Examples of transport interchanges such as the "Ring Diamond"

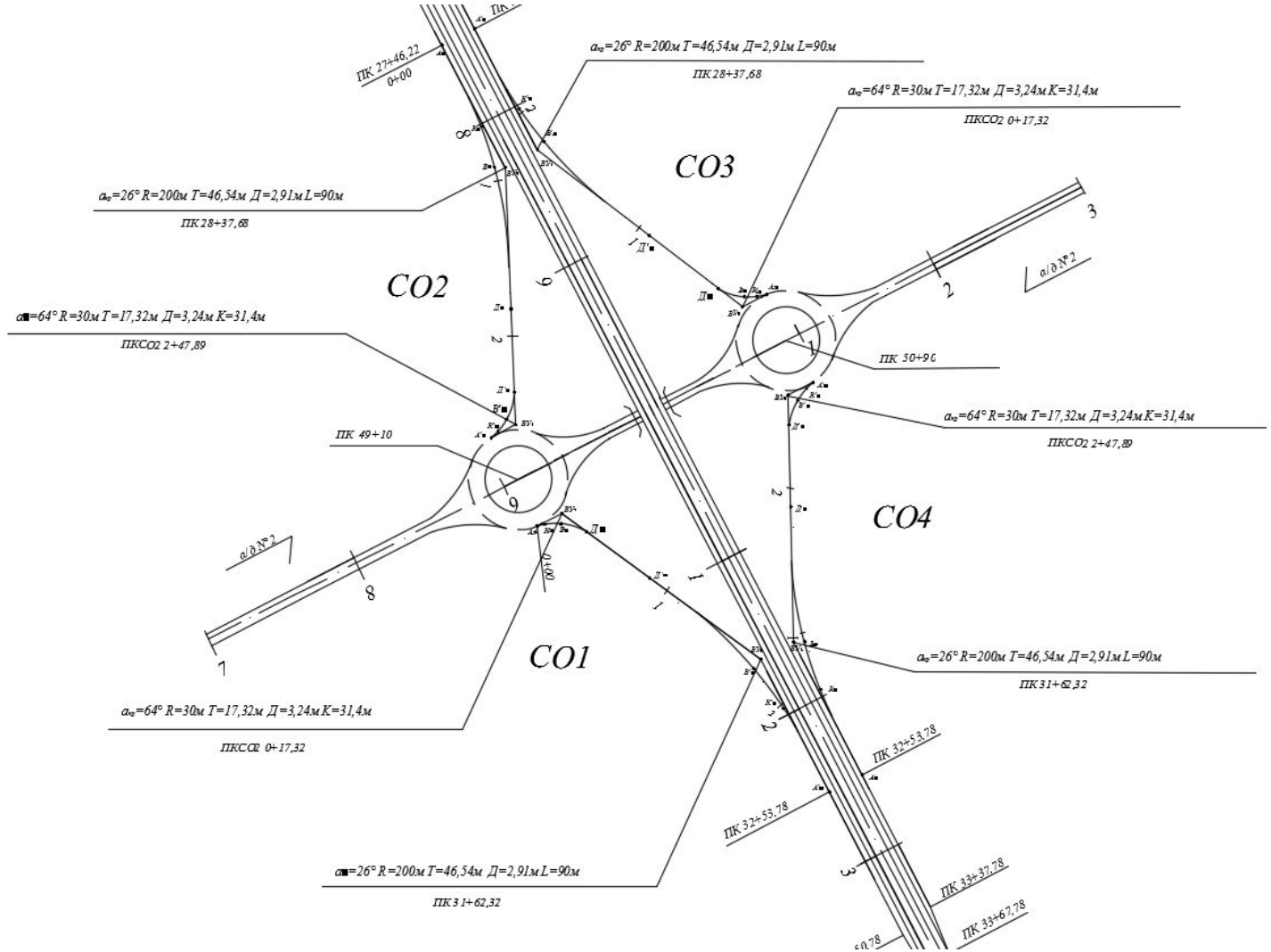
Crossing roads

H9120 and M-6

Transport interchange by the type of rhombus»

M6 and P65

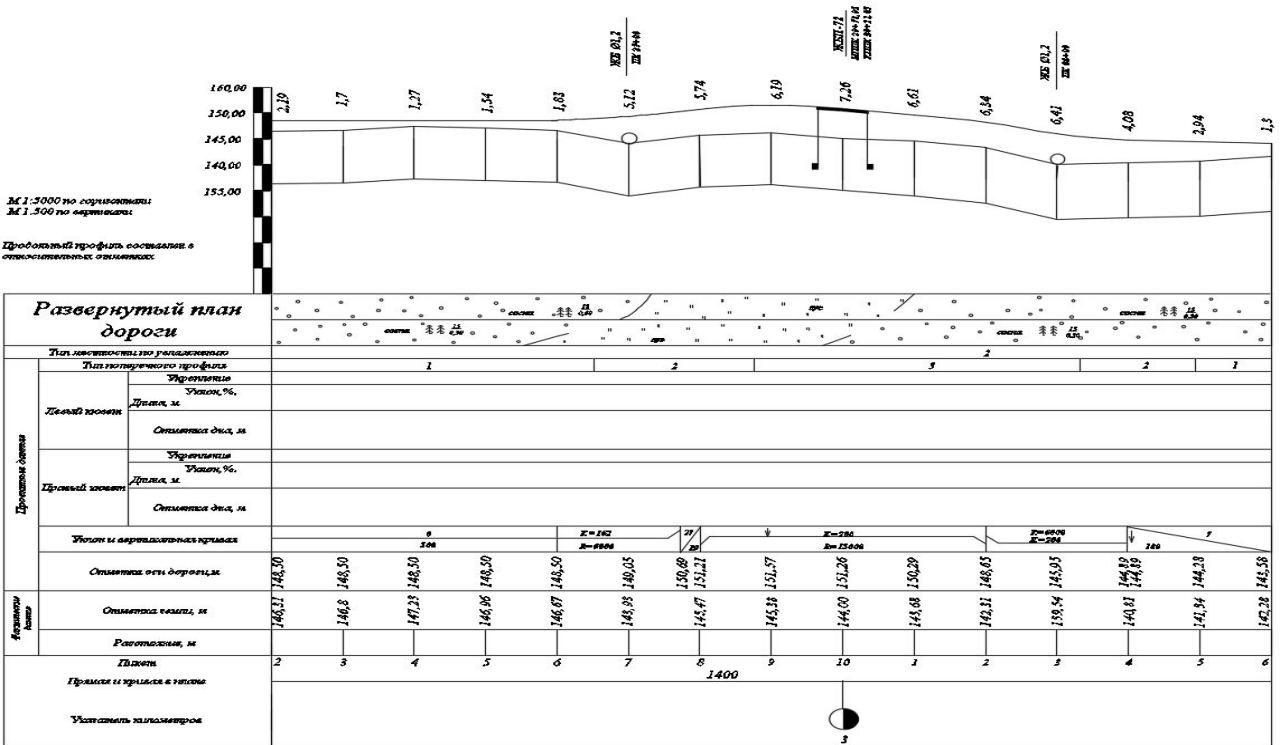
Road junction plan



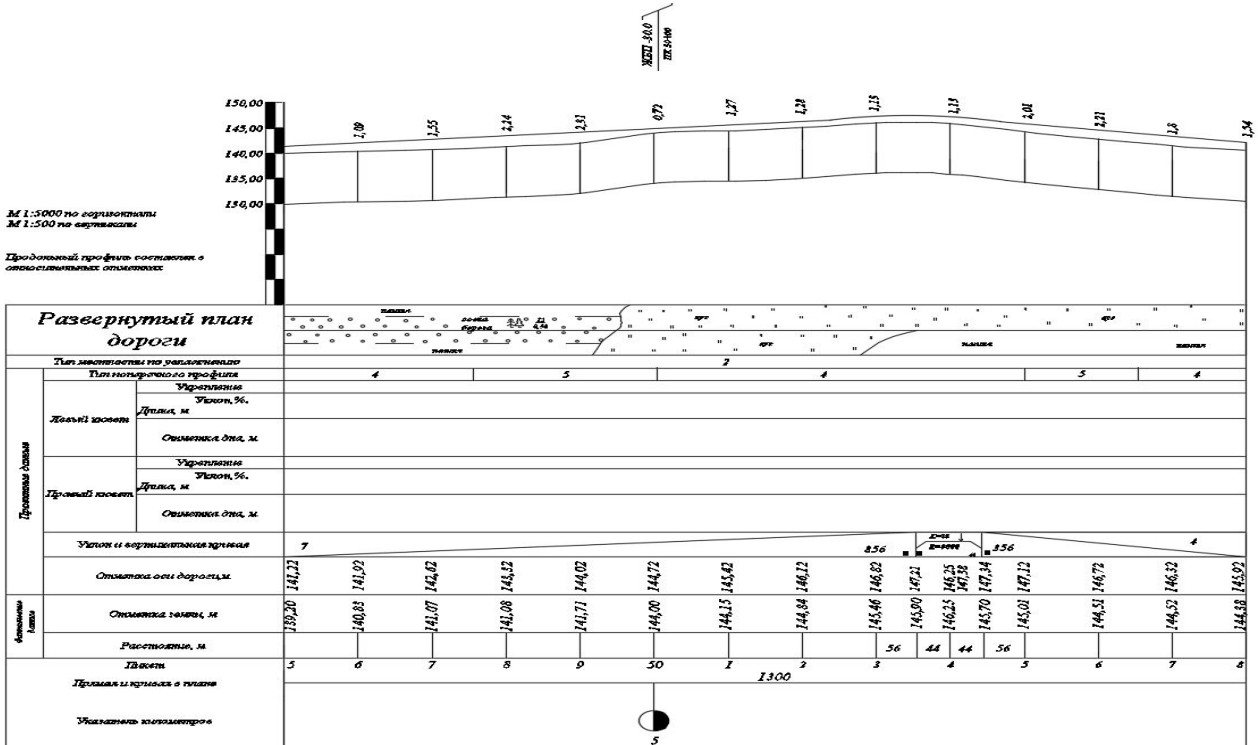
Longitudinal profiles of intersecting roads

The design of the longitudinal profile of the upper road begins with the designation of the minimum mark of the project line on the overpass

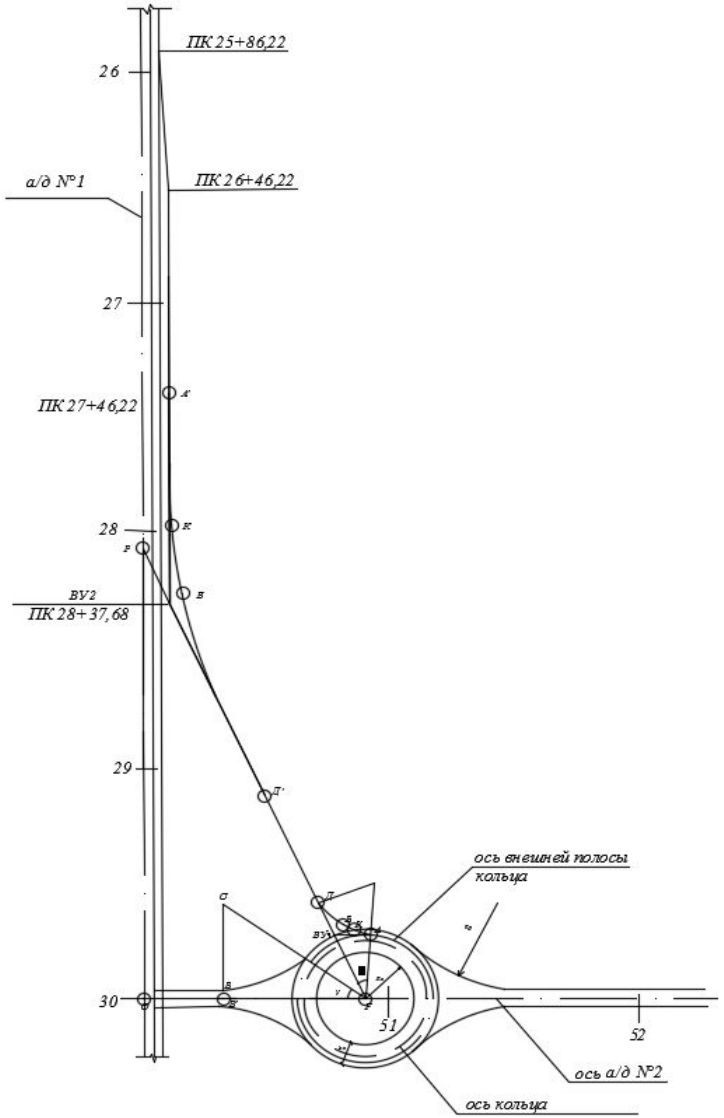
Highway №1
Category I-b
(top level)



Highway №2
Category III
(Lower level)



Planning the route of the connecting branch



Consider the triangle OPF, apply the sine theorem

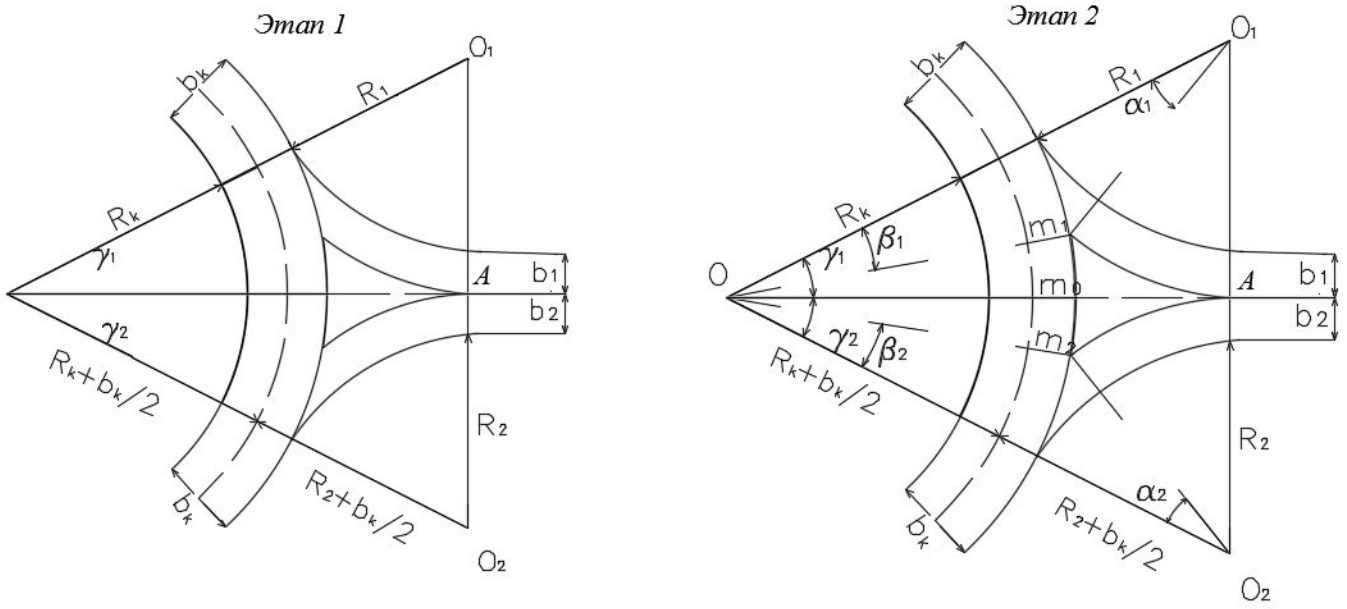
$\sin\alpha/PF=\sin2\beta/OF=\sin(180-\alpha-2\beta)/OP$

