CONSERVATION PRACTICE STANDARD

ANIMAL TRAILS AND WALKWAYS

(Ft.)

CODE 575

DEFINITION

Established lanes or travel ways that facilitate animal movement.

PURPOSE

- Provide or improve access to forage, water, working/handling facilities, and/or shelter,
- Improve grazing efficiency and distribution, and/or
- Protect ecologically sensitive, erosive and/or potentially erosive sites.

CONDITIONS WHERE PRACTICE APPLIES

On lands where control of animal movement is needed.

This practice does not apply to travel ways routinely or primarily used for vehicular traffic. Access Road (PA 560) is applicable to those areas.

CRITERIA

General Criteria Applicable to All Purposes

All planned work shall comply with all federal, state, and local laws and permit conditions and requirements. The landowner shall obtain all necessary permits prior to construction or any land clearing activities.

Animal trails or walkways shall be constructed wide enough to accommodate movement of animals and access by operator for management and maintenance.

Trails or walkways shall be designed and constructed with consideration of site soil characteristics.

Trails or walkways shall be constructed in such a manner that accelerated erosion will not occur. A maximum of 10% slope is allowed; except that for distances of 100 feet or less, up to 20% slopes will be allowed when drainage structures are provided according to Table 1 criteria.

Table 1

Maximum Distances Between Drainage Structures	
Walkway Slope (%)	Distance (feet)
1	400
2	250
5	200
10	150
15	100
20	50

Where necessary, diversions with a stable outlet will be provided.

Drainage structures such as culverts, open top culverts, and water bars shall be installed to safely dispose of surface water. Spacing of these structures are listed in Table 1. All structures should convey runoff water to stable outlets at velocities that are non-erosive. Drainage structures that convey walkway runoff shall not discharge directly to a stream.

Conservation practice standard PA578, Stream Crossing, will be used when animal trails or walkways cross streams or other shallow water bodies.

Trails or walkways shall be constructed with a crown or cross slope to drain water. The cross slope or crown shall meet the Table 2 slope requirements, measured perpendicular to the direction of travel.

Table 2

Minimum Crowns and Cross Slopes	
Trail Width	Slope
≤ 6.0 Ft	1.0 In/Ft
6.1 – 11.9 Ft	0.75 In/Ft
≥ 12 Ft	0.5 In/Ft

The lane or walkway shall have a minimum surfacing based on soil drainage classes as contained in Table 3.

Sensitivity of the animal's feet, with respect to the intended purpose of the trail or walkway, will be included as a design parameter in selecting the surface material for trails or walkways.

Table 3

Trail or Walkway Cross Section		
Cross Section Option	Soil Drainage Classification*	
	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Compacted earth**	X	
Minimum 2” surface material	X	
Minimum 2” surface material over 2” binder course over 4” base course	X	
Minimum 2” surface material over 6“ base course	X	
Minimum 2” of surface material over 6” base course over class IV geotextile (non-woven)		X
Minimum 2” of surface material over 2” binder course over 4” base course over class IV geotextile (non-woven)		X

*Based on site specific investigations due to soil complexes in local soil surveys.

** Compacted earth, including weathered shale, shall be used only on slopes less than 5% where the walkway runoff is directed across a pasture or a vegetated *Filter Strip (PA 393).*

Definitions

Surface Material: PennDOT gradations Select Granular Material (2RC) or Driving Surface Rock Aggregate (Dirt & Gravel Roads DSA Mix); AASHTO/PennDOT No. 10 (stone dust); or cementitious coal combustion by-products.

Binder Course: AASHTO/PennDot No. 57, No. 67, or 2A.

Base Course: AASHTO/PennDOT No.1, No. 3 or No. 57.

Consider the adequacy of natural surfacing. If trails or walkways are seeded or planted to vegetative cover, vegetation will be protected from grazing until fully established and capable of withstanding grazing and/or trampling. Vegetative cover shall be established in accordance with Critical Area Planting, PA342. Where maintaining vegetative cover is necessary but not possible, Heavy Use Area Protection, PA561 will be used to provide adequate surface protection.

