

# ROUTE SURVEY METSOMÄKI

## 1. Implementation

|                           |                     |          |
|---------------------------|---------------------|----------|
| Date                      | 15.11. - 16.11.2023 |          |
| Revision nr - modified by | 1.0 -SK             |          |
| Time                      | 9:00-19:00          |          |
| Weather                   | -4 C                |          |
| Conditions                | 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 Pori Gate 1 | 61.592028, 21.482778 | Site entrance Metsomäki | 62.212242, 24.500106 |
| Port of Pori Gate 2 | 61.592124, 21.486144 |                         |                      |

### 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     | 50,0m  | 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 Pori to site area Metsomäki, in Mänttä-Vilppula municipality, Finland.

Location of the site entrance is known, since original entrance is not feasible, site entrance need to be moved. Used new estimated site entrance.

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

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 are excluded from this report.

Planned site entrance need to be changed and new site entrance to be located on junction road 3482 (Vilppulantie) / Ristimäentie.

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 - 214km. Route 2 - 217km.

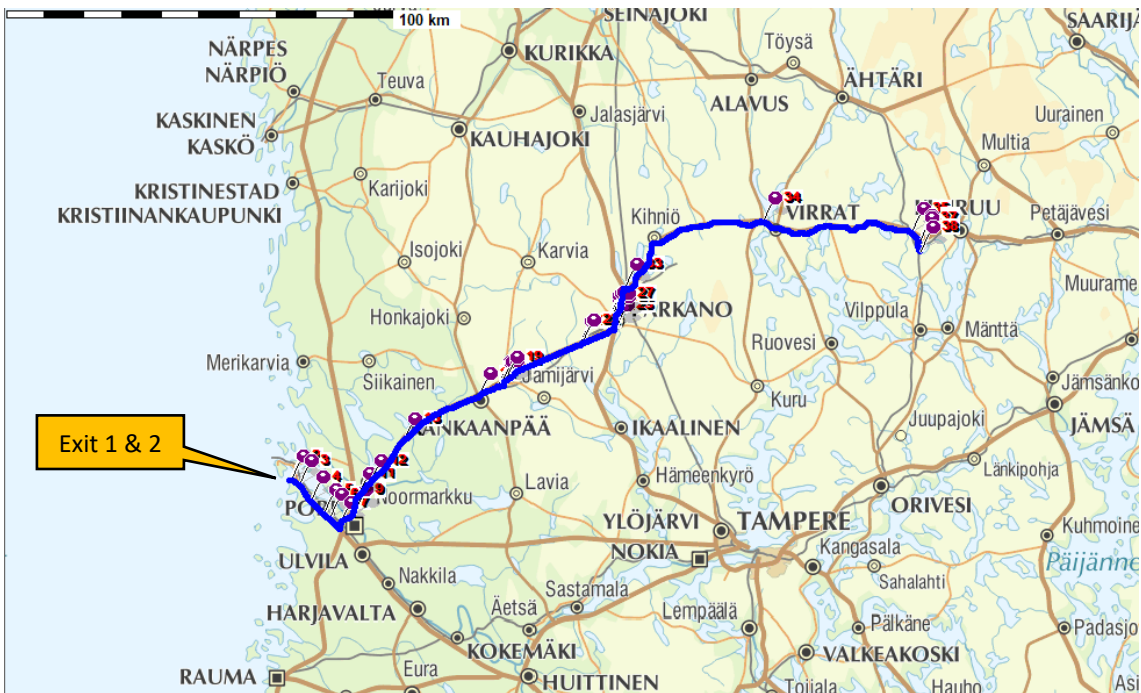
Route 1 (Blades) in google maps: <https://maps.app.goo.gl/4uSwzag5x8ocRaF4A>

Route 2 (Towers) in google maps: <https://maps.app.goo.gl/MXeVrnjwpYjtAkb49>

#### Route description:

Route 1: Port of Pori – road 2 – road 8 – road 23 – road 3 – road 23 – road 3482 – New site entrance Ristimäentie 1.

Route 2: Port of Pori – road 2 (bridge detour) – road 8 – road 23 – Varuskunnankatu – Niinisalonkatu – road 261 – road 23 – Rautalammentie – road 23 – Vatusentie – Vanhatalontie – road 274 – road 3 – road 23 – road 3482 – New site entrance Ristimäentie 1.

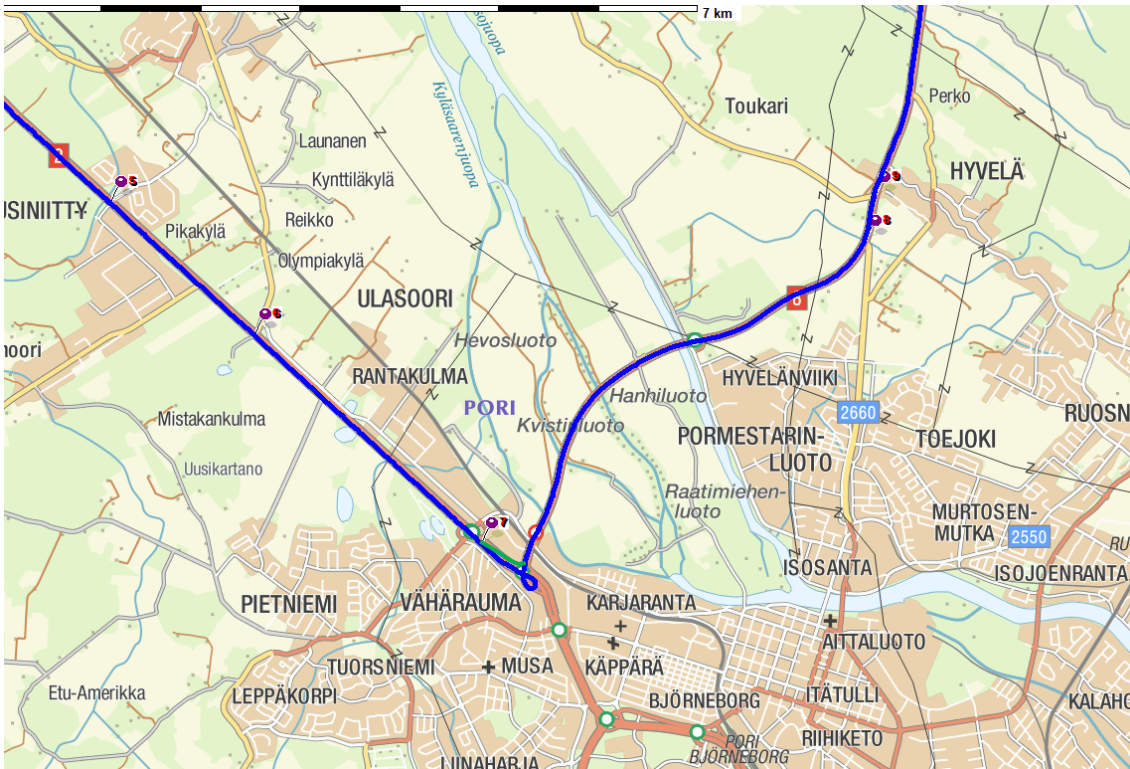


Map 1. Route overview.



**3.2 Maps 2-11 – Positions noted.**

Map 2. First part of the route. Bridge detour marked as red.



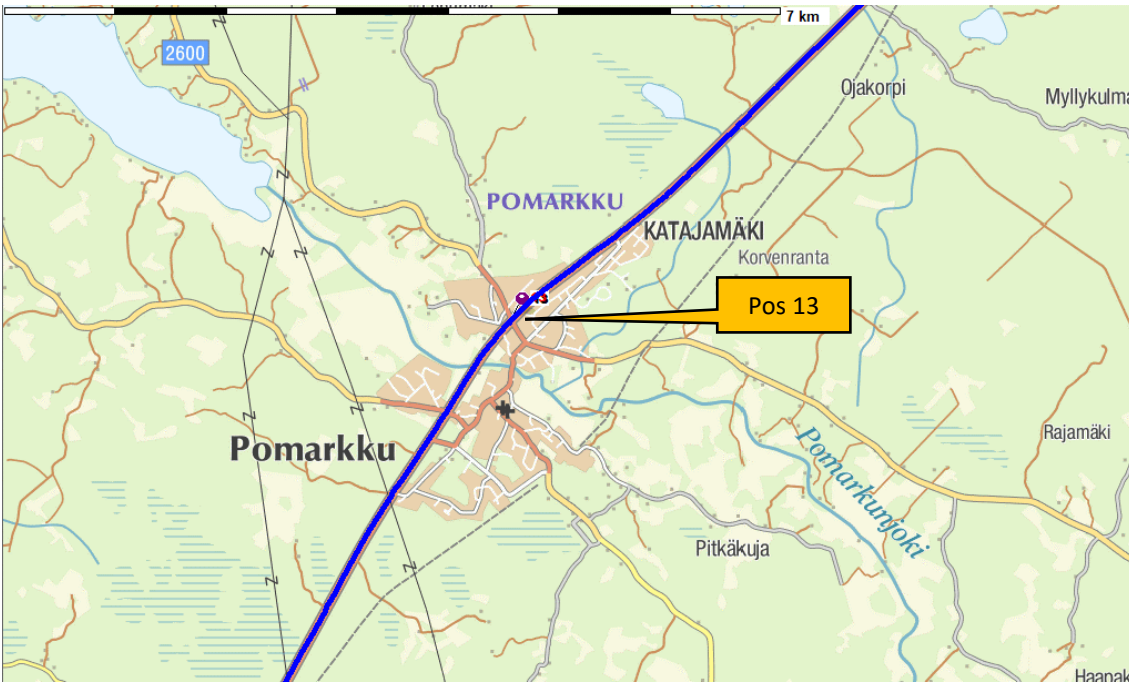
Map 3. Second part of the route.





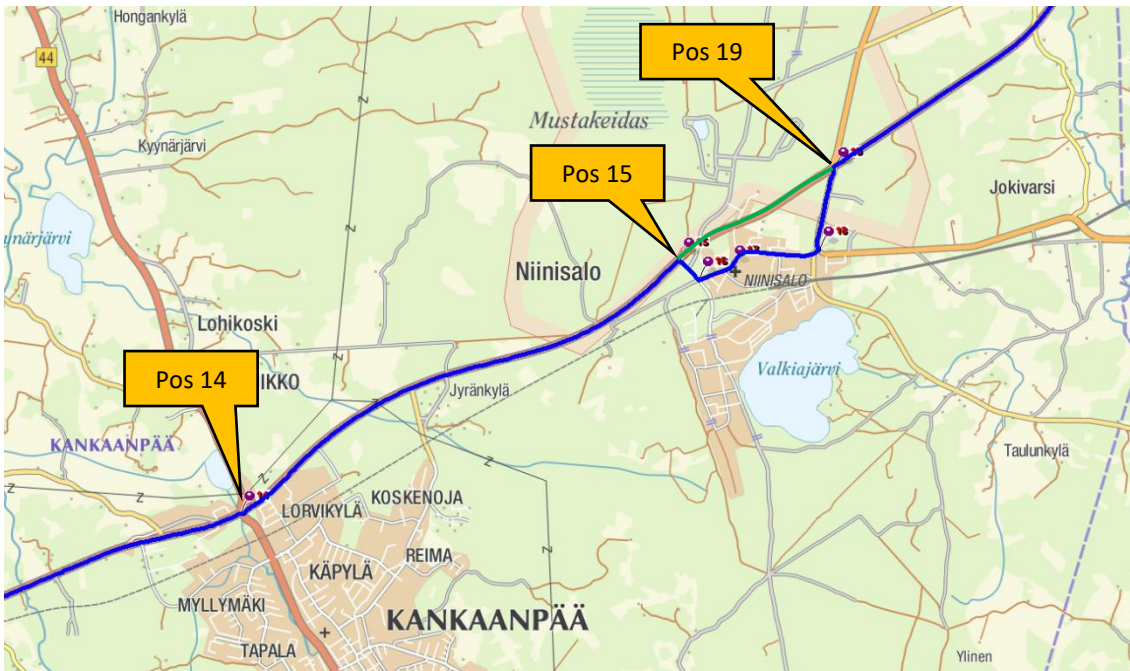


Map 4. Third part of the route.

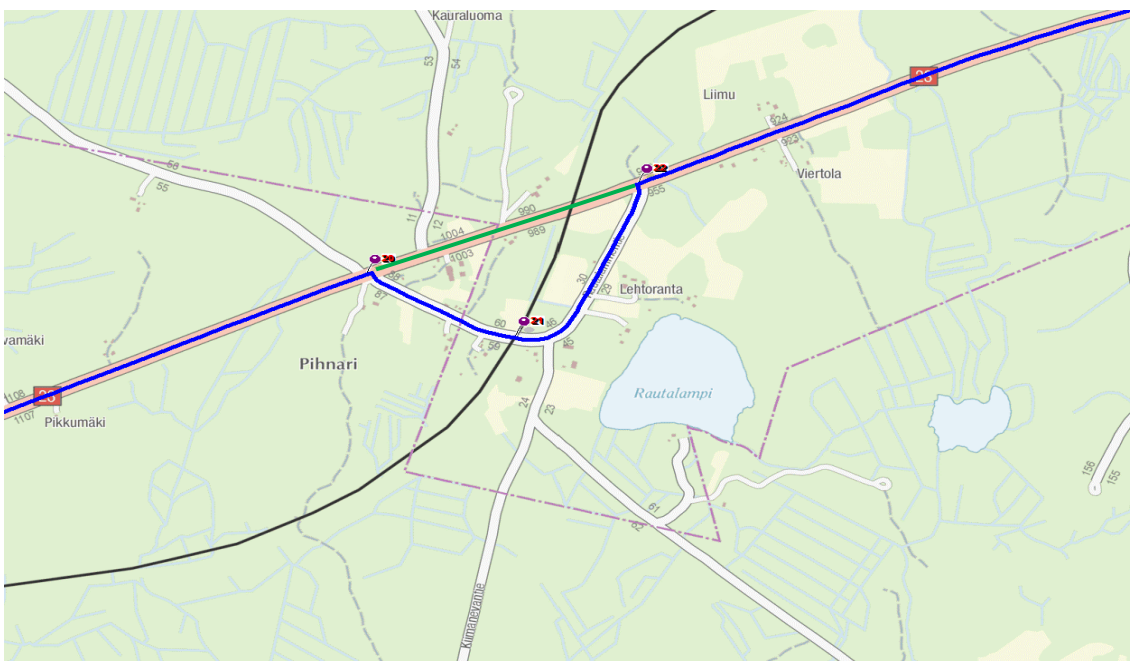


Map 5. Fourth part of the route.





Map 6. Fifth part of the route. Route for blades marked as green.

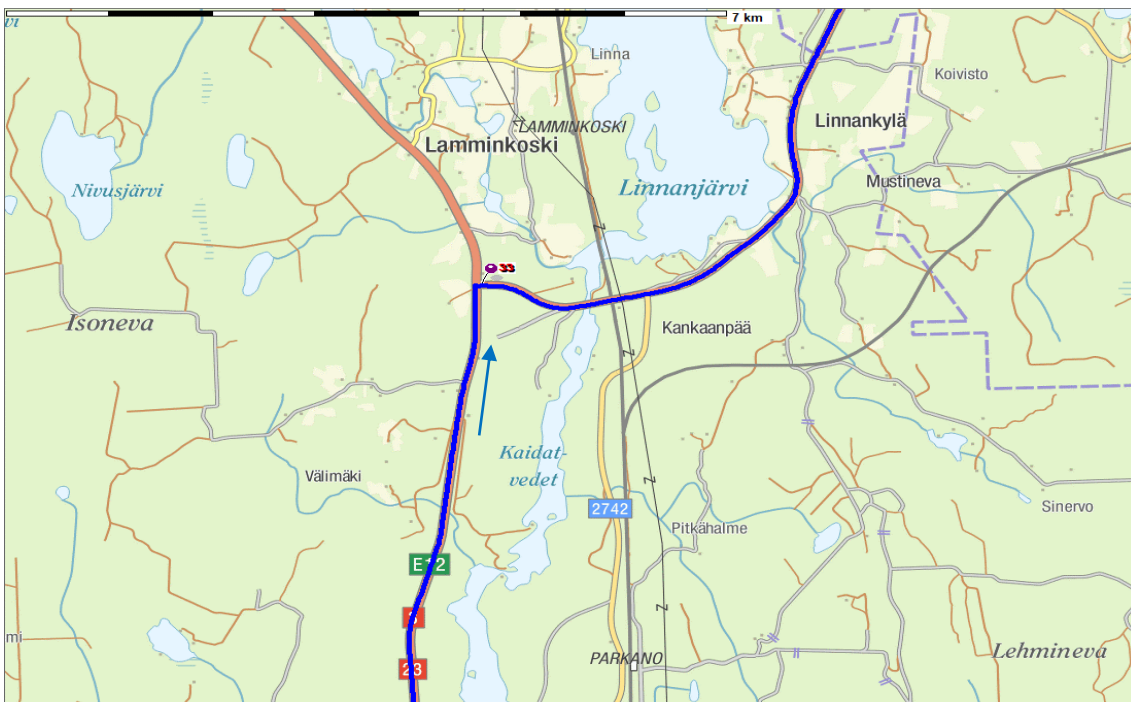


Map 7. Sixth part of the route. Route for blades marked as green.





