CE353 PRINCIPLES OF TRANSPORTATION AND TRAFFIC ENGINEERING

RECITATION 4

1.) A horizontal curve is to be constructed as a second class highway. The given standards and the selected values are as follows:

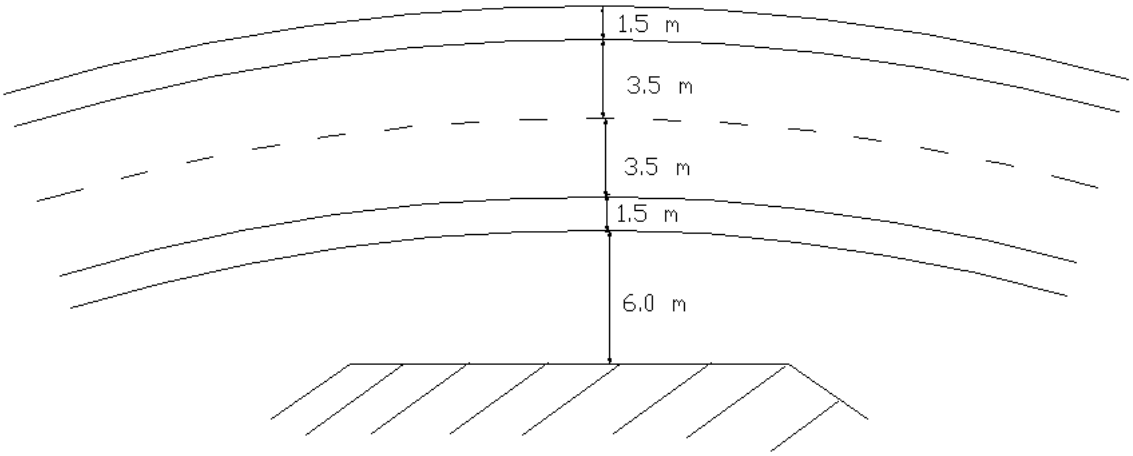
Given standards:
2^{nd} Class Highway
V_d = 70 km/hr
R_{min} = 200 m
G_{max} = 5%
e_{max} = 8%
w (lane width) = 3.5 m
μ= 0.5 , μ_b=0.7
t_R (perception and reaction time) = 2.5 sec

Selected Values:
R = 250 m
$\Delta = 20^o$
g = 4%

There is an immovable obstruction 2.6 m away from center of the inner lane and it creates a lateral sighting problem.

Check whether the selected values meet the given standards. If not, make necessary adjustments on design speed.

2.)



A horizontal curve with a radius of 200 meters and intersection angle $\Delta = 30^o$ is located on a road section. The platform width and lane width of that road are 10 m and 3.5 m respectively. Taking design speed as 90 km/hr and the distance between inner edge and the obstruction as 6 m, answer the following questions:

a) Is the necessary sight distance is maintained for safe stopping?
b) How many meters does the obstruction have to be moved, if the above mentioned sight distance is not maintained?

(Note that M_s is measured from the centerline of the inner edge.)