

TRAIL DESIGN AND BUILDING TERMS

Suzanne Mittenthal, Knobstone Hiking Trail Association
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1. Natural Surface Trails. Trails built on the natural clay surface of Hoosier hills will last very well if they are protected from erosion by proper drainage of water off their surface. No amount of drainage can prevent damage to natural surface trails from machine and horse use, which loosens the soil and causes it to wash away; these trails need hardening. Trails must be a proper width. Clay edges will hold, if not trampled.

2. Fall Line. The “fall line” is the line water will follow going straight down a slope. The center of a ridge was a favorite place for old wagon tracks and trails; water could not drain off these, and turned them into ditches. These V-shaped ditches are features of parks and forests and abandoned farm lands around Indiana.

2. Drain. A “drain” is any place along a trail where water accumulating above the trail can pass off the trail. Drains can be engineered into the design or made use of from features of the terrain, such as the dip at the top of a ravine that the trail must cross as it descends a slope.

3. Reverse-Grade. The way a drain works to get water off a trail is that a descending trail is turned sharply downhill momentarily, so that water drains off it; then the trail ascends briefly again (“reversing” its downward grade), even if only for a few feet, before continuing its descent. Water cannot reverse its course; this also causes the water to flush silt or leaves off the trail.

4. Examples of Reverse-Grade Drains (Ogle Hollow Nature Preserve Trail, BCSP).



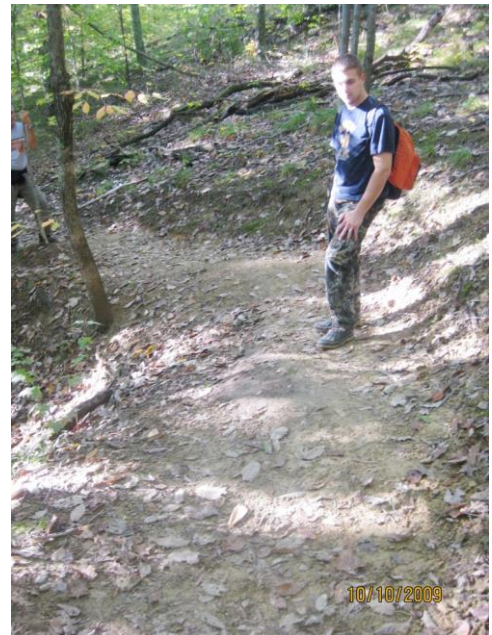
- Trail goes up and over natural bump at base of tree before continuing descent (left and below)





- Trail follows “scallop” pattern, looping in slow descent through trees along side of ridge (at left).
- Two drains are built in succession on steep descent at trail turn at head of a ravine (with hiker, below, standing between two drains). Soil removed to dig drain is placed across trail beyond drain to increase depth of drain. Drains must be big enough to walk through, to keep them open.

5. Switchback. To fit a trail on a narrow slope, sometimes the trail must “switch-back” or zigzag down the slope. The bottom switch “back” must be sloped out severely (below, with a drain to right), or water will collect on the trail and continue around the bend.



6. Water Bars. “Water bars” are generally no longer used on natural-surface trails. Without maintenance, they tend to get clogged (wood) or worn through (dirt, so-called rolling grade dips). They are intended to divert water off trails, but the trail bed is never turned off the grade, so

when filled or worn through, they become ineffective over time. Stone water bars can work in some cases if planted deep enough, or installed in rocky terrain.