

ROUTE SURVEY METSÄRINNE

1. Implementation

Date	2.11.2023	
Revision nr - modified by	1.0 -SK	
Time	8:00-18:00	
Weather	+2 - -5 C	
Conditions	Dry, sunny, snow	
Participants	Function	Company
Sami Kivelä	Site Manager	Silvasti

1.1 Start and end points of the route

Start point(s)	Coordinates	End point	Coordinates
Port of Raahe Route 1	64.642384, 24.433365	Site entrance Metsärinne	63.794189, 27.418477
Port of Raahe Route 2	64.664972, 24.416467	Site entrance Metsärinne	63.794189, 27.418477

1.2 WTG type

Number of WEA	Type WTG	Type tower	Type blade
?	?	?	?

1.3. Total dimensions checked

Component	Length	Width	Height	Weight	Overhang
Blade	112,0m	4,50m	4,50m		? m
Tower	50m	6,50m	6,80m		



2. Result

Purpose of this survey was to define feasible route for transports with total dimensions stated in the report from port of Raahe to site area Metsärinne, in Sonkajärvi municipality, Finland.
Location of the site entrance is known.

Survey is based on use of dollytrailer for blade transports and clamp trailer for tower transports.

Some of the modifications along the routes were already built at the time of the survey. Final dimensions of all drivable and oversail areas to be defined after transport dimensions of blades and heavy components are confirmed.

All modifications mentioned in the report are needed to enable the transports.
Modifications inside of port area and factory area are excluded from this report.

On the basis of the executed survey, route from POL until to the site entrance is feasible when modifications shown in this document are made.

2.1 Disclaimer of liability

This survey is valid only on the day it is compiled.
The given route is subject to final approval by the local authorities.
A test permit needs to be applied in order to define if heavy transport is possible on the defined route.
A second feasibility check of the proposed route must be done at least 10 weeks before start of deliveries.



3. Route and maps

3.1 Overall route

Total length of the route(s) from the port: Route 1 -251 km. Route 2 -216 km.

Route 1 (Towers) in google maps: <https://maps.app.goo.gl/yUPnATMEusY8C95f7>

Route 2 (Blades) in google maps: <https://maps.app.goo.gl/QKji1Y2eAEuq7wA58>

Route description:

Route 1 via exit 1: Port of Raahе – (via SSAB factory area) Koksaamontie – road 8 – road 4 – road 88 – road 28 - road 5 – Site entrance.

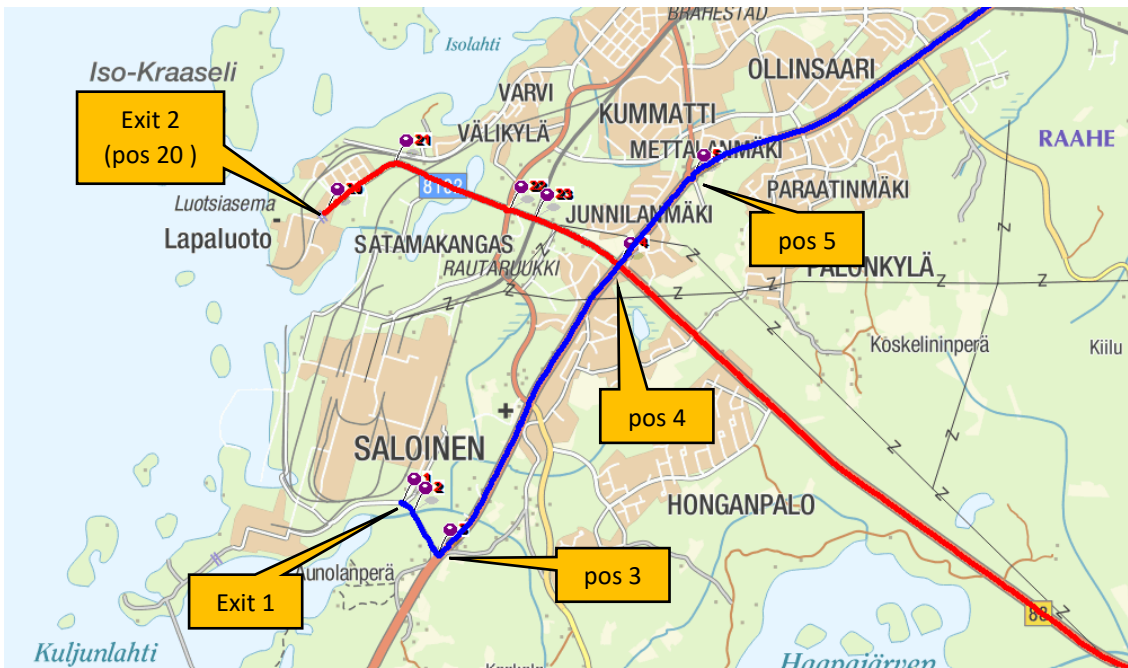
Route 2 via exit 2: Port of Raahе – Lapaluodontie – road 88 – road 28 - road 5 – Site entrance.



Map. 1. Route overview. Route for blades marked as red.



3.2 Maps 2-13 – Positions noted



Map 2. First part of the routes. Positions 1-3 exit from port via KoksaaMontie (route 1). Exit route suitable for towers and main components marked as blue. Positions 20 - 4 exit via Lapaluodontie (route 2). Exit route suitable for Blades and main components (subject to weight and height) marked as red.



Map 3. Second part of the route 1.





Map 4. Third part of the route 1.



Map 5. Fourth part of the route 1.





Map 6. Fifth part of the route 1.



Map 7. Sixth part of the route 1.





Map 8. Seventh part of the routes. Route 2 for blades marked as red. Rest of route 2 is same with other components.

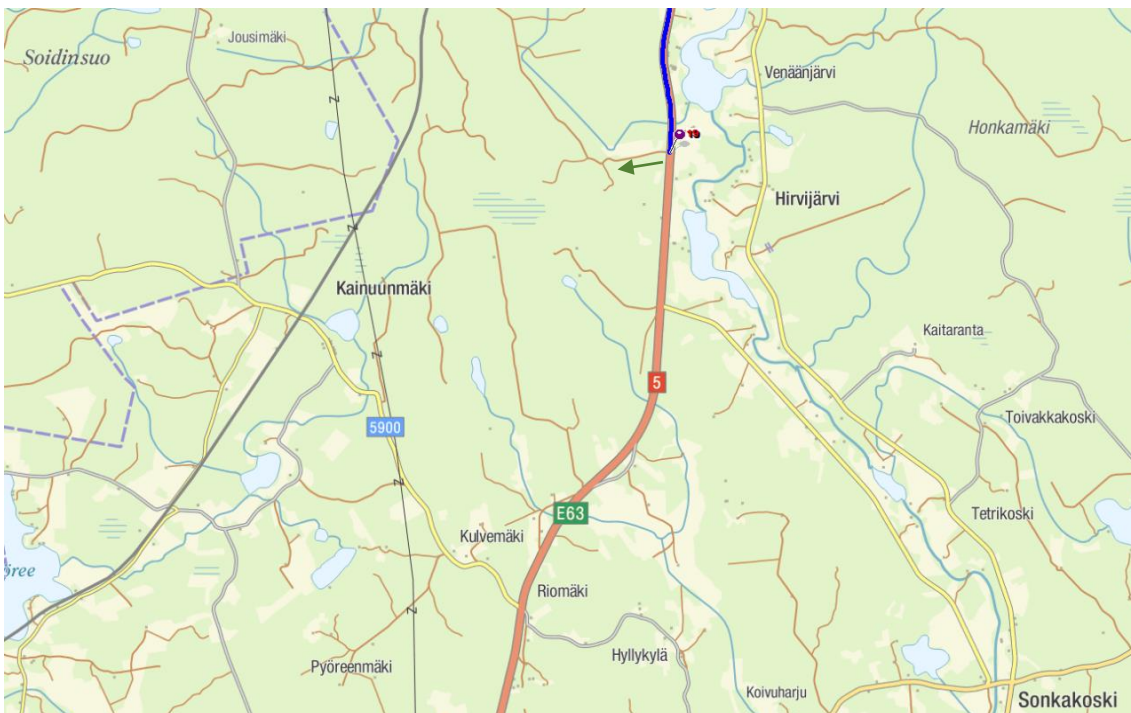


Map 9. Eighth part of the routes.