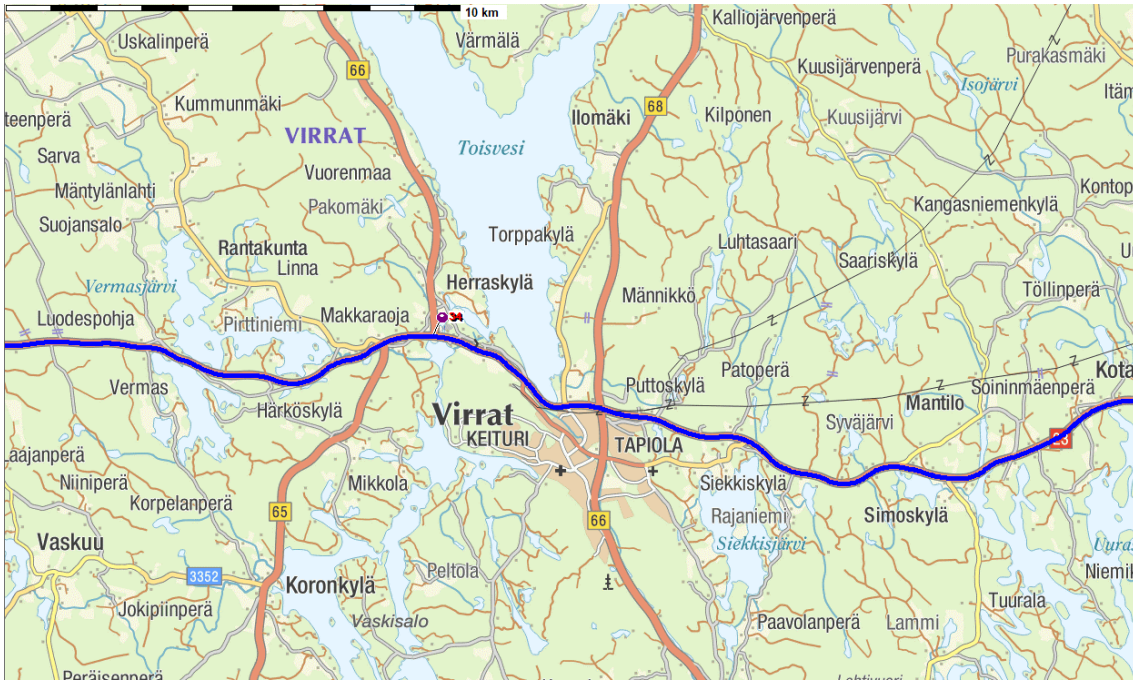
Map 8. Seventh part of the routes. Route for height over 4,5m loads marked as red.



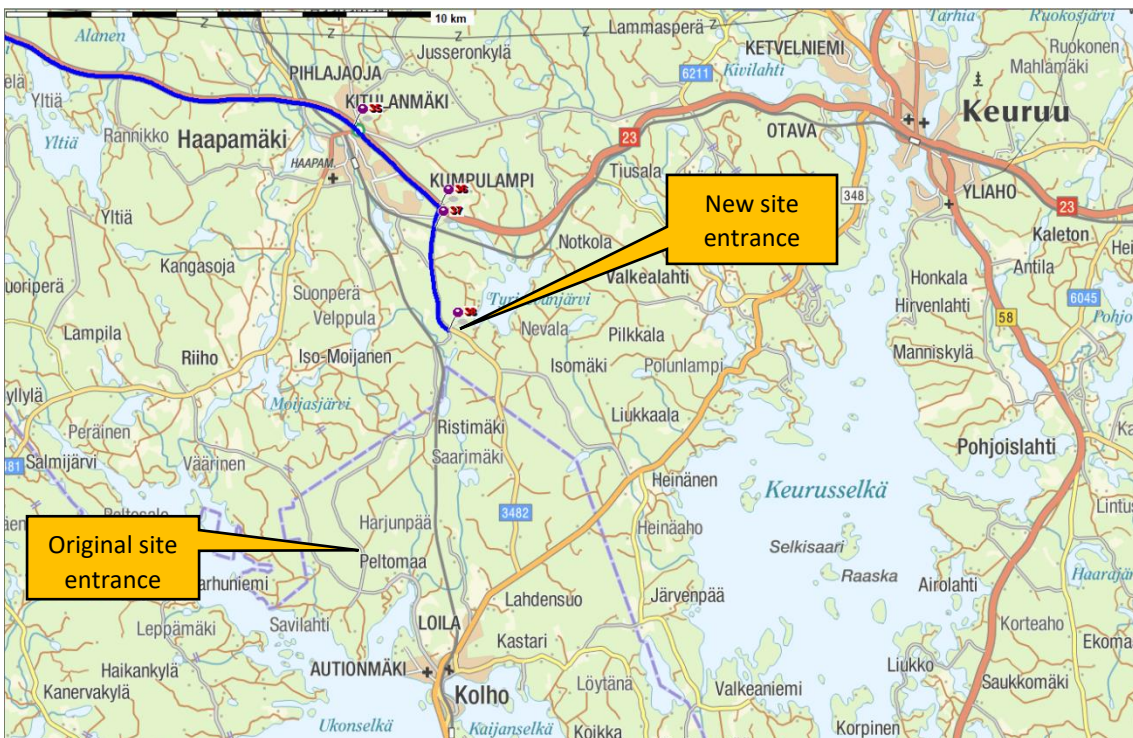
Map 9. Eighth part of the route.







Map 10. Ninth part of the route.



Map 11. Last part of the route. New site entrance position 38 (Junction road 3482/Ristimäentie). Original site entrance is not feasible from south.



**4. Individual route sections**

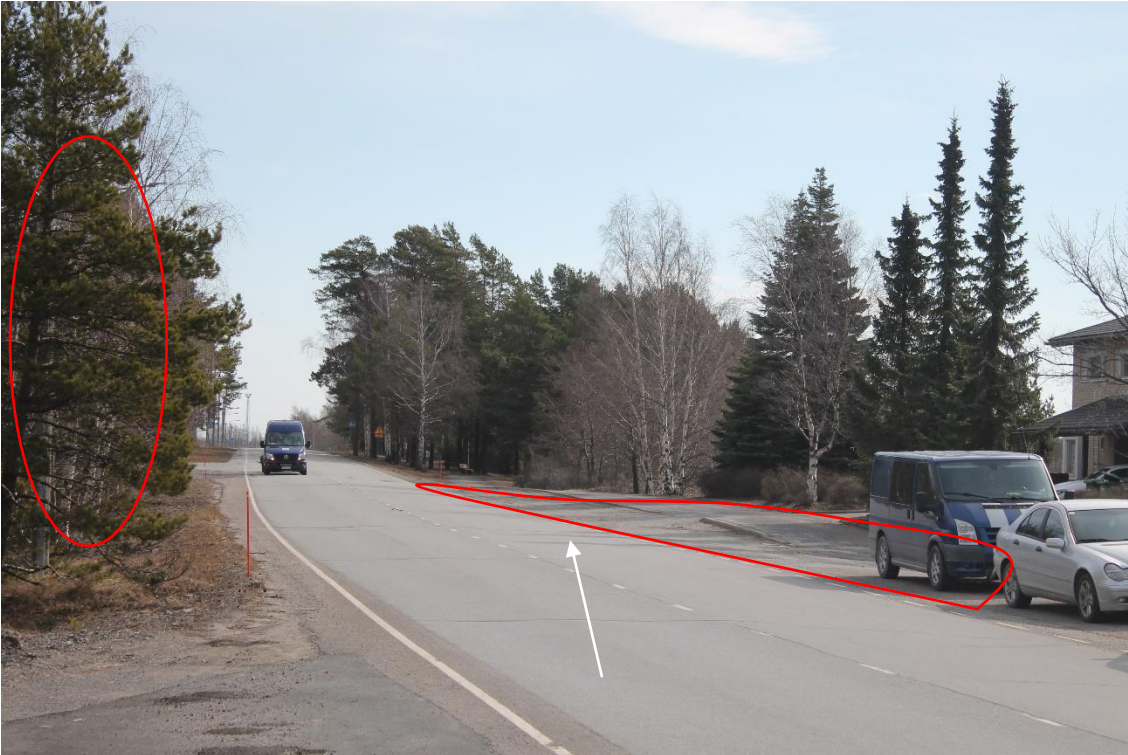
Pos 1/Pic 1. Exit from port via gate EK1. <https://goo.gl/maps/BamiPLb9PiQk4WWk7>  
This gate to be used for blades. Marked lamp post need to be removed.



Pos 1/Pic 2. Exit from port via gate EK1.  
Marked trees need to cut. Marked lamp posts need to be removed. Marked area need to be filled and drivable.







Pos 1/Pic 3. Exit from port via gate EK1.  
Marked area need to be free during transport period, no parking allowed. Marked trees need to cut.



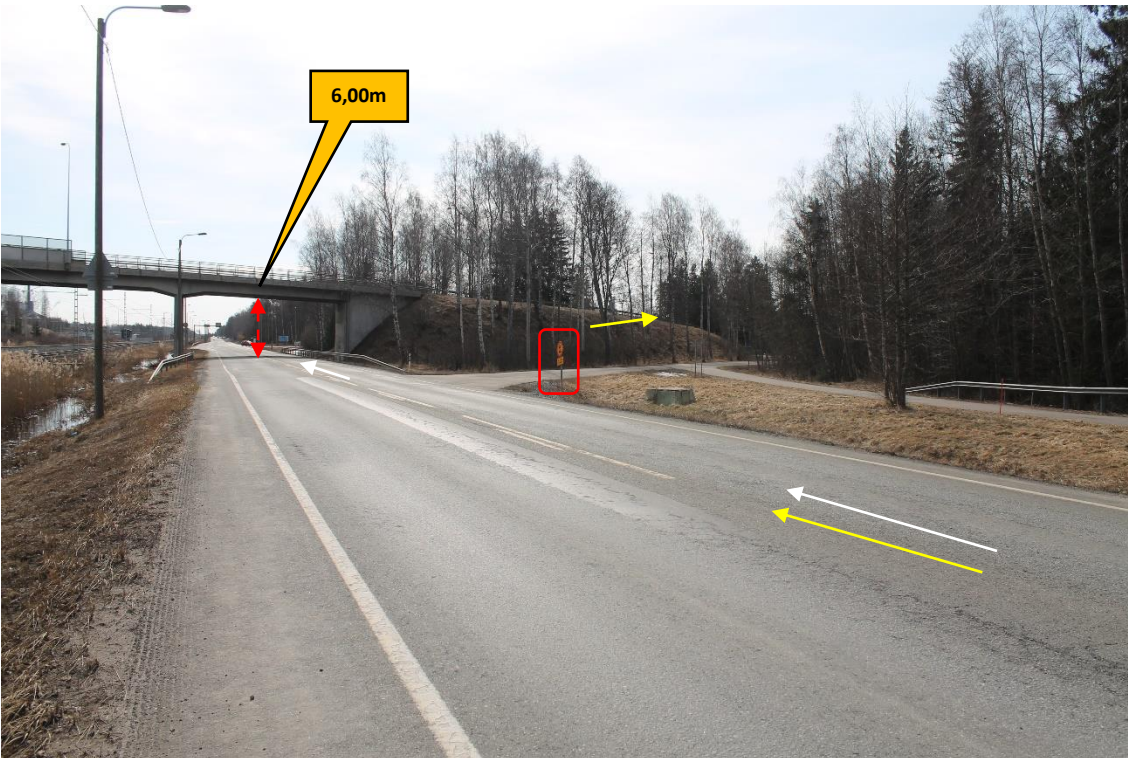
Pos 2/Pic 4. Exit from port via gate EK2. <https://goo.gl/maps/i92xEntjmmgKHUeD6>  
White arrow points driving direction for blades. Gate EK2 is not suitable for blades.







Pos 2/Pic 5. Exit from port via gate EK2.  
White arrow points driving direction for blades. Gate EK2 is not suitable for blades.



Pos 3/Pic 6. Bridge detour on road 2. <https://goo.gl/maps/p72e9yQF2igHNxZo6>  
Blades continue straight under bridge. Marked sign need to be removed.







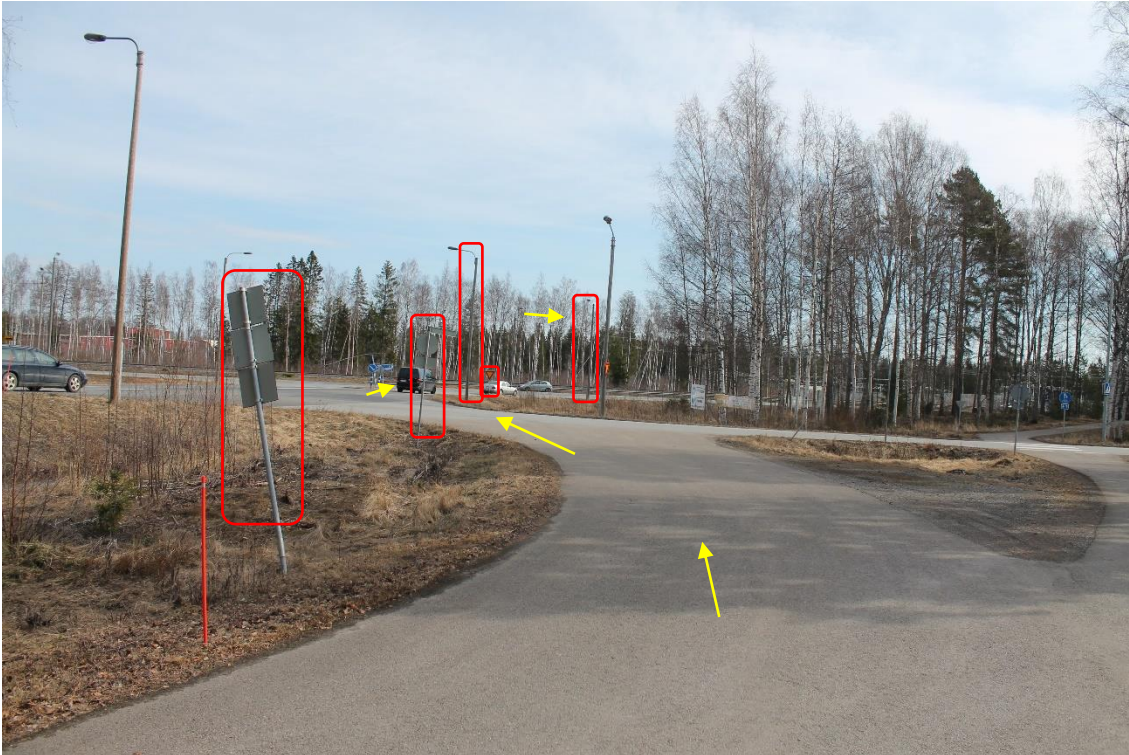
Pos 3/Pic 7. Bridge detour on road 2.  
Marked sign to be removed. Marked tree branches need to cut.



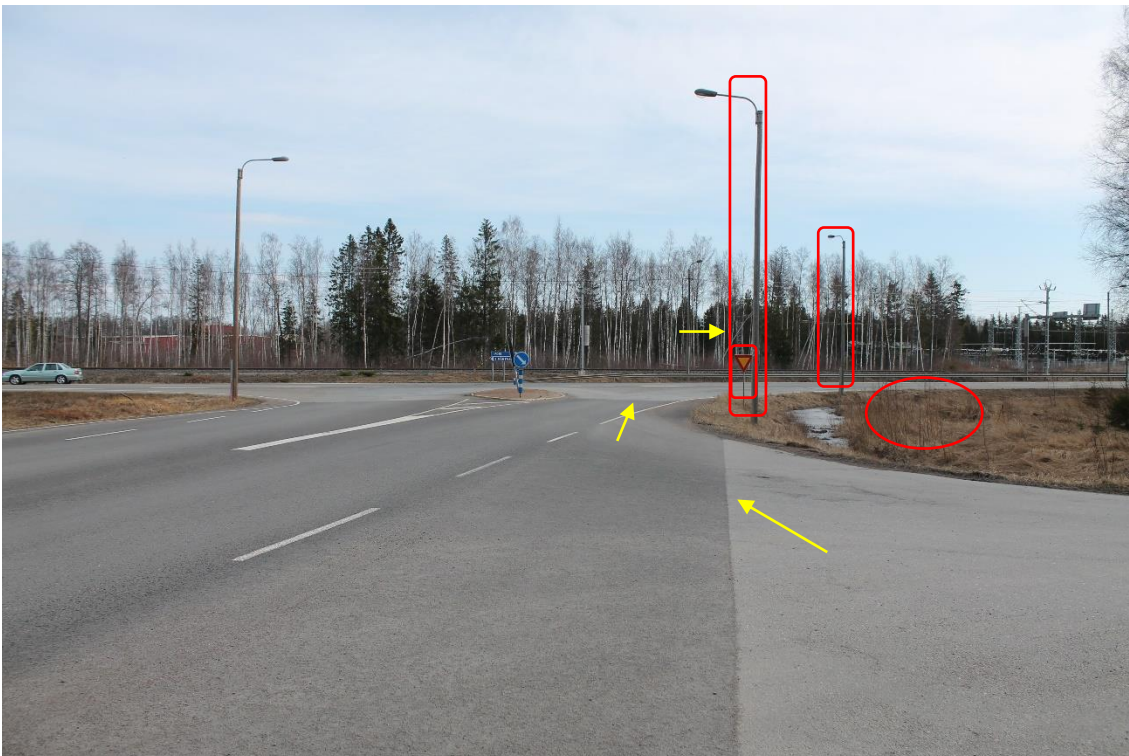
Pos 3/Pic 8. Bridge detour on road 2.  
Marked sign to be removed. Marked tree branches need to cut.







Pos 3/Pic 9. Bridge detour on road 2.  
Marked signs and lamp posts need to be removed.



Pos 3/Pic 10. Bridge detour on road 2.  
Marked signs and lamp posts need to be removed. Marked bushes need to cut.







Pos 3/Pic 11. Road 2. Bridge detour on road 2.  
Marked Lamp post need to be removed.



Pos 4/Pic 12. Road 2. <https://goo.gl/maps/jZqxmZeLSkBpwQDDA>  
Continue straight on counter lane.







Pos 5/Pic 13. Road 2. <https://goo.gl/maps/MFgg2rdeQ5U3TRn2A>  
Continue straight on road 2.



Pos 6/Pic 14. Road 2. <https://goo.gl/maps/qUL7vx7awnimZaHNA>  
Continue straight on road 2.







Pos 7/Pic 15. Turning from road 2 toward road 8. <https://goo.gl/maps/jWtzNzh3zXjR32hX6>

Blades need to use counter lane from here to the next ramp to road 8. All other transports will make u-turn in next ramp. White arrow points driving direction for blades. Yellow arrow points driving direction for towers etc.



Pos 7/Pic 16. Turning from road 2 toward road 8.

White arrow points driving direction for blades on counter lane. Yellow arrow points driving direction for towers etc.



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Pos 7/Pic 17. Turning from road 2 toward road 8.

Modifications: N/A. White arrow points driving direction for blades on counter lane. Yellow arrow points driving direction for towers etc.



