FEASIBILITY

from

TRANZCARR
HEAVY HAULAGE LTD

covering

LAND TRANSPORTATION

of

WIND TURBINE EQUIPMENT

PORT OF MOUNT MAUNGANUI TO KAIMAI RANGE SITE

for

KAIMAI WIND ENERGY LTD

June 2018
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1. Purpose and Scope

1.1. Purpose

The purpose of this report is to outline the route options, procedures, plans, and contingencies in place for the transport of several Wind Turbine components from the Port area at Mount Maunganui, to a new proposed site north of Te Aroha in the Waikato region.

Tranzcarr Heavy Haulage Ltd from Manukau has been commissioned by Kaimai Wind Energy Ltd to examine the route from Port to site.

1.2. Scope of Work

This plan will cover the transport of the Wind Turbine parts. The proposed turbine used in this report is a model is optional with three suppliers being considered. The blade length reviewed for this report (May 2018) is up to 78 metres long.

Tranzcarr Heavy Haulage has been involved in several wind farm projects throughout New Zealand since 2004 and has a vast degree of knowledge in transporting the heavy and over-dimensional equipment required to be transported.

The Civil design work done to date for the project looks reasonable and practical, however that view is subject to detailed design following confirmation of final turbine selection and the trailer design.

In preparation of this report Tranzcarr has considered and incorporated the following:

- Memorandum-Kaimai Turbine Dimensions-rev4, 21 May 2018 Kaimai Windfarm Ltd
- Civil Engineering Drawings-Resource Consent Issue; Rev A; Tektus Consultants June 2018
- Civil Engineering Peer Review; May 2018 Tiaki Consultants.

2. Transportation of Components

2.1. Loads and Destination

The Turbine units will be shipped into the Mount Port area and offloaded from ship to storage on the Port. From there, they will be loaded onto trailers and transported to the site entrance on Rawhiti Rd, North of Te Aroha.

The typical turbine will comprise several different components, with the largest loads being blades, tower sections and Nacelle units. In addition, numerous smaller loads including shipping containers of ancillary plant, will be transported to the site.

This report has focused on two main concerns regards the transport.

- The blade sections measuring 78.0 metres in length
- The heaviest of the loads, either Nacelle or Tower up to 90 tonne in weight
2.2. Route from Port to Site – Blade Sections

The Route from the Port storage out of the Mount/Tauranga region and over State Highway 29 (Kaimai Range) differs from the heavy loads to lighter Blade Sections.

There are no over-height loads being transported that should require any additional escort from the Lines Companies. Final details of each load are still to be provided and until dimensions are known, the likelihood of over-height loads still exists.

![Figure 1 Route from Mount Wharf to site north of Te Aroha for Blades](image-url)
The length of the blades at 78.0 metres makes them the most difficult of the loads to be hauled to site. The ability to manoeuvre the long load with large overhang has meant a variation to the normal route. At present, there are no trailers in New Zealand capable of transporting such a long blade load and consideration for supply of units similar to those used in Europe and other parts of the world, needs to be made.

Included in this report are details and drawings from 2 major trailer suppliers out of Europe who specialise in trailers for Windfarm components. These types of trailers could be used in New Zealand, Tranzcarr Heavy Haulage/Machinery Movers currently operate ex there Auckland base one Nooteboom unit extendible to 49 metres.

A more detailed study of the route with proper computerised tracking of proposed trailers will need to be undertaken to confirm access and modifications.

Discussions have not been held with the Local Road Authority at this stage, however the intention would be to get approval to haul these blade loads via Tower Rd once they enter the township of Matamata.

The route from State Highway 24 Into Tower Road - Manawaru Road-Alexandria Road - Stanley Road -State Highway 26 to Te Aroha - Lipsey Street - Burgess Street - State Highway 26 to Rawhiti Road and site entrance.

