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# Access Roads on Pacific Island Farms

USDA NRCS Practice (560)



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## What is an access road?

Pacific Island farms need travel ways to move crops, livestock, supplies and equipment around the farm. A stable, long-lasting access road can be a major improvement for any farm business. An **access road** may vary from an unsurfaced trail with seasonal access to a year-round, all-weather surfaced roadway.

## Why build and improve access roads?

Pacific Island farmers can benefit from stable access roads on their farm. Using this practice can:

- provide a safe, stable route for moving equipment, supplies, crops, and animals.
- reduce expensive long-term road maintenance and labor costs.
- improve farm appearance and quality of life.
- prevent erosion problems.
- keep water bodies clean.

## Where are access roads used?

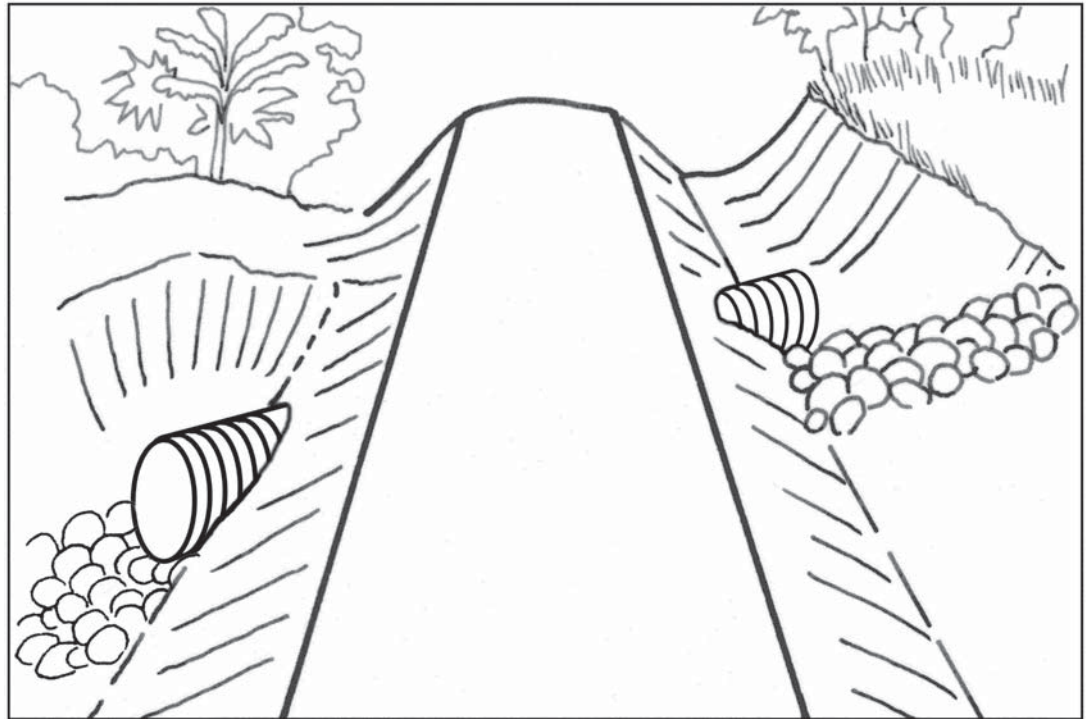
- In farm areas where vehicles must travel

## Plan for access roads

Poor access roads can cause many problems for Pacific Island farmers. Rutted roads can damage farm vehicles making it necessary to repair and replace them often. If you are spending valuable time and money to repair sections of the road again and again after heavy rain storms, it may be worthwhile to invest in improving your access roads.