Pos 7/Pic 18. Turning from road 2 toward road 8.

Marked sign need to be removed. Yellow arrow points driving direction for towers etc.







Pos 7/Pic 19. Turning from road 2 toward road 8.  
Transports need to make u-turn on designed ramp to road 8. Marked trees need to cut. Yellow arrow points driving direction for towers etc.



Pos 7/Pic 20. Turning from road 2 toward road 8.  
Transports need to make u-turn on designed ramp to road 8. Marked tree need to cut. Marked pole need to be removed. Yellow arrow points driving direction for towers etc.







Pos 7/Pic 21. Turning from road 2 toward road 8.

Transports need to make u-turn on designed ramp to road 8. Marked trees need to cut. Marked pole need to be removed. Yellow arrow points driving direction for towers etc.



Pos 7/Pic 22. Turning from road 2 toward road 8.

Transports need to make u-turn on designed ramp to road 8. Marked trees need to cut. Yellow arrow points driving direction for towers etc.



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Pos 7/Pic 23. Turning from road 2 toward road 8.

Transports need to make u-turn on designed ramp to road 8. Marked lamp post need to be removed. Yellow arrow points driving direction for towers etc.

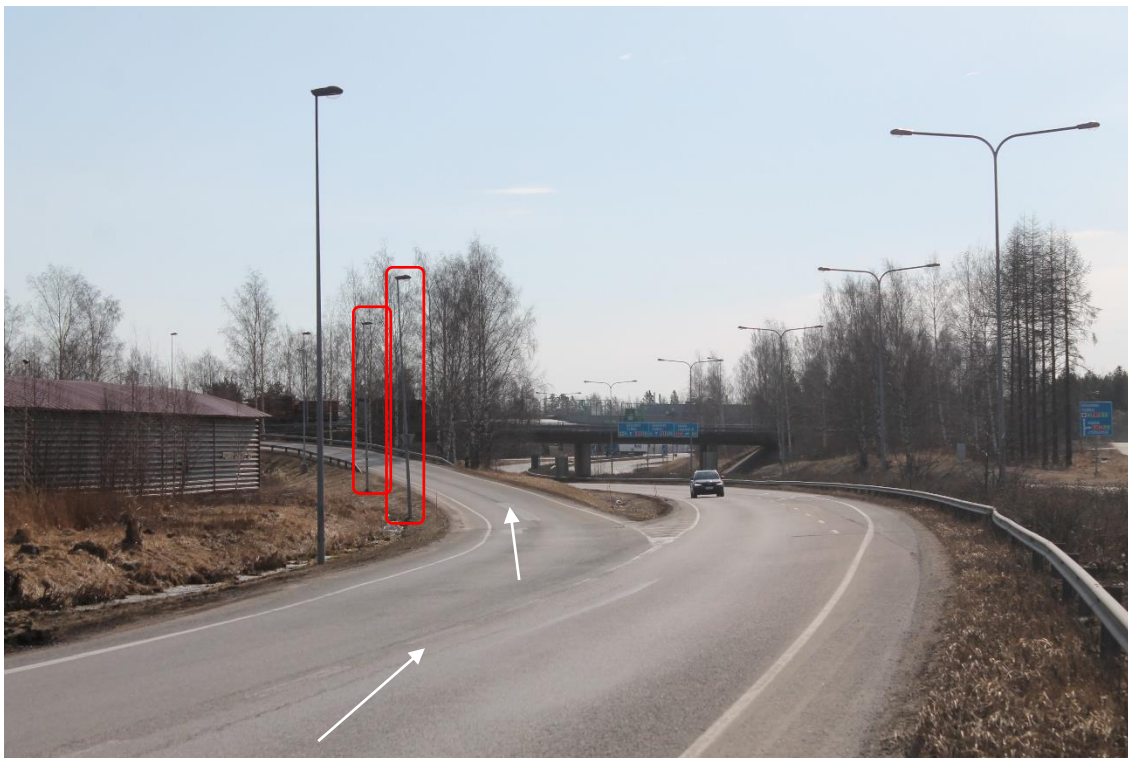


Pos 7/Pic 24. Turning from road 2 toward road 8.

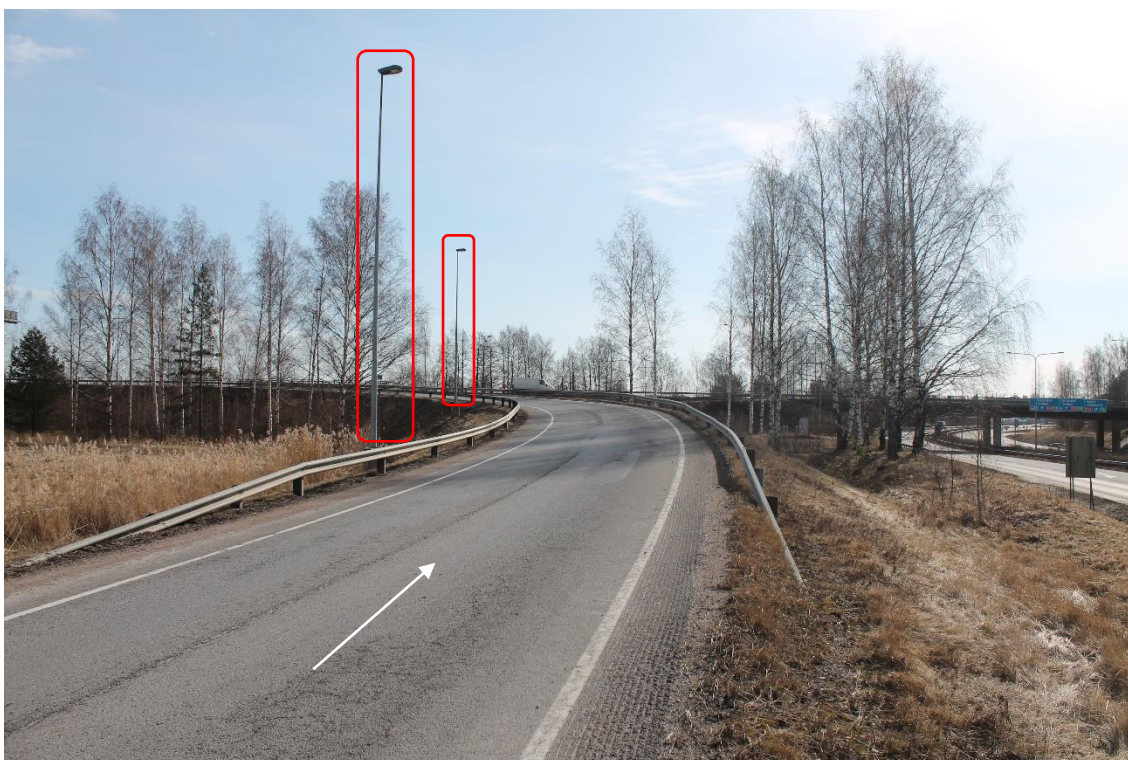
Modifications: N/A. White arrow points driving direction for blades on counter lane.







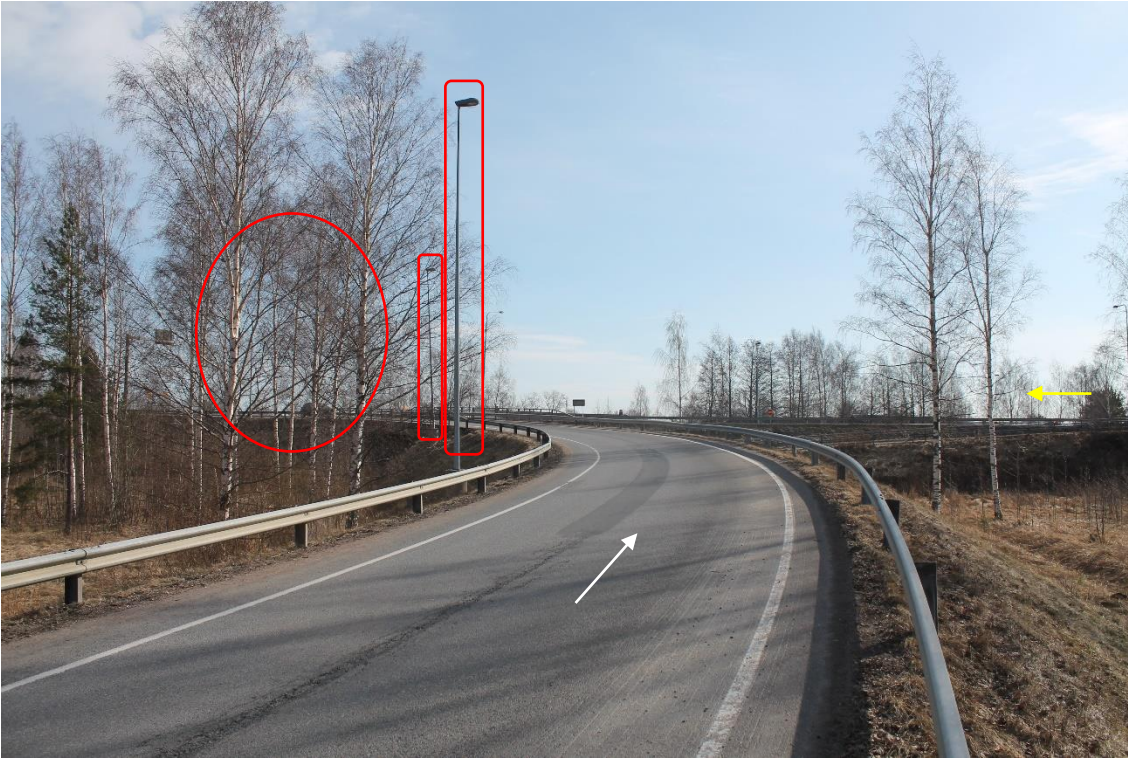
Pos 7/Pic 25. Turning from road 2 toward road 8.  
Marked lamp posts need to be removed. White arrow points driving direction for blades on counter lane.



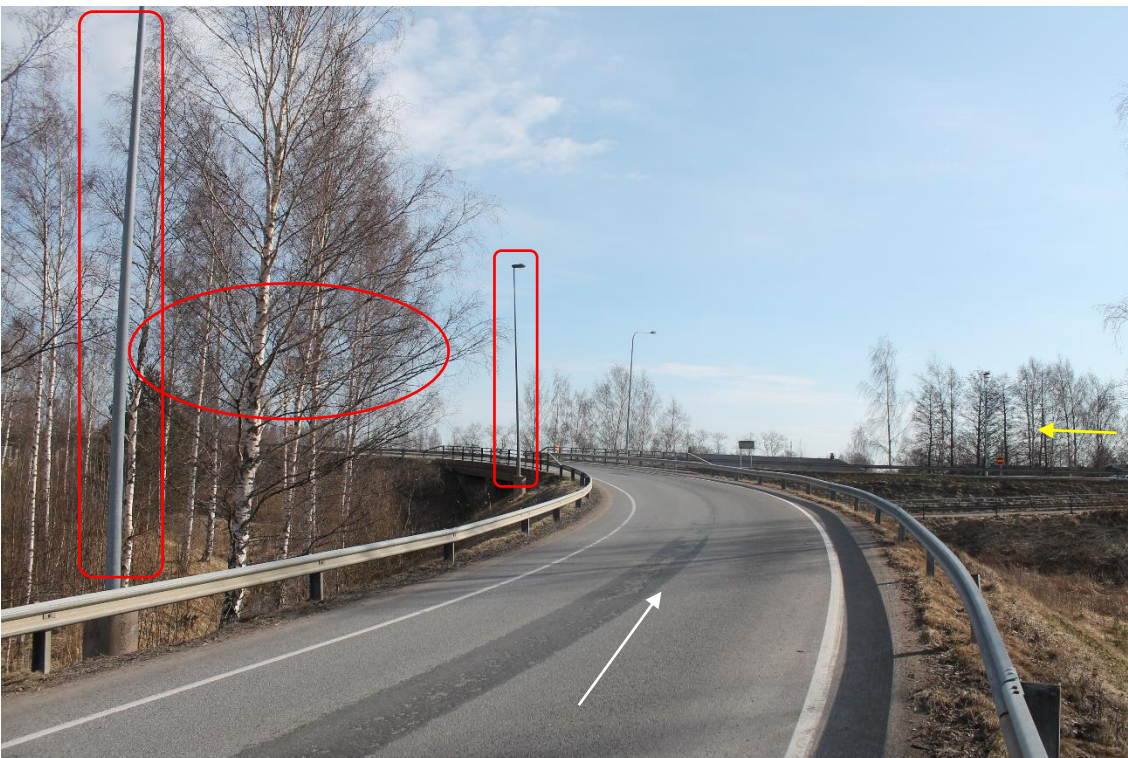
Pos 7/Pic 26. Turning from road 2 toward road 8.  
Marked lamp posts need to be removed. White arrow points driving direction for blades on counter lane.







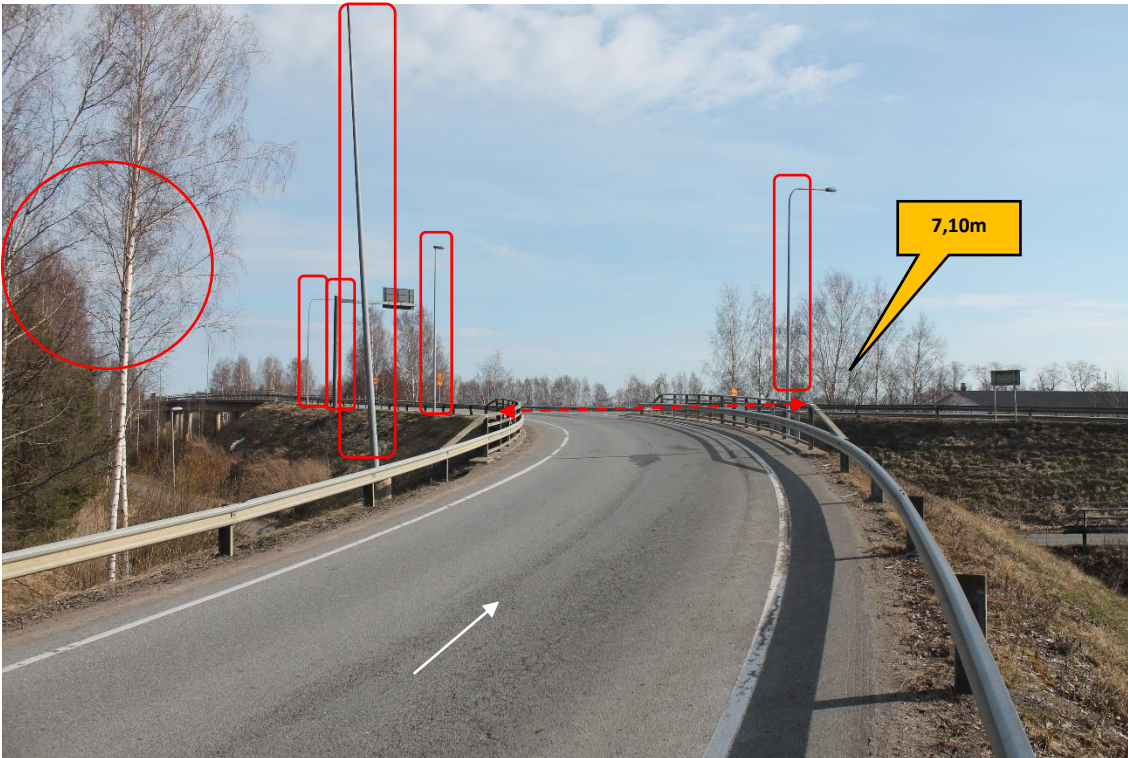
Pos7 /Pic 27. Turning from road 2 toward road 8.  
Marked lamp posts need to be removed. Marked trees need to cut. White arrow points driving direction for blades on counter lane.



Pos 7/Pic 28. Turning from road 2 toward road 8.  
Marked lamp posts need to be removed. Marked trees need to cut. White arrow points driving direction for blades on counter lane.







Pos 7/Pic 29. Turning from road 2 toward road 8.  
Marked lamp posts and portal need to be removed. Marked trees need to cut. Rails height 1,06m. Blade need to be lifted and need to be able to oversail the rails. White arrow points driving direction for blades on counter lane.

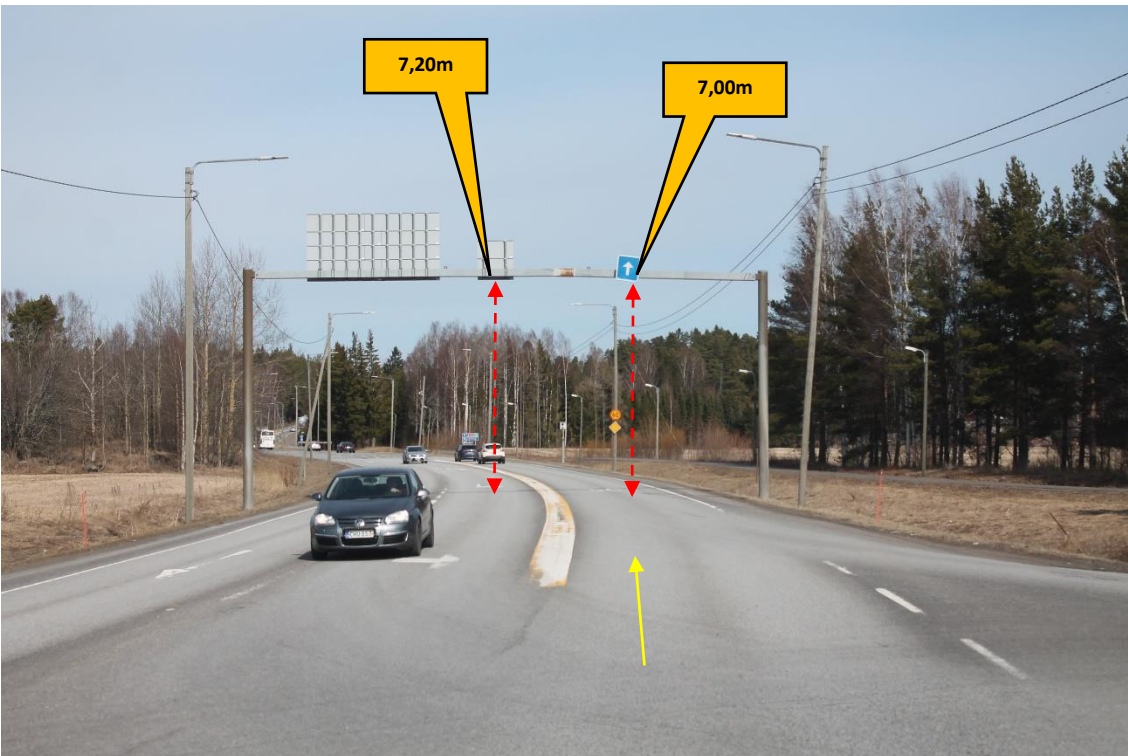


Pos 7/Pic 30. Turning from road 2 toward road 8.  
Marked lamp posts and portal need to be removed. Marked trees need to cut. Rails height 1,06m. Blade need to be lifted and need to be able to oversail the rails. White arrow points driving direction for blades on counter lane. Yellow arrow points driving direction for towers etc.





