised by smaller components associated with Dumnaglass Wind Farm. The B851/B862 have been upgraded in various locations although there are still numerous sections on the route where the road consists of single track, particularly at the bridges west of the Dumnaglass site access as illustrated in Photo 3.11 and 3.12 below. It is likely that mitigation will be required at numerous locations along this route including modification to the bridge structures.

Photo 3.11 and 3.12: Narrow Carriageway and Bridge Structures on B851

3.35 The key constraint along the route is the final 1.5km section to the east of the Site access junction and west of Loch Tarff where the B862 drops into a valley with a series

of tight radius bends as illustrated in Photo 3.13. Due to the rock outcrop at this location the use of one of the specialist transport equipment options outlined in Section 2 would be required, which, combined with the level of mitigation at other locations on this route will result in a significant number of third-party land deals and associated cost implications in addition to the extensive engineering works outlined in Section 3.34.

Photo 3.13: B862 Right-hand Bend Glendoebeg

Route 3b – Inverness via North Loch Ness

3.36 It is proposed that all loads will follow the route described below:

- Loads would exit Inverness Harbour and turn left onto Stadium Road before continuing onto the A82 at Longman Roundabout;
- Loads would continue on the A82 for 52km before turning left onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Site access junction.

3.37 The route from the Inverness to Invermoriston has previously been utilised to transport tower components associated with Bhlaraidh Wind Farm. The section of the route from the port through to the A82 on the south western edge of Inverness is subject to numerous constraints with components requiring to be transported through the residential area of Scorguie in order to avoid constraints on the A82 within Inverness city centre.

3.38 The route is not considered suitable for blade transport due to the requirement for specialist transport equipment both within Inverness and Drumnadrochit. The 24km distance between these points would result in considerable delays to general traffic based on the speed of travel of the Scheuerle Blade Adaptor. Use of the Broshius Quattro blade trailer is not considered suitable due to the rigid length of the trailer and conflict with the bridge at Drumnadrochit.

3.39 The key constraint of the section of the route through Inverness is the junction between Clachnaharry Road and Scorguie Road as illustrated in Photo 3.14. A swept path assessment has been undertaken based on the V136 Base and Mid towers within a clamp and clamp trailer set-up. The swept path illustrates that areas of over-run will be required within the northern footway with over-sail required within third party land on the southern edge of Scorguie Road (See Drawings SPA011 in Appendix B).

Photo 3.14: Clachnaharry Road / Scorguie Road Junction Inverness

3.40 South of Inverness, the key constraint is the left bend and bridge within Drumnadrochit as illustrated in Photo 3.15. A swept path assessment has been undertaken based on the V136 Base and Mid towers within a clamp and clamp trailer set-up. The swept path illustrates that an area of over-run will be required within the northern footway with over-sail required within third party land in the southern verge and across the bridge parapet. The bridge parapet may also require modification subject to confirmation of the available clearances. (See Drawings SPA012 in Appendix B).

Photo 3.15: A82 Left Bend Drumnadrochit

Summary of Potential Access Options

3.41 An initial review of potentially suitable ports and associated access routes for the import of turbine components associated with the Proposed Development has found that:

- The routes previously utilised for the transport of components to Stronelairg Wind Farm remain the preferred routes for transport of components associated with the Cloiche Wind Farm;
- Subject to ongoing discussion with turbine manufacturers, Kyle of Lochalsh may be suitable for transport of Vestas V136 components although subject to further investigation the MOWI Kyleakin facility may provide a suitable alternative;
- Transport from Kyle of Lochalsh will require the use of specialist transport equipment subject to the agreement of Transport Scotland to allow the transportation of components across the Skye Bridge to an appropriate storage location and onward transport to site within a standard superwing blade transport;
- Access for blade components from Inverness along the B851/B862 or Kishorn along the A896/A890 may be feasible as an alternative route subject to further investigation should access from Kyle of Lochalsh or Kyleakin not be possible; and

- Existing constraints along the previous tower route are likely to constrain the use of larger tower sections and the feasibility of alternative transport configurations will require further investigation.

Preferred Access Strategy

3.42 Following the initial review the following routes were taken forward as the initial preferred access strategy for further detailed review:

- Route 1a Kyle of Lochalsh – Blade Components; and
- Route 2 Corpach – All other components including towers, nacelles and hubs.

4 PREFERRED ACCESS STRATEGY ROUTE REVIEW

4.1 A route review was undertaken by video survey from Corpach Harbour and Kyle of Lochalsh to the Cloiche site access. This method allows a full record of the routes to be undertaken, with notes recorded following completion of the survey. Not only is this process efficient, it also provides a much safer working environment for staff. The video survey allows a full record of the route to be kept for future reference. To accompany the video survey, various Points of Interest (POI) were recorded using a Global Positioning System (GPS) tracker that logs the locations of points on the routes to Ordnance Survey (OS) co-ordinates.

4.2 The site visit did not include any geotechnical, utility or environmental reviews and as such the information provided in this report is based solely on the observations noted on the site visit and subsequent swept path assessments.

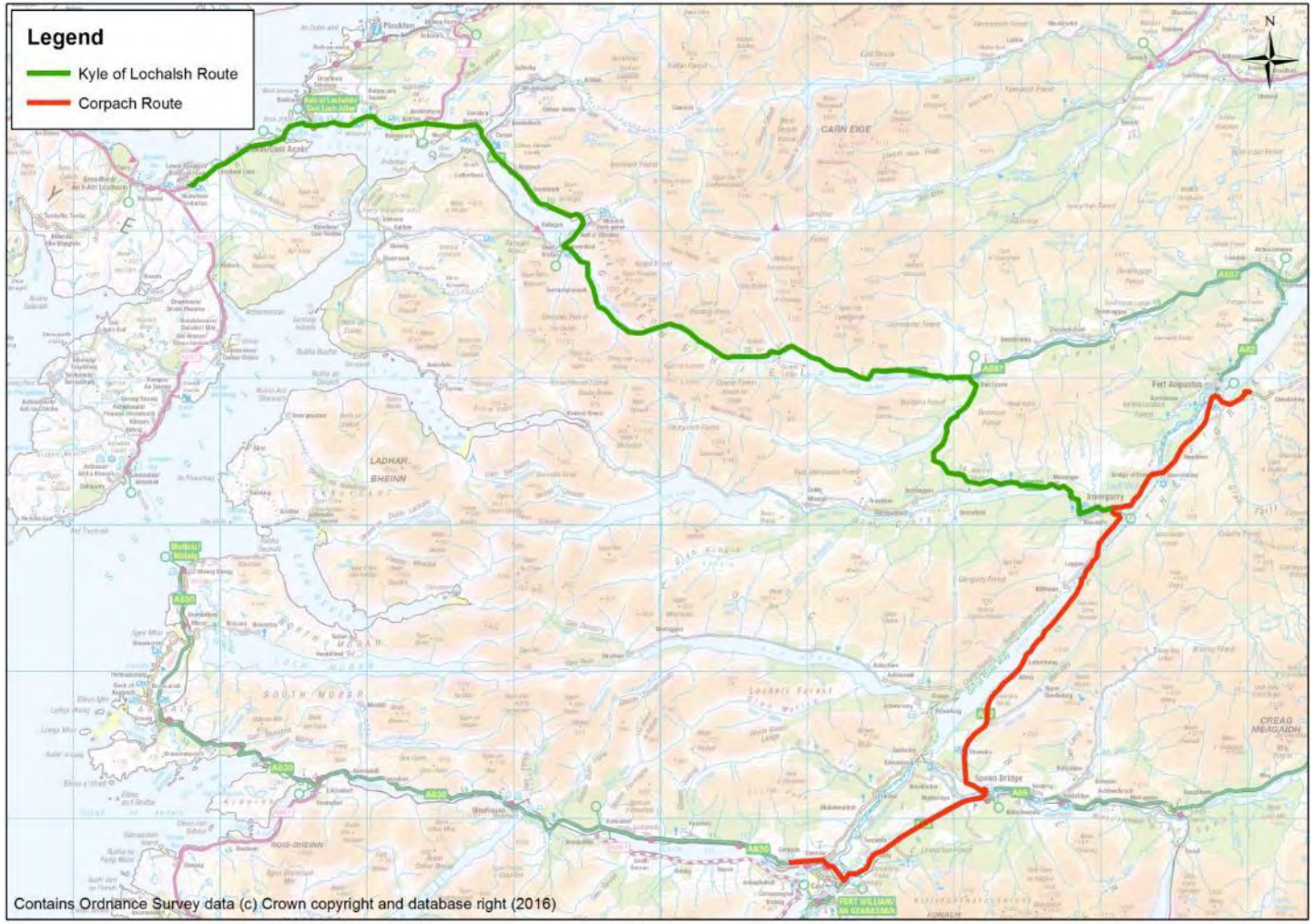
4.3 Plans illustrating the location of the constraints and a detailed list of POI's are provided in Appendix C.

Route Description

4.4 Corpach Harbour has previously been used for the delivery of tower components to Stronelairg Wind Farm and Kyle of Lochalsh Harbour has previously been used for blade components also to Stronelairg Wind Farm.

4.5 The proposed route options are illustrated in Figure 4.1 below.

Figure 4.1: Preferred Route Options



Route 1a - Kyle of Lochalsh

4.6 The route from Kyle Harbour to the Cloiche site access junction (blades only) is as follows:

- Loads would exit Kyle Harbour turning left onto the A87 and continuing over the Skye Bridge to a storage area located on the Isle of Skye. Locations identified as being potentially feasible for storage are the Broadford Airport (used previously for Stronelairg Wind Farm) or the MOWI facility at Kyleakin;
- Loads would exit either the Broadford Airport or the MOWI facility at Kyleakin and turn left onto the A87;
- Continue on the A87 until Invergarry;
- Turn left onto the A82 to the east of Invergarry;
- Continue on the A82 before turning left onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Cloiche site access junction.

Route 2 - Corpach

4.7 The route from Corpach Harbour to the Cloiche site access junction (all non-blade loads) is as follows:

- Loads would exit Corpach Harbour via the main gate turning right onto the A830;
- Continue on the A830 for 4.5km before turning left onto the A82:
- Continue on the A82 for 48km through Spean Bridge and Invergarry before turning right onto the B862 within Fort Augustus; and
- Continue on the B862 for 3km before turning right into the Cloiche site access junction.

4.8 Within the wind farm site, loads would then proceed to the turbine locations. All on-site access roads will be designed to turbine manufacturers standards and as such are excluded from this report.

Network Constraints

4.9 Tables 4.1 and 4.2 detail the potential constraint point locations on each of the route options from the associated POE through to the Cloiche site access junction.

4.10 Where street furniture is to be removed to allow movement, it is suggested that socket foundations are used to allow reinstatement.

Table 4.1: Corpach Constraint Points (Towers Only up to Invergarry)

POI	Constraint	Details
01	Corpach Harbour Gate  	Loads will exit the Corpach harbour gate and turn right onto the A830. The swept path illustrates that loads will utilise the existing bus layby opposite the entrance to the harbour. Loads will over-run the northern footway and verge where a load bearing surface should be laid. The area should be re-profiled to carriageway level with existing utilities protected. Trees, one lighting column and one planter to be removed. Limits of adoption to be confirmed. Loads will over-sail the eastern verge on the inside of the right turn. Port authorities should be consulted at the earliest opportunity to discuss the feasibility of relocating one signal head, two posts and sections of wood fencing from within the port to enable this manoeuvre. The proximity to Network Rail infrastructure should be checked during the test run. Swept path drawing SPA001 is included in Appendix E. All Towers are carried in rear clamp trailer configuration except where specified.

POI	Constraint	Details
01B	Corpach Harbour Gate 	**Mid Tower in Step Trailer Configuration** The mitigation is similar to that above but with approximately 3m less over-sail and over-run required into the northern verge. Over-sail within the eastern verge is also reduced. Swept path drawing SPA001B is included in Appendix D.
02	A830 Bollards Corpach 	Loads continue on the A830. At three locations within Corpach the existing Weebol bollards will need to be socketed and removed.
03	A830 Blar Mhor Roundabout 	Loads continue ahead on the A830 and will pass the roundabout using a contra-flow manoeuvre. Escorts to ensure that north bound A830 traffic is held back 50m from the junction. The swept path illustrates that over-sail area will be required on the centre island of the roundabout and in the western verges both on approach and exit from the junction. Swept path drawing SPA002 is included in Appendix D.

POI	Constraint	Details
04	A830 / A82 Roundabout  	Loads turn left from the A830 onto the A82. The swept path assessment indicates that loads will over-sail the footway and verge on the inside of the left turn where one lighting column should be relocated with limited clearance to the wall south of the bridge. Loads will over-sail and over-run both the approach and exit arm splitter islands where load bearing surfaces should be laid and four lit bollards should be socketed along with two road signs. Loads will also over-run and over-sail the northern section of the central island and the eastern footway on exit from the junction. Load bearing surfaces should be laid and existing utilities protected. All obstacles to be removed from indicated over-run and over-sail areas. Swept path drawing SPA003 is included in Appendix D.
05	B851 Tree Canopy 	Throughout the route, the tree canopy needs to be trimmed to provide a clear 5m head height and the side vegetation cut back to improve forward visibility.

POI	Constraint	Details
06	A82 Left Bend Spean Bridge  	Loads will continue on the A82 heading north. The swept path assessment indicates that areas of over-run area are required on the outside of the bend. On approach to the left bend, loads will over-run and over-sail the south eastern footway where a load bearing surface should be laid. Loads will over-sail the inside of the left turn where all street furniture should be removed. The bridge parapet height should be confirmed to provide suitable clearances for proposed loads with the chosen haulier once selected. Loads will over-run and over-sail into land to the north where a load bearing surface should be laid. Fencing to be set-back, two trees removed and one lighting column should be relocated. Swept path drawing SPA004 is included in Appendix D.

POI	Constraint	Details
06B	A82 Left Bend Spean Bridge  	<u>Mid Tower in Step-trailer configuration</u> Mitigation is similar to that above but with less over-sail and over-run required On approach to the left bend, loads will over-run and over-sail the south eastern footway where a load bearing surface should be laid. Loads will over-sail and over-run the footway on the inside of the left turn where all street furniture should be removed. The bridge parapet height should be confirmed to provide suitable clearances for proposed loads with the chosen haulier once selected. Loads will over-run and over-sail into land to the north where a load bearing surface should be laid. Fencing to be removed and one lighting column should be relocated. Tree canopy to be trimmed and the roots of the trees protected. Swept path drawing SPA004B is included in Appendix D.
07	A82 Series of Bends Glenfintaig 	Loads will continue on the A82. The swept path assessment indicates that no mitigation measures are required to facilitate the movement of tower loads along the route. Escorts will need to provide warning to oncoming traffic. There are a number of points along the A82 where escorts will need to provide protection to oncoming traffic and the location of these will be identified in the Traffic Management Plan (TMP). Swept path drawing SPA005 is included in Appendix D.

