MOIFJELLET

TRANSPORT STUDY



MAMMOET

SMARTER | SAFER | STRONGER

MAMMOET
SMARTER | SAFER | STRONGER

From
Mammoet Denmark
Sjællandsvej 5
7330 Brande
Denmark

Phone
045 9718 1346

To
Statkraft AS
Lilleaker
NO-2016 Oslo
Norway

Our reference 16000451
Your reference N/A

Date 29 August 2024
Subject Moifjellet Transport Study

Dear Recipient,

Please find our comments related to the forwarded route survey report for the Moifjellet project.

The comments focus on the reasons why the Port of Risavika have been considered as port of entry instead of Port of Sirevåg or Port of Egersund.

Sincerely yours,

Mammoet Denmark

Anders Bräuner
Senior Sales and Tendering Manager

Mammoet Denmark

Thomas Simonsen
Operations Manager

TABLE OF CONTENTS

TASK SUMMARY **3**

1. PORT OF ENTRY **4**
1.1 Ports considered as unsuitable 5
1.2 Project proposed port / Risavika 6

2. CONCLUSION **8**

TASK SUMMARY

Route survey from nearest suitable port to Moifjellet project location.

Mammoet were handed the task of identifying the nearest suitable port for transporting wind turbine components to the Moifjellet project.

Furthermore, Mammoet were responsible for performing a route survey to determine the required road modifications for allowing a smooth and safe transport execution of the oversized components.

The Siemens Gamesa Renewable Energy 5X platform, with a 170-meter rotor, was used throughout the route survey, as this is the longest blade currently being transported in the Nordic countries. The difference in transport dimensions for the Vestas Wind System V162 or Nordex N163 blades are minimum, why no major changes to the route should be expected if considering these makes and models instead.

The following tower design was considered for the survey.

SECTION:	WEIGHT:	LENGTH:	LARGE Ø:	SMALL Ø:
Base section	84.958 kg	13.564 mm	4.700 mm	4.700 mm
Mid-1 section	84.328 kg	18.200 mm	4.700 mm	4.436 mm
Mid-2 section	84.548 kg	23.800 mm	4.436 mm	4.427 mm
Mid-3 section	71.771 kg	26.880 mm	4.427 mm	4.021 mm
Top section	63.863 kg	29.970 mm	4.021 mm	3.503 mm

The route survey was executed on the 31st of August and 1st of September, during when major road construction works were ongoing on the E39 south of Stavanger. As the purpose of the construction work is to upgrade the existing infrastructure no route restrictions are expected once the planned work is complete.

The considered route has been chosen based on what is most suitable and feasible considering the overall project execution but remains subject to possible restrictions set out by the Norwegian authorities.



1. PORT OF ENTRY

Ports considered for shipping in wind turbine generators for the Moifjellet project.

Mammoet have considered the following points when determining which port could be deemed most suitable as port of entry for the Moifjellet project:

- Infrastructure from the exit of the port area to the current considered access points for the site.
- Restrictions for vessels used for shipping the wind turbine generators to Norway.
- Storage capabilities for storing the wind turbine generators prior to transport.
- Handling capabilities for discharging vessel, shifting of components, and reloading prior to transport.

1.1 PORTS CONSIDERED AS UNSUITABLE

The following ports have not been considered as unsuitable due to reasons specified for each individual port.

1.1.1 Port of Sirevåg

Despite being the closest of the three considered ports, Mammoet have considered the Port of Sirevåg as unsuitable due to the following reasons.

- The oversized transports will have to travel close to Stavanger to cross the railroad tracks running between Stavanger and Egersund. This because the following crossing points cannot be considered:
  - Bridge at Brusand (https://maps.app.goo.gl/dp8NTjaSsq8HNCvt6) due to the convex radius and required width for passing.
  - Bridge near Vigrestad (https://maps.app.goo.gl/nV3Tin8pMQEo52aR8) due to height limitations.
  - Bridge in Varhaug (https://maps.app.goo.gl/6VMCvsy3rKu3Ugm89) due to the convex radius.
- The infrastructure for leaving the port of Sirevåg will require several road modifications to allow the transport to safely depart the port. This includes blasting away rock areas and widening of turns.
  - The guard fences at the bridge on Nordsjøvegen north of Sirevåg will have to be removed to allow for the oversail of the blades.
- Due to the location of the storage area, the quay, and the exit road, it will be challenging to handle the long blades in the port, while still allowing enough storage area for the tower sections and main components to be handled efficiently.
- Due to the small quay area, it will be challenging to discharge the incoming vessels carrying wind turbine components with land-based cranes, resulting in the need for geared vessels that cannot accommodate sufficient cargo.

1.1.2 Port of Egersund

The Port of Egersund is one of the ports in Norway that have handled most wind turbine components in recent time, Mammoet does however not find it suitable due to the following reasons:

- Restrictions for crossing the Eigerøy bridge.
  - Due to the development in blade lengths, a substantial amount of rocks will have to be blasted in order for the blade transport to be able to clear the right turn in the roundabout when entering the bridge.
    - Depending on how much clearance can be blasted, it may also be necessary to remove guardrails on the bridge to allow for the oversail.
  - Continuous transports exceeding 100 tons, the heaviest up to 160 tons, are not allowed to cross the bridge. This has resulted in components for the Bjerkreim project, Maakaknuten project and Stigafjellet project having to be barged pass the bridge to Langholmen.
    - Barging requirements and constraints:

        - If barging only units exceeding 100 tons, a total of 320 units will have to be barged, which could be as much as 250-300 trips to Langholmen from Port of Egersund.
        - If the longer blades must be barged across, that is an additional 120 units, which would also require a considerable long barge than the one used for the towers and main components.
        - Besides added time and costs for operating the barging setup, it also presents and increased HSE risk.
    - The area around Langholmen have been developed further since the above projects were carried out, making it more difficult to pass through. A fire station has been built at Langholmen. This could create a dangerous situation if fire trucks have to respond to an emergency at the same time as the oversized transports enter Eigerøyveien, leaving little or no space for them to pass.
    - The barging operation will have a significant operational and commercial impact on the overall project execution, due to reduced flexibility when planning transports, and the costs for setting up the needed barge setup.
- Due to the construction of new industrial facilities and roads inside the port area in Egersund, there is significant less storage area available compared to earlier, while the space required to maneuver the oversized transports during discharge has become much more restrictive.
- Besides the challenges already described for crossing the Eigerøy bridge, several locations have been identified as critical when transporting blades from Egersund:
    - Bridge at Krossmoveien (https://maps.app.goo.gl/8aeKMDAvB9ZxvTNA8), the oversail and overhang of the blade will be close to the powerlines on both side of the bridge. The guardrails will have to be removed in minimum one side to allow for the oversail of the blade.
    - House on Krossmoveien (https://maps.app.goo.gl/h5abJtJYYSHysQAKA), the blade will oversail the house, unless road can be widened, requiring blasting.
    - Left turn at E39 (https://maps.app.goo.gl/tLZH6fRWtSP9CMZb8) will have to be widened significantly, or the parking area will have to be used to drive on and a curfew arranged for the full project duration.
    - Curve in Vikeså (https://maps.app.goo.gl/P3UMPxryWt6t3G9X9), the blade will get in contact with the concrete embankment in the left side of the road.

1.2 PROJECT PROPOSED PORT / RISAVIKA

When assessing the overall possibilities and restrictions for the transport to the Moifjellet project, Mammoet would recommend shipping the components for the wind turbine to the Risavika Harbour in Stavanger.

1.2.1 Quayside and storage areas

The port in Risavika can accommodate the required vessel size for shipping in the wind turbine generators.

- Water depth, minimum 10 meters at the shallowest locations, but average is 14 meters.
- No navigational restrictions (E.g. ice, snow, height, tidal or priority).
- Quay length, up to 285 meters and with RO/RO capabilities.
- Heavy-lift quayside with up to 70 tons point loads, and remaining quay strength averaging 10 tons per square meter.
- Approximately 50.000 square meters of storage area, with a possible addition of 30.000 square meters.
    - Availability and required amount of storage area will be discussed in detail with the port when execution dates are firm.

1.2.2 Transport route to site from Risavika

Mammoet have performed a route survey from Risavika to the Moifjellet site which has been submitted to Statkraft.

Based on the route survey Mammoet finds the route from Risavika to site suitable for transporting the considered oversized components.

Mammoet also considers Risavika more suitable from a future service perspective, as sending spare parts like generators or similar loads to site via Risavika compared to Sirevåg or Egersund is a considerably more flexible solution. This because there are shore cranes available in Risavika for lifting these units on and off small coaster vessels, or they can be shipped to Risavika by use of existing RO/RO liner service vessels.

Mammoet have previously used and proven the proposed transport route from Risavika for the tower sections installed on the Skurvenuten project. This accounts for about 60% of the transport route.



2. CONCLUSION

Transport of wind turbine generators from Port of Risavika to the Moifjellet site

Based on the provided route survey report and the content of this report it can be concluded that wind turbine generators with similar dimensions and transport configurations as considered in the route survey can be safely transported to the Moifjellet wind farm from the Port of Risavika.

The above conclusion is based on obtaining permission for the proposed transport route from all relevant authorities and third-party landowners. Since blades transports with the blade-dolly system is new in Norway, this system must be approved by Statens Vegvesen.

MAMMOET HAS OVER 120 OFFICES AND BRANCHES WORLDWIDE.

Below are the Mammoet regional head offices on each continent.
To contact an office near you, please visit mammoet.com/contact and select 'Find an office'.



1
MAMMOET AMERICAS
Rosharon, TX, USA
+1 281 369 2200
sales.america@mammoet.com

2
MAMMOET EUROPE
Schiedam, The Netherlands
+31 10 204 2740
saleseurope@mammoet.com

3
MAMMOET MIDDLE EAST & AFRICA
Dubai, United Arab Emirates
+971 4 812 8000
salesmiddleeast@mammoet.com

4
MAMMOET ASIA PACIFIC
Pasir Gudang, Malaysia
+60 7 253 8000
salesapac@mammoet.com

MAMMOET
SMARTER | SAFER | STRONGER

MAMMOET

Route Survey

Moifjellet

SG170 - 6.0MW 115mhh

Statkraft

Rev.	Date	Change	Responsible	Checked
00	29-08-2024	First issue.	TBS-Mammoet	ABB-Mammoet

Public

MAMMOET

Introduction

The Road study was carried out to determine the extent of required road modifications for safe transportation of SG 170 6.0 MW 115MHH Wind Turbine components to Moifjellet wind park.

Project Data

Date of route survey:	Week 31 - 2024.
Responsible for route survey:	Thomas Simonsen, Mammoet.
Project name:	Moifjellet Wind Farm
Pick up point of components:	Port of Risavika
Site location:	Approx. 6 kilometres from the E39
Transport distance:	52,5 kilometres.
Turbine model:	SG 170 – 6.0 MW 115MHH
Participants in the route survey:	Thomas Simonsen, Mammoet. Anders Braüner, Mammoet
Route survey measurements is based on:	See configuration on page 4 - 5

Cargo information:

SECTION:	WEIGHT:	LENGTH:	WIDTH:	HEIGHT:
Base section	84.958 kg	13.564 mm	4.700 mm	4.700 mm
Mid-1 section	84.328 kg	18.200 mm	4.700 mm	4.436 mm
Mid-2 section	84.548 kg	23.800 mm	4.436 mm	4.427 mm
Mid-3 section	71.771 kg	26.880 mm	4.427 mm	4.021 mm
Top section	63.863 kg	29.970 mm	4.021 mm	3.503 mm
Blade	29.282 kg	83.362 mm	4.476 mm	4.000 mm

Public

Report layout

Google Maps links

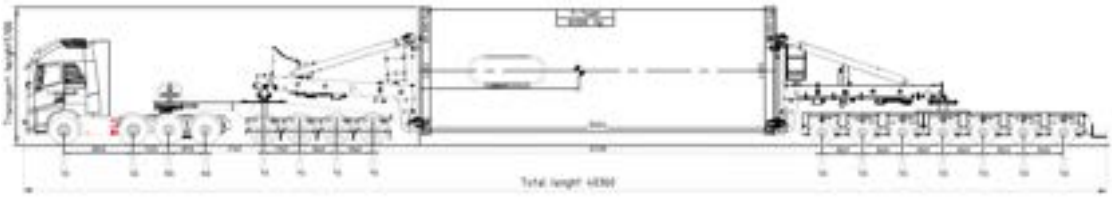
All points in this route survey is marked with 
In order to find the specific point in this survey simply just press the icon.

Attached Files

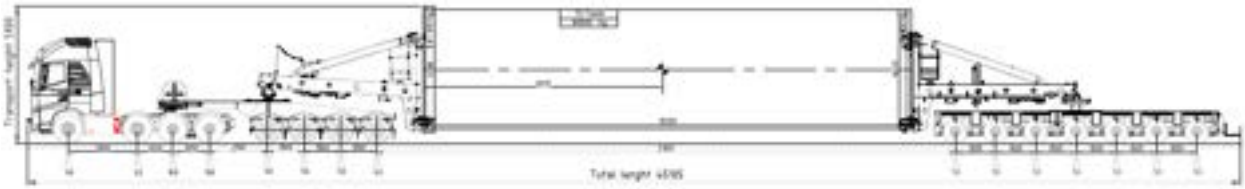
Attached AutoCAD drawings (SPA / RM) is to illustrate the swept path and to give a detailed description of the extend of road modification on the specific point.

Shapes & Figures

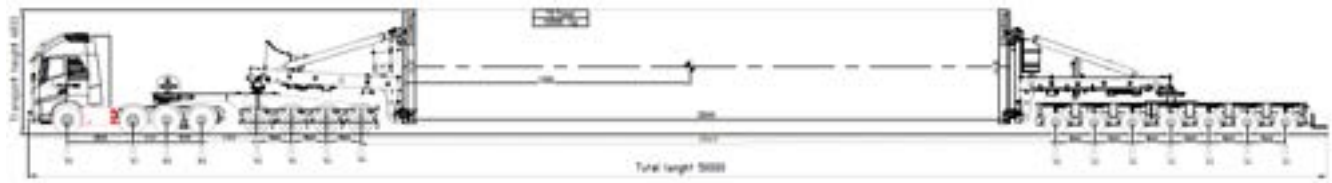
	Yellow arrow:	Indication of forward driving.
	Red arrow:	Indication of reverse driving.
	Red box:	Indication of street furniture, sign etc. that must be removed.
	Dotted red box:	Removable signs or street furniture.
	Blue area:	Indication of area that must be made suitable to drive on.
	Dotted blue line:	Over sail line, removal of embankment, rocks, mountain wall etc.
	Green box/line:	Indication of tree cutting/trimming.
	Dotted black or red arrow:	Measurements, meters.
	Dotted black line:	Measurements from/to.
	Dotted red line:	Indication of over head utility/power line.
	Dotted purple arrow:	Parking ban.
	Dotted purple Box:	No parking



