

obstacle. An exemption from the obstacle height requirements is allowed if compliance isn't possible because of a condition for departure.

## Protruding Objects and Trails

Protruding objects extend into the clear width area of a trail from beside or above the trail. Leaning tree trunks, rock ledges, and branches are common protruding objects. There must be at least 80 inches (2,030 millimeters) of clear headroom above trails, the same requirement as ABAAS section 307. If the vertical clearance of a trail is reduced to less than 80 inches (2,030 millimeters) because of a condition for departure, a barrier must be provided to warn people who are blind or visually impaired (figure 118). An exemption to the requirement

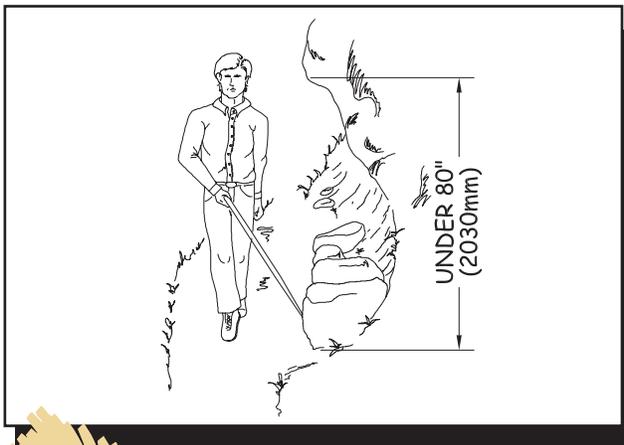


Figure 118—A warning barrier is required wherever vertical clearance is insufficient.

is allowed where a condition for departure prevents installing a barrier or providing 80 inches (2,030 millimeters) of clearance. This exception allows a trail to pass under ledges or through caves without changing the character of undeveloped areas (figure 119).



Figure 119—Entering a cave in an undeveloped area managed by the Bureau of Land Management.

## Openings in Trail Surfaces

Openings are gaps in the surface of a trail. Gaps include slots in a drainage grate and spaces between the planks on a puncheon, bridge, or boardwalk. Openings that are big enough for wheels, cane or crutch tips, or shoe heels to drop through or get stuck in are hazards that should not exist in pedestrian routes. Openings up to 1/2 inch (13 millimeters) wide are permitted in trail surfaces. Elongated openings must be placed so that the long dimension is perpendicular or diagonal to the primary direction of travel (figure 120). Elongated openings

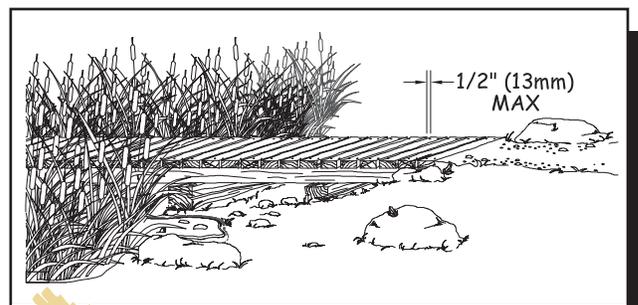


Figure 120—The requirements for openings in the trail surface that are perpendicular to the direction of travel.

less than  $\frac{1}{4}$ -inch (6.4 millimeters) wide may be used parallel to the dominant direction of travel (figure 121). This allows trail managers to place boards lengthwise along a boardwalk trail, as is often done in wetland areas.

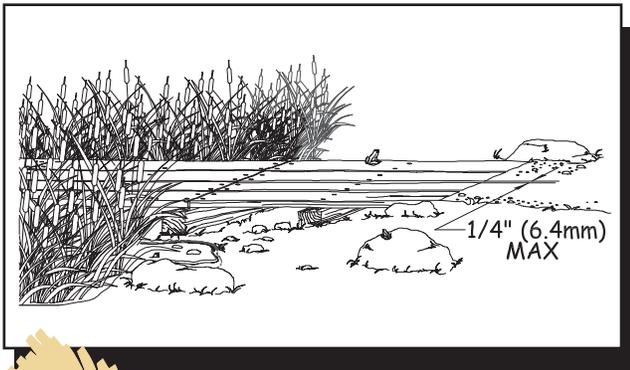


Figure 121—The requirements for openings in the trail surface that are parallel to the direction of travel.

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If there is a condition for departure, openings less than  $\frac{3}{4}$  inch (19 millimeters) wide may be placed perpendicular or diagonal to the predominant direction of travel.

This exception allows the use of boardwalk decking that needs more than  $\frac{1}{2}$ -inch- (13-millimeter-) wide spacing between the planks to permit expansion and to allow water to drain.

If one or more conditions for departure prevent the trail from meeting the requirements above, compliance with the openings provision isn't required.

## Edge Protection for Trails

Edge protection is a raised curb, wall, railing, or other projecting surface that defines the edge of a travel surface and helps keep people and assistive devices from acciden-

tally falling off the edge. Edge protection is not required for accessibility on trails. However, if edge protection is provided on a trail to improve safety or for other reasons, it should be designed appropriately for the site and must be at least 3 inches (75 millimeters) high. This is higher than the 2-inch (50-millimeter) edge protection required by the ABAAS because objects less than 3 inches (75 millimeters) high aren't easy to see or detect in the outdoors. Such objects may become a tripping hazard, particularly since natural trail surfaces tend to be irregular. In the outdoors, people with limited vision who use canes tend to search higher than they do indoors (figure 122). They use the tactile change between the trail surface and the surrounding ground surface to distinguish between the edge and the surface of the trail. Holes, slots or other openings in the edge protection may be provided for drainage or other reasons.

