

Here's the same setup as before but with larger flows. This exercise is to get you thinking about the physical constraints of a culvert passing beneath a road - pipes need a minimum of 1 foot of cover :

1. Use the inlet and outlet invert elevations from Lecture 11. Figure out where the top of the pipe will be at the upstream edge of the roadway - will there be 1' of cover? Assume the pipe wall thickness is 3".
2. Figure out the channel roughness value like before, but with the new flow rates.
3. Test out various pipe sizes to see which ones work:  
You might need 2 barrels to handle all the flow without overtopping.

| Peak Flows |        |
|------------|--------|
| Min.       | 35 cfs |
| Design     | 58 cfs |
| Max.       | 70 cfs |