$\sin90°/206,72=\sin25°/90=\sin65°/185,80$

Calculation of elements of curvatures

$\gamma=\arcsin (Rb+b)/(Rk+b_к)+Rb$

Designing guide islands



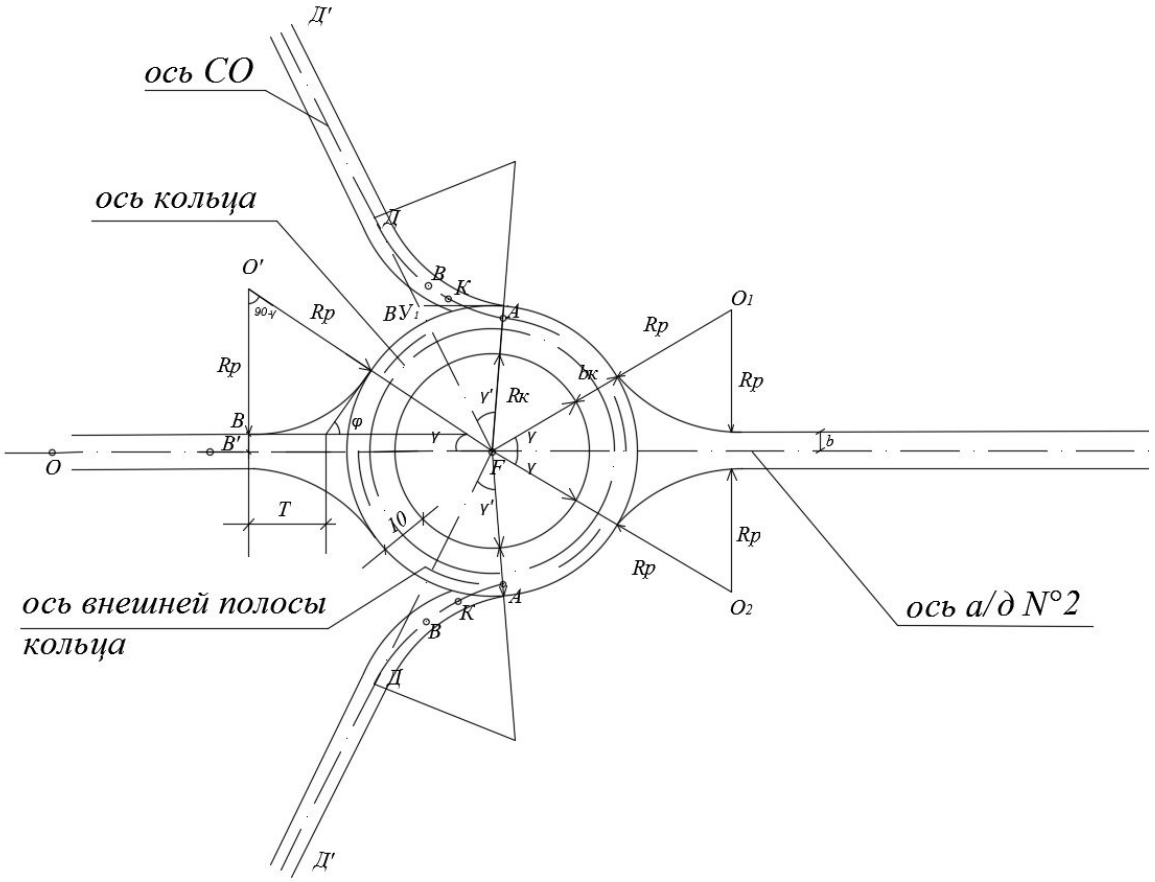
1)sinγ1=O1A/OO1=R1/R1+bk+Rk
sinγ2=O2A/OO2=R2/R2+bk+Rk

2)γ1=arcsinO1A/OO1=arcsin(R1/R1+bk+Rk)
γ2=arcsinO2A/OO2=arcsin(R2/R2+bk+Rk)

3) The points m1 and m2 are obtained after conjugation of the corresponding edges of the island (the axis of the secondary road from point A) to the axis of the ring with radii (R1+b1) и (R2+b2)

4)sinα1/(R1+b1)=sinβ1/(Rk+bk)
sinα2/(R2+b2)=sinβ2/(Rk+bk)

Designing of ring conjugation of connecting branches and a secondary road



The basic formula

$\gamma=\arcsin(Rp+b)/((Rk+bк)+Rp)$

Ring features :