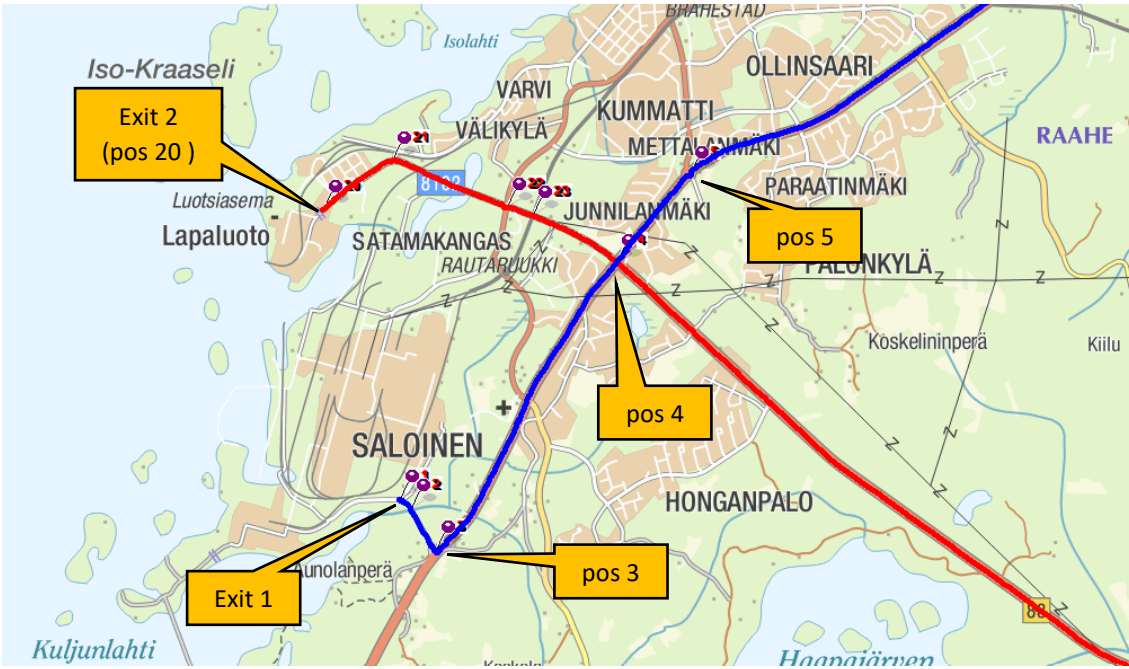


Map 10. Ninth part of the routes.

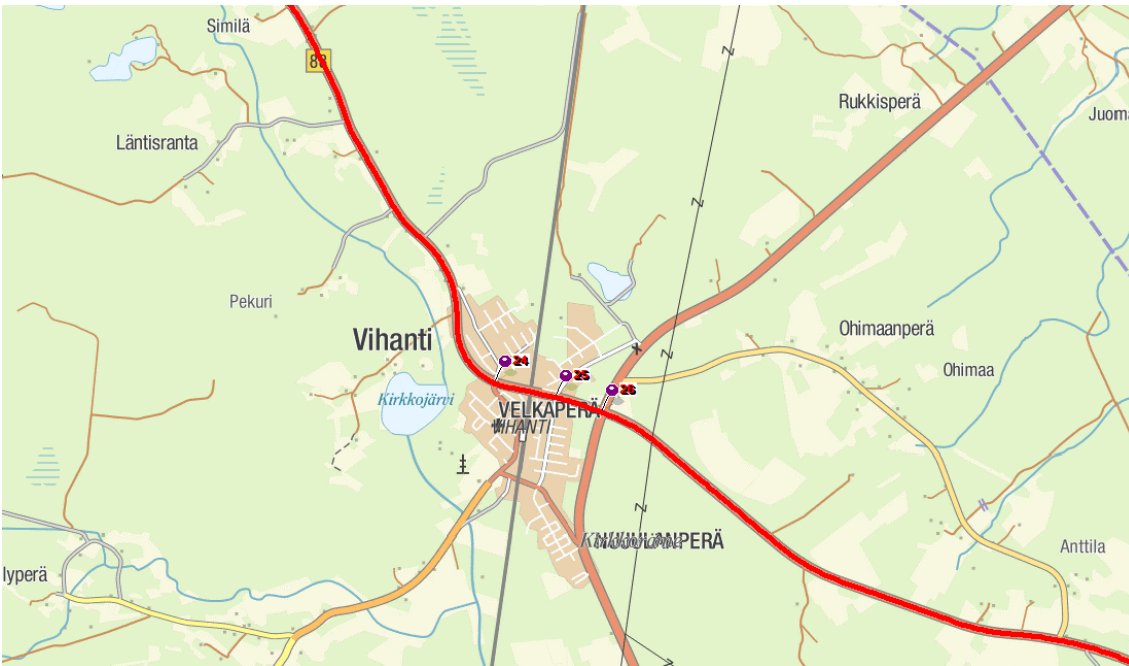


Map 11. Last part of the routes.



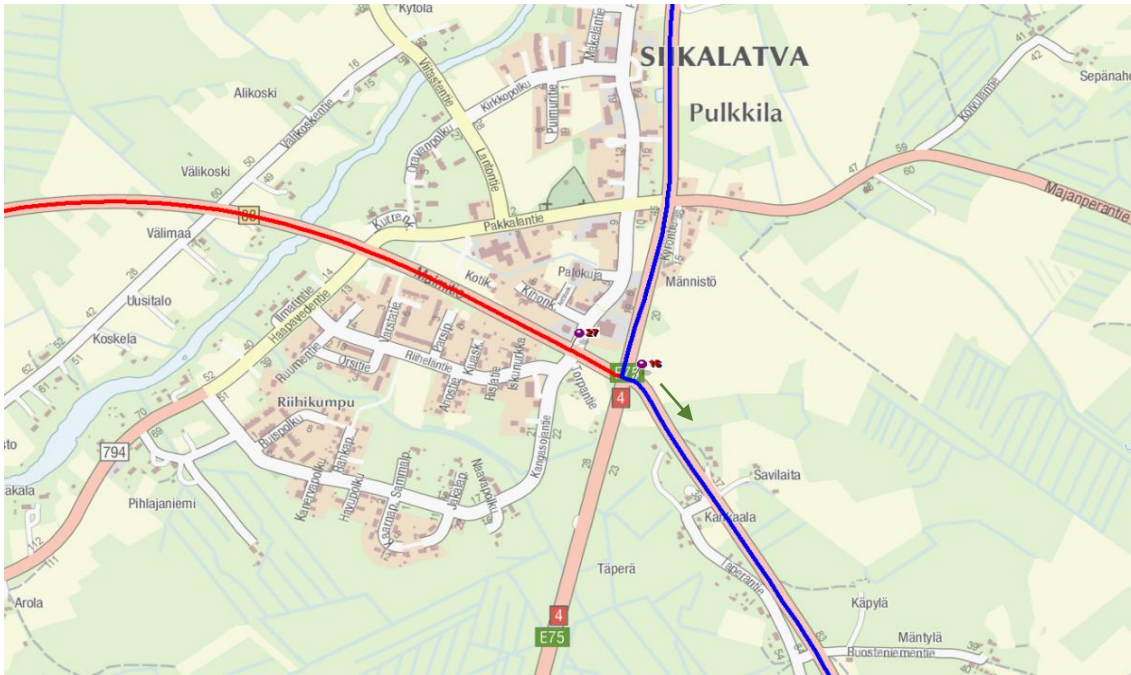


Map 11. Positions 20 - 4 exit via Lapaluodontie (route 2). Exit route suitable for Blades and main components (subject to weight and height) marked as red.



Map 12. Route 2 in Vihanti.





Map 13. Route 2 for blades marked as red. Rest of route 2 is same with other components.



4. Individual route sections

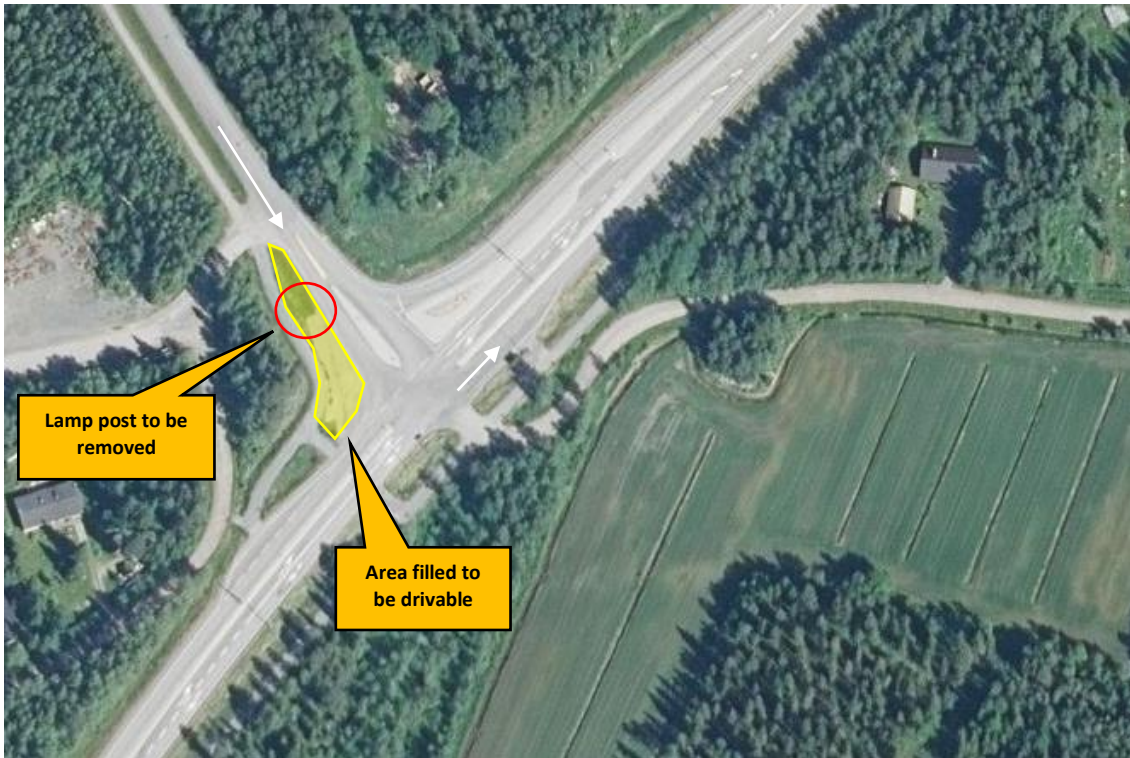


Pos 1/Pic 1. Exit via KoksaaMontie. (route 1). <https://goo.gl/maps/fuXC4nDZ4k1cLSV89>.
Modifications: N/A



Pos 2/Pic 2. KoksaaMontie. Continue straight. <https://goo.gl/maps/cbCiVDTjACptdCDj6>.
Marked lamp post height to be rechecked before transports.