Construction of embankments should be kept to a minimum. The walkway surface (Table 3) shall be installed above original grade on poorly and somewhat poorly drained soils so that drainage can occur. Side slopes shall be 1½ H to 1 V maximum. All earthfill and cut slopes need to be revegetated in accordance with Practice Standard Critical Area Planting, (PA342). Where upslope runoff is intercepted, it shall be conveyed in a stabilized swale outside the trail or walkway.

Conservation practice standard PA382, Fence, will be used when needed to keep animals confined to the trail or walkway until the desired destination is reached. The trail or walkway cross section shall extend to the outside of the fence posts.

Cultural resources, threatened or endangered species, wetlands, streambanks, floodways or other ecologically sensitive areas, and areas of special scenic value will be protected through the proper design and placement of trail(s) or walkway(s).

Additional Criteria Applicable to Providing or Improving Access to Forage, Water, Working/Handling Facilities and/or Shelter

Trails and walkways will be designed and constructed of sufficient size to accommodate the amount of time of and the expected frequency of use and animal type(s) planned for the operation.

When needed to facilitate movement of animals through a series of paddocks or pastures, gate openings and lane layouts shall allow for efficient flow of animals with the least amount of stress.

Additional Criteria Applicable to Improving Grazing Efficiency and Distribution

Fenced or unfenced animal trails or walkways will be used to distribute grazing to overcome terrain features causing uneven grazing distribution and pressure.

CONSIDERATIONS

This practice should be implemented along with other practices that facilitate proper grazing management, such as prescribed grazing and watering systems. Conservation Practice Standard PA528, Prescribed Grazing, can be used to further improve grazing distribution and pressure.

Other conservation practices, such as Use Exclusion, PA472 can be used in conjunction with trails or walkways to minimize the impact on sensitive areas.

For areas of high livestock concentration, such as around ponds, tanks, troughs, or other feeding areas, use Heavy Use Area Protection, PA561.

Consider limiting width to prevent usage as a roadway.

Where a trail or walkway meets a pasture, as part of a continuous grazing system and not part of a rotational system, the walkway should be widened in a V shape up to 5 times its normal width, over a length 5 times the normal width.

PLANS AND SPECIFICATIONS

Each lane or walkway shall have a site-specific design and construction plan based on the criteria contained in this standard.

Plans and specifications for installing animal trails or walkways shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. Plans and specifications shall include construction plans, drawings, job sheets or other similar documents. These documents shall specify the requirements for installing the practice, including the location and the kind, amount, and quality of materials to be used.

OPERATION AND MAINTENANCE

A site specific O&M plan shall be prepared for and reviewed with the farm operator. The O&M plan can be part of a grazing system O&M plan. The operation and maintenance (O&M) plan shall specify that the trails or walkways and associated practices be inspected annually and

after significant storm events to identify repair and maintenance needs.

The O&M plan shall detail the level of repairs needed to maintain the effectiveness and useful life of the practice. These repairs should include, but are not limited to, the following:

- Periodic grading or re-shaping trails or walkways to maintain the designed grade and dimensions,
- Periodic addition of surfacing materials where used,
- Re-seeding of areas in which the vegetation has been damaged or destroyed, and/or
- Mending of fences and replacement of gates.

Periodic removal and management of manure accumulations will be addressed in the O&M plan.

For multiple adjacent vegetated walkways the O&M plan should provide guidance as to the rotation of walkways to allow for recovery of vegetation and for improvement of traffic - supporting conditions.

REFERENCES:

NRCS, Pennsylvania Technical Guide. NRCS, Engineering Field Handbook

Using All-Weather Geotextile Lanes and Pads, Agricultural Engineering Digest AED-45, Midwest Plan Service, Ames, Iowa, 1999.

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United States Department of Agriculture, Forest Service, 2007. Trail Construction and Maintenance Notebook. Washington, DC.

USDA-NRCS. 2003. National range and pasture handbook, revision 1. Washington, DC.

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