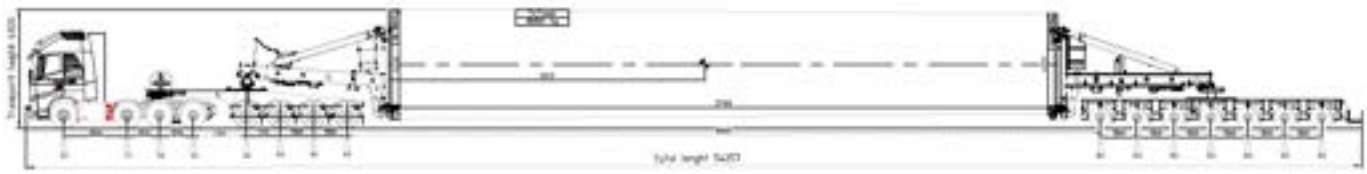
Total weight: 154.640 Kg



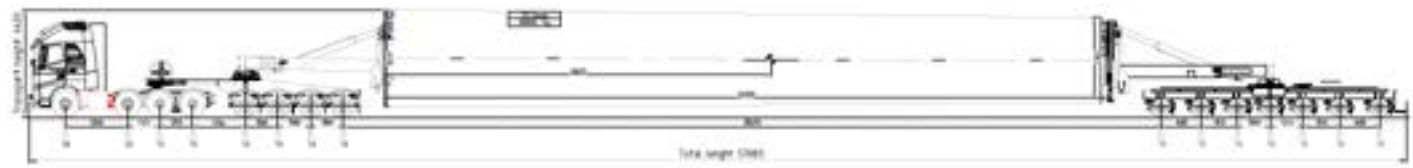
Total weight: 152.840 Kg



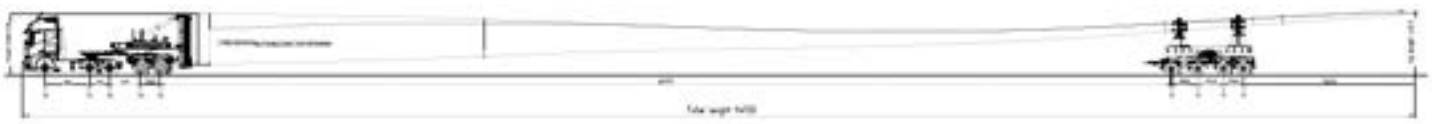
Total weight: 154.940 Kg



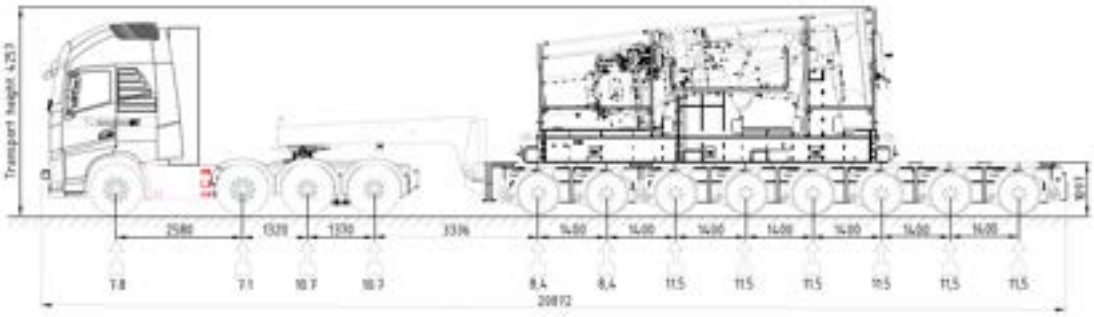
Total weight: 141.840 Kg



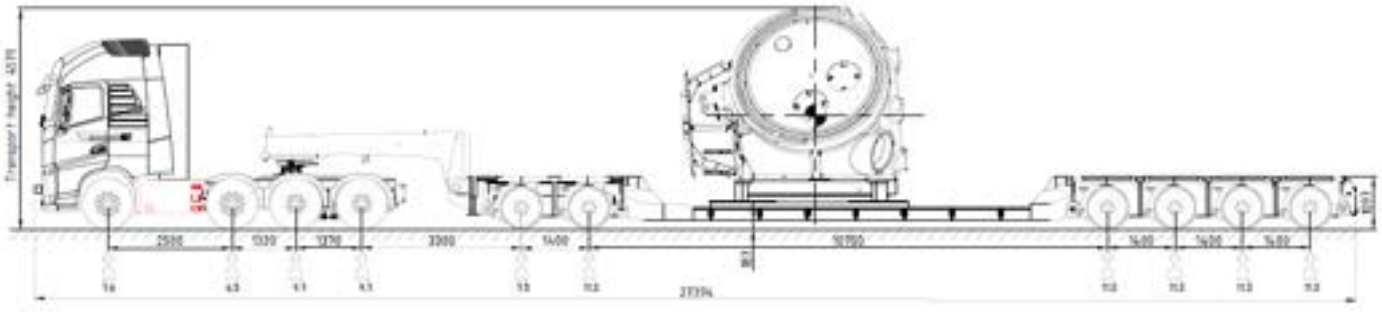
Total weight: 106.300 Kg



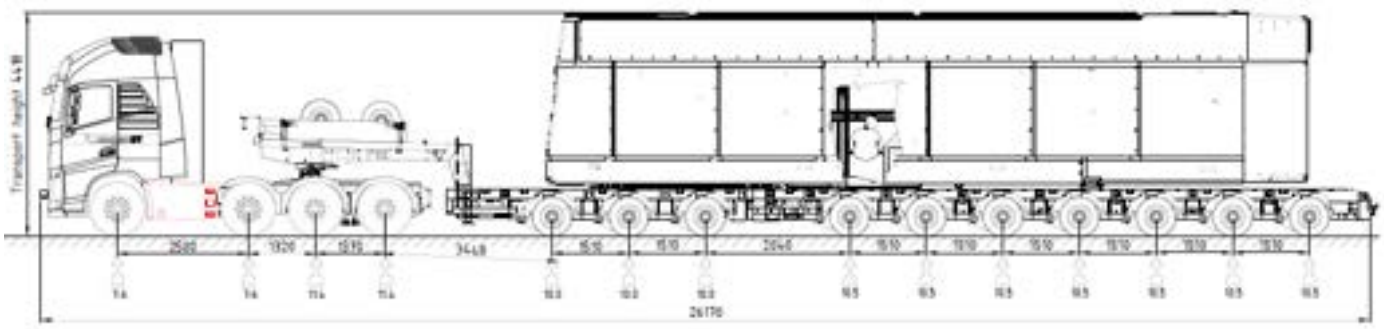
Total weight: 65.000 Kg



Total weight: 122.800 Kg



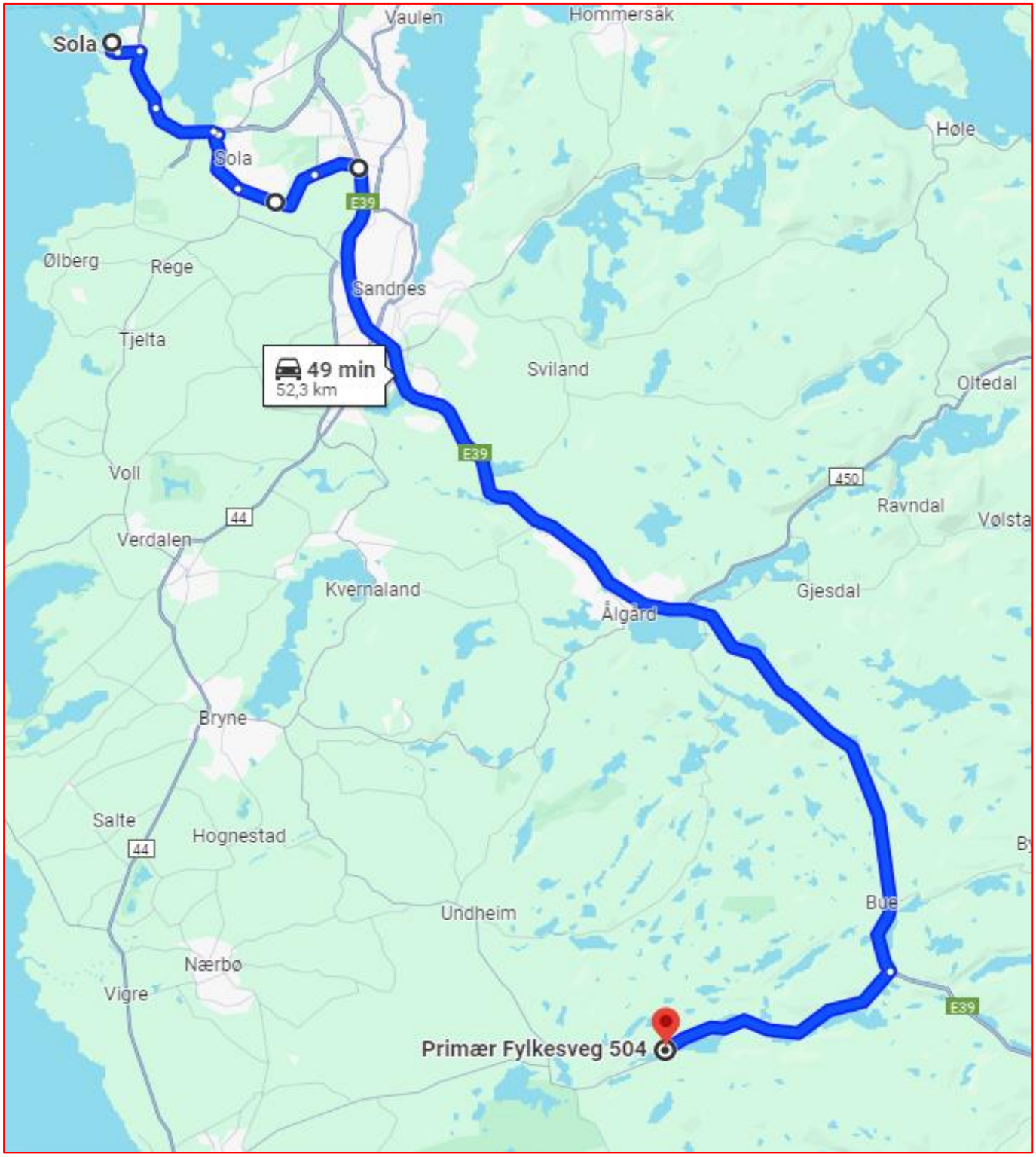
Total weight: 117.400 Kg



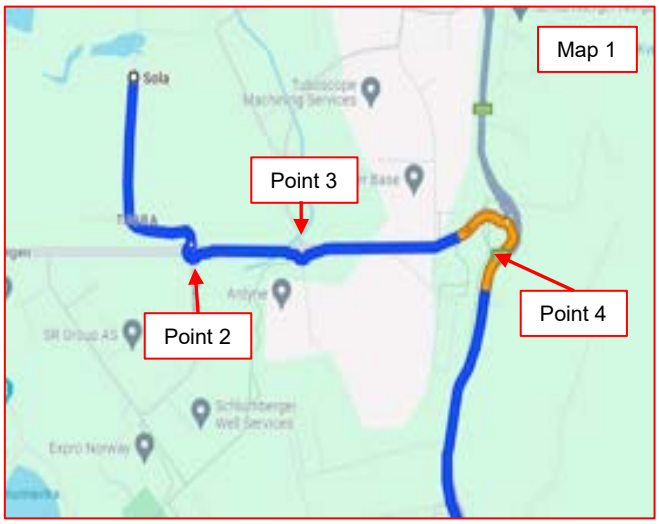
Total weight: 141.500 Kg

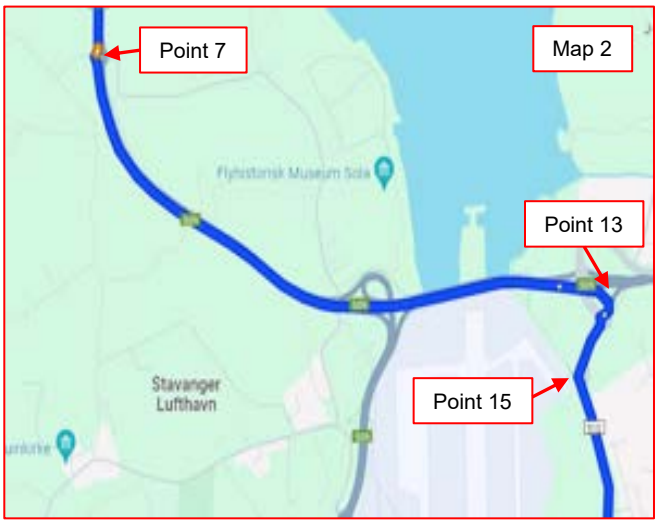
MAMMOET

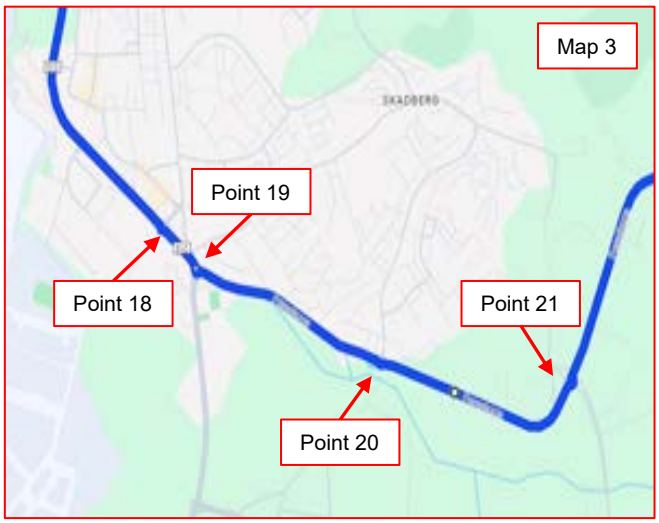
Route map from Port of Risavika to Moifjellet Wind Park.

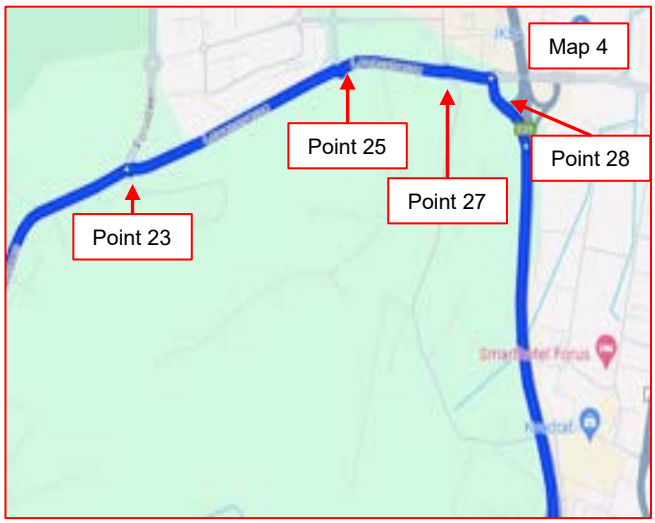


Public

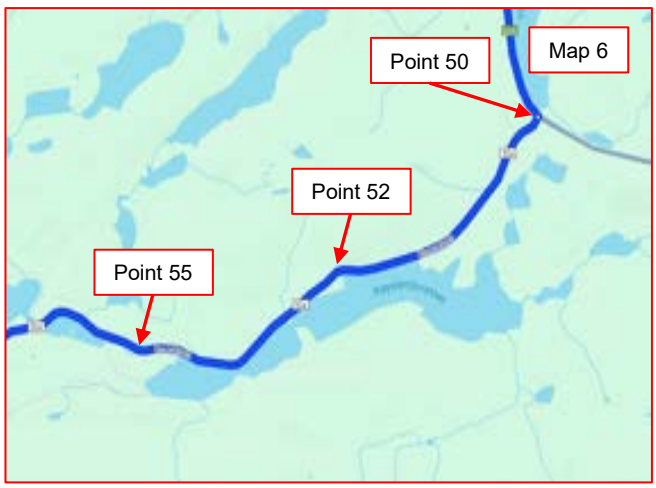

Map 1
Point 3
Point 2
Point 4


Point 7
Map 2
Point 13
Point 15
Stavanger Lufthavn

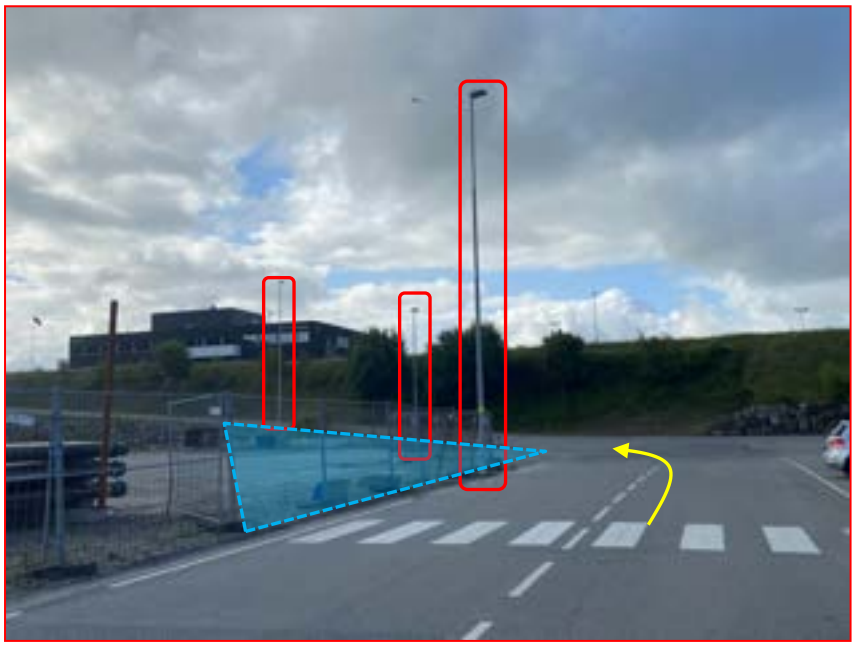

Map 3
Point 19
Point 18
Point 21
Point 20


Map 4
Point 25
Point 28
Point 27
Point 23


Point 42
Map 5
Point 43
Point 45


Point 50
Map 6
Point 52
Point 55

Point 1 - Exit at Port of Risavika near Tjora

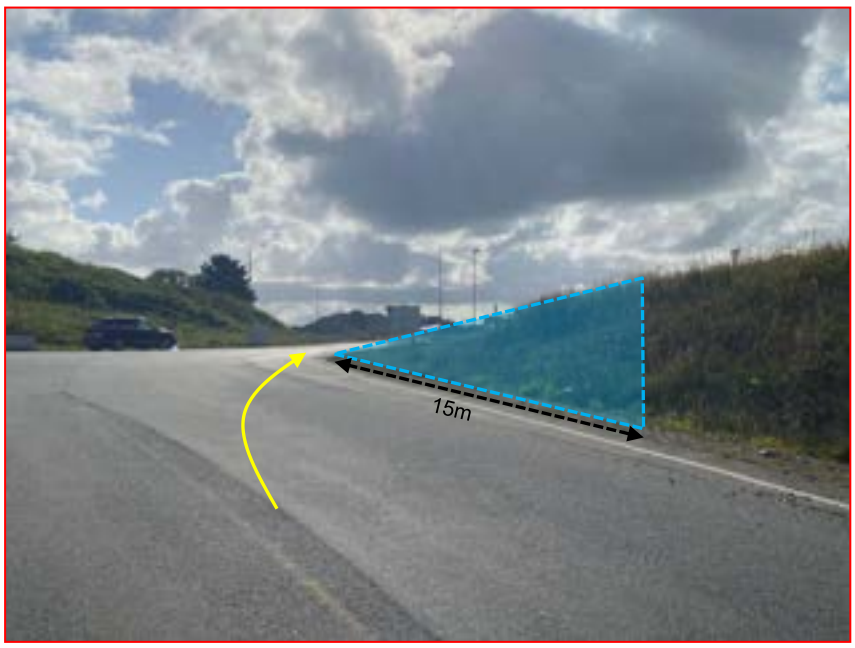


Actions or Info

Transports will turn left towards the exit of the port.

- 3 light poles must be removed to allow for oversail.
- Fence must be removed to allow over sail.

