

COLLETT

EXPERTS IN MOTION



Route Access Survey
340497 – Vestas V162

Bracklyn Wind Farm

Galetech
October 2020



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Report Details

Report for

Cormac McPhillips
Galetech Energy
Clondargan
Stradone
County Cavan
Ireland

Attendees of Survey

Steven Mangham

Time / Date of Survey: 29th October 2019

General weather conditions: Mixed

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Document Revisions

| No | Date | Details |
|-------------------|------------|--|
| 340497-V162 | 12/10/2020 | Updated with V162 Blade |
| 340497-V162 REV 1 | 30/04/2021 | Updated as per client req. |
| 340497-V162 REV 2 | 12/05/2021 | Updated comments in section 5.9 as per client req. |

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- Heavy Lift Storage
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1. Executive Summary

- 1.1. This report comprises of a study of the road route as detailed here in for the road transport of V162 Blade Components to the proposed Bracklyn Wind Farm, near Bracklyn, County Westmeath.
- 1.2. One route has been assessed from the Port of Waterford to the proposed site.
- 1.3. No other turbine components have been assessed as part of this assessment.

Third party land

- 1.4. Third party land is required at the junction of the N52 and the L1504.

Road widening

- 1.5. Road widening within highways owned land is required at numerous locations on the route:
 - N29 / R711 Roundabout.
 - N25 / R680 Roundabout (Option 2).
 - N9 / M9 Roundabout.
 - N4 / N52 Roundabout at Mullingar.
 - L1504 / Dumper Depot junction.
 - Throughout unnamed road to meet the Vestas Road Specification

Modifications to street furniture

- 1.6. Modifications to street furniture will be required along the route at a high number of locations:
 - Exit from the port of Waterford – Road signs, fence and barrier to be removed.
 - N29 / R711 Roundabout – Road signs to be removed.
 - N29 / N25 Roundabout – Road signs and lamp posts to be removed.
 - N25 / R680 Roundabout (Option 1) - Road signs and lamp posts to be removed.
 - N25 / R680 Roundabout (Option 2) - Road signs and lamp post to be removed.
 - N25 / N9 Roundabout - Road signs and lamp posts to be removed.
 - N9 / M9 Roundabout – Road signs to be removed.
 - N4 / N52 Roundabout at Mullingar – Lamp posts and road signs to be removed.
 - N52 / L1504 Junction – Road signs and hedge to be removed.
 - L1504 / Dumper Depot junction – Wall and trees to be removed.
 - Dumper Depot junction / Unnamed Road junction – Trees to be removed.
 - Right hand bend on unnamed road – Two telegraph poles to be removed.

Vertical Alignment and Height Clearances

- 1.7. Verticals crests along the route can be navigated by raising the neck of the trailer.

Structural Assessment

- 1.8. No structural assessments were undertaken as part of this route survey. Once the tower dimensions have been selected, it is advised that a dummy permit be issued to determine whether there are any structural issues on the route.

Other areas of note

- 1.9. The area within the port is to be cleared of all obstructions to allow rear projection to oversail.
- 1.10. Trees and pole at the proposed exit from the Dumper Depot will require removal to allow a new exit to be constructed.
- 1.11. A turning manoeuvre will be required at the N4/N52 Roundabout to allow the loaded blade vehicle to navigate onto the N52.
- 1.12. A turning manoeuvre will be required at the N25 / R680 roundabout (Option 2). This is to reduce the amount of lamp posts that require to be removed.

2. Introduction

- 2.1 Collett & Sons Ltd. were commissioned by Galetech Energy to undertake an abnormal loads route access study to assess the transportation of Wind Turbine components to the proposed Bracklyn Wind Farm, near Bracklyn, County Westmeath.
- 2.2 The road routes as detailed herein are for the road transport of the V162 Blade component identified in Section 4.
- 2.3 The purpose of this report is to detail access from the Port of Waterford.

3. Candidate Abnormal Loads

- 3.1. The blade specification was instructed by Galetech Energy.

4. Abnormal Indivisible Load Profiles

- 4.1. The abnormal load components are assessed based on weight, length, width and height and loaded to the most appropriate vehicle the weights and dimensions of these are detailed below. The loading diagrams are detailed in Appendix 1.

| | |
|------------------------|----------------------------------|
| 4.2. | 340497-A |
| V162 Blade Component | |
| | |
| | Loaded vehicle dimensions |
| Overall vehicle Length | 91.48m |
| Rigid Length | 87.66m |
| Width | 4.50m |
| Height | 4.26m |
| Gross Vehicle Weight | 79.00Te |
| Maximum axle weight | 8.00Te |

