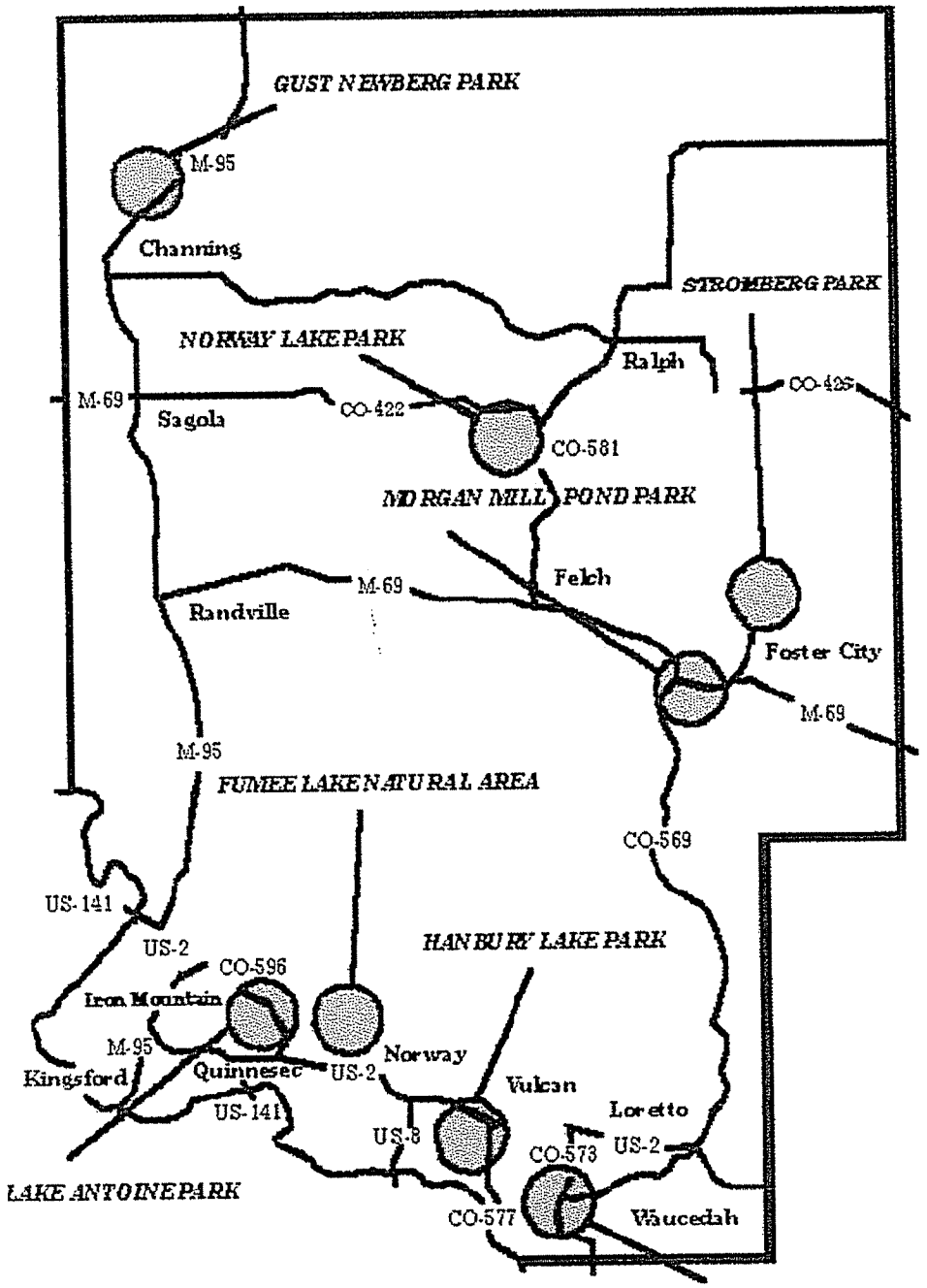
APPENDIX A

Maps

MAP 3.1

COUNTY RECREATION FACILITY LOCATIONS



DICKINSON COUNTY PARKS

APPENDIX B

U.S. Forest Service
Outdoor Recreation Accessibility Guidelines

May 22,2006

Forest Service Outdoor Recreation Accessibility Guidelines

FSORAG

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USDA Forest Service
Outdoor Recreation Accessibility Guidelines

Executive Summary

The Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG) provide guidance for maximizing accessibility of outdoor recreation areas in the National Forest System, while protecting the unique characteristics of their natural setting. The FSORAG applies to new or altered camping facilities, picnic areas, beach access routes, outdoor recreation access routes (ORARs), and other constructed features in the National Forest System (including benches; trash, recycling, and other essential containers; viewing areas at overlooks; telescopes and periscopes; mobility device storage; pit toilets; warming huts; and outdoor rinsing showers).

The FSORAG integrates the Forest Service policy of universal design (Forest Service Manual 2330.5) to ensure the integration of all people, to the greatest extent possible, without separate or segregated access for people with disabilities. Under the Forest Service's universal design policy, with few exceptions, all new or altered facilities and associated constructed features at recreation sites must comply with the technical provisions of the FSORAG, rather than only a certain percentage of those facilities.

The FSORAG is based on draft guidelines for outdoor developed areas created by a regulatory negotiation committee (Reg Neg Committee) established by the Architectural and Transportation Barriers Compliance Board (Access Board).

Like the Reg Neg Committee's draft guidelines, the FSORAG provides for one level of accessibility. The FSORAG preserves the uniqueness of each area's setting through the use of conditions for departure and exceptions, where application of a technical provision would cause a change in an area's setting. Compliance with the FSORAG will not always result in facilities that are accessible to all persons with disabilities. At some locations, the natural environment will prevent compliance with some of the FSORAG's technical provisions.

The Access Board is preparing to publish the Reg Neg Committee's draft guidelines for public notice and comment. The Access Board's proposed guidelines will apply to federal agencies subject to the Architectural Barriers Act. When the Access Board finalizes its accessibility guidelines for outdoor developed areas, the Forest Service will revise the FSORAG to as needed to incorporate the Access Board's standards, where the provisions are a higher standard, as supplemented by the Forest

Service. The supplementation will ensure the agency's application of equivalent or higher guidelines and universal design, as well as consistent use of agency terminology and processes.