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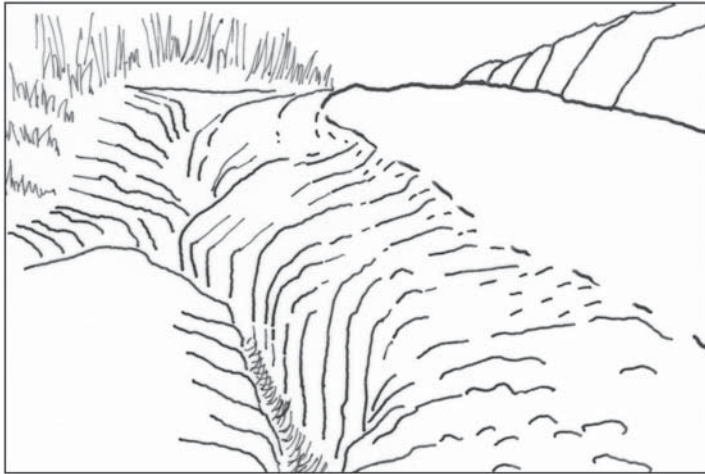
- Consider slopes when laying out roads. Plan and build roads across the slope and stay off steep slopes. Long sections of road going up and down the slope are difficult to drive and keep stable. Avoid them to save time and money on maintenance and repair.
- Consider soils when designing access roads. Learn about the soils your farm roads will cross. For example, heavy clay soils, rocky soils, and wet soils each have different construction considerations to build a durable, long lasting road.
- Consider stream crossings when planning your roads. As much as possible, avoid stream crossings because they are expensive to build and maintain. If they are not built properly, they can wash out, causing expensive damage to property, to water quality, and to fish and wildlife.



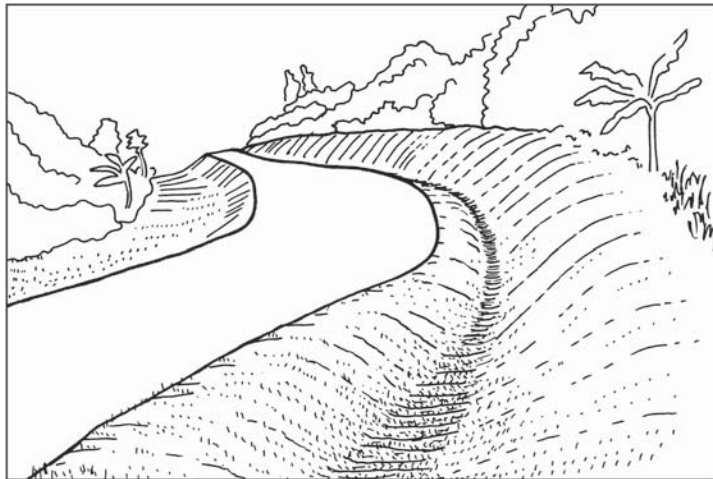
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Roads that are safe to travel on have a good shape, a stable surface, good drainage, and stable side ditches. A dry road surface provides safer driving conditions.

**Road Shape:** When surface water does not quickly drain off the road, it can lead to washouts, muddy conditions, and potholes. Build roads to drain off the water. Crown the center of the road by making the road higher in the middle and lower on the sides to allow water to quickly run off the road surface.



*The shape of the ditch is important. Narrow V-shaped ditches take less space, but concentrate water into a small area and may cut down into the ground.*



*Wide flat ditches can spread water out and slow down its speed.*

**Road Drainage:** If needed, use other conservation practices to help divert and drain water off the road surface. Water bars and broad based dips are like speed bumps built at an angle across the road. Use them to move water from the road surface to the road's edge. Open-top culverts are long, box-like channels cut down into the road surface to collect and divert water to the side.

**Stable Roadside Ditches:** Ditches collect road surface run-off and drain it away from the road. Poorly designed and built ditches can make a bad situation even worse. The shape of the ditch is important. Wide flat ditches can spread water out and slow down its speed. Narrow V-shaped ditches take less space, but concentrate water into a small area and may cut down into the ground. Adjust the shape of the ditch to spread out and slow down water. Don't make ditch side slopes too steep, which can cause erosion and maintenance problems. Discharge water collected from road ditches into natural undisturbed areas with thick plant growth. Some outlet areas may need strengthening with rock or stone.

If your road ditches carry large volumes of storm water, get help from a qualified professional to help design your ditches, culverts and outlets.