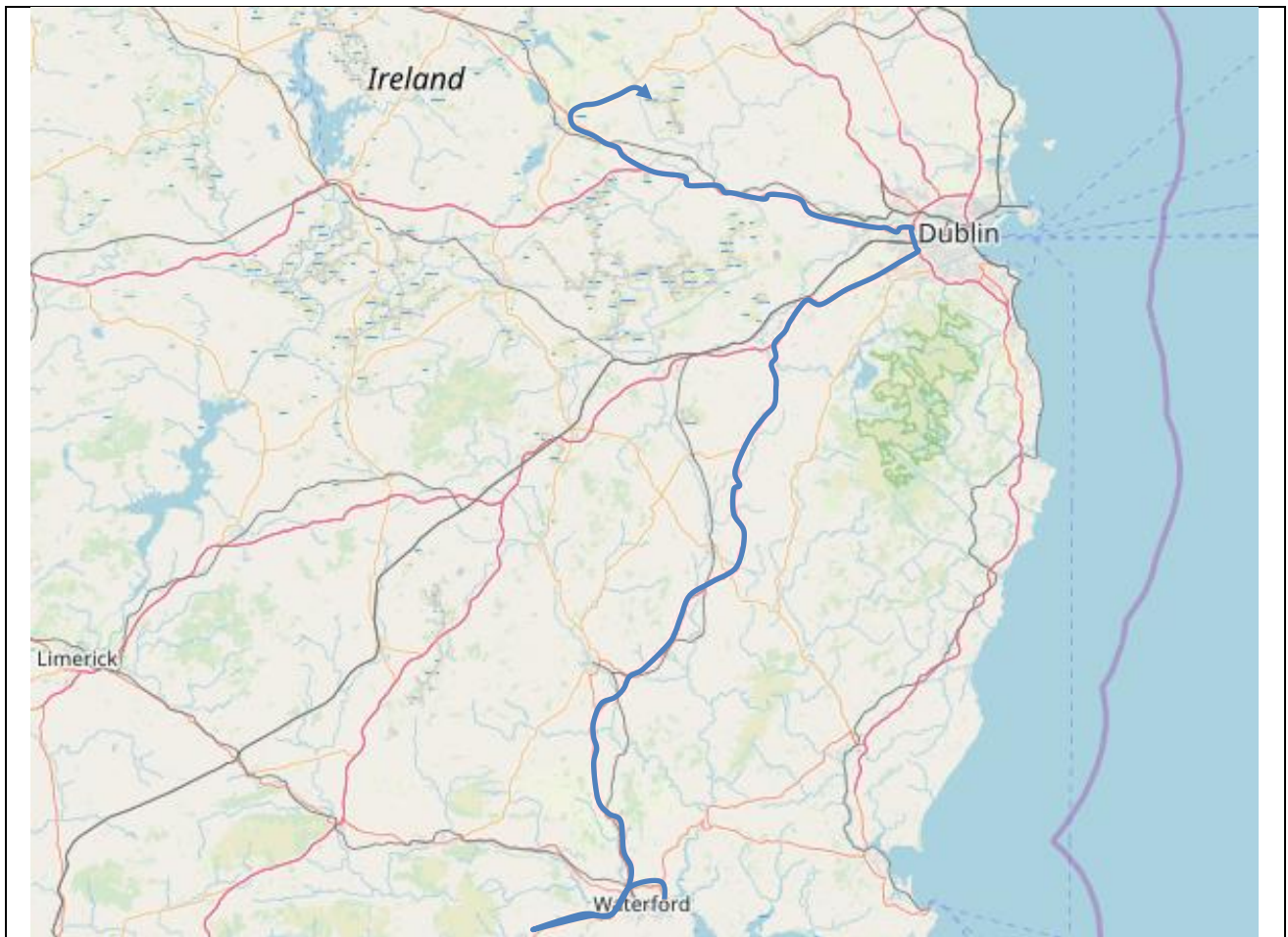
5. Route Assessment Overview

- 5.1. This section of the report illustrates the route assessed for the delivery of V162 Blade Component only from Port of Waterford to the proposed site entrance of Bracklyn Wind Farm.
- 5.2. For the purpose of this report, one route to the site was surveyed. All the routes surveyed in this report have been identified by Collett.
- 5.3.

Route

| Start Location | Port of Waterford | Distance of Route | Km | Miles |
|---|--------------------------------|-------------------|-----|-------|
| Via: | N29/N25/M9/M50/N4/M4/N52/L1504 | | 273 | 170 |
| <ul style="list-style-type: none"> • Exit Port of Waterford onto the N29. • At roundabout, take the 3rd exit onto N29. • At roundabout, turn left onto N25. • At roundabout, take the 4th exit onto N25. • Continue on N25 and take the exit onto N9. • At the roundabout, turn right onto M9. • Continue on M9 and merge onto M7. • Continue on M7 and merge onto N7. • Continue on N7 and take the exit onto M50. • Continue on M50 and take the exit onto N4. • Continue on N3 and merge onto M4. • Continue on M4 and merge onto N4. • Take the exit at M4 J16 and then turn right at roundabout onto N52. • Continue on N52 and then turn right at junction onto L1504. • Continue straight into Dumper Depot and then onto unnamed road • Continue on unnamed road to proposed site entrance at: OSI N 59923 59791. | | | | |

5.4. Map Overview



5.5. Amendment Categorisation

For the purposes of this report, the route amendments have been identified into 3 categories.

Major Amendments – Third Party Land, Road Widening

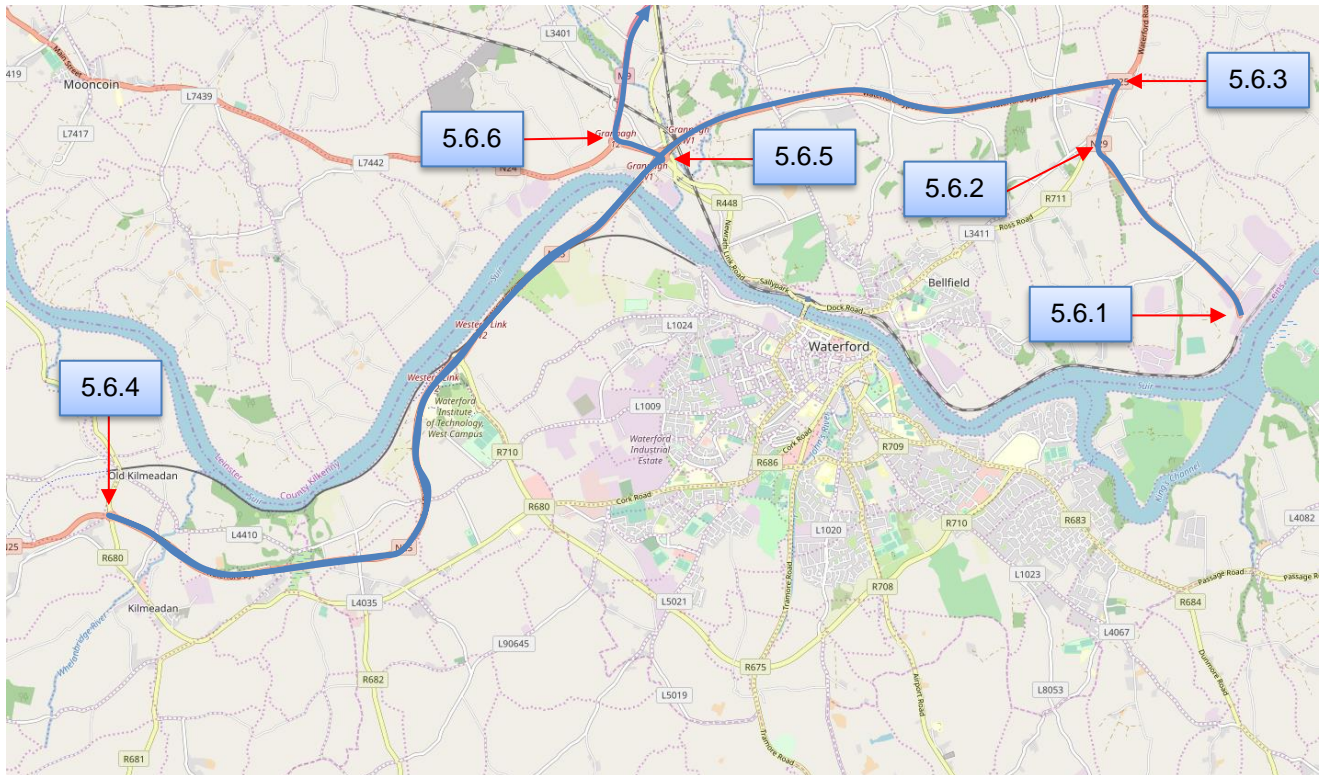
Minor Amendments – Modifications to Street Furniture, Pruning, Contraflow Manoeuvre, Manual Steering

No Amendments - Location is suitable as assessed during this survey

The categories have been colour coded for each report item as per the below key.

