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## **Terrace Systems**

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### **1 Purpose and Scope**

**1.1** This Standard is intended as a guide to engineers and technicians for the design, layout, construction and maintenance of terrace systems on cropland. Terraces are earth embankments and channels constructed across the crop field slope at suitable spacing and with acceptable grades to reduce soil erosion and trap sediment, and/or to retain moisture for crop use. This Standard applies where sheet and rill or gully erosion is a problem, or there is a need to manage runoff leaving a site. The soils and site conditions must be suitable to build an earth embankment. The site must provide an adequate outlet.

**1.2** Terraces alone may not provide adequate control of erosion and runoff on sloping lands. Used in combination with water and sediment control basins, diversions, contouring, conservation cropping systems, conservation tillage, crop residue management, and/or permanent vegetation, they can be part of a resource management system to protect the soil and water resource base.

### **2 Normative references**

**2.1** The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies unless noted. For undated references, the latest approved edition of the referenced document (including any amendments) applies.

ASAE S442, Water and Sediment Control Basins

ASABE EP425, Underground Outlets for Conservation Practices

ASABE EP464, Grassed Waterway for Runoff Control

ASABE EP492, Diversions

RUSLE2 Official NRCS RUSLE2 Program and Official NRCS Database This site contains the official NRCS version of RUSLE2. <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/tools/rusle2>

### **3 Terminology**

Terraces can be identified by the way in which they handle runoff. There are three types of terraces:

**3.1.1** Storage terrace: Runoff is intercepted by the terrace, and flood routed in the terrace basin, while slowly being released through an underground outlet (UGO) (see ASABE EP425, Underground Outlets for

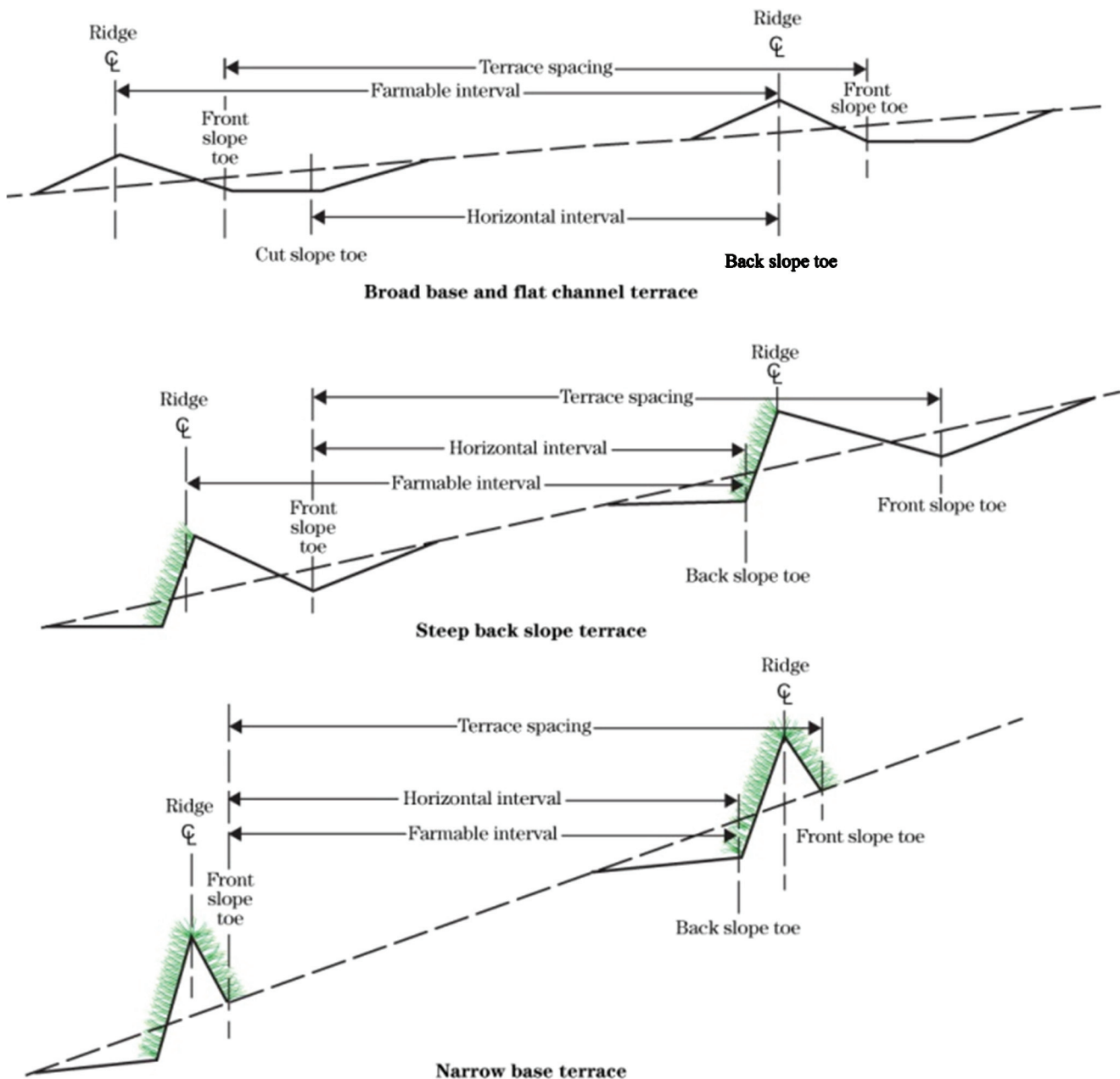
Conservation Practices). The embankment of a storage terrace can include sections that store runoff as well as sections that intercept runoff and convey it to the storage (e.g. diversions).

**3.1.2 Gradient terrace:** Runoff is intercepted by the terrace and conveyed directly (without any storage) to a stable surface outlet at non-erosive velocities.

**3.1.3 Level terrace:** Runoff is intercepted for the purpose of moisture conservation. The embankment of the terrace is designed level and the channel behind the embankment is level or nearly level. The intercepted runoff is stored behind the terrace embankment and allowed to infiltrate into the soil.

**3.2 Terrace cross-sections.** Each of these terrace types can be further broken down by the characteristics of the terrace cross-section (refer to Figure 1 for terrace cross-section nomenclature).

$h:v$  = horizontal distance : vertical height (e.g.  $5h:1v$  = 5 units horizontal for every 1 unit vertical)



**Figure 1 – Terrace cross-sections**