

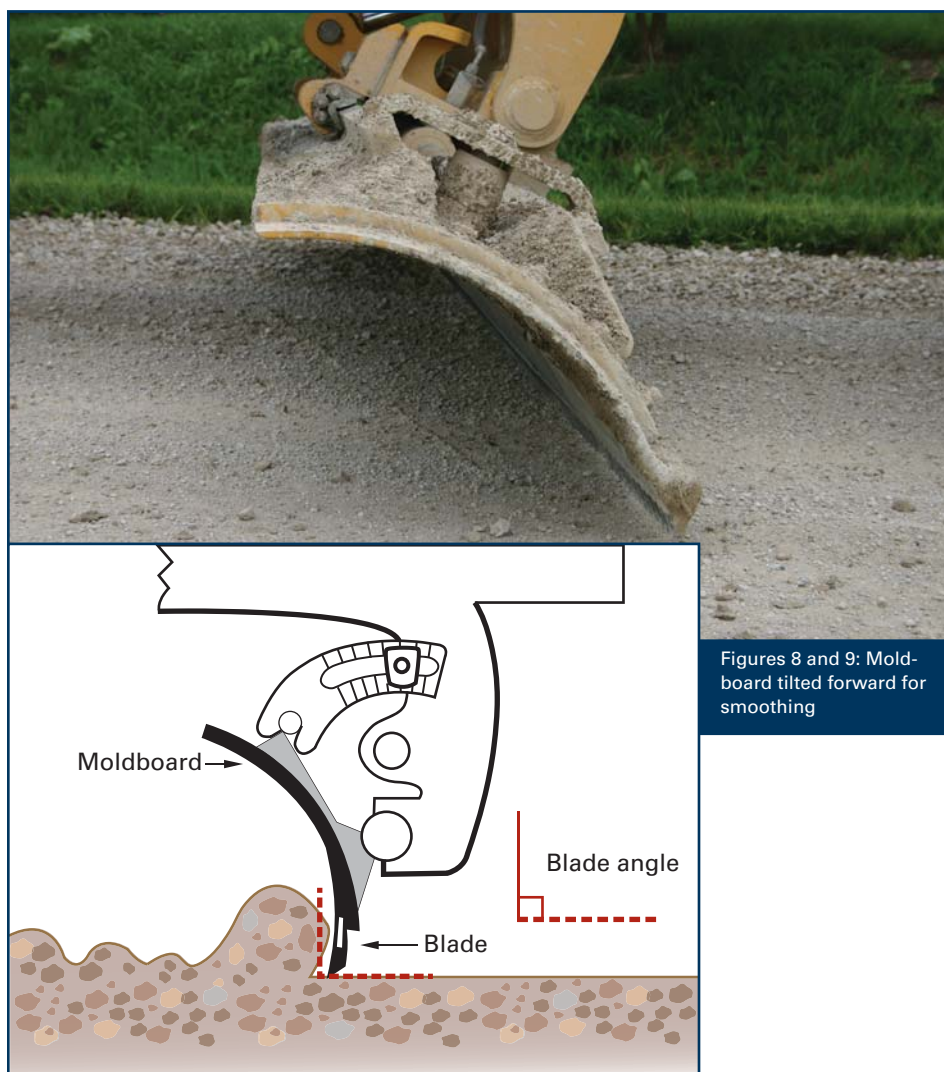
# road workers continued

*Adjusting continued from page 4*

To create a compaction roll that smoothes the road and helps shape the crown, tilt the moldboard forward until the blade is perpendicular to the road. See figures 8 and 9. Move and roll the aggregate in a mixing action away from the shoulder and toward the center of the road.

To bring fine materials back across the road, the blade should be in the “float” position (if that feature exists on your grader). That is, there should be no down pressure except the weight of the blade. To do this, simply turn off the pressure to the blade.