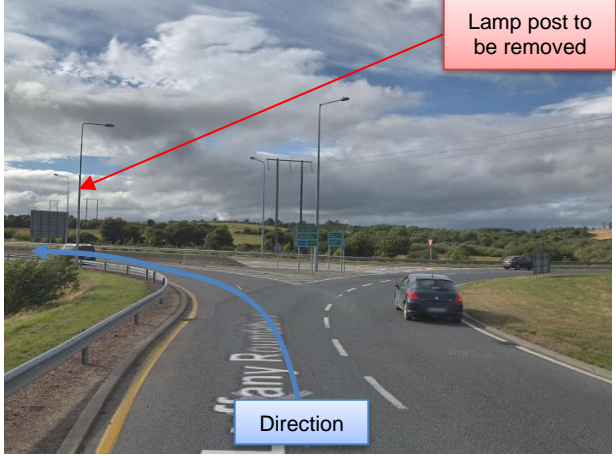
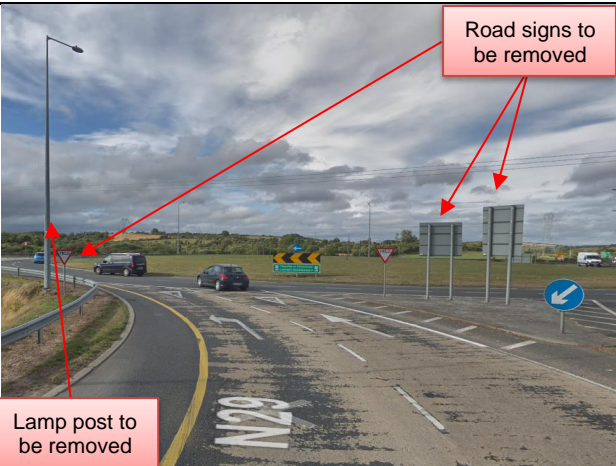

| KEY | | | |
|-----|------------------|--|------------------|
| | Major Amendments | | Minor Amendments |
| | No Amendments | | |

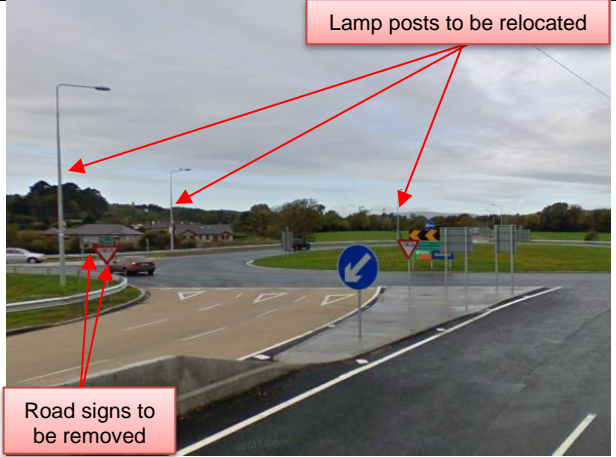
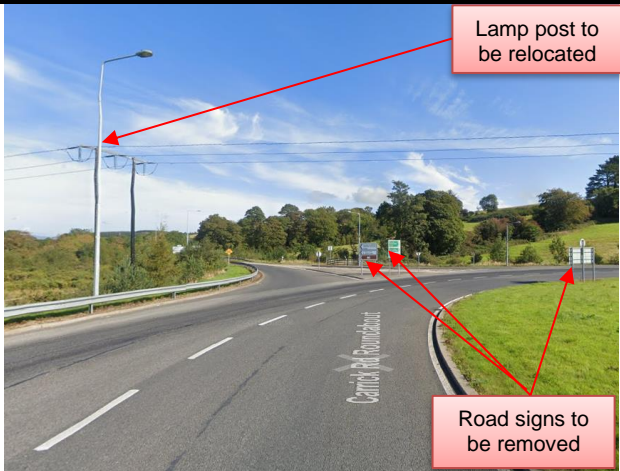
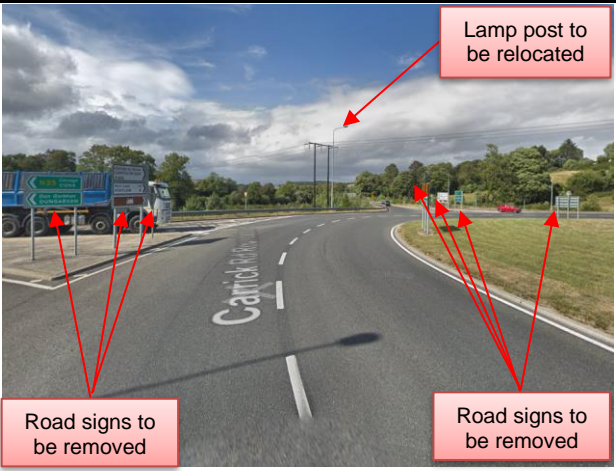

5.6. Map extract of survey locations


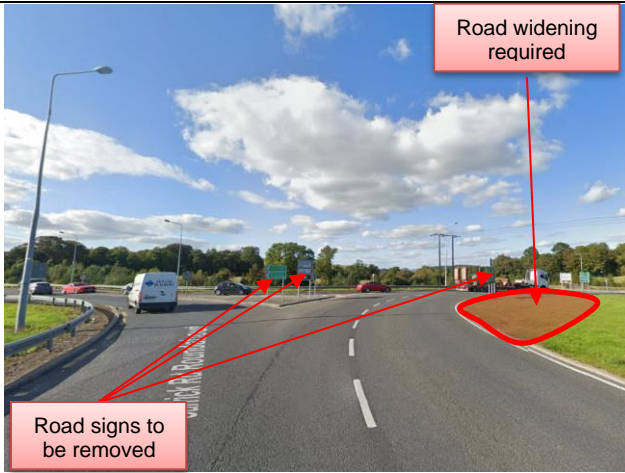
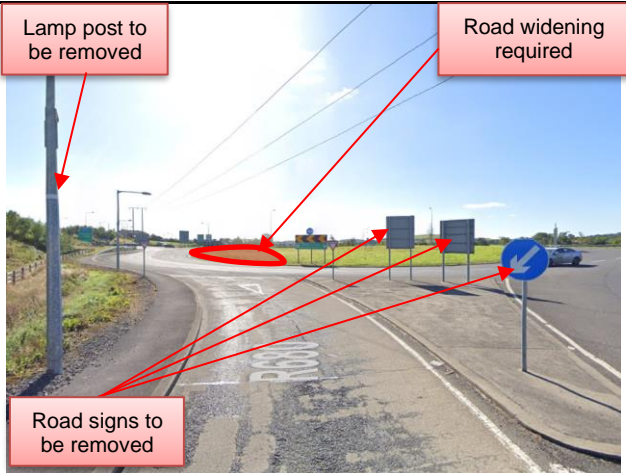