POI	Constraint	Details
08	A82 Right Bend Invergloy 	Loads will continue on the A82. The swept path illustrates that no mitigation will be required. Swept path drawing SPA006 is included in Appendix D.
09	A82 Vertical Profile North of Invergloy 	It is recommended that a vertical assessment is completed on a topographical base plan to ensure adequate ground clearance is available for loads when transiting the section, or that clearances are reviewed in the test run when the haulier is selected.
10	A82 Right Bend Laggan Locks 	Loads will continue on the A82. The swept path illustrates that minor over-sail areas will be required within the verge inside the bend although no physical mitigation is required. Swept path drawing SPA007 is included in Appendix D.
11	A82 Right Bend Laggan 	Loads will continue on the A82. The swept path illustrates that a minor over-sail area will be required within the verge inside the bend although no physical mitigation is required. Swept path drawing SPA008 is included in Appendix D.

POI	Constraint	Details
12	A82 / A87 Junction Invergarry Towers  Blade 	Loads will straddle the centre line through the bend. Escorts will need to provide warning to oncoming traffic. There are a number of points along the A82 where escorts will need to provide protection to oncoming traffic and the location of these will be identified in the TMP. **From this point to the Cloiche site access junction, the blade route is the same as the tower route. As such, the results for blades have been included from this point onwards.** The swept path indicates that the tower loads will over-sail the eastern verge. The blade components approaching from the west will over-sail the southern and northern verges of the A87 where limits of adoption should be confirmed. One bollard, one road sign and all street furniture should be removed from the over-sail area of the northern verge. Blade loads will over-run and over-sail the eastern verge of the A82 where a load bearing surface should be laid. Vegetation to be cleared from all over-sail areas. Swept path drawing SPA009 is included in Appendix D.

POI	Constraint	Details
13	A82 Right Bends Bridge of Oich    	Loads will continue on the A82. The swept path illustrates that over-sail will occur on both sides of the carriageway where the tree canopy and vegetation should be trimmed back. Inside of the first bend one bollard, one road sign and several fence posts should be removed, and the limits of adoption confirmed. Blade loads will over-sail and over-run the outside of the bend utilising extant over-run areas and requiring new load bearing surfaces in the western and northern verges. Proximity to the western embankment should be confirmed, embankment re-profiling may be required. Two chevron signs, seven bollards and two road signs should be socketed for removal during deliveries. Through the second bend the blade tip will over-sail two bollards in the northern verge and one road sign should be socketed for removal from the inside verge. Tree canopy and vegetation to be trimmed back throughout. Through the following left bend one road sign to be removed from the inside bend. Swept path drawing SPA010 is included in Appendix D.

POI	Constraint	Details
14	A82 Right Bend North of Aberchalder 	Loads will straddle the centre line through the bend. Escorts will need to provide warning to oncoming traffic. There are a number of points along the A82 where escorts will need to provide protection to oncoming traffic and the location of these will be identified in the TMP. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.
15	A82 Double Bend South of Fort Augustus  	Loads will continue on the A82. The swept path illustrates that over-sail will occur on both sides of the carriageway where the tree canopy and vegetation should be trimmed back. Four chevron signs should be socketed for removal from the outside of both bends. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken. Swept path drawing SPA011 is included in Appendix D.

POI	Constraint	Details
16	A82 Right Bend Fort Augustus  	Loads will continue on the A82 through Fort Augustus. The swept path illustrates that over-run and over-sail areas will be required within the footway on the outside of the bend with limited clearances to two lighting columns. A load bearing surface should be laid in the over-run area. Loads will over-sail the inside of the bend where one road sign and a section of fence should be removed. Limits of adoption to be confirmed with limited clearances to a low stone wall. Swept path drawing SPA012 is included in Appendix D.

POI	Constraint	Details
17	A82 / B862 Junction   	Loads will turn right from the A82 onto the B862. The swept path illustrates that on approach to the right bend, loads will over-run and over-sail the northern verge where an existing over-run surface should be utilised and two road signs and a tree should be removed. Remaining vegetation to be trimmed and proximity to one lighting column to be confirmed. Loads will over-run and over-sail the splitter island to the north where an existing load bearing surface should be utilised. One lighting column should be relocated and three road signs removed. Trees, vegetation and decorative island furniture should be removed. On exit from the bend, loads will over-sail the western verge where three lighting columns should be removed or socketed. Trees and vegetation should be trimmed. Embankment re-profiling may be required subject to detailed design. In the eastern footway clearance to the wall is extremely limited. Load suspension should be increased to maximum and section of fence may require removal. Tree canopy to be trimmed. Swept path drawing SPA013 is included in Appendix D.

POI	Constraint	Details
18	B862 Left Bend 	Loads will continue on the B862. Loads will over-sail both sides of the carriageway. On the inside of the bend tree canopy, vegetation, three bollards and two road signs should be removed. Clearances to the fence-line are limited. On the outside of the bend two signs and eight trees to be removed. Swept path drawing SPA014 is included in Appendix D.
18B	B862 Bridge and Right Bend  	Loads will continue on the B862. Loads will over-run the north footway of the bridge which should be confirmed suitable for load over-run and tar wedges utilised. Trailer loads will over-sail the parapet to the north and south. Load suspension to be set to maximum and height clearances to be confirmed through test-run. A downward gradient was noted upon exiting the bridge. Loads will over-sail the north-east of the bridge where vegetation and trees should be removed from all over-sail areas, one sign, one lighting column and three bollards should also be removed. Loads will over-sail to the south when exiting the bridge, over-sailing the bridge parapet and three bollards. Seven trees, three road signs and a section of fence should be removed. Swept path drawing SPA015 is included in Appendix D.

POI	Constraint	Details
19	B862 	Tree canopy to be trimmed back to provide 5m of clearance throughout this section of the route.

POI	Constraint	Details
20	B862 Series of Bends East of Fort Augustus   	Loads will continue on the B862. The swept path illustrates that over-sail areas will be required on both sides of the carriageway throughout this section where trees and vegetation should be removed. Through the right-hand bend adopted extents to be confirmed and vegetation trimmed back. Two road signs to be removed from the northern verge and a load bearing surface laid in the northern verge to reduce mitigation inside the bend. The clearances to the embankment on the inside of the bend should be reviewed during the test run, re-profiling may be required. Loads will continue on the B862 around a left bend situated in a cutting with rock outcrops present on either side. The swept path illustrates that over-sail areas will be required on either side of the carriageway through the bend. The existing rock embankment on the outside of the bend and inside of the bend will need to re-profiled with retaining structures potentially required subject to detailed design. Load suspension to be set to maximum through this section. Fence, trees and vegetation to be cleared from both verges and rock faces. Swept path drawing SPA016 is included in Appendix D.

POI	Constraint	Details
21	B862 Series of Bends Approaching Site Access   	Loads will continue on the B862. A 12% up gradient was noted at this location. Loads should engage low gear and proceed with caution and the road surface should be kept clean. The swept path illustrates that over-sail areas will be required on either side of the carriageway through the section. Due to the constrained nature of this location load suspension should be set to maximum with rock re-profiling a likely requirement at multiple points subject to detailed design. Trees and vegetation should be trimmed throughout. Outside of the left-hand bend one road sign should be removed and the height of gate, fence and embankment confirmed suitable for over-sail. Swept path drawing SPA017 is included in Appendix D.

POI	Constraint	Details
22	B862 Site Access 	Loads will turn right from the B862 into the Cloiche site access junction. The swept path illustrates that over-sail and over-run areas will be required both inside and outside of the turn and the existing junction will require upgrading. A load bearing surface should be laid in addition to that previously installed and land re-profiling works undertaken. Trees, vegetation and fence to be removed. To the north of the carriageway trees and vegetation will need to be cleared. Swept path drawing SPA018 is included in Appendix D.

Table 4-2: Kyle of Lochalsh Route Constraint Points (Blades only)

POI	Key Constraint	Details
23	Kyle Harbour West Pier    	Loads will turn left exiting the west pier onto the adjacent access road. This is location 1 of 2 where a Scheuerle Blade Adaptor is recommended to reduce mitigation. Due to the 60 degree angle of the blade lifter physical works are not expected to be necessary as the component will over-sail fences, lighting columns and street furniture. A swept path assessment has been undertaken and illustrates the blade will over-sail the fence and one lighting column to the east and the dock wall to the south. Swept path drawings SPA019 is included in Appendix D.

POI	Key Constraint	Details
23	Kyle Harbour West Pier	An assessment utilising the Broshius Quattro Blade Adaptor has also been undertaken at this location and provided for comparison. Within this configuration loads will over-sail and over-run east into Network Rail land where a load bearing surface will be required, and the raised blade-tip will also over-sail the railway line and the building to the east subject to building height. Loads will over-run and over-sail to the north of the carriageway through the left-hand bend towards the rock embankment, and to the south of the carriageway through the right-hand bend. Load bearing surfaces to be laid in all over-run areas with potential rock removal, re-profiling and new retaining structures required to the north subject to detailed design. Seven lighting columns to be removed, three planters, one road sign and vegetation to be cleared. All street furniture and obstacles to be removed from inside of the initial left-hand bend. As noted above, in section 3.21, to undertake this manoeuvre loads will over-sail substantial areas of Network Rail land, including the railway line and station building, combined with the need to accommodate over-run and provide a level load bearing surface within this area, Network Rail approval will be required. Discussions should begin at the earliest opportunity. Subject to further detailed discussions with turbine suppliers on the maximum over-hang of the Broshius Quattro blade trailer a further assessment should be made of the viability of this transport option. Swept path drawings SPA019 is included in Appendix D.

POI	Key Constraint	Details
24	A87 Station Road Junction  	Loads will turn left onto the A87. This is location 2 of 2 where a Scheuerle Blade Adaptor is recommended to reduce mitigation. Due to the 60 degree angle of the blade lifter physical works are not expected to be necessary as the component will over-sail fences, lighting columns and street furniture. A swept path assessment has been undertaken and illustrates the blade will over-sail the fence to the east. Swept path drawing SPA020 is included in Appendix D.

POI	Key Constraint	Details
24	A87 Station Road Junction	An assessment utilising the Broshius Quattro Blade Adaptor has also been undertaken at this location and provided for comparison. Within this configuration loads will over-run and over-sail the eastern footway and northern verges with minimal clearances on all sides. Load bearing surfaces to be laid in over-run areas. Utilities to be protected. To the east loads will over-sail two lighting columns and one road sign, limits of adoption to be confirmed. To the north sections of guard-rail and barrier, one signal head and one sign to be removed, Re-profiling may be required, subject to detailed design. Inside the bend a section of guardrail, two traffic signal heads and one road sign to be removed. The existing steps and embankment will require to be modified to allow required over-sail, subject to detailed design. Swept path drawing SPA020 is included in Appendix D.

25	A87 Kyleakin Roundabout  	Loads will remain in the Scheuerle Blade Adaptor configuration and turn right and continue on the A87 (3rd exit) at the roundabout utilising a contra-flow manoeuvre. Following storage at a suitable storage location on the Isle of Skye loads will return northbound in the direction of Kyle in the Super-wing Carrier configuration. A swept path assessment has been undertaken of the Scheuerle Blade Adaptor in both raised and lowered positions westbound through this location. Scheuerle Blade Adaptor Raised: Over-sail areas will be required within the verge and footway on all sides of the carriageway on approach and on exit. Both splitter islands and the central island will require over-run surfaces to be laid. The following street furniture should be either relocated or removed: • 3 lit bollards. • 2 lighting columns. • 2 road signs. • 2 chevron signs. • 1 post. Scheuerle Blade Adaptor Lowered: Over-sail areas will be required within the verge and footway on all sides of the carriageway on approach and on exit to a much greater extent than that described above. Loads will over-sail to the east. Subject to confirmation of blade height when lowered, loads will over-sail one gate, three junction boxes and one stone wall. Proximity to the lighting column inside of the bend should be confirmed. Both splitter islands and the central island will require over-run surfaces to be laid. The following street furniture should be either relocated or removed: • 3 lit bollards.

POI	Key Constraint	Details
		• 2 lighting columns. • 6 road signs. • 4 chevron signs. • 1 post. • Trees and vegetation Swept path drawing SPA021 is included in Appendix D.
26	A87 / Broadford Airport Junction 	Loads will turn right into the Broadford Airport and following storage will turn left in the direction of Kyle. A swept path assessment has been undertaken of the Scheuerle Blade Adaptor in both raised and lowered positions westbound through this location. Scheuerle Blade Adaptor Raised: Over-run and over-sail areas will be required within the verge on either side of the airport access road. An over-sail area will also be required within the southern verge of the A87. Scheuerle Blade Adaptor Lowered: Over-run and over-sail areas will be required within the verge on either side of the airport access road. A large over-sail area will also be required within the southern verge of the A87 where all trees and vegetation should be removed. A load bearing surface should be laid in the over-run areas and the exact extents of the existing areas of hardstanding should be confirmed. All street furniture to be removed. Vegetation to be cleared. Swept path drawing SPA022 is included in Appendix D.

POI	Key Constraint	Details
27	A87 Left Bend South of Keppoch 	Loads will continue on the A87. A swept path assessment has been undertaken and illustrates that minor over-sail areas will be required on both sides of the carriageway although no physical mitigation is necessary. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.
28	A87 Left Bend Sheil Bridge  	Loads will continue on the A87. A swept path assessment has been undertaken and illustrates that an over-sail area will be required on both sides of the carriageway. One chevron sign and one road sign to be set-back from the outside of the bend on approach. Vegetation to be trimmed from over-sail areas. Swept path drawing SPA023 is included in Appendix D.
29	A87 Left Bend East of Doire na Ba 	Loads will continue on the A87. A swept path assessment has been undertaken and illustrates that minor over-sail areas will be required on both sides of the carriageway although no physical mitigation is necessary. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.

POI	Key Constraint	Details
30	Bends Glen Moriston  	Loads will continue on the A87. A swept path assessment has been undertaken and illustrates that over-sail areas will be required within the verge on either side of the carriageway. Outside of the first bend the blade-tip will over-sail several bollards and the tree canopy should be trimmed back. Inside the bend one road sign to be removed and proximity to one sign confirmed. Swept path drawing SPA024 is included in Appendix D.
31	A87 Series of Bends South of Cruachan Coille 	Loads will continue on the A87. A swept path assessment has been undertaken and illustrates that minor over-sail areas will be required on both sides of the carriageway although no physical mitigation is necessary. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.

