NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

ACCESS ROAD

(Ft)
Code 560

DEFINITION

A travel-way for equipment and vehicles constructed as part of a conservation plan.

PURPOSE

To provide a fixed route for vehicular travel for resource activities involving the management of timber, livestock, agriculture, wildlife habitat, and other conservation enterprises while protecting the soil, water, air, fish, wildlife, and other adjacent natural resources.

CONDITIONS WHERE PRACTICE APPLIES

Where access is needed from a private or public road or highway to a land use enterprise or conservation measure, or where travel ways are needed in a planned land use area.

Access roads range from seasonal use roads, designed for low speed and rough driving conditions, to all-weather roads heavily used by the public and designed with safety as a high priority. Some roads are only constructed for a single purpose; i.e. access to remote recreation areas or access for maintenance of facilities.

This practice does not apply to temporary or infrequently used trails used for logging or forestry management activities. Use Florida NRCS conservation practice standard Forest Trails and Landings, Code 655.

CRITERIA

General Criteria Applicable to All Purposes

Access roads shall be designed to serve the enterprise or planned use with the expected vehicular or equipment traffic. Factors in the design include the type of vehicle or equipment, speed, loads, soil, climatic, and other conditions under which vehicles and equipment are expected to operate.

Where general public use is anticipated, roads shall be designed to meet applicable federal, state and local criteria.

Sound engineering practices shall be followed to ensure that the access road meets the requirements of its intended use and that maintenance requirements are acceptable.

Impact to cultural resources, wetlands and Federal and state protected species shall be evaluated and avoided or minimized to the extent practicable during planning, design and implementation of this conservation practice in accordance with established National and Florida policy, General Manual (GM) Title 420-Part 401; Title 450-Part 401, Title 190-Parts 410.22 and 410.26, National Planning Procedures Handbook (NPPH) Florida Supplements to Parts 600.1 and 600.6, National Cultural Resources Procedures Handbook (NCRPH), National Food Security Act Manual (NFSAM), and the National Environmental Compliance Handbook (NECH).

Criteria Applicable for Non-Public Use Access Roads

Location. Access roads shall be located to serve the purpose intended, to facilitate the control and disposal of surface and subsurface water, to control or reduce erosion, to make the

best use of topographic features, and to include scenic vistas where possible. The roads should generally follow natural contours and slopes to minimize disturbance of drainage patterns. Roads shall be located where they can be maintained and where water management problems are not created. To reduce potential pollution, roads shall be located away from water bodies and watercourses. Overland flow should not be impeded. Utilize buffers where possible to protect waterbodies.

Soil. Take adequate number of soil borings to determine the suitability of the location of the access road. Remove any unsuitable material.

Additional Features. Provide a turnaround at the end of dead end roads. The turnaround shall be sufficient for the anticipated vehicle type that will be using the road. In some areas, turnarounds may also be desirable for stream, lake, recreation, or other access purposes.

Provide parking space as needed to keep vehicles off the road or from being parked in undesirable locations.

Alignment. The gradient and horizontal alignment shall be adapted to the intensity of use, mode of travel, the type of equipment and load weights, and the level of development.

Grades normally should not exceed 10 percent except for short lengths. Maximum grades of 18 percent should only be exceeded if necessary for special uses such as field access roads, fire protection roads, or other roads not intended for public access.

For stream crossings, the road should be aligned so that it crosses perpendicular to the channel as much as possible.

Width. The minimum width of the roadbed is 14 feet for one-way traffic and 20 feet for two-way traffic. The roadbed width includes a tread-width of 10 feet for one-way traffic or 16 feet for two-way traffic. Each type of road requires 2 feet of shoulder width on each side. The two-way traffic width shall be increased approximately 4 feet for trailer traffic. The shoulder width may be either gravel or grass.

Turnouts shall be used on single lane roads where vehicles travel in both directions on a limited basis. Where turnouts are needed, the turnout will be constructed with a minimum width of 14 feet, minimum length of 30 feet, and an entrance of 10 feet and an exit of 10 feet to accommodate vehicles with a longer wheelbase. Final turnout dimension will be based on professional judgment.

Side slopes. All cuts and fills shall be designed to have stable slopes with a minimum of 2 horizontal to 1 vertical (2:1) on heights of less than 4 feet. For short lengths, rock areas, or very steep hillsides, steeper slopes may be permitted, if soil conditions warrant and special stabilization measures are installed.

Areas with geological conditions and soils subject to slides shall be avoided or treated to prevent slides.

Drainage. The type of drainage structure used will depend on the intended use and runoff conditions. Provide a culvert, bridge, ford, or grade dip for water management at every natural drainage way. The capacity and design shall be consistent with sound engineering principles and shall be adequate for the class of vehicle, type of road, development, or use. When a culvert or bridge is installed in a drainage way, it shall have a capacity that is sufficient to convey the design storm runoff without causing erosion or road overtopping for the 2 year-24 hour storm. If greater safety is required to protect the road or have access to home site, the minimum capacity shall be the 10 year-24 hour storm.

