CAL FIRE
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• STANDARD 5 •
DETERMINING PERCENT OF ROAD & DRIVEWAY GRADES

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 percent of grade is desired. (Similar to the depth of a step).

GENERAL:
Determining percent of grade is simply dividing the rise by the run and multiplying by 100. It is recommended the percent of grade be determined along the access road/driveway for each 5' to 10' of elevation change.

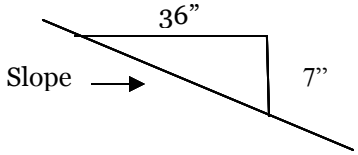
GRADING PLAN DETERMINATION:
It is necessary to determine the distance (run) for which the percent is desired and the elevation change (rise) from the contour lines.

EXAMPLE: Determine the distance (run) where the percent 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) = Grade

ON-SITE DETERMINATION:
In the absence of a "Smart Level" or other device, the following method will determine the percent 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
(Rise) ÷ (Run) = Grade

* See "Standard 4 – Access Roads" to determine what type of surface will be required based on percent of grade.