Preamble

The preamble provides background on the FSORAG, beginning with the Forest Service's development of universal design guidelines for outdoor recreation areas. The preamble also contains a detailed explanation of the FSORAG, including a discussion of its applicability.

The FSORAG contains a definitions section and six sections of technical provisions that apply to new or altered constructed features in outdoor recreation areas. In addition, the FSORAG enumerates four conditions for departure that provide for deviation from specific technical provisions.

The appendix to the FSORAG contains provisions from the Architectural Barriers Act Accessibility Standards that are cited in the FSORAG's technical provisions.

Background

The Architectural Barriers Act of 1968 (ABA) and Section 504 of the Rehabilitation Act of 1973 (Section 504) require newly constructed or altered facilities to be accessible, with few exceptions. The applicable standard for new construction and alteration of Forest Service facilities under these laws is the Architectural Barriers Act Accessibility Standards (ABAAS).

While Chapter 10 of the ABAAS addresses some recreation facilities, including boating and fishing facilities, swimming pools, play areas, sports arenas, miniature golf courses, and amusement parks, the ABAAS does not address camping and picnicking areas and elements, outdoor recreation access routes, beach access routes, and pedestrian hiking trails.

Since the late 1980s, the USDA Forest Service (Forest Service) has been committed to the development of accessibility guidelines that recognize and protect the unique characteristics of the natural setting. In 1993, the Forest Service developed and implemented the *Universal Access to Outdoor Recreation: A Design Guide* (*Design Guide*), which contains accessibility guidelines for the outdoor recreation environment.

The applicability of the provisions in the *Design Guide* was based on the Forest Service's recreation opportunity spectrum (ROS). Under this approach, the degree of modification for accessibility in a given area reflected that area's level of development, resulting in a spectrum of opportunities for all people with the diversity of challenge and risk that is inherent in the outdoor recreation environment. The *Design Guide* also incorporated the universal design policy of developing programs and facilities to serve all people, to the greatest extent

possible. The goal of universal design is to ensure integration of all people, without separate or segregated access for people with disabilities. Under the Forest Service's universal design policy, new or altered facilities and associated constructed features in recreation areas are required to be accessible, rather than only a certain percentage of those facilities, with few exceptions.

The Forest Service presented the *Design Guide* to the Access Board, the federal agency responsible for accessibility guidelines and for enforcement of the ABA. The Access Board established a Recreation Access Advisory Committee (RAAC) in July 1993 to develop additional, recreation-oriented provisions for the federal accessibility guidelines. The RAAC issued a report in July 1994 that addressed the various types of recreation facilities and identified the features of each type that were not addressed by the current federal accessibility guidelines. The RAAC made recommendations for developing accessibility guidelines for those facilities.

The Access Board published an advance notice of proposed rulemaking in September 1994 requesting public comment on the RAAC's recommendations. The public comments expressed support for many of the recommendations. However, the public comments also revealed a lack of consensus among interested parties on some major issues regarding outdoor developed areas. Consequently, the Access Board decided to develop proposed accessibility guidelines for outdoor developed areas through a regulatory negotiation process. The Forest Service was one of the 24 members of the Regulatory Negotiation Committee on Outdoor Recreation Developed Areas (Reg Neg Committee).

The Reg Neg Committee's scope of work included outdoor recreation access routes, beach access routes, camping and picnicking areas and elements, and pedestrian hiking trails. The Reg Neg Committee determined that the applicability of its guidelines would not be based on the ROS. Rather, the Reg Neg Committee's guidelines would apply regardless of the setting, unless one or more conditions for departure existed and an exception applied for a specific technical provision. Further, the Reg Neg Committee's guidelines would not integrate a universal design policy.

In 1999, the Reg Neg Committee issued draft accessibility guidelines for outdoor recreation facilities and trails. While awaiting completion of the rulemaking process for these guidelines, the Forest Service began developing internal guidelines for both trails and outdoor recreation facilities that would apply only in the National Forest System and that would comply with the public notice and comment process for Forest Service directives pursuant to 36 CFR Part 216. The agency took this step to provide a consistent and reliable method for designing accessible outdoor recreation facilities and trails pending promulgation of the Access Board's guidelines. The Forest Service's guidelines are based on the Reg Neg Committee's draft guidelines. The Forest Service's guidelines are in two parts: the Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG) and the Forest Service Trail Accessibility Guidelines (FSTAG).

In 2006, the Access Board plans to publish for public notice and comment the Reg Neg Committee's draft guidelines for outdoor developed areas managed by federal agencies. The Forest Service and the other federal land management agencies will work with the Access Board as it develops final accessibility guidelines for outdoor developed areas. The final FSORAG and FSTAG will incorporate the Access Board's standards, as supplemented by the Forest Service. The supplementation will ensure the agency's application of equivalent or higher guidelines and universal design, as well as consistent use of agency terminology and processes.

The FSORAG addresses outdoor recreation access routes, beach access routes, camping and picnicking areas, and other constructed features. Pedestrian hiking trails are addressed in the FSTAG. Both the FSORAG and the FSTAG are available at www.fs.fed.us/recreation/programs/accessibility.

The FSORAG integrates the Forest Service's universal design policy and allows Forest Service designers and managers to maximize accessibility of constructed features in camping and picnicking areas and the pathways connecting these facilities, while preserving the uniqueness of the outdoor environment. For example, every picnic table provided in a recreation area must meet the technical provisions for accessible seating spaces, table clearance, slope and surface. In addition, at least 20 percent of the tables must be connected by an outdoor recreation access route to the other major constructed features at the site.

The technical provisions in the FSORAG, including the conditions for departure and exceptions, were taken from the Reg Neg Committee's draft guidelines. The scoping requirements for the FSORAG are based on the Forest Service's universal design policy (FSM 2330.5). However, in contrast to the *Design Guide*, applicability of the FSORAG is not determined by the ROS, but rather by the conditions for departure and exceptions from the Reg Neg Committee's draft guidelines.

On February 17, 2005, the Forest Service published in the *Federal Register* public notice and a request for comments on the proposed directive to Forest Service Manual (FSM) 2330 that would require compliance with the FSORAG. On May 22, 2006, the Forest Service published, in the *Federal Register* (Volume 71, Number 98) notice of the final directive that requires compliance with the FSORAG, effective on that date. In the notice for the final directive, the agency also responded to the comments made on the proposed directive and noted the changes to the FSORAG made in response to comments.
The Forest Service will work closely with its many partners in implementing the FSORAG and FSTAG. The agency understands that some aspects of implementation may prove challenging, particularly with regard to expense, design expertise, and labor. The Forest Service is committed to assisting its partners in implementing the FSORAG and FSTAG.

