

Private Driveways

Construction Guidelines

Will Emergency Services personnel be able to reach you when you need them?

When planning the driveway access to your new construction, it is important to bear in mind the possibility that you may someday require help from emergency services. Most ambulances will be able to travel anywhere which is accessible by a 2-wheel drive car. Fire apparatus however, require additional consideration. *Large fire trucks such as the tankers which carry water to the scenes of rural fires are more than 8 feet wide, 11 feet tall, 35 feet long, and weigh over 50,000 pounds when loaded.* Even when operated by highly trained drivers, fire trucks can only be useful when they reach the scene of an emergency. Narrow driveways, steep grades, soft shoulders, and hairpin turns can all contribute to disastrous results if your home or business should catch on fire.

While Botetourt County currently does not regulate the design and maintenance of private roads and driveways, each property owner would be prudent to consider emergency service access when designing, installing and maintaining the access to their home or business. Here are some guidelines to follow:

Design considerations –

Access Point – The access point from a State-maintained road should be designed with a turning radius of at least 45 feet, which allows access by large vehicles. If you plan to gate your road, ensure that it is set back far enough from the entrance to provide adequate turning radius. Additionally, the gate itself should be a minimum of 12 feet in width. Finally, if you plan to lock your gate, ensure that your local volunteer fire and rescue departments are provided with a key. If they are not, and assistance is requested from your address, they will cut the lock or take any other necessary measures to gain access. A list of local fire and rescue agencies is available from the County Administrators Office - (540) 473-8233.

Width – A large fire truck requires a minimum road width of 10 feet. Even with a road this width, no other vehicles can pass when a large fire truck is traveling the road. A 20 foot width with hard shoulders is ideal but, if this is not possible, “turnouts” (wide, graveled spots along the road which allow vehicles to pass) are recommended to be placed every 250 feet.

Curves/Turnarounds – Adequate turning radius is crucial to allow long fire trucks to negotiate curves and turnarounds. Any curves or turnarounds should have a 45 foot turning radius at minimum. If at all possible, there should be an adequate turnaround installed within 100 feet of the structure.

Grade – The grade of any driveway should not exceed 12%. Additionally, any sharp change in grade should be transferred over an adequate distance along the length of the road. This measurement, called “angle of approach or departure” should not exceed 7%. In this way, long, heavily laden trucks will not get rear bumper stuck as they begin to climb or return to level.

Bridges/Culverts – Bridges and culverts should be designed to support at least 55,000 pounds and should provide a minimum of 12 feet of unrestricted width and height. Additionally, they should be constructed so as to be safely operational during 100 year flood events.

Road material – Road construction should provide an adequate base to support 55,000 pounds during any weather. Compacted shale or stone base is preferable, topped with either compacted gravel or asphalt.

Building site plan - If possible, vehicle access to at least 2 sides of any structure should be available at the termination of the driveway, to allow easy access by fire apparatus and personnel.

Maintenance considerations:

Ditches/culverts – Keep ditches and culverts clean and open so as to allow water to drain away from the road surface and shoulders without rutting.

Road surface – Maintain an adequate road surface for safe travel, adding material to fix any pot holes or ruts, should they begin to develop.

Width / Height clearance – It is important to not overlook the necessity of keeping side and overhead vegetative grown trimmed back to at least 12' in vertical clearance for adequate access by large vehicles. Additionally, the increased sunlight on the road will help to encourage growth of grass on banks and in ditches, reducing erosion, as well as promoting faster snow and ice melt in the winter.

Bridges / Gates – Periodically inspect bridges for any defects and ensure that you immediately provide your local emergency service agencies with a new key, should you decide to change the lock on your gate.

Weather related maintenance – It is a fact that the number of structure fires increases during the cold months of winter. It is very important to remove snow and ice from your road as soon as possible following a freezing precipitation event.

In summary, it is the responsibility of the property owner to provide suitable access for emergency services vehicles. If the guidelines above are followed, you can be assured that Fire and Rescue crews should have little trouble reaching you during your time of need.