**Culverts and Stable Outlets:** Culverts carry water from one side of a road to the other. They are generally made from corrugated metal, plastic, or concrete. Culverts are used where roads cross drainage ways

(such as a stream or seasonal runoff channel) to keep natural flow patterns and protect wildlife. In other cases, some roads can act like a dam. If the road holds back large volumes of surface runoff, plan to install a culvert to let water get from one side to the other. In both cases, a well sized culvert will prevent your road from being washed out during big storms. Protect the downside end of the culvert from eroding with stone or a plunge pool.

**Roads in wet areas:** Often wet areas on the farm may be protected wetlands. Avoid building roads through them.

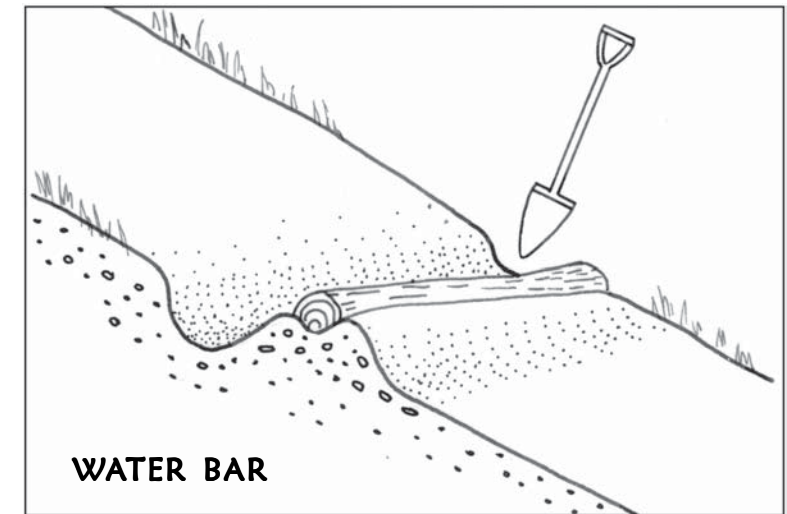
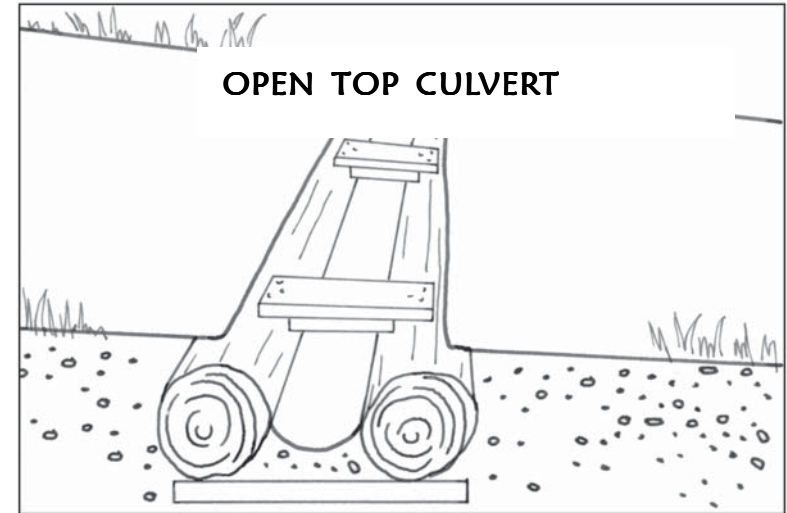
**Surfaced roadways:** Get help from a qualified professional to design and build surfaced roadways for heavy use.

For the best results, combine **access roads** with other conservation practices:

- **Heavy Use Area Protection (561):** strengthening heavily used areas with mulch, gravel, asphalt, concrete, cement

For assistance to plan, design or construct an access road, contact your local USDA NRCS field office.

Additional information is available from your local USDA Service Center or at [www.pb.nrcs.usda.gov](http://www.pb.nrcs.usda.gov) and [www.hi.nrcs.usda.gov](http://www.hi.nrcs.usda.gov).



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