Development of the FSORAG

To develop the FSORAG, the Forest Service formed a committee of USDA employees consisting of Ruth Doyle, Santa Fe National Forest Landscape Architect and Assistant Recreation Staff Officer, Forest Service representative to the Reg Neg Committee, and primary Forest Service author of the *Design Guide*; Janet Zeller, National Accessibility Program Manager; Ellen Hornstein, Attorney Advisor, Office of the General Counsel, Natural Resources Division; the nine Regional Recreation Accessibility Coordinators; Ramiro Villalvazo, Chief Landscape Architect; David Hackett, Recreation Sites Program Manager; and their teams of specialists.

Purpose of the FSORAG

The purpose of the FSORAG is to provide guidance for maximizing accessibility, while protecting the unique characteristics of the natural setting. Specifically, the FSORAG:

- Protects forest resources and the environment.
- Preserves the recreation experience.
- Provides for equality of recreation opportunities.
- Maximizes accessibility.
- Is reasonable.
- Addresses public safety.
- Provides guidance.
- Is enforceable and measurable.
- Is based on independent use by persons with disabilities.
- Complies with the ABA, Section 504, and, to the greatest extent possible, current federal accessibility guidelines and standards.
- Integrates the Forest Service's universal design policy.

Wheelchair Dimensions and Reach Ranges

The FSORAG bases standards for construction and alteration on wheelchair dimensions and reach ranges in the ABAAS.

Section-by-Section Analysis

Section 1.0 Conditions for Departure

Sections 1 through 6 include scoping requirements and technical provisions for outdoor recreation areas. Other constructed features in outdoor developed

recreation areas not specifically addressed in the FSORAG shall comply with applicable requirements of the ABAAS. For example, where general parking is provided, F208, F216.5, and 502 of the ABAAS apply.

The FSORAG requires new and altered camping facilities, picnic areas, beach access routes, and outdoor recreation access routes (ORARs) in the National Forest System to comply with sections 1 through 6. Compliance with the FSORAG will not always result in facilities that are accessible to all persons with disabilities. At some locations, the natural environment will prevent compliance with some of the FSORAG's technical provisions.

Section 1.1 Applicability

Deviations are permitted from certain technical provisions of the FSORAG where one or more of four conditions for departure exist and an exception applies. Section 1.1 does not provide a blanket exemption from the technical provisions. Rather, each technical provision must be examined to determine whether a condition for departure exists and an exception applies that would permit deviation from that provision.

Section 1.1 authorizes deviation from specific technical provisions due to the presence of a site-specific condition. When that site-specific condition no longer exists, the technical provision reapplies. For example, in altering a campground, an ORAR to a camping unit may have to be located on steep ground. The terrain may make it difficult to meet the pertinent running slope provision without severe cuts or fills. A review of section 1.1 indicates that one of the conditions for departure exists and that a deviation from the running slope provision is permitted. However, all other provisions (including clear tread width, surface, and cross slope) still apply. In addition, all other constructed features, such as picnic tables and grills, are still required to meet applicable provisions in the FSORAG. Once the terrain flattens and the steep slope is no longer an issue, the deviation is no longer permitted and the technical provision for running slope must be met.

Allowing some deviation is essential, as the outdoor environment is very different from a constructed indoor environment. Factors that influence the ability to provide fully accessible facilities, such as soil, surrounding vegetation, hydrology, terrain, and surface characteristics, are fundamental to outdoor areas. Without deviations from the technical provisions, compliance could significantly and unacceptably alter the nature of the outdoor experience.

The following are the four conditions for departure that permit deviations from specific technical provisions where an exception applies.

1. **Where compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics.**

A significant natural feature may include a large rock, outcrop, tree, vegetation, or body of water that is regarded as distinctive or important locally, regionally, or nationally. Significant natural features also could include areas protected under federal or state laws, such as areas with threatened or endangered species or wetlands that could be threatened or destroyed by full compliance with the technical provisions, or areas where compliance would directly or indirectly substantially harm natural habitat or vegetation.

Significant cultural features include areas such as archaeological sites, sacred lands, burial grounds and cemeteries, and protected tribal sites. Significant historical features include properties listed or eligible for listing in the National Register of Historic Places or other places of recognized historic value. Significant religious features include sacred tribal sites and other properties held sacred by an organized religion.

If the significant feature would be directly or indirectly altered, destroyed, or otherwise negatively impacted by construction of the outdoor recreation facility or element in the process of providing accessibility, this condition for departure would apply. Where designers or managers deviate from one of the technical provisions, the other technical provisions of the FSORAG still apply.

When determining whether substantial harm would be incurred by the proposed change, consider only the specific additional impact of increasing the size, relocating the feature, or other change necessary to provide accessibility. This condition for departure does not apply where substantial impact will result from construction of non-accessible features and only a little more impact is due to construction directly related to accessibility.

For example, there may be concern about the number of trees of an uncommon species being removed to make way for an accessible camping unit. This condition for departure would not apply if 15 trees must be removed to make way for a non-accessible camping unit and only 3 more trees must be removed to provide an accessible camping unit. The majority of the proposed damage to the grove is not attributable to compliance with accessibility requirements. In this case, an alternate location should be selected for the camping unit.

2. Where compliance would substantially change the nature of the setting or the purpose or a portion of a facility or would not be consistent with the applicable land management plan.

Outdoor recreation areas such as picnic areas and campgrounds are designed for a certain purpose. In some areas, complying with the technical provisions in the FSORAG could change the nature of some recreation opportunities. Further, compliance could negatively impact the unique characteristics of the natural setting that prompt people to recreate in the outdoor environment. People using primitive camping areas, for example, often experience the outdoor environment

in a more natural state, with limited or no development. Use of manufactured building materials or engineered construction techniques in such a setting can change its primitive character and therefore the user's experience. In these settings, people generally are looking for a higher degree of challenge and risk where they can use their outdoor or survival skills. Compliance with the technical provisions of the FSORAG, particularly those related to surface and obstacles, could destroy the natural or undeveloped nature of the setting. This condition for departure addresses these concerns.

