California Department of Forestry and Fire Protection
Butte County Fire Department
176 Nelson Avenue, Oroville, CA 95965

DETERMINING % OF GRADE

SCOPE: To assist and obtain consistency in determining the percent of grade which is often necessary to comply with access road/driveway requirements. Examples are useful when using a grading plan or an actual on-site determination.

DEFINITIONS
RISE: The elevation change that occurs in the horizontal distance measured. (Similar to the rise of a step)

RUN: The horizontal distance for which the % of grade is desired (Similar to the depth of a step)

1. GENERAL: Determining % of grade is simply dividing the rise by the run. It is recommended the % of grade be determined along the access road/driveway for each 5' to 10' of elevation change.

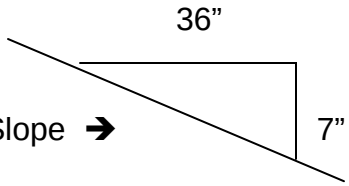
2. GRADING PLAN DETERMINATION: It is necessary to determine the distance (run) for which the % is desired and the elevation change (rise) from the contour lines.

EXAMPLE: Determine the distance (run) where the % of grade is desired by using the scale on the grading plan. Use the contour lines within that distance and determine the elevation change (rise).

21' ÷ 115' = .182 or 18% Grade
(Rise) (Run)

3. ON-SITE DETERMINATION: In the absence of a "Smart Level" the following method will determine % of grade on a slope.

EXAMPLE: A level (or straight board with a level on it) is held against the slope in a level position without moving. A measurement is taken at the 36" point down to the slope. The 36" is the run and the vertical measurement taken is the rise. 36" is used as an example, but the longer the run, the more accurate the results.



7" ÷ 36" = .194 or 19% Grade