POI	Key Constraint	Details
32	A87 / A887 Junction 	Loads will continue on the A87 by turning right at the junction. A swept path assessment has been undertaken and indicates that significant over-sail areas are required on the north and west verges of the junction. An increase to the existing over-run area to the north is also required. Extensive re-profiling of the embankment will be required subject to detailed design; the existing embankment top is approximately 4m higher than carriageway level. Three road signs and multiple bollards should be removed. Trees and vegetation to be cleared. Load suspension should be increased to maximum and the available clearances to the bridge parapet should be confirmed suitable with the chosen haulier and assessed through test-run. Swept path drawing SPA025 is included in Appendix D.
33	A87 Bend (1) 	Loads will continue south on the A87. A swept path assessment has been undertaken and illustrates that minor over-sail will be required outside of the bend where two chevron signs should be socketed for removal during deliveries. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.

POI	Key Constraint	Details
34	A87 Bend (2) 	Loads will continue south on the A87. A swept path assessment has been undertaken and illustrates that minor over-sail areas will be required inside of the right-hand bend although no physical mitigation is necessary. Due to limited detail within OS Mapping throughout this section it is recommended a test-run is undertaken.

Swept Path Assessment Results

4.11 The detailed swept path drawings for the locations analysed in Tables 4.1 and 4.2 are provided in Appendix D for review.

4.12 The drawings in Appendix D illustrate tracking undertaken for the worst case loads at each location. The colours provided on the swept paths are:

- Green – vehicle/trailer outline (body swept path);
- Red – wheel tracked pathway (wheel swept path); and
- Purple – load over-sail tracked path (load swept path).

4.13 Where mitigation works are required, the locations are illustrated on the swept path drawings. Please note that any alterations to the specified load or vehicle details will invalidate the assessment results.

4.14 It is important to note that a number of the swept path assessments undertaken have been based on OS data. There can be measurement errors associated with the use of this data.

Route Summary

Route 1a - Kyle of Lochalsh

4.15 The key constraints along the route are at the exit from Kyle of Lochalsh Harbour (POI 23 and 24) where the use of the Scheuerle Blade Adaptor (or similar) transporter is required and the sections of B862 between Fort Augustus and the Site (POI 17-22).

4.16 The section of the route along the B862 is extremely constrained with areas of over-run and over-sail required including the re-profiling of the rock at POI 20.

Route 2 - Corpach

4.17 This route is considered feasible for tower, nacelle and hub loads. From Invergarry Route 1a and Route 2 converge and follow the same route to the Cloiche site access junction.

4.18 The key constraints along the route are at the left bend on the A82 within Spean Bridge (POI 6).

Land Ownership and Utilities

4.19 The limits of road adoption can vary depending upon the location of the site and the history of the adopting agency. In general, the adopted area is that contained within a defined boundary where the local authority or Transport Scotland 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.

4.20 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 every location can be different.

General Comments

4.21 WYG has undertaken a review of the potential access routes from Corpach and Kyle of Lochalsh through to the Site access junction. WYG would strongly suggest that a review of the following is undertaken prior to the delivery of the abnormal loads, to ensure load and road user safety:

- A review of maximum axle loading on structures along the entire access route with the various road agencies is undertaken immediately prior to the loads being transported in case of last minute changes to structures;
- A review of clear heights with utility providers and the transport agencies along the route (maximum height of the loads is expected to be no greater than 4.9m with the exception of any specialist towers). The SSER chosen haulier is recommended to ensure with utility providers that there is sufficient clearance with an appropriate safety factor (especially with respect to power lines);
- That any vegetation which may foul the loads is trimmed back to allow passage (this is of concern once the load is on the local road network and should be assessed for summer conditions);
- That there are no roadworks or closures that could affect the passage of the loads. A check with Highland Council and Transport Scotland should be made before the transit of the first abnormal load;
- That a comprehensive test-run is completed to further assess the route for all components and confirm findings of the swept path assessments;

- Vertical assessments are carried out to confirm ground clearance;
- That there are no new or diverted underground services on the access route that are at risk from the abnormal loads; and
- That a condition survey is undertaken to ascertain the extents of any highway defects and that this is agreed in advance of any load movements with the roads agencies to protect the client group from unrelated damage claims. This is to be undertaken in conjunction with Highland Council and Transport Scotland.

5 ABNORMAL LOADS MANAGEMENT PLAN

Introduction

5.1 This chapter introduces a number of traffic management measures that could help reduce the impact of the abnormal load convoys. These measures are currently presented as indicative and should be confirmed with Highland Council and Transport Scotland closer to the construction date. The measures presented under headings Advance Warning Signage and Public Information represent a good practice guideline to minimise potential conflict with members of the public using the public road network at the same time as abnormal load deliveries. To ensure these systems could be put into place, consultation would be required with Police Scotland, roads authorities and other stakeholders to agree delivery principles including defined slots. It is recognised that this may not be compatible with the way that Police Scotland resource abnormal load escorting and therefore may not be achievable in every instance.

Advance Warning Signage

5.2 Advance warning signs would be installed on the approaches to the affected roads network. Temporary signage advising drivers that abnormal loads will be operating could be erected on the sections of the selected route close to the main areas of constraint. Signs such as the example shown in Figure 5.1 and 5.2 (and translated examples) could be installed to help assist drivers. Flip up panels (shown in grey) can be used to mask over days where convoys would not be operating. Figure 5.2 illustrates a cover panel secured by clips that would alert drivers that no convoys were operating during that week.

Figure 5.1: Indicative Information Sign

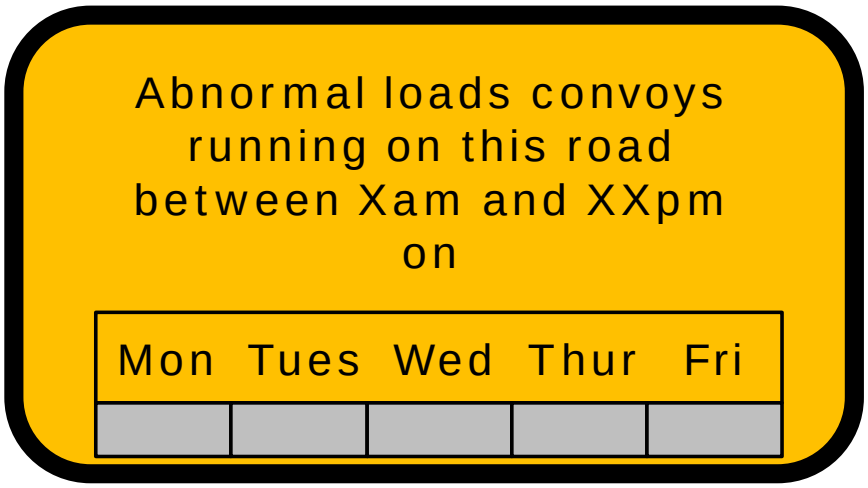
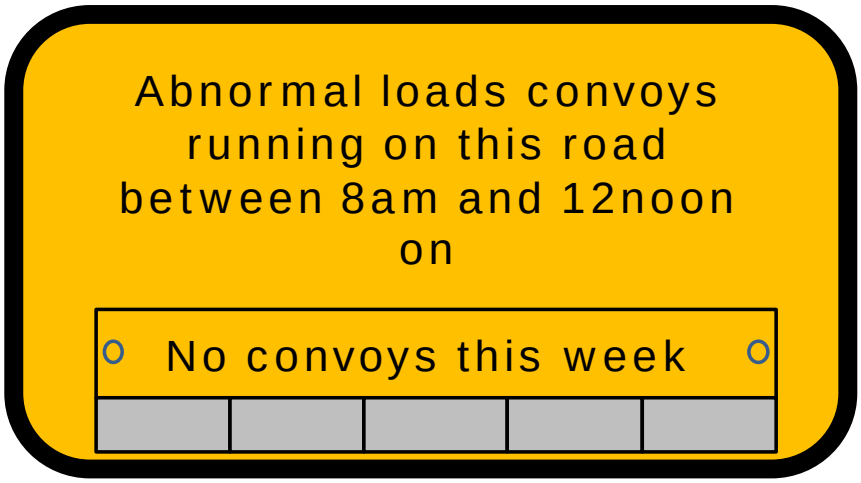


Figure 5.2: Indicative Information Sign



5.3 The purpose of this type of signage is to help improve driver information and allow drivers of oncoming traffic to be aware of the potential for wide loads.

Public Information

5.4 Information on the movement of abnormal load convoys could be provided to local media outlets to help assist the public. Information could be provided to local newspapers and radio stations that related to expected vehicle movements along the proposed route. This level of information would make residents more aware of convoy movements and would help reduce any potential conflicts.

5.5 WYG also suggest that the developer may wish to consider producing a local newsletter for distribution to properties along the most affected sections of the proposed access route, advising of convoy movements and the measures put in place to ensure the safe and efficient operation of the road network.

Convoy System

5.6 A Police escort will likely be required to facilitate the delivery of the predicted loads. The Police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advanced escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.

5.7 Further discussions will be held with the relevant road's authorities and police through the ESDAL consultation process which will confirm the exact timings, number of police and civilian escorts and the number of vehicles in the abnormal load convoys.

5.8 The abnormal load convoys should ideally be no more than three HGV's long, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

5.9 The times in which the convoys would travel will need to be agreed with Police Scotland. Typical delivery times for similar projects has seen the early morning periods used in constrained sections, as traffic levels are generally lighter than those found in the afternoon.

5.10 A full convoy operation plan for the route will require to be developed in consultation with The Highland Council and Transport Scotland before deliveries commence to the Site.

6 SUMMARY AND FURTHER WORKS

Summary

6.1.1 WYG were commissioned by SSER to undertake a route review for the delivery of abnormal loads associated with the proposed Cloiche Wind Farm located to east of Fort Augustus, Highland.

6.1.2 This report identifies the key points and issues associated with the proposed routes from Kyle of Lochalsh (Route 1a) and Corpach (Route 2) Harbours through to the Cloiche site access junction.

Initial Considerations and Further Work

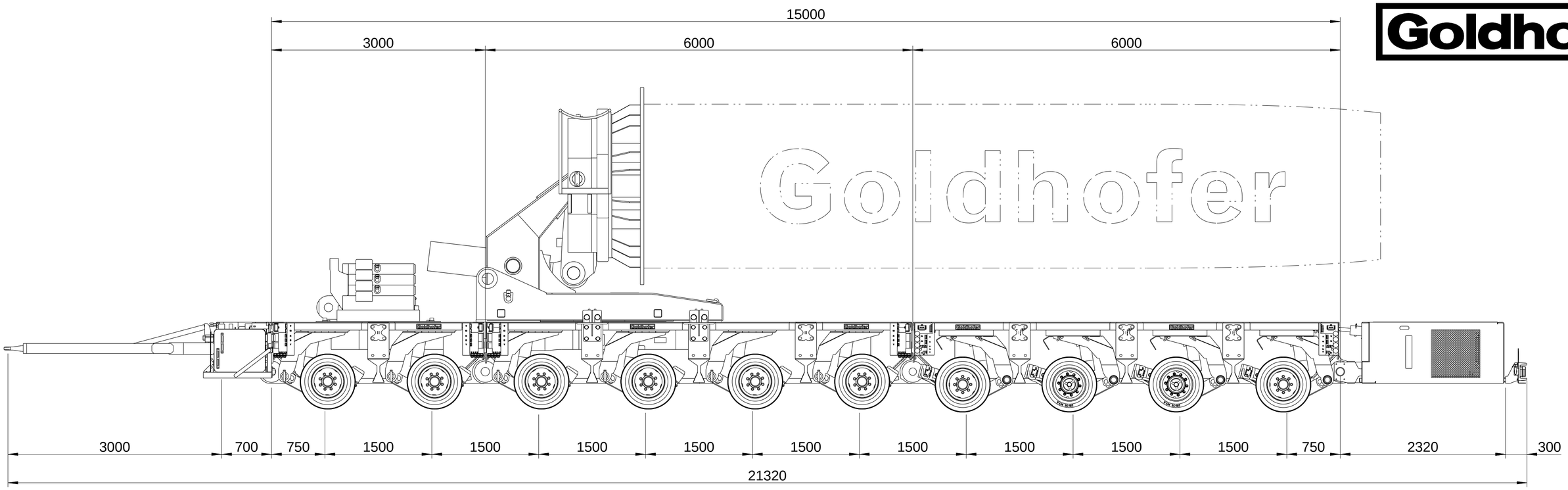
6.1.3 From this review, WYG would suggest any mitigation works are designed to be permanent to ensure future wind farm maintenance can be undertaken without the need to re-open land and access rights on site.

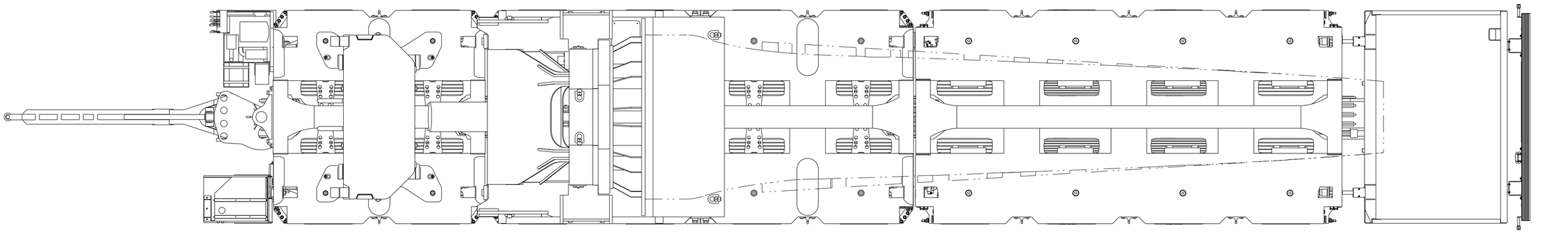
6.1.4 The following work is recommended to SSER for consideration in relation to the proposed access route:

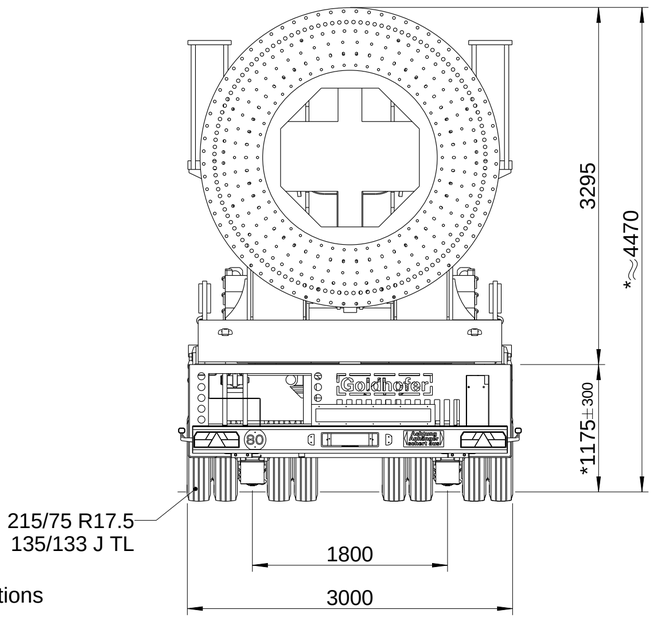
- Detailed design review of the proposed mitigation works;
- Confirmation of the availability and suitability of the MOWI Kyleakin facility;
- Discussions with Stakeholders regarding the use of the proposed specialist transportation options within the public road;
- Land searches should be completed for the areas where third party land requirements are identified in the Tables 4.1 & 4.2; and
- Traffic Management Plan - a detailed Traffic Management Plan (TMP) will be essential for this project given the level of constraint in a number of areas.