**Route Distance in km from Port to site Gate**

<table>
<thead>
<tr>
<th>Distance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0km</td>
<td>Port exit</td>
</tr>
<tr>
<td>1km</td>
<td>Right turn onto Hewletts Road and across Harbour Bridge</td>
</tr>
<tr>
<td>4.1km</td>
<td>Takitimu Drive-Elizabeth Street Roundabout - Civil works required</td>
</tr>
<tr>
<td>4.9km</td>
<td>Overhead Bridge with 5.1metres clearance</td>
</tr>
<tr>
<td>6.6km</td>
<td>Toll Road</td>
</tr>
<tr>
<td>11.7km</td>
<td>SH 29 Roundabout</td>
</tr>
<tr>
<td>34.7km</td>
<td>Summit Kaimai Range SH 29</td>
</tr>
<tr>
<td>46.5km</td>
<td>SH 24 Intersection - take wrong side Inside corner turning right</td>
</tr>
<tr>
<td>52.4km</td>
<td>Turn right into Tower Road Matamata - Inside Pole/ sign will need to be removed</td>
</tr>
<tr>
<td>69km</td>
<td>Manawaru Road</td>
</tr>
<tr>
<td>81.5km</td>
<td>Alexandria Road - right turn on wrong side of road</td>
</tr>
<tr>
<td>88.5km</td>
<td>SH 26 - right turn take wrong side into Te Aroha Deviation through Te Aroha via Lipsey Street and Burgess Street</td>
</tr>
<tr>
<td>94.5km</td>
<td>Rawhiti Road entrance - civil works required for right turn access</td>
</tr>
</tbody>
</table>
Elizabeth Street Roundabout

There are some options that could be considered here; the sweep on the road from the Port area heading away from the city is too severe for the long blades. Options to consider, include removing part of the roundabout centre area so the long loads can be more central or removing barrier arms to allow the loads to proceed on the wrong side heading south, crossing back over again at a safe and suitable location.

Figure 2, Ariel view of roundabout
Figure 3, view approaching the roundabout
The main street in Matamata is very wide however there are several roundabouts and rail crossings. Ninety degree turn from SH 24 onto SH 27 and then an S bend turn across the rail into Waharoa. The alternative considered is to turn right off SH 24 when entering Matamata and driving east along Tower Road as shown in photo above and map view below.
Following the exit from Stanley Road onto SH 26 and then through Te Aroha a bypass as shown above, this deviation will keep the long and heavy loads away from the main business centre of the town.

Tranzcarr has had no contact at this stage with the Local Road Authority for approval to transport the blades off the main state highway network on using the route set our above.

Figure 6 Street map view of Te Aroha and bypass option
2.3. Transport Port to Site – Tower Sections

The haulage of the heavy Tower and Turbine sections (Nacelle and Generator); the route from the port will follow a different path. This is because of the weight and height for the overhead bridges on Takitimu Drive.

Following a feasibility permit request to New Zealand Transport Agency (NZTA) using a Generic heavy load of 80tonne, approval was given to haul these loads on the route shown below.

![Figure 7 Street map view from Mount wharf to site – Heavy Loads](image)

The route above follows the State highway network all the way from the Port with the exception of the last section onto Rawhiti Road. A copy of a feasibility permit issued by NZTA is annexed to this report. This permit primarily covers the overweight load and the restrictions on the bridge structures on the designated route.

The heavy Tower and Nacelle Generator loads will also need approval from the overhead lines companies due to the transport height exceeding 4.8metres. No separate escort is required as the loads are less than 5.4metres off the ground and this is the recognised threshold from the lines companies, allowing unescorted loads to proceed.
2.4. Permits

2.4.1. NZTA Over-Dimension Permits

Over-dimension and over-weight permits with NZTA and Local Road Authorities are required for all loads.

All transport will be completed within the requirements of the Land Transport Vehicle Dimension and Mass Rule 41001, 2002 and its amendments. This rule includes time and travel and pilot escort requirement for each load during haulage.

It would be expected that all Blade loads would depart the Port area and be clear of the Tauranga City boundary by 0700hours on any day. The restrictions that could be required to navigate the Elizabeth Street roundabout will dictate the times of travel. Similarly all heavy loads should also depart the port with the intention of clearing the City limits by 0700hours.

