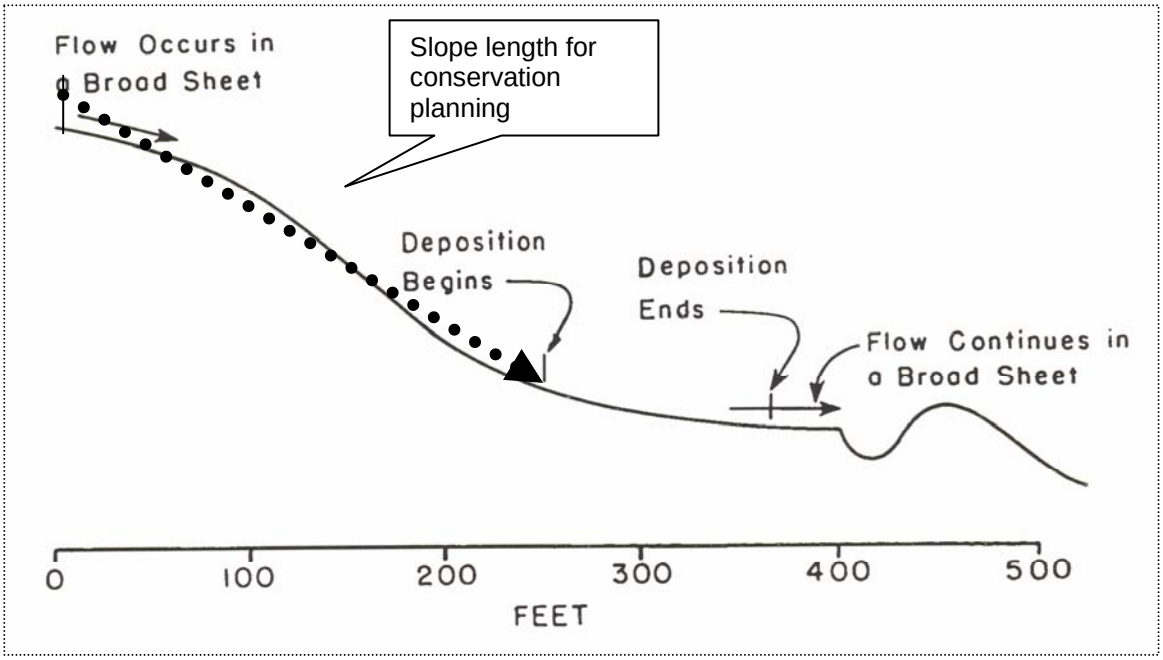
Determining slope lengths and grades.

Using RUSLE2 to determine the erosion rates for the sloping areas of the field involves determining soil types, slope lengths and grades. This is done by an onsite evaluation. Several slopes are typically shot until one's judgement determines that a common length and grade is representative of the landscape in question.



The accuracy of topographic maps is not adequate to determine slope grades or lengths in the office. Likewise, slope grades and lengths contained in soils databases are not site specific and may vary considerably due to the nature and methods used in making soil surveys and should not be used for conservation planning purposes.