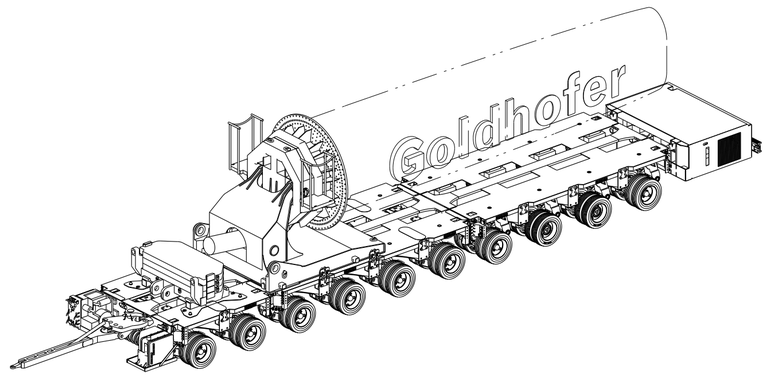
APPENDIX A

Shipping and Haulage Information







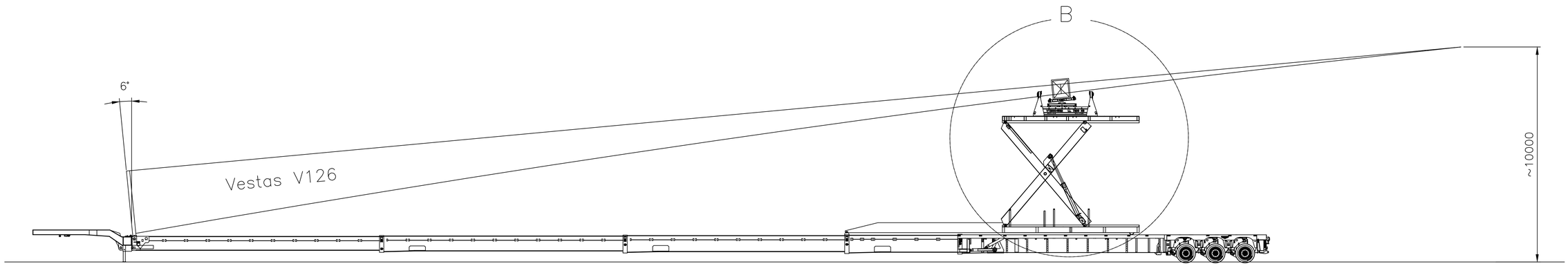


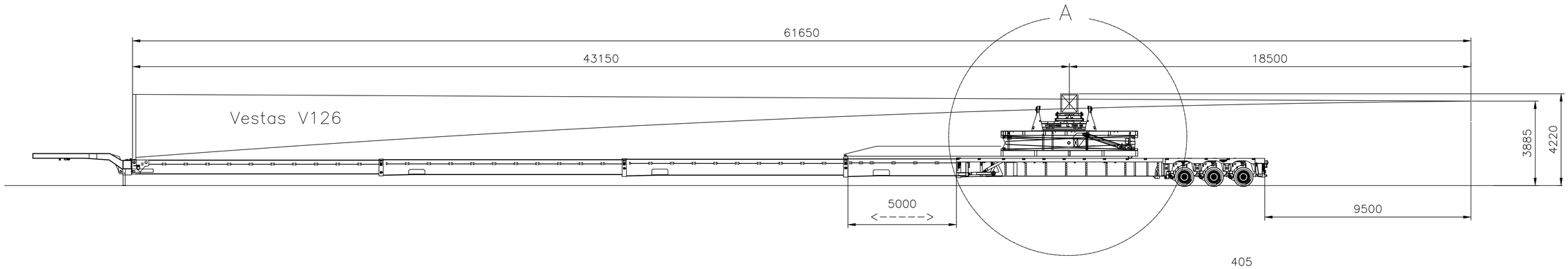
THP/ADD 10 - 20x04

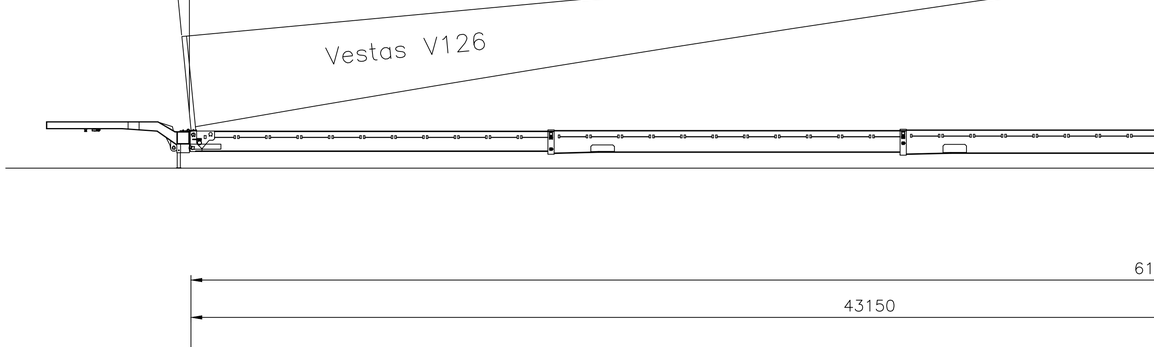
P10110	A.1	1 / 1	25.02.2016	VP3422
drawing #	version	sheet	date	No.

* = beladen/laden

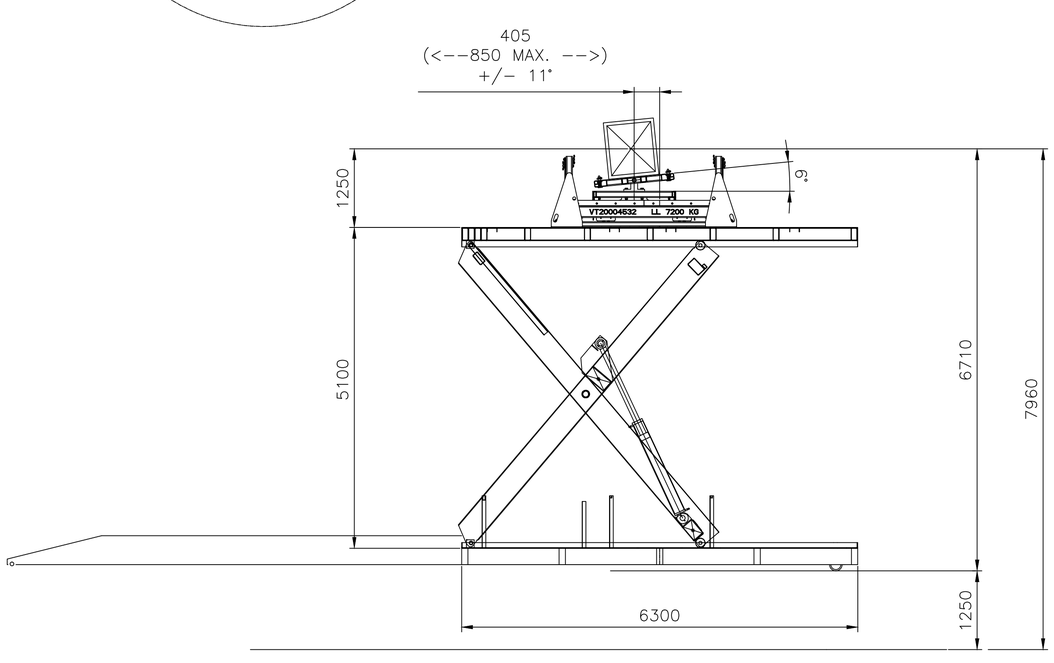
Technische Änderungen vorbehalten / Subject to technical alterations







Detail A



Detail B

BROSHUIS
HOLLAND
BROSHUIS B.V. SPECIAL TRAILERS
INDUSTRIEWEG 22 8263 AD KAMPEN
POSTBUS 468 8260 AL KAMPEN
TELEFOON +31(0)38 3372800
TELEFAX +31(0)38 3372888
E-MAIL contact@broshuis.com

Hubtische weiter detailliert		1 B.A.	23-04-15
Alle lassen, tenzij anders vermeld,		projectie	
getekend B.A.	maten in mm		
datum 27-03-15	schaal 1:100		
chass.nr. 1501068	formaat A4		
Afgeleid v. P-11561	toleranties ISO 2768-cL		

QUATTRO MIT BLATT UND HYDRAULISCHE HUBTISCHE

tek.nr K-20554/1 paraaf

PARTICULARS

MV PEAK BREMEN

ADMINISTRATIVE DETAILS

Shipsname	:	Peak Bremen
Nationality	:	Netherlands
Port of registry	:	Harlingen
Call sign	:	PCJO
IMO number	:	9612533
Type of vessel	:	Heavy cargo/open top vessel
Class	:	Lloyd's register
P&I	:	Gard
Built	:	Shipkits Harlingen
Date of delivery	:	2011

Class entry

Class + 100 A1, general cargo vessel equipped for the carriage of containers,strenghtened for heavy cargoes,loading and unloading aground suitable for carrying steel coils,dangerous cargo,bulk cargo,bulk cargoes only, + UMS,SCM

VESSEL'S CHARACTERISTICS

Gross tonnage		2978 T
Netto tonnage		1384 T
Deadweight		3931 T
Displacement		5360 T
Light ship	:	1429 T
LOA	:	89,95 m
LPP	:	84,95 m
Beam moulded	:	14,00 m
Depht moulded	:	6,80 m
Max.Summer draft	:	5,35 m
Max.Open top draft	:	Abt 3,361 m
FW allowance	:	118mm
Freeboard	:	1,453 m
Airdraft from keel	:	30,74 m

HOLD CHARACTERISTICS

One hold, box shaped	:	56,00x11,00x8,25 m
One hatch	:	72,00x11,6 m
Deck extensions fitted	:	No
Grain capacity	:	5049 m^3 / 178300 ft^3
Movable bulkheads	:	Yes
Tweendecks	:	8 pcs
Tweendeck load	:	1,5 T/sqm^2
Tanktop load	:	15 T/sqm^2
Hatches / aftdeck load		1,5 T/sqm^2

OPERATORS / OWNERS

Peak Project Carriers AS,
Part of the peak Group as agents to owners
Litleåsveien 49
5132 Nyborg, Norway
Phone.: +4755535300
Email: project@peakgroup.no
chartering@peakgroup.no
operation@peakgroup.no

COMMUNICATION FACILITIES

Telephone mobile	:	+31629564363
Satellite phone.	:	+870773166498

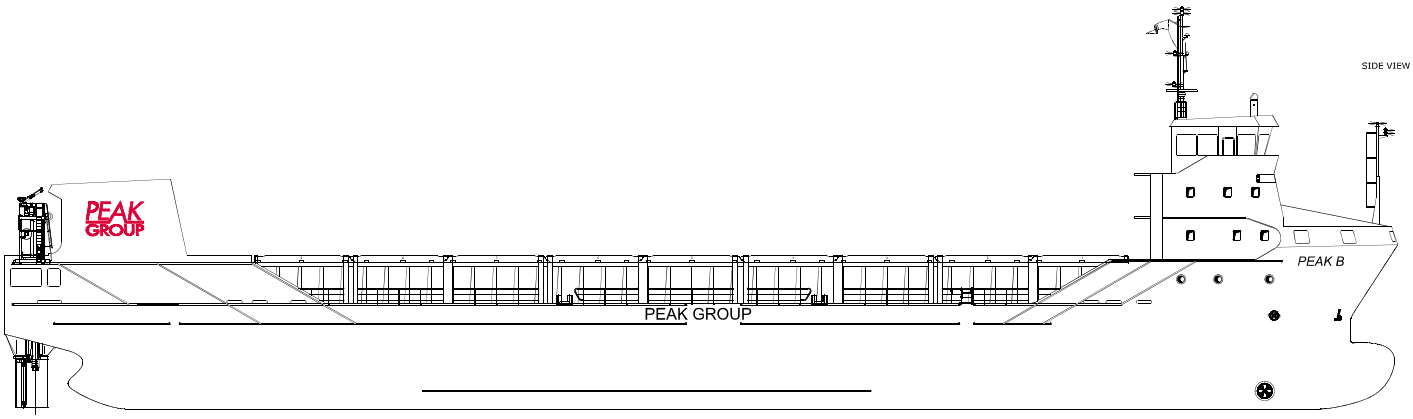
Email: peakbremen@skyfile.com

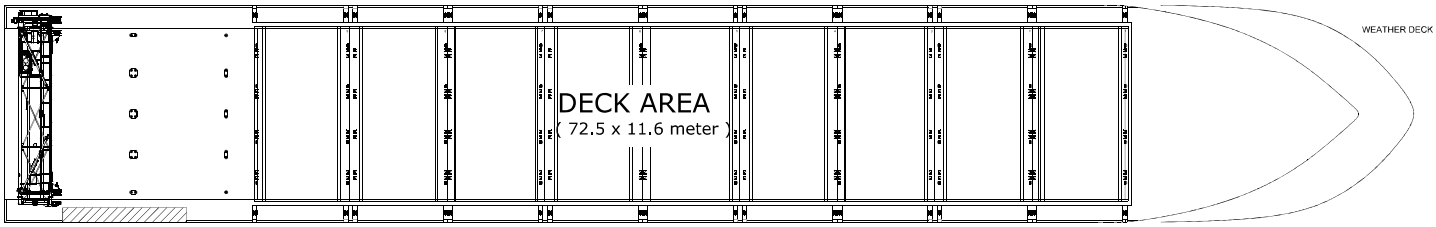
MANAGERS

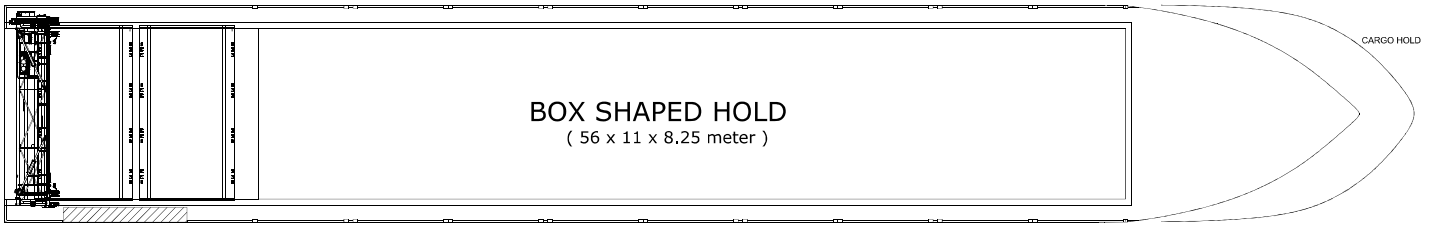
Gronberg Ship Management
Helperpark 274-6
9723 ZA Groningen, The Netherlands
Phone.: +31507676027