All heavy and over-dimensional loads must for recorded to NZTA via the Palmerston North central registry, prior to departure from the Port. The senior Class 1 load escort will be advised of any potential problems on the route and of any other large loads using the network at the same time.
2.4.2. Kiwi Rail

All loads will require Kiwi Rail approval and permits; there are several level crossings over the entire route and the requirement will be that Kiwi Rail Train control will be notified when each load approaches each crossing and approval is then granted to cross once the line is clear.

2.5. Health and Safety during Transport

A Job Safety and Environmental Analysis (JSEA) will be required for the transport works and shall be reviewed by everyone involved in the transport prior to it commencing.

Before each transport movement each day, the crew should complete a Daily Hazard ID.

2.6. Contingency Planning

2.6.1. Minor Breakdown on Route

Where a minor breakdown occurs, repairs should be made on site under temporary traffic management. Instances may include a puncture, blown hydraulic or air hose.

2.6.2. Major Breakdown on Route (Prime Mover)

Spare Prime movers will need to be available should a major breakdown occur. The prime movers will be towed away and exchanged with new units as required. The steep grade on the Kaimai Range will also mean an additional Prime Mover back up should be on hand if required.

2.6.3. Major Breakdown on Route (Trailer)

If a major breakdown occurs on a trailer, all efforts should be made to affect a repair as soon as possible. If the breakdown requires a significant delay, then an assessment will be made depending on:

- The location of haul at the time of breakdown.
- What are the safety/traffic implications for leaving the load on site / crane removing the load?
- When the haul should resume.
- Discussions with Road Authorities and the Police.

2.6.4. Accident

In the event of an accident, either directly associated with the movement, or in the movement preparation, the transport team will work under direction of the Police.
2.7. Site Access

Site access for the turbine component transport is from Rawhiti Road in a Northbound direction within the Matamata Piako District Council. The existing accessway is wide and sweeps in a favourable way for northbound transporters as can be seen in the photograph. The road signage and letter boxes (seen in the photograph below) will need to be temporarily removed to allow passage of the transporters.

Civil Drawings of Site Entrance

Photo of Site Entrance
2.8 Internal Site Roads

A Civil Engineering Peer Review report issued by Tiaki consultants was provided to us late by Kaimai Wind Farm Ltd, recommendations pertaining to this study was:

As mentioned within the roadway portion of the review above, the Tranzcarr report deals with the transportation of the turbine blades to the access point to the site from SH26. It is recommended that Tranzcarr be engaged again to include an assessment of the internal access roads on the farms to each of the 24 individual turbine sites, as this is expected to be the critical area in terms of manoeuvrability of the 78m long blades over vertical crest curves, and around horizontal bends with cut embankments on the inside of the curve.

We have viewed the Civil Design drawings developed by Tektus – Revision C. The steepest slope on the site roads appears to be 1 in 6.2.

The typical road width is 6m and wider on corners. Vertical curves are minimised in a practical way to allow passage of the long transporters.

Some of the platform areas do not have laydown areas adjacent to the turbine – in this case the components will need to be picked directly from the transporter and then the transporter can be reversed out or lifted out by a crane.

The preliminary design completed by Tektus is reasonable and practical, however following final turbine selection and the design of specialist trailers and detailed review will be required pre-construction.
3. Transport Schedule

The following summary if the estimated number of loads for transport based on a total of 24 complete Turbines from the Port to site.

- Tower section 4 per Turbine 96 loads
- Blade sections – 3 per Turbine 72 loads
- Nacelle Units 1 per Turbine 24 loads
- Hub 1 per Turbine 24 loads
- Shipping containers 2 per Turbine 48 loads
- Ancillary equipment 24 loads
Appendices 1 – Site Map
## Appendices 2 – Transport Permit

**Feasibility No.:** WB/M/16/0015

Tranzcarr Heavy Haulage, PO Box 23194, Hunters Corner, Auckland 2155, Attn: Mike van Ravenstein, Fax: 09 2783600, Phone: 09 2639900

TSL No. 0294035

Is hereby authorised to use (vessel description): Transporter

Registered N°(s): BIG8WD, T241Q, N468R, N467R, 8X48WD

Feasibility Study Only - not for issue as an Overweight Permit

For the transport of: Tower section

On Route: Tauranga to Rawhiti rd, Te Aroha

Over the route specified below, subject to the conditions, restrictions, and maximum mass limits in this Permit.

VAI: 1.41

<table>
<thead>
<tr>
<th>Axle Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>Axle Type*</td>
<td>S</td>
<td>T</td>
<td>T</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Individual Axle Mass Limit (kg)</td>
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<td>9000</td>
<td>9000</td>
<td>10500</td>
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<tr>
<td>Spacing from previous axle (m)</td>
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<td>1.45</td>
<td>1.80</td>
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<table>
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<td>Standard</td>
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</tbody>
</table>

<table>
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<td>8</td>
<td>T</td>
<td>8</td>
<td>8</td>
<td>T</td>
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<td>T</td>
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<tr>
<td>Individual Axle Mass Limit (kg)</td>
<td>10500</td>
<td>10500</td>
<td>10500</td>
<td>10500</td>
<td>6500</td>
<td>6500</td>
<td>5500</td>
<td>5500</td>
<td>5500</td>
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<tr>
<td>Spacing from previous axle (m)</td>
<td>1.80</td>
<td>7.75</td>
<td>1.92</td>
<td>1.73</td>
<td>1.45</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* S=Single tyre axle, T=Twin tyre axle, 4=Four tyre oscillating axle, 8=Eight tyre oscillating axle. The tyre sizes shall be as indicated above.

The total mass on any individual axle, axle set or combination of axles must not exceed the sum of the mass limits shown for those axles in the table above.

### Critical Conditions

1. The gross mass of the vehicle with the load must not exceed **172,500** (Kilograms)

2. The gross mass of the vehicle must not exceed the gross vehicle mass, gross combination mass, maximum towed mass, or brake code mass where these limits apply to the vehicle

3. The vehicle must comply with all bridge restrictions specified in the permit.

### Additional Conditions

1. *Separate Plant* - The carriage or towing of separate items of plant, equipment or materials not specifically nominated in the description of load is not permitted.

2. *Mass* - The mass of any axle shall not exceed the mass specified in this permit. The gross mass of the vehicle or combination of vehicles must not exceed the limit specified on the current certificate of loading issued to the vehicles.
3. **Authorised Agent** - The vehicle shall not be operated on a road or bridge under this permit when in the opinion of an authorised agent of the road controlling authority, as communicated to the operator, it would be contrary to public interest to do so.

4. **Non Transferable** - This permit is not transferable either to other users of or to any vehicle other than the vehicle described by this permit.

5. **Weighing** - Police are authorised to divert vehicles up to five kilometres from the approved route for the purpose of weighing, provided under strength bridges are not included on the route.

### ROUTE AND SPECIAL INSTRUCTIONS:

**Route**

<table>
<thead>
<tr>
<th>Section</th>
<th>Highway</th>
<th>From RP</th>
<th>From Junction</th>
<th>To RP</th>
<th>To Junction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SH2</td>
<td>151 / 6.38</td>
<td></td>
<td>164 / 0.0</td>
<td></td>
</tr>
<tr>
<td>Totara Ave/SH2 intersection to SH2/SH29A junction (Te Maunga)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SH29A</td>
<td>0 / 0.0</td>
<td></td>
<td>14 / 0.0</td>
<td></td>
</tr>
<tr>
<td>Te Maunga to SH29A/SH29 junction (Tauriko)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SH29</td>
<td>19 / 0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauriko to SH29/SH27 junction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SH27</td>
<td>74 / 9.58</td>
<td></td>
<td>48 / 4.7</td>
<td></td>
</tr>
<tr>
<td>SH29/SH27 junction to SH27/SH26 junction (Tutanui)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SH26</td>
<td>52 / 8.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tutanui to SH26/Rawhiti rd intersection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Permit mass limits are only applicable on the routes specified above. If the vehicle deviates from this general route general mass limits will apply.

**BRIDGE ENGINEERING SELF SUPERVISION:** NZTA BESS identification card or BESS letter must be carried at all times

A. Bridge crossings on this permit are valid only for operators with BESS accreditation

B. The driver must adhere to *Specific Traffic Control Requirements* for each bridge listed on this permit

C. The driver may cross bridges specified in this permit unless there is a "DNC" or "DO NOT CROSS" noted & therefore MAY NOT BE CROSSED UNDER ANY CIRCUMSTANCES

D. Vehicle is to avoid moving through peak hour and holiday traffic.

**VEHICLE DIMENSION & MASS RULE:** Vehicle travel times that apply to this permit are those that relate specifically to each type of vehicle as covered by the Land Transport Rule Vehicle Dimension and Mass 2002 Rule 41001.

**LOCAL AUTHORITY ROADS**

Local Authority Permit is required to travel on Local Authority roads not covered by this overweight permit.
Requirement to observe permit conditions

A breach of weight limits specified on this form, or any permit condition, is an offence as provided in the Land Transport (Offences and Penalties) Regulations 1999.

Permit is invalid if:

1. The vehicle is off-route, unless directed to do so by NZ Police or the road controlling authority
2. The permit is altered without authority
3. The vehicles or persons operating the vehicles are not those described on the permit.

Revocation

This permit can be revoked, under clause 5.6 of the Rule.

Authorised Issuing Officer

Nicola Dixon

22 January 2016

(Designation)

(Controlling Authority)

(Permit Dated)

Note:

1. This permit is an exemption from the mass limits set out in the Land Transport Rule: Vehicle Dimensions and Mass 2002, and does not authorise the user to exceed the exemption so permitted or exempt the user from complying with all other acts, regulations and other laws (including those relating to certificate of loading, road user charges or Static Roll Threshold).

2. This permit must be carried on the vehicle, and must be surrendered for inspection on the demand of any enforcement officer, or an authorised agent of the NZ Transport Agency or a road controlling authority.

3. The conditions on the reverse of this form shall apply together with any other conditions on the attached sheets.

4. Overdimension - For the transport of vehicles and loads that exceed the limits specified in Section 6 of the Land Transport Rule: Vehicle Dimensions and Mass 2002, a separate permit must be obtained from the Overdimension Permit Issuing Agency (OPIA) at the NZ Transport Agency, Palmerston North. OPIA contact number 0800 OVERSIZE / 0800 683774.

5. Railway Level Crossings - Travel over level crossings is not fully covered by this permit. Operators of overweight and overdimension vehicles may require permission from KiwiRail or their agents for travel over railway level crossings.

6. Tyre pressure - Tyres must be operated at the pressures recommended by either the manufacturer or the Tyre and Rim Associations but not exceeding the maximum pressures stated in the Land Transport Rule 32013: Tyres and Wheels 2001.
### Fees Payable:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Permit Issuing Fee (As specified in Schedule 4A of the Heavy Motor Vehicle Regulations 1974)</td>
<td>$18.18</td>
</tr>
<tr>
<td>Bridge Supervision Fee (0 Trips)</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Fee</td>
<td>$18.18</td>
</tr>
<tr>
<td>GST</td>
<td>$2.73</td>
</tr>
<tr>
<td>Total</td>
<td>$20.91</td>
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</table>

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**Feasibility Study Only**

**Feasibility No.:** WB/M/16/0015
Critical Conditions: Bridge Restrictions

1. Engineering supervision of bridges is required during the trip authorised by this permit. For this purpose the user to whom this permit is issued shall contact the agents of the road controlling authorities nominated below at least 24 hours in advance of the bridge crossing and arrange to meet the supervisor.

   The vehicle and its load shall be operated in strict accordance with all instructions given by the supervisor and it shall not proceed past the arranged meeting place without being instructed to do so by the supervisor.

   Note: (a) A police officer, unless specifically authorised by the road controlling authority, is not empowered to carry out bridge engineering supervision

   (b) If the operator fails to rendezvous within one hour of the time arranged and the supervised crossing(s) is/are postponed or cancelled, a fee of $40 will be charged (the equivalent of one supervised crossing).

2. Agents are:

   Bridge Engineering Self-Supervision (BESS) registered Driver.
   BESS ID Card or Letter Must Be Carried On Vehicle
   Failure to produce VOIDS Permit

3. Bridges requiring engineering supervision are:

<table>
<thead>
<tr>
<th>Bridg e No.</th>
<th>State High way</th>
<th>Route Position</th>
<th>Bridge Name</th>
<th>BSN</th>
<th>Speed</th>
<th>Position</th>
<th>Risk to Other Vehicles</th>
<th>GPS Co-ords N/E</th>
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<tr>
<td>1</td>
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<td>157/1.88</td>
<td>HEWLETT'S ROAD FLYOVER (Incr Dir)</td>
<td>1589</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>63875832/793123</td>
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<tr>
<td>2</td>
<td>29A</td>
<td>8/3.23</td>
<td>WAIMAPU STREAM BRIDGE (Incr Dir)</td>
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<td>OWN LANE</td>
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<td>63798852/787118</td>
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<td>29</td>
<td>21/2.9</td>
<td>OMANAWA FERRY BRIDGE (Incr Dir)</td>
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<td>20</td>
<td>OWN LANE</td>
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<td>63778142/790803</td>
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<td>29</td>
<td>21/5.9</td>
<td>POUHAROA BRIDGE (Incr Dir)</td>
<td>299</td>
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<td>21/12.0</td>
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<td>63716862/775663</td>
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<td>OWN LANE</td>
<td>Not Significant</td>
<td>63714262/775055</td>
</tr>
</tbody>
</table>

MAINTAIN 0.5M GAP FROM GUARDRAIL

<table>
<thead>
<tr>
<th>Bridg e No.</th>
<th>State High way</th>
<th>Route Position</th>
<th>Bridge Name</th>
<th>BSN</th>
<th>Speed</th>
<th>Position</th>
<th>Risk to Other Vehicles</th>
<th>GPS Co-ords N/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>29</td>
<td>50/1.2</td>
<td>WAIOMOU STREAM BRIDGE (Incr Dir)</td>
<td>512</td>
<td>50</td>
<td>OWN LANE</td>
<td>Not Significant</td>
<td>63863672/76586</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>50/8.2</td>
<td>WAHIPOU RIVER BRIDGE (Incr Dir)</td>
<td>582</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>63648792/756117</td>
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<tr>
<td>10</td>
<td>27</td>
<td>74/7.4</td>
<td>MANGAWHERO STREAM BRIDGE (Decr Dir)</td>
<td>814</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>63665362/753695</td>
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<tr>
<td>11</td>
<td>27</td>
<td>46/6.7</td>
<td>WAITOA RIVER BRIDGE (Decr Dir)</td>
<td>527</td>
<td>10</td>
<td>Central</td>
<td>High</td>
<td>63910722/744494</td>
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<td>12</td>
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<td>35/4.1</td>
<td>WAITOA RIVER BRIDGE (Incr Dir)</td>
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<td>OWN LANE</td>
<td>Not Significant</td>
<td>63675092/742648</td>
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<td>13</td>
<td>26</td>
<td>35/5.2</td>
<td>WAHEKAU STREAM BRIDGE</td>
<td>403</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>63976062/743881</td>
</tr>
<tr>
<td>Bridge No.</td>
<td>State Highway</td>
<td>Route Position</td>
<td>Bridge Name</td>
<td>BSN</td>
<td>Speed*</td>
<td>Position*</td>
<td>Risk to Other Vehicles*</td>
<td>GPS Coord N/E</td>
</tr>
<tr>
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</tr>
<tr>
<td>14</td>
<td>26</td>
<td>357/6.1</td>
<td>PIRAUNUI STREAM (INCREASING) BRIDGE (Incr Dir)</td>
<td>426</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>6398649/2 745660</td>
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<td>15</td>
<td>26</td>
<td>48/0.0</td>
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<td>480</td>
<td>10</td>
<td>OWN LANE</td>
<td>Low</td>
<td>6402622/2 749448</td>
</tr>
</tbody>
</table>

*See the next page

4. The user to whom this permit is issued shall contact the police at least two working days in advance of the crossing of any bridge in the above list where "police control" is indicated and make arrangements for a police officer to be present to control other traffic during the supervised crossing.