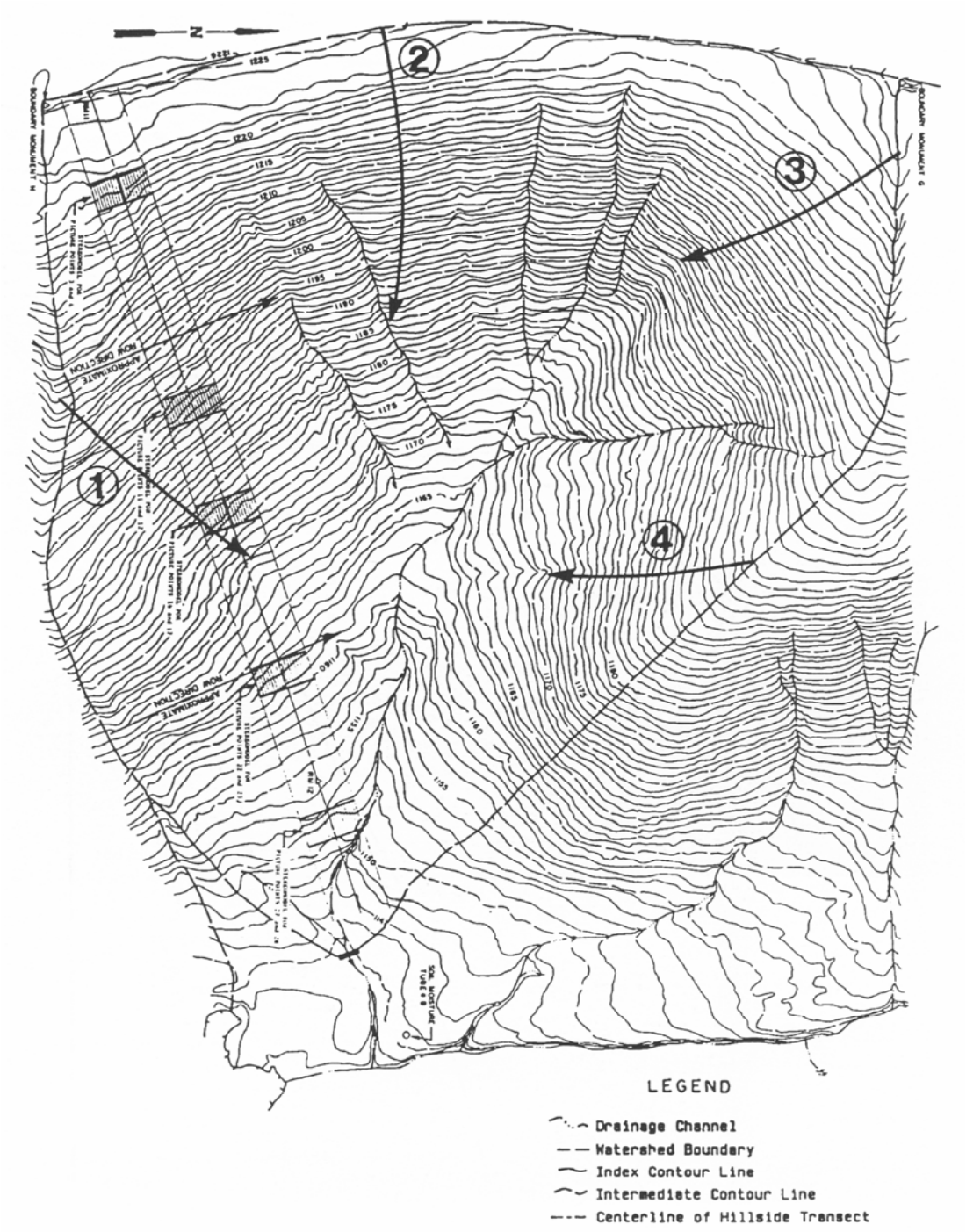
Determining slope grade

Slope is always measured perpendicular to the contour or directly up and down the slope in the direction that gravity forces the

water to run. A basic fact of life is that water runs downhill and that is also the path of sheet and rill erosion.
Slope grades can be measured using a hand level, clinometer, or Abney level. To measure slope another person, a range pole, or other device is used to establish the “eye height” at a point on the slope and is placed at either the top or bottom of the slope or at the points where major slope breaks occur when dealing with slopes having segments with different grades. When using a hand level a sighting is made from a measured or paced distance such as 50 or 100 feet up or down from the range pole or helper and the difference in elevation recorded and converted into percent slope. When using the clinometer or abney level the cross hair is lined up with the “eye height” on the distant range pole or helper and the grade read directly.

Determining slope lengths

Slopes for RUSLE are measured perpendicular to the contour line starting at the origin of overland flow near the top of the hillslope and terminate at either significant deposition where the slope flattens significantly or at the point where flow concentrates in a larger channel, ephemeral gully or gully.



Slopes 2, 3 and 4 end at concentrated flow, while slope 1 ends and deposition.