Note: Figures 3, 5, 6, 7, and 9 were adapted from illustrations in *Gravel Roads Maintenance and Design Manual*. FHWA and SD LTAP. 2000. ■



## Maintaining shoulders on granular surfaced roads

(Based on chapters 3 and 4 of the *Local Roads Maintenance Workers' Manual*, TR-514)

The following deficiencies may be found on shoulders of granular surfaced roads:

- **High shoulders.** Vegetation in the shoulder collects sediment and gradually breaks down, raising the level of the earth. Earth shoulders that were originally flush with the adjacent roadway may, over time, become too high. High shoulders create a safety hazard to drivers and restrict drainage away from the roadway.
- **Erosion.** Shoulder erosion can cause (and may be caused by) poor drainage. Earth or gravel shoulders with steep slopes may be particularly prone to erosion.
- **Secondary ditches.** See figure 10 on the following page. Secondary ditches can form in shoulders from excessive throw-off of material from gravel roads or when there is a lack of proper shoulder maintenance. Secondary ditches can cause many roadway problems that may result in the need to rebuild the roadway.
- **Vegetation.** When vegetation is allowed to grow on earth shoulders, it can inhibit drainage, create secondary ditches, cause snow to drift, and create unsafe conditions for vehicles that leave the roadway.
- **Fixed-object improvements within the clear zone.** Such objects (like fences, utility poles, or culvert headwalls) can be safety hazards.

*Shoulders continued on page 6*

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## Providing dust control

*Shoulders continued from page 5*

To correct shoulder deficiencies, regularly perform the following maintenance activities:

- **Repairing high shoulders.** Shoulders higher than the adjacent pavement should be reshaped and compacted. If vegetation in the shoulder is part of the problem, use a mechanical mixer to break up roots and follow with blading.
- **Repairing erosion and secondary ditches.** Refill, reshape, and compact earth and gravel shoulders in accordance with the original design.
- **Mowing.** Mow earth shoulders regularly. Consult your supervisor, and follow your agency's policies and procedures.
- **Managing obstacles in the clear zone.** Agencies must manage fixed-object improvements located on the shoulder and within the clear zone. The goal is to eliminate collision hazards. If you see fixed objects in the clear zone, notify your supervisor. (See "Final Iowa rule on obstructions in ROW" in the May–June 2006 issue of *Technology News*.)
- **Maintaining shoulders at driveways.** Be aware of the area where a driveway interconnects with the shoulder. Be careful that shoulder maintenance operations do not negatively impact adjacent property owners. Figure 11 shows the proper drainage point for a driveway. ■

(Based on chapter 3 of the *Local Roads Maintenance Workers' Manual*, TR-514)

All granular surfaced roads, whether natural gravel or crushed stone, will produce dust under traffic.

The amount of moisture in the area has a great effect on the amount of dust.

The quality of granular material also has a major impact. Limestone develops the most dust. Glacial gravel, with highly plastic clay, is less prone to developing dust.

Applying dust control products (or dust stabilizers) on higher-volume granular surfaced roads may be cost effective.

*Dust continued on page 7*



Figure 10. Secondary ditches in shoulders can cause many roadway problems.

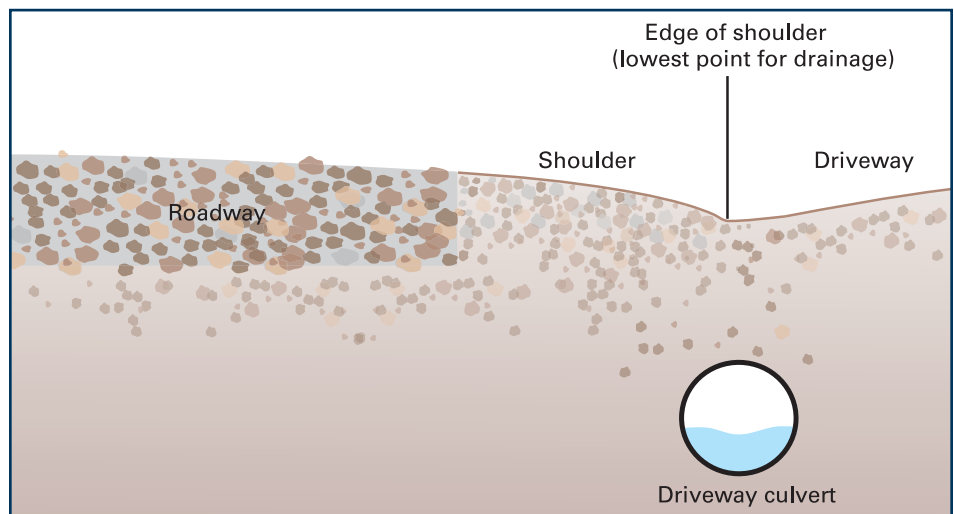


Figure 11. Maintain proper drainage point at driveways.