State of California
The Resources Agency
Department of Forestry

STATE FOREST NOTES

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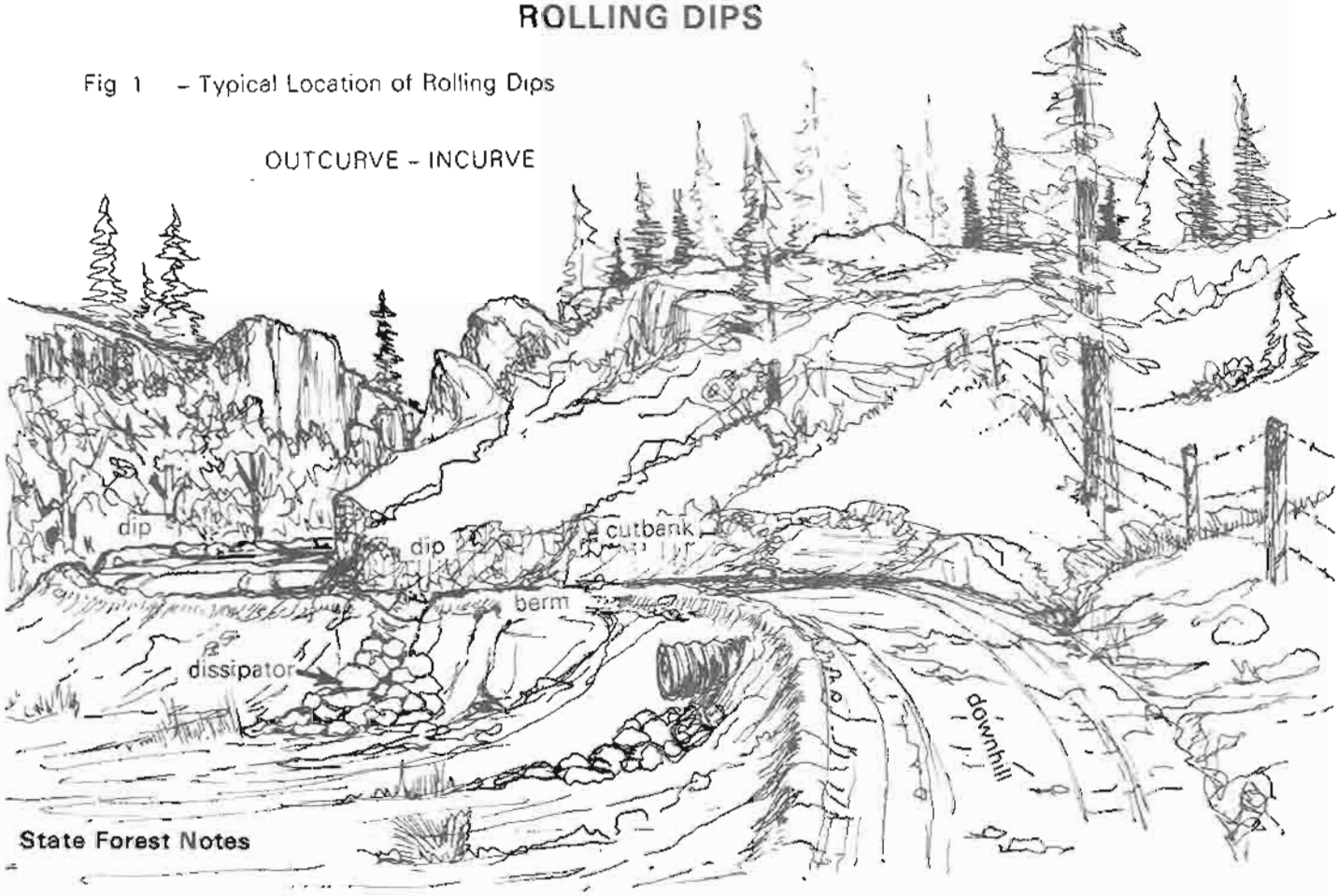
ROLLING DIPS

Fig 1 – Typical Location of Rolling Dips



Rolling dips can be constructed on roads to help minimize the volume of water flowing down the road and to channel the water off the road to places where it will minimize erosion. On roads to be kept passable, rolling dips are preferable to waterbreaks but they are not intended to replace culverts or permanent drains. These guidelines, if utilized in conjunction with adequate upslope erosion control, will help reduce erosion and help meet the requirements of the Forest Practice Act.