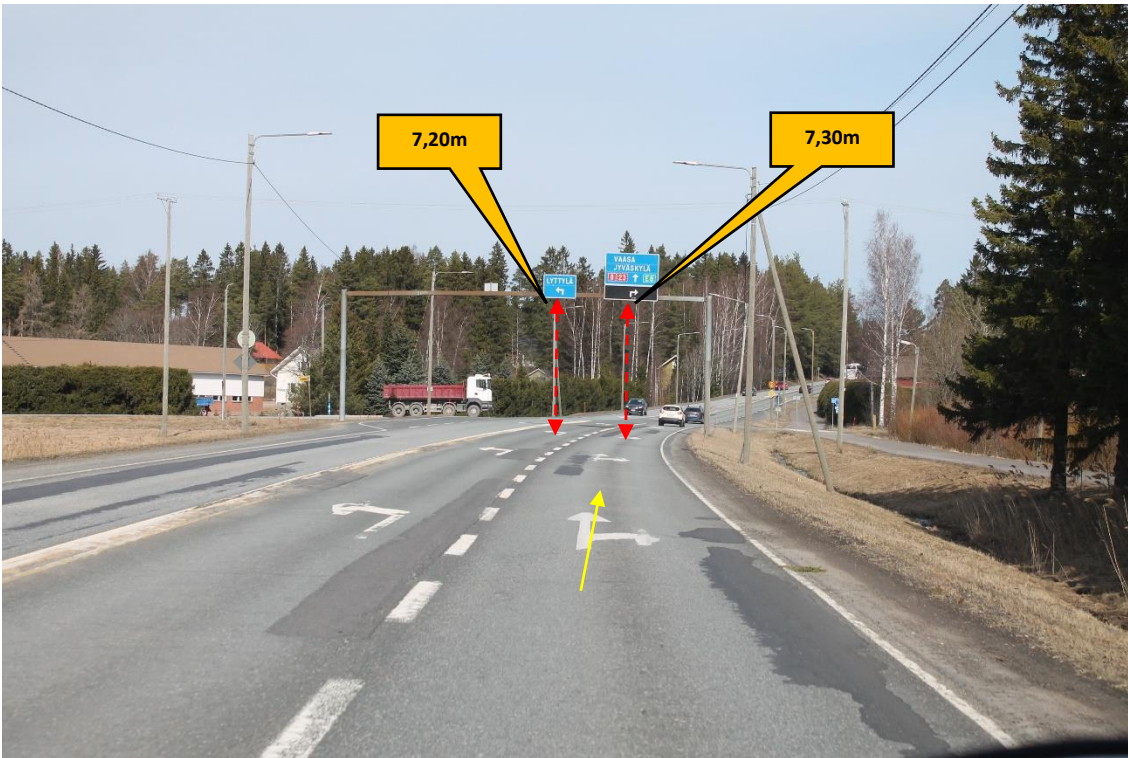
Pos 8/Pic 31. Road 8. <https://goo.gl/maps/ZLfYC4APuZTeMiZUA>  
Blades need to use counter lane.



Pos 8/Pic 32. Road 8.  
Modifications: N/A.







Pos 9/Pic 33. Road 8. <https://goo.gl/maps/aeogyWykzynSnGZw9>  
Modifications: N/A.



Pos10 /Pic 34. Turning from road 8 toward road 23. <https://goo.gl/maps/AxWKWiPAL1THNcKP8>  
Marked lamp post need to be removed.





Pos 10/Pic 35. Turning from road 8 toward road 23.  
Marked lamp posts need to be removed.



Pos 10/Pic 36. Turning from road 8 toward road 23.  
Marked lamp posts, portal and signs need to be removed.







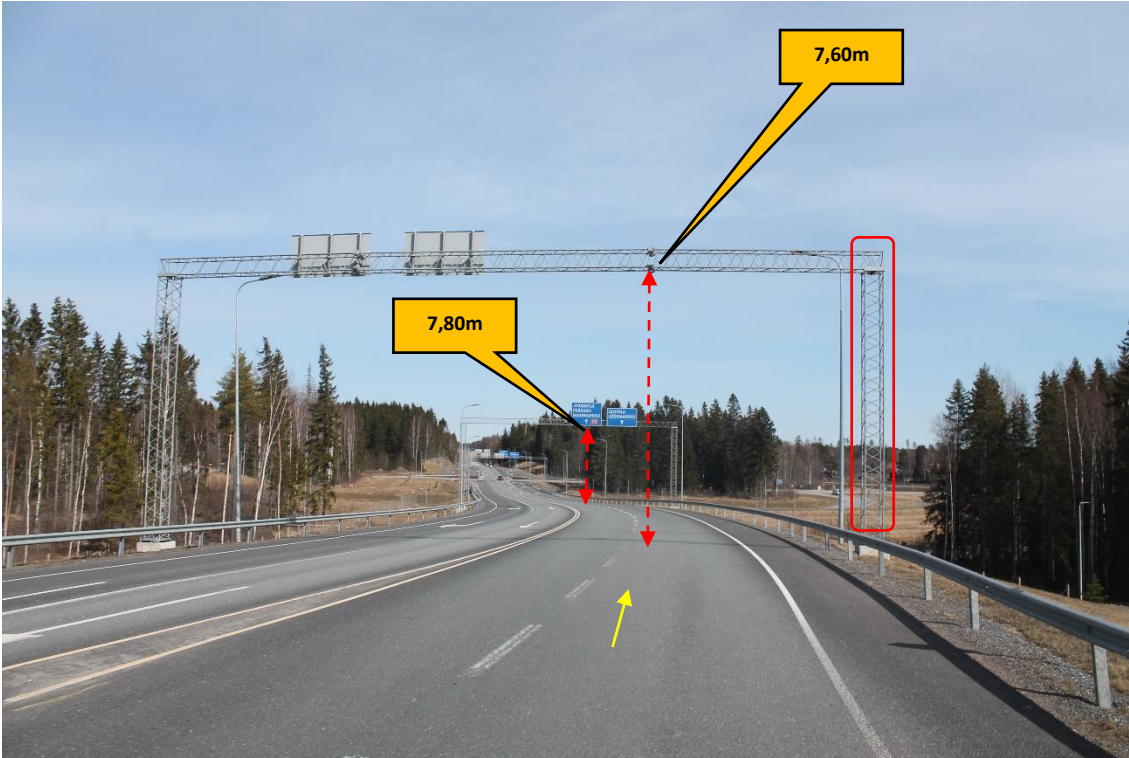
Pos 10/Pic 37. Turning from road 8 toward road 23.  
Marked lamp post, portal and signs need to be removed. Rails height 0,7m.



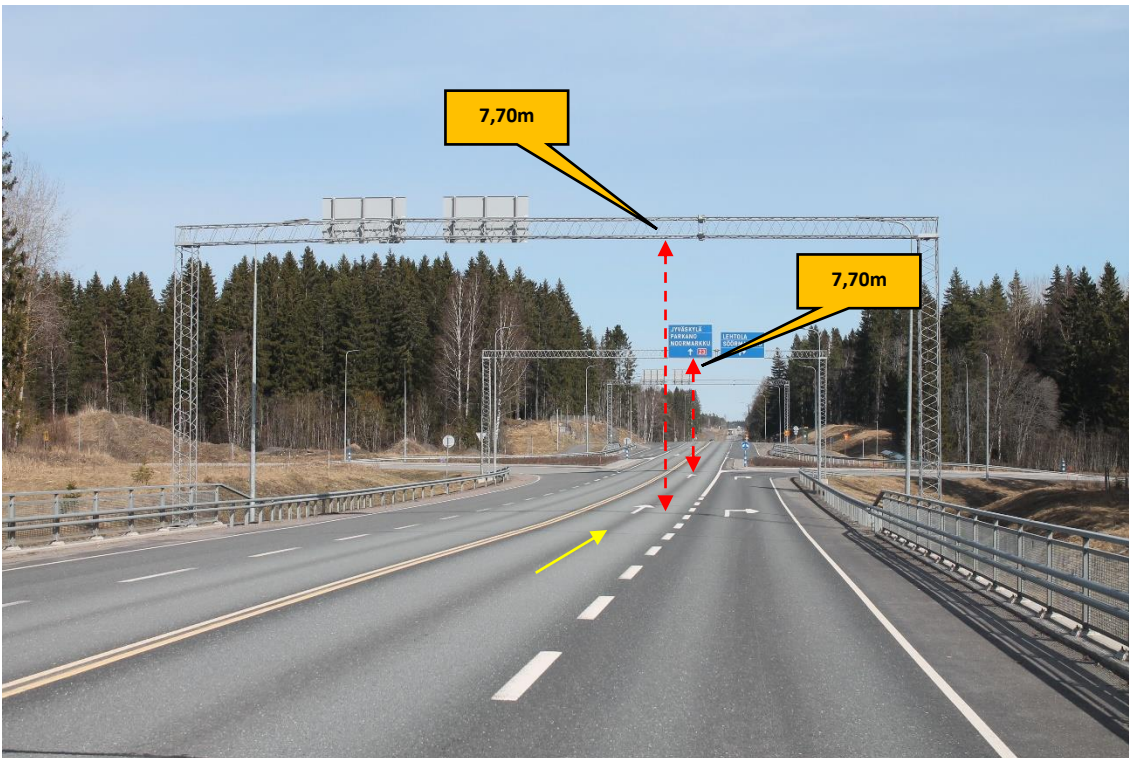
Pos 10/Pic 38. Turning from road 8 toward road 23.  
Marked lamp post, portal and signs need to be removed. Rails height 0,7m.







Pos 10/Pic 39. Turning from road 8 toward road 23.  
Marked portal need to be removed.



Pos 11/Pic 40. Road 23. <https://goo.gl/maps/QrnFRrwrwtUfEPm86>  
Modifications : N/A.





Pos 11/Pic 41. Road 23.  
Modifications : N/A.



Pos 12/Pic 42. Road 23 roundabout in Noormarkku. <https://goo.gl/maps/NNd5grPuA5qSnNXd6>  
Need to drive thru on counter side. Marked signs need to be removed.







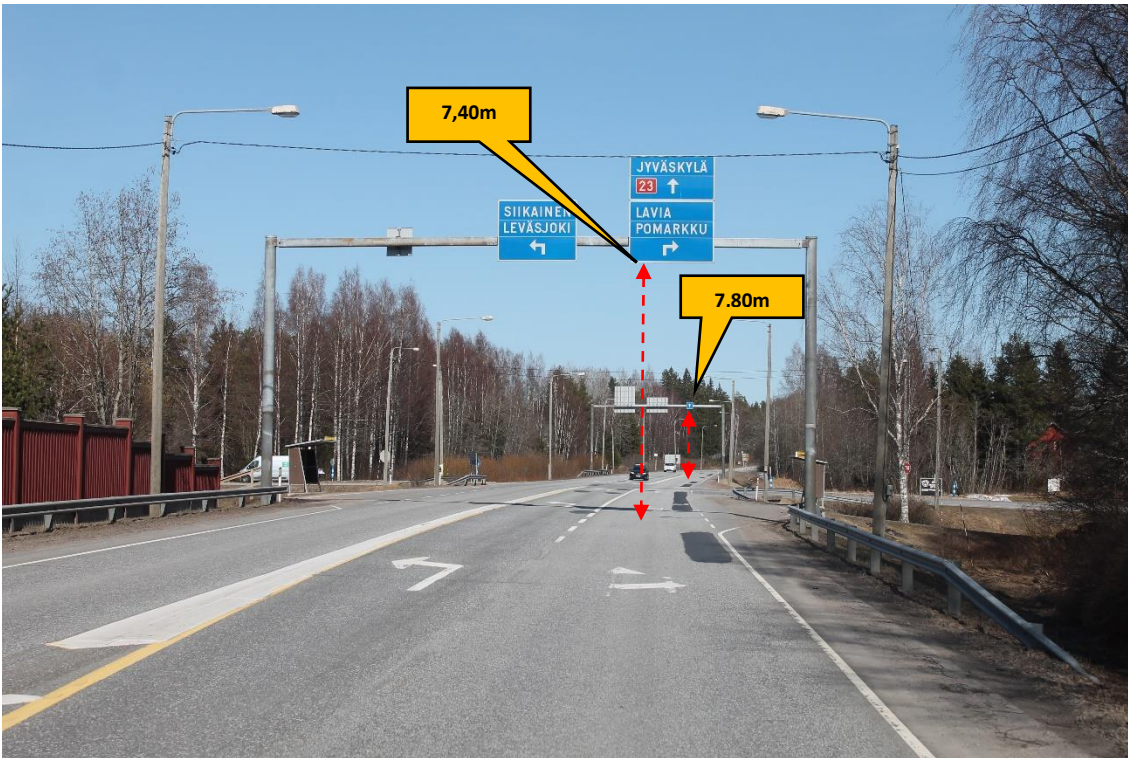
Pos 12/Pic 43. Road 23 roundabout in Noormarkku.  
Need to drive thru on counter side. Marked signs and poles need to be removed.



Pos 12/Pic 44. Road 23 roundabout in Noormarkku.  
Need to drive thru on counter side. Marked signs and poles need to be removed.

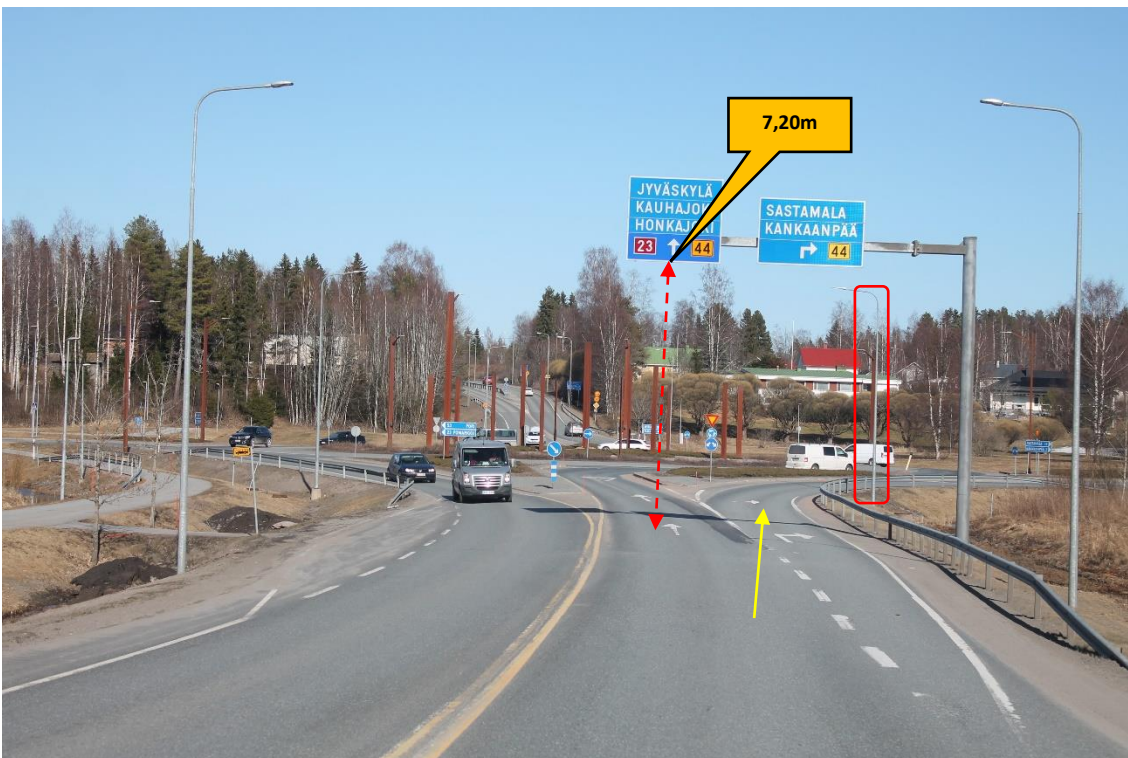






Pos 13/Pic 45. Road 23. <https://goo.gl/maps/xkAHjxPhfC783JkB8>

Modifications : N/A.