Pos 3/Pic 3. Turning from Koksaamontie toward road 8. <https://goo.gl/maps/KRvRVDs4VtXoCE8e6>.

Modifications:

- Area between Hiientie/sidewalk/E8 to be filled and drivable (currently done).
- Lamp post to be removed (currently removed)



Pos 3/Pic 4. Turning from Koksaamontie toward road 8. <https://goo.gl/maps/KRvRVDs4VtXoCE8e6>.

Marked area needs to be filled and drivable. Marked sign need to be removed. Lamp post removed from marked area.



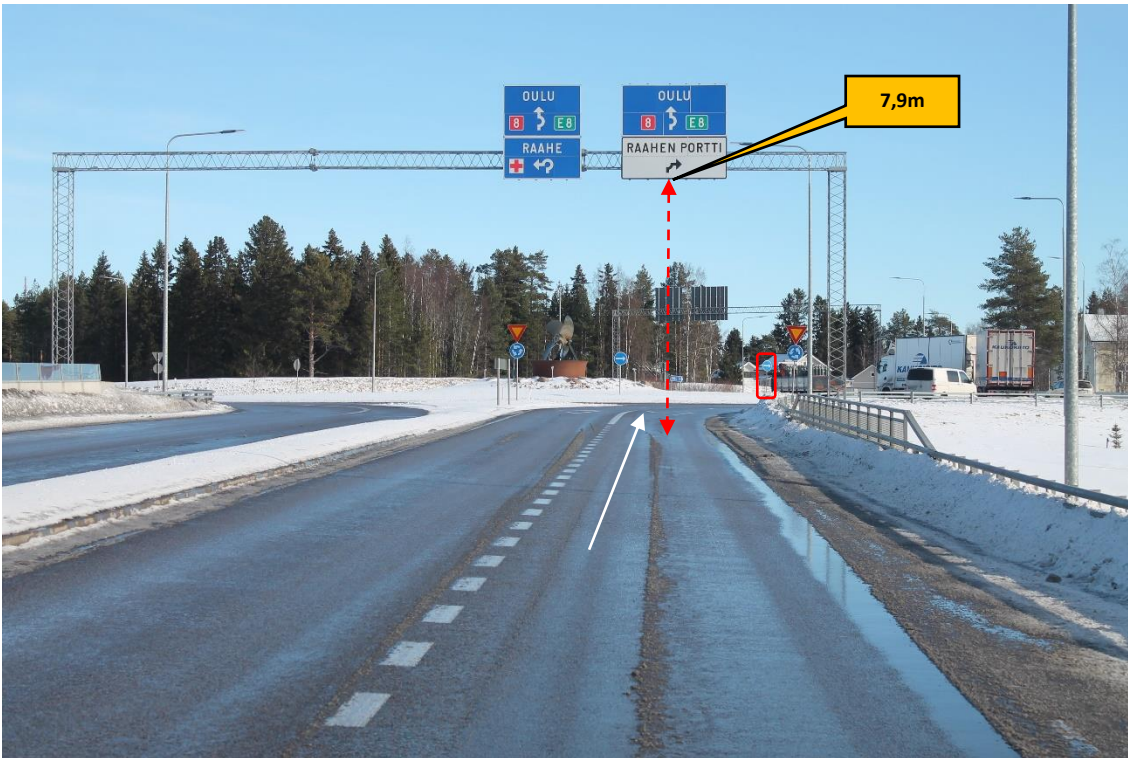


Pos 3/Pic 5. Turning from Koksaamontie toward road 8. <https://goo.gl/maps/KRvRVDs4VtXoCE8e6>.
Marked signs to be removed.



Pos 4/Pic 6. Junction road 8/road 88. Continue straight on road 8.
<https://goo.gl/maps/2mtmM73RSJQEixnS8>.
Yellow arrow points driving direction for blades.





Pos 5/Pic 7. Roundabout on road 8. Continue straight on road 8. <https://goo.gl/maps/QUW3nz9bApAtpjiRA>. Marked signs need to be removed.



Pos 5/Pic 8. Roundabout on road 8. Continue straight. <https://goo.gl/maps/QUW3nz9bApAtpjiRA>. Marked signs to be removed.





Pos 5/Pic 9. Road 8. <https://goo.gl/maps/2EvF65GnD5QaHKdn8>.
Marked sign to be removed.



Pos 6/Pic 10. Road 8. Continue straight on counter lane. <https://goo.gl/maps/zBqM1gULQySmSoFh6>.
Marked sign need to be removed.





Pos 6/Pic 11. Road 8. Continue straight on counter lane. <https://goo.gl/maps/zBqM1gULQySmSoFh6>.
Marked sign to be removed.



Pos 7/Pic 12. Road 8. <https://goo.gl/maps/pPpDXCU26rpkJyuu5>.
Marked sign need to be removed.





Pos 8/Pic 13. Road 8. Continue straight. <https://goo.gl/maps/fLBJdYMTxjLyqj1Z9> .
Need to use counter lane. Marked sign need to be removed.



Pos 8/Pic 14. Road 8. <https://goo.gl/maps/fLBJdYMTxjLyqj1Z9> .
Need to use counter lane. Marked sign need to be removed.





Pos 9/Pic 15. Road 8. <https://goo.gl/maps/F989ccuuYAbFZHvi9>
Modifications: N/A



Pos 9/Pic 16. Road 8. <https://goo.gl/maps/F989ccuuYAbFZHvi9>
Modifications: N/A





Pos 10/Pic 17. Road 8. <https://goo.gl/maps/DyBmT3nTtqF4cuYq9> <https://goo.gl/maps/F989ccuuYAbFZHvi9>
Modifications: N/A



Pos 11/Pic 18. Road 8. <https://goo.gl/maps/HCo5ugHTXVumZoao6>
Modifications: N/A



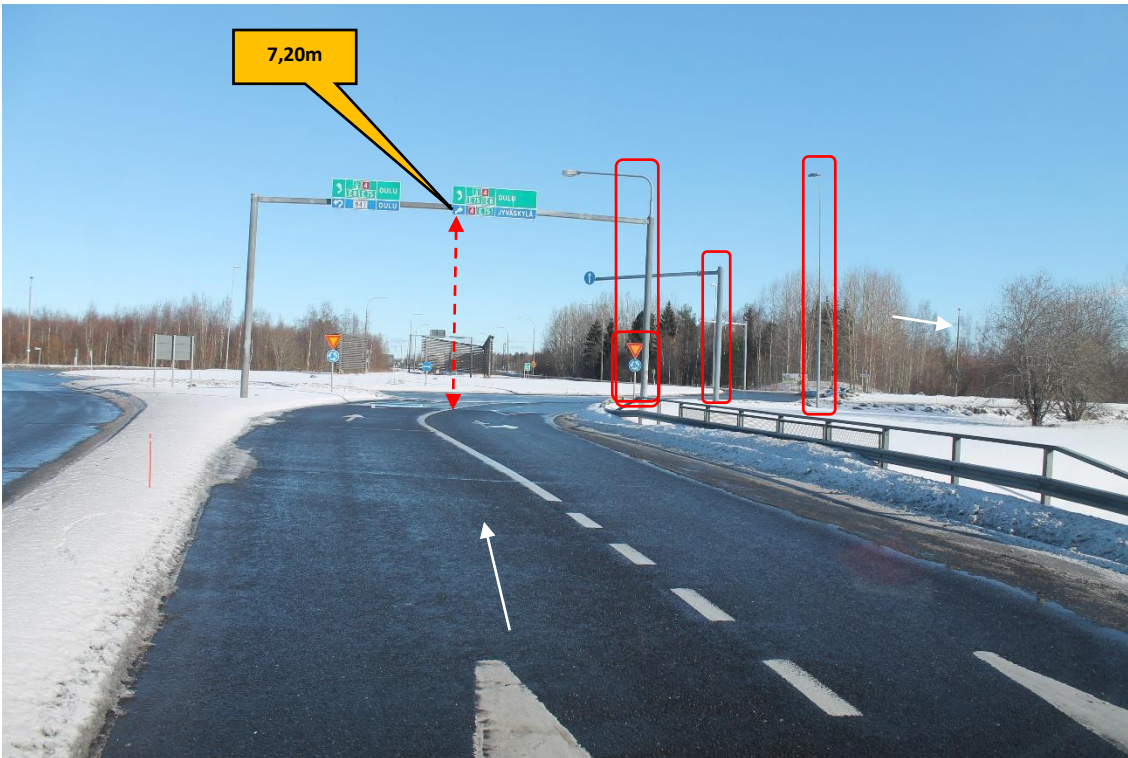


Pos 12/Pic 19. Road 8. <https://goo.gl/maps/Mg36qefhwnvMgzZ57>
Modifications: N/A