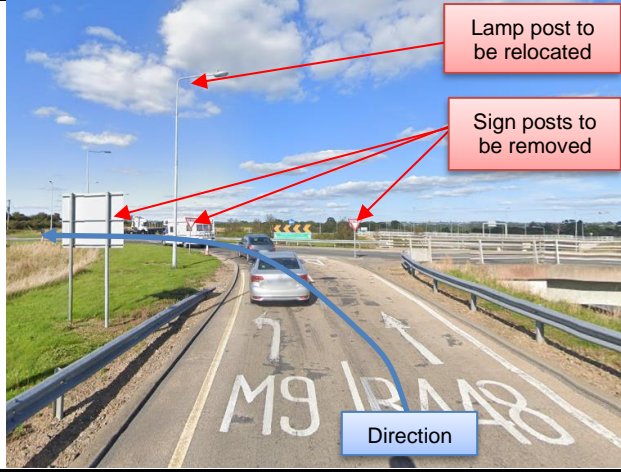
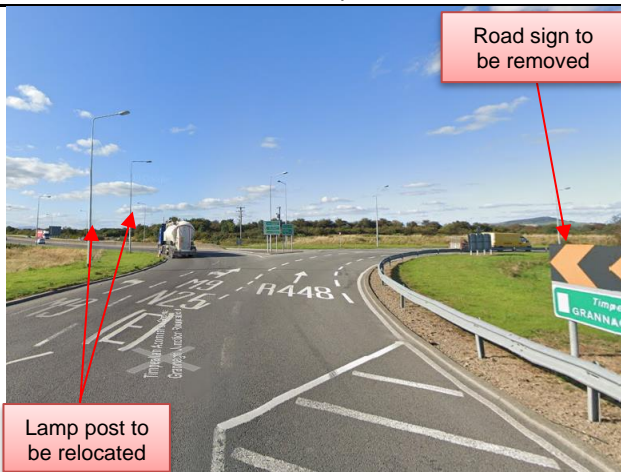

| | | | | |
|---|---------------------------|---|-------------------------------------|-----------------|
| ITEM NUMBER | 5.6.1 | LOCATION | EXIT PORT OF WATERFORD ONTO THE N29 | |
| DIRECTION | Continue at this location | | | |
| GRID REFERENCE | S 65780 12965 | | | |
| MODIFICATION AND DESCRIPTION | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that the fence and road sign on the offside is to be removed.</p> <p>Blade is required to contraflow the exit gate house to reduce the amount of modifications required.</p> <p>Road signs on nearside of railway crossing required to be removed to allow rear projection of blade to oversail.</p> <p>The barrier on the offside is to be removed.</p> <p>The area in the port is to be cleared of containers.</p> <p>Swept path analysis is recommended to confirm the above.</p> | |  <p style="text-align: center;">Direction</p> | | |
| | | Direction of N29 | | |
| | |  <p style="text-align: center;">Exit from the port</p> | | |
| | | Exit from the port | | |
|  <p style="text-align: center;">Aerial View of Location</p> | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | NO | TYPE | Choose an item. |
| RELATED DOCUMENT NUMBERS | | | | |

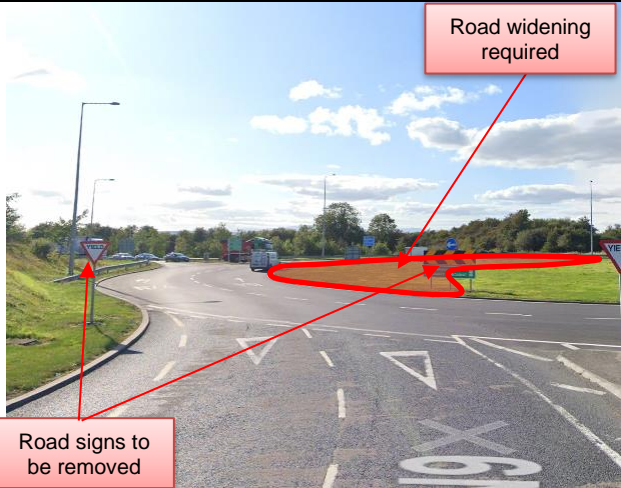
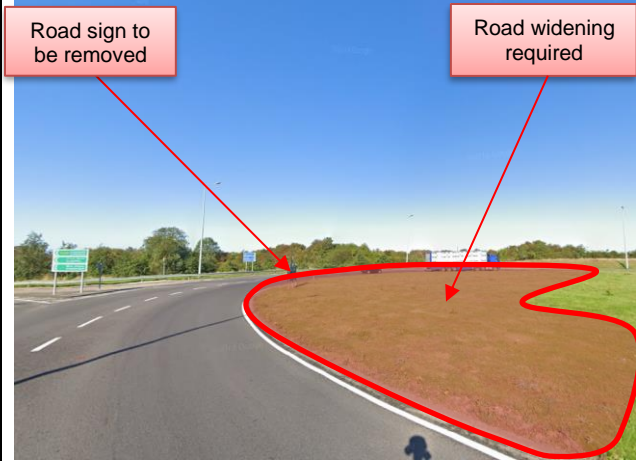


| | | | | | |
|--|---|----|---|---------------------|--|
| ITEM NUMBER | 5.6.2 | | LOCATION | N29/R711 ROUNDABOUT | |
| DIRECTION | Take the 3 rd exit at the roundabout | | | | |
| GRID REFERENCE | S 63927 15153 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that road widening is required on the central reservation to avoid the removal of lamp posts.</p> <p>Road signs on central reservation required to be removed.</p> <p>Rear projection of blade oversailing on coming carriageway.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>Road widening required</p> <p>View of roundabout</p> | | |
| | | |  <p>Road signs to be removed</p> <p>Road widening required</p> <p>View of roundabout</p> | | |
| | | |  <p>Aerial View of Location</p> | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | NO | TYPE | Choose an item. | |
| RELATED DOCUMENT NUMBERS | | | | | |

| | | | | | |
|--|---|----|---|--------------------|--|
| ITEM NUMBER | 5.6.3 | | LOCATION | N29/N25 ROUNDABOUT | |
| DIRECTION | Take the 1 st exit at the roundabout | | | | |
| GRID REFERENCE | S 64149 15861 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that the road sign and lamp posts on the nearside is to be removed.</p> <p>Road signs on the offside to be removed.</p> <p>Blade oversailing on coming carriageway.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>Lamp post to be removed</p> <p>Direction</p> | | |
| | | | <p>View of Direction</p>  <p>Road signs to be removed</p> <p>Lamp post to be removed</p> | | |
| | | | <p>View of roundabout</p>  <p>Aerial View of Location</p> | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | NO | TYPE | Choose an item. | |
| RELATED DOCUMENT NUMBERS | | | | | |

| | | | | | |
|--|-------------------------------|--|---|--------------------------------|-----------------|
| ITEM NUMBER | 5.6.4 | | LOCATION | N25/R680 ROUNDABOUT (OPTION 1) | |
| DIRECTION | Circumnavigate the roundabout | | | | |
| GRID REFERENCE | S 51422 10214 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that road signs on central reservation and splitter island are required to be removed.</p> <p>All Lamp posts on outside of roundabout required to be removed to allow rear projection of balde to oversail.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>View of roundabout</p> | | |
|  <p>View of roundabout</p> | | |  <p>View of roundabout</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | NO | TYPE | Choose an item. |
| RELATED DOCUMENT NUMBERS | | | | | |