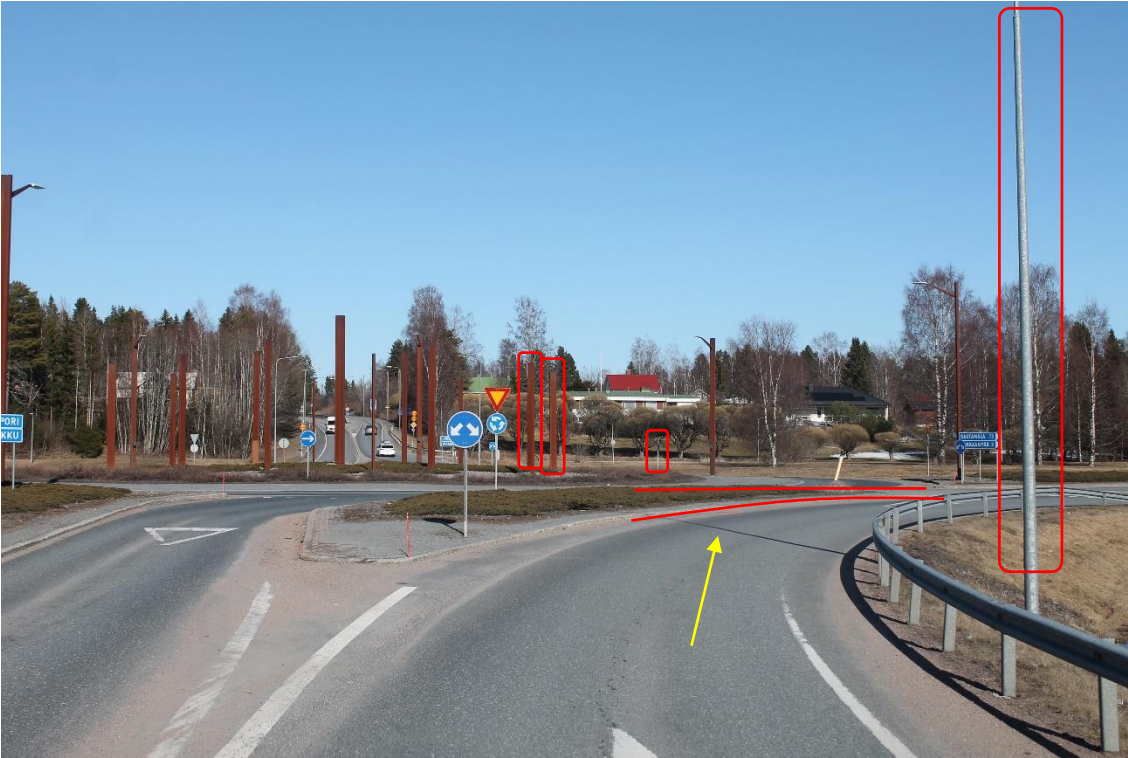


Pos 14/Pic 46. Roundabout on road 23. <https://goo.gl/maps/43nRAVW3Aj17S4SZ7>

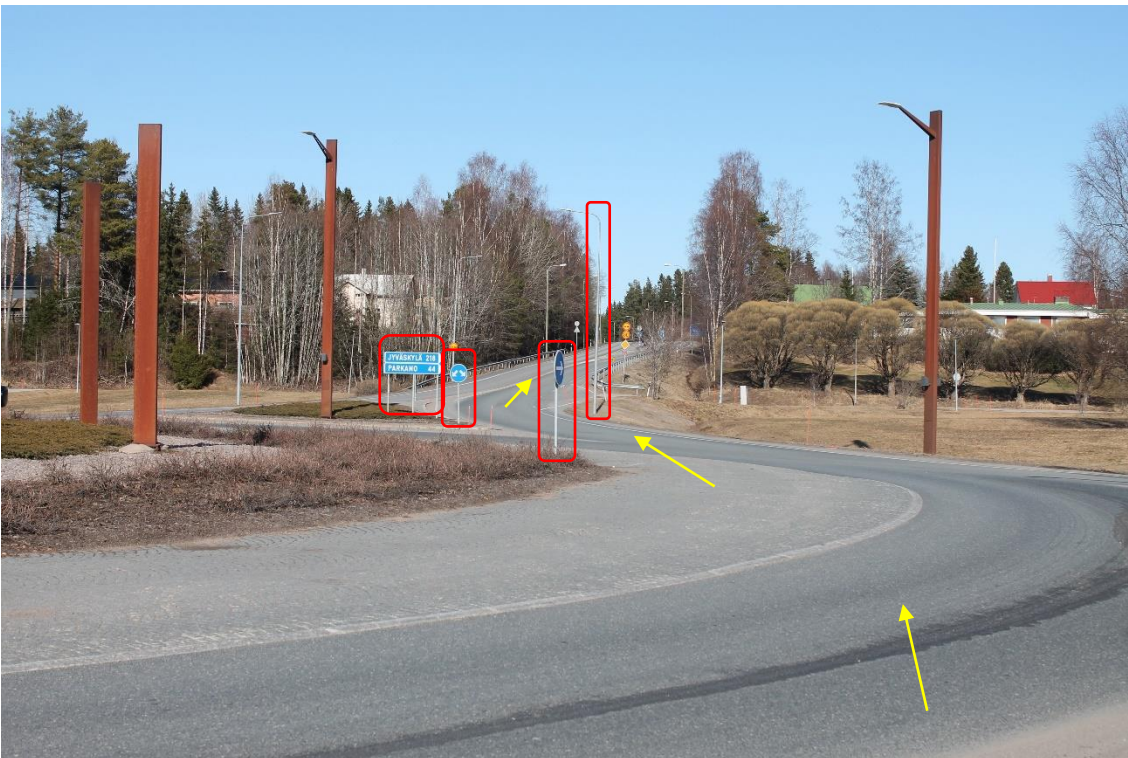
Continue straight. Marked lamp posts need to be removed.







Pos 14/Pic 47. Roundabout on road 23. Marked sign, poles and lamp post need to be removed. Marked part of traffic island need to be flat and drivable.



Pos 14/Pic 48. Roundabout on road 23. Marked signs and lamp post need to be removed.







Pos 15/Pic 49. Turning from road 23 toward Varuskunnantie. <https://goo.gl/maps/FQHZRCLFP4kQ6ogL7>  
Bridge detour. White arrow points driving direction for blades. Yellow arrow points driving direction for towers.



Pos 15/Pic 50. Turning from road 23 toward Varuskunnantie. Bridge detour.  
Marked lamp post need to be removed. White arrow points driving direction for blades. Yellow arrow points driving direction for towers.



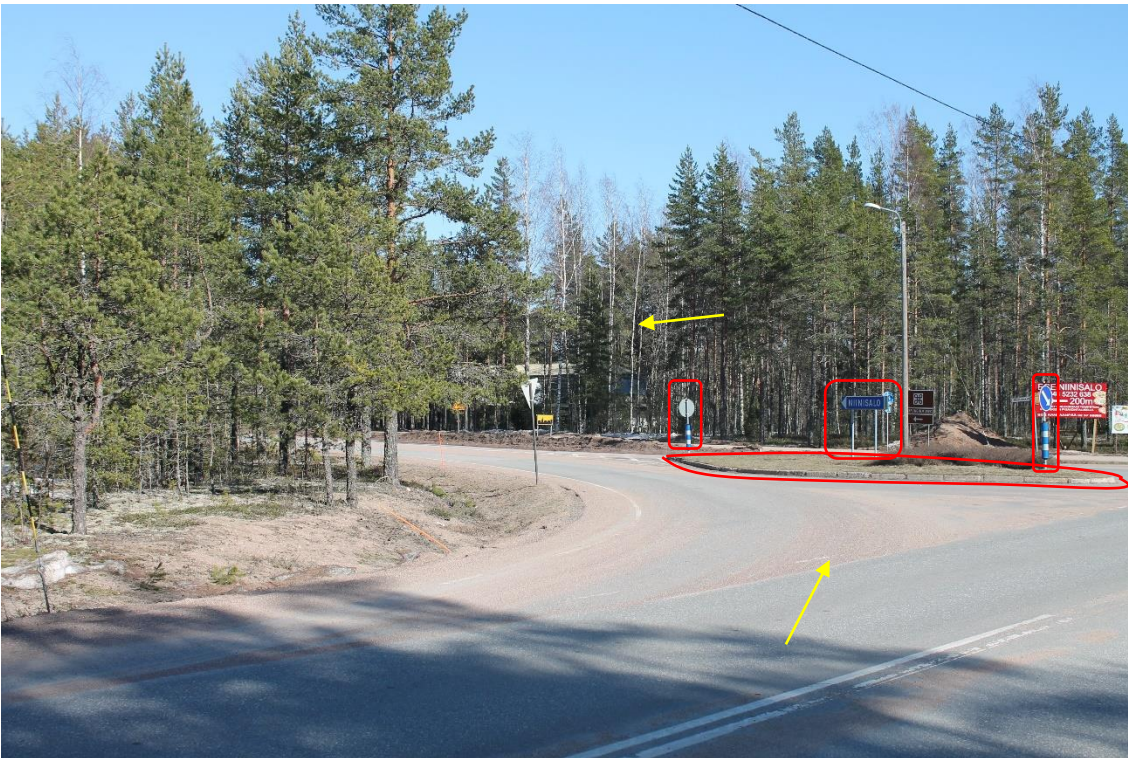




Pos 16/Pic 51. Turning from Varuskunnantie toward Niinisalonkatu.

<https://goo.gl/maps/1eY67qFDD58mFsis7>

Bridge detour. Marked signs need to be removed. Marked traffic island need to be flat and drivable. Yellow arrow points driving direction for towers.



Pos 16/Pic 52. Turning from Varuskunnantie toward Niinisalonkatu.

Bridge detour. Marked signs need to be removed. Marked traffic island need to be flat and drivable. Yellow arrow points driving direction for towers.



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Pos 17/Pic 53. Niinisonkatu. <https://goo.gl/maps/gsv2BihXYPjzi76z8>  
Bridge detour. Marked tree branches need to cut. Yellow arrow points driving direction for towers.



Pos 18/Pic 54. Turning from Niinisonkatu toward road 261. <https://goo.gl/maps/sGci2SzHBWZer2Pd8>  
Bridge detour. Yellow arrow points driving direction for towers.  
Modifications . N/A.







Pos 18/Pic 55. Turning from Niinisalonkatu toward road 261.  
Bridge detour. Marked bush and trees need to cut. Yellow arrow points driving direction for towers.



Pos 19/Pic 56. Turning from road 261 toward road 23. <https://goo.gl/maps/69GubpAtixrrSAQy6>  
Bridge detour. Marked sign need to be removed. Yellow arrow points driving direction for towers.  
White arrow points driving direction for blades.







Pos 20/Pic 57. Turning from road 23 toward Rautalammentie. <https://goo.gl/maps/baLiE2NgcNu4Cbac8>  
<https://goo.gl/maps/vY6EfRHcbuutHDga8>  
Bridge detour.



Pos 20/Pic 58. Turning from road 23 toward Rautalammentie. <https://goo.gl/maps/vY6EfRHcbuutHDga8>  
Bridge detour. Marked trees need to cut. During the wintertime road need extra maintenance. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.







Pos 21/Pic 59. Rautalammentie. <https://goo.gl/maps/Htx1ZGFS4QSQhYUGA>  
Railway crossing. Railway traffic need to be checked before crossing. Yellow arrow points driving direction for towers.



Pos 21/Pic 60. Rautalammentie. Bridge detour.  
Marked sign need to be removed. Marked tree branches need to cut. Yellow arrow points driving direction for towers.







Pos 21/Pic 61. Rautalammentie. Bridge detour.

Marked sign need to be removed. Marked tree branches need to cut. Yellow arrow points driving direction for towers.



Pos 22/Pic 62. Turning from Rautalammentie toward road 23. <https://goo.gl/maps/gwpweuCG9BacGjiw7>

Bridge detour. Marked sign need to be removed. Marked trees and bushes need to cut. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.



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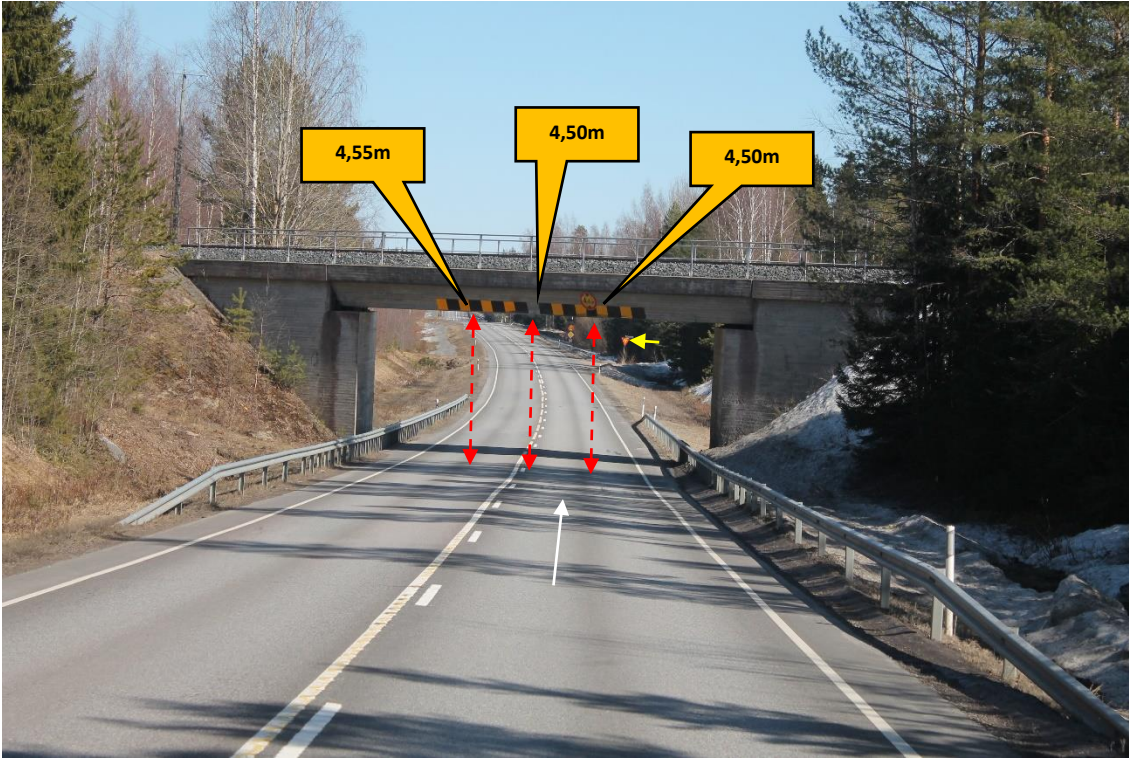
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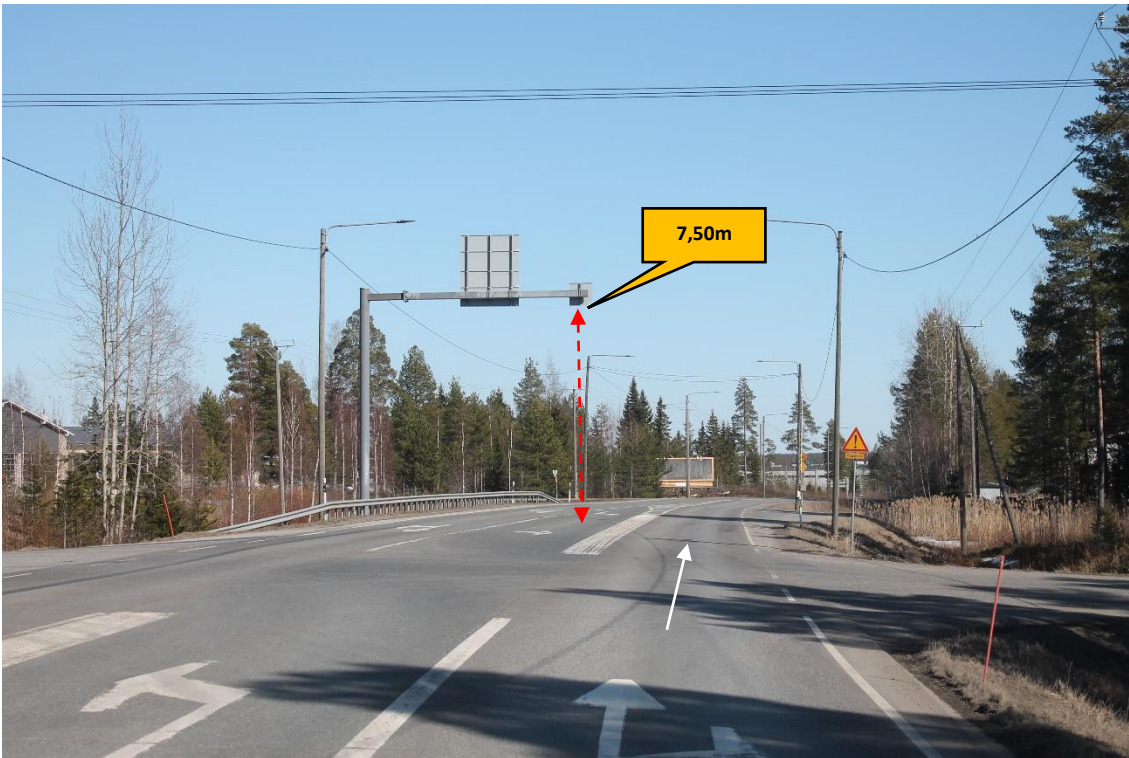
Pos 22/Pic 63. Bridge on road 23. <https://goo.gl/maps/mnCu7SBnaxXgrXmT7>  
Yellow arrow points driving direction for towers. White arrow points driving direction for blades.



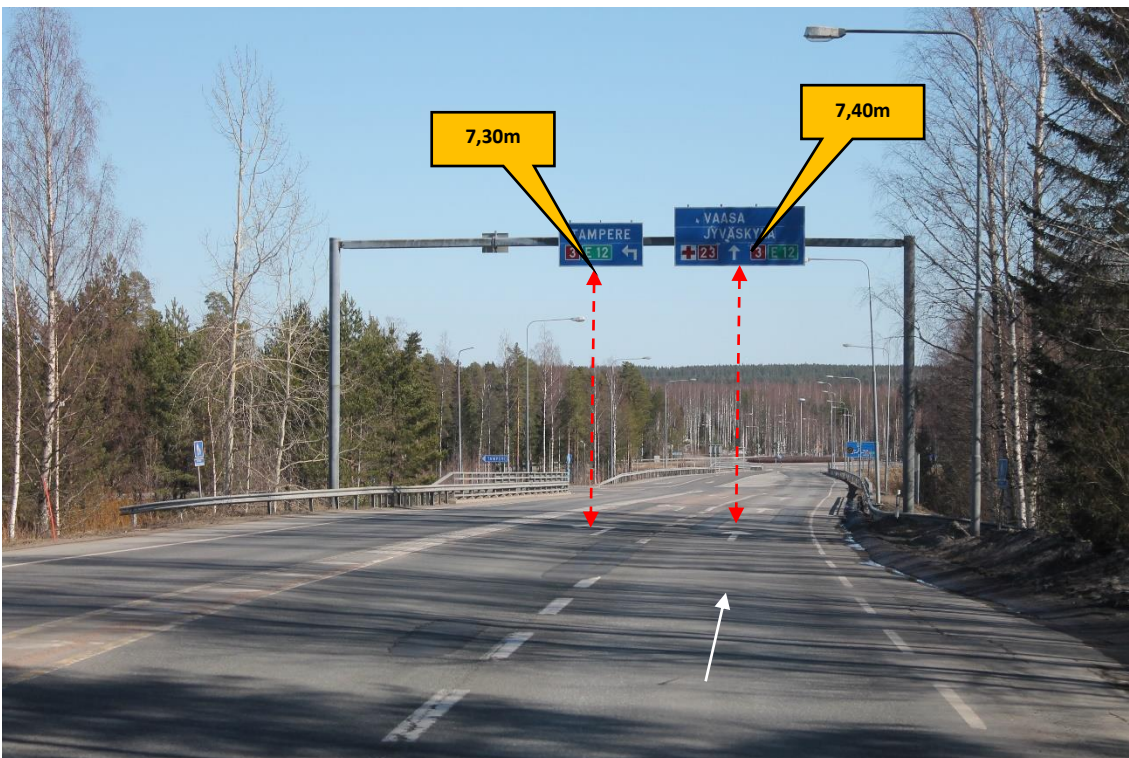
Pos 23/Pic 64. Road 23. <https://goo.gl/maps/fCDyKbaw3zcksk2X7>  
Yellow arrow points driving direction for towers. White arrow points driving direction for blades.