5. Bridge Engineering Self Supervision is permitted only for the bridge listed and the person named in condition 2 above.
Critical Conditions: Bridge Restriction Requirements

A. SPEED

The speed of the overweight vehicle shall not exceed the value shown while on the bridge.

B. POSITION

The vehicle shall travel in the left hand lane on all bridges except those for which alternative bridge engineering supervision instructions are specifically provided in this permit.

Own Lane - the overweight vehicle shall travel in its own lane as far as is practicable.

Offset - the overweight vehicle shall travel so that its centre is at the indicated distance from the kerb on the left of the vehicle.

Central - the overweight vehicle shall travel on that part of the bridge most favourable to the structure. This shall be:

(i) central on the beam system for bridges with beams and concrete decks;
(ii) central between kerbs for slab bridges;
(iii) approximately central on the beam system but with wheels as near as possible over the beams for bridges with timber decks.

Opposite Bridge - the overweight vehicle shall use the bridge on the opposite traffic direction.

Ford or Bypass - the overweight vehicle shall not cross the bridge but use the adjacent ford or bypass.

C. TRAFFIC CONTROL

Other heavy vehicles proceeding in the same direction shall be spaced at least 30 metres from the overweight vehicle while it is on the bridge. Care may be closer as necessary.

Where “offset”, “central on opposite bridge” is indicated for position, traffic travelling in the opposing direction shall be prevented from crossing the bridge while the overweight vehicle is on it.

Traffic control at bridge crossings shall be in accordance with the “Code of Practice for traffic control at bridges being crossed by overweight vehicles”.

Traffic control requirements:

<table>
<thead>
<tr>
<th>Risk to other vehicles</th>
<th>Traffic control requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not significant</td>
<td>None required</td>
</tr>
<tr>
<td>Low</td>
<td>Overweight vehicle to have revolving amber light or flashing amber light visible from the rear together with rear facing retro-reflective hazard panels</td>
</tr>
<tr>
<td>High</td>
<td>Provide qualified traffic controllers or Class 1 or Class 2 certified pilots using approved industry procedures.</td>
</tr>
</tbody>
</table>
THE ULTIMATE ROTOR BLADE TRANSPORTER
(TESTED WITH BLADE LENGTHS UP TO 71m)

Dez.
2010

"Goldhofer AG completely fulfilled our profile of requirements on a transport vehicle for the rotor blade of our V 112 - 3.0 MW. Various loading situations were tested and we were completely satisfied with the results. Even the most difficult driving situations on uneven terrain had no impact on our rotor blade. We were able to issue the official transport approval for this vehicle in good conscious!"

Gunnar K. Sørgaard Pedersen
VESTAS Technology R&D
Specialist Transport
Installation & Service

"The handling characteristics of this new Goldhofer SPZ-P 3 AAA are fantastic. With the precise, direct and aggressive steering, roundabouts are no problem at all. After just two test runs across Denmark our driver mastered the operation of the vehicle without using the radio controlled auxiliary steering!"

Torben Rafn, Director
Torben Rafn & Co. A/S
International Specialisttransporter
"Brilliant solutions are simple! - This is something that Goldhofer AG demonstrates in convincing fashion. The impressive features of the skidding device include its low kerb weight, user-friendly operation and its fast and efficient load securing."

Jørn Rahbek Christiansen
VESTAS Wind Systems A/S
Projekt Manager Technology R&D, Special Tools

"Wind turbine manufacturers and transport specialists have long awaited this vehicle. The transport of rotor blades with lengths of 55, 58 or 61 m is no trouble at all. Even when faced a rotor blade length of 71 m, manufacturers and hauliers remain confident!"

Jørn Bolding, Direktør
Jørn Bolding A/S
"Goldhofer Scandinavia"

"We have tested a wide variety of vehicles with our 61.5 m rotor blade. The SP2-P SABA from Goldhofer was the only one which won us over from this start. We also look forward to seeing this vehicle on our premises in the future!"

Repower / LM