3. Where compliance would require construction methods or materials that are prohibited by federal, state, or local law.

For example, use of mechanized equipment is prohibited in wilderness areas. Construction methods are limited to hand tools in those areas. Imported materials may be prohibited to maintain the integrity of the natural setting. Construction methods and materials employed in wetlands or coastal areas are strictly limited. For traditional, historic, or other reasons, some ORARs are built using only the native soil for surfacing, which may not be firm and stable. Federal statutes such as the Wilderness Act and the Endangered Species Act and state and local laws often impose restrictions to address environmental concerns. Many aquatic features are protected under federal or state laws. Some constructed water crossings that are required to provide accessibility may not be permitted under certain laws or regulations.

Local law has been included in this condition for departure to address situations where conservation easements or local ordinances prohibit or restrict construction methods and practices. For example, where land is purchased from farms, certain use restrictions may prohibit importation of surfacing materials.

4. Where compliance would be impractical due to terrain or prevailing construction practices.

For example, when altering an ORAR, compliance with the FSORAG's technical provisions, particularly those pertaining to running slope in areas of steep terrain, may require extensive cuts or fills that would be difficult to construct and maintain or that could cause drainage and erosion problems. Certain soils are highly susceptible to erosion. Other soils expand and contract in accordance with their water content. If compliance with the FSORAG requires techniques that are incompatible with the natural drainage or existing soil, the ORAR will be difficult, if not impossible, to maintain. This condition for departure also may apply where construction methods for particularly difficult terrain or an obstacle require the use of equipment that is not typically used in that setting. One example is where a bulldozer is required to remove a rock outcropping, but access to that area by large equipment may not be possible without destroying the surrounding environment.

These conditions for departure are consistent with similar exceptions in the Reg Neg Committee's draft guidelines. Compliance with the provision requiring a firm

and stable surface might conflict with prevailing construction practices by mandating importation of surfacing material that would not otherwise have been used. For example, if prevailing construction practices do not involve importation of surfacing material and the natural surfacing material cannot be made firm and stable, it may be impossible to comply with the technical provision requiring a firm and stable surface.

The phrase "would be impractical" in this condition for departure refers to what is not reasonable, rather than to what is technically infeasible. This condition for departure applies when the effort and resources required to comply would be disproportionately high relative to the level of access established. Although compliance is technically feasible, the amount of effort and resources required is not reasonable.

This condition for departure is not intended to exempt an outdoor recreation area from the technical provisions of the FSORAG simply because of a particular construction practice (*e.g.*, the use of hand tools) or to encourage the use of a certain construction practice to avoid compliance when more expedient methods and resources are available.

Moreover, when the Forest Service is funding a project, the agency cannot use cost as the reason for not making the project accessible, unless the cost to make the project accessible would have a significant adverse impact on the agency's appropriations.

Regardless of the amount of money that is available to the agency, consistent with the principles of the FSORAG, the natural setting should not be changed to make a camping unit, ORAR, or other outdoor recreation area accessible. Thus, there is no requirement to use drastic measures to provide accessibility if doing so would unacceptably change the character of the setting and the recreation opportunity.

While the FSORAG addresses the special circumstances where designers and managers may not be able to achieve accessibility, they are always encouraged to provide access to the greatest extent possible.

Section 2.0 Outdoor Recreation Access Routes (ORARs)

Section 2.1 General

FS terminology change

In order to meet monitoring and federal reporting requirements, some changes have been made in Forest Service terminology. Previously, areas where constructed features were provided primarily for resource protection rather than visitor comfort and convenience were referred to as General Forest Areas

(GFAs). Areas where constructed features were provided to facilitate use, comfort and convenience by recreationists were referred to as developed recreation sites.

However, a new classification system has been implemented by the agency to better reflect the different types of recreation sites, as described in the Forest Service (FS) Recreation Site Development Scale Definitions (see Appendix). This system retains the essence of the GFA/Developed Recreation Sites but deletes specific reference to "GFA" and "Developed" by referring to all areas as "recreation sites".

FS Development Scale 0 recreation sites do not contain any constructed features, while constructed features in FS Development Scale 1 and 2 recreation sites are primarily for resource protection. Areas where features are provided to facilitate use, comfort and convenience by recreationists are rated from 3 – 5. For purposes of the Forest Service accessibility guidelines, the term General Forest Areas has been retained, however it is defined in accordance with the standard Forest Service terminology for recreation sites.

Regardless of the FS Recreation Site Development Scale, under the Forest Service's universal design policy, with few exceptions, all new or altered facilities and associated constructed features at recreation sites must comply with the technical provisions of the FSORAG.
ORARs are required at recreation sites with a FS Recreation Site Development Scale of 3 or higher. Constructed features in FS Development Scale 1 and 2 recreation sites are primarily for resource protection rather than visitor comfort and convenience.

ORAR Documentation

Often when managers leave their positions, they take with them the institutional knowledge and memory for a particular project. Therefore, documentation is being required for any construction or alteration of an ORAR in a developed recreation area if a decision is made that the ORAR cannot be made accessible.

If a determination is made that the ORAR can not meet the technical specification provisions due to one or more condition fro departure, a brief document must be drafted and retained in the project file enumerating the rationale for that determination, which conditions for departure and exceptions apply, the date of the determination, and the name of the individuals who made the determination.

There is no standard format for this documentation; each unit may develop its own format to meet its specific needs. The documentation need not be lengthy; one page should be sufficient. The documentation will show that applicability of

the FSORAG was considered at the onset of the project and that a good-faith effort was made to consider accessibility.

ORARs in GFAs

ORARs are not required in general forest areas (GFAs). GFAs are all National Forest System lands available for recreational use, other than wilderness areas, where the FS Recreation Site Development Scale is 2 or less.

In GFAs, paths connecting associated constructed features, as well as paths connecting them to a trail, must comply with section 7.0 of the FSTAG. These paths are not ORARs and are not required to meet the technical provisions for an ORAR in the FSORAG.

ORARs are not required in GFAs because the resulting construction would substantially alter the nature of the setting. While some constructed features (such as picnic tables and fire rings) may be provided in GFAs, these features are usually for resource protection rather than visitor comfort and convenience.