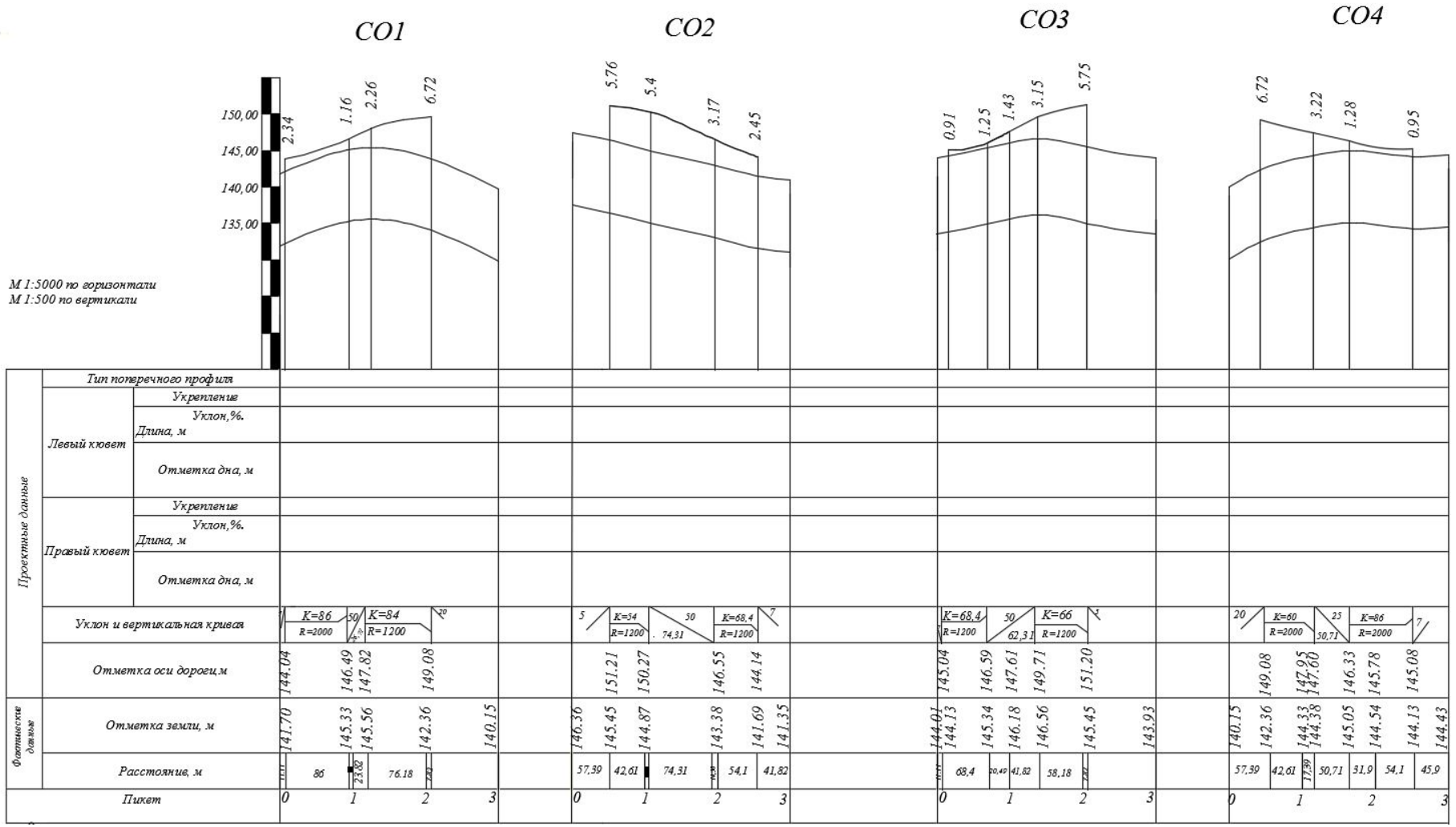
Rp=30м

b=3,5м

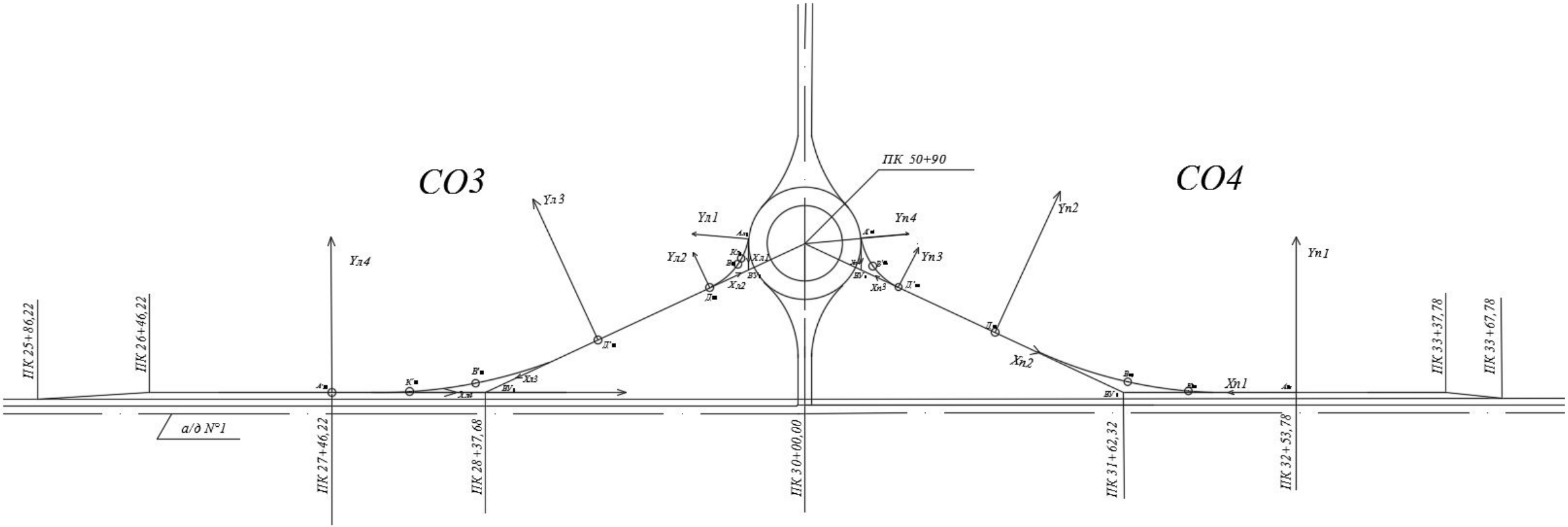
Rk=20м

bк=10м

Design of the longitudinal profile of connecting branches

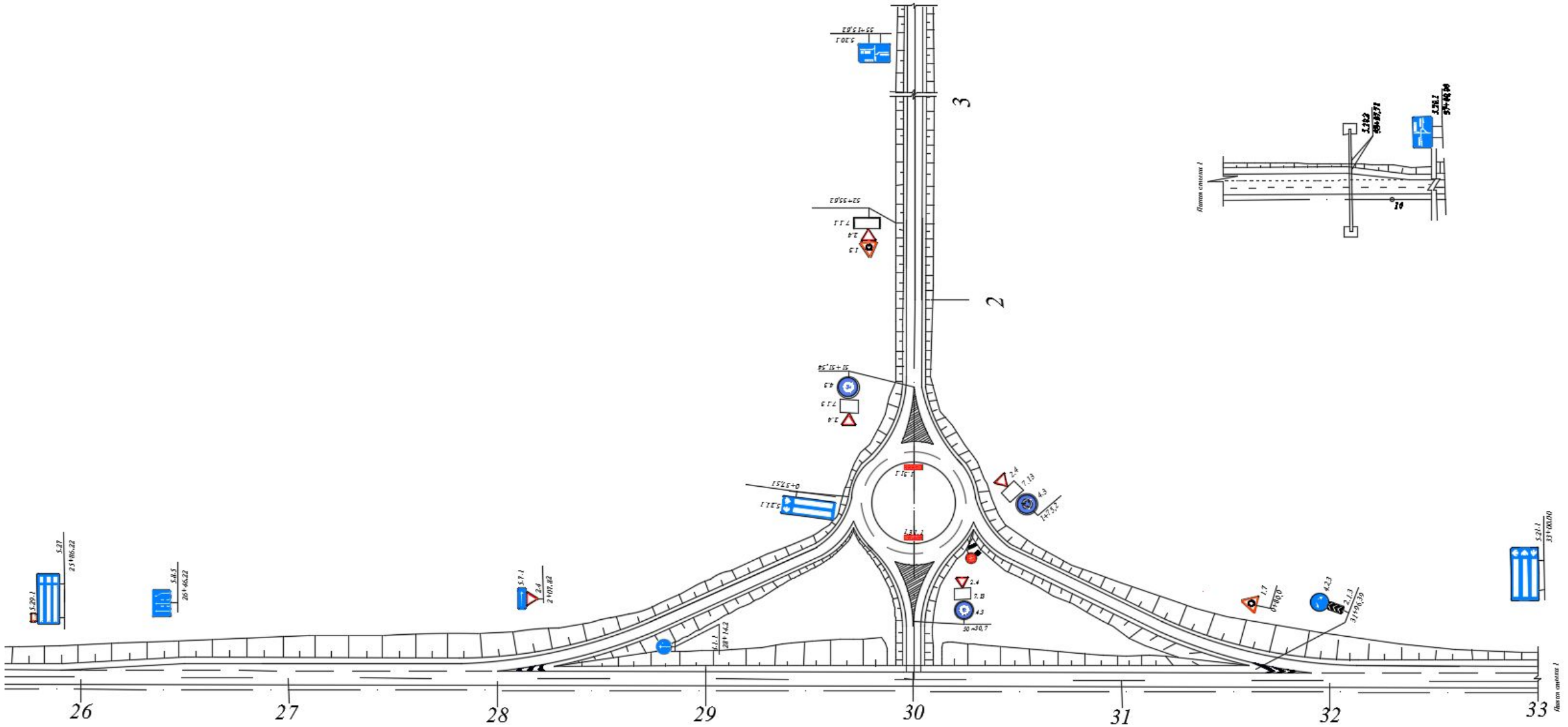


Inline Drawing