Point 2.1 – Exit at Port of Risavika near Tjora



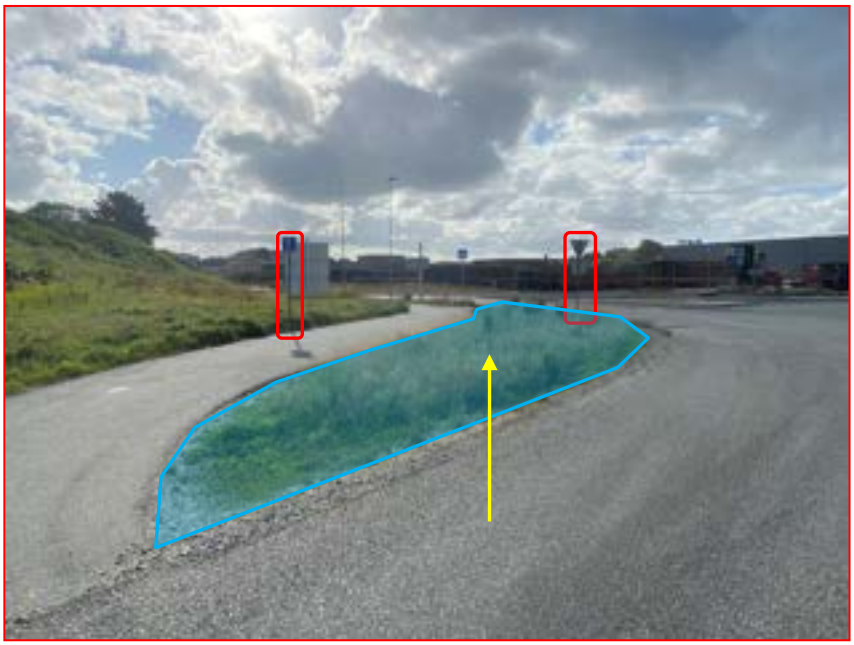
Actions or Info

Transports will enter the roundabout coming from the port of Risavika.

- Embankment must be lovered down to road level to allwo for oversail.

See attached PDF file: Point 2.

Point 2.2 - Exit Port of Tananger onto Kontinentalvegen near Tjora



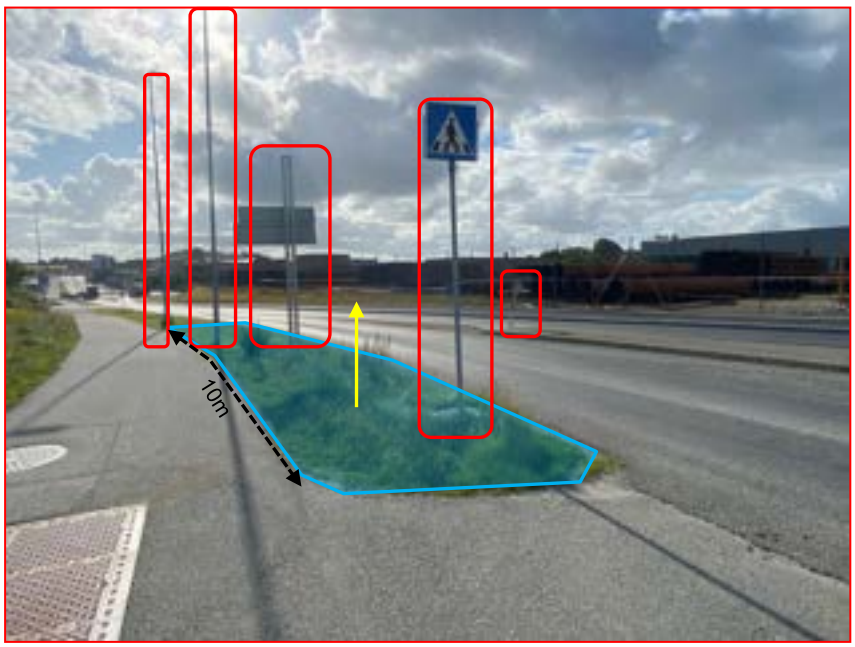
Actions or Info

The transports will turn left in the roundabout.

- Driving against flow of traffic requried.
- 2 signs must be made removable to allow for oversail.
- The grass verge must be in road level and made suitable to drive on.

See attached PDF file: Point 2.

Point 2.3 - Exit Port of Tananger onto Kontinentalvegen near Tanager



Actions or Info

The transports will turn left in the roundabout.

- Driving against flow of traffic requried.
- 3 signs must be made removable to allow for oversail.
- 2 lamp posts must be removed to allow for oversail.
- The grass verge must be in road level and made suitable to drive on.

See attached PDF file: Point 2.

Point 3 – Kontinentalvegen near Tanager



Actions or Info

The transports will go straight in the roundabout.

- 1 sign must be made removable to allow for blade overhang.

Point 4 – Kontinentalvegen onto Route 509 near Tanager



Actions or Info

The transports will turn right towards the airport.

- The roundabout is currently under construction, but no further restrictions expected upon completion.
- 2 signs must be made removable to allow for blade overhang/oversail.

Point 5 – Route 509 near Snøde

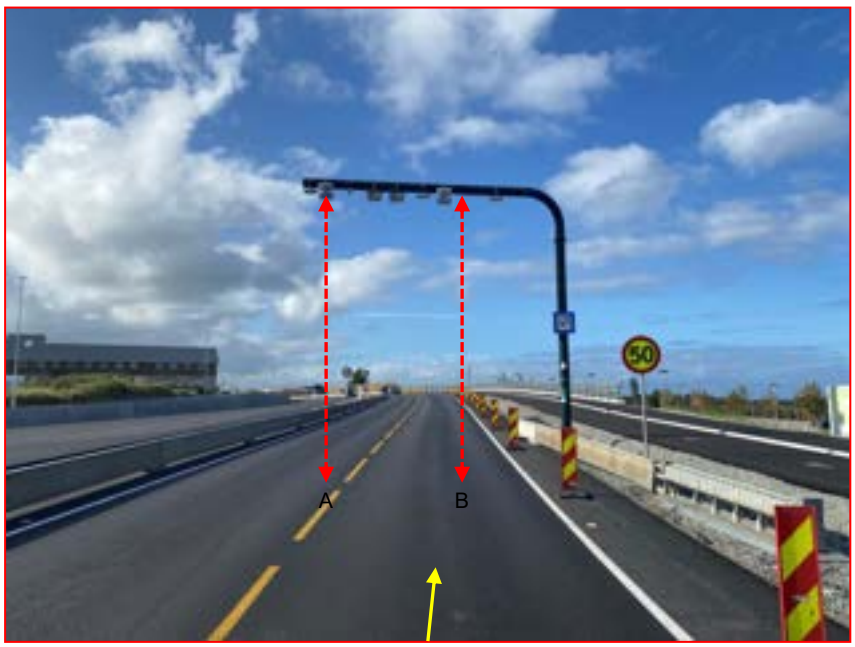


Actions or Info

The transports will continue towards the airport on route 509.

- Route 509 is currently construction, but no restrictions expected upon completion, as the current road is being upgraded.

Point 6 – Route 509 near Snøde



Actions or Info

The transports will continue towards the airport on route 509.

- Obstacle clearances:

A. 6,87m
B. 6,90m

Point 7 – Route 509 near Snøde

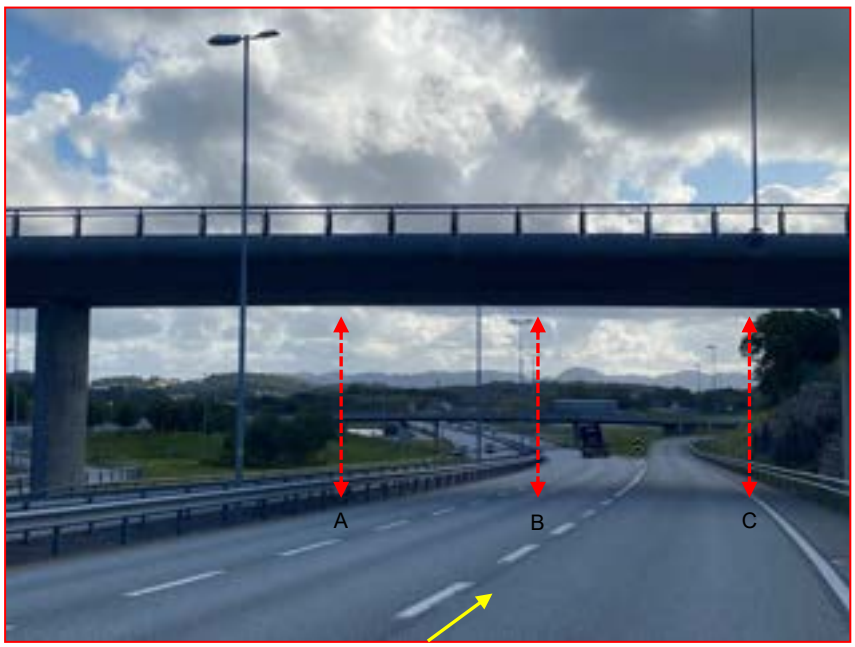


Actions or Info

The transports will pass through the roundabout in their own side of the road.

- 1 sign must be made removable to allow for blade overhang.
- Vegetation in center of roundabout must be trimmed to a maximum height of 0,8 meters above streel level.

Point 8 – Route 509 near Sola



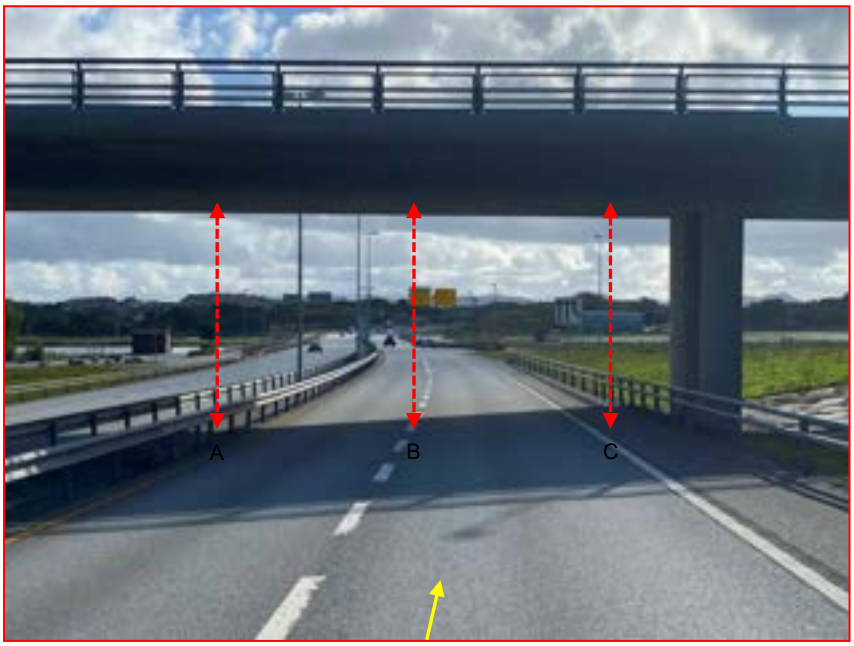
Actions or Info

The transports will continue towards the airport on route 509.

- Obstacle clearances:

A. 6,74m
B. 6,52m
C. 6,34m

Point 9 – Route 509 near Sola



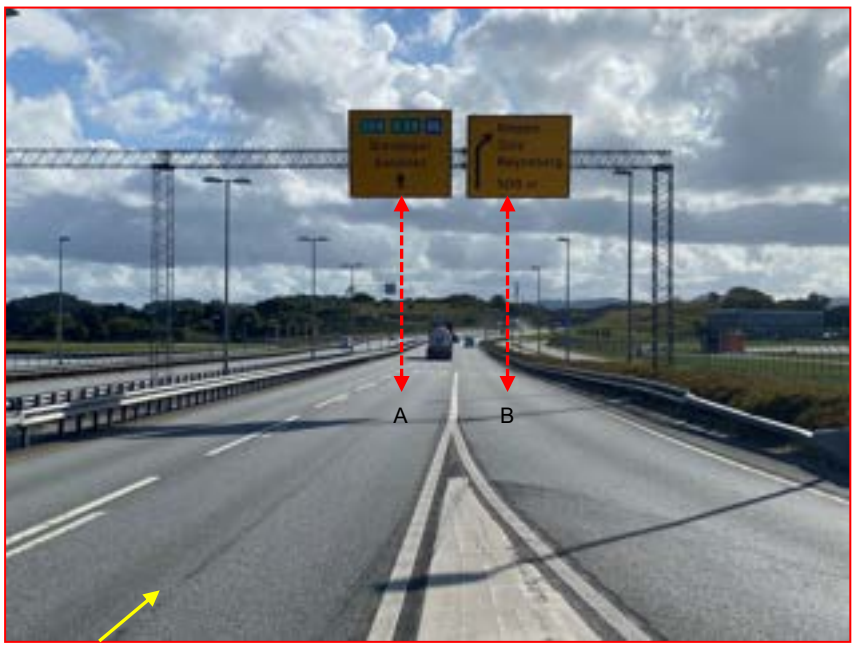
Actions or Info

The transports will continue towards the airport on route 509.

- Obstacle clearances:

A. 6,74m
B. 6,52m
C. 6,34m

Point 10 – Route 509 near Sola



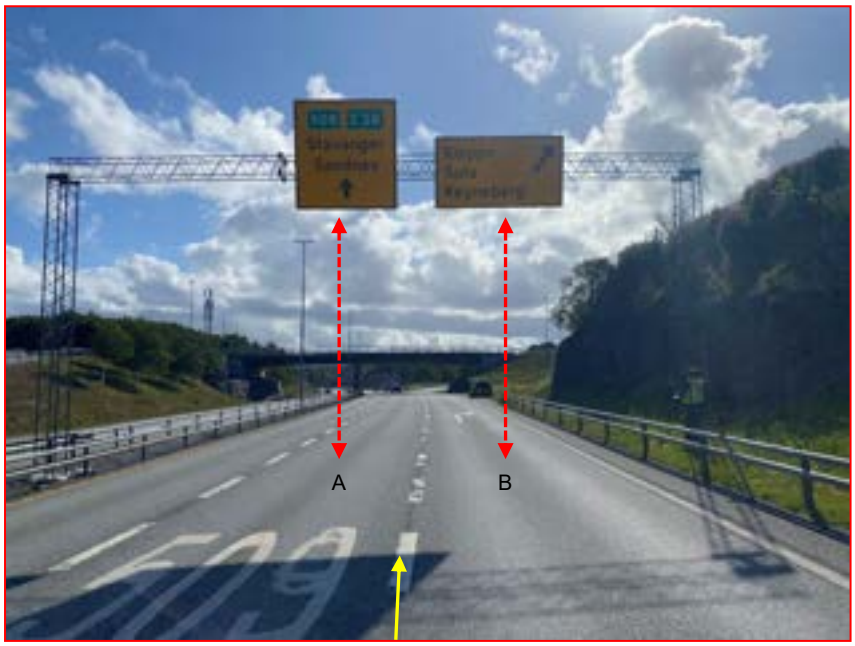
Actions or Info

The transports will on route 509 passing the airport.

- Obstacle clearances:

A. 5,96m
B. 5,90m

Point 11 – Route 509 near Sola



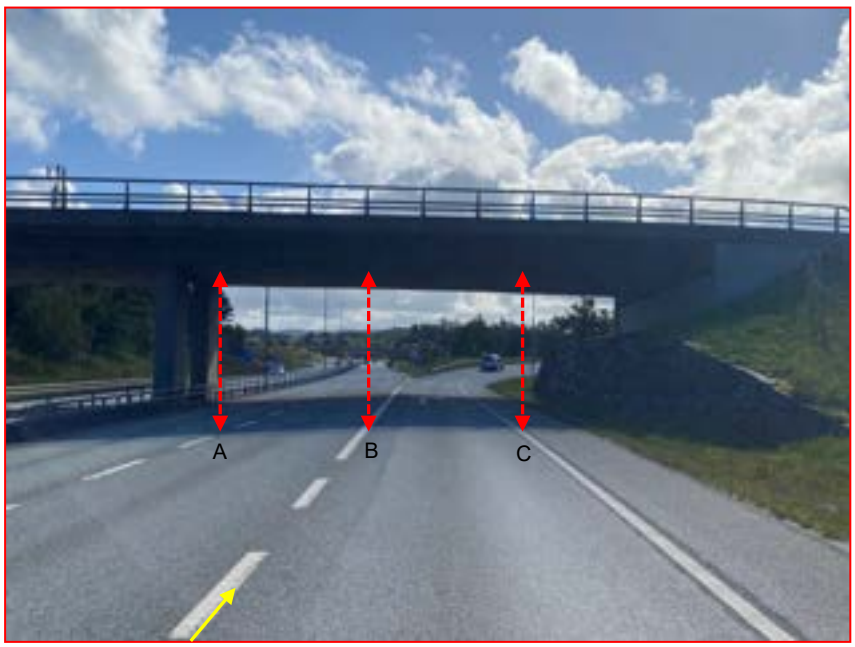
Actions or Info

The tranpsorts will prepare to leave route 509 at the junction towards route 510.

- Obstacle clearances:

A. 5,73m
B. 5,88m

Point 12 – Route 509 near Sola

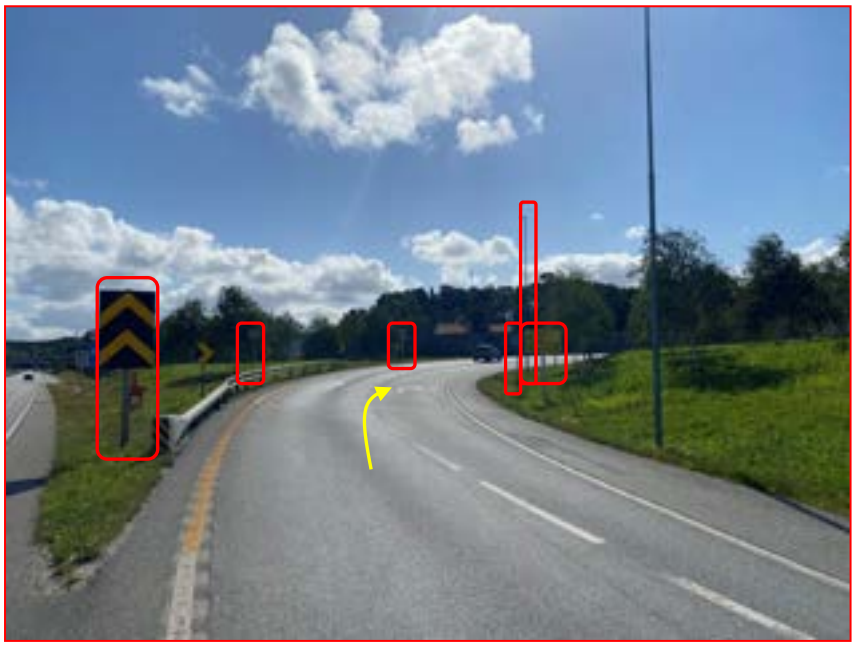


Actions or Info

The tranpsorts will prepare to leave route 509 at the junction towards route 510

Obstacle clearances:
A. 5,25m
B. 5,30m
C. 5,21m

Point 13.1 – Route 509 onto Route 510 near Sola



Actions or Info

The transports will enter the junction leading towards route 510.