Constructed features in GFAs should be designed appropriately for the setting and should comply with the FSORAG to ensure that the facility can be used by a person with a disability. In GFAs, site modification for constructed features, if it occurs at all, generally should be limited to the minimum necessary for installation of the constructed features.

Section 2.4 Surface

The accessible surface of ORARs and the surface surrounding constructed features must be firm and stable. The FSORAG does not contain the slip resistance requirement in the accessible surface provisions of 302.1 of the ABAAS because slip resistance cannot be guaranteed in the outdoor environment. Weather conditions (rain, snow, and ice) will affect slip resistance. For example, natural or non-hardened surfaces may not be slip resistant. Slip resistance also may be difficult to control when leaves and other surface debris caused by natural erosion accumulate on a surface.

The means and materials used to establish accessible exterior surfaces are plentiful. Crushed stone, fines, packed soil, and other natural materials can provide a firm and stable surface. Natural materials bonded with synthetic materials can provide the required degree of stability and firmness. However, not all of these materials are suitable for every outdoor recreation area. An exception permits deviating from this provision where one or more conditions for departure in section 1.1 exist. For example, as stated in the fourth condition for departure, if the prevailing construction practices do not involve importation of surfacing material and the natural surfacing material cannot be made firm and stable, compliance with the firm and stable requirement may not be possible.

The terms "firm" and "stable" have been used in accessibility guidelines since the UFAS was issued in 1984. The terms have never been clearly defined, nor has there been a readily available means of technical measurement to determine what constitutes a firm and a stable surface. In the FSORAG, a firm surface is not noticeably distorted or compressed by the passage of a device that simulates a person using a wheelchair. In the FSORAG, a stable surface is not permanently affected by normally occurring weather conditions and is able to sustain normal wear and tear of the uses of the site between planned maintenance cycles. Surface firmness and stability should be determined and documented during the planning process for the primary seasons in which the surface will be used, under normally occurring weather conditions.

The purpose of ensuring the firmness and stability of a surface is to prevent mobility devices from sinking into the surface, thereby making it difficult for a person using crutches, a cane, a wheelchair, or other mobility device to move through the area with reasonable effort. The standard mobility device used in the Forest Service's accessibility guidelines is the wheelchair because its dimensions and multiple contacts points (two wheels and two casters) often make it difficult to accommodate. Thus, if a person using a wheelchair can utilize an area, most other people can also utilize that area.
To determine the wheelchair compatibility of a surface, that is, whether it is firm and stable enough to accommodate a person using a wheelchair, one should look at the surface and consider whether (1) a person riding a narrow-tired bicycle could cross the surface easily without the wheels sinking into or disturbing the surface; and (2) a heavy child in a folding umbrella stroller with small plastic wheels could be pushed across that surface without the small wheels sinking into or distorting the surface. The wheel configurations on these two devices are similar to the large rear tires and small front casters of the average wheelchair. While this method for determining firmness and stability is not scientifically accurate, it has proven to be effective.

In the late 1990s, the Access Board worked with Beneficial Designs of Minden, Nevada, to develop a scientific method for determining firm and stable exterior surfaces. The technical paper resulting from that work is available on the Access Board's website at www.access-board.gov/research&training/research.htm (under "Completed Research," select "Accessible Exterior Surfaces"). For further information, consult Beneficial Designs' website at http://www.beneficialdesigns.com/.

Section 2.8 Protruding Objects

Protruding objects extend into the clear width of an ORAR from beside or above it. Leaning tree trunks, rock ledges, and branches are common protruding objects. ORARs must comply with 307 of the ABAAS and provide at least 80 inches of headroom. Where the vertical clearance of an ORAR is reduced to less than 80 inches because one or more conditions for departure in section 1.1

exist, a barrier to warn blind and visually impaired persons must be provided. This exception allows an ORAR to pass under ledges or through other naturally constricted areas without changing the character of the setting or the recreation experience.

Section 4.0 Constructed Features in Picnic Areas

The Forest Service policy of universal design directs the agency to construct, purchase, and install only accessible constructed features (FSM 2330.5). For example, the terrain might preclude making an ORAR to a picnic table accessible because doing so would substantially alter the setting. However, an accessible picnic table must still be placed in that location. Individuals can then select the location where they want to picnic and are not limited by the location of accessible tables. All picnic tables, pedestal grills, and other picnic area elements that are purchased or constructed by the Forest Service must be accessible to meet the agency's universal design policy, with few exceptions.

Section 5.0 Constructed Features in Campgrounds

The Forest Service policy of universal design requires the agency to purchase and construct only accessible constructed features (FSM 2330.5). For example, in the alteration of an existing campground the terrain might preclude complying with the slope provisions for an ORAR to a camping unit because doing so would substantially alter the setting. However, all the elements of the camping unit must still comply with the FSORAG. Individuals can then select the location where they want to camp without being limited by the location of accessible constructed features, such as picnic tables and fire rings.

Section 5.1.6 Identification of Accessible Camping Units

If not all camping units at a campground are accessible and the camping units are not assigned upon arrival or through a reservation system, the accessible camping units must be identified at an entrance kiosk, on a bulletin board, or on a sign at the registration area. The accessible camping units should be assigned as needed to individuals with disabilities. Accessible camping units should be assigned to persons without disabilities only after non-accessible camping units are no longer available, thereby maximizing the availability of accessible camping units for persons with disabilities. The following type of statement is appropriate on the registration information sign: "Sites 2, 4, 6, and 10 are accessible. If no one in your group needs accessible facilities, please do not use these sites unless all other sites are filled."

Individual camping units should not be signed as accessible. Numerous complaints have been received from members of the public concerning this type of signage. Individuals with disabilities have stated that it tends to stigmatize them and make them more vulnerable to crime. Individuals who do not have

disabilities are uncomfortable using a camping unit that is designated for people with disabilities because they believe it may be illegal, like parking in an accessible parking space in a parking lot.

Section 5.2 Tent Pads and Tent Platforms

The dimensions of tent pads and tent platforms are not specified because the type of tent most commonly used at campgrounds varies widely. For example, at a campground located close to a wilderness area, small tents may be commonly used, whereas at another campground with numerous amenities for children, large, multi-room family tents may be used more often. Local campground managers are the best source of information concerning the tent size most commonly used in an area.