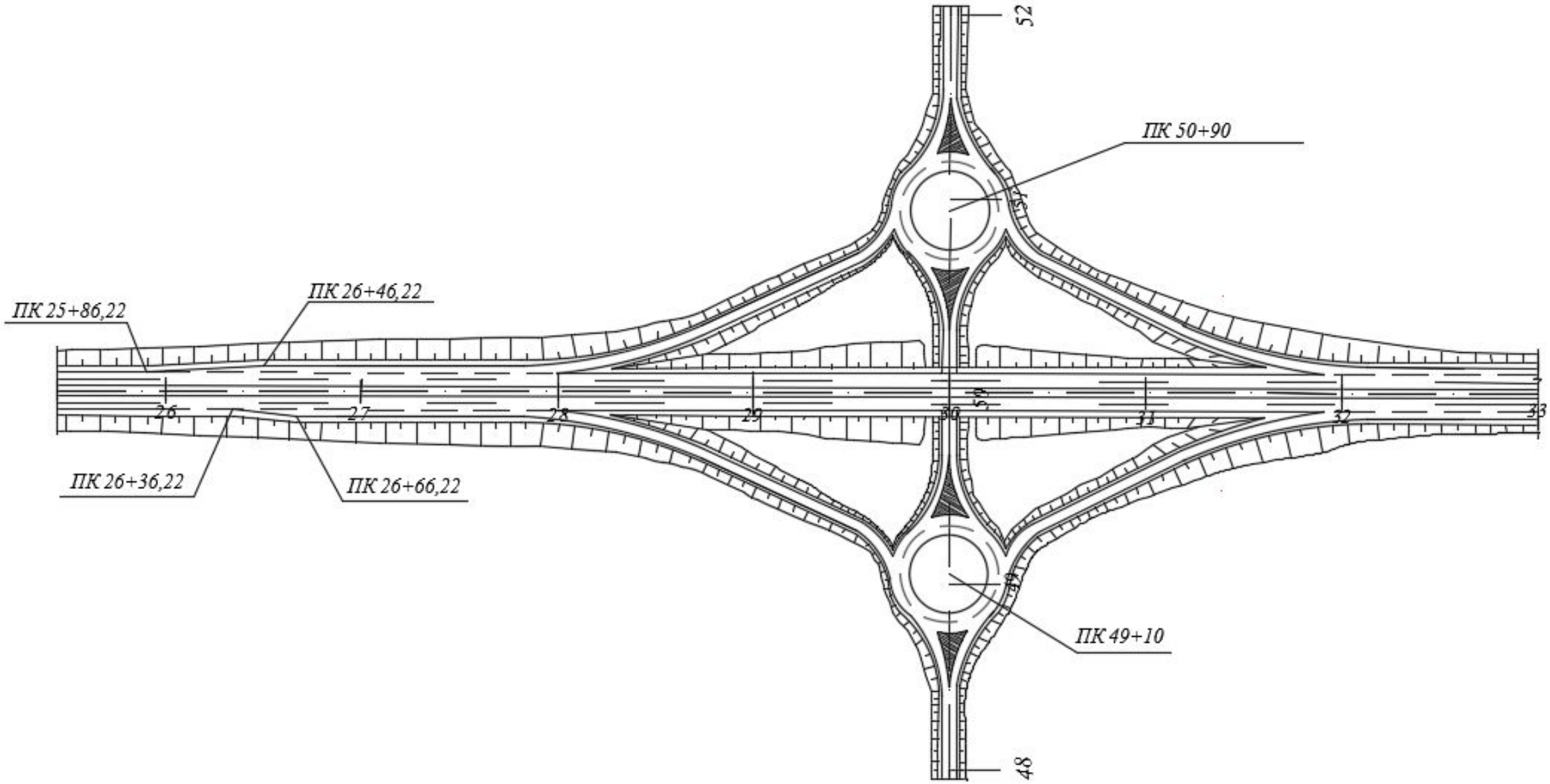
The roadside staging in the lower level is conducted along the road axis, and not along the axis of the carriageway of the ring.

Arrangement of traffic signs



Within the boundaries of the traffic interchange, the following markings are marked: 1.1; 1.5; 1.6; 1.8 for the separation of streams, 1.16.1-1.16.3 for the designation of islands, as well as additional markings.

Road junction plan



Thank you for attention!