

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TECHNICAL GUIDE
SECTION IV

STATEWIDE
Hillside Ditch 423-1

Hillside Ditch (Ft)

Design criteria

Location. Hillside ditch systems shall be designed to fit land conditions. They shall drain from the ridge to a stable outlet.

Outlets. Adequate outlets shall be provided before beginning construction to dispose of discharge without creating an erosion hazard. Such outlets may be a natural waterway or a constructed one, a stable watercourse, or stable disposal areas, such as well-established pasture.

Length. Maximum length draining in one direction shall be 400 ft. This length may be extended to 500 ft if necessary to reach a stable outlet.

Grade. The ditch grade may be either constant or variable but must not exceed 3 percent.

Side slopes. Side slopes shall be stable for the soil in which the ditch is constructed.

Horizontal spacing and cross-sectional area. The maximum horizontal spacing and minimum cross-sectional area per 100 ft of ditch shall be as follows:

Average slope	Maximum spacing	Minimum cross-sectional area per 100-ft length
<i>pct</i>	<i>ft</i>	<i>ft²</i>
12 or less	40	0.35
12-25	35	.3
25-40	25	.2

Definition

A channel that has a supporting ridge on the lower side constructed across the slope at definite vertical intervals and gradient, with or without a vegetative barrier.

Scope

This standard applies to the planning and design of hillside ditches on steep land. It does not apply to diversions (362) or terraces (600).

Purpose

To control the flow of water in sloping areas by diverting runoff to a protected outlet, thus minimizing erosion and runoff.

Conditions where practice applies

Areas that have sufficient soil depth for constructing a hillside ditch system.

Plans and specifications

Plans and specifications for constructing hillside ditches shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

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NATIONAL
SUPPLEMENT
423-NS-1

Hillside Ditch (ft)

Planning considerations for water quantity and quality

Quantity

1. Effects upon components of the water budget, especially effects on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.
2. Effects of snowcatch and melt on water budget components.

Quality

1. Filtering effects of vegetation on movement of sediment and dissolved and sediment-attached substances.
2. Effects on erosion and the movement of sediment, pathogens, and soluble and sediment-attached substances by runoff.
3. Effects on the visual quality of the water resources.
4. Short-term and construction-related effects of this practice on the quality of downstream water.
5. Potential for development of saline seeps or other salinity problems resulting from increased infiltration in the presence of restrictive layers.