Use NRCS Conservation Practice Standard 578, Stream Crossing, to design stream crossings. The capacity of the culvert or bridge must be sufficient to carry the design flow for the applicable storm event.

An erosion resistant low point or overflow area may be constructed across the access road to supplement culvert capacity on non-public use roads.

The capacity of roadside ditches shall be adequate to provide surface drainage for the roadway and deep enough, as needed, to serve as outlets for subsurface drainage. At a minimum, the bottom of the roadside ditch shall be 1.0 foot below the top of road surface to provide internal drainage. Ditch channels shall be designed to be on stable grades or protected with structures or linings for stability.

Surface Cross Drains such as water-breaks, rolling dips, water bars, diversions or broad

based dips may be used to control surface runoff on low-intensity use forest, ranch or similar roads. On steep grades where runoff and erosion is anticipated down the road, water bars should be considered. Water bars must be constructed of materials that are compatible with the use and maintenance of the road surface. Water bar discharge areas must be well vegetated or have other erosion resistant materials. See Figure 1 "Recommended Spacing of Surface Cross Drains Based on Soil Type."

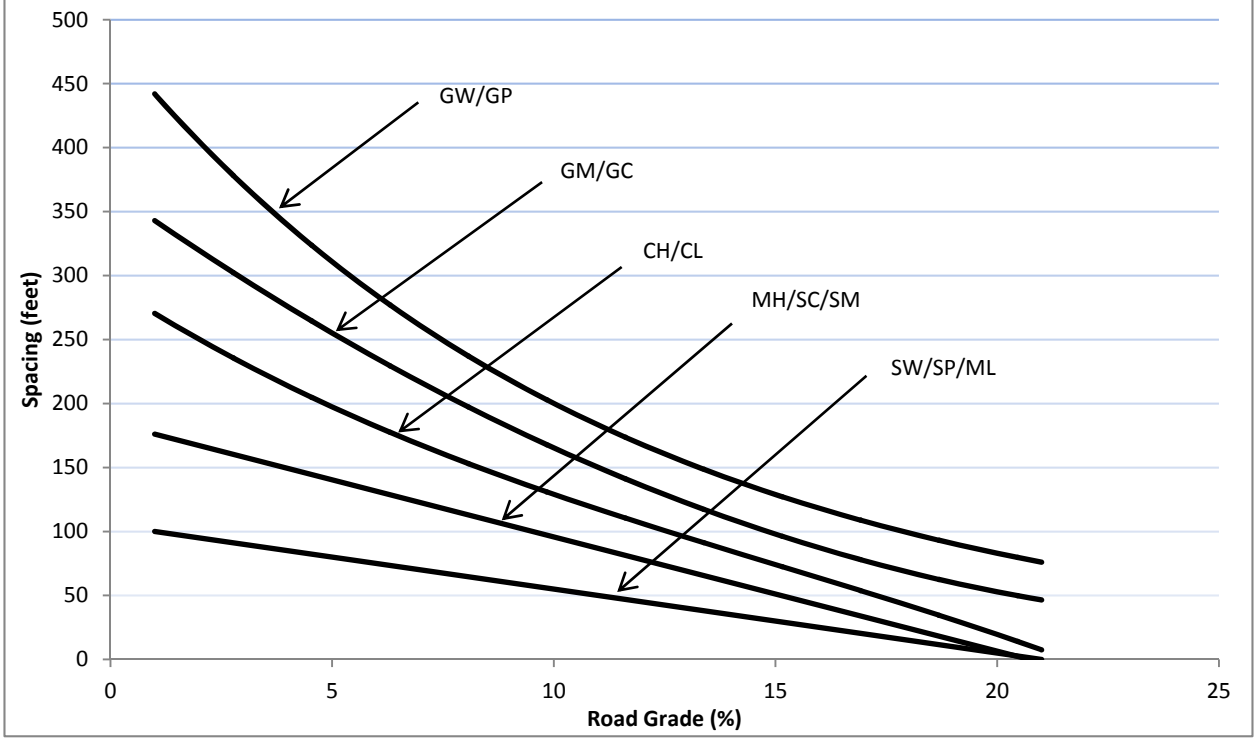
Surface crowning can also help direct road runoff into the side drainage ditches. Unobstructed flow into the ditches must be maintained to prevent flows from causing roadside erosion.

Surfacing. Access roads shall be given a wearing course or surface treatment if required by traffic needs, soil, climate, erosion control, or particulate matter emission control. The type of treatment, if needed, depends on local conditions, available materials, and the existing road base. If these factors or the volume of traffic is not a problem, no special treatment of the surface is required. On weak load bearing capacity soils such as silts, organics, and clays, the surface treatment should be underlain with a geotextile material specifically designed for road stabilization applications when the road is used on a regular basis.

Unsurfaced roads may require controlled access to prevent damage or hazardous conditions during adverse climatic conditions.

Toxic and acid-forming materials shall not be used on roads. This should not be construed to prohibit use of chemicals for dust control after considering potential impacts on stabilizing vegetation.

Figure 1. Recommend Spacing of Surface Cross Drains Based on Soil Types



Construction Operations. Construction operations shall be carried out in such a manner that erosion and air and water pollution are minimized and held within legal limits. Construction shall include the following requirements as necessary for the job:

1. Measures must be in place to limit the generation of particulate matter during construction.
2. Trees, stumps, roots, brush, weeds, and other objectionable material shall be removed from the work area.
3. Unsuitable material shall be removed from the roadbed area.
4. Grading, sub-grade preparation, and compaction shall be applied as designed.
5. Surfacing shall be applied as designed.

Traffic safety. Turnouts, guardrails, signs, and other facilities will be provided as needed for safety. Connections to a public highway shall be designed to meet applicable federal, state and local criteria.

Erosion control. If soil and climatic conditions are favorable, road banks and disturbed areas shall be vegetated as soon as possible and skid trails, landings, logging, and similar roads shall be vegetated after harvesting or seasonal use is completed. Vegetated treatment shall be in conformance with Florida NRCS conservation practice standard Critical Area Planting, Code 342. If the use of vegetation is precluded and protection against erosion is needed, protection shall be provided by non-vegetative materials, such as gravel or other organic or inorganic material in conformance with Florida NRCS conservation practice standard Mulching, Code 484 or in accordance with local regulations.

Roadside channels, cross drains, and drainage structure inlets and outlets shall be designed to be stable and shall be in conformance with Florida NRCS conservation practice standard Structure for Water Control, Code 587. If protection is needed, riprap or other similar materials shall be used.

Watercourses and water quality shall be protected during and after construction by erosion-control facilities and maintenance. Filter strips, water and sediment control basins, and other conservation practices shall be used and maintained as needed.

Criteria Applicable for Public Use Access Roads

Access roads used by the public shall be designed in conformance with local and state laws, rules and regulations to ensure a safe road for the anticipated traffic volumes, type of vehicles, and site conditions.

CONSIDERATIONS

Consider visual resources and environmental values during the planning and designing of the road system.

When available, consider using organic biodegradable materials as a surface treatment.

Access roads should be located where minimal adverse impacts will affect wetlands, waterbodies and wildlife habitat. Consideration should be given to the following:

- Effects on downstream flows or aquifers that would affect other water uses or users.
- Effects on the volume and timing of downstream flow to prohibit undesirable environmental, social, or economic effects.
- Short-term and construction-related effects of this practice on the quality of on-site downstream water courses.
- Overall effects on erosion and the movement of sediment, pathogens, and soluble and sediment-attached substances that would be carried by runoff from construction activities.
- Effects on wetlands and aquatic wildlife habitats that would be associated with the practice.
- Establishing vegetation on road shoulders wider than the 2-4 feet.
- Limiting the number of vehicles and vehicle speed will reduce the potential for generation of particulate matter and decrease safety and air quality concerns.

PLANS AND SPECIFICATIONS

Plans and specifications for constructing access roads shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

As a minimum, plans and specifications shall include:

- A plan view of the proposed road that shows the location of water features, utilities, and other features that affect the design.
- Road width and length with profile and typical cross section(s) including turnouts, parking, and turnarounds.
- Design road grades or maximum grades when applicable.
- Location of soil borings and plot of the soil/geologic boring showing the USCS.
- Type and thickness of surface treatment including any subbase preparation.
- Grading plan.
- Cut and fill slopes where applicable.
- Planned drainage features.
- Structure requirements for culverts, bridges, etc.
- Vegetative requirements that include vegetation materials to be used, establishment rates, and season of planting.
- Erosion and sediment control plan.
- Expected usage of the road and relevant safety features.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be provided to and reviewed with the landowner.

The plan shall include the following items and others as appropriate:

- Inspect culverts, roadside ditches, water bars, and outlets after each major runoff event and restore flow capacity as needed. Ensure adequate cross section is available and outlets are stable.
- Maintain vegetated areas in adequate cover to meet the intended purpose(s).
- Fill low areas in travel treads and re-grade, as needed, to maintain road cross section.
- Select chemical treatment(s) that minimize the damage to vegetative buffers adjacent to the road when it is necessary to chemically treat the road surface to maintain erosion protection.
- Use conservation practices that limit particulate matter emissions should be incorporated into long-term maintenance plans.

REFERENCES

Florida Drainage Guide
Florida NRCS Conservation Practice Standards
    Critical Area Planting, Code 342
    Mulching, Code 484
    Structure for Water Control, Code 587
General Manual
    Title 420-Part 401
    Title 450-Part 401
    Title 190-Parts 410.22 and 410.26
National Cultural Resources Handbook
National Environmental Compliance Handbook
National Food Security Act Manual
National Planning Procedures Handbook
    Florida Supplements to Parts 600.1 and 600.6