It is not unusual to find six or seven 5-foot-by-8-foot tents in one part of a GFA. Typically, the spaces allotted for these tents are approximately 10 feet by 12 feet. The size of an accessible tent pad would need to be increased to at least 13 feet by 16 feet to accommodate a 5-foot-by-8-foot tent. If all tent spaces were required to meet the FSORAG's technical provisions, a significant amount of additional excavation would be necessary. Because most facilities provided in GFAs are for resource protection rather than visitor comfort and convenience, the scoping for tents is reduced to minimize alteration of the setting, while integrating accessibility. Thus, only at least 5% of tent pads and tent platforms in GFAs are required to comply with section 5.2, in contrast to at least 20% at recreation sites.

The difference in scoping requirements between recreation sites, with a FS Recreation Site Development Scale of 3 or higher and GFAs where the FS Development Scale is 2 of less, reflects recent findings and recommendations from studies in recreation management regarding overnight site design. These studies are making recreation managers rethink how camping units in GFAs should be designed. Typically, areas of flat terrain are the most desirable for camping. However, as use increases, the area of impact continues to expand because the terrain does not discourage campers from using every square foot of flat land available. This expanded use results in extensive loss of vegetation, soil compaction, erosion, and a general degradation of the scenic resources and recreation setting. To minimize these impacts, some recreation managers are recommending that GFA camping units be built on side slopes that are too steep for pitching tents and provide level tent pads and tent platforms by cutting and filling the slope. This approach accommodates the need for camping units, while minimizing negative impacts on the environment by confining the use to smaller areas.

Section 5.3 Fire Rings

When one or more conditions for departure in section 1.1 exist, there is an exception to the requirement that the fire-building surface be at least 9 inches

above the ground or floor. For example, in the Boundary Waters Canoe Area Wilderness, campfire sites are made using a circle of rocks or other low-profile design appropriate to a wilderness setting. If the fire-building surface in a fire ring were required to be at least 9 inches above the ground or floor in that setting, the fire ring would require higher sides, which would result in a substantial adverse impact on the wilderness setting.

Section 5.3.3 Raised Edge

This provision limits the combined distance over a raised edge or curb down to the fire-building surface to 24 inches. This provision does not apply to the standard, commercially manufactured fire ring, such as those available from Pilot Rock and Iron Mt. Forge that tend to be used in most campgrounds. The material used to fabricate these fire rings is usually some type of metal that is not very thick or wide. The only requirement for this type of standard fire ring is that the fire-building surface be located at least 9 inches above the ground.

The raised edge provision in section 5.3.3 is intended primarily for a custom-built unit that would have a little wall around the fire-building area, perhaps built out of bricks or mortared stone. The distance over this edge down to the fire-building surface cannot exceed 24 inches under this technical provision. The measurement in this technical provision has nothing to do with the measurement from the top of the unit down to the ground, because someone in a wheelchair is not reaching down to the ground.

Section 5.5.2 Controls and Operating Mechanisms for Utilities

Controls and operating mechanisms for utilities must comply with the technical provisions in the ABAAS for clear floor or ground space (305); reach ranges (308); and operating controls (309). Section 309 of the ABAAS requires controls to be operable with one hand, without pinching, grasping, or twisting the wrist, with no more than 5 pounds of pressure. If a control mechanism can be operated with one closed fist, with no more than 5 pounds of pressure, it should be in compliance.

Currently there is an accessible hand pump available for wells with a static water level at 40 feet deep or less and the technology for hand pumps to access deeper well water levels is under development. This type of accessible hand pump should be used, when a new hand pump is installed, where it is technically adequate to access the water supply.

Section 6.1.3 Benches

903 of the ABAAS requires fixed or built-in benches in assembly areas to have a full back support or to be affixed to the wall. When more than one bench is

provided at an outdoor recreation area, with a FS Recreation Site Development Scale of 3 or higher, the FSORAG requires 50% of the benches to have back support. In addition, one armrest must be provided on at least 50% of the benches with back support. In determining where to place an armrest, designers should consider the visitors who will use the site where the bench will be located. An armrest is helpful for the growing number of people who have difficulty rising to a standing position from a seat. A bench with a backrest and one armrest in the middle or at one end accommodates both types of individuals. If provided at an end, the armrest should not be located at same end as the clear floor or ground space so as to not interfere with someone in a wheelchair transferring onto the bench.

Section 6.2.5 Controls and Operating Mechanisms for Trash, Recycling, and Other Essential Containers

Controls and operating mechanisms are required to comply with the technical provisions in the ABAAS for clear floor or ground space (305); reach ranges (308); and operating controls (309). Section 309 of the ABAAS requires controls to be operable with one hand, without pinching, grasping, or twisting the wrist, with no more than 5 pounds of pressure. If a control mechanism can be operated with one closed fist, with no more than 5 pounds of pressure, it should be in compliance.

Because of the need to provide animal control in the design of hinged lids and other operating controls for trash, recycling, food storage, and other essential containers that attract large animals, a force greater than 5 pounds is often required to access these containers. The FSORAG exempts hinged lids and controls on trash, recycling, and other essential containers from 309.4 of the ABAAS until hinged lids and controls that comply with that provision while meeting animal control requirements are readily available.

Section 6.6 Toilet Buildings at Recreation Sites

Designers should not confuse toilets at recreation sites, that have a FS FS Recreation Site Development Scale of 3 or higher, with pit toilets in GFAs.

Vault toilets, flush toilets, and composting toilets are all common at recreation sites with a FS Recreation Site Development Scale of 3 or higher. None of them are pit toilets, and all of them must meet the ABAAS requirements for toilet buildings. Regardless of their waste disposal system and design, toilet buildings that are located at such recreation sites and that have one riser must comply with the requirements for toilet and bathing rooms in 603 of the ABAAS. Toilet buildings that are located at developed recreation sites and that have multiple risers must comply with the requirements in 604 of the ABAAS. Designers should be careful not to confuse the requirements for toilet stalls with the requirements for single-riser toilet rooms. Each toilet building at such a

recreation site also must comply with the ABAAS requirements for grab bars, controls, and dispensers.