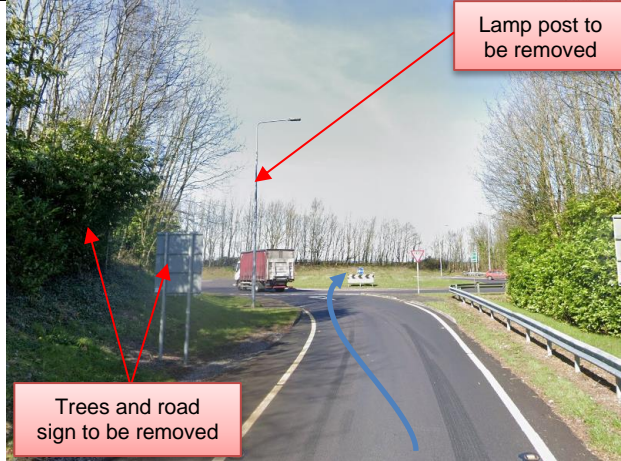
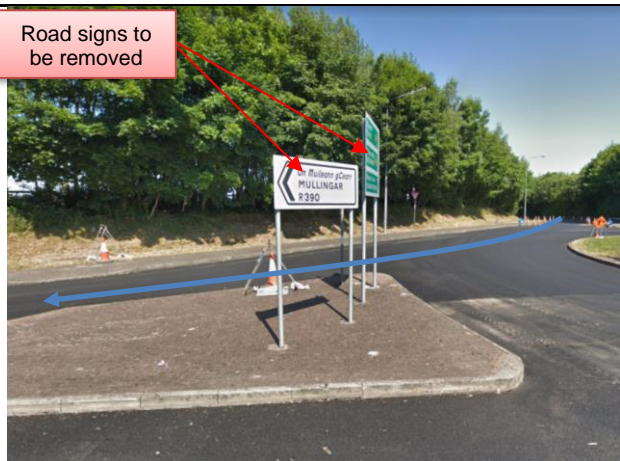
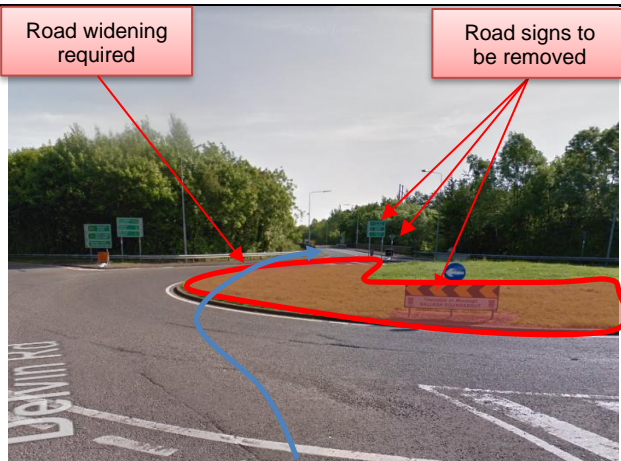

| | | | | | |
|--|-------------------------------|--|--|--------------------------------|-----------------|
| ITEM NUMBER | 5.6.4 | | LOCATION | N25/R680 ROUNDABOUT (OPTION 2) | |
| DIRECTION | Circumnavigate the roundabout | | | | |
| GRID REFERENCE | S 51422 10214 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that road widening is required on central reservation.</p> <p>A three-point turn manoeuvre is required to reduce the amount of street furniture required to be removed.</p> <p>Multiple road signs required to be removed on splitter islands and on central reservation.</p> <p>One lamp post is required to be removed on nearside of R680.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>Road widening required</p> <p>View of roundabout</p> | | |
|  <p>Road widening required</p> <p>Road signs to be removed</p> <p>View of roundabout</p> | | |  <p>Lamp post to be removed</p> <p>Road widening required</p> <p>Road signs to be removed</p> <p>View on R680</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | NO | TYPE | Choose an item. |
| RELATED DOCUMENT NUMBERS | | | | | |

| | | | | | |
|--|-----------------------|----|--|-------------------|--|
| ITEM NUMBER | 5.6.5 | | LOCATION | N25/N9 ROUNDABOUT | |
| DIRECTION | Turn left at junction | | | | |
| GRID REFERENCE | S 58290 14812 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that lamp posts to be relocated on the nearside.</p> <p>Sign posts to be removed on both sides of the road.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>View on slip road</p>  <p>View of N25</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | NO | TYPE | Choose an item. | |
| RELATED DOCUMENT NUMBERS | | | | | |

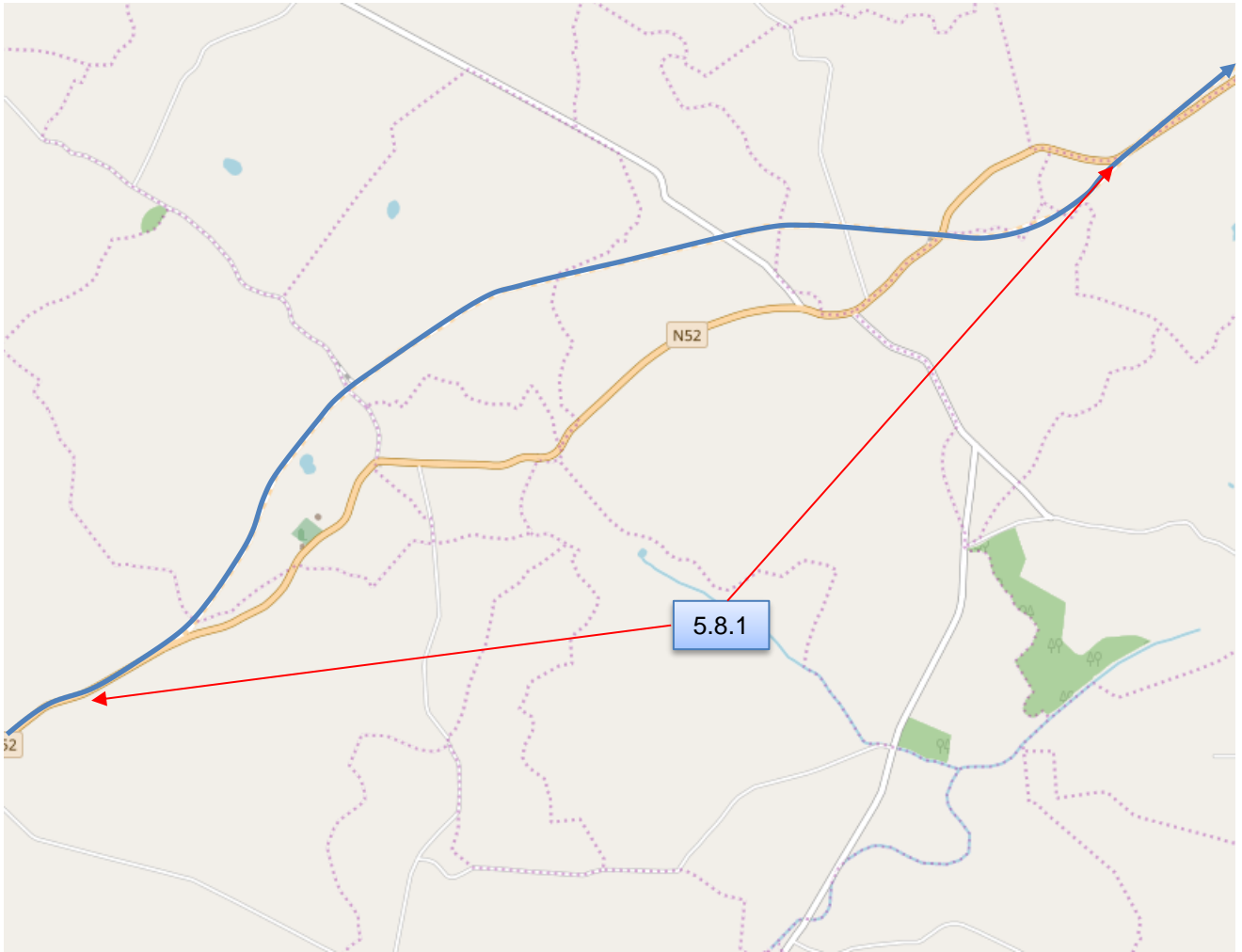
| | | | | | |
|--|---|--|--|------------------|-----------------|
| ITEM NUMBER | 5.6.6 | | LOCATION | N9/M9 ROUNDABOUT | |
| DIRECTION | Take the 2 nd exit at the roundabout | | | | |
| GRID REFERENCE | S 57784 15057 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Visual inspection indicates that lamp post on the nearside to be relocated.</p> <p>Sign posts to be removed on the nearside and road signs to be removed on the nearside and offside.</p> <p>Swept path analysis is recommended to confirm the above.</p> | | |  <p>View of entrance to roundabout</p> | | |
|  <p>View on roundabout</p> | | |  <p>View of exit of roundabout</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | NO | TYPE | Choose an item. |
| RELATED DOCUMENT NUMBERS | | | | | |


5.7. Map extract of survey locations



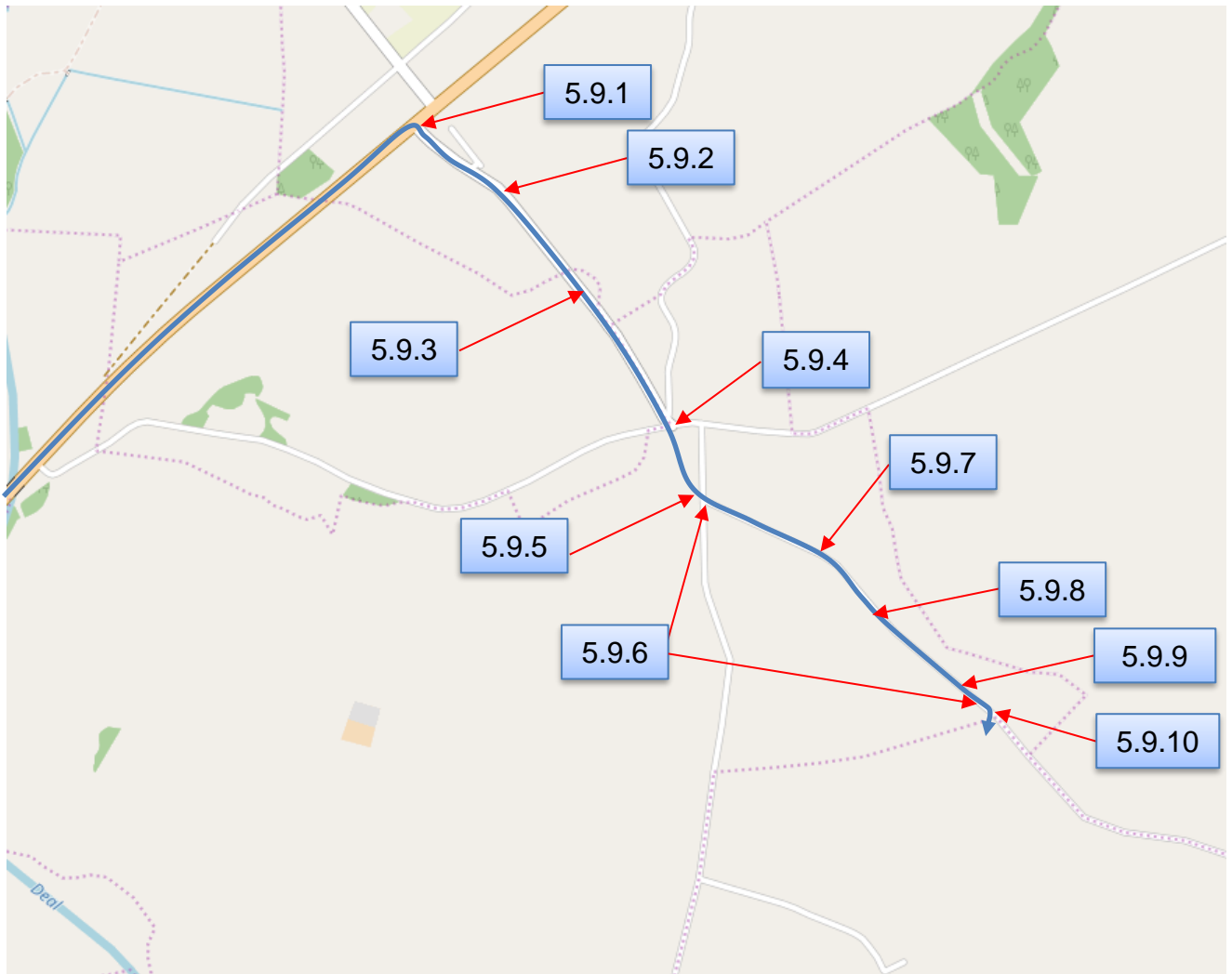
| | | | | | |
|--|---------------------------------|--|---|-------------------|---------------------|
| ITEM NUMBER | 5.7.1 | | LOCATION | N4/N52 ROUNDABOUT | |
| DIRECTION | Take 3rd Exit at the roundabout | | | | |
| GRID REFERENCE | N 45699 54063 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Loaded blades vehicle is to drive straight across at the roundabout onto on slip, then reverse back onto Delvin Road then drive straight over roundabout onto N52.</p> <p>Road widening is required on the central island of the roundabout.</p> <p>Road signs on central island of the roundabout and on Delvin Road splitter island.</p> <p>Lamp post on nearside of roundabout entry to be removed.</p> <p>Pruning of trees required at this location.</p> | | |  | | |
| | | | View of roundabout | | |
|  | | |  | | |
| View of splitter island | | | View of direction | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | Swept Path Analysis |
| RELATED DOCUMENT NUMBERS | | | 340497-100 | | |