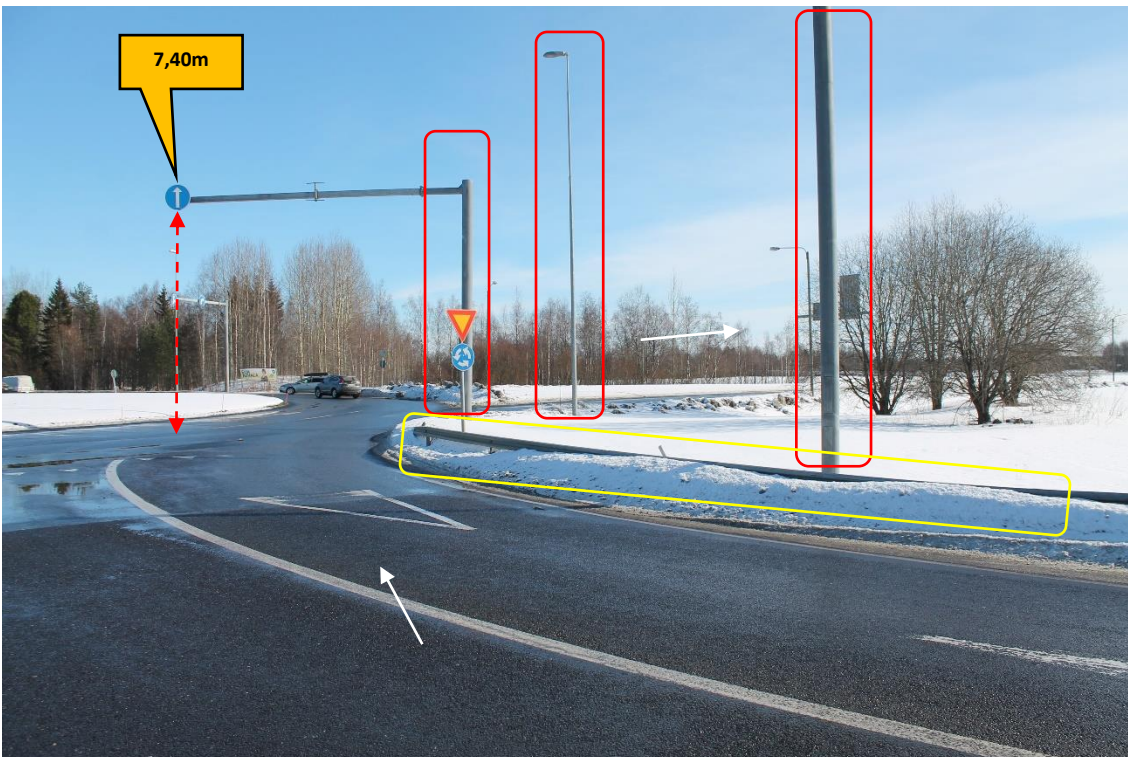


Pos 13/Pic 20. Road 8. <https://goo.gl/maps/Bb46EiQ9Faf774qBA>
Need to use counter lane.



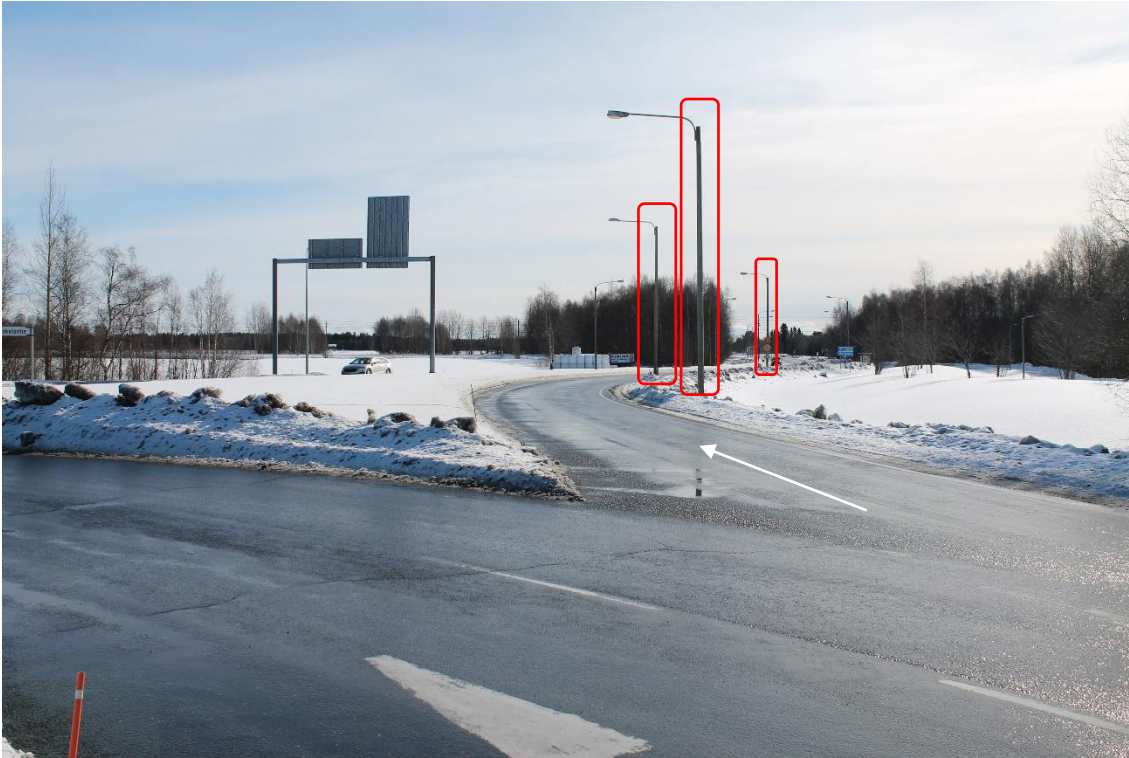


Pos 14/Pic 21. Turning from road 8 toward road 4. <https://goo.gl/maps/8KuKRnihE8ttFnnz9>
Marked portal poles, lamp post and sign need to be removed.

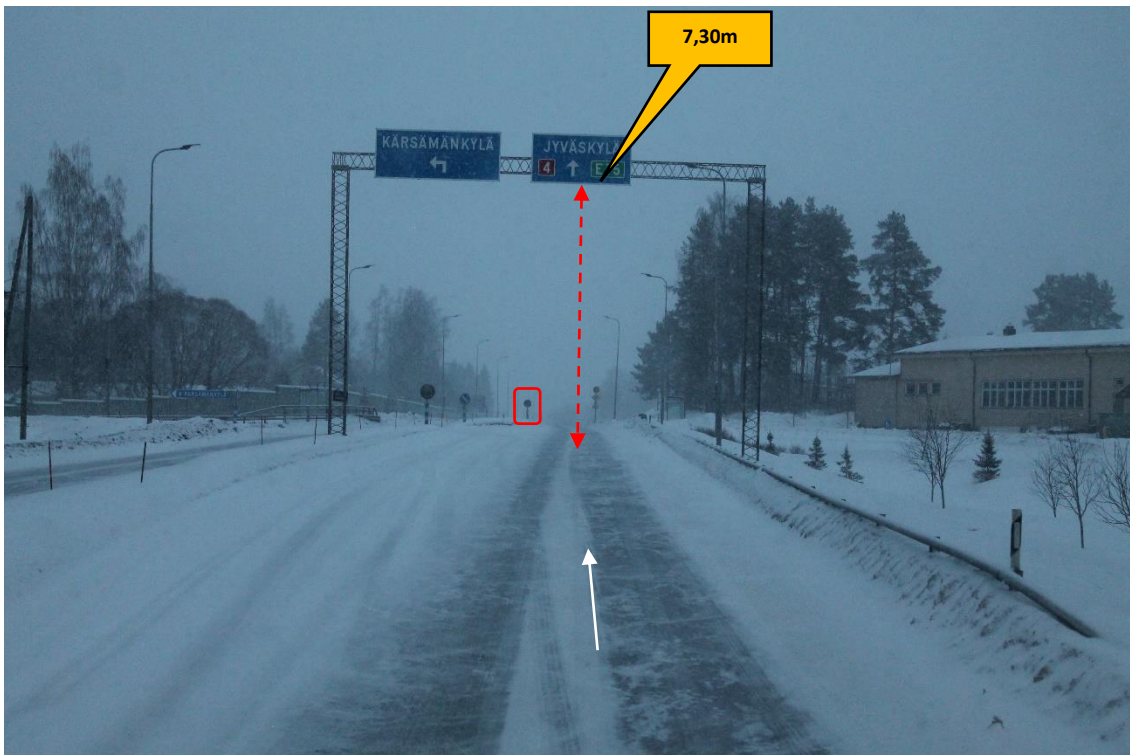


Pos 14/Pic 22. Turning from road 8 toward road 4.
Marked portal poles, lamp post and sign need to be removed. Tower need to be able to oversail rails in inner curve or part of rails need to be removed.