Section 6.7 Pit Toilets in General Forest Areas (GFAs)

In contrast to toilet buildings at recreation sites with a FS Recreation Site Development Scale of 3 or higher, pit toilets are primitive outhouses that are provided only in GFAs with a FS Development Scale of 2 of less. Like other constructed elements in GFAs, pit toilets are provided primarily for resource protection, rather than visitor comfort and convenience. Pit toilets may consist simply of a hole dug in the ground covered by a toilet riser. The pit toilet riser may or may not be surrounded by walls and may or may not have a roof. Pit toilets may be permanently installed or may be moved from one location to another as the pit is filled or the area becomes severely impacted from use. Waste in pit toilets may be disposed of directly into the pit or may be composted. Pit toilets in GFAs do not have to be connected to an ORAR.

The design of pit toilets varies widely depending on the setting, the amount of expected use, and the process used to manage the waste. An accessible pit toilet is not required to have walls, a floor, a door, or a roof. However, if a pit toilet has a riser and toilet seat, the total height of the seat and the riser must be 17 to 19 inches above the ground or floor. The riser should have vertical sides, a flat area on either side of the seat that is approximately 3 inches wide, and a seat cover that also functions as a back rest.

If the pit toilet has a constructed floor, per 304.3 of the ABAAS, it must accommodate, clear of obstructions, either a circular turning space 60 inches in diameter or a T-shaped turning space within a 60-inch square. If a door is provided, it must open out, slide, or otherwise not obstruct the clear floor or ground space in the pit toilet.

If the pit toilet has walls that will sustain 250 pounds of force, grab bars complying with 604.5 and 609 of the ABAAS must be mounted on the walls. Privacy screens that do not support 250 pounds of force may be used at pit toilets. However, for safety reasons, grab bars must not be mounted on these lightweight screens.

Effort should be made to locate a pit toilet entrance at ground level. Some pit toilets are designed to process waste, which requires the riser to be placed above the processing unit. For these toilets, use a slope that permits the entrance to remain at ground level. If the layout of the site requires the pit toilet floor to be located above the ground, a trail or ramp complying with section 7.3 of the FSTAG must be provided from the ground to the entrance.

If a trail or ramp is not feasible because one or more conditions for departure in section 1.1 exist, steps into the pit toilet may be provided, but only as a last

resort. If steps have to be used, specifications for steps similar to those used in accessible play areas are enumerated in the FSORAG. These steps can serve as transfer landings. The step treads must be at least 14 inches deep and 36 inches wide, and the step riser should be between 6 and 9 inches high. A level clear floor or ground space that is 30 inches by 48 inches must be provided along one side of the steps. One of the steps must fall between 17 and 19 inches above the clear floor or ground space. Single steps are hazards and should be avoided. Where steps are necessary, at least two steps, but preferably three, should be provided.

Forest Service Outdoor Recreation Accessibility Guidelines

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FOREST SERVICE

OUTDOOR RECREATION ACCESSIBILITY GUIDELINES (FSORAG)

Technical Provisions

1.0 APPLICABILITY

All new or altered camping facilities, picnic areas, beach access routes, outdoor recreation access routes (ORARs), and other constructed features associated with outdoor recreation areas in the National Forest System (including benches; trash, recycling, and other essential containers; viewing areas at overlooks; telescopes and periscopes; mobility device storage; pit toilets; warming huts; and outdoor rinsing showers) shall comply with the FSORAG.

Construction or alteration of all other outdoor recreation areas (such as toilet buildings and information centers) in the National Forest System shall comply with the applicable requirements of the Architectural Barriers Act Accessibility Standards (ABAAS).

The FSORAG does not apply to:
Trails in the National Forest System, which are covered by the Forest Service Trail Accessibility Guidelines (FSTAG) at www.fs.fed.us/recreation/programs/accessibility.

- Boating and fishing facilities, swimming pools, play areas, sports arenas, miniature golf courses, and amusement parks, which are referred to as "recreation facilities" in Chapter 10 of the ABAAS (www.access-board.gov).

1.1 Conditions for Departure. Deviations from the technical provisions in sections 1 through 6 are permitted only where one or more of the following conditions for departure exist and an exception applies. If no exception applies, no deviation is allowed. Deviations must be determined provision by provision. Once the circumstances that justify the deviation are no longer present, the technical provision must be met.

Condition for Departure 1. Where compliance would cause substantial harm to cultural, historic, religious, or natural features or characteristics.

Condition for Departure 2. Where compliance would substantially change the nature of the setting or the purpose or a portion of a facility or would not be consistent with the applicable land management plan.

Condition for Departure 3. Where compliance would require construction methods or materials that are prohibited by federal, state, or local law.

Condition for Departure 4. Where compliance would be impractical due to terrain or prevailing construction practices.

1.2 Definitions

Alteration of a recreation site, building, or facility. A change to a portion of a recreation site, building, or facility that is addressed by the accessibility guidelines and that affects the usability of the site, building, or facility.

Beach Access Route. A continuous, unobstructed path designed for pedestrian use that crosses the surface of a beach.

Camping Unit. A discrete area within a campground that is used for camping and that includes a camp living area and a parking spur.

- **Camp Living Area.** The area in a camping unit that contains constructed features (such as picnic tables, grills, fire rings, utilities, and other related elements) and that is located adjacent to or near a parking spur.

- **Parking Spur.** The space in a camping unit that is designed for vehicular access and parking and that includes a driveway and vehicle parking area.

    - **Driveway.** The section of a parking spur connecting the road accessing a campground and a vehicle parking area.

    - **Vehicle Parking Area.** The section of a parking spur where camping-vehicles (such as cars, vans, recreational vehicles, and trailers) are parked.

Clear Floor or Ground Space. The minimum unobstructed floor or ground space required to accommodate a single, stationary wheelchair and occupant.

Constructed Feature. A picnic table; a fire ring; a pedestal grill; a tent pad; a bench; a trash, recycling, or other essential container; a viewing area at an overlook; a telescope or periscope; mobility device storage; a pit toilet; a warming hut; an outdoor rinsing shower; or other constructed element associated with an outdoor recreation area.

Essential Container. A trash, recycling, food storage, or other animal-resistant container.

General Forest Areas (GFAs). For purposes of the FS guidelines, all National Forest System lands available for recreational use, other than wilderness areas, where the FS Recreation Site Development Scale is 2 or less. FS Development Scale 0 recreation sites do not contain any constructed features, while

constructed features in FS Development Scale 1 and 2 recreation sites are primarily for resource protection rather than visitor comfort and convenience.

Outdoor Recreation Access Route (ORAR). A continuous, unobstructed path designed for pedestrian use that connects constructed features in a picnic area or campground, at a trailhead or other recreation site where modifications are provided for visitor convenience and comfort.