Rolling dips are usually installed below outcurves to get water concentrations off the road, above incurves and fills to reduce runoff from washing over these areas directly into streams, and elsewhere as needed (Fig. 1). Rolling dips can either be outsloped or insloped. When outsloped, spillway openings two (2) feet wide on the bottom of the dip should provide a discharge point through the raised berm (Fig. 3). A raised shoulder or berm is necessary to retain the water under control until it reaches the point of discharge at the bottom of the dip. When insloped, the discharge will ultimately be cross-drained to the downhill side of the road through a culvert.

The center line of the dip should angle downgrade at 45° to 60° to the center line of the road. The rolling dip should begin a minimum of 50 feet upslope from the bottom of the dip, and continue a minimum of 15 feet downslope from the bottom of the dip. Such distances are necessary to

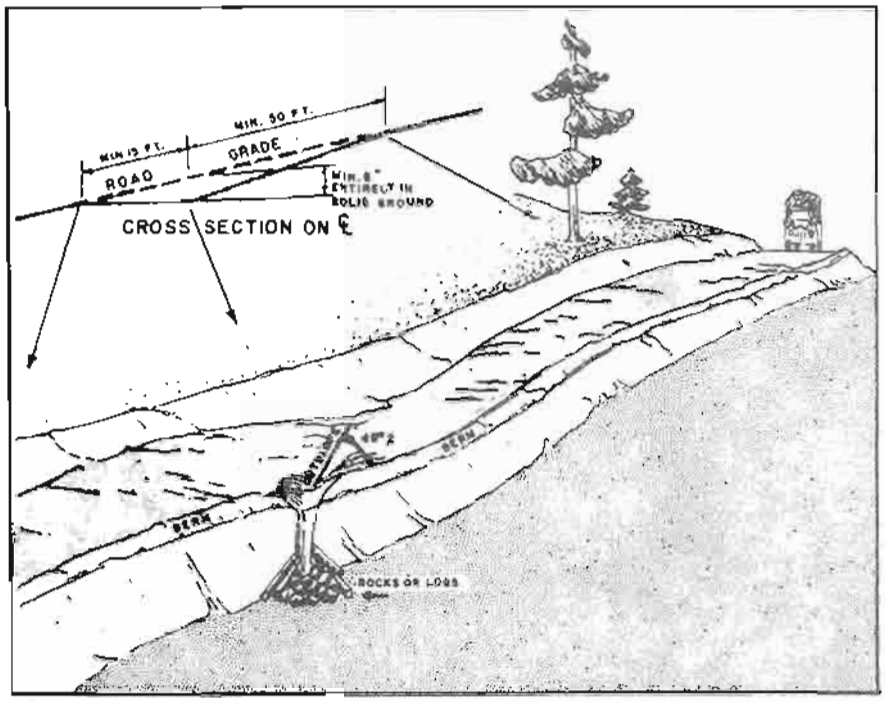
reduce the vehicle jolt and to prevent wheel tracks from channeling runoff water down the roadway. The bottom of the dip should be cut at least six (6) inches (up to 24") into the firm roadbed below the existing surface, or deeper in areas subject to high runoff and road useage.

Rolling dips are not recommended on roads above 10 percent grades but may be used on steeper roads where appropriate. Rolling dips must be spaced to meet the requirements of the District Forest Practice Rules when used in place of waterbreaks.

The water discharged from the rolling dip should fall onto some form of energy dissipator to prevent unnecessary erosion or washing of sediment on the slope. The dissipator may be the undisturbed forest floor (duff), logging slash, logs, rocks, or a downspout of prefabricated material.

If properly constructed, the rolling dip should be self-cleaning, but regular periodic inspection for maintenance is essential.

FIG. 2 **TYPICAL ROLLING DIP INSTALLATION**



OUTSLOPED ROLLING DIP (top view)

FIG 3