Pos 14/Pic 23. Turning from road 8 toward road 4.
Marked lamp posts need to be removed.



Pos 15/Pic 24. Road 4. <https://goo.gl/maps/oRgk2HLY8Jno2AdV6>
Marked sign need to be removed.





Pos 16/Pic 25. Turning from road 4 toward road 88. <https://goo.gl/maps/gqsMmTAFtgPnDaHi7>
Marked signs need to be removed. Marked area need to be filled. From here routes are same to site.

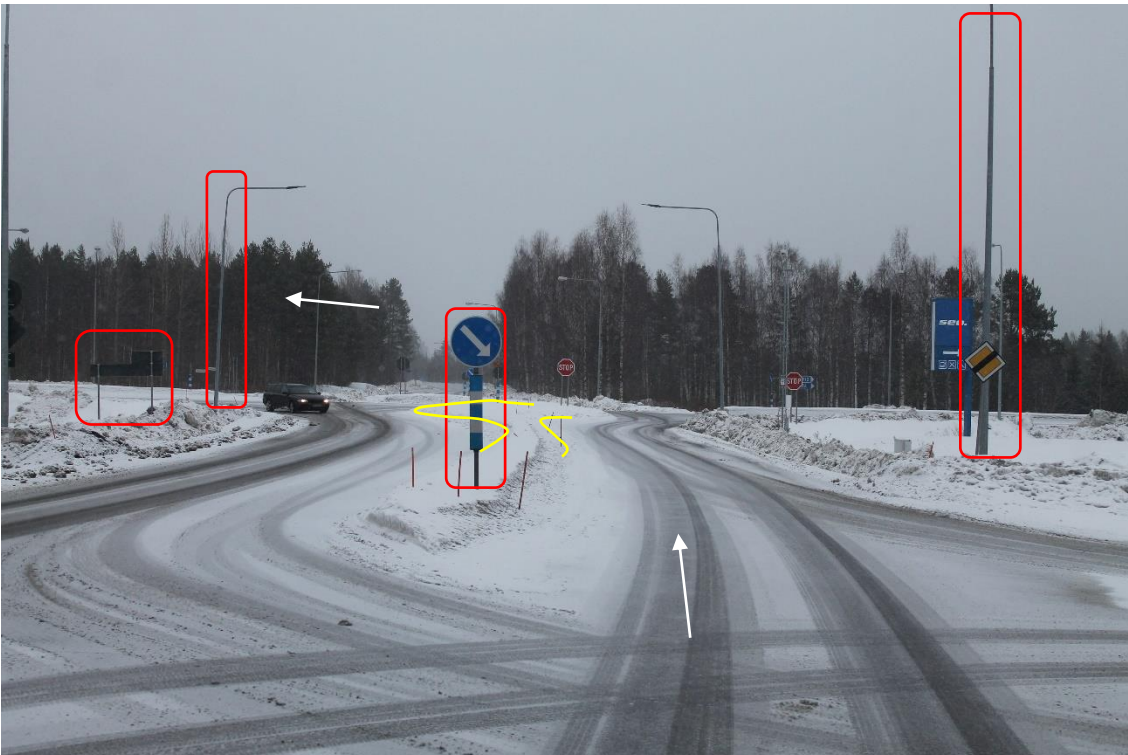


Pos 16/Pic 26. Turning from road 4 toward road 88.
Marked signs need to be removed. Marked area need to be filled.



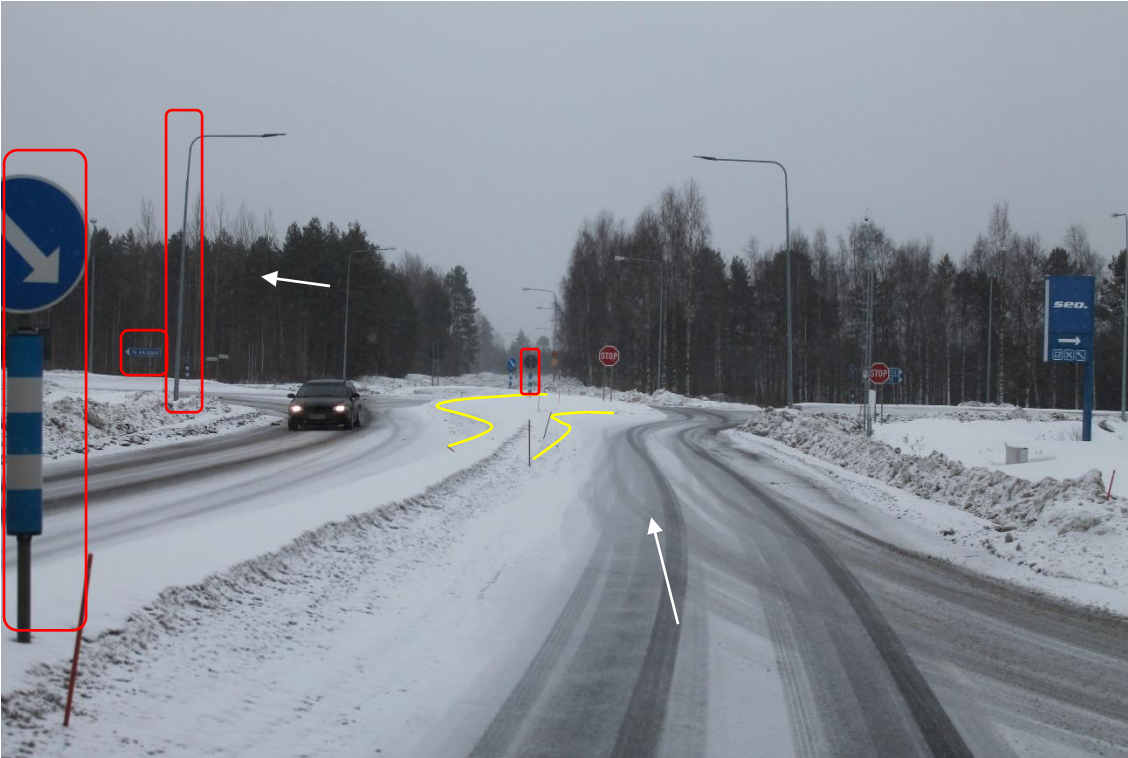


Pos 17/Pic 27. Road 88. <https://goo.gl/maps/UnHpVqDEzfYUMwou7>
Marked lamp posts and signs need to be removed.

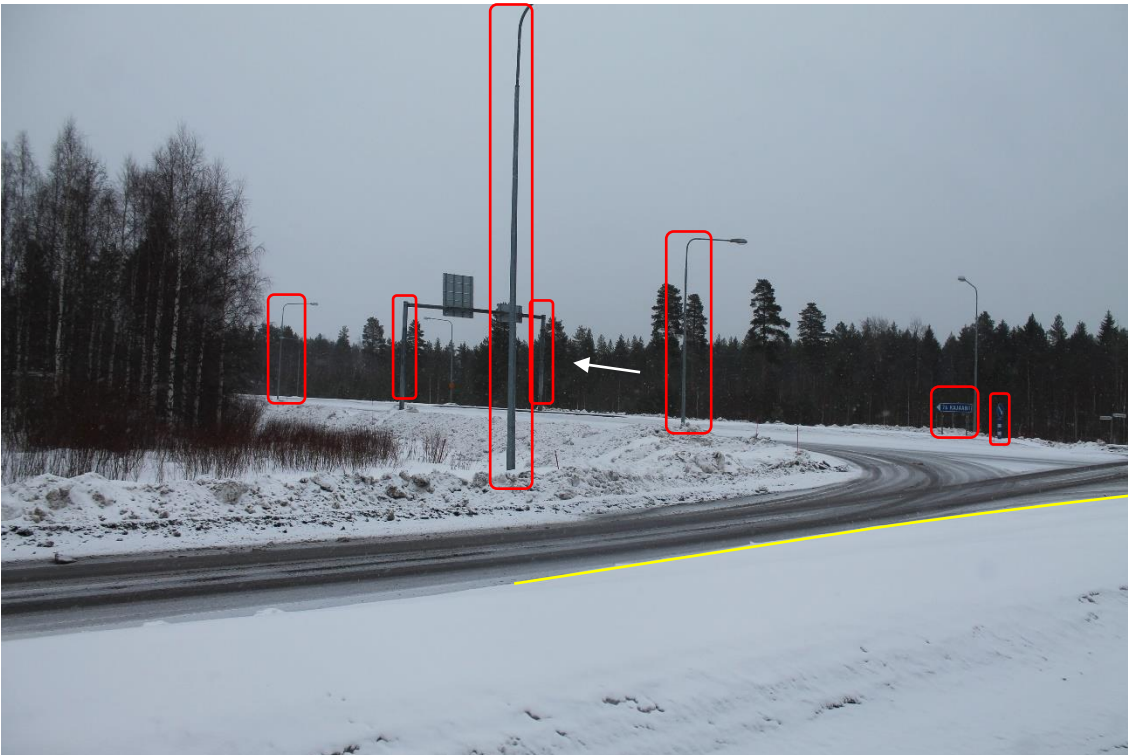


Pos 17/Pic 28. Turning from road 88 toward road 28.
Marked lamp posts and signs need to be removed. marked area need to be filled and drivable.



