

# Route Survey Report



Wind Farm Project Name: **Wind farm name**

Project reference number: **123456**

Survey carried out by: **Name of Contractor**

On behalf of: **Client name**

Date of Report; **Date of report production**

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## Report Details

### Report for

Name of person  
Client Name and Address

### Attendees of Survey

Name of Person carrying our survey  
Name of any other person in attendance

### Time / Date of Survey:

Date & Time here

### General weather conditions:

General description of state of weather

### Issued by

Name of person creating/issuing the report

### Approved by

Name of person approving the report  
Name of employer and contact details

### Document Revisions

| No | Date | Details |
|----|------|---------|
|    |      |         |
|    |      |         |

## Non-Disclosure Notice

The methodology contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of etc. etc....

## Third Party Disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by etc. etc....

## 1. Executive Summary

- This report comprises of a study of the road routes as detailed here in for the road transport of etc. etc.
- One route has been assessed from abc to the proposed site location xyz;
- Other executive summary details etc.

### *Third party land*

- Third party land has been identified by the assessment located at xxx, other than the land required for the site entrance etc.

### *Road widening*

- Road widening within highways owned land is required at
- Location A
- Location B
- Location C

### **Modifications to street furniture**

- Street furniture removal will be required at a number of locations
- Location 1.
- Location 2
- Location 3 etc.

### **Manual Steering**

- Manual steering will be required at the following locations
- Location A
- Location B
- Location C etc..

### **Vertical Alignment**

- Vertical alignment and ground clearance is an issue at points
- 1A
- 2B
- 3C etc

### **Structural Assessment**

- Outline details of the relevant structures consultation and the details of their response here.
- Response 1
- Response 2
- Response 3

### **Other areas of note**

- Tree pruning of branches at locations and other issues are noted here.
- Area X
- Area Y
- Area Z

## **2. Introduction**

**2.1** Details of the survey and rationale

**2.2**

## **3. Candidate Turbine Components**

- Details of the candidate turbine selected
- Who supplied the turbine details.

#### 4. Abnormal Indivisible Load Profiles

The turbine 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 2.

|                        | Dwg ref                                      |
|------------------------|--|
| Blade                  | 1 off per load = 12 loads for 4 off Turbines |
|                        |  |
|                        | Loaded vehicle dimensions                    |
| Overall vehicle Length | 42.55m                                       |
| Rigid Length           | 38.93m                                       |
| Width                  | 3.04m  |
| Height                 | 4.39m  |
| Gross Vehicle Weight   | 34.00Te                                      |
| Maximum axle weight    | 7.00Te                                       |

|                        | Dwg ref                                     |
|------------------------|---|
| Bottom Tower           | 1 off per load = 4 loads for 4 off Turbines |
|                        |   |
|                        | Loaded vehicle dimensions                   |
| Overall vehicle Length | 42.55m                                      |
| Rigid Length           | 38.93m                                      |
| Width                  | 3.04m                                       |
| Height                 | 4.39m                                       |
| Gross Vehicle Weight   | 34.00Te                                     |
| Maximum axle weight    | 7.00Te                                      |

Etc.

#### 5. Requirements for the movement of Abnormal Indivisible Loads

- An abnormal load is defined as below including the actions required for permitting and notice.
- Details here

##### **Turbine Requirements**

- For the specified turbine, the following actions will be required for each turbine delivery vehicle.
- Details here

## 6. Route Assessment Overview

This section of the report illustrates the routes assessed for the delivery of all wind turbine components from ABC to XYZ.

### Route A

| Start Location  | ABC | Distance of Route | Km  | Miles |
|---|-----|-------------------|-----|-------|
| Via:  |     |                   | 100 | 60    |
| <ul style="list-style-type: none"><li>Exit Harbour and turn right onto Highway number 123</li><li>etc</li><li>Continue on unclassified road to proposed access route at approx. OSi Grid refs: 123456, 654321</li></ul> |     |                   |     |       |

### Route B

| Start Location  | 123 | Distance of Route | Km  | Miles |
|---|-----|-------------------|-----|-------|
| Via:  |     |                   | 110 | 60    |
| <ul style="list-style-type: none"><li>Exit Harbour and turn right onto Highway number 123</li><li>etc</li><li>Continue on unclassified road to proposed access route at approx. OSi Grid refs: 123456, 654321</li></ul> |     |                   |     |       |

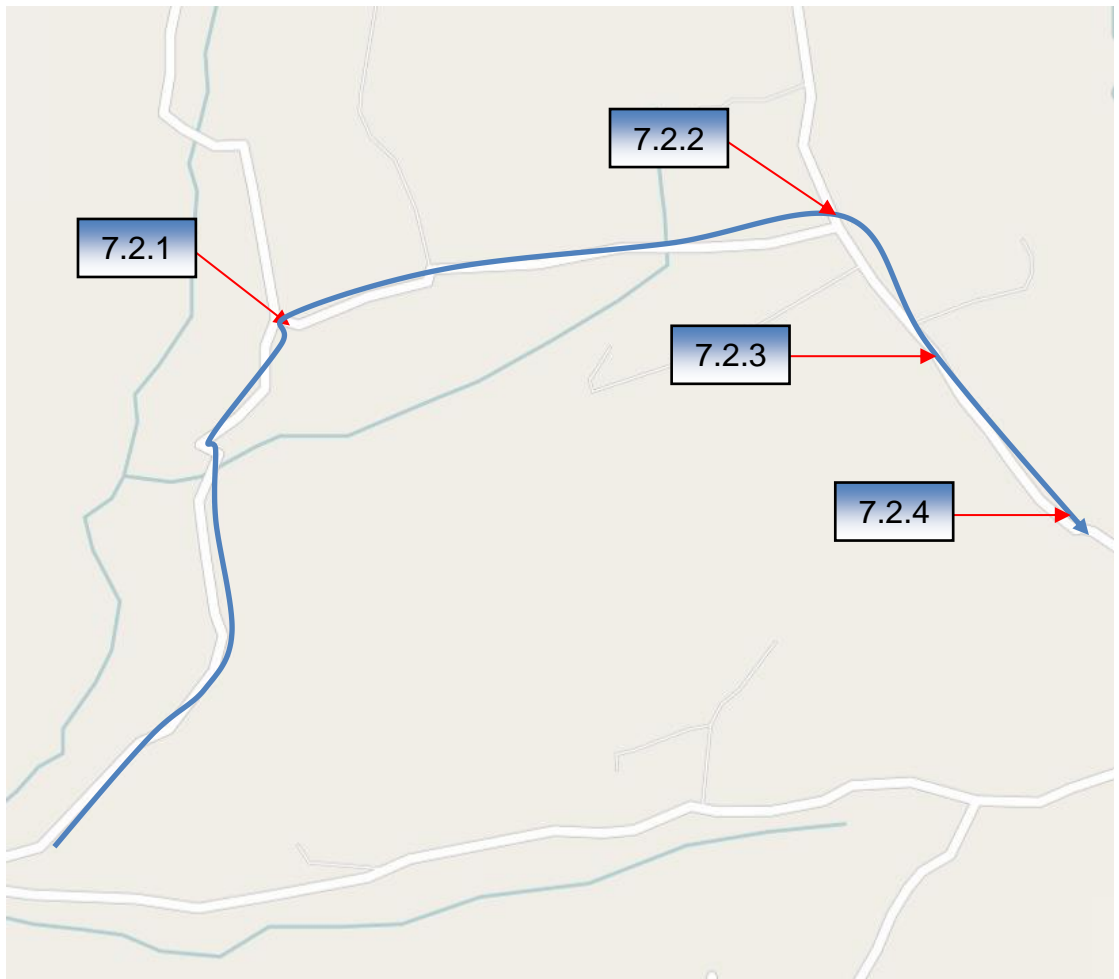
### Map Overview

Insert view of map and route to be taken

## 7. Route Assessment

|   |     |                   |     |       |
|---|-----|-------------------|-----|-------|
| Start Location  | ABC | Distance of Route | Km  | Miles |
| Via:  |     |                   | 110 | 60    |
| <ul style="list-style-type: none"><li>Exit Harbour and turn right onto Highway number 123</li><li>etc</li><li>Continue on unclassified road to proposed access route at approx. OSi Grid refs: 123456, 654321</li><li></li><li></li></ul> |     |                   |     |       |

### Map extract of survey locations



|                                      |                 |                               |                     |  |
|--------------------------------------|-----------------|-------------------------------|---------------------|--|
| ITEM NUMBER                          | 7.1.1           | LOCATION                      | Intersection of 987 |  |
| GRID REFERENCE                       | N123456, 654321 |                               |                     |  |
| DESCRIPTION                          |                 | PHOTOGRAPH OF LOCATION        |                     |  |
| Visual inspection indicates that etc |                 | Insert photograph of location |                     |  |
| FURTHER INVESTIGATION RECOMMENDED    | YES             | TYPE                          | Swept Path Analysis |  |

|                                      |                 |                               |                 |  |
|--------------------------------------|-----------------|-------------------------------|-----------------|--|
| ITEM NUMBER                          | 7.1.2           | LOCATION                      | Junction of 654 |  |
| GRID REFERENCE                       | N123456, 654321 |                               |                 |  |
| DESCRIPTION                          |                 | PHOTOGRAPH OF LOCATION        |                 |  |
| Visual inspection indicates that etc |                 | Insert photograph of location |                 |  |
| FURTHER INVESTIGATION RECOMMENDED    | NO              | TYPE                          |                 |  |



## 8. Logistics assessment

Vehicle timing, distance calculations, stop over points, EC Drive hours regs, Vessel discharge, Port operations and vehicle loading and offloading, maps and routes, site restrictions and operational timing should be documented here.

Production of control documents and analysis.

Eg Delivery schedule, components log/condition forms, commentary on overnight parking routines, Police/Pilot car/permit availability

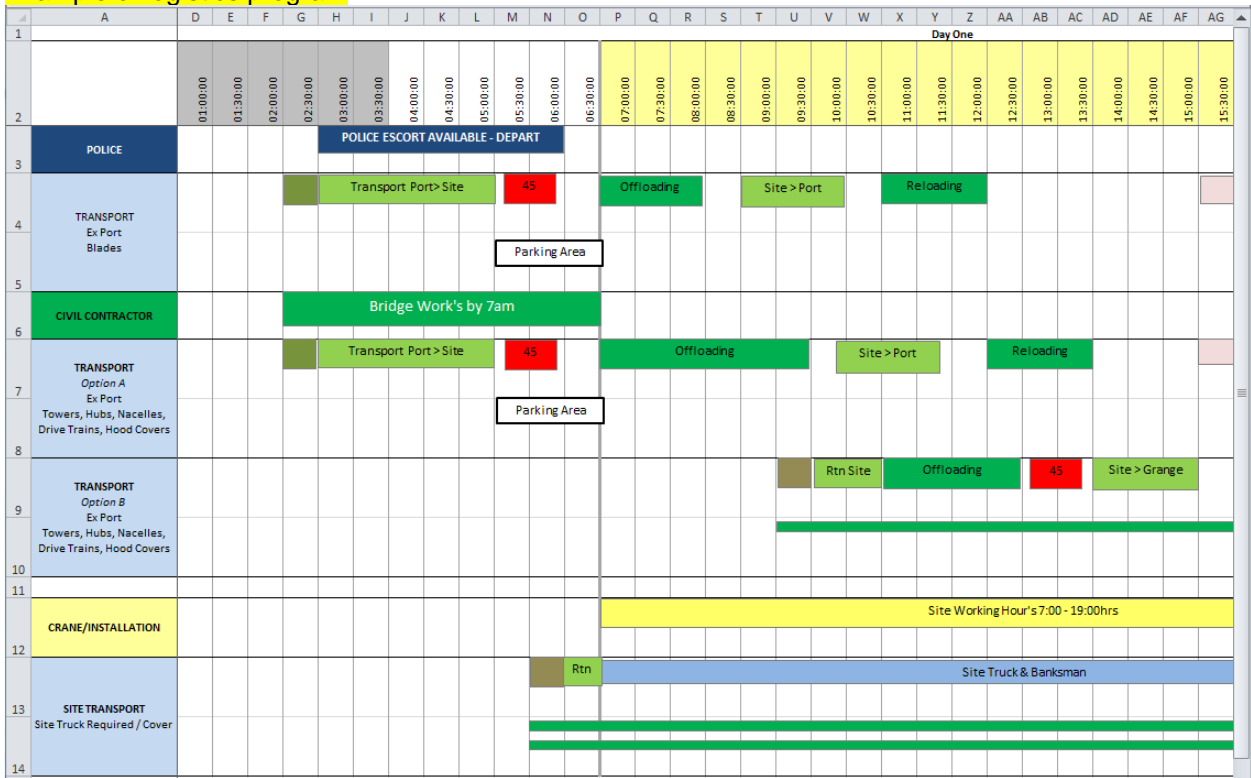
Example of Component control document

| Version         |     | NO WIND (Will change with wind delays) |      |    |    |                  |      |             |             |                |                     |        |       | Double Handle Top Off |            |        |       |                |             |    |    |            |          |                      |            | 10 16 10 0 0 0 0 0 0 0 0 0 |                 |           |             |                       |     |       |          |      |       |   |  |
|-----------------|-----|--|------|----|----|------------------|------|-------------|-------------|----------------|---------------------|--------|-------|-----------------------|------------|--------|-------|----------------|-------------|----|----|------------|----------|----------------------|------------|----------------------------|-----------------|-----------|-------------|-----------------------|-----|-------|----------|------|-------|---|--|
|                 |     | Port 1 Deliveies                       |      |    |    | Port 2 Deliveies |      |             |             | C&I Plan       |                     |        |       | Summary               |            |        |       | Comments       |             |    |    |            |          |                      |            |                            |                 |           |             |                       |     |       |          |      |       |   |  |
| Offload at Site |     | Tower to site                          |      |    |    | hub/nac          |      |             |             | Port Departure |                     |        |       | Blades                |            |        |       | Port Departure |             |    |    | Crane Plan |          |                      |            | Trucks on the road         |                 |           |             | Summary               |     |       |          |      |       |   |  |
| Date            | Day | WK                                     | Base | LM | UM | Top              | Ship | hub to site | nac to site | Hood to Site   | Drive Train to Site | Date   | Time  | Ship                  | Port Stock | Site   | Date  | Time           | pre-install | C2 | C1 | Blades     | Adaptors | Hub & nacelle & hood | Base Tower | Low Mid Tower              | Upper Mid Tower | Top Tower | Drive Train | Grangemouth (exc. DT) | KGV | Total | Comments |      |       |   |  |
| 02-Jul          | Mon | 27                                     |      |    |    |                  | 13   |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 03-Jul          | Tue | 27                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 04-Jul          | Wed | 27                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 05-Jul          | Thu | 27                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 06-Jul          | Fri | 27                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 07-Jul          | Sat | 27                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 08-Jul          | Sun | 28                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 09-Jul          | Mon | 28                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 10-Jul          | Tue | 28                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 11-Jul          | Wed | 28                                     |      |    |    |                  |      | 21          | 21          | 21             | 21                  | 10-Jul | 21:00 | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 3          | 0                          | 0               | 0         | 0           | 1                     | 3   | 0     | OK       | 4    | Con   |   |  |
| 12-Jul          | Thu | 28                                     |      |    |    |                  |      | 26          | 26          | 26             | 26                  | 11-Jul | 21:00 | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 3          | 0                          | 0               | 0         | 0           | 1                     | 3   | 0     | OK       | 4    |       |   |  |
| 13-Jul          | Fri | 28                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 14-Jul          | Sat | 28                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 15-Jul          | Sun | 29                                     |      |    |    |                  |      |             |             |                |                     |        |       | 9                     | 9          |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | 0    | OK    | 0 |  |
| 16-Jul          | Mon | 29                                     |      |    |    |                  |      | 15          | 15          | 15             | 15                  | 15-Jul | 21:00 | 8                     | 20         | 16-Jul | 03:00 |                |             |    |    |            | 3        | 0                    | 3          | 0                          | 0               | 0         | 0           | 1                     | 3   | 3     | OK       | 7    | At ri |   |  |