Picnic Unit. A place in a picnic area that contains one or more constructed features (such as picnic tables, grills, and other related elements).

Pit Toilet. A primitive outhouse that is located in a GFA and is provided primarily for resource protection, rather than visitor comfort and convenience. A pit toilet may consist simply of a hole dug in the ground covered by a toilet riser. A pit toilet riser may or may not be surrounded by walls and may or may not have a roof. A pit toilet may be permanently installed or may be moved from one location to another as the pit is filled or the area becomes severely impacted from use. Waste may be disposed of directly into the pit or may be composted. A pit toilet is never appropriate at a recreation site with a FS Recreation Site Development Scale of 3 or higher. A pit toilet is not a vault toilet, flush toilet, or composting toilet, all of which are provided at recreation sites with FS Development Scales of 3 or higher. Those toilets must comply with the ABAAS.

Protruding Object. An object, such as a tree, branch, or rock ledge, that extends into the clear width of an ORAR from beside or above it.

Recreation Site. A discrete area on a Forest that provides recreation opportunities, receives use, and requires a management investment to operate and/or maintain to standard.

Scoping Requirement. Specification of where, when, and how much of an ORAR, a beach access route, a constructed feature in a picnic area or campground, or other constructed features must be accessible to comply with the FSORAG.

Slope

- **Cross Slope.** The percentage of rise to length when measuring the ORAR from edge to edge perpendicular to the direction of travel.

- **Running Slope.** The percentage of rise to length when measuring the ORAR parallel to the direction of travel.

Surface

- **Firm.** Not noticeably distorted or compressed by the passage of a device that simulates a person using a wheelchair. Surface firmness should be determined and documented during the planning process for the primary seasons in which the surface will be used, under normally occurring weather conditions.

- **Stable.** Not permanently affected by normally occurring weather conditions and able to sustain normal wear and tear of the uses of the area between planned maintenance cycles.

Technical Provision. Specification of the dimensions and characteristics of constructed features that are required to ensure accessibility.

Trail. For purposes of the FSTAG and FSORAG, a trail is a route that is designed, constructed, or designated for recreational pedestrian use or provided as a pedestrian alternative to vehicular routes within a transportation system. A trail is not an outdoor recreation access route (ORAR).

Trailhead. For purposes of the FSORAG and FSTAG, a trailhead is a site designed and developed by the Forest Service, a trail association, a trail maintaining club, a trail partner, or other cooperators to provide staging for trail use.

For purposes of the FSORAG and FSTAG, the following do not constitute a trailhead:

- Junctions between trails where there is no other access.

- Intersections where a trail crosses a road or users have developed an access point, but no improvements have been provided by the Forest Service, a trail association, a trail maintaining club, a trail partner, or other cooperators beyond minimal signage for public safety

Wheelchair. A device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion and that is suitable for use in an indoor pedestrian area. A person whose disability requires use of a wheelchair or mobility device may use a wheelchair or mobility device that meets this definition anywhere foot travel is permitted (Forest Service Manual 2353.05 and Title V, Section 507c, of the Americans With Disabilities Act).

2.0 OUTDOOR RECREATION ACCESS ROUTES (ORARs)

2.1 General. ORARs are required only at recreation sites where the FS Recreation Site Development Scale is 3 or higher.

ORARs are not required in GFAs. In GFAs, a path connecting associated constructed features as defined in the FSTAG and a path connecting them to a trail must comply with section 7.0 of the FSTAG. These paths are not ORARs and are not required to meet the technical provisions for an ORAR in the FSORAG.

ORARs are not required in GFAs because the resulting construction would substantially alter the nature of the setting. While some constructed features (such as picnic tables and fire rings) may be provided in GFAs, these constructed features are usually for resource protection rather than visitor comfort and convenience.

Constructed features in GFAs should be designed appropriately for the setting and should comply with the FSORAG to ensure that they can be used by a person with a disability. In GFAs, site modification for constructed features, if it occurs at all, generally should be limited to the minimum necessary for installation of the constructed features.

2.2 Slope. The slope of ORARs shall comply with sections 2.2.1 and 2.2.2.

2.2.1 Running Slope. The running slope of ORARs shall comply with all applicable provisions of this section. No more than 15% of the total length of an ORAR may exceed a slope of 1:12 (8.33%).

2.2.1.1. The running slope of an ORAR shall be 1:20 (5%) or less for any distance.

2.2.1.2. A running slope of up to 1:12 (8.33%) is permitted for up to 50 feet (15250 mm) of an ORAR. Resting intervals complying with section 2.3 shall be provided at distances of no more than 50 feet (15250 mm) apart.

> **Exception. For alteration only (not new construction)**, a running slope of up to 1:12 (8.33%) is permitted for up to 100 feet (30500 mm) of an ORAR where one or more conditions for departure in section 1.1 exist. Resting intervals complying with section 2.3 shall be provided at distances of no more than 100 feet (30500 mm) apart.

2.2.1.3. A running slope of up to 1:10 (10%) is permitted for up to 30 feet (9150 mm) of an ORAR. Resting intervals complying with section 2.3 shall be provided at distances of no more than 30 feet (9150 mm) apart.

> **Exception 1. For alteration only (not new construction),** a running slope of up to 1:10 (10%) is permitted for up to 50 feet (15250 mm) of an

ORAR where one or more conditions for departure in section 1.1 exist. Resting intervals complying with section 2.3 shall be provided at distances of no more than 50 feet (15250 mm) apart.

Exception 2. For alteration only (not new construction), where the running slope of an ORAR cannot comply with section 2.2.1.3 or exception 1 of that section because one or more conditions for departure in section 1.1 exist, section 2.2.1 does not apply.

2.2.2 Cross Slope. The cross slope of an ORAR shall be no more than 1:33 (3%).

2.3 Resting Intervals. Resting intervals shall be at least 60 inches (1525 mm) in length, shall have a width at least as wide as the widest portion of the ORAR leading to the resting intervals, and shall have a slope of no more than 1:33 (3%) in any direction.

2.4 Surface. The surface of an ORAR shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

2.5 Clear Tread Width. The clear tread width of an ORAR shall be at least 36 inches (915 mm).

Exception. The clear tread width of an ORAR shall be at least 32 inches (815 mm) for a maximