

You are staking out an equal tangent vertical curve on a highway with the following design criteria:

G1	=	-1.250%	PVI STA.	=	45+00
G2	=	+2.500%	PVI ELEV.	=	543.21
L	=	1000 feet			

This vertical curve was designed to have its low point at a small stream. An 18-inch culvert planned for the stream's station is to have 12 inches of cover. As you are checking ahead on the proposed alignment, you discover that the streambed elevation is 545.25.

You have to hold both the PVC and the PVI station and elevation, the length of the curve, and the symmetry.

As a dozer gobbles up the last stake you set, you feverishly recalculate the vertical curve. Show the criteria for your redesigned curve and a table of the new elevations at full stations including the stream station.