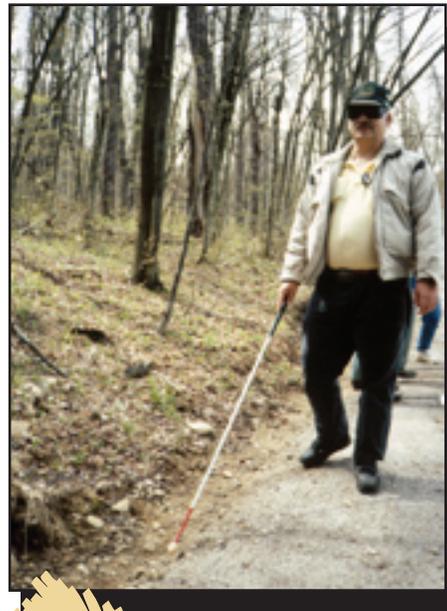


Figure 122—A hiker searches the edge of a trail.

## Signs for Trails

Local managers can decide whether to post signs on newly constructed or altered class 1, 2, or 3 hiking or pedestrian trails. If a local manager decides to post signs, they must meet the requirements explained below. Trail classes are explained in *Understanding Trail Terminology*.

Signs must be posted at the trailheads of newly constructed or altered class 4 or 5 trails and trail segments that are designed for hiker or pedestrian use, and at trailheads for trails that have been evaluated for accessibility. At a minimum, information on trailhead signs must include:

- Trail name
- Trail length
- Typical and maximum trail grade
- Typical and minimum tread width
- Typical and maximum cross slope
- Trail surface (type and firmness of surface)
- Any major height obstacle, such as boulders, in the trail tread
- A statement that posted information reflects the condition of the trail when it was constructed or assessed, including the construction or assessment date

The last requirement is because tree blowdowns, flooding, or other events can make trails designed and constructed to FSTAG standards temporarily inaccessible until maintenance crews can clear the obstruction.

Where more extensive trail information such as an aerial map of the trail and related facilities is provided, the location of specific trail features and obstacles that do not comply with the FSTAG's technical provisions should be identified and a profile of the trail grade should be included.

If materials such as maps, brochures, fee envelopes, and so on need to be obtained from or filled out at a sign or kiosk, the sign or kiosk must be designed to meet the standard reach ranges of a person in a wheelchair in accordance with ABAAS section 308 as explained in *Reach Ranges and Operability Requirements*. In addition, 30- by 48-inch (760- by 1,220-millimeter) clear floor or ground spaces must be provided to allow for forward or side approach.



# Constructed Features Associated With Trails

In the FSTAG, the term *associated constructed features* refers to tent pads and platforms, pit toilets, viewing areas, benches, warming huts, and similar structures for trail users. To comply with the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973 (Section 504), associated constructed features provided along trails—even trails that are not accessible—must be designed to comply with the applicable provisions in the FSORAG.

The path of travel between associated constructed features, as well as the path connecting them to a trail, must comply with the FSTAG. These paths are not ORARs and are not required to meet the technical provisions for an ORAR.

trail at North Doublehead in New Hampshire. The toilet was constructed in 1972, after the 1968 passage of the ABA. The Forest Service replaced the toilet with an accessible model.

It's really in the best interests of all organizations to ensure that all facilities—regardless of where they are located—are appropriate to the setting and are accessible. When accessibility is integrated into the design from the beginning, there's not much difference in cost. If the design of a facility that's already under construction must be changed to provide for accessibility, or if an inaccessible facility has to be replaced with an accessible facility at a later date, costs will be substantial.

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## DESIGN TIP—

***If the trail isn't accessible, why does the warming hut have to be accessible?***

This issue was clarified for Federal agencies when a complaint was filed with the U.S. Access Board against the National Park Service for installing an inaccessible toilet at 10,000 feet (3,048 meters) on Mt. Rainer. The petitioner was a paraplegic who was climbing the mountain with a sit-ski and ropes. He was not able to use the toilet that the rest of his party could use, because it wasn't accessible. The Access Board found that the Park Service was not in compliance with the 1968 Architectural Barriers Act that requires all new construction funded by Federal Executive agencies to be accessible. The Park Service settled the case by replacing the toilet with an accessible model.

The Forest Service was cited by the Access Board after a complaint was filed about a toilet serving the

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Associated constructed features must be designed appropriately for the setting and in compliance with the applicable provisions in the FSORAG to ensure that the facility can be used for its primary purpose by all hikers, including hikers with disabilities. For example, a trail hut or lean-to with three walls may be provided along a trail. If its floor is above the ground, at least one section of the floor on the open side of the hut must be 17 to 19 inches (430 to 485 millimeters) above the ground to facilitate transfer onto the floor from a wheelchair, as explained in *Warming Huts*.

Requirements for all recreation facilities, including those that are commonly associated with trails, are contained in the FSORAG and explained in the section titled Applying the Forest Service Outdoor Recreation Accessibility Guidelines. The requirements for tent pads are explained in *Camp Unit Tent Pads and Tent Platforms*. The requirements for pit toilets are explained in *Pit Toilets in General Forest Areas*. Constructed features associated with trails must meet the requirements for those features provided in GFAs.