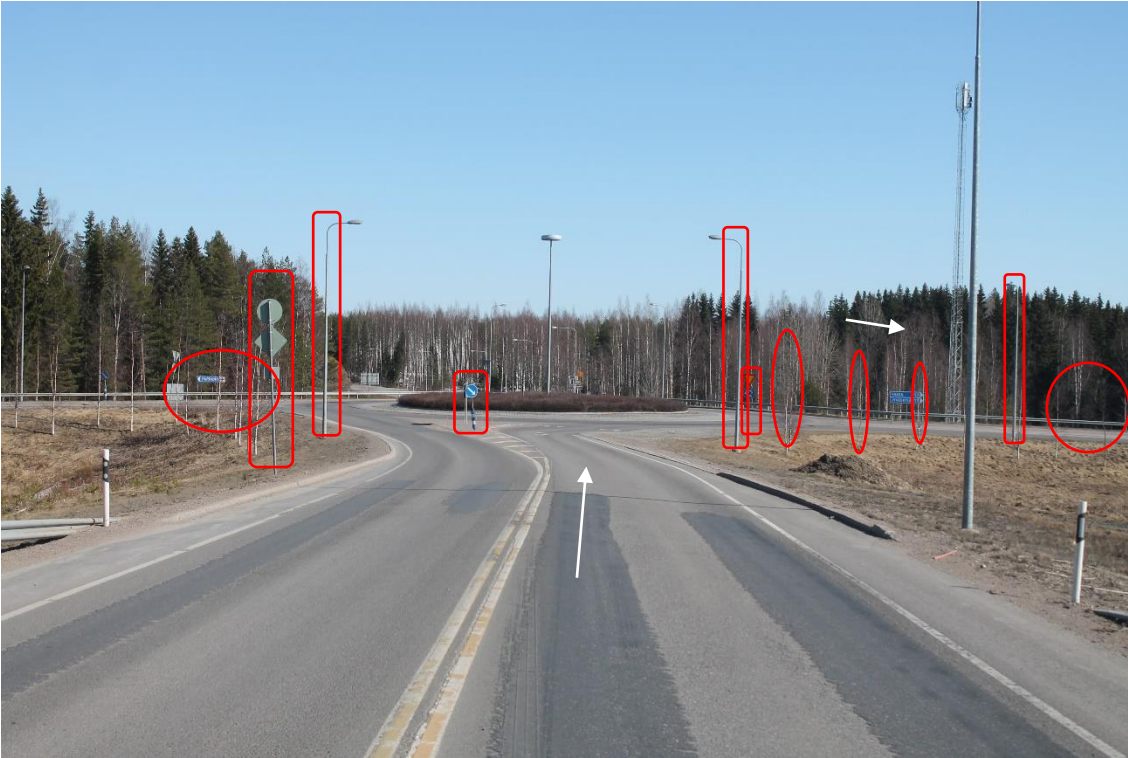
Pos 23/Pic 65. Road 23.  
White arrow points driving direction for blades.



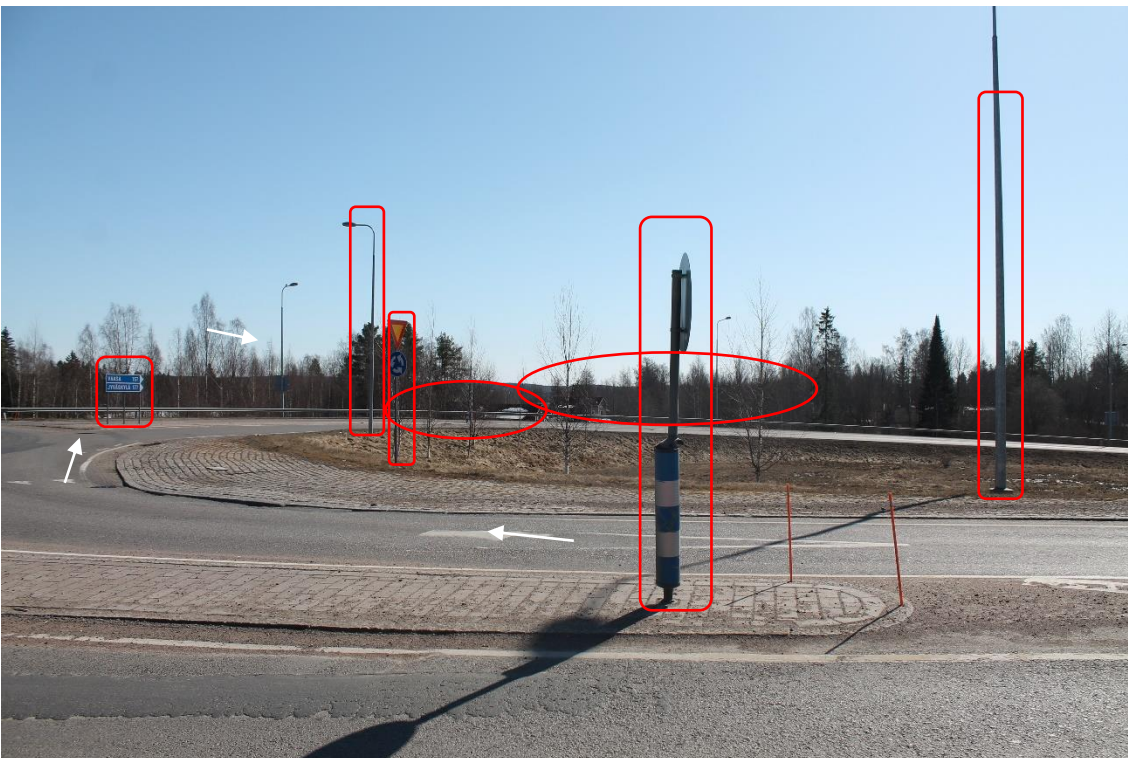
Pos 24/Pic 66. Road 23. <https://goo.gl/maps/aRAepeEHeFns1Zur9>  
White arrow points driving direction for blades.







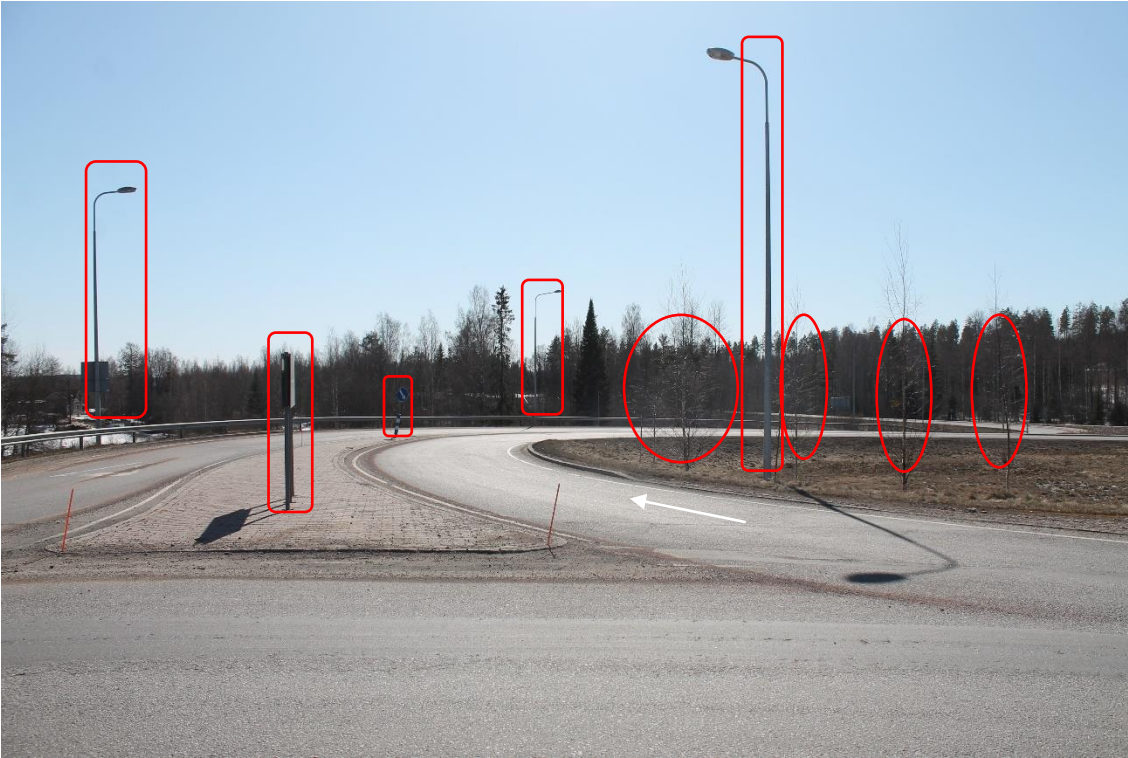
Pos 25/Pic 67. Turning from road 23 toward road 3. <https://goo.gl/maps/82YjUh2vZ6PTcCJX6>  
Marked signs and lamp posts need to be removed. Marked trees need to cut. Extra pilotcars needed. White arrow points driving direction for blades.



Pos 25/Pic 68. Turning from road 23 toward road 3.  
Marked signs and lamp posts need to be removed. Marked trees need to cut. White arrow points driving direction for blades.







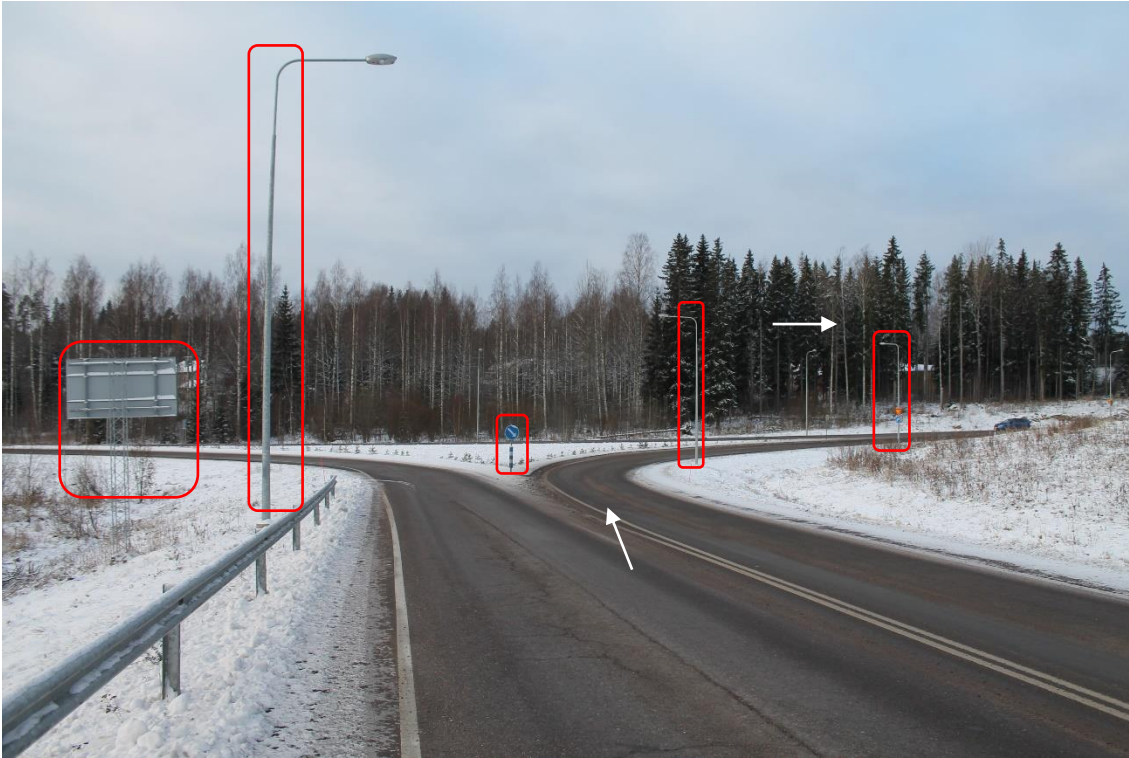
Pos 25/Pic 69. Turning from road 23 toward road 3.  
Marked signs and lamp posts need to be removed. Marked trees need to cut. White arrow points driving direction for blades.



Pos 25/Pic 70. Turning from road 23 toward road 3.  
Marked signs and lamp posts need to be removed. Marked trees need to cut.







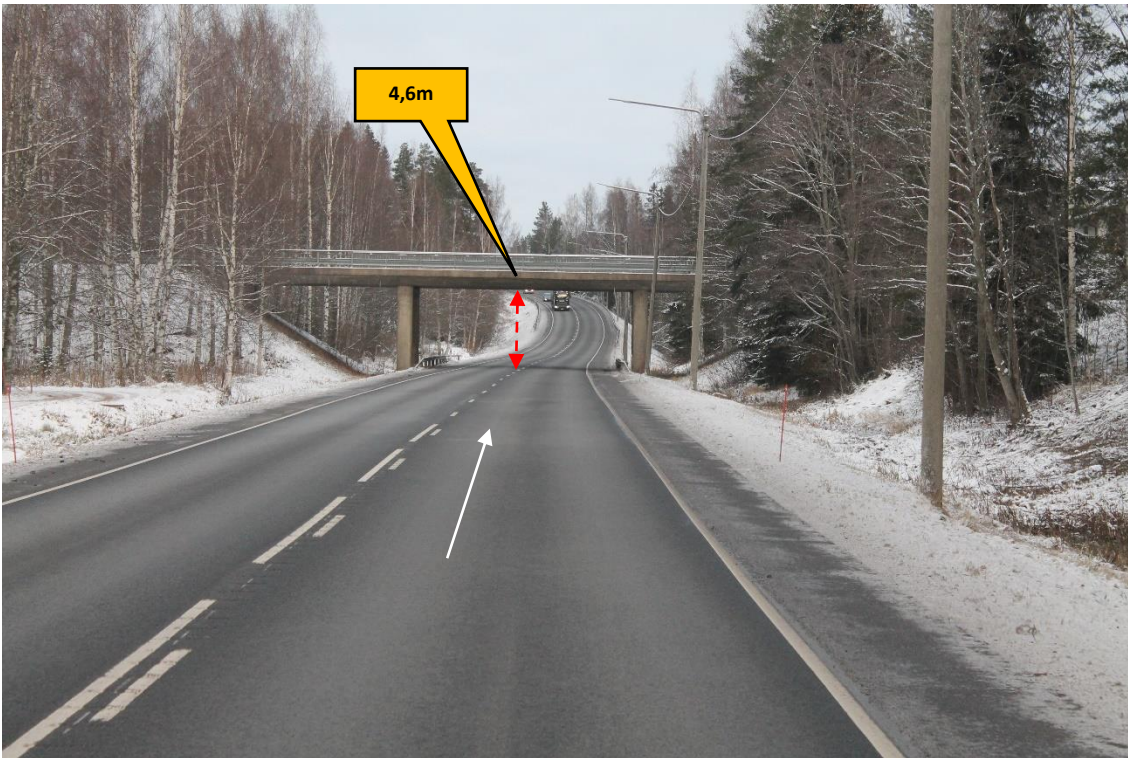
Pos 25/Pic 71. Turning from road 23 toward road 3.  
Marked signs and lamp posts need to be removed.



Pos 25/Pic 72. Turning from road 23 toward road 3.  
Info.







Pos 26/Pic 73. Road 3. <https://maps.app.goo.gl/CyBRGL5tHg1Ns86z6>  
Info.



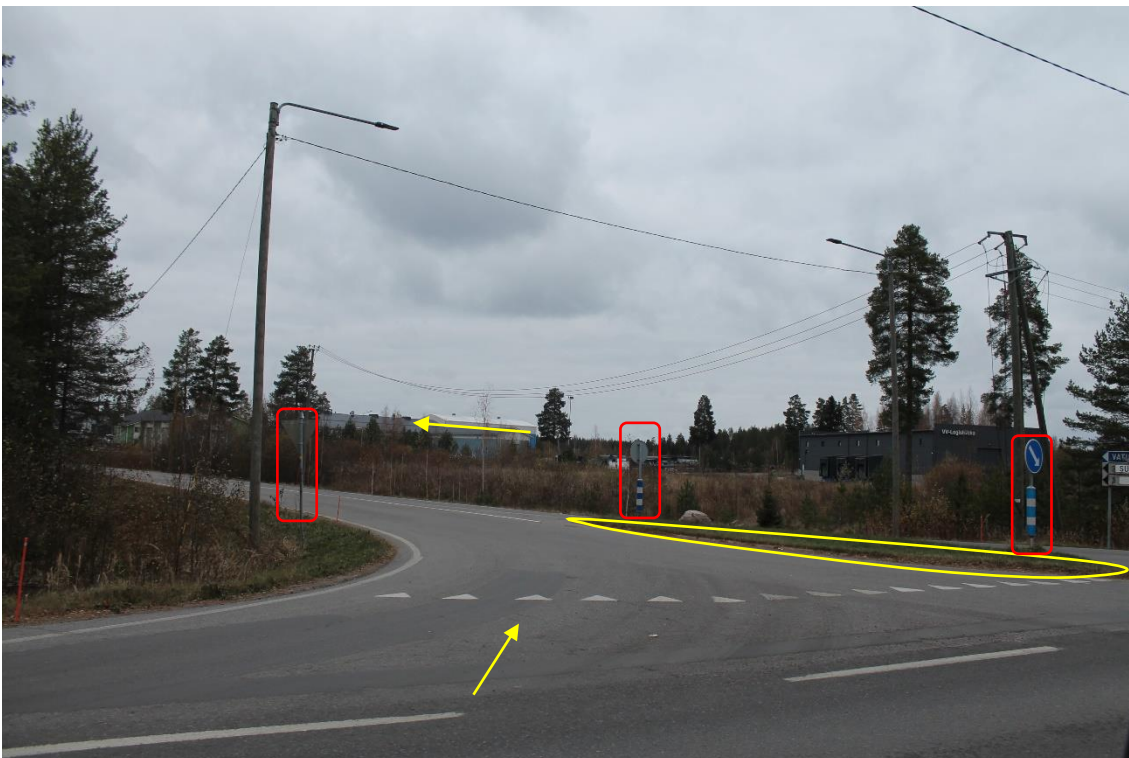
Pos 27/Pic 74. Road 3. <https://maps.app.goo.gl/2sZkKn7YXraxLCQP9>  
From here routes are the same to site. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.