- 2 signs in the right side of the road must be made removable to allow for blade overhang.
- 1 light pole must be removed to allow for blade overhang.
- 3 signs in the left side of the road must be lowered to 1,5m to allow for blade oversail.

See attached PDF file: Point 13.

Point 13.2 – Route 509 onto Route 510 near Sola



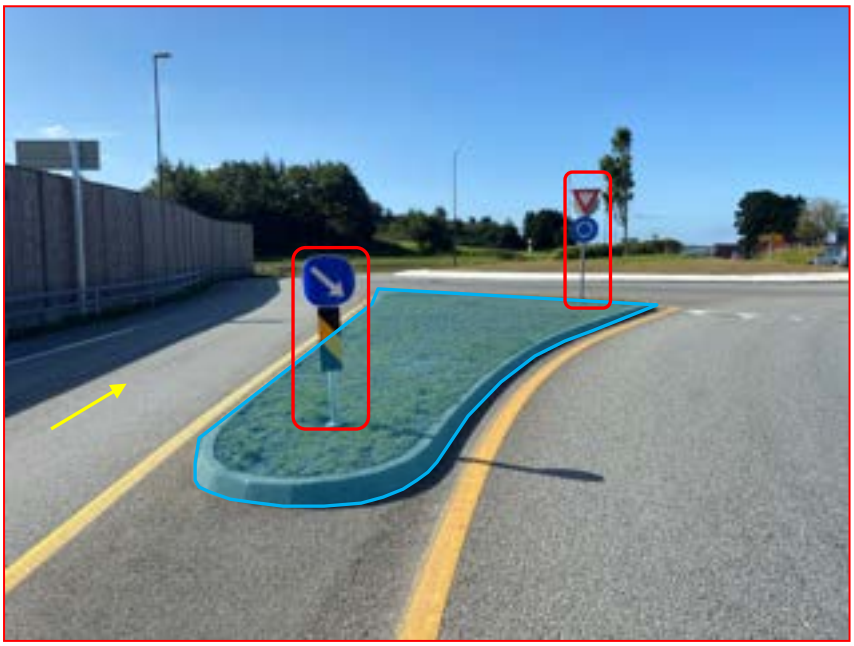
Actions or Info

The transports will pass onto the wrong lane when entering the roundabout.

- Driving against flow of traffic required.
- 1 sign must be removable to allow for blade oversail.
- 2 light pole must be removed to allow for blade oversail.

See attached PDF file: Point 13.

Point 13.3 – Route 509 onto Route 510 near Sola



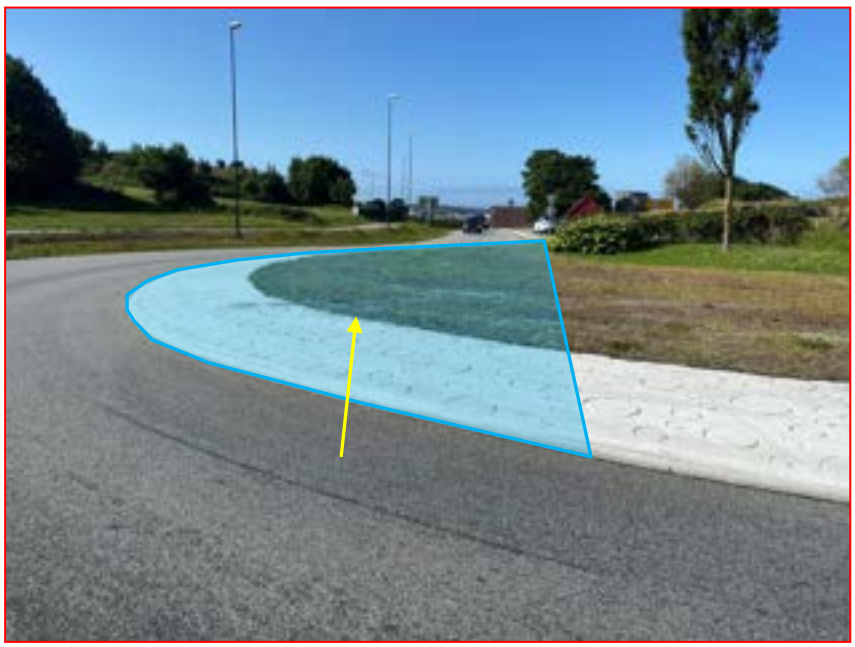
Actions or Info

The transports will clear the roundabout in the opposite lane.

- Driving against flow of traffic required.
- 2 signs must be made removable to allow space for the transports.
- Traffic island must be in road level and suitable to drive on.

See attached PDF file: Point 13.

Point 13.4 – Route 509 onto Route 510 near Sola



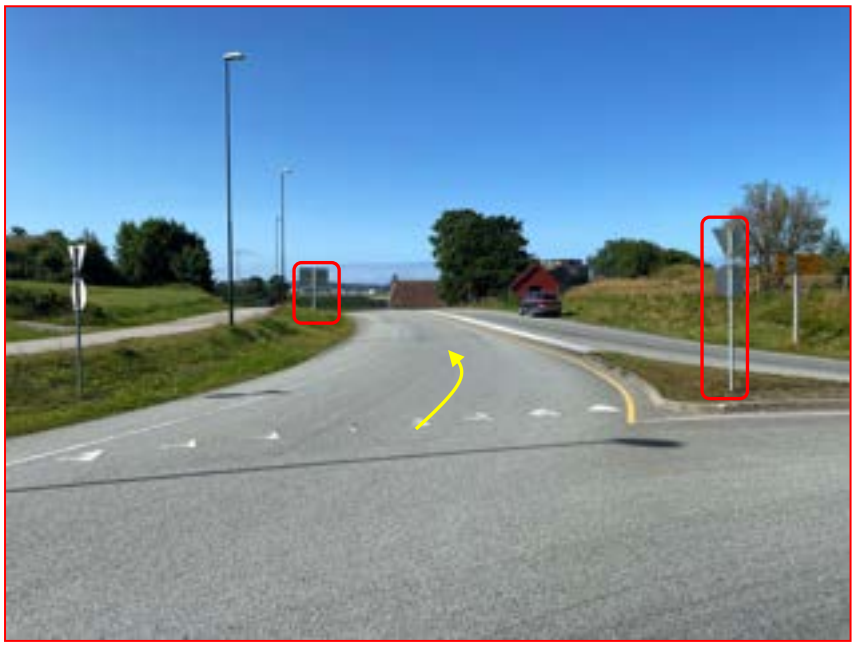
Actions or Info

The transports will clear the roundabout in the opposite lane.

- Driving against flow of traffic required.
- Center of roundabout must be in road level and be suitable to drive on.

See attached PDF file: Point 13.

Point 14 – Route 510 near Sola.



Actions or Info

The transports will leave the roundabout and remain in the opposite lane up until point 15.

- Driving against flow of traffic until next roundabout requried.
- 2 signs must be made removable to allow for blade overhang/oversail.

Point 15.1 – Route 510 near Sola.

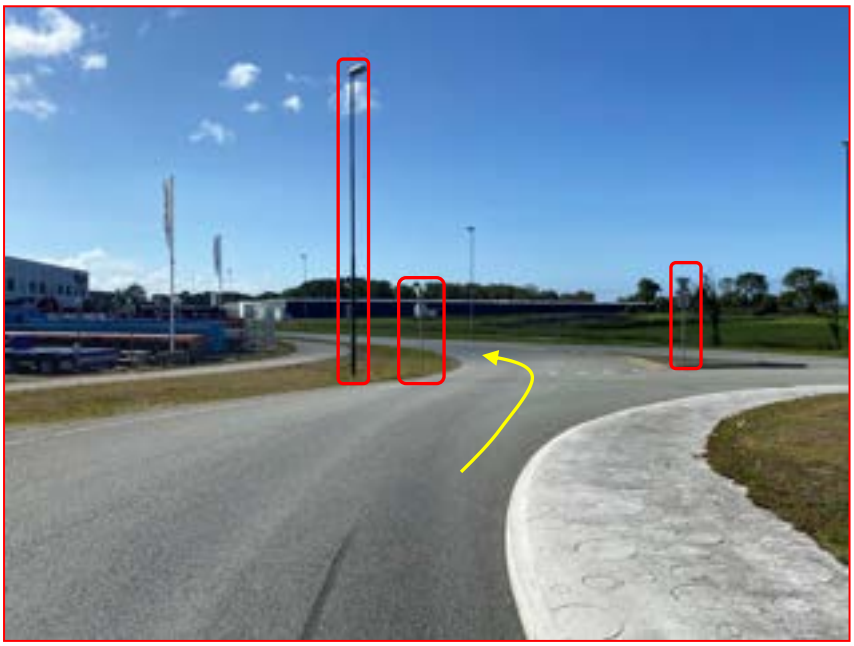


Actions or Info

The transports will enter and exit the roundabout in the opposite lane.

- Driving against flow of traffic requried.

Point 15.2 – Route 510 near Sola



Actions or Info

The transports will enter and exit the roundabout in the opposite lane.

- Driving against flow of traffic required.
- 2 signs must be made removable to allow for blade overhang/oversail.
- 1 light pole must be removed to allow for blade ovesail.

Point 16 – Route 510 near Sola



Actions or Info

The transports will continue on route 510, now back in the right lane.

- 4 signs in center reservation must be mde removable to allow for blade oversail.

Point 17 – Route 510 near Sola



Actions or Info

The transports will continue on route 510, now back in the right lane.

- 2 signs in center reservation must be made removable to allow for blade oversail.

Point 18 – Route 510 near Sola

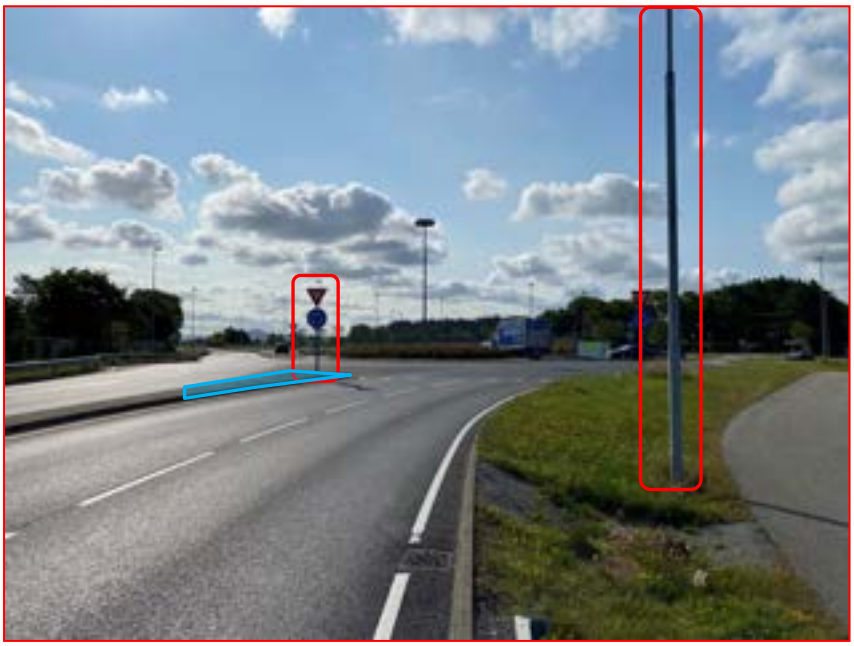


Actions or Info

The transports will enter the roundabout in theur own lane.

- 1 sign must be removable to allow for blade overhang.
- Traffic island must be kept in road level.

Point 19.1 – Route 510 near Sola



Actions or Info

The transports will pass into the opposite lane when entering the roundabout.

- Driving against flow of traffic required.
- 1 sign must be made removable to allow for blade oversail.
- 1 light pole must be removed to allow for blade overhang.
- The marked area will have to be made level with the road and suitable to travel on.

See attached PDF file: Point 19.

Point 19.2 – Route 510 near Sola



Actions or Info

The transports will leave the roundabout in the opposite lane and pass back into the right lane at the end of the traffic island.

- Driving against flow of traffic required.
- 2 signs must be removable to allow for blade overhang/oversail.

See attached PDF file: Point 19.

Point 20.1 – Fv 443 near Sola



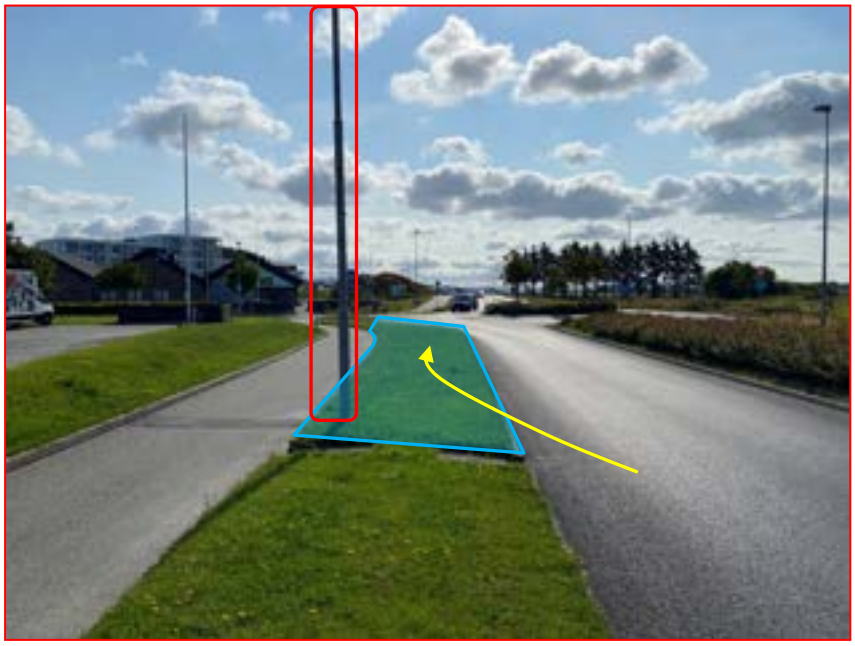
Actions or Info

The transports will pass onto the opposite land in order to get a better approach to the oncoming roundabout.

- These modifications are made to avoid removing trees in center of the roundabout.
- Driving against flow of traffic required.
- 1 sign must be removable to allow for blade oversail.

See attached PDF file: Point 20.

Point 20.2 – Fv 443 near Sola



Actions or Info

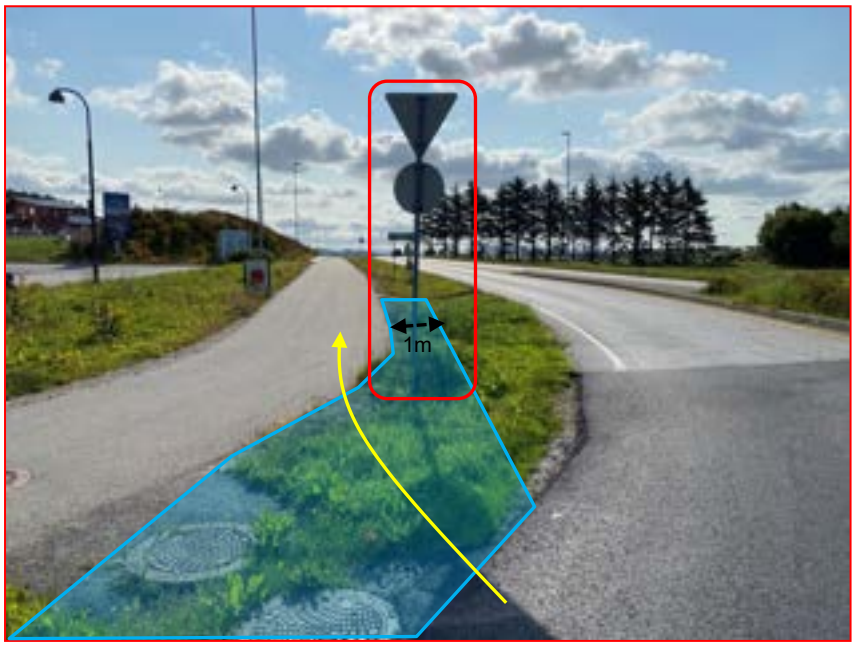
The transports will remain in the opposite land in order to get a better approach to the oncoming roundabout.

- Driving against flow of traffic required.
- 1 light pole must be removed to allow for blade overhang.
- The grass verge must be suitable to drive on and not higher than curb stone.
- The curbstone must be ramped to allow as smooth entry onto the blue area.
- Side walk must be approved to drive on.

See attached PDF file: Point 20.

MAMMOET

Point 20.3 – Fv 443 near Sola



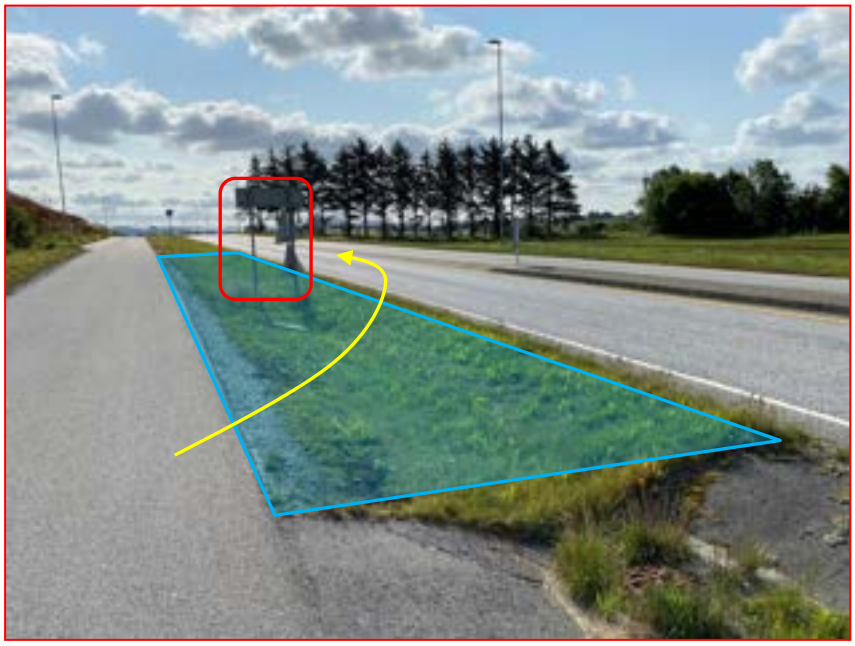
Actions or Info

The transports will leave the roundabout in the opposite lane, using the side walk as well.

- Driving against flow of traffic required.
- 1 sign must be made removable to allow space for the transport.
- Sewer cover must be re-inforced and protected.
- The grass verge must be made suitable to drive on.
- Side walk must be approved to drive on.

See attached PDF file: Point 20.

Point 20.4 – Fv 443 near Sola



Actions or Info

The transports will drive back onto the road, leaving the side walk in the marked area.

- Driving against flow of traffic required.
- 2 signs must be removable to allow space for the truck as well as oversail for the blade.
- The grass verge must be in road level and made suitable to drive on.

Public

Point 21.1 – Fv 443 near Sandnes

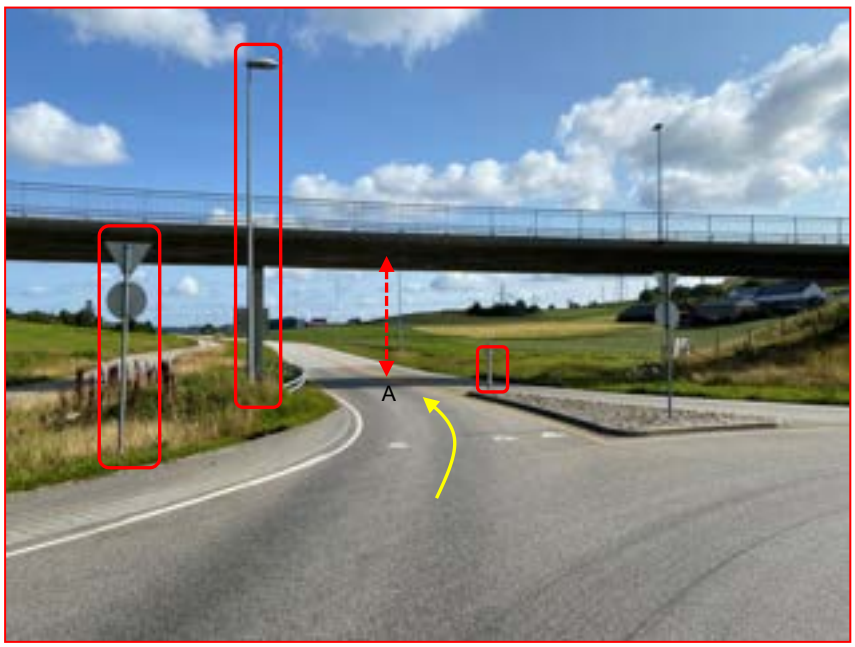


Actions or Info

The transports will enter the roundabout in the opposite lane to avoid road modifications.

- Driving against flow of traffic required.

Point 21.2 – Fv 443 near Sandnes



Actions or *Info*

The transports will leave the roundabout in the opposite lane to avoid road modifications.

- Driving against flow of traffic requied-
- 2 signs must be removable to allow for blade oversail/overhang.
- 1 light pole must be removed to allow for blade oversail.

- Obstacle clearances:

A. 6,18m

Point 22 – Fv 443 near Sandnes



Actions or Info

The transports will continue on Forusbeen.

Obstacle clearances:
A. 6,85m

Point 23.1 – Fv 443 near Sandnes



Actions or Info

The transports will enter the roundabout in the right lane.

- 4 signs must be removable to allow for blade overhang/oversail.
- Tree must be trimmed into the trunk and to a height of 4,5 meters.

Point 23.2 – Fv 443 near Sandnes

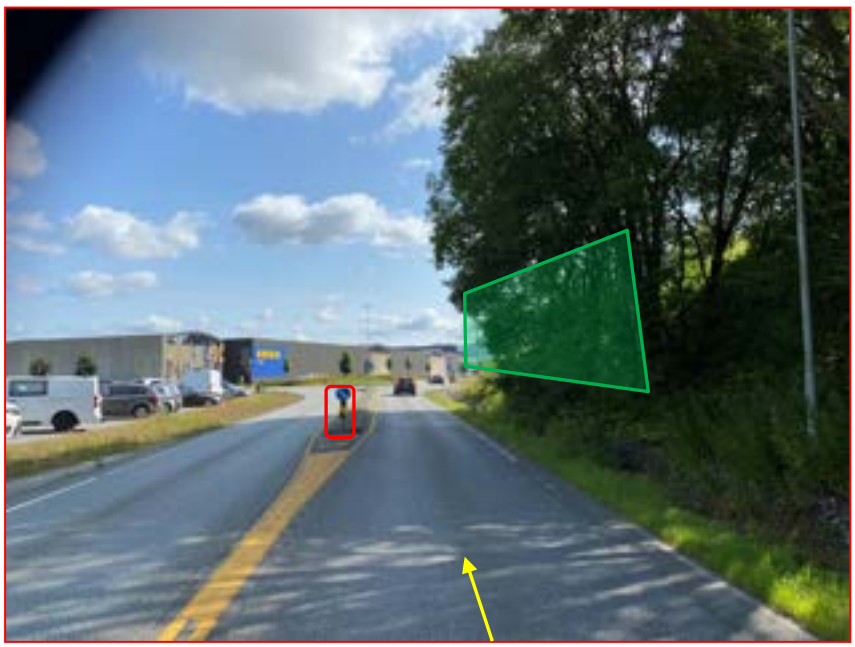


Actions or Info

Transports will leave the roundabout and onto Løwenstrasse in the right land.

- 2 signs must be removable to allow for blade oversail.

Point 24 – Fv 443 near Sandnes



Actions or Info

The transports will continue on Løwenstrasse.

- 1 sign must be removable to allow room for the tower trucks.
- Trees must be trimmed into the trunk and in a height of 4,50 meters.

Point 25 – Fv 443 near Sandnes



Actions or Info

The transports will enter and leave the roundabout on Løwenstrasse in the right lane.

- 3 signs must be removable to allow for blade overhang/oversail.

Point 26 – Fv 443 near Sandnes

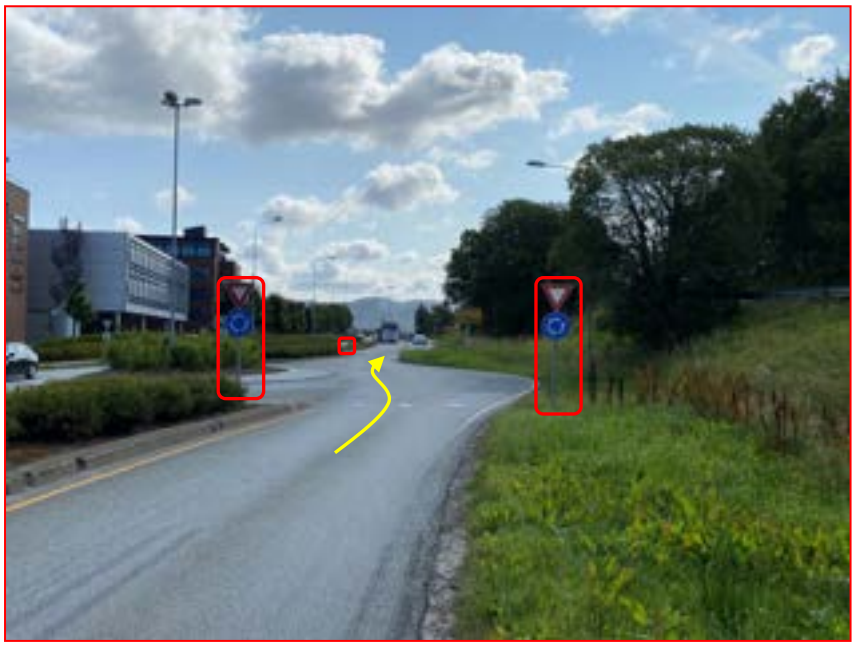


Actions or Info

The transports will continue on Løwenstrasse.

- 1 sign must be removed to allow for blade oversail.

Point 27 – Fv 443 near Sandnes



Actions or Info

The transports will enter and leave the roundabout on Løwenstrasse in the right lane.

- 3 signs must be removable to allow for blade oversail/overhang.

Point 28.1 – From Fv 443 onto E39 near Sandnes



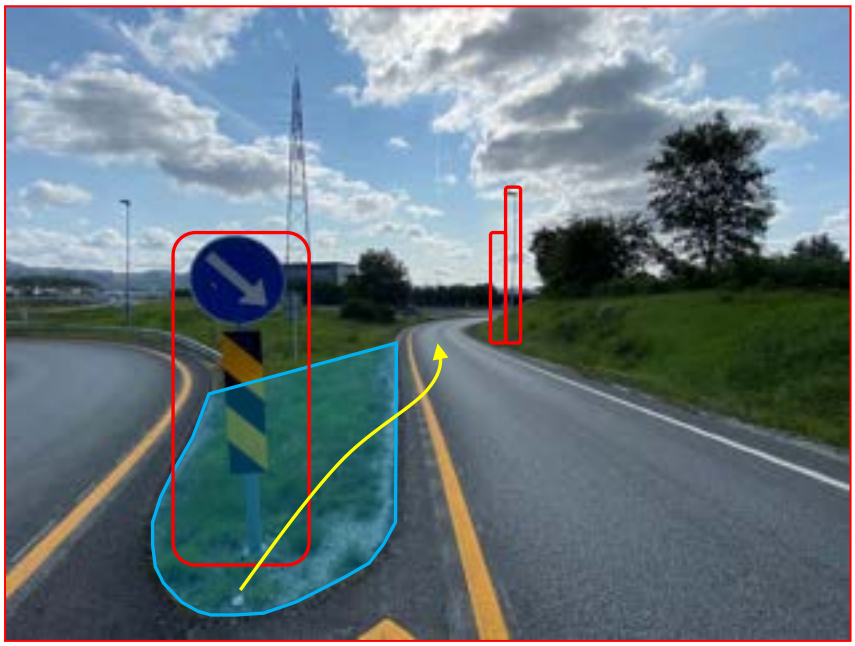
Actions or Info

The transports will turn right in the roundabout to enter the E39.

- Driving against flow of traffic required.
- 4 signs must be removable to allow for blade oversail/overhang.
- 1 light pole must be removed to allow for blade overhang.

See attached PDF file: Point 28.

Point 28.2 – Onto the E39 near Sandnes



Actions or Info

The transports will drive down the access ramp to enter the E39.

- Driving against flow of traffic required.
- 1 sign must be removable to allow the transports space to pass.
- 2 light poles must be removed to allow room for blade oversail.
- Drivable area must be in road level and be suitable drive on.

See attached PDF file: Point 28.

Point 28.3 – Onto the E39 near Sandnes



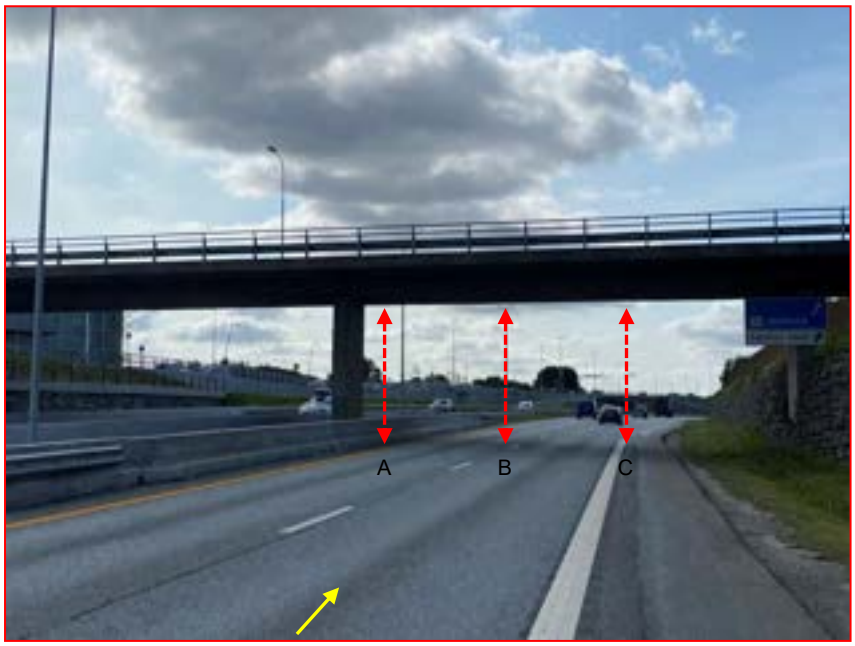
Actions or Info

The transports will drive down the access ramp to enter the E39.

- Drivable area must be in road level and be suitable to drive on.

See attached PDF file: Point 28.

Point 29 – South on E39 near Sandnes



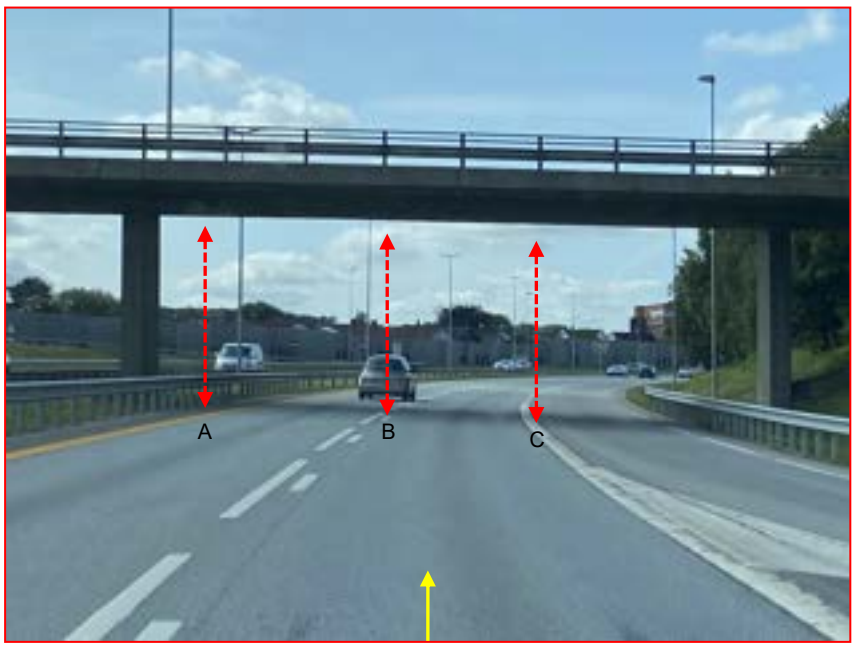
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,35m
B. 5,40m
C. 5,45m

Point 30 – South on E39 near Sandnes



Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 4,82m
B. 4,90m
C. 4,82m

Point 31 – South on E39 near Sandnes



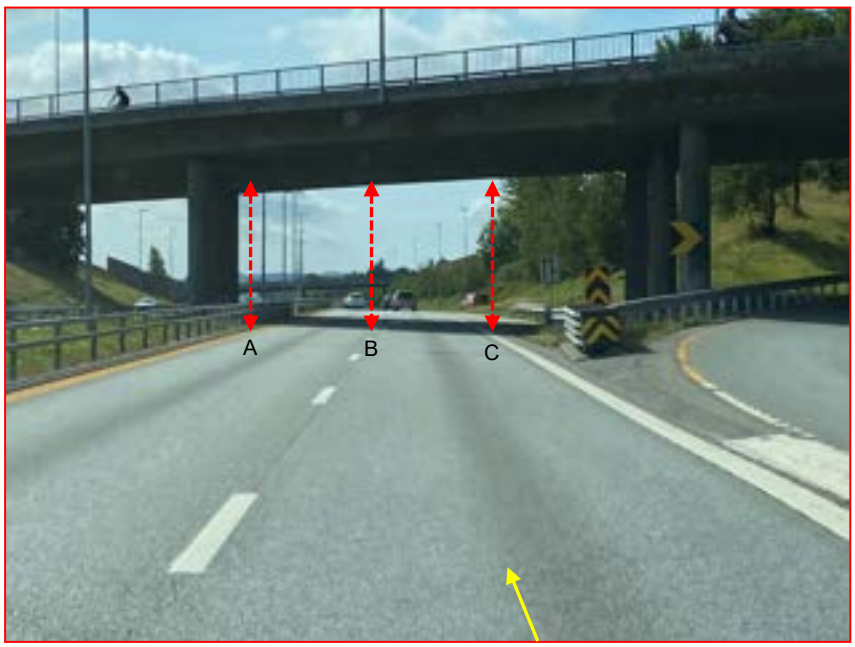
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,50m
B. 5,25m
C. 5,00m

