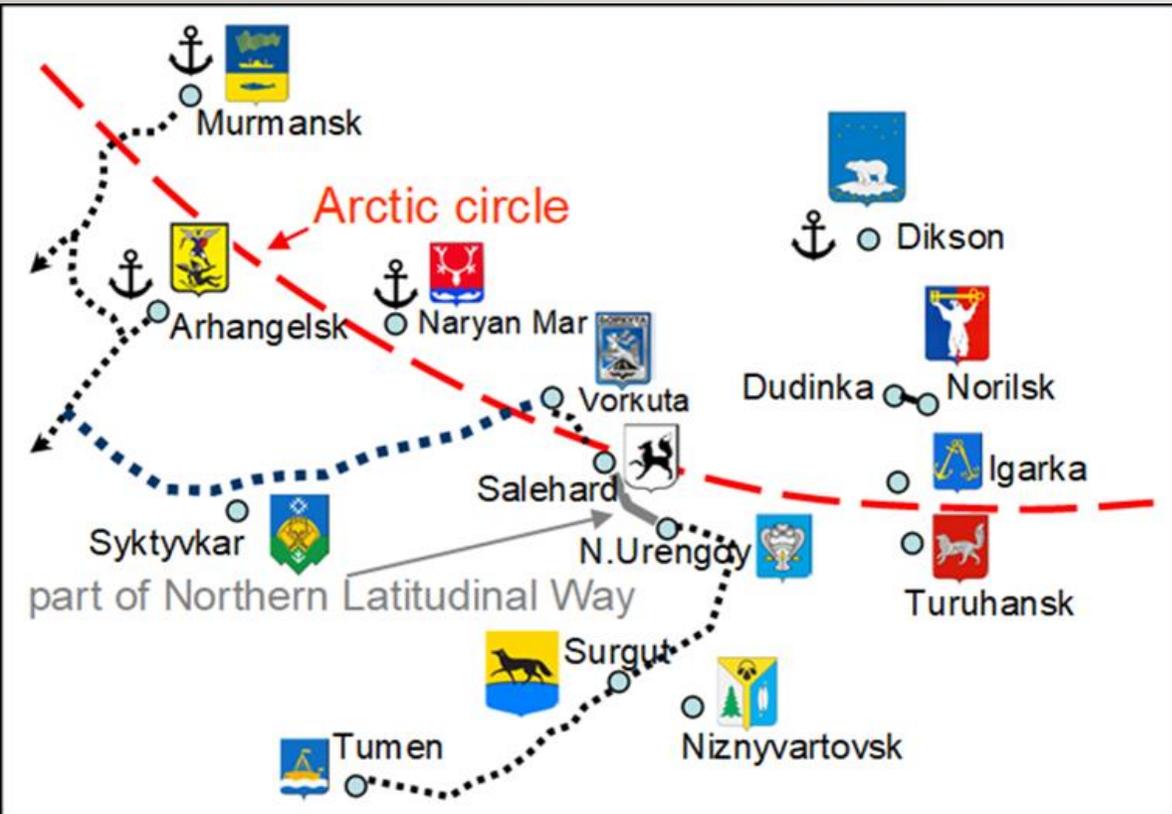


CONSTRUCTION AND OPERATION OF LINEAR CONSTRUCTIONS AT THE POLYGONAL LAND RELIEF, IN THE CONDITIONS OF DISTRIBUTION OF PERMAFROST SOIL

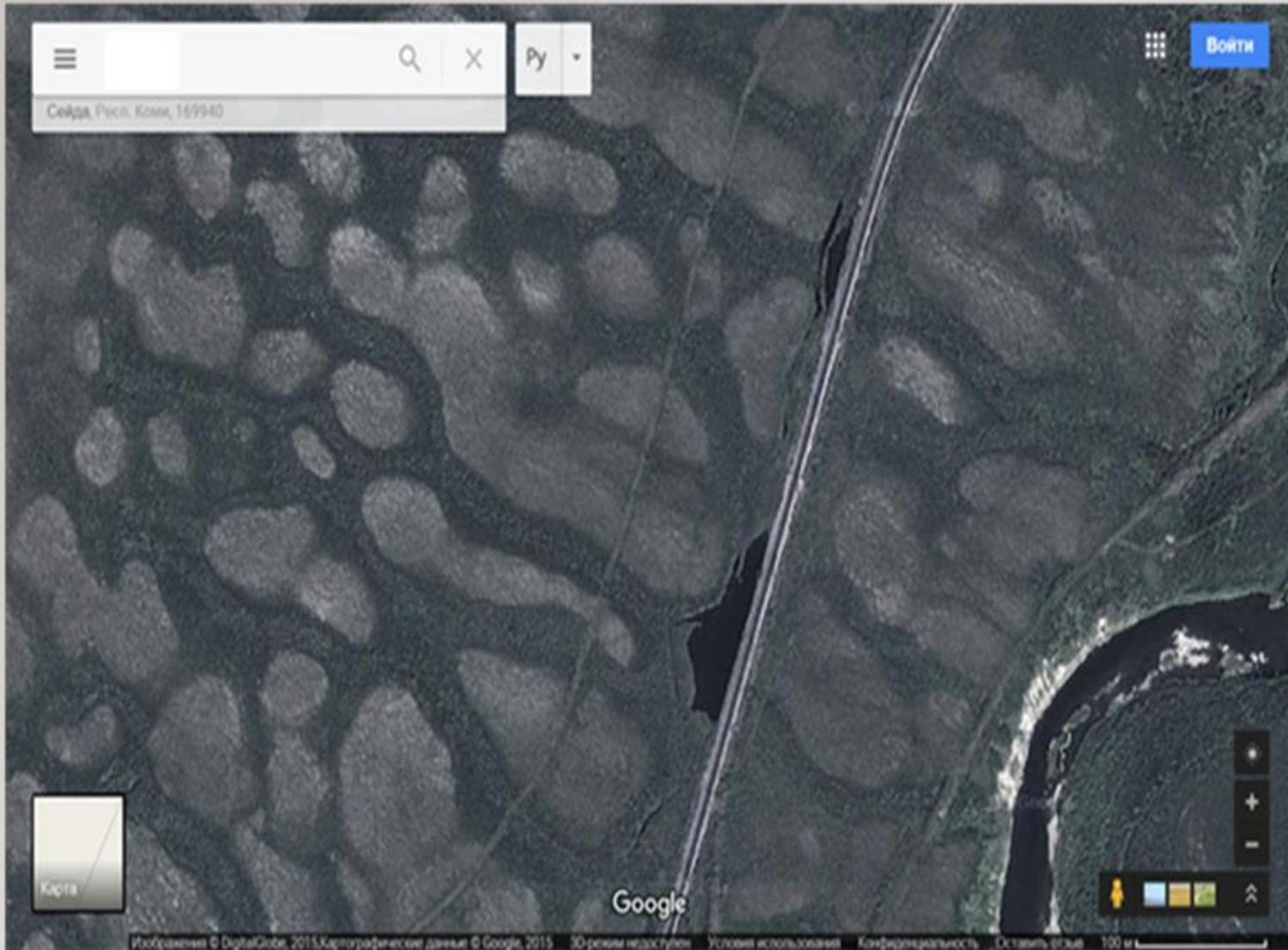
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Construction and operation of structures are connected with considerable difficulties because of a big variety and light vulnerability of soil of the foundations in areas of distribution of permafrost. Moreover, the situation is significantly is complicated by the global climate change developing now that leads to the shift of borders of distribution of permafrost rocks to the North. The total area of permafrost soil is about 63 % of the territory of the Russian Federation. Most all gas complex, infrastructure of the cities and settlements exist this territory, a considerable part of oil production is developed here and gaz and oil pipelines, as well as railways and highways pass through the territory. All these structures and constructions have the soil behavior reasons.