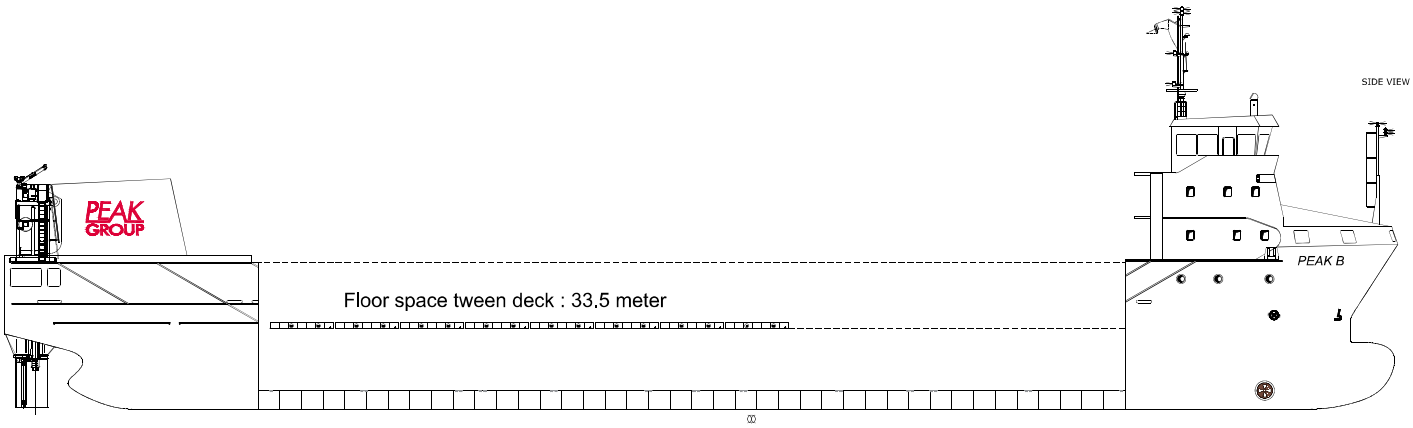
All details are given in good faith, believed to be correct but without garantee.

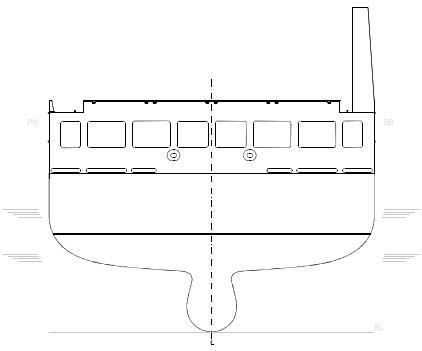
POCKET PLAN B-SERIE



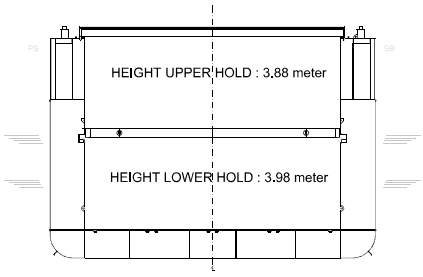








CROSS SECTION AFT DECK



CROSS SECTION AT CARGO HOLD

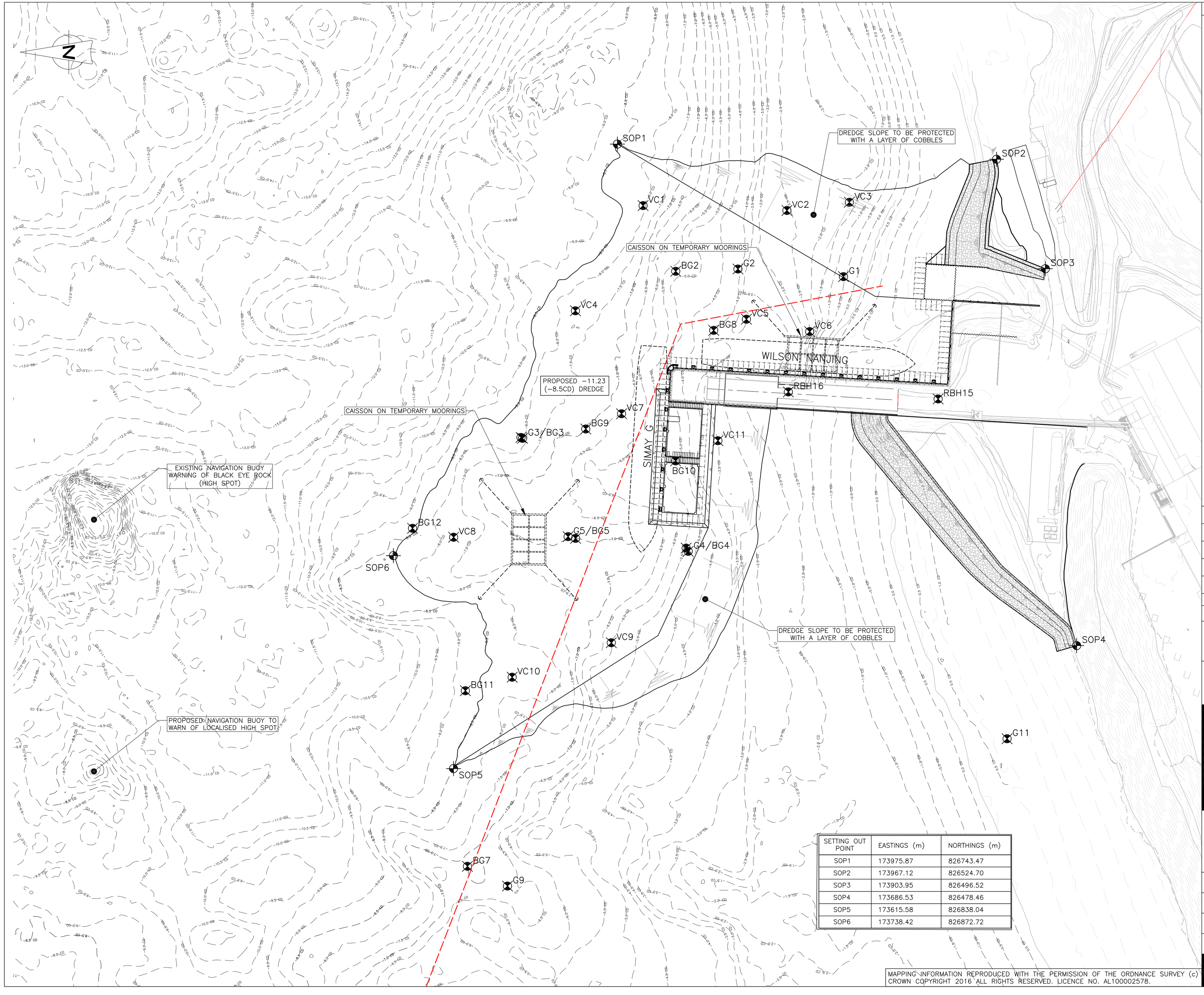
Maximum stacking loads [ton]			
	20ft	40ft	45ft
Hatch covers	25	40	-
Tanktop	60	68	68
Aftdeck bay 19	25	-	-
Aftdeck bay 20	-	20	-
Aftdeck bay 21	13	-	-

CLASS
Lloyd's Register Rules July 2007
+100A1 General cargo vessel
Open top, unrestricted.
Equipped for the carriage of containers
Strengthened for heavy cargoes
Loading and unloading aground
Suitable for carrying steel coils
Dangerous cargo, bulk cargoes only
+UMS, SCM

MAIN PARTICULARS

Length o.a.	89.95	m
Length b.p.	84.95	m
Length rule	94.29	m
Breadth mld.	14.00	m
Depth mld.	06.80	m
Max summer draft	05.35	m
Max winter draft	05.24	m
Max open top draft	03.35	m
Design speed	12.00	kn
GT	2978	mt
NT	1384	mt
DWT	3900	mt
DWCC (summer)	3700	mt
DWCC (winter)	3600	mt
DWCC (open top)	1800	mt
Displacement	5360	mt
Block coefficient	0.82	
Load on tanktop	15.00	mt/m2
Load on tweendeck	01.50	mt/m2
Load on deck	01.50	mt/m2

Peak Group AS. Litleåsveien 49. NO-5132 Nyborg, Norway. Telephone +4755535200 Fax +4755535301 Email: chartering@peakgroup.no



SETTING OUT POINT	EASTINGS (m)	NORTHINGS (m)
SOP1	173975.87	826743.47
SOP2	173967.12	826524.70
SOP3	173903.95	826496.52
SOP4	173686.53	826478.46
SOP5	173615.58	826838.04
SOP6	173738.42	826872.72

GENERAL NOTES

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. CHART DATUM IS 2.73m BELOW ORDNANCE DATUM.
4. MHWS +2.57 +5.3 CD
   MLWS −2.13 +0.6 CD

LEGEND

—— —— −7.0 CD —— —— SEABED CONTOUR

NUMBER OF SAMPLES REQUIRED FOR PRE−DREDGE ANALYSIS (BASED ON A VOLUME OF UP TO 250,000m³ DREDGED [MARINE SCOTLAND GUIDANCE]) 10 NO.

VC − VIBROCORE SAMPLE (11NO.)
G − GRAB SAMPLE (11NO.)
BG − BENTHIC GRAB SAMPLE (12NO.)

REF. NO.	EASTING (m)	NORTHING (m)	LATITUDE(N) (D)	(M)	(S)	LONGITUDE(W) (D)	(M)	(S)
VC1	173940.38	826728.64	57	16	30.275	5	45	5.813
VC2	173937.58	826645.65	57	16	27.592	5	45	5.707
VC3	173942.3	826609.6	57	16	26.437	5	45	5.307
VC4	173879.7	826767.7	57	16	31.428	5	45	9.556
VC5	173874.83	826669.03	57	16	28.235	5	45	9.522
VC6	173867.69	826632.52	57	16	27.044	5	45	9.827
VC7	173820.3	826741.07	57	16	30.462	5	45	13.007
VC8	173749.05	826837.97	57	16	33.462	5	45	17.571
VC9	173688.18	826747	57	16	30.418	5	45	20.898
VC10	173668.3	826804.2	57	16	32.229	5	45	22.270
VC11	173804.73	826685.46	57	16	28.640	5	45	13.752
G1	173899.4	826613	57	16	26.471	5	45	7.874
G2	173903.8	826704.6	57	16	29.434	5	45	7.913
G3	173806.1	826798.2	57	16	32.281	5	45	14.041
G4	173740.9	826702.6	57	16	29.080	5	45	17.611
G5	173749.4	826771.9	57	16	31.331	5	45	17.333
G6	174081.6	826716.6	57	16	30.138	5	45	57.361
G7	174085.8	826673.9	57	16	28.768	5	44	56.970
G8	NO SAMPLE	NO SAMPLE	–	–	–	–	–	–
G9	173547.8	826806.9	57	16	32.101	5	45	29.458
G10	NO SAMPLE	NO SAMPLE	–	–	–	–	–	–
G11	173632.8	826518.6	57	16	22.949	5	45	23.445
BG1	NO SAMPLE	NO SAMPLE	–	–	–	–	–	–
BG2	173902.5	826709.8	57	16	29.600	5	45	8.008
BG3	173806.6	826799.1	57	16	32.311	5	45	14.015
BG4	173742.8	826703.8	57	16	29.122	5	45	17.502
BG5	173748.4	826767.6	57	16	31.190	5	45	17.378
BG6	NO SAMPLE	NO SAMPLE	–	–	–	–	–	–
BG7	173559.2	826830	57	16	32.867	5	45	28.855
BG8	173868.4	826687.9	57	16	28.832	5	45	9.967
BG9	173811.5	826761.7	57	16	31.112	5	45	13.600
BG10	173793.1	826709.9	57	16	29.408	5	45	14.525
BG11	173660.5	826831.2	57	16	33.086	5	45	22.824
BG12	173754.2	826861.7	57	16	34.237	5	45	17.342

REV	DATE	DETAILS	DRAWN	CHK'D	APP'D
G	17.11.16	DREDGE AREA REVISED, LAYOUT UPDATED, SOP'S ADDED	LS	TR	TR
F	08.09.16	PIER LAYOUT REVISED	LS	TR	TR
E	19.08.16	ROCK CONTOURS REMOVED	JHG	TR	TR
D	17.08.16	AS SAMPLED	JHG	TR	TR
C	28.07.16	RECLAMATION AREA ADDED	ADS	TR	TR

AMENDMENTS

CLIENT

marineharvest

PROJECT

KYLEAKIN FEED MILL MARINE WORKS

Wallace Stone
CONSULTING CIVIL ENGINEERS
GLASGOW 0141 554 8233 glasgow@wallacestone.co.uk
DINGWALL 01349 866775 dingwall@wallacestone.co.uk
HEBRIDES 01851 612454 hebrides@wallacestone.co.uk

DRAWING TITLE

PROPOSED PIER DREDGING AND APPROACH SEABED FEATURES

DRAWN	CHECKED	APPROVED
ADS	TR	TR
DATE: MAY 2016	DATE: MAY 2016	DATE: MAY 2016

SCALE (A1) 1:1000 STAGE CONSENTS

REVISION A B C D E F G

PROJECT No. 1849

DRAWING No. 108

APPENDIX B

Initial Swept Path Assessment

V136 Blade
Scheuerle Adaptor
Raised

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: Kyle of Lochalsh Harbour Exit

POI: 23

COMPONENTS: Vestas V136 Blade - Scheuerle Blade Adaptor and Tow

Swept Path Assessment

REAR STEER UTILISED

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

DRAWN:	CHECKED:	DATE:	SCALES:	PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
LJ	JD	Dec 2019	1:500 @ A3	A112875	SPA19	-

V136 Blade
Scheuerle Adaptor
Raised

Lighting column to be over-sailed.

