One of the challenges of rural living is to build a good driveway - one that holds up in all kinds of weather, is low maintenance, is not expensive to build, has good sight distance at the road, can handle a fire truck or moving van, drains well, and is aesthetically pleasing. Here are some tips that should work in many situations.

**Drives should be no more than 10% slope.**
Steeper driveways are dangerous for large vehicles such as emergency equipment. Cutting a driveway at an angle across the slope can reduce the grade. At the road, a driveway that has a small negative slope for good drainage is preferred. A level or slightly inclined driveway at the road provides a safe landing area for a vehicle waiting for traffic to pass. Check local codes for driveway requirements in the road right-of-way.

**Layout should maintain natural drainage patterns as much as possible.**
In the effort to achieve maximum privacy or to meet a 10% slope standard (see your local subdivision/land use laws if applicable), sometimes a drive may need to “double back” to continue the climb or drop to the house/barn which can create a dangerous curve. This can also rapidly extend the driveway making it more expensive to build and maintain. A long driveway may also disturb the natural drainage pattern so that runoff issues are created.

**A turnaround is often needed for safe access.**
For safety’s sake, it is better to drive onto a road than to back into it. This usually requires a turnaround at the building. At the road intersection, the driveway should meet the road at right angles (90 degrees), but an angled driveway in the range of 75 to 90 degrees is acceptable.

**Your municipality probably has requirements for sight distance for vehicles entering the highway.**
Check with your local code enforcement officer or highway superintendent to make sure there is enough sight distance at the driveway entrance on the road.

**Knowing your soils is essential to building a driveway that will last.**
Check the county Soil Survey available from the Soil and Water Conservation District or go on line to [www.websoilsurvey.nrcs.usda.gov](http://www.websoilsurvey.nrcs.usda.gov). The best soils are well-drained with high weight-bearing abilities. Avoid wet soils that won’t be able to support traffic. Clay soils become slippery while sands become soft. If you are building a driveway on a hillside in the southern tier, you are likely to encounter a “fragipan” – a dense subsoil layer that keeps water from soaking in. The design guidelines in this brochure keep the fragipan in mind.

**A NYS Construction Permit is needed if you are disturbing more than one acre (43,560 square feet).**
Before you dig the first shovelful, don’t forget to do your math. The amount of land you are disturbing for the driveway, building lot, lawn/landscaping/septic tank could be an acre or more. If so, contact NYS Department of Environmental Conservation (NYSDEC) for a Stormwater Construction Permit. This will require installing erosion and sediment control practices among other requirements. Now is your chance to redesign your layout so that you disturb as little land as possible.
Construction recommendations:
The drawing to the right shows the recommended way to build the driveway. Compact the entire surface of the driveway – not just where wheels will normally travel. For the surface of an unpaved drive, an aggregate of mixed stone size (such as modified #2A) will bind together better and be easier to maintain than uniformly-sized #1’s and #2’s.

Keep water and debris off the road!
Crown the drive so that it won’t collect runoff and direct the concentrated flow down the driveway. This can cause icy/flooding conditions or send mud/debris onto the road. Highway law allows the Town to levy fines on a landowner for these dangerous situations.

Driveways on steep slopes (over 10%)
A driveway angled across a steep slope will probably intercept water running down the hill. A recommended solution is to create a series of broad-based dips - shallow channels across the drive at an angle (about 60 degrees) that disperse water into established vegetation. You may also need to build an infiltration area at the foot of the driveway to catch and absorb runoff into the ground before it gets to the road.

Driveways on flatter slopes.
Here you can build swales along the driveway instead. They should be no less than three feet wide and shallow – no steeper than one foot on two feet. A wider vegetated swale is the best ditch since water is slowed down and absorbed by the plants, reducing erosion.

A gently sloped driveway should drain to shallow swales and infiltration areas if needed.

Culverts and Road Ditches
Many highway departments will install the culvert at the driveway entrance if the landowner purchases the recommended size and type of pipe. Check with your highway superintendent for culvert requirements. Keep your culvert clear of debris to avoid water backing up.

Leave streams/creeks alone wherever possible!
See the STC brochure on “Stream Crossings” for details. State/local permits may be needed.

Edited by STCRPDB, drawings by Jennifer Fais, October 2009