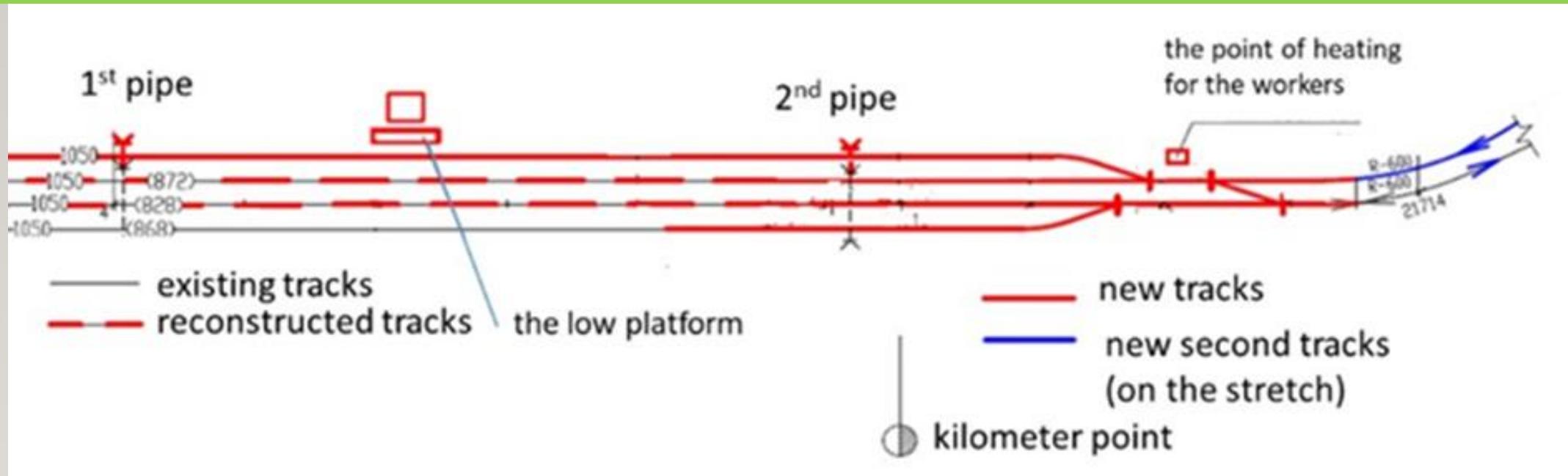


The Russian Republic of Komi. Section of the railway track, at the intersection of the lineaments of polygonal relief and the roadbed with the formation of places of stagnation of surface waters.

Within the framework of the project Northern Latitudinal line it is planned to build both main and station railway tracks. Under the conditions of a significant planned volume of cargo processing, the design of the road-bed in the permafrost zone requires special attention. Relying on the experience of operating the existing lines it was found that the subgrade at the station is less prone to active deformations, but its identification and analysis is very complex.

In particular, when expanding the station tracks (see figure 3), the deformations should be taken into account. The frequency of their growth is approximately from 6 months to a one year, they can be eliminated by straightening works for the permanent way.

A more detailed survey of the places of groundwater activity will allow to carry out timely measures to eliminate them by equipping the ditches that cut off the inflow of water from the mountainous side.



The example of typical plan for station reconstruction at the permafrost zone.

- As a tool of engineering protection of an embankment body which is located in the territory of distribution of the polygonal relief (polygonal-vein ice), it is offered to produce local thermal insulation of the soils of the foundation of the embankment body and the adjacent territory in order to preserve the ground ice in the frozen state.