5.8. Map extract of survey locations


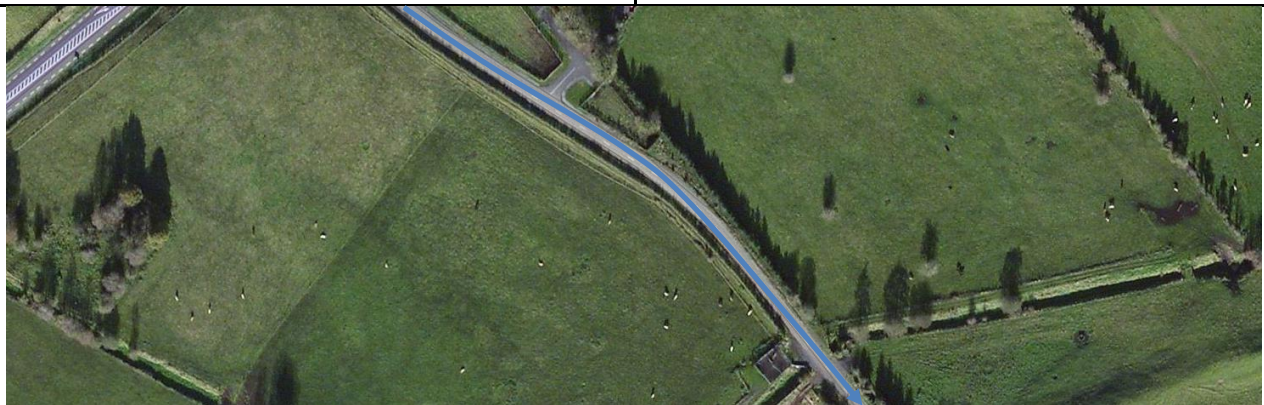


| | | | | | |
|---|---------------------------|--|------------------------|--------------------------|-----------------|
| ITEM NUMBER | 5.8.1 | | LOCATION | N52 TURIN CROSS NEW ROAD | |
| DIRECTION | Continue at this location | | | | |
| GRID REFERENCE | N 53129 57445 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
|  | | | | | |
| New bypass road being constructed on N52 | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | NO | TYPE | Choose an item. |
| RELATED DOCUMENT NUMBERS | | | | | |

5.9. Map extract of survey locations







| | | | | | |
|--|-----------------------------|--|--|--------------------|---------------------|
| ITEM NUMBER | 5.9.1 | | LOCATION | N52/L1504 JUNCTION | |
| DIRECTION | Turn right at this junction | | | | |
| GRID REFERENCE | N 58727 60984 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Swept path analysis indicates third party land required on the eastern side of the junction.</p> <p>Hedgerow to be removed to allow access to third party land.</p> <p>Road signs on nearside of the L1504 to be removed.</p> <p>Manual steering required to assist navigation.</p> | | |  <p>Hedgerow and road signs to be removed</p> <p>View of N52</p> | | |
| | | |  <p>Third party land required</p> <p>View of junction</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | Swept Path Analysis |
| RELATED DOCUMENT NUMBERS | | | 340497-110 | | |

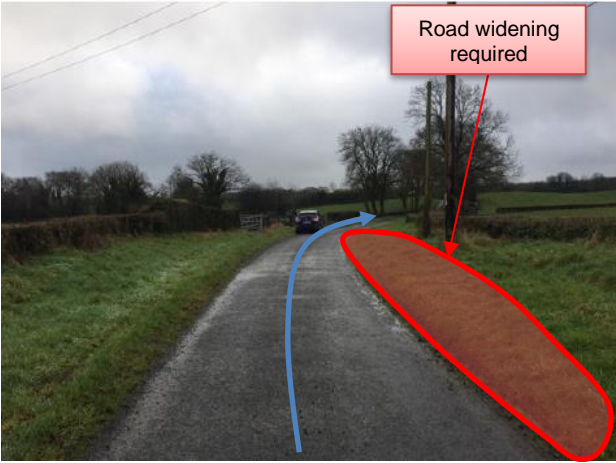

| | | | | | |
|---|------------------------------------|------------|--|---------------------|--|
| ITEM NUMBER | 5.9.2 | | LOCATION | RIGHT BEND ON L1504 | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 58894 60856 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Swept Path Analysis indicates a tree is to be removed on the nearside to allow the rear projection of the blade to oversail.</p> <p>Manual steering utilised to assist navigation.</p> | | |  | | |
| | | | View of N52 | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | YES | TYPE | Swept Path Analysis | |
| RELATED DOCUMENT NUMBERS | | 340497-120 | | | |



| | | | | | |
|---|------------------------------------|--|--|--------------------------|-------------------|
| ITEM NUMBER | 5.9.3 | | LOCATION | VERTICAL CRESTS ON L1504 | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59011 60714 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Vertical Analysis indicates that Loaded blade component will navigate this vertical crest with the neck of clamp raised.</p> <p>Once the rear projection of blade is on the vertical crest it rises to above 5m, overhead cables are to be checked at this location to avoid the projection colliding with them.</p> | | |  | | |
| | | | View of N52 | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | Vertical Analysis |
| RELATED DOCUMENT NUMBERS | | | 340497-125V/127V | | |



| | | | | | |
|---|------------------------------------|--|---|-----------------------------|---------------------|
| ITEM NUMBER | 5.9.4 | | LOCATION | L1504/DUMPER DEPOT JUNCTION | |
| DIRECTION | Continue straight at this junction | | | | |
| GRID REFERENCE | N 59242 60391 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Wall and trees on the offside of the access to the Dumper Yard to be removed to allow access.</p> <p>Ground within Dumper Yard to be assessed and, if required, upgraded to accept suitable axle loadings as per the Vestas specification.</p> | | |  <p>View of dumper depot entrance</p> | | |
| | | |  <p>View of direction</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | Swept Path Analysis |
| RELATED DOCUMENT NUMBERS | | | 340497-130 | | |



| | | | | | |
|--|------------------------------------|------------|---|------------------------------------|--|
| ITEM NUMBER | 5.9.5 | | LOCATION | DUMPER DEPOT/UNNAMED ROAD JUNCTION | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59321 60238 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>A New exit from the Dumper Yard is to be constructed to allow the loaded blade vehicles to navigate from the Dumper Yard onto the unnamed road.</p> <p>Trees will require removal to allow construction of the exit.</p> <p>Trees on the unnamed road will require pruning to create an envelope that meets the Vestas Specification.</p> | | |  <p>New exit to be constructed</p> <p>View of right hand bend</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | YES | TYPE | Swept Path Analysis | |
| RELATED DOCUMENT NUMBERS | | 340497-140 | | | |