Point 32 – South on E39 near Sandnes



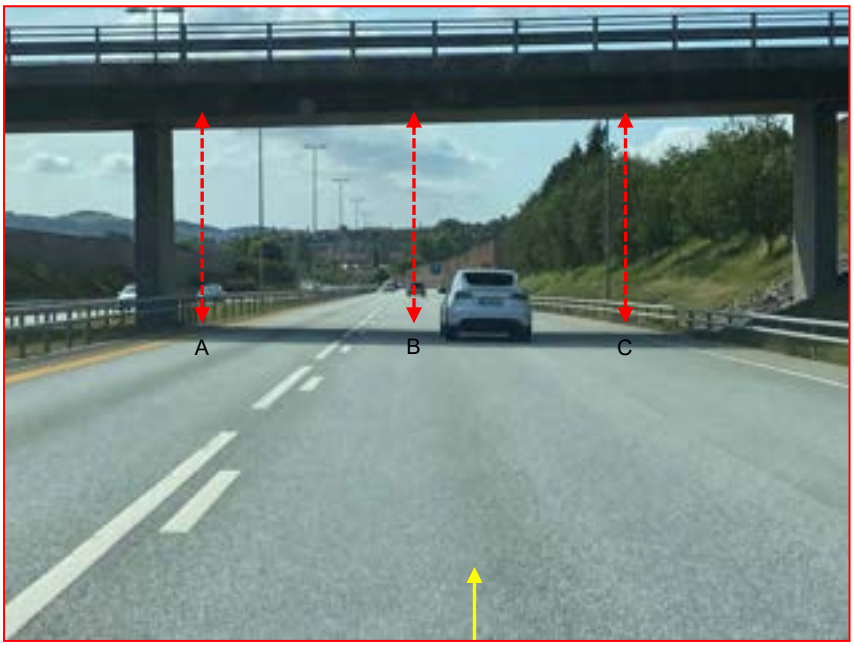
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,85m
B. 5,95m
C. 6,05m

Point 33 – South on E39 near Sandnes



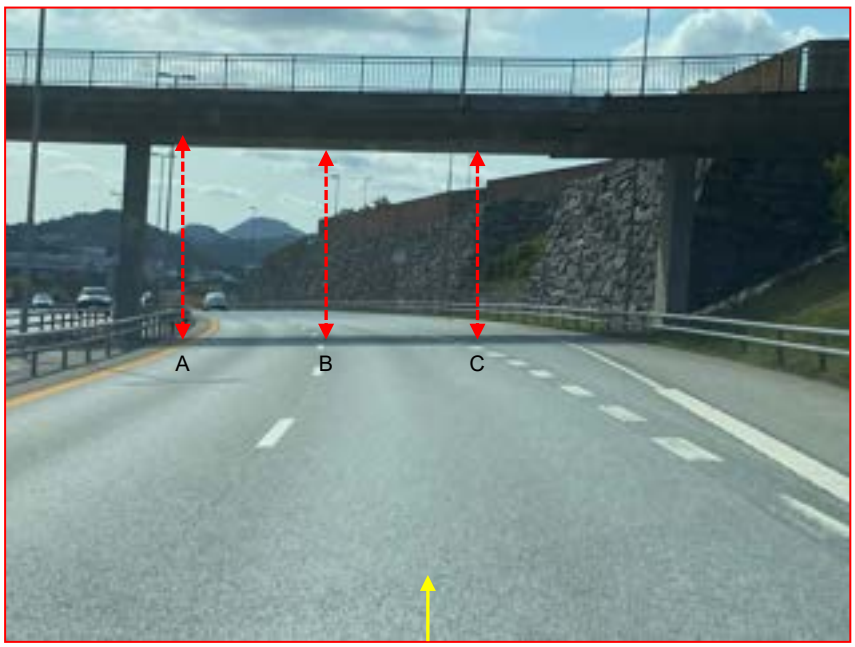
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,12m
B. 5,20m
C. 5,12m

Point 34 – South on E39 near Sandnes



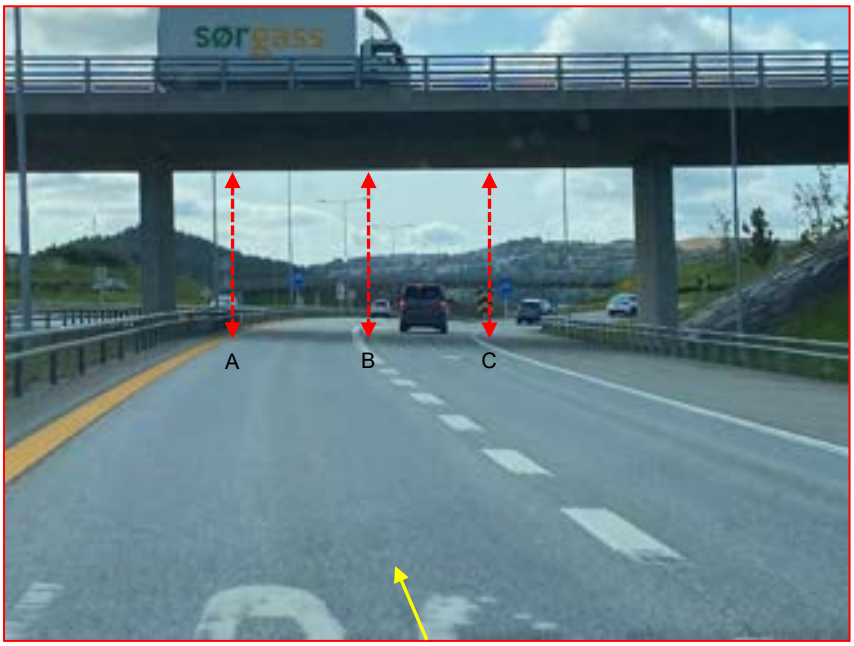
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 6,20m
B. 6,30m
C. 6,30m

Point 35 – South on E39 near Sandnes



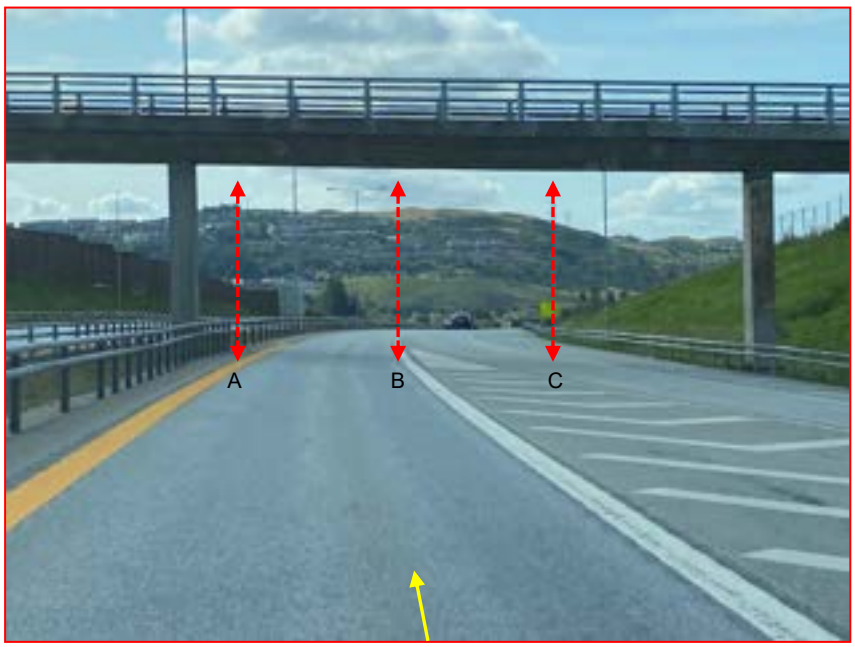
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,25m
B. 5,30m
C. 5,21m

Point 36 – South on E39 near Sandnes



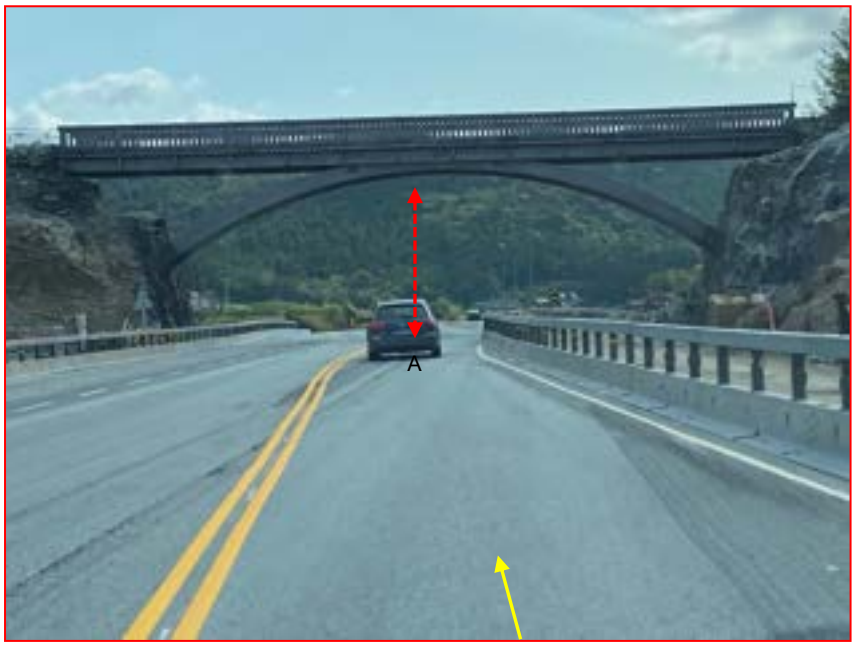
Actions or *Info*

The transports will continue south on the E39

- Obstacle clearances:

A. 5,25m
B. 5,30m
C. 5,21m

Point 37 – South on E39 near Håbet



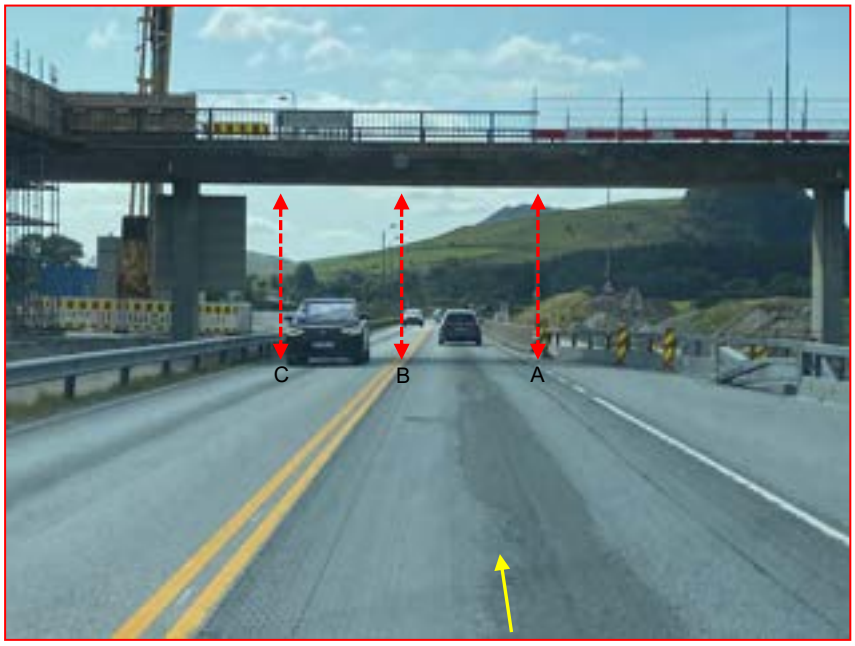
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 6,80m

Point 38 – South on E39 near Håbet



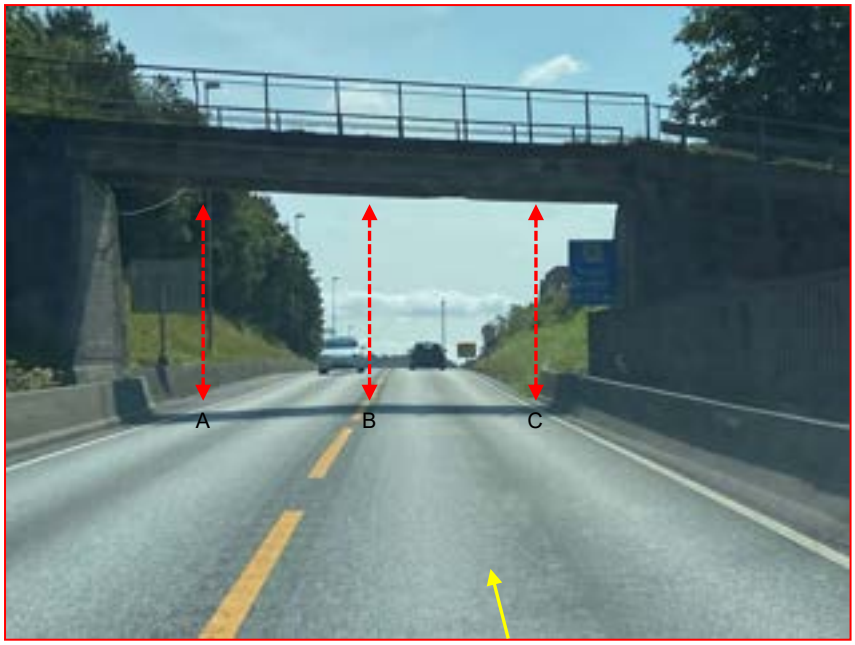
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 5,10m
B. 5,10m
C. 5,10m

Point 39 – South on E39 near Opstad



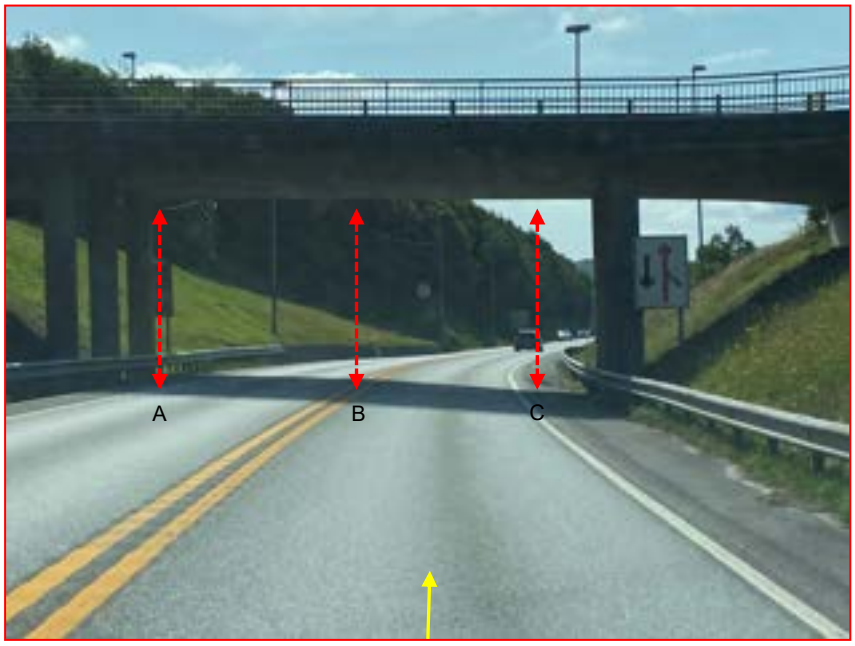
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 4,80m
B. 4,80m
C. 4,80m

Point 40 – South on E39 near Opstad



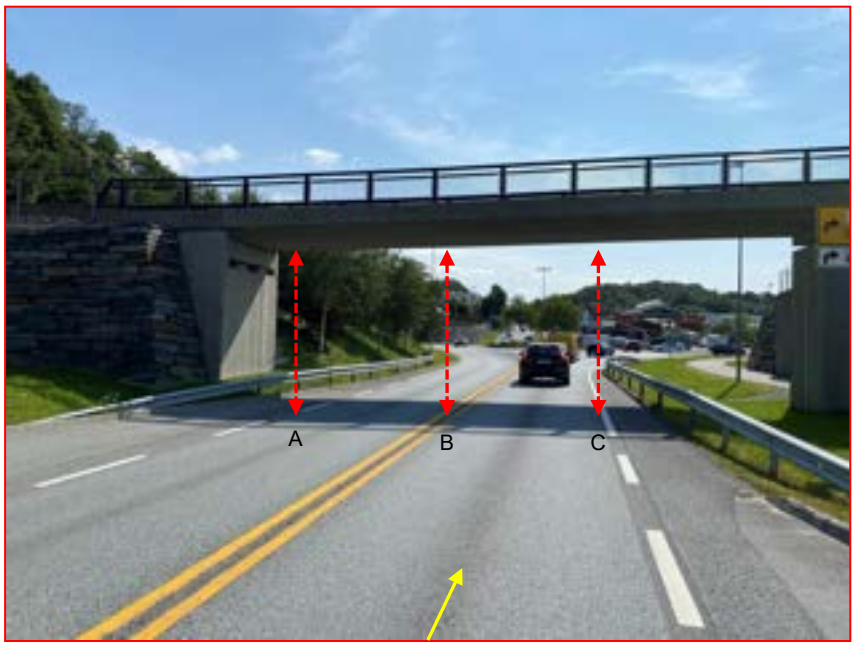
Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 4,98m
B. 4,79m
C. 4,75m

Point 41 – South on E39 near Ålgård



Actions or Info

The transports will continue south on the E39

- Obstacle clearances:

A. 4,93m
B. 4,95m
C. 4,95m

Point 42.1 – South on E39 near Ålgård



Actions or Info

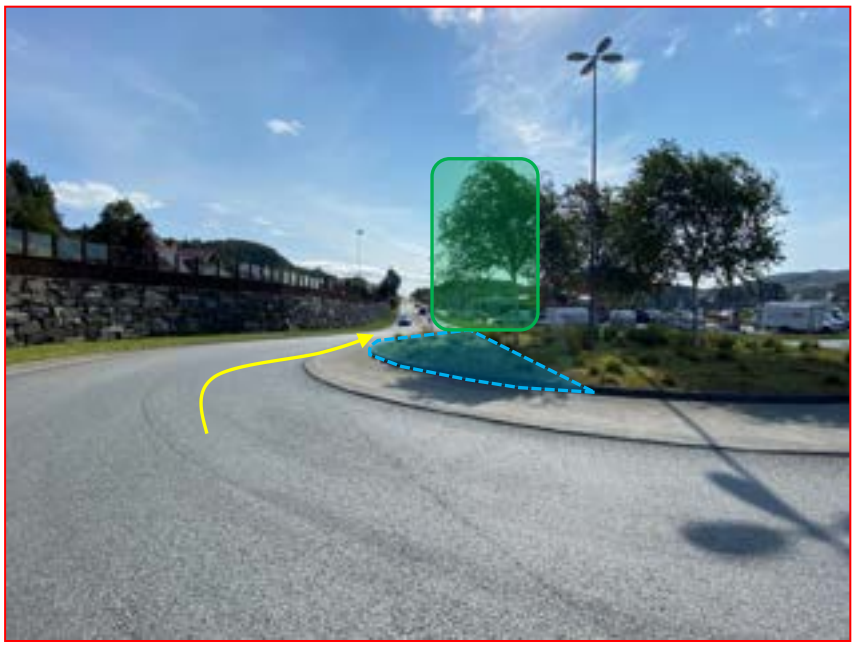
The transports will pass the roundabout in the opposite lane to minimize the required road modifications.

