4.27 Steep Slope System

Revision: ~~April 21, 2000~~September 18, 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

~~Steep slope systems may be considered where the slope at the site is greater than 20% but less than 46%.~~

1. Soil must be well-drained, with no evidence of saturation and of soil design group A or B without any 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, and:
   a. The drainfield bottom may not exceed 48 inches below the natural soil surface on the downhill side of the trench, and
   b. The required separation distances from the bottom of the drainfield to features of interest (IDAPA 58.01.03.008.02) must be capable of being met from the uphill side of the drainfield trench.
6. A gravel drainfield must:
   a. Contain a minimum of 18 inches of drainrock, 12 inches of which must be installed below the perforated distribution pipe, and
   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:
   a. Be constructed with an approved gravelless trench component (Section 4.12) configuration, and
   ~~a.~~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

~~Parallel trenches must be separated by at least 8 feet of undisturbed soil.~~

1. ~~If more than one trench is used, serial distribution will be required~~Trenches may be constructed using serial or equal distribution.
   a. Pressure distribution is recommended but not required.

b. If serial distribution is utilized it is recommended that the system is constructed using drop boxes (Section 3.2.6.2).

c. If equal distribution is utilized it is highly recommended that a distribution box (Section 3.2.5.2) be utilized, access to the distribution box from grade be made available, and that equal flow to each trench be verified prior to backfilling the system.

~~1.~~2. Regardless of the distribution method used the drainfield trenches should follow the natural contour of the land surface.

~~Trenches must be installed at a minimum depth of 30 inches below the natural soil surface on the downhill side of the trench and contain a minimum of 18 inches of drainrock and 12 inches of soil backfill or be constructed to gravelless trench specifications with a 30 inch minimum depth.~~

3. In consideration of safety and plumb trench sidewalls, hand excavation of trenches ~~paralleling the contour of the land surface~~ may be necessary.

4. Figure 4-33 illustrates the relationship between the site's vertical drop and horizontal run.

Equation 4-17 shows the calculation for determining a site's percent slope.

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

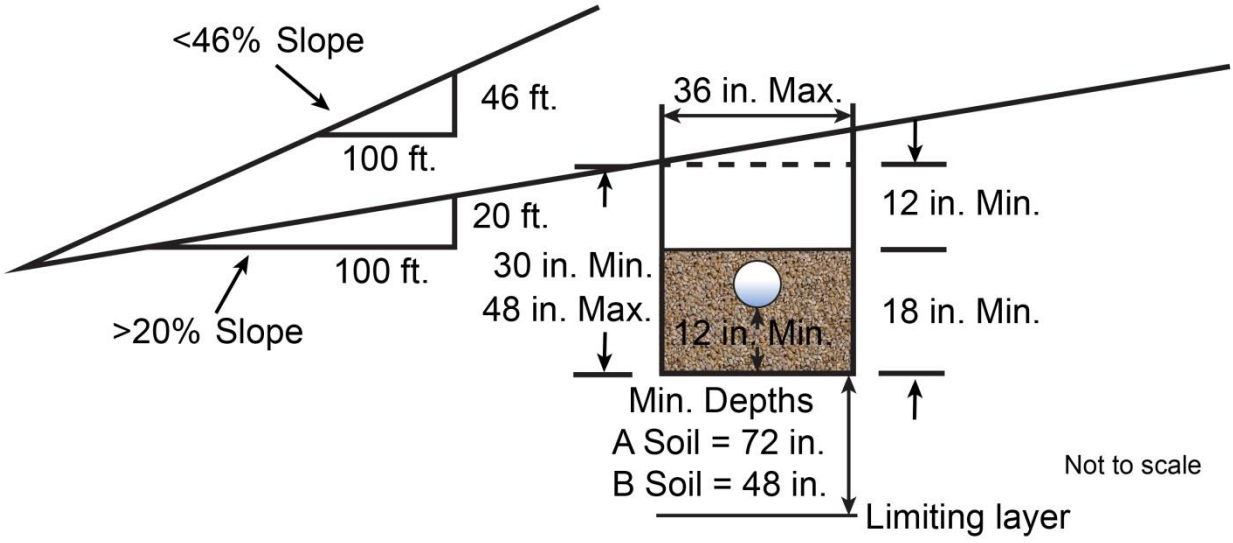

Figure 4-33. Illustration of a steep slope trench with an example of ~~rise over run~~maximum and minimum slope.