| 17-Jul          | Tue | 29                                     | 15   | 15 | 15 |                  |      |             |             |                |                     | 16-Jul | 21:00 | 8                     |            |        |       |                |             |    |    |            | 0        | 0                    | 1          | 1                          | 1               | 0         | 0           | 0                     | 3   | 0     | OK       | 3    |       |   |  |
| 18-Jul          | Wed | 29                                     |      |    |    |                  |      | 25          | 25          | 25             | 25                  | 17-Jul | 21:00 | 7                     | 14         | 17-Jul | 03:00 | 15             |             |    |    |            | 3        | 0                    | 3          | 0                          | 0               | 0         | 1           | 3                     | 3   | OK    | 7        | Blak |       |   |  |
| 19-Jul          | Thu | 29                                     | 20   | 20 | 20 |                  |      |             |             |                |                     | 18-Jul | 21:00 | 6                     | 13         | 19-Jul | 03:00 | 20             |             |    |    |            | 3        | 0                    | 1          | 1                          | 1               | 0         | 0           | 3                     | 3   | OK    | 6        |      |       |   |  |
| 20-Jul          | Fri | 29                                     |      |    |    |                  |      | 14          | 14          | 14             | 14                  | 19-Jul | 21:00 | 9                     | 15         |        |       |                |             |    |    |            | 0        | 0                    | 3          | 0                          | 0               | 0         | 1           | 3                     | 0   | OK    | 4        |      |       |   |  |
| 21-Jul          | Sat | 29                                     | 14   | 14 | 14 |                  |      |             |             |                |                     | 20-Jul | 21:00 | 14                    | 26         | 21-Jul | 03:00 | 14             |             |    |    |            | 3        | 0                    | 0          | 1                          | 1               | 0         | 0           | 3                     | 3   | OK    | 6        |      |       |   |  |
| 22-Jul          | Sun | 30                                     |      |    |    |                  |      |             |             |                |                     |        |       | 14                    |            |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 0               | 0         | 0           | 0                     | 0   | 0     | 0        | OK   | 0     |   |  |
| 23-Jul          | Mon | 30                                     |      |    |    |                  |      | 13          | 13          | 13             | 13                  | 22-Jul | 21:00 | 14                    |            |        |       |                |             |    |    |            | 0        | 0                    | 3          | 0                          | 0               | 0         | 1           | 3                     | 0   | OK    | 4        |      |       |   |  |
| 24-Jul          | Tue | 30                                     | 13   | 13 | 13 |                  |      |             |             |                |                     | 23-Jul | 21:00 | 13                    | 25         | 24-Jul | 03:00 | 13             |             |    |    |            | 3        | 0                    | 1          | 1                          | 1               | 0         | 0           | 3                     | 3   | OK    | 6        |      |       |   |  |
| 25-Jul          | Wed | 30                                     | 21   |    |    |                  |      | 22          | 22          |                | 22                  | 24-Jul | 21:00 | 13                    |            |        |       |                |             |    |    |            | 0        | 0                    | 2          | 1                          | 0               | 0         | 1           | 3                     | 0   | OK    | 4        |      |       |   |  |
| 26-Jul          | Thu | 30                                     | 22   | 22 |    |                  |      |             |             | 22             |                     | 25-Jul | 21:00 | 12                    | 6          | 26-Jul | 03:00 | 22             | 21          |    |    |            | 3        | 0                    | 1          | 1                          | 1               | 0         | 0           | 3                     | 3   | OK    | 6        |      |       |   |  |
| 27-Jul          | Fri | 30                                     |      |    |    |                  |      | 21          | 21          | 21             |                     | 26-Jul | 21:00 | 12                    |            |        |       |                |             |    |    |            | 0        | 0                    | 0          | 0                          | 1               | 1         | 1           | 0                     | 3   | 0     | OK       | 3    |       |   |  |