Load bearing surface to be laid in over-run area.
Blade to over-sail trees and dock wall.

Notes:

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Key:

- Over-run Required
- Over-sail Required
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: Kyle of Lochalsh Harbour Exit

POI: 23

COMPONENTS: Vestas V136 Blade - Scheuerle Blade Adaptor and Tow

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA19-2	-

V136 Blade
Broshius Adaptor

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: Kyle of Lochalsh Harbour Exit

POI: 23

COMPONENTS: Vestas V136 Blade - Broshius Blade Adaptor

Swept Path Assessment

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA19-3	-

V136 Blade Broshius Adaptor

Lighting column to be removed.

Load bearing surface to be laid in over-run area.
Lighting column and road sign to be removed.
Proximity to rocks to be confirmed.
Potential rock removal required.

Proximity to rocks to be confirmed.
Potential rock removal required.

Load bearing surface to be laid in over-run area.
Four lighting columns to be removed.
Vegetation to be cleared.

Area to be cleared of obstacles.

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

Load bearing surface to be laid in over-run area.
Three planters to be removed.

Load bearing surface to be laid in over-run area.
Blade tip to over-sail building - dependent on building height and associated trailer.

Notes:

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Key:

- Over-run Required
- Over-sail Required
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: Kyle of Lochalsh Harbour Exit

POI: 23

COMPONENTS: Vestas V136 Blade - Broshius Blade Adaptor

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA19-4	·

V136 Blade
Scheuerle Adaptor
Raised

827300N

827250N

827200N

A87

Main Street

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A87 Station Road Junction

POI: 24

COMPONENTS: Vestas V136 Blade - Scheuerle Blade Adaptor + Tow

Swept Path Assessment

REAR STEER UTILISED

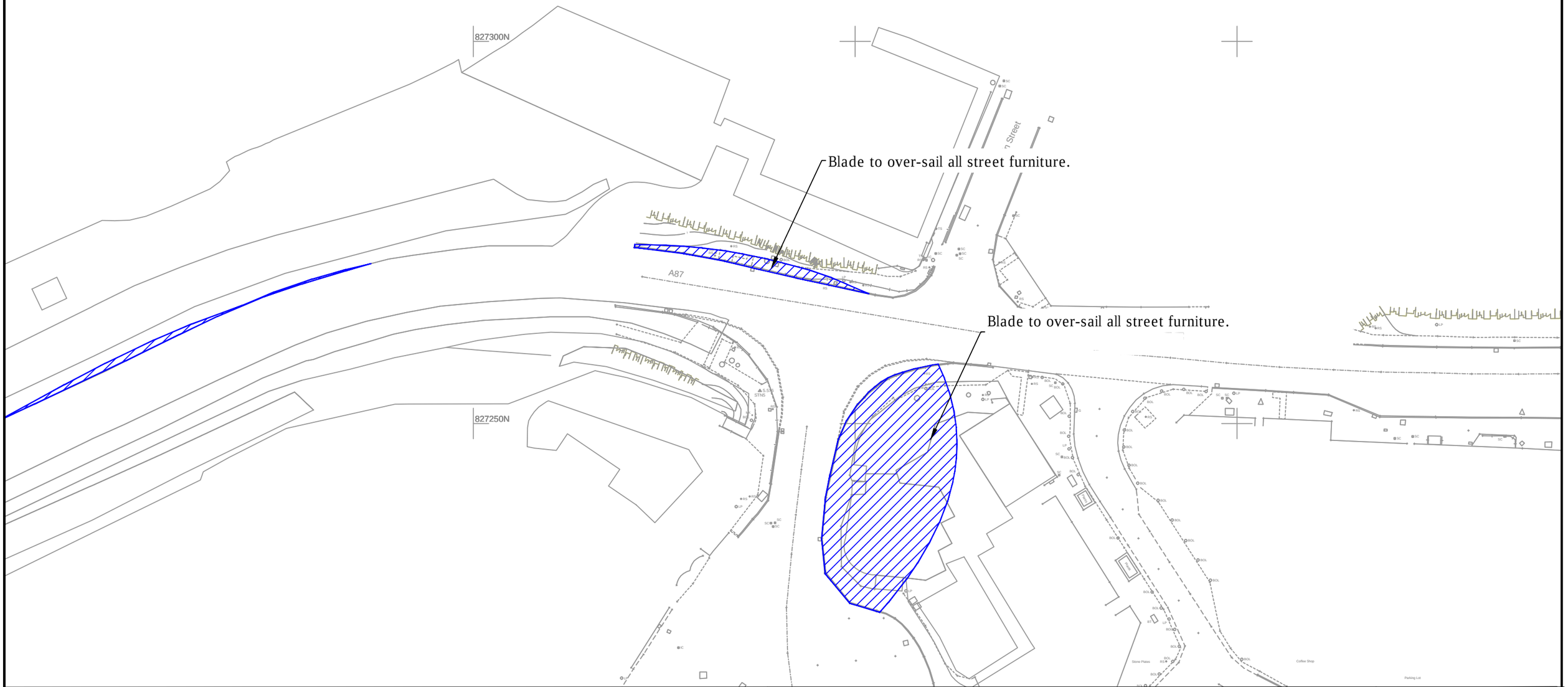
DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA20	·

V136 Blade
Scheuerle Adaptor
Raised



Notes:

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Key:

- Over-run Required
- Over-sail Required
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A87 Station Road Junction

POI: 24

COMPONENTS: Vestas V136 Blade - Scheuerle Blade Adaptor + Tow

Required Remedial Works

REAR STEER UTILISED

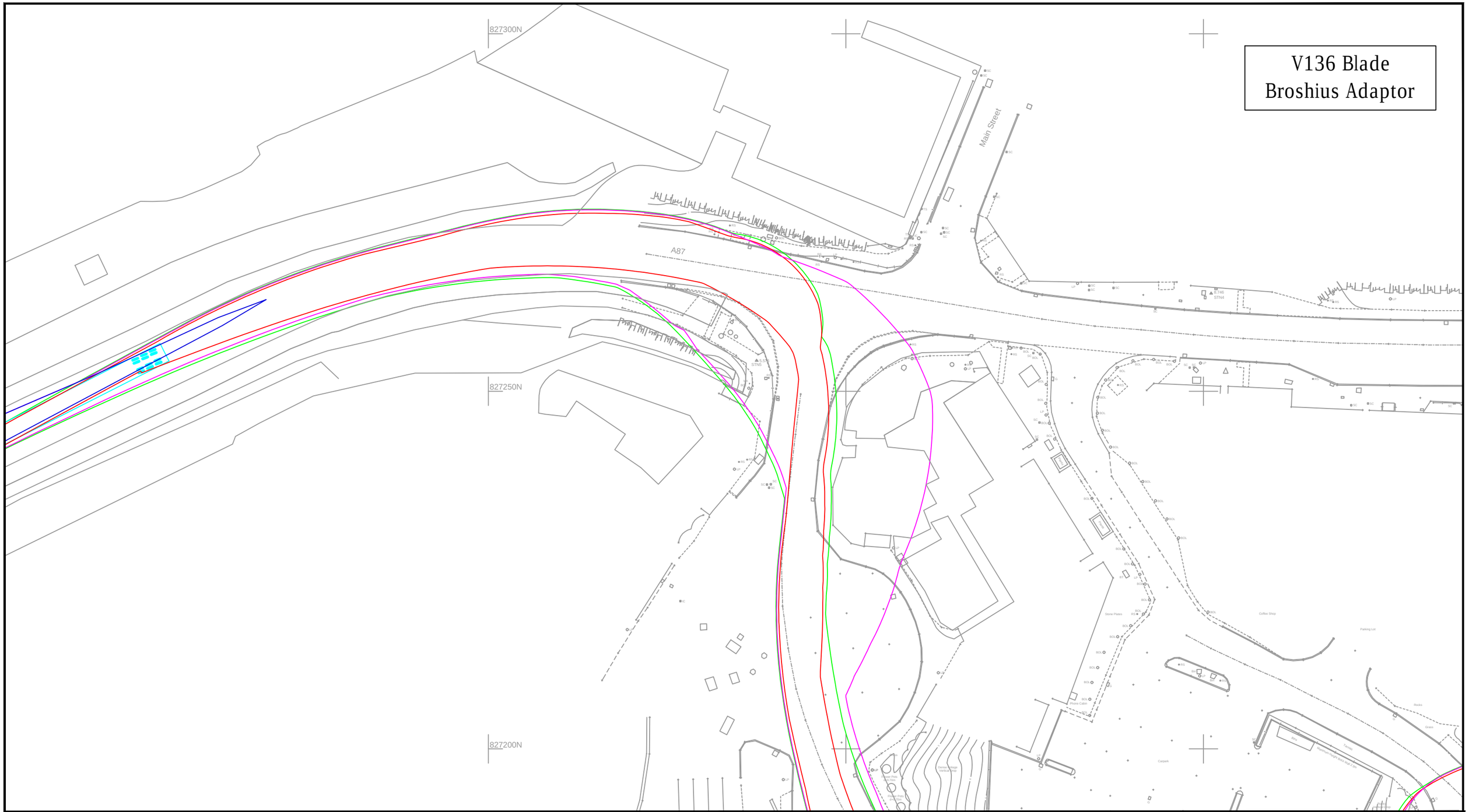
DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA20-2	·

V136 Blade
Broshius Adaptor



Notes:

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Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A87 Station Road Junction

POI: 24

COMPONENTS: Vestas V136 Blade - Broshius Blade Adaptor

Swept Path Assessment

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

WYG Transport Planning
part of the WYG group

The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA20-3	·

V136 Blade
Broshius Adaptor

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Over-run Required
- Over-sail Required
- Topographical Survey Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A87 Station Road Junction

POI: 24

COMPONENTS: Vestas V136 Blade - Broshius Blade Adaptor

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

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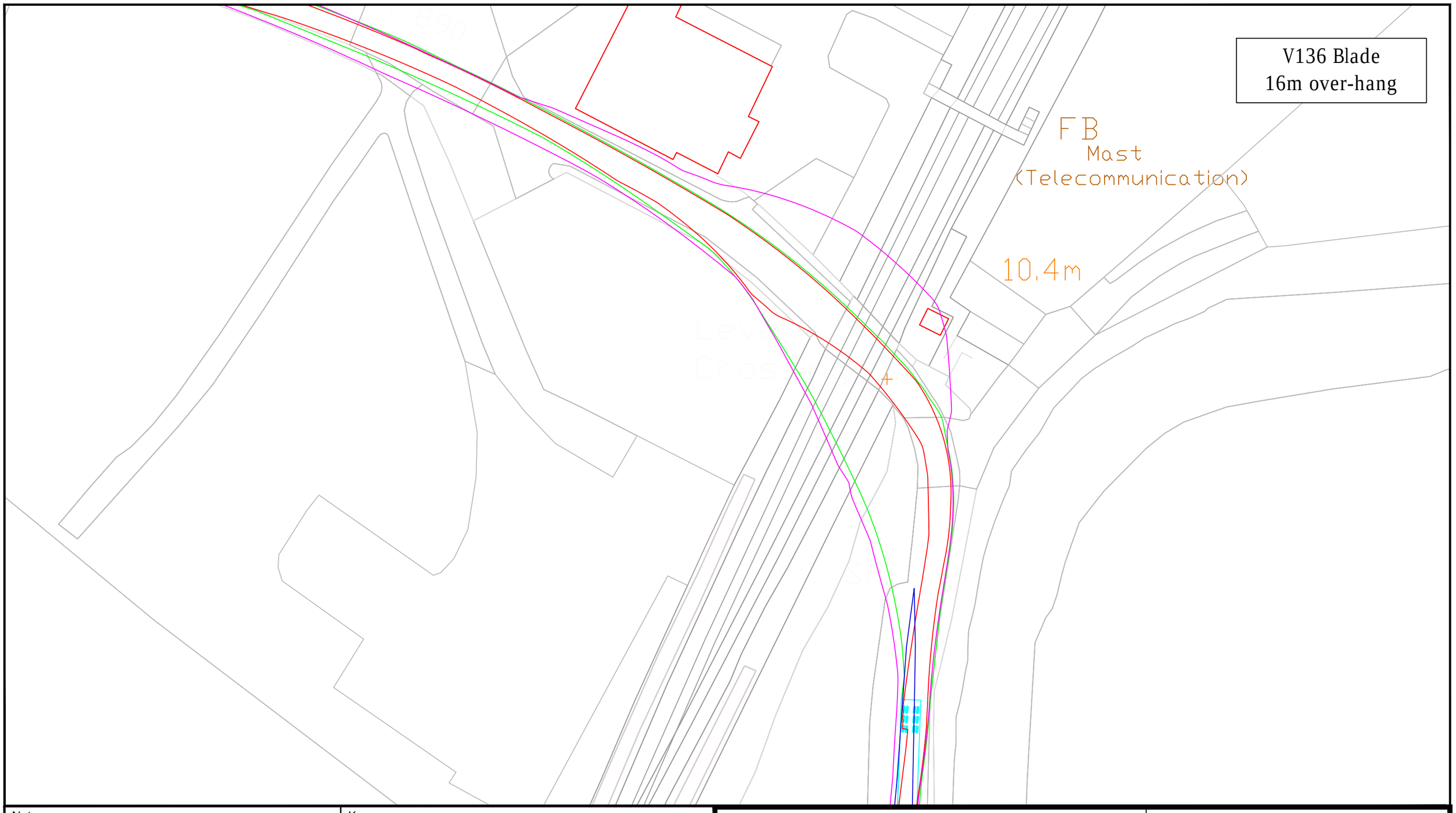
The Cube 45 Leith Street Edinburgh EH1 3AT
t: +44 (0)131 247 5700 e: edinburgh@wyg.com

PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA20-4	-



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Ordnance Survey Mapping

Cloiche Windfarm

LOCATION: Strathcarron Railway Station

POI: -

COMPONENTS: V136 Blade 16m over-hang

Swept Path Assessment

DRAWN:	CHECKED:	DATE:	SCALES:
JS	JD	April 2019	1:500 @ A3

SSE Renewables

WYG Transport Planning
part of the WYG group

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PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA009	-

V136 Blade
16m over-hang

FB
Mast
(Telecommunication)

Load bearing surface to be laid in over-run area. Two trees to be removed.
Third party land potentially required.