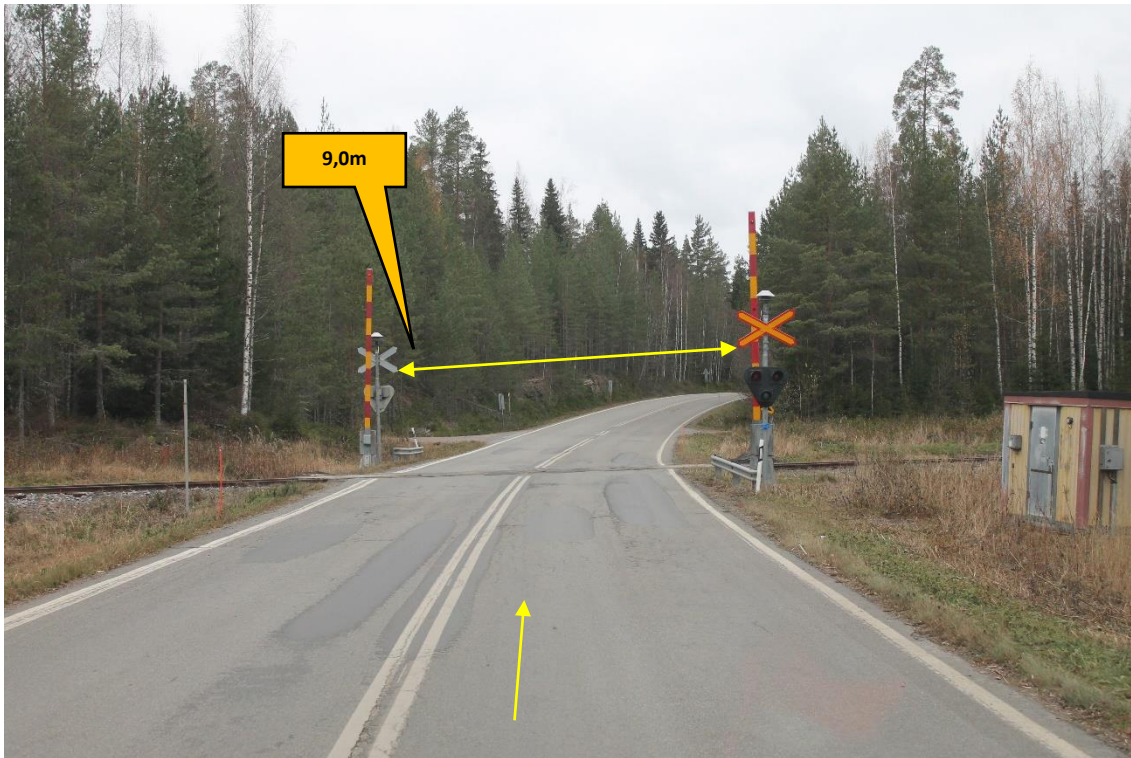
Pos 23/Pic 75. Turning from road 23 toward Vatusentie. <https://goo.gl/maps/fCDyKbaw3zcksk2X7>  
Towers and other loads height over 4,5m need to use detour. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.



Pos 23/Pic 76. Turning from road 23 toward Vatusentie. <https://goo.gl/maps/fCDyKbaw3zcksk2X7>  
Towers and other loads height over 4,5m need to use detour. Marked signs need to be removed. Marked area need to be flat and drivable. During the wintertime road need extra maintenance to road 3. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.







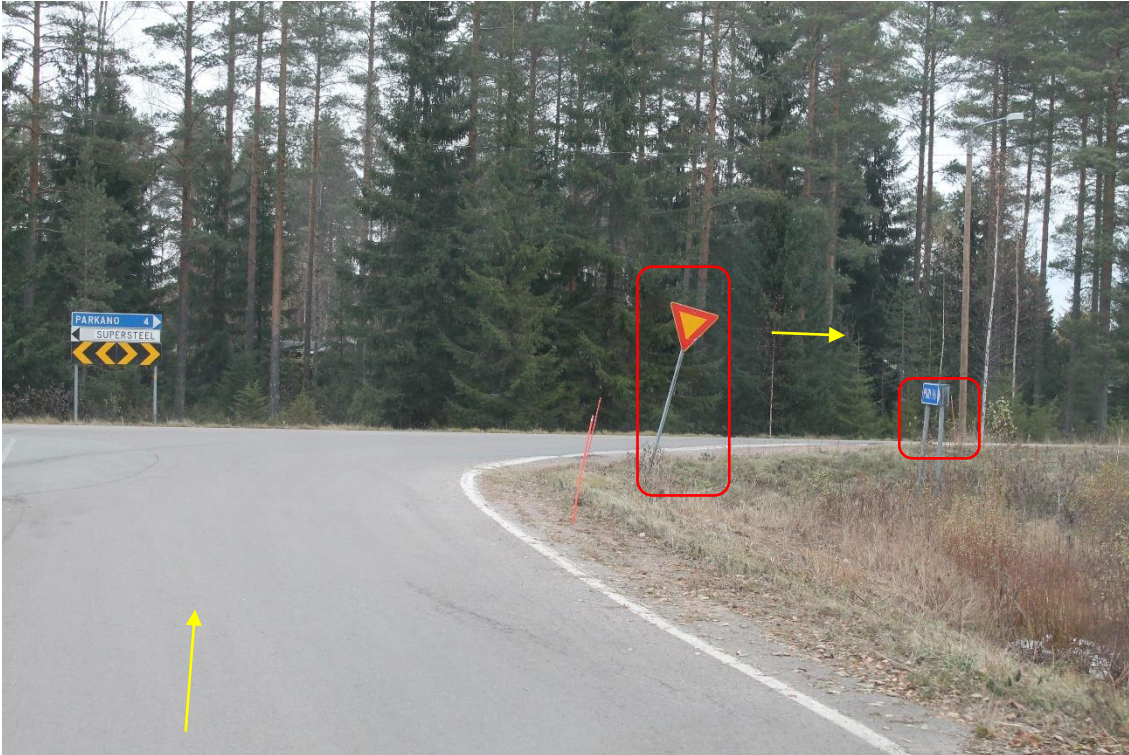
Pos 28/Pic 77. Vatusentie. <https://maps.app.goo.gl/i8t3RugXmerRVFey7>  
Railway crossing. Railway traffic need to be checked before crossing.



Pos 29/Pic 78. Turning from Vatusentie toward Vanhatalontie.  
<https://maps.app.goo.gl/9vXRZXCkikDPR6zXA> Marked sign need to be removed.



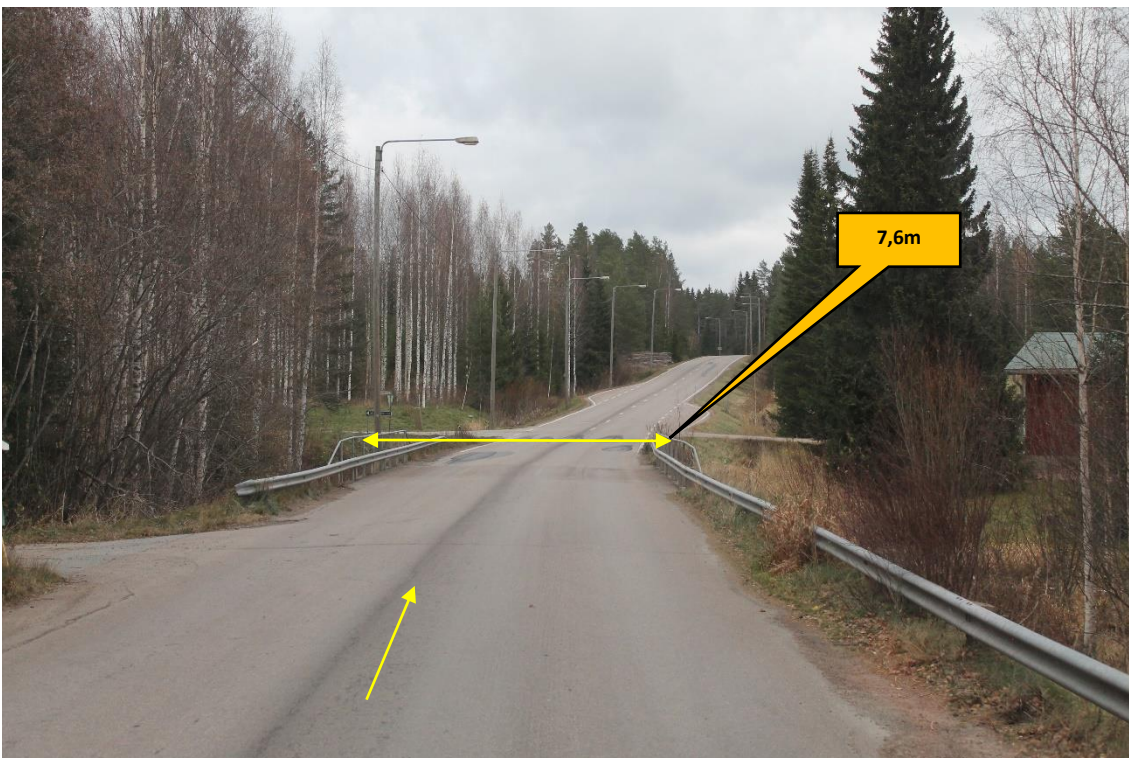




Pos 29/Pic 79. Turning from Vatusentie toward Vanhatalontie.

<https://maps.app.goo.gl/9vXRZXcKikDPR6zXA>

Marked signs need to be removed.



Pos 30/Pic 80. Vanhantalontie. <https://maps.app.goo.gl/uv65TEc6zB2Dkdid8>

Rails height 106cm.



Kuljetusliike Ville Silvasti Oy

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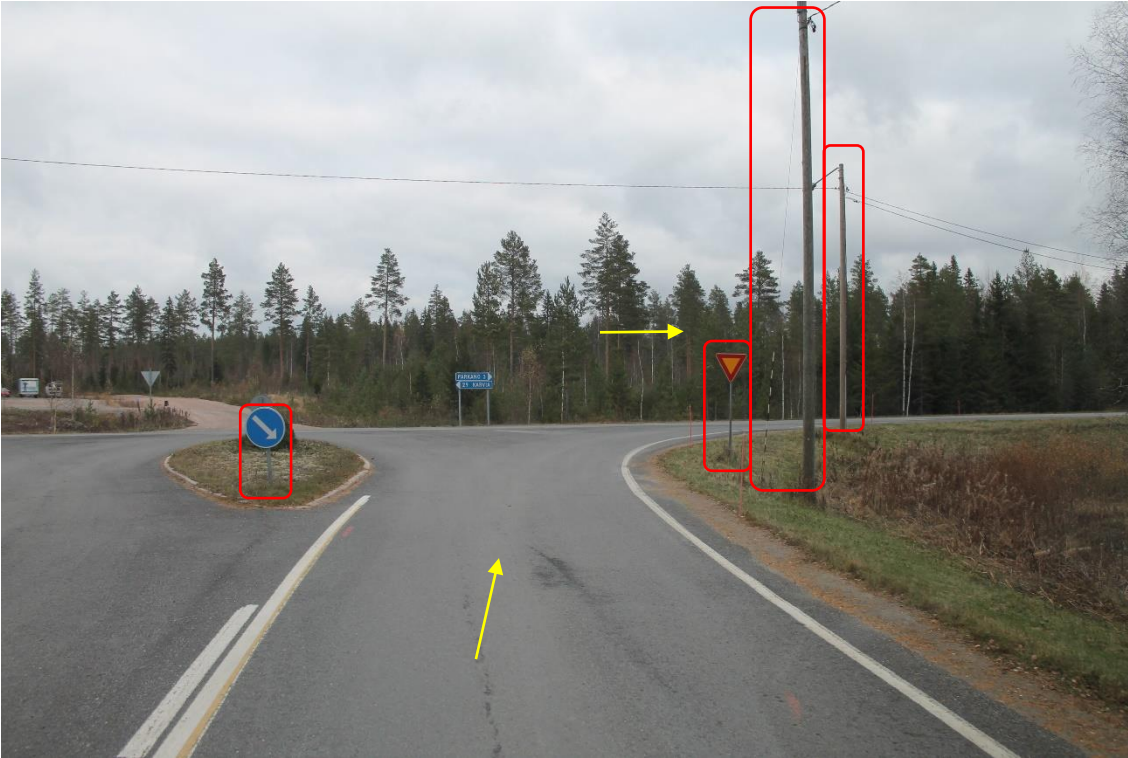
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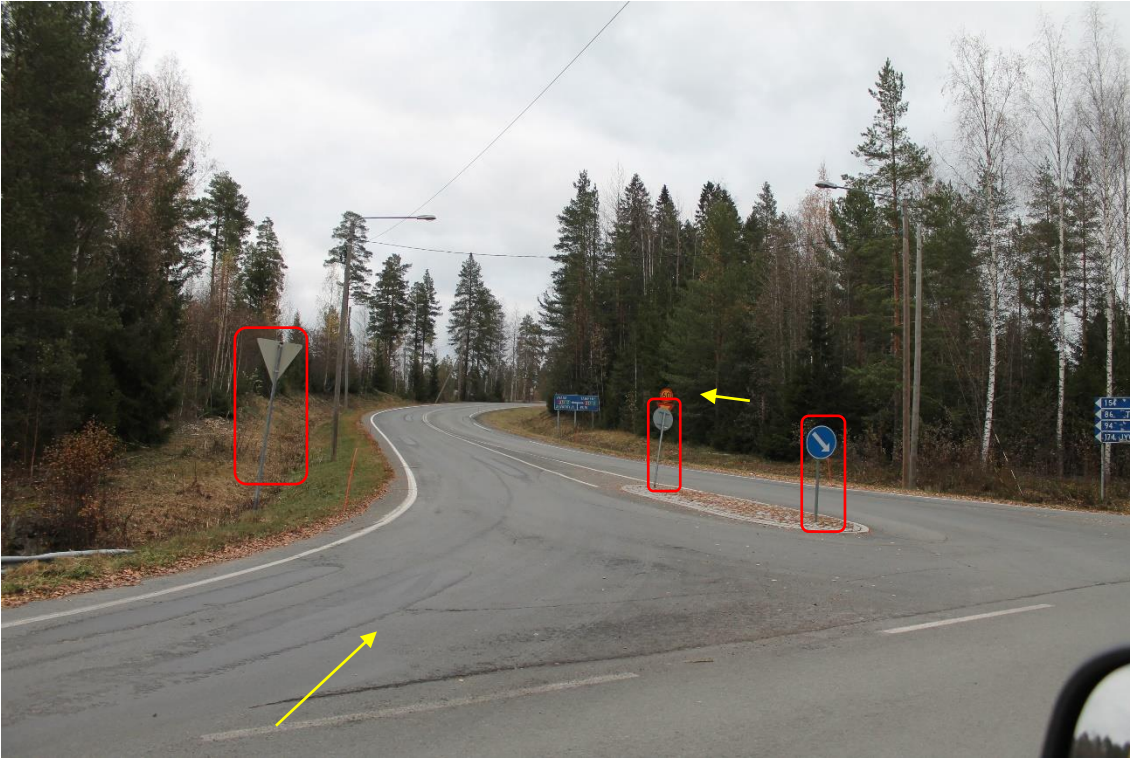
Pos 31/Pic 81. Turning from Vanhantalontie toward road 274. <https://maps.app.goo.gl/7UhZDvziuKNJFEzv8>  
Marked signs and lamp posts need to be removed.



Pos 32/Pic 82. Turning from road 274 toward road 3. <https://maps.app.goo.gl/K4C29vhd7EtHoicXA>  
Marked signs need to be removed. Marked fence need to be removed.







