

Horse Environmental Awareness Program

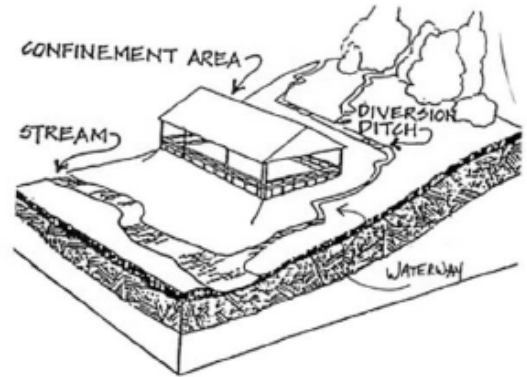
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CONNECTICUT

Keeping Clean and Dry With Water Diversions

That wonderful *sacrifice area* you are planning could use some help! (See *Home Base - Creating a Sacrifice Area*). Your attempt to create the perfect surface for your horse's loafing pleasure could be foiled by that runoff flowing onto or through the area from upslope. Roof runoff may be deposited there as well. Perhaps storm water follows a path that takes it through your manure pile! Even mild storm events can send runoff traveling through your territory -- collecting soil and manure contaminants as it goes -- depositing them in the nearest water body. If this is the case you need a water diversion.

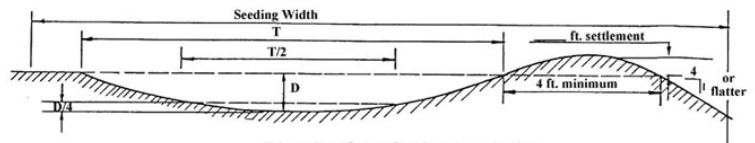
A diversion is simply a means of redirecting overland runoff around an area of concern, and outletting it to a stable, suitable site. This prevents ponding of water at the location you desire to protect, and reduces the quantity of clean water mixing with manure and leaving the site as polluted runoff. The goal of a diversion in this situation is to keep clean water clean, and minimize the creation of *dirty* runoff. Diversions are also used to reduce erosion and mud.



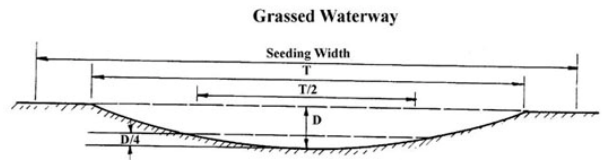
Two Basic Ways to Redirect Runoff

- 1. Diversion Ditch or Swale** - Diversions are generally constructed across a slope to intercept runoff and redirect or divert it to another location. The sides of the channel are carefully shaped and vegetated with grass to prevent erosion. Diversions should be engineered (designed and sized) to handle the predicted quantity of storm water that is produced by a 25-year storm event. They are sized and stabilized depending on the water velocity, soil type, and degree of slope. *The potential outlet that will receive the diverted flow must be evaluated for suitability and stability in order to avoid creating or relocating a mud or erosion problem.*
- 2. Roof Gutters** - Gutters are also a form of a diversion. Roof runoff may be captured with a gutter and downspout system designed to discharge storm water *away* from your barn and/or sacrifice area. Mud and contaminated runoff from those areas will be significantly reduced. Roof gutter systems for small barns may be outletted to one or more drywells if necessary. Large and small facilities usually benefit when downspouts are connected to underground pipes which outlet storm water well away from animal activities.

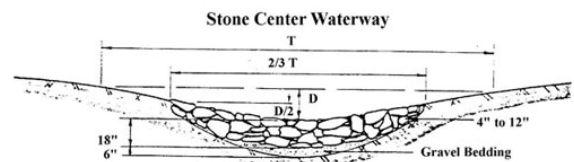
Diversion



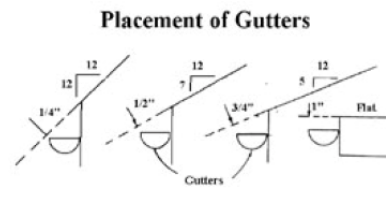
Diversion Cross Section (parabolic)



Parabolic Shape Cross Section



Parabolic Shape Cross Section



Note: Gutters should be placed below the slope so that snow and ice can slide clear. Steeper pitch requires less clearance.

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