One railway signal, two lit crossing warning signs, one lighting column and one telecommunications mast and associated cabinet to be relocated.
Third party land potentially required.

One railway signal and two lit crossing warning signs to be relocated.
Third party land potentially required.

Notes:

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Key:

- Over-run Required
- Over-sail Required
- Ordnance Survey Mapping

Cloiche Windfarm

LOCATION: Strathcarron Railway Station

POI: -

COMPONENTS:

V136 Blade 16m over-hang

Required Remedial Works

DRAWN:	CHECKED:	DATE:	SCALES:
JS	JD	April 2019	1:500 @ A3

SSE Renewables

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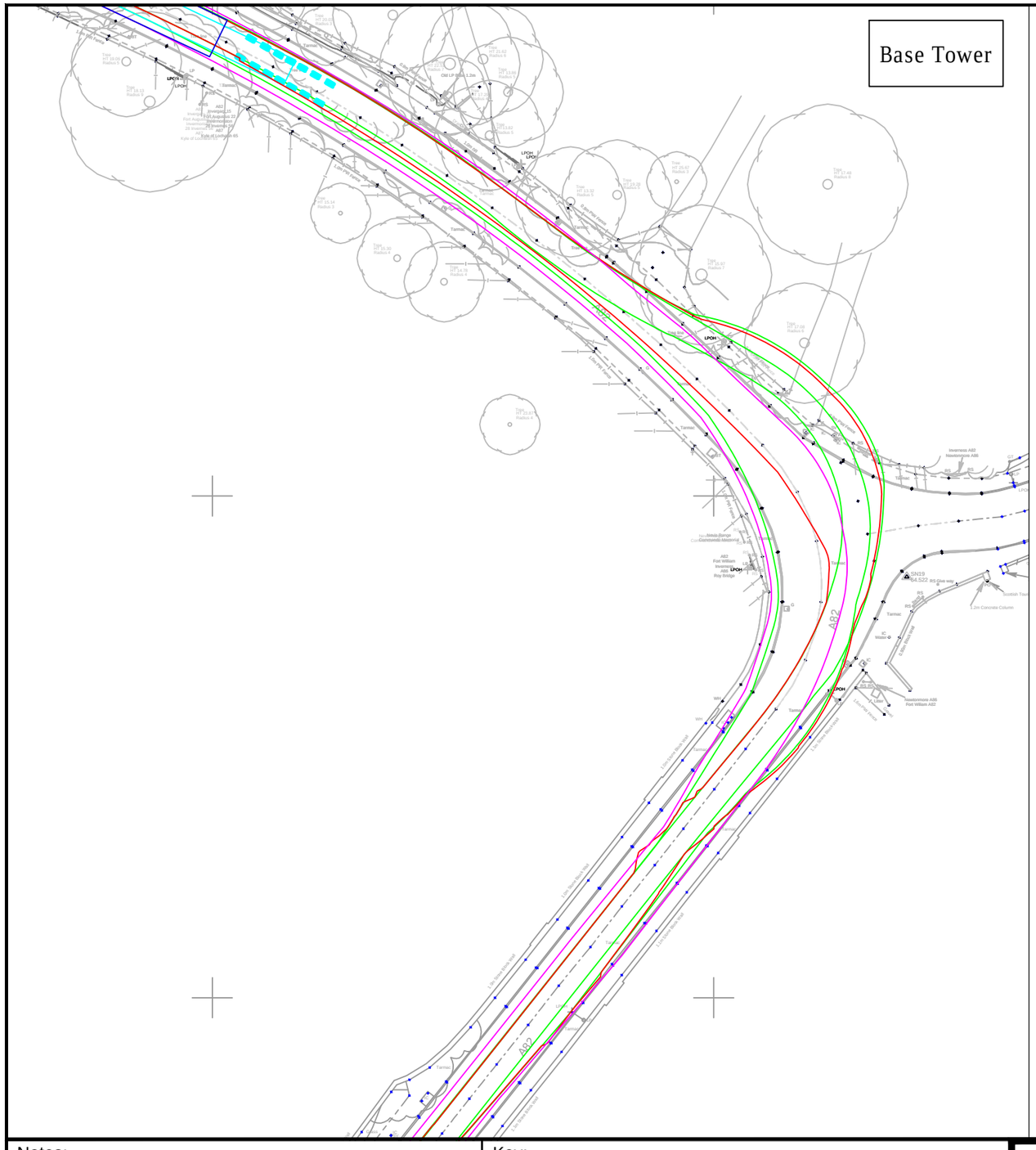
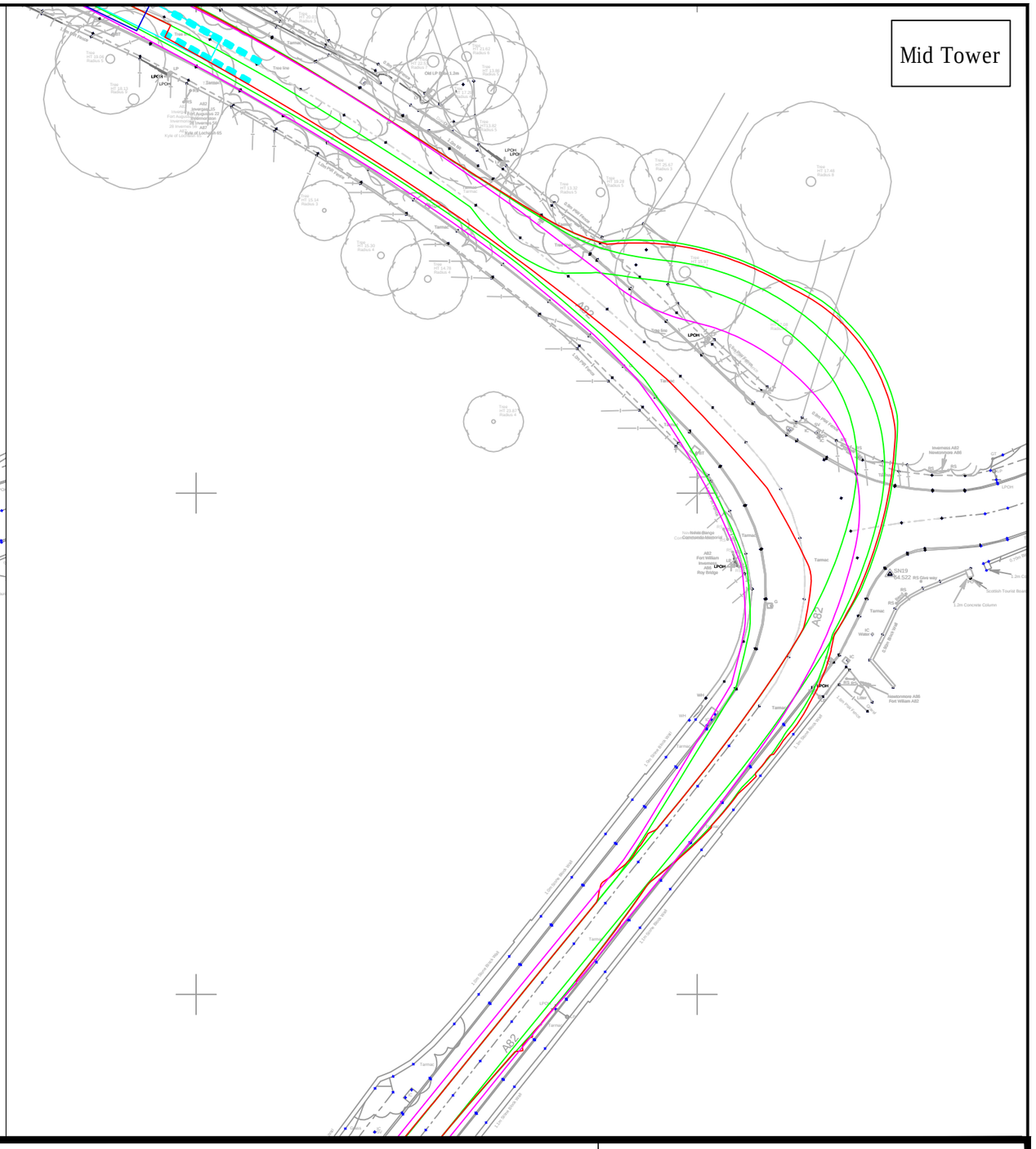
PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA009-2	-





Notes:

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Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- Client Provided Topographical Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A82 Spean Bridge

POI: 6

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Swept Path Assessment

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

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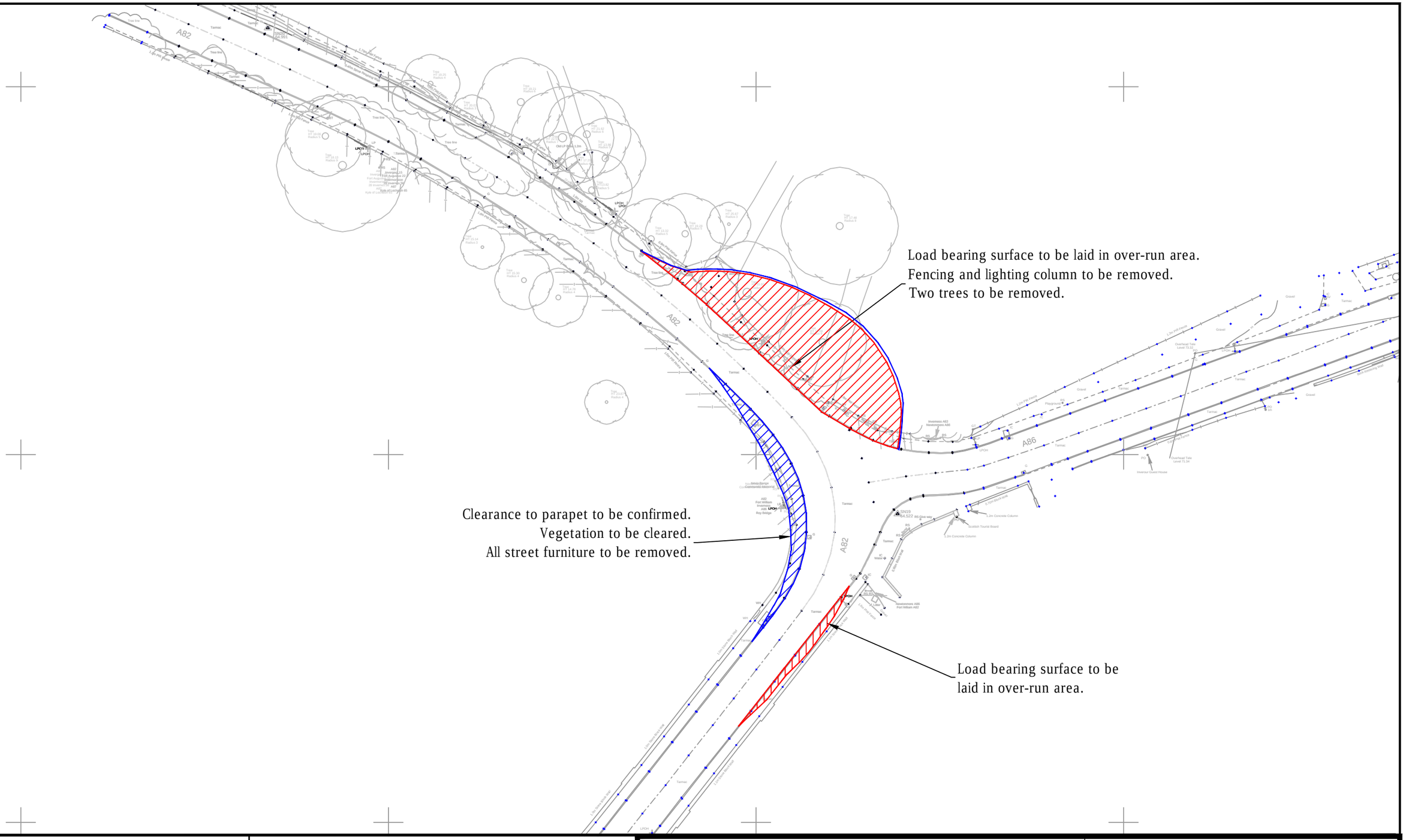
PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA004	-



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Over-run Required
- Over-sail Required
- Client Provided Topographical Mapping

