

## 4.27 Steep Slope System

Revision: December 10, 2014

### 4.27.1 Description

A steep slope system is a trench system for slopes greater than 20% but less than 46%.

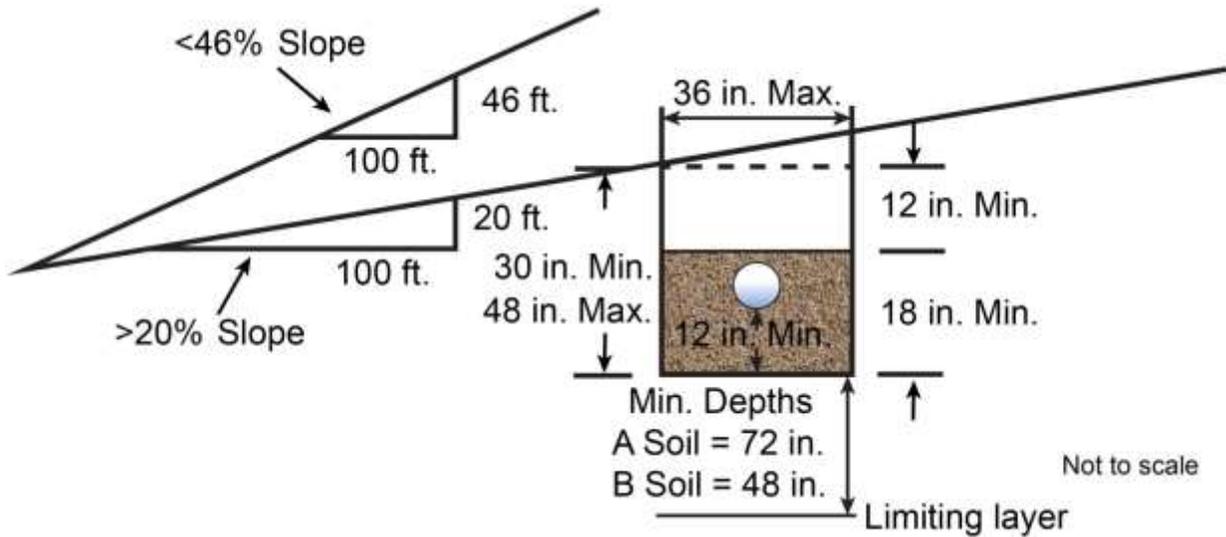
### 4.27.2 Approval Conditions

1. Soil must be well-drained without evidence of saturation and of soil design group A or B without evidence of textural change in the effective depth.
2. Except as listed in this section, all regulations applicable to a standard system will apply.
3. Trenches must be separated by at least 8 horizontal feet of undisturbed soil.
4. Trenches may not exceed 36 inches in width.
5. The drainfield bottom must be installed at a minimum depth of 30 inches below the natural soil surface on the downhill side of the trench:
  - a. The drainfield bottom may not exceed 48 inches below the natural soil surface on the downhill side of the trench.
  - b. The required vertical separation distances from the bottom of the drainfield to features of interest (IDAPA 58.01.03.008.02.c) must be capable of being met from the uphill side of the drainfield trench.
6. A gravel drainfield must meet the following:
  - a. Contain a minimum of 18 inches of drainrock, 12 inches of which must be installed below the perforated distribution pipe.
  - b. Restriction on the credit for the installation of extra drainrock below the drainfield in the steep slope system shall follow section 4.11.
7. A gravelless drainfield must meet the following:
  - a. Be constructed with an approved gravelless trench component (section 4.12) configuration.
  - b. No reduction in drainfield disposal area shall be credited for the installation of the gravelless trench component in the steep slope system.

### 4.27.3 Construction

1. Trenches may be constructed using serial or equal distribution.
  - a. Pressure distribution is recommended but not required.
  - b. If serial distribution is used, it is recommended that the system is constructed using drop boxes (section 3.2.6.2).
  - c. If equal distribution is used, it is highly recommended that a distribution box (section 3.2.5.2) be utilized, access to the distribution box from grade be available, and equal flow to each trench be verified before backfilling the system.
2. Regardless of the distribution method used, the drainfield trenches should follow the natural contour of the land surface.

3. In consideration of safety and plumb trench sidewalls, hand excavation of trenches may be necessary.
4. Figure 4-39 illustrates the relationship between the site's vertical drop and horizontal run.



**Figure 4-39. Illustration of a steep slope trench with an example of maximum and minimum slope.**

Equation 4-16 shows the calculation for determining a site's percent slope.

$$\frac{\text{Elevation Difference from Uphill Point to Downhill Point (Rise)}}{\text{Length Between Uphill and Downhill Point (Run)}} \times 100$$

**Equation 4-16. Percent slope of a site.**