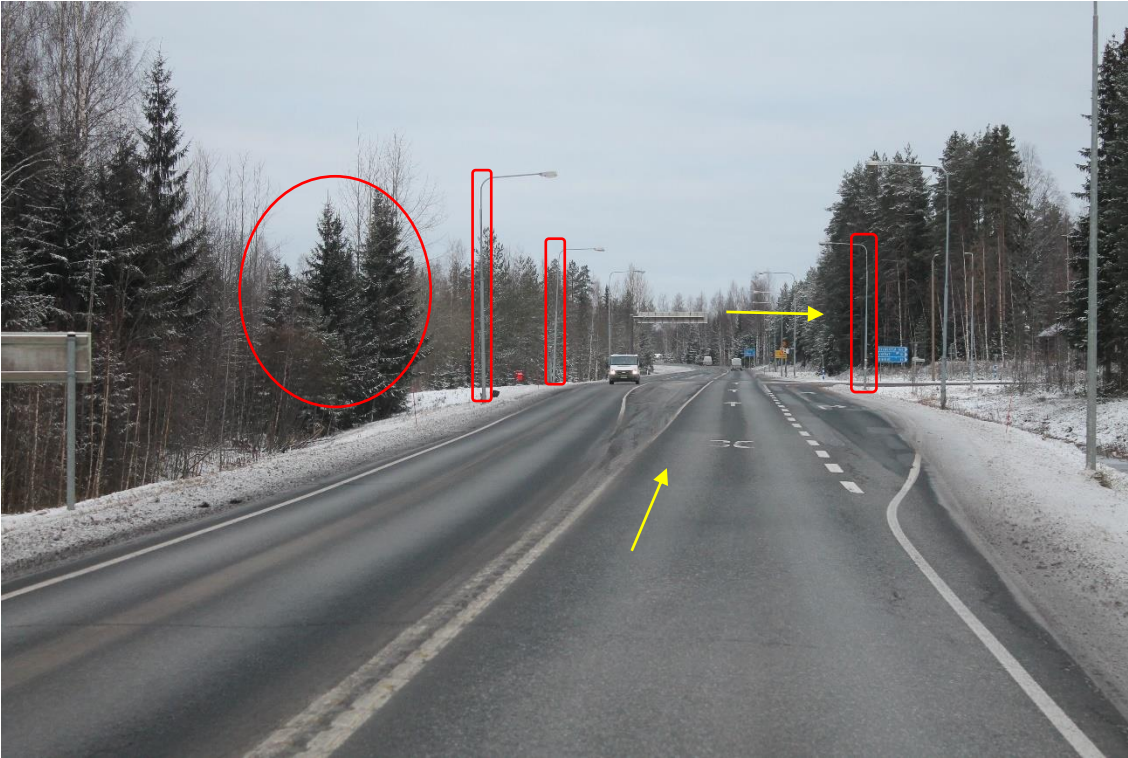
Pos 32/Pic 83. Turning from road 274 toward road 3.  
Marked signs need to be removed.



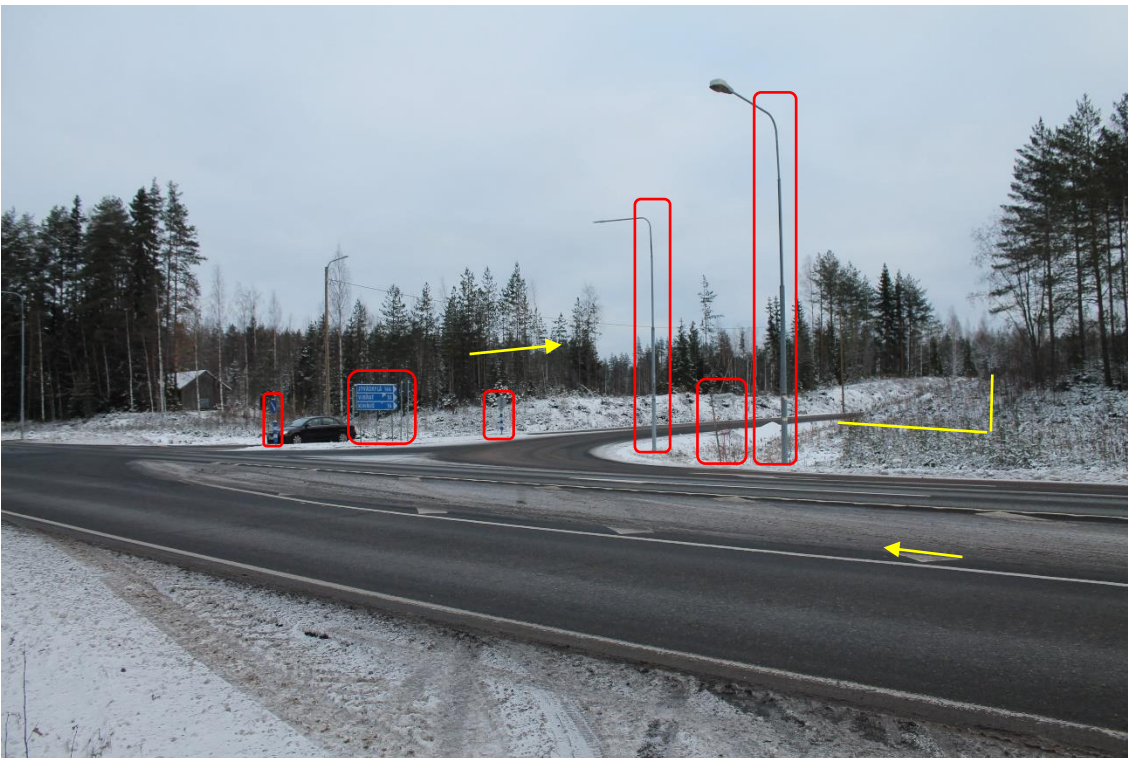
Pos 27/Pic 84. Turning from road 274 toward road 3. <https://maps.app.goo.gl/2sZkKn7YXraxLCQP9>  
Marked sign need to be removed. From here routes are the same to site. Yellow arrow points driving direction for towers. White arrow points driving direction for blades.







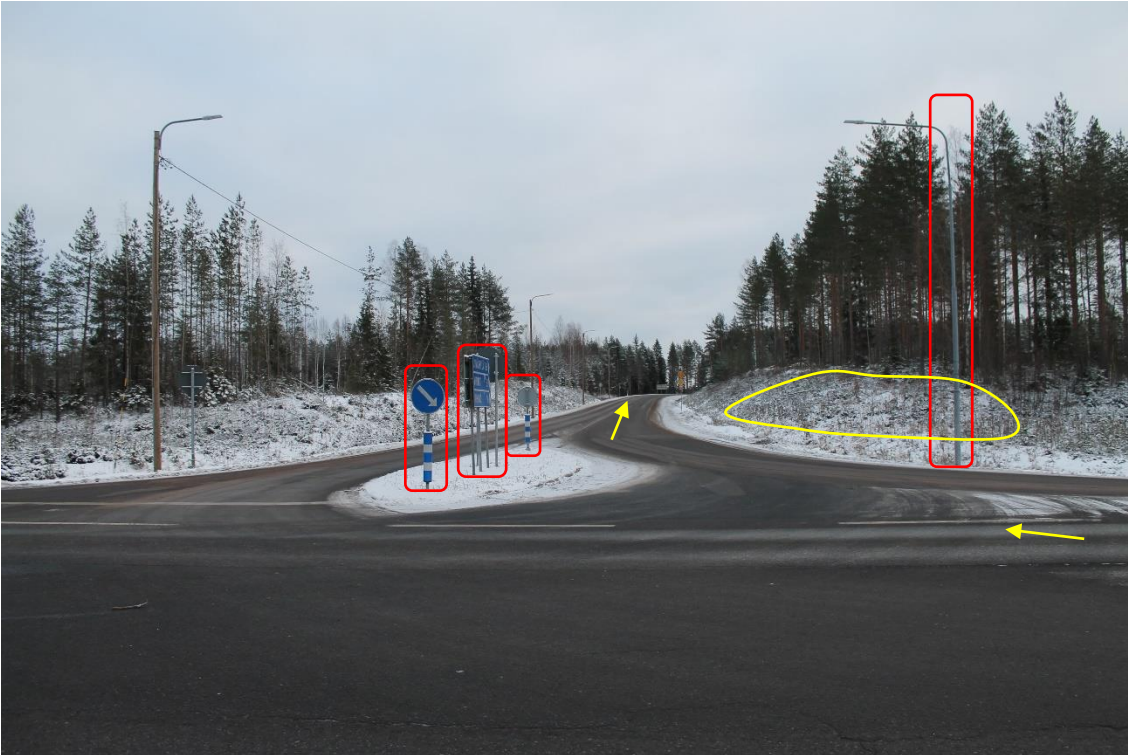
Pos 33/Pic 85. Turning from road 3 toward road 23. <https://maps.app.goo.gl/PYgZEFtx5JVoSSbP7>  
Marked lamp posts need to be removed. Marked trees need to cut.



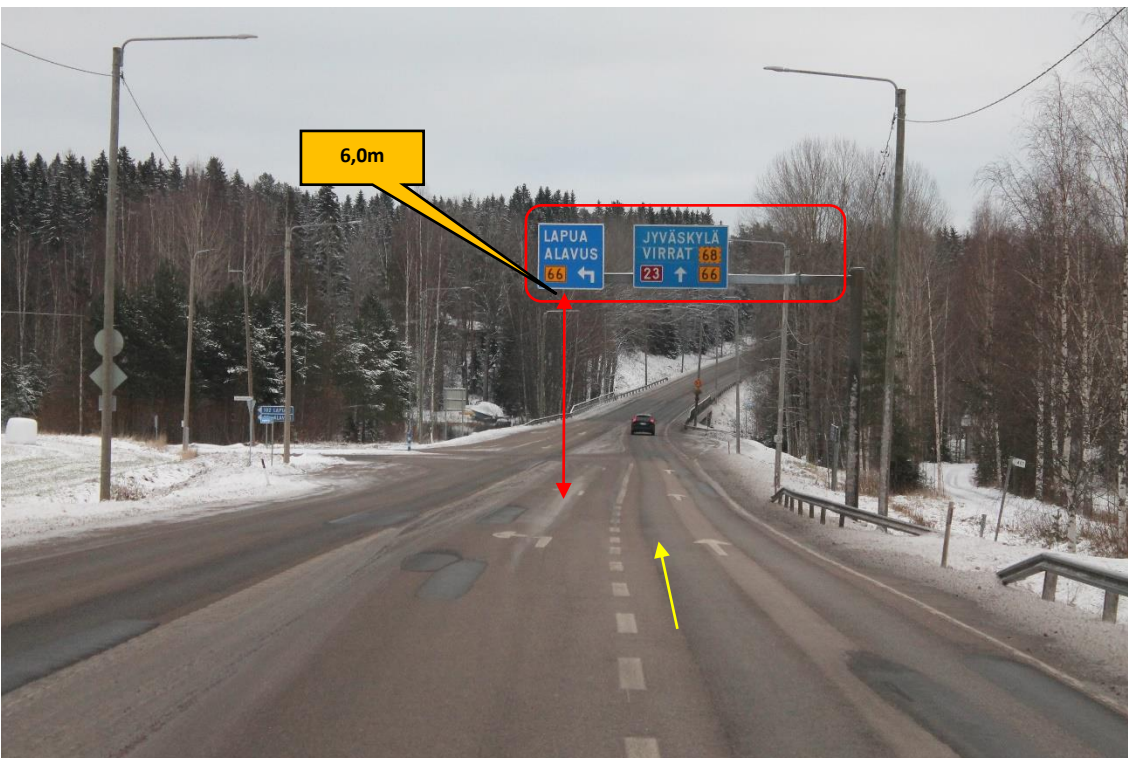
Pos 33/Pic 86. Turning from road 3 toward road 23.  
Marked signs and lamp posts need to be removed. Marked area need to be levelled.







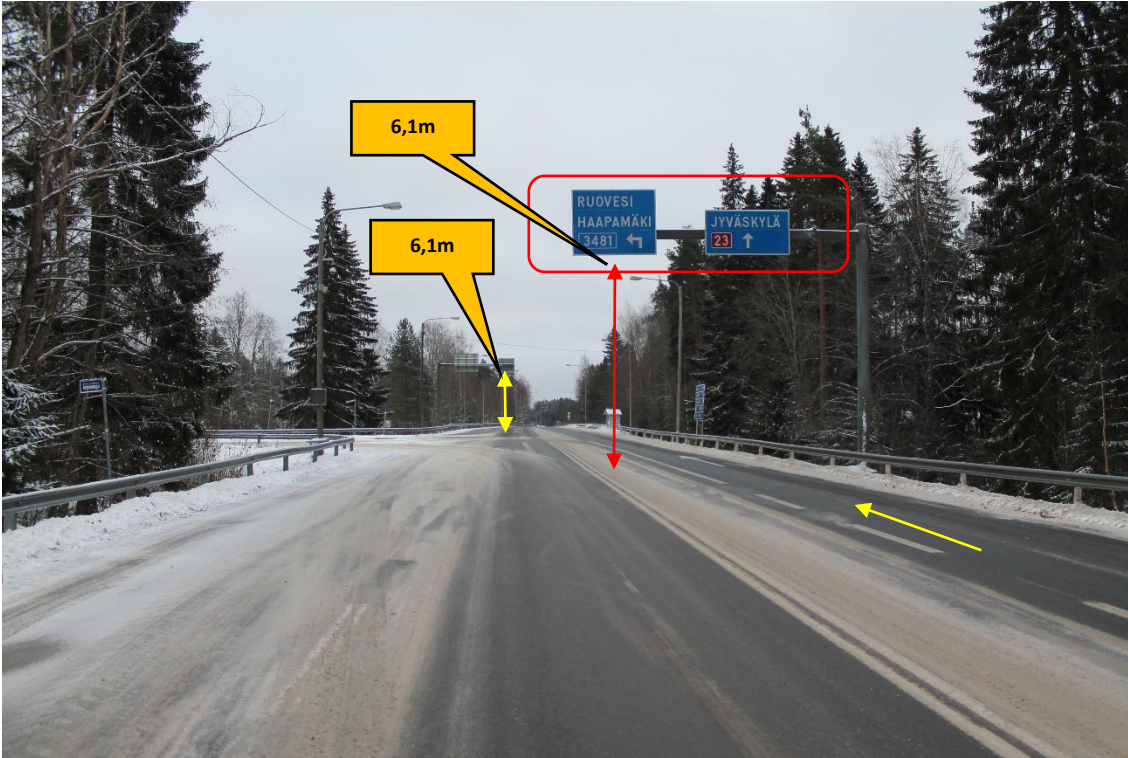
Pos 33/Pic 87. Turning from road 3 toward road 23.  
Marked signs and lamp post need to be removed. Marked area need to be levelled.



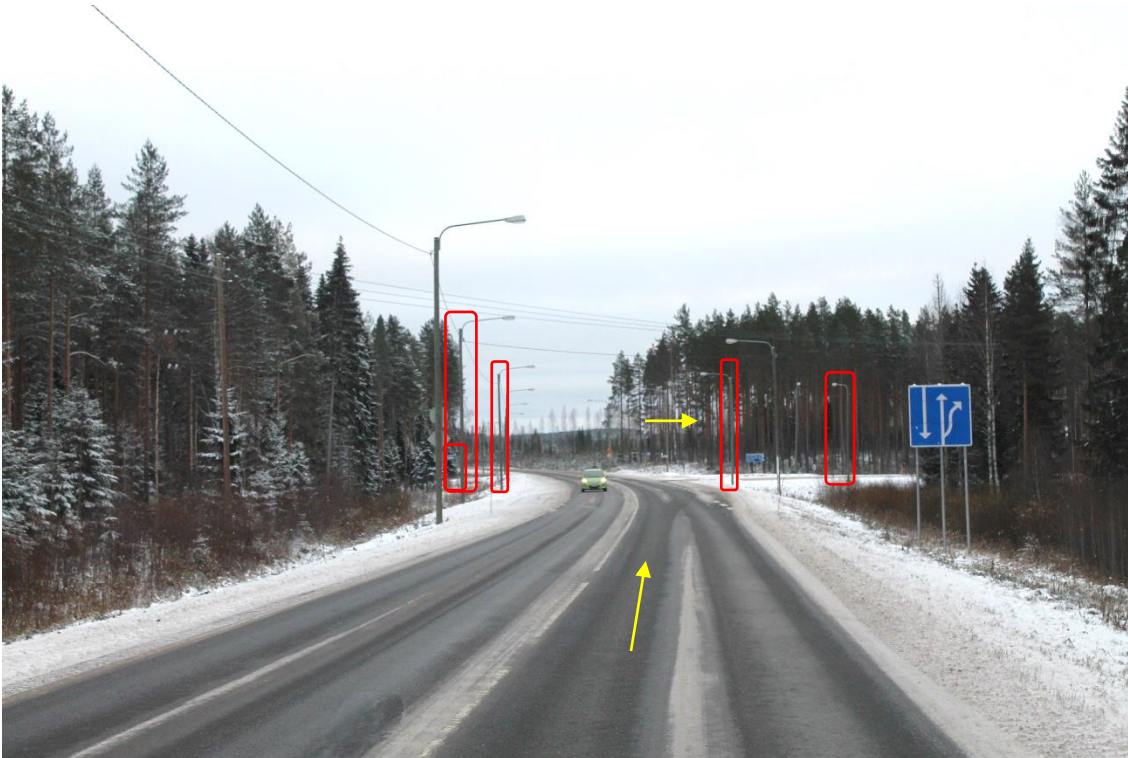
Pos 34/Pic 88. Road 23. <https://maps.app.goo.gl/mbQrvHQGcpVBjyaQ7>  
Marked portal need to be removed.







Pos 35/Pic 89. Road 23. <https://maps.app.goo.gl/o67URU7ufa8ASPAc8>  
Marked portal need to be removed.



Pos 36/Pic 90. Turning from road 23 toward road 3482. <https://maps.app.goo.gl/otS2SsBYmP7nhRtdA>  
Marked sign and lamp posts need to be removed.







Pos 36/Pic 91. Turning from road 23 toward road 3482.  
Marked signs and lamp posts need to be removed. Marked bushes need to cut.



Pos 37/Pic 92. Road 3482. <https://maps.app.goo.gl/2tmqXE75pNAjGF9S6>  
Bridge bearing capacity need to be checked. During the wintertime road need extra maintenance.







Pos 38/Pic 93. Turning from road 3482 toward Ristimäentie. <https://maps.app.goo.gl/ztSVwHy169P35UAS6>  
This junction to be considered as new site entrance. Site entrance to be build according to specifications for site roads. Original site entrance is not feasible.



Pos 38/Pic 94. Turning from road 3482 toward Ristimäentie. <https://maps.app.goo.gl/ztSVwHy169P35UAS6>  
This junction to be considered as new site entrance. Site entrance to be build according to specifications for site roads. Original site entrance is not feasible.







Pos 38/Pic 95. Turning from road 3482 toward Ristimäentie. <https://maps.app.goo.gl/ztSVwHy169P35UAS6>  
This junction to be considered as new site entrance. Site entrance to be build according to specifications for site roads. Original site entrance is not feasible.





## 5. General notes regarding overhead lines

Based on the survey 16.11.2023 there are following amount of overhead lines between port of Pori and site Entrance Metsomäki :

Low voltage protected height under 6,80m 2 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 2 pcs.