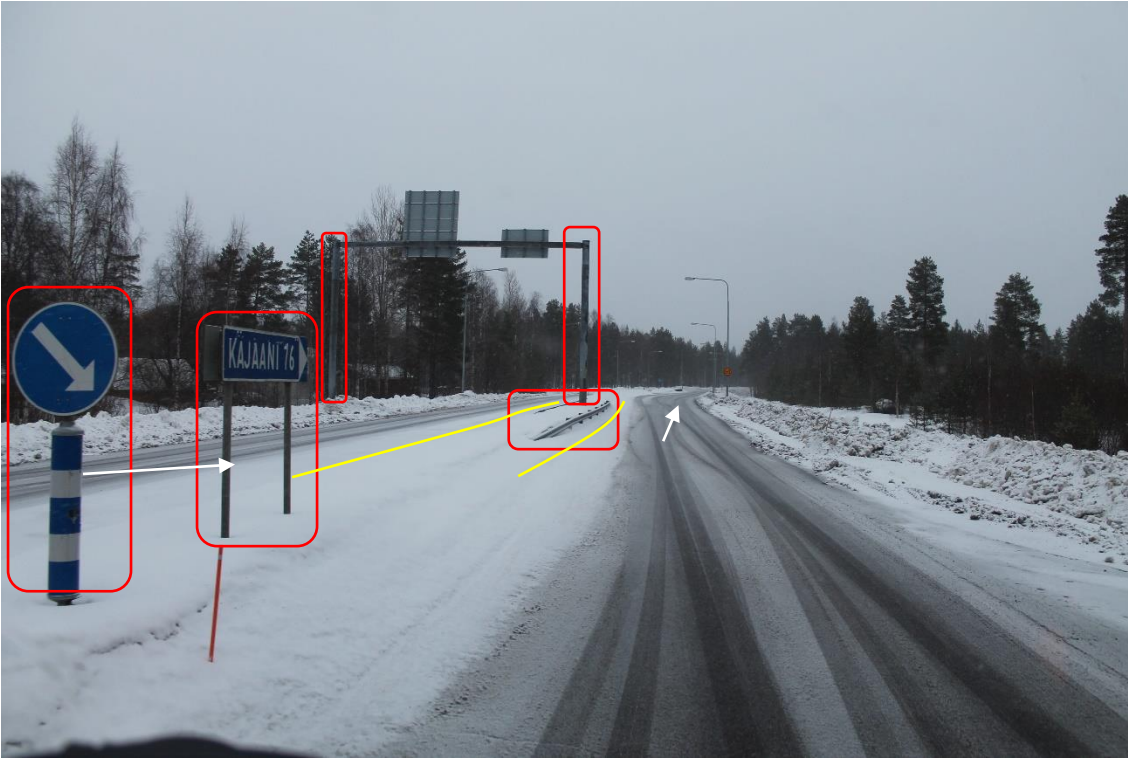


Pos 17/Pic 29. Turning from road 88 toward road 28.
Marked lamp posts and signs need to be removed. Marked area need to be filled and drivable.



Pos 17/Pic 30. Turning from road 88 toward road 28.
Marked lamp posts and signs need to be removed. Marked area need to be filled and drivable.





Pos 17/Pic 31. Turning from road 88 toward road 28.
Marked lamp posts, signs and rails need to be removed. Marked area need to be filled and drivable.

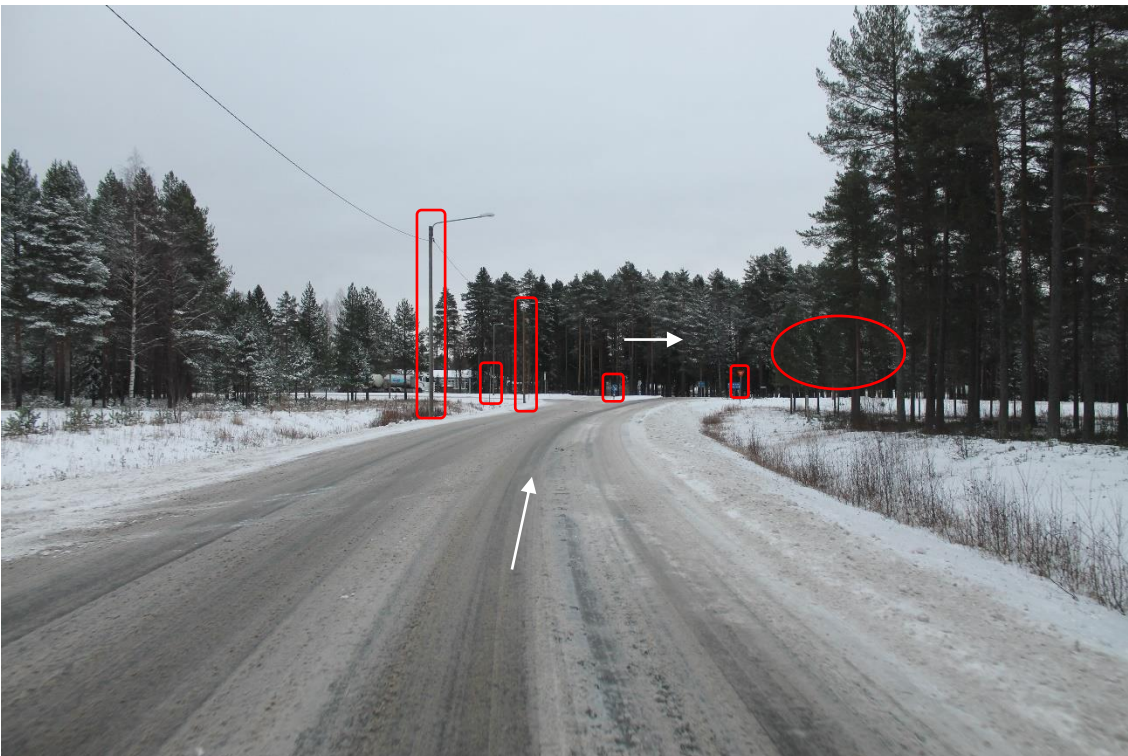


Pos 17/Pic 32. Turning from road 88 toward road 28.
Marked lamp post need to be removed.



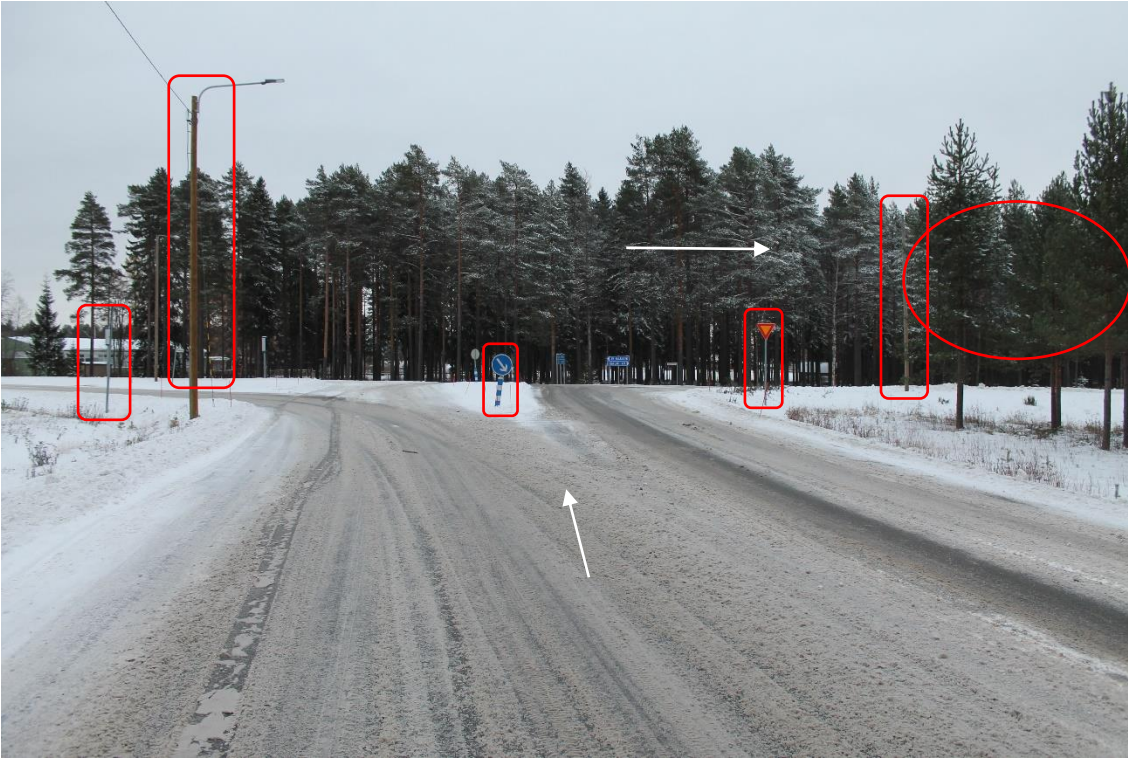


Pos 18/Pic 33. Turning from road 28 toward road 5. <https://maps.app.goo.gl/YiDtaAN7ThVbhVCz8>
Marked signs need to be removed.

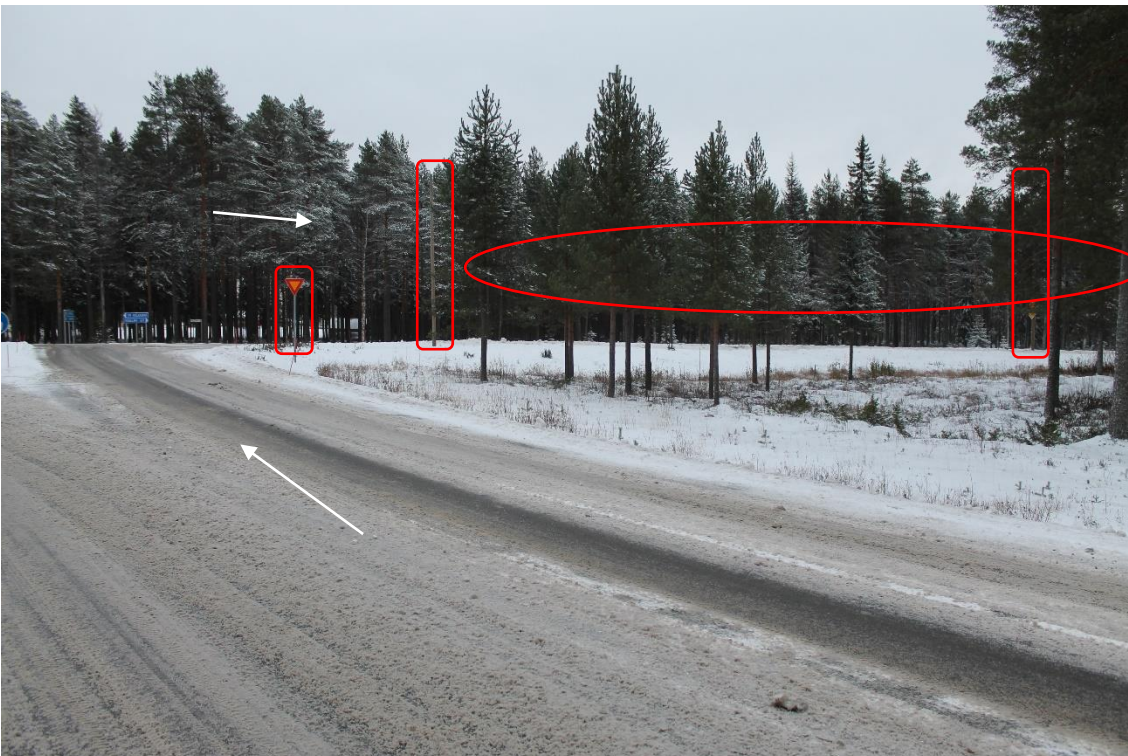


Pos 18/Pic 34. Turning from road 28 toward road 5.
Marked signs and lamp posts need to be removed. Marked trees need to cut.





Pos 18/Pic 35. Turning from road 28 toward road 5.
Marked signs and lamp posts need to be removed. Marked trees need to cut.



Pos 18/Pic 36. Turning from road 28 toward road 5.
Marked signs and lamp posts need to be removed. Marked trees need to cut.





Pos 19/Pic 37. Turning from road 5 toward site area. <https://maps.app.goo.gl/ViLZJeNyCN7jPMCQ8>
Site entrance to be build according to specifications for site roads.



Pos 19/Pic 38. Turning from road 5 toward site area. <https://maps.app.goo.gl/ViLZJeNyCN7jPMCQ8>
Site entrance to be build according to specifications for site roads.





Pos 19/Pic 39. Turning from road 5 toward site area. <https://maps.app.goo.gl/ViLZJeNyCN7jPMCQ8>
Site entrance to be build according to specifications for site roads.



Route 2 for blades



Pos 20/Pic 40. Exit via Lapaluodontie (route 2). <https://goo.gl/maps/coCb664KhB726gww9>
Modifications: N/A



Pos 21/Pic 41. Lapaluodontie. <https://goo.gl/maps/SZSvDUusUGcyWNCj8>.
Marked lamp post and sign to be removed. Marked bush/trees need to cut.



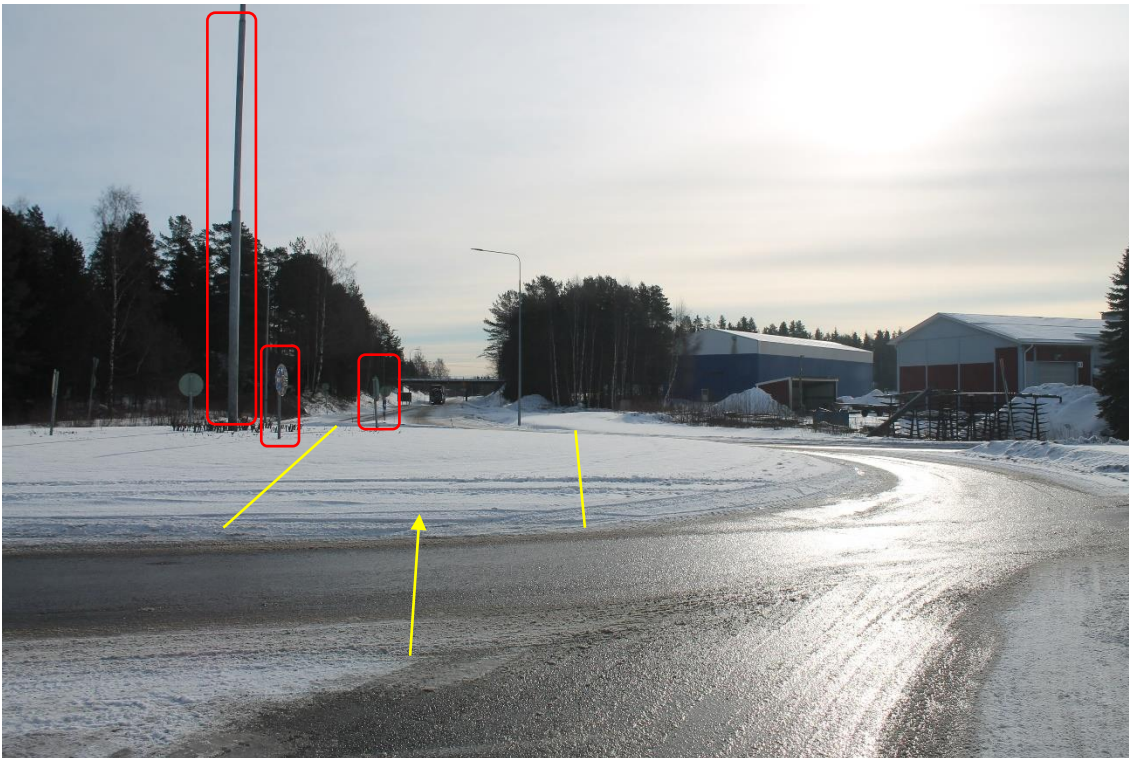


Pos 21/Pic 42. Lapaluodontie.
Marked signs to be removed. Marked bush/trees need to cut.



Pos 22/Pic 43. Roundabout Lapaluodontie. <https://goo.gl/maps/fNoSyewtX85WBptj7>.
Marked lamp post and signs to be removed. Marked area need to be filled and drivable.





Pos 22/Pic 44. Roundabout Lapaluodontie. <https://goo.gl/maps/fNoSyewtX85WBptj7>.
Marked lamp post and signs need to be removed. Marked area need to be filled and drivable.



Pos 22/Pic 45. Roundabout Lapaluodontie. Marked sign need to be removed. Marked area need to be filled.