Example of Driving time analysis

|    | A                     | B                   | C              | D       | E       | F       | G            | H            | I      | J         | K          |
|----|-----------------------|---------------------|----------------|---------|---------|---------|--------------|--------------|--------|-----------|------------|
| 1  | Driving Time analysis |                     |                |         |         |         |              |              |        |           |            |
| 2  | Component             | Vehicle             | Distance Miles | Alert 1 | Alert 2 | Alert 3 | Total Alerts | Driving Time | Breaks | Overnight | Total Time |
| 3  | Blade 1               | 6x4 3axle SWC       | 185            | 7.4.2   |         |         | 04:00        | 03:35        | 01:30  | 0         | 9.05       |
| 4  | Blade 2               | 6x4 3axle SWC       | 185            | 7.4.2   |         |         | 04:00        | 03:35        | 01:30  | 0         | 9.05       |
| 5  | Blade 3               | 6x4 3axle SWC       | 185            | 7.4.2   |         |         | 04:00        | 03:35        | 01:30  | 0         | 9.05       |
| 6  | Tower Base            | 8x4 3+5 Clamp       | 355            | 7.2.8   | 7.2.14  | 7.2.23  | 12:45        | 14:15        | 11:30  | 1         | 48.30      |
| 7  | Tower Mid             | 8x4 2+4 Clamp       | 355            | 7.2.8   | 7.2.14  |         | 09:30        | 14:15        | 11:30  | 1         | 45.15      |
| 8  | Tower Top             | 6x4 4axle Stepframe | 355            |         |         |         | 00:00        | 09:40        | 01:30  | 1         | 21.10      |
| 9  | Hub                   | 6x2 3axle Stepframe | 260            |         |         |         | 00:00        | 08:45        | 00:45  | 0         | 9.15       |
| 10 | Nacelle               | 8x4 7axle Stepframe | 260            | 7.1.15  |         |         | 07:00        | 11:20        | 01:30  | 1         | 29.50      |
| 11 | Drive Train           | 6x4 5axle Stepframe | 260            | 7.1.15  |         |         | 07:00        | 11:20        | 01:30  | 1         | 29.50      |

**Example of logistics program**



**9. Important Notes**

- The recommendations in this report are etc.
- A Police escort or pilot car will be required for xxx in order to assist with traffic control for the entire route surveyed.
- Permits will be required for the movement of all of the components. These permits are xxx and a major consideration before any movements can be undertaken.
- It is recommended to have adequate warning signs implemented to warn other road users at critical points etc.
- Where pinch points have been highlighted, the manual steering of Trailer equipment should be kept to a minimum due to risk of accidents, fatigue of steersman and exposure of personnel on live highway situations etc.
- All hedges, shrubs, bushes, trees and overhanging branches along the nominated routes must be trimmed to allow a minimum envelope on the road as specified in the best practice guidelines.
- All street furniture, signage etc. along the nominated route must be removed to allow a minimum envelope on the road as specified in manufacturer's specification. Other specific street furniture has been nominated in this report to facilitate over-sailed and swept path areas etc
- Minimum road widths required for the transport of components are defined by the manufacturer/ in the best practice guidelines document etc.
- 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 xxx etc.

- The maximum gross vehicle weight anticipated for a 50m diameter rotor turbine could be xxx. Therefore, a full Route Access Survey and bridge assessment study is recommended
- A test drive of the route with an empty trailer, from ABC point of this route to XYZ is recommended. This is in order to verify the facts contained in this report and proof test the requirements for road alterations horizontally and vertically.
- 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 etc.
- The boundaries between private land and highways property are assumed by using obvious demarcation such as fence lines/hedges etc.