| | | | | | |
|---|------------------------------------|--------------|---|-----------------------------|--|
| ITEM NUMBER | 5.9.6 | | LOCATION | FULL LENGTH OF UNNAMED ROAD | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59389 60202 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>The full length of the road from the Dumper Yard to site will require upgrading to the Vestas road specification.</p> <p>These modifications will include road widening to the minimum stated road widths for straight sections and for bends, as well as pruning of vegetation to ensure the stipulated clear envelope is available for the turbine components.</p> <p>Trees on the unnamed road will require pruning to create an envelope that meets the Vestas Specification.</p> <p>Road widening to take place on the southern (right hand side) of the road</p> | | |  <p>Road requires upgrading to Vestas specification</p> <p>View of vertical</p> | | |
|  <p>Aerial View of Location</p> | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | YES | TYPE | Swept Path Analysis | |
| RELATED DOCUMENT NUMBERS | | 340497-SPA X | | | |

| | | | | | |
|--|------------------------------------|--|--|----------------------------|-----|
| ITEM NUMBER | 5.9.7 | | LOCATION | RIGHT BEND ON UNNAMED ROAD | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59588 60109 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Road widening is required on the nearside of the road to allow the loaded blades to navigate this bend.</p> <p>Trees on the unnamed road will require pruning to create an envelope that meets the Vestas Specification.</p> <p>Road widening to take place on the southern (right hand side) of the road</p> | | |  <p>Road widening required</p> | | |
| | | | View of proposed site entrance | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | N/A |
| RELATED DOCUMENT NUMBERS | | | 340497-150 | | |

| | | | | | |
|---|------------------------------------|-------------|--|--------------------------------|--|
| ITEM NUMBER | 5.9.8 | | LOCATION | VERTICAL CREST ON UNNAMED ROAD | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59696 59983 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Vertical Analysis indicates that Loaded blade component will navigate this vertical crest with the neck of clamp raised.</p> <p>Once the rear projection of blade is on the vertical crest it rises to 6.81m, overhead cables are to be checked at this location to avoid the projection colliding with them.</p> <p>Trees overhanging the road will be required to be pruned to avoid damaging the blade.</p> | | |  | | |
| | | | View of proposed site entrance | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | YES | TYPE | Vertical Analysis | |
| RELATED DOCUMENT NUMBERS | | 340497-155V | | | |

| | | | | | |
|--|------------------------------------|--|--|----------------------------|---------------------|
| ITEM NUMBER | 5.9.9 | | LOCATION | RIGHT BEND ON UNNAMED ROAD | |
| DIRECTION | Continue straight at this location | | | | |
| GRID REFERENCE | N 59919 59790 | | | | |
| MODIFICATION AND DESCRIPTION | | | PHOTOGRAPH OF LOCATION | | |
| <p>Road widening required on the nearside of the bend to allow loaded blades to navigate.</p> <p>Road widening to take place on the southern (right hand side) of the road</p> | | |  | | |
| | | | View of proposed site entrance | | |
|  | | | | | |
| Aerial View of Location | | | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | | | YES | TYPE | Swept Path Analysis |
| RELATED DOCUMENT NUMBERS | | | 340497-160 | | |

| | | | |
|--|----------------------|--|------------------------|
| ITEM NUMBER | 5.9.10 | LOCATION | PROPOSED SITE ENTRANCE |
| DIRECTION | Turn right into site | | |
| GRID REFERENCE | N 59977 59722 | | |
| MODIFICATION AND DESCRIPTION | | PHOTOGRAPH OF LOCATION | |
| <p>Site entrance to be constructed in accordance with the Vestas specification.</p> <p>Swept path analysis is recommended to confirm the proposed design of the site entrance.</p> | |  <p>View of proposed site entrance</p> | |
|  <p>Aerial View of Location</p> | | | |
| FURTHER INVESTIGATION UNDERTAKEN? | NO | TYPE | N/A |
| RELATED DOCUMENT NUMBERS | N/A | | |

6. Important Notes

- 6.1. The recommendations in this report are made from a purely transport orientated view, and do not consider any political issues in terms of land ownership, or any other precincts raised that may otherwise be restrictive.
- 6.2. The information contained in this report is privileged and confidential and is for the exclusive use of the client nominated herein.
- 6.3. A Police escort or pilot car will be required in order to assist with traffic control for the entire route surveyed.
- 6.4. Permits will be required for the movement of all loads. These permits are at the discretion of the Local Authority (L.A). Therefore, approval of these permits by the L.A is a major consideration before any movements can be undertaken.
- 6.5. It is recommended to have adequate warning signs implemented to warn other road users at critical points.
- 6.6. All hedges, shrubs, bushes, trees and overhanging branches along the nominated routes must be trimmed to allow a suitable minimum envelope.
- 6.7. All street furniture, signage etc. along the nominated route must be removed to allow a suitable minimum envelope on the road. Other specific street furniture has been nominated in this report to facilitate over-sailed and swept areas.
- 6.8. The turbine manufactures transport guidance notes will state the minimum road width required for the transport of components. Any roads below this stated width will require widening to reflect this.
- 6.9. In areas where land take or road widening is required, the road construction must be formed to the minimum specification suitable for the transfer of axle loadings up to 16Te, the road construction must be formed to the minimum specification contained in the selected manufacturers transport and erection guidance notes.
- 6.10. Overhead utility cables have not been measured as part of this survey and correspondence with the utility companies regarding cable heights and possible remedial solutions should be undertaken prior to any delivery.
- 6.11. It should be noted that all assessments and inspections have been done so with the intention of producing information to highlight anticipated problems. This includes highlighting of potential land take requirements, possible street furniture implications, and highway alignment issues.
- 6.12. Land take is usually referred to when land is required from private land owners; road widening is usually referred to when land is required within highways boundaries. However, the details of the nominated land take and road widening contained in this report are highlighting the expected areas of concern, and can only be confirmed by swept path analysis. The boundaries between private land and highways property are assumed by using obvious demarcation such as fence lines/hedges etc. It should be noted that actual boundaries between highways and private land are not substantiated in this report and can only be authenticated by carrying out land searches.
- 6.13. All inspections and assessments are made for the road movement of loaded trailer equipment carrying specific storage tank components. These dimensions are based on the turning circles and specification of Collett & Sons trailer equipment.
- 6.14. All route inspections and assessments, and subsequent conclusions and recommendations are deemed accurate by Collett & Sons Limited at the date that this report is created. We cannot be held responsible for the development of future road schemes or alterations to the routes surveyed that may leave this report inaccurate.
- 6.15. This report is based solely on a preliminary visual inspection. Nothing in this report shall be construed in any way as committing Collett & Sons Limited to being able to deliver to site using this route before further structural analysis has been undertaken, and any accommodation/remedial works undertaken which are to Collett & Sons satisfaction.