Pos 23/Pic 46. Bridge Lapaluodontie. <https://goo.gl/maps/cZSekQgSr8Riw3VU9>

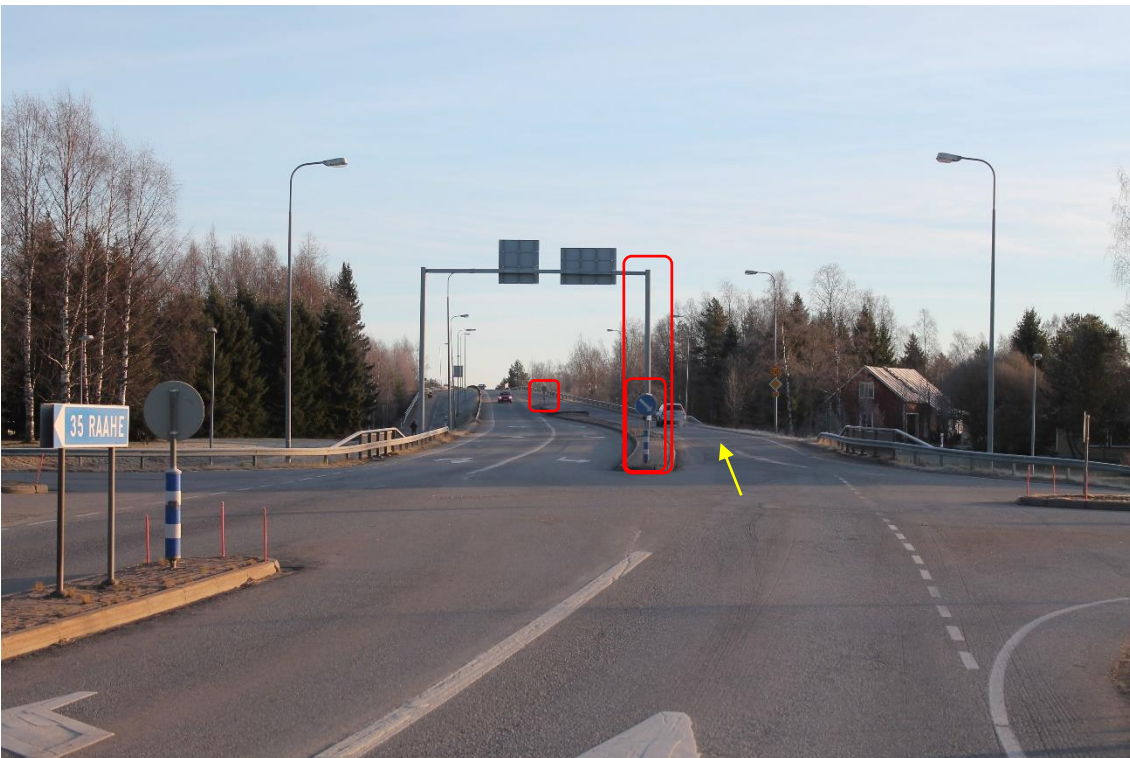


Pos 4/Pic 47. Continue from Lapaluodontie toward road 88. <https://goo.gl/maps/xrdRsg8ttCenzBKD8>.
White arrows points driving direction for heavy components.
Modifications : N/A





Pos 24/Pic 48. Road 88. <https://goo.gl/maps/9j58sMbdbnfWDuyP9>
Marked sign need to be removed.



Pos 24/Pic 49. Road 88.
Marked signs and portal need to be removed.





Pos 25/Pic 50. Road 88. <https://goo.gl/maps/VLvHSc3NuM756165A>
Marked signs (4 pcs) need to be removed.

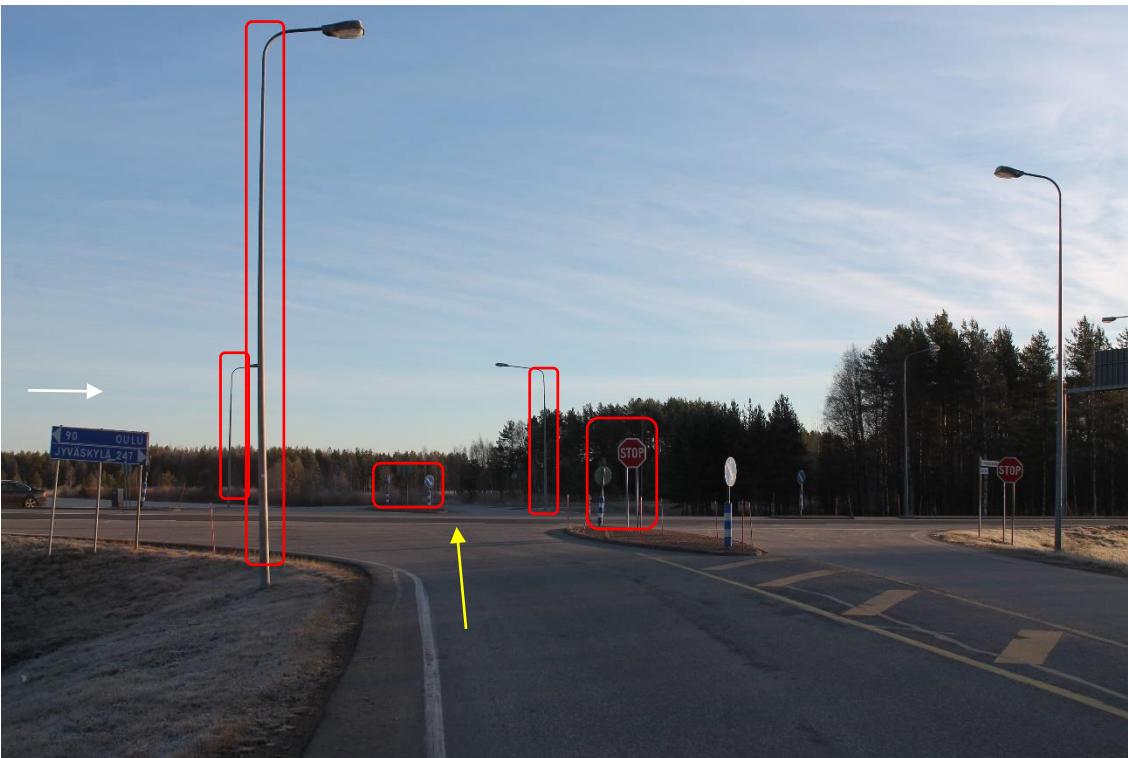


Pos 26/Pic 51. Continue straight on road 88. <https://goo.gl/maps/V7tLt1S2bxMhANBh7>
Marked signs (4 pcs) need to be removed.



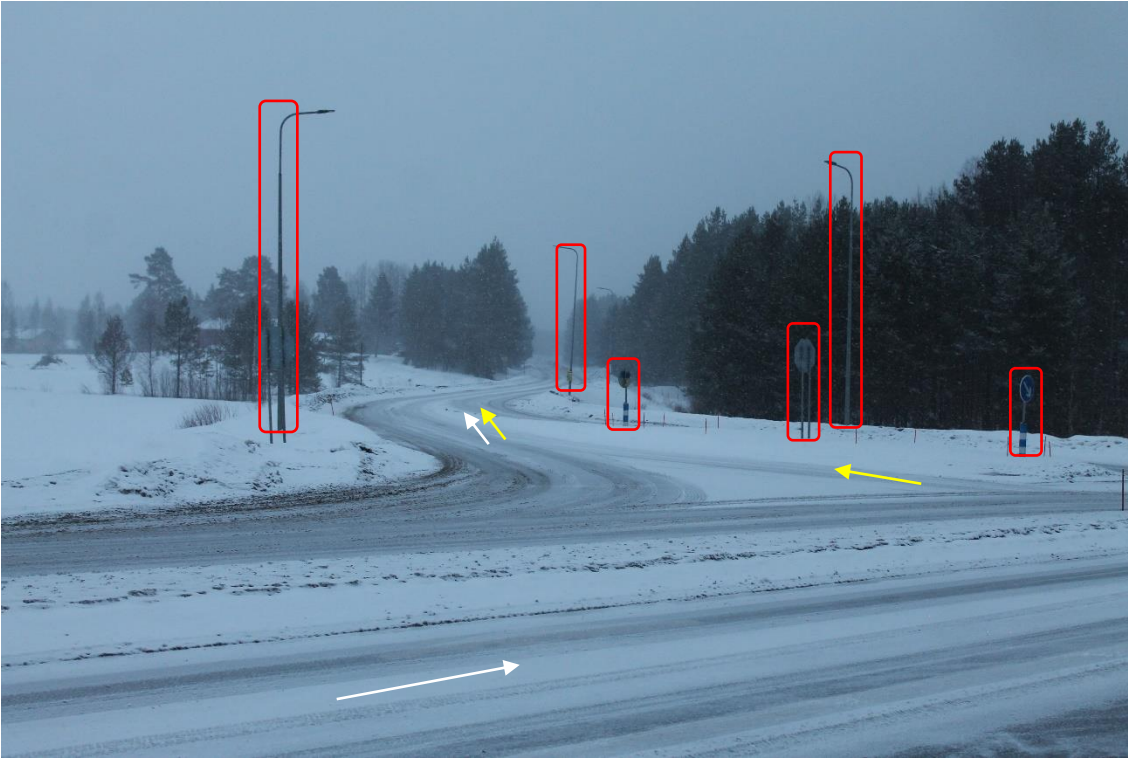


Pos 27/Pic 52. Road 88. <https://goo.gl/maps/onbSxwFLoXGyWgSN7>
Need to use counter lane. Marked signs(2pcs) need to be removed.



Pos 16/Pic 53. Continue straight on road 88. <https://goo.gl/maps/qqsMmTAFtgPnDaHi7>
Need to use counter lane. Marked signs and lamp posts need to be removed. White arrows points driving direction for heavy components. From here routes are same to site.





Pos 16/Pic 54. Continue straight on road 88.

Marked signs and lamp posts need to be removed. Rest of the route is same with other components.



5. General notes regarding overhead lines

Based on the survey 2.11.2023 there are following amount of overhead lines between port of Raahe and site Entrance Metsärinne :

Low voltage protected height under 6,80m 0 pcs.

Phone cable protected height under 6,80m 0 pcs.

High voltage height under 7,80 m (transport height + safety margin 1,0 m) 0 pcs.

Traffic portal height under 6,80 m 0 pcs.