- Driving against flow of traffic requried.
- 1 sign must be made removable to allow space for the transports to pass.
- 1 light pole must be removed to allow for blade overhang.

See attached PDF file: Point 42.

MAMMOET

Point 42.2 – South on E39 near Ålgård



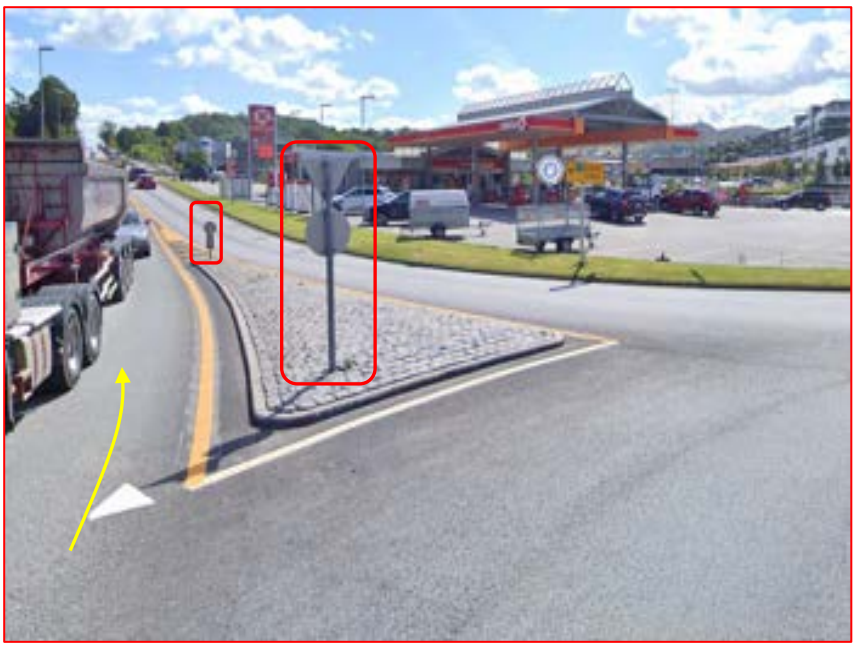
Actions or Info

The transports will pass the roundabout in the opposite lane to minimize the required road modifications.

- Driving against flow of traffic is requried.
- The marked oversail area cannot be higher than 0,80 meters from road level.
- Trees must be removed in center of roundabout in over sail area.

See attached PDF file: Point 42.

Point 42.3 – South on E39 near Ålgård



Actions or Info

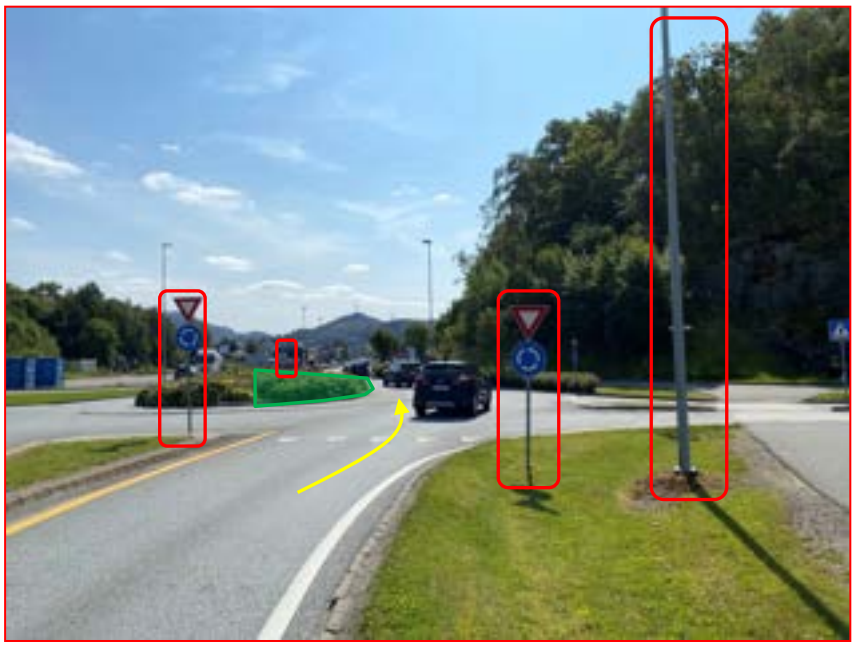
The transports will pass the roundabout in the opposite lane to minimize the required road modifications.

- Driving against flow of traffic is required.
- 2 signs must be removable to allow overhang/oversail for blades.

See attached PDF file: Point 42.

Public

Point 43 – South on E39 near Ålgård



Actions or Info

The transports will pass the roundabout in the right lane.

- 3 signs must be made removable to allow for blade overhang/oversail.
- 1 light pole must be removed to allow for blade overhang.
- Vegetation in center of the roundabout cannot exceed a height of 0,80 meters.

Point 44 – South on E39 near Ålgård

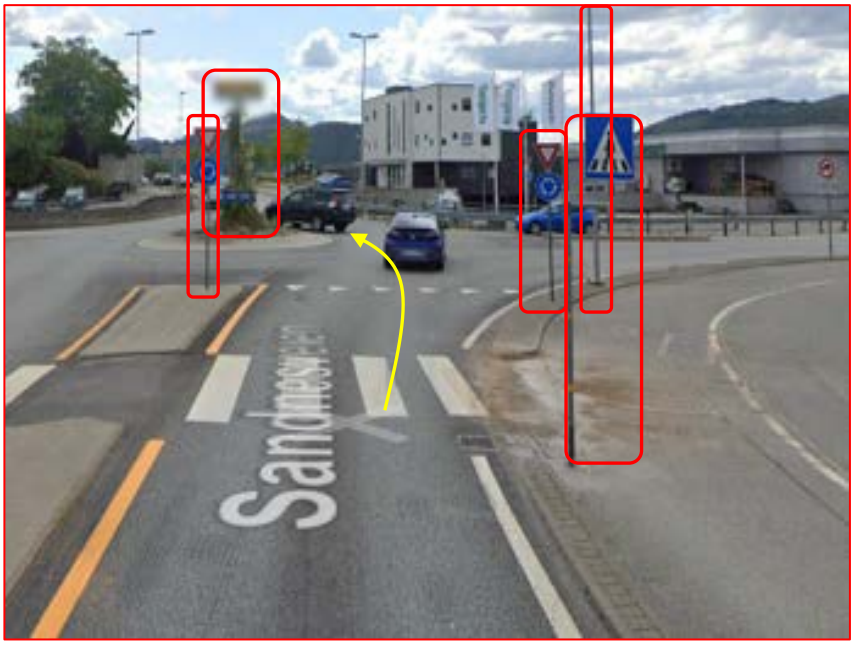


Actions or Info

The transports will continue south on the E39.

- 1 sign must be made removable.

Point 45 – South on E39 near Fiske

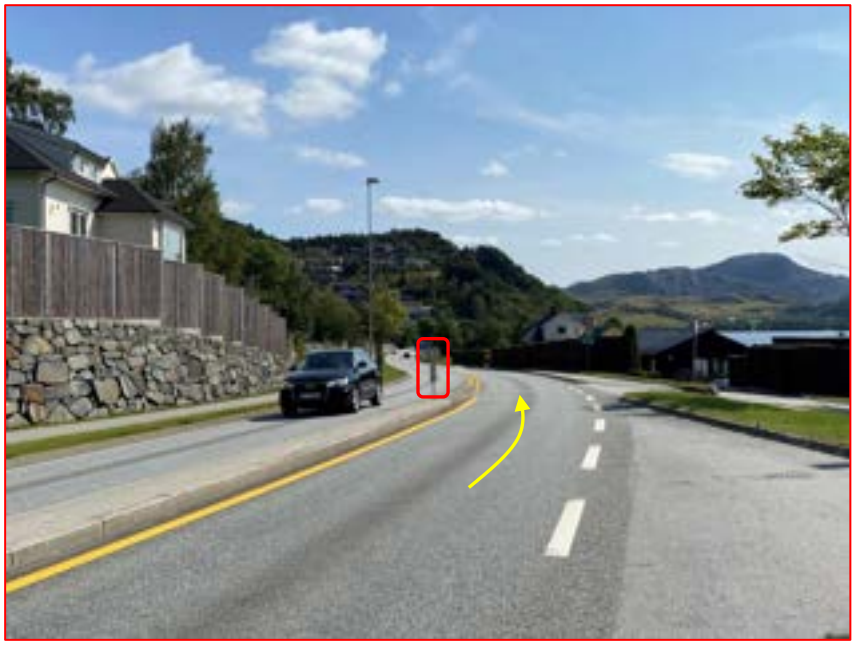


Actions or Info

The transports will pass the roundabout in the right lane.

- 4 signs must be made removable to allow for blade oversail/overhang.
- 1 light pole must be removed to allow for blade overhang.

Point 46 – South on E39 near Fiske



Actions or Info

The transports will continue south on the E39.

- 1 sign must be made removable.

Point 47 – South on E39 near Fiske



Actions or Info

The transports will continue south on the E39.

- 1 sign must be made removable.

Point 48 – South on E39 near Gjesdal

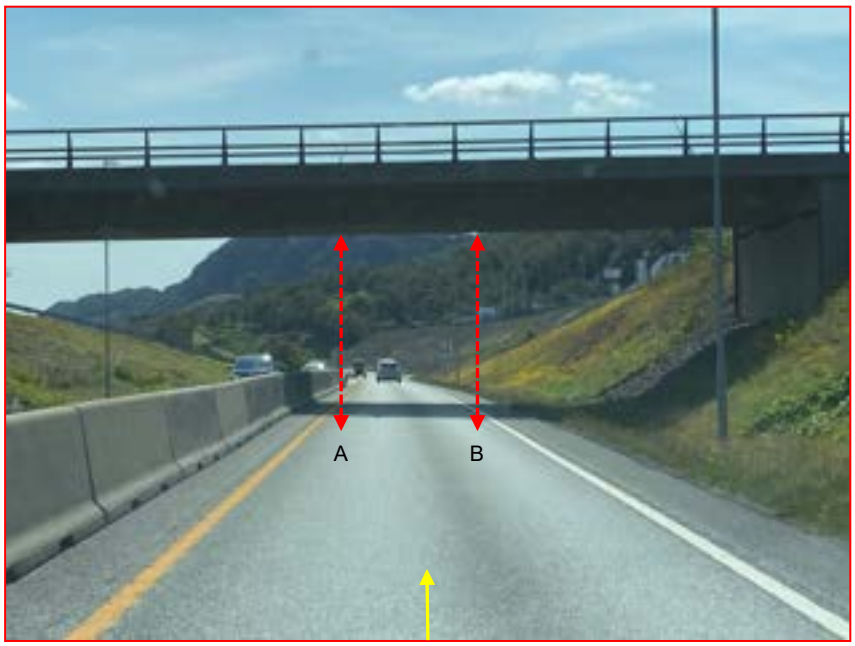


Actions or Info

The transports will continue south on the E39.

- 3 light poles must be removed.

Point 49 – South on E39 near Gjesdal



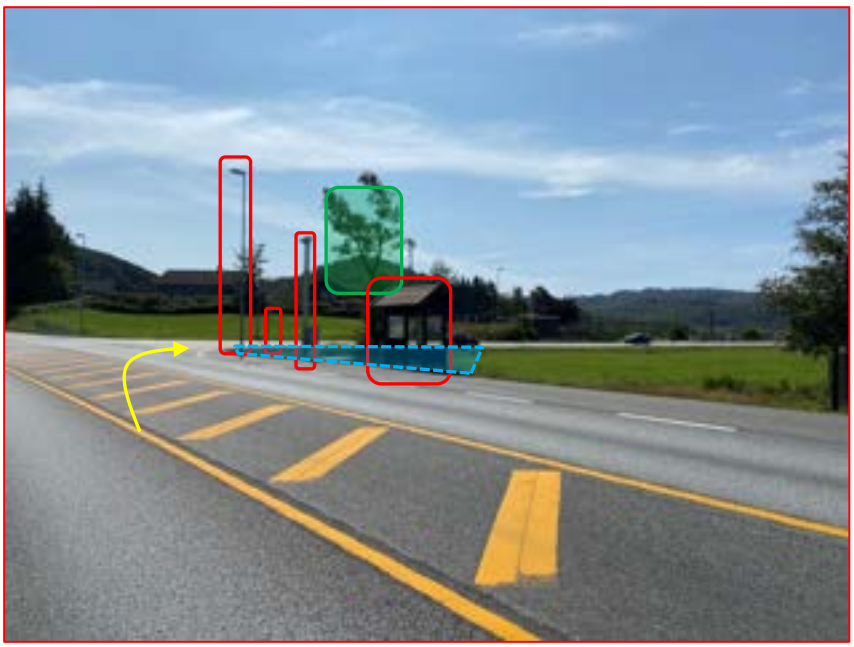
Actions or Info

The transports will continue south on the E39.

- Obstacle clearances:

A. 5,25m
B. 5,30m

Point 50 – Right turn onto Rv504 near Bue



Actions or Info

The transports will turn right onto Buevegen.

- 1 sign must be made removable.
- 2 light poles must be removed.
- 1 tree must be removed.
- 1 bus shelter must be relocated to outside the over sail area.

See attached PDF file: Point 50.

Point 51 – Rv504 near Bue



Actions or Info

The transports will continue on route 504 towards the site entrance.

- 2 signs must be made removable.

Point 52 – Rv504 near Bue



Actions or Info

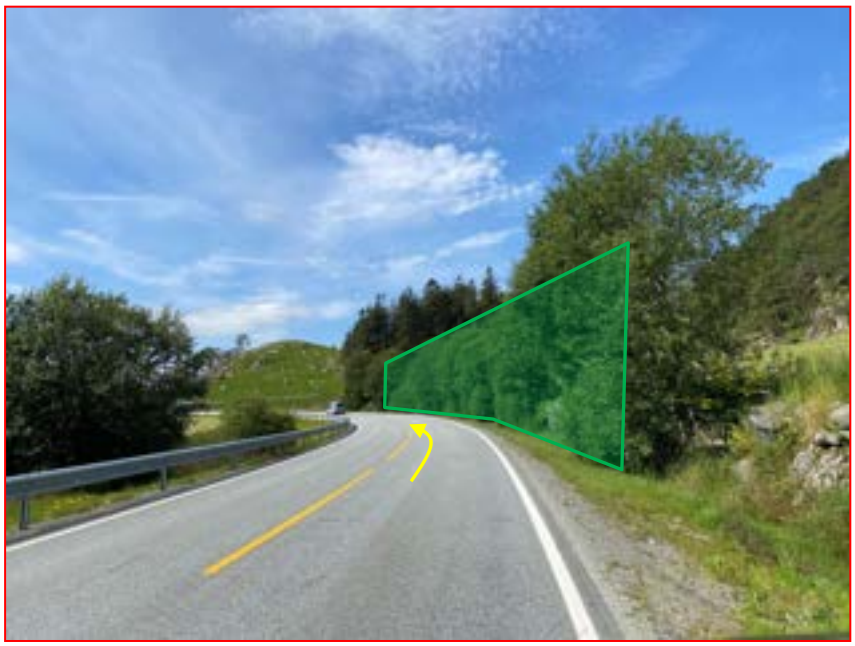
Transports will follow the right curve on route 504 towards site. There are two options for passing this curve.

Option 1:
- Rocks blasted away to allow over sail.

Option 2:
- Road must be extended outside the crashbarrier, where there is considerable height difference.

See attached PDF file: Point 52.

Point 53 – Rv504 near Bue



Actions or Info

The transports will follow the left curve.

- Trees must be trimmed into the trunk to allow tip over sail.

Point 54 – Relevant route point for access 1



Actions or Info

The transports will turn left onto the site roads.

- The access turn will have to the built according to the site specific requirements for the appointed supplier.

Point 55 – Rv504 near Helland



Actions or Info

Transports will follow the right curve on route 504 towards site. There are two options for passing this curve.

Option 1:
- Rocks blasted away to allow over sail.