Cloiche Windfarm

LOCATION: A82 Spean Bridge

POI: 6

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

SSE Renewables

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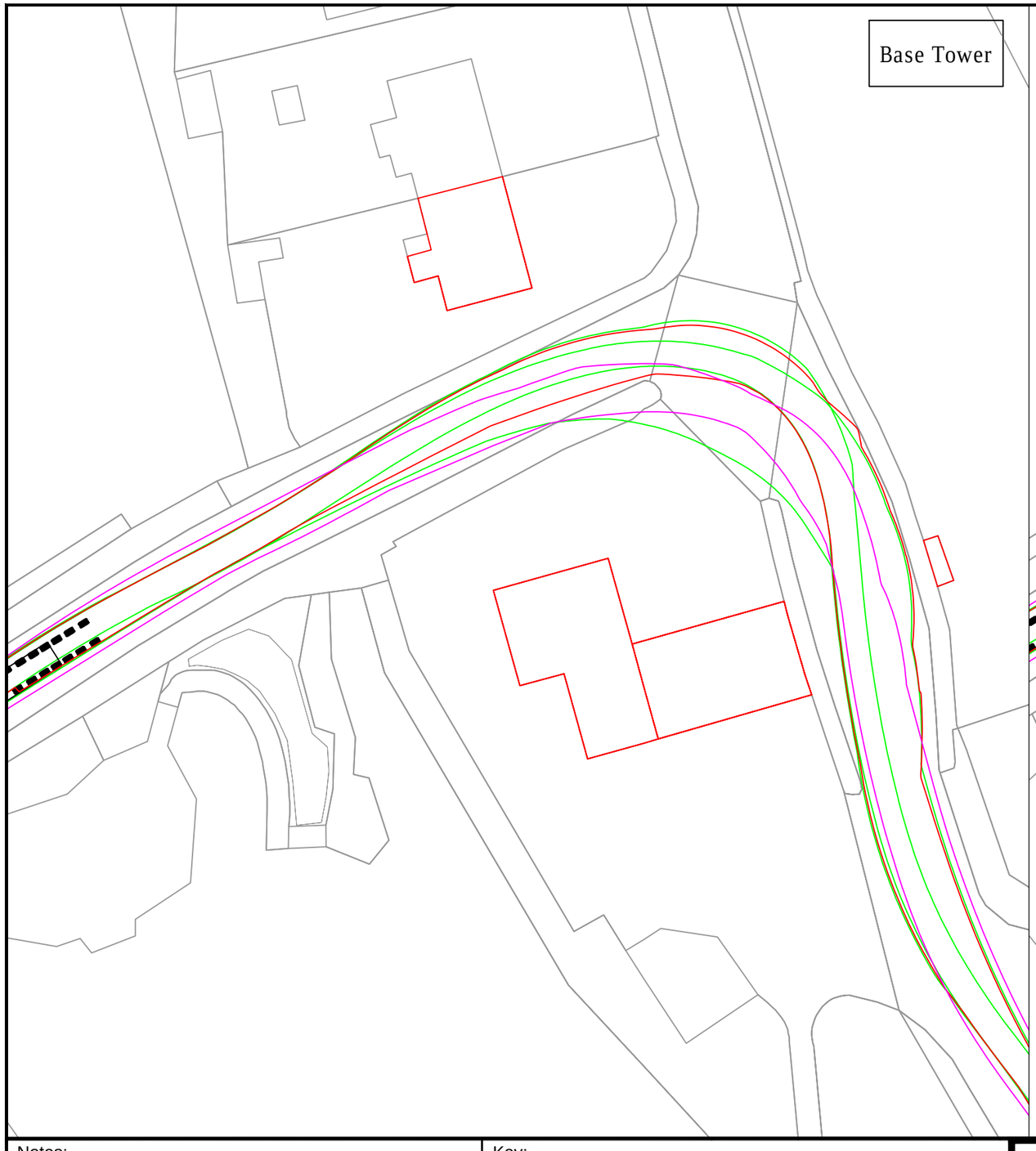
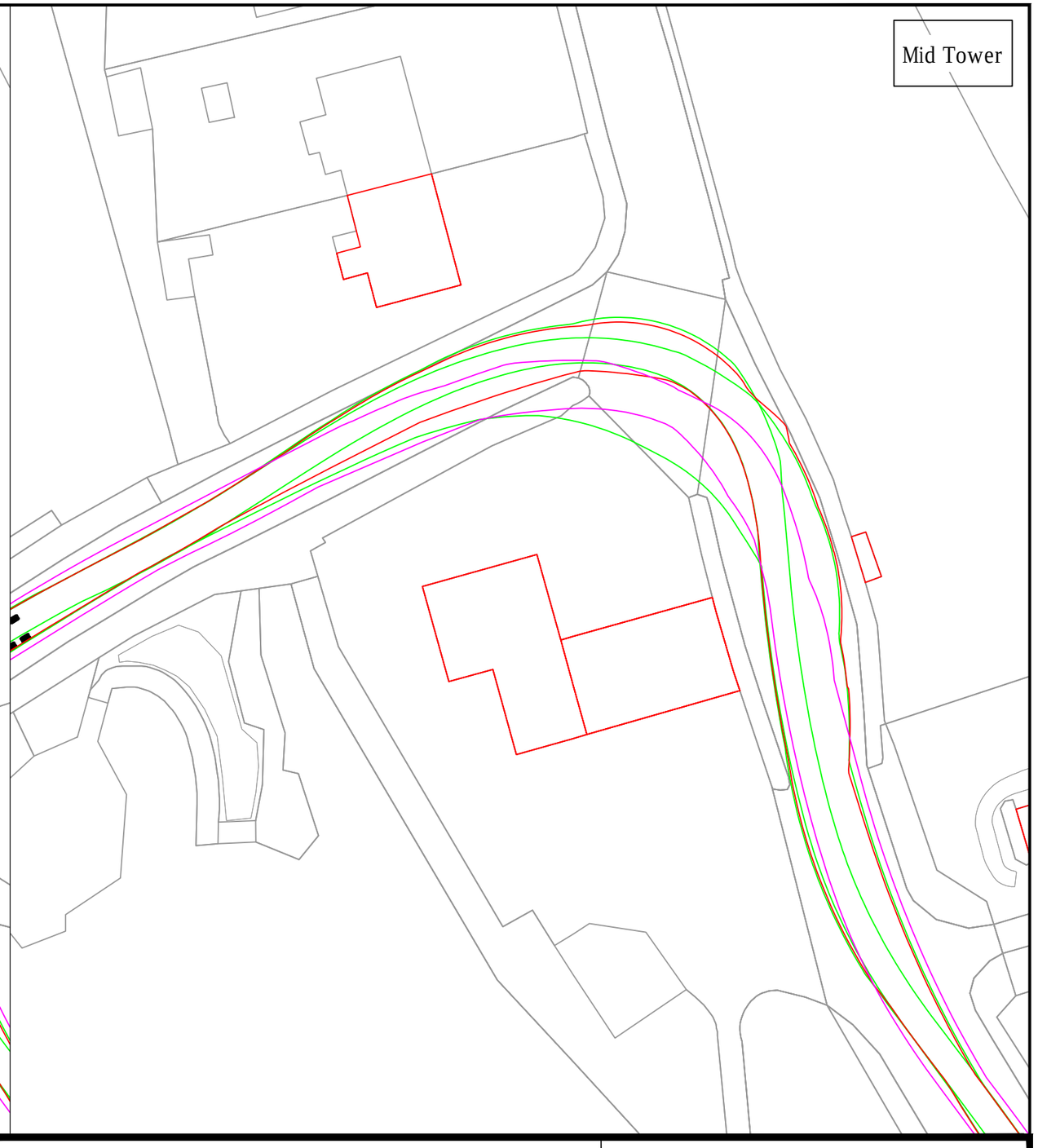
PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA004-2.	·





Notes:

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Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- OS Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A862 / Scourgie Road Junction

POI: 8

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Swept Path Assessment

REAR STEER UTILISED

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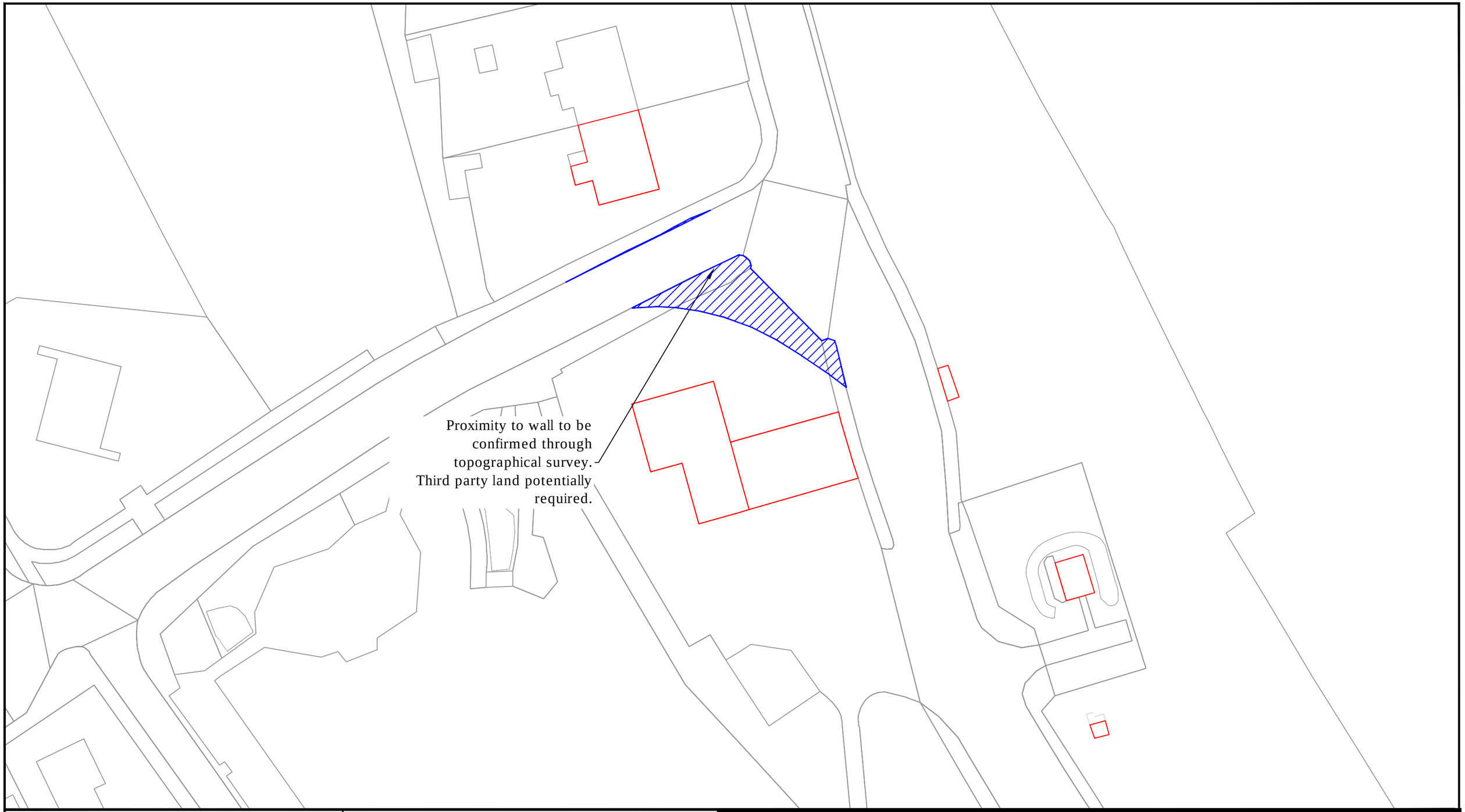
LJ	JD	Dec 2019	1:500 @ A3	A112875	SPA0011	-



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Over-run Required
- Over-sail Required
- OS Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A862 / Scourgie Road Junction

POI: 8

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

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PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA011-2	·

Notes:

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Key:

- Load Swept Path
- Vehicle Swept Path
- Wheel Swept Path
- OS Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A82 / A831 Junction

POI: 8

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Swept Path Assessment

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

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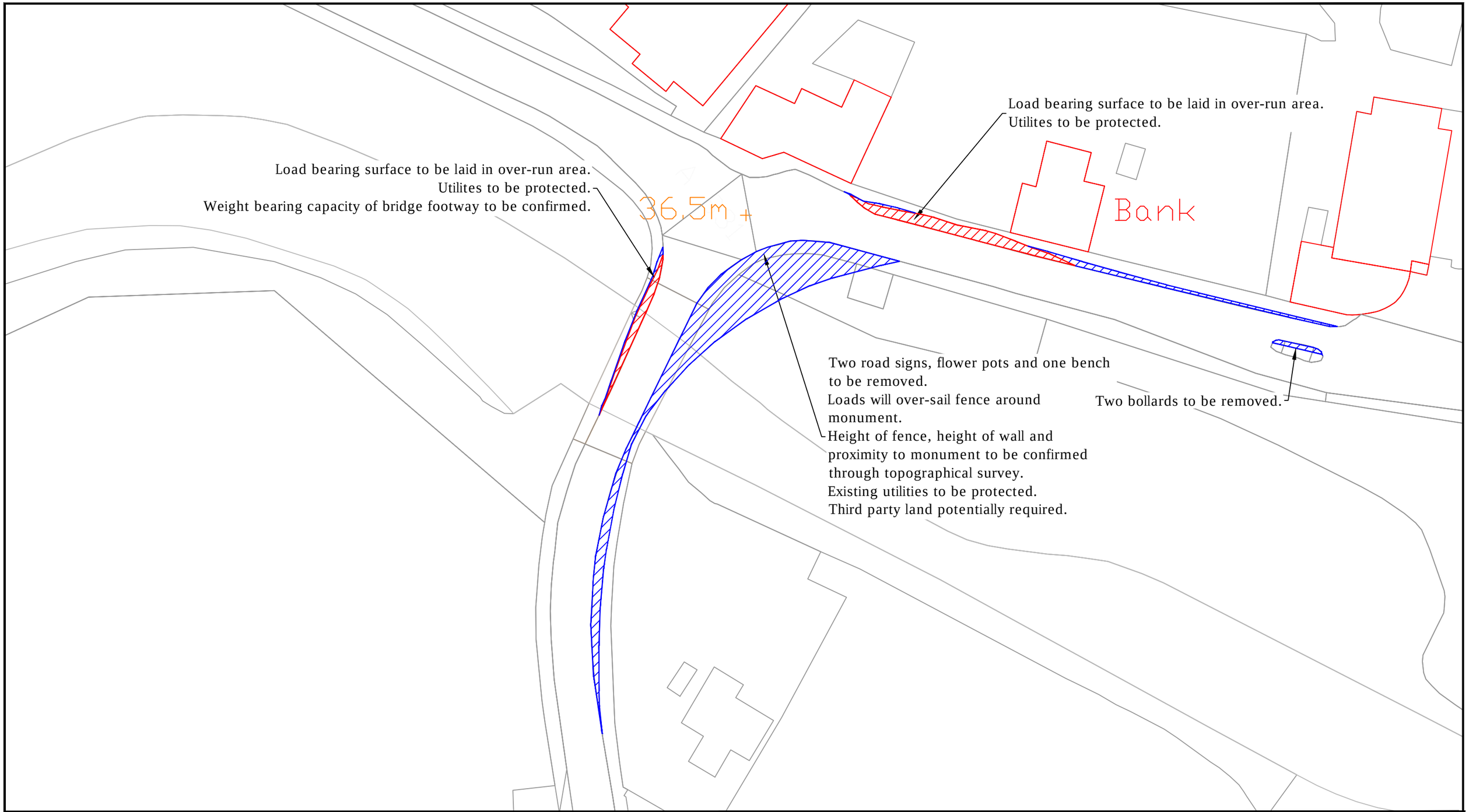
PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA012	·



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Over-run Required
- Over-sail Required
- OS Mapping

Cloiche Windfarm

SSE Renewables

LOCATION: A82 / A831 Junction

POI: 8

COMPONENTS: Vestas V136 Base (clamp) and Mid (clamp) Tower

Required Remedial Works

REAR STEER UTILISED

DRAWN:	CHECKED:	DATE:	SCALES:
LJ	JD	Dec 2019	1:500 @ A3

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PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
A112875	SPA012-2	·