Option 2:
- Road must be extended outside the crashbarrier, where the height difference is limited.

See attached PDF file: Point 55.

Point 56 – Relevant route point for access 2



Actions or Info

The transports will turn left onto the site roads.

- The access turn will have to the built according to the site specific requirements for the appointed supplier.

Measured in 18°

Cable overview

NO.:	HEIGHT:	HIGH VOLTAGE:	CRITICAL:	GOOGLE LINK:
1	9,59m	Yes	No	https://maps.app.goo.gl/ry84a6RMCTp3K7zN9
2	18,39m	Yes	No	https://maps.app.goo.gl/jJUX7tJGJ7N9U9pj8
3	6,51m		No	https://maps.app.goo.gl/1xJjbcamqtGAPgf5A
4	10,33m	Yes	No	https://maps.app.goo.gl/TXgJPmfusvh7rCvt6
5	7,56m		No	https://maps.app.goo.gl/XV54x3F82UjxohRp6
6	6,56m		No	https://maps.app.goo.gl/459wG2oeRstGUPTJ8

Conclusion

The route is suitable for transport of wind turbine components of SG170 6.0 MW – 115MHH to Moifjellet if the road modifications described in the document are carried out.

Besides the already highlighted modifications mentioned in this report, Mammoet have the following comments:

- Mammoet recommend to transport the base and mid-section towers by use of clamp-sets with hydraulic suspension, due to the road camber on route 509 between points 4 and 7.
- The base tower and mid-section 1 must be transported without tower feet mounted.
- All bridge clearances on the E39 are based on measurements taken by the Norwegian Authorities which is shared on the homepage www.Vegkart.no .
    - No cables were measured on the E39, but all were deemed to have the necessary clearance.
- All cables are measured in approximately 18°
- The modifications required in point 20 can be reduced significantly if the trees are removed and half of the center island made suitable to drive on.
- Tree trimming should be expected between points 42 and 43, but the exact amount should be determined closer to the actual execution.
- Towers with a diameter up to 5,15 meters can be transported to site by using an alternative route (https://maps.app.goo.gl/qUkeDWadEg1PEDHJ7). This would however require the railroad bridge in Varhaug to be levelled out, due to the steep convex radius of the bridge. The proposed route will travel on Nordsjøvegen which is very narrow and might have to be widened in areas and lay-bys built to allow traffic to pass the transports. The expected travelling time is longer than for the proposed route.
- It is expected that blades, tower sections and main components are able to travel to the full distance to site without the need for breaks, why possible parking areas and lay-by's have not been considered during the survey.
- Due to the nature of the transport and the, in areas, narrow roads between the port and site there will be a need for well planned and executed traffic management.
- This route survey only covers the areas and modifications required for transporting the described wind turbine generators to site and is subject to obtaining permits for all relevant Norwegian authorities, third-party landowner agreements where needed, approved bridge calculations and permits issued from Statens Vegvesen for the transport equipment considered.

Public



MAP LEGEND: Body over sail | Tip over sail | Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 2. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER
SAP No:	PROJECT No: -	SUB: - DOC: D PART: - SHT. 1/1 REV. - 00



MAP LEGEND:

Body over sail

Tip over sail

Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 13. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-		- D -		- 1/1 -	00



MAP LEGEND:

Body over sail

Tip over sail

Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 19. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



MAP LEGEND: Body over sail | Tip over sail | Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: SGRE

PROJECT: Moifjellet

TITLE: Point 20. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00

3 signs must be removable

1 light pole must be removed

Over sail area
Clearance 0,8m above road level
Approx 750m2

Over sail area
Clearance 0,8m above road level
Approx 270m2

Drivable area must be in road level
and be suitable to drive on
Approx 200m2

Drivable area must be in road level
and be suitable to drive on
Approx 70m2

MAP LEGEND:

Body over sail

Tip over sail

Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 28. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETREVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



MAP LEGEND: Body over sail | Tip over sail | Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 42. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED | SIZE: A1 | DRAWING NUMBER

SAP No: | PROJECT No: | SUB: | DOC: | PART: | SHT. | REV.

\- | - | D | - | 1/1 | 00



MAP LEGEND:

Body over sail

Tip over sail

Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 50. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



MAP LEGEND: Body over sail | Tip over sail | Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 1
Point 52. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETREIVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER				
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT. / REV.
		-	-	D	-	1/1 - 00



MAP LEGEND:

Body over sail

Tip over sail

Drivable area

DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 2
Point 52. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -		- 1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 1
Point 55. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER
SAP No:	PROJECT No: -	SUB: - DOC: D - PART: - SHT. 1/1 REV. - 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 2
Point 55. RM

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

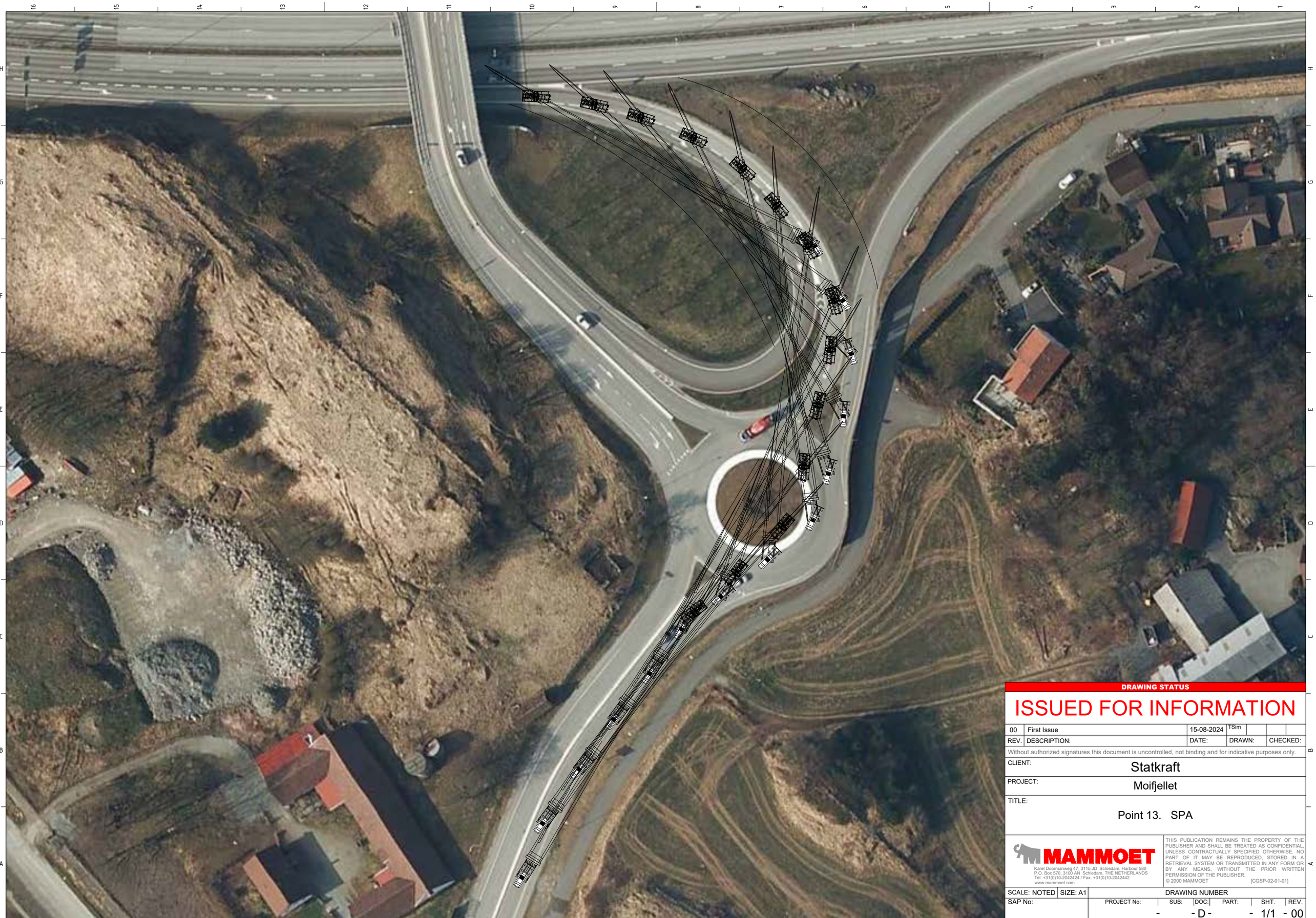
PROJECT: Moifjellet

TITLE: Point 2. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-		- D -		- 1/1 -	00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 13. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 19. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: SGRE

PROJECT: Moifjellet

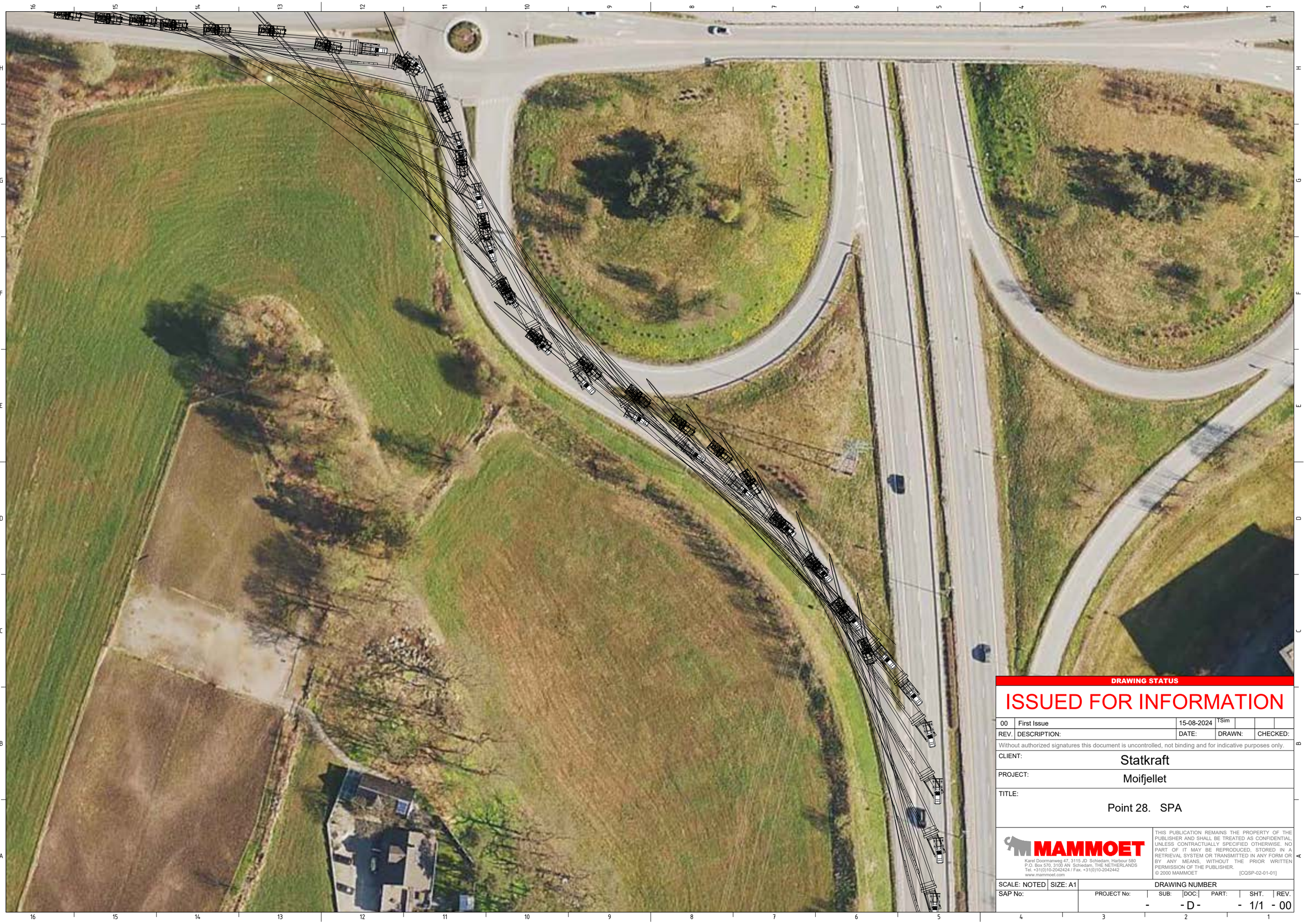
TITLE: Point 20. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER

SAP No:	PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	- D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 28. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED | SIZE: A1 | DRAWING NUMBER

SAP No:	PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
	-	-	D	-	1/1	00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 42. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER

SAP No:	PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
	-	-	D	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Point 50. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED | SIZE: A1 | DRAWING NUMBER

SAP No:

PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
	-	- D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 1
Point 52. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED | SIZE: A1

DRAWING NUMBER

SAP No:	PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
	-		- D -		- 1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 2
Point 52. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

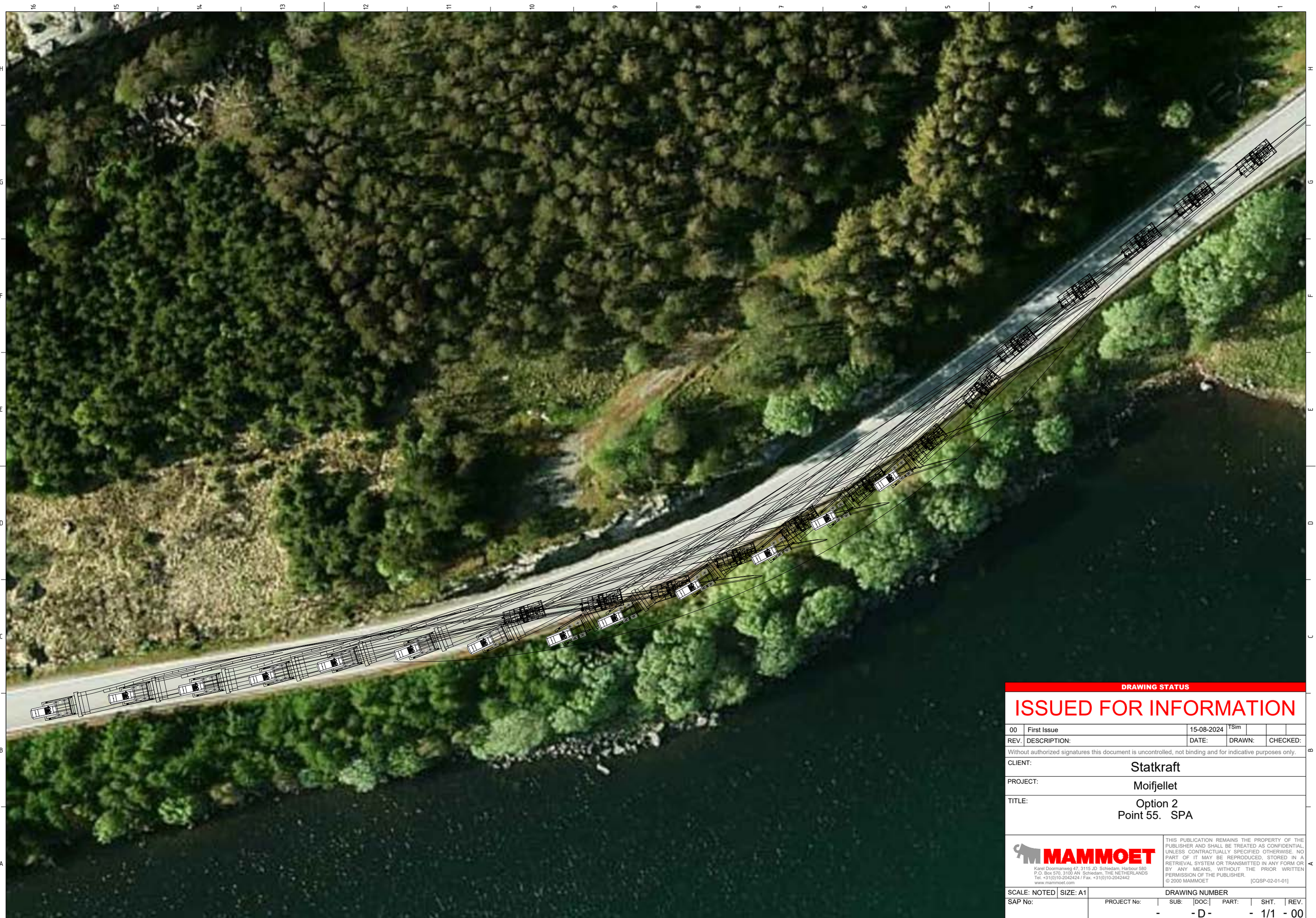
PROJECT: Moifjellet

TITLE: Option 1
Point 55. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D	-	1/1	- 00



DRAWING STATUS

ISSUED FOR INFORMATION

REV.	DESCRIPTION:	DATE:	DRAWN:	CHECKED:
00	First Issue	15-08-2024	TSim	

Without authorized signatures this document is uncontrolled, not binding and for indicative purposes only.

CLIENT: Statkraft

PROJECT: Moifjellet

TITLE: Option 2
Point 55. SPA

MAMMOET
Karel Doormanweg 47, 3115 JD Schiedam, Harbour 580
P.O. Box 570, 3100 AN Schiedam, THE NETHERLANDS
Tel. +31(0)10-2042424 / Fax. +31(0)10-2042442
www.mammoet.com

THIS PUBLICATION REMAINS THE PROPERTY OF THE PUBLISHER AND SHALL BE TREATED AS CONFIDENTIAL, UNLESS CONTRACTUALLY SPECIFIED OTHERWISE. NO PART OF IT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER.
© 2000 MAMMOET [CQSP-02-01-01]

SCALE: NOTED	SIZE: A1	DRAWING NUMBER					
SAP No:		PROJECT No:	SUB:	DOC:	PART:	SHT.	REV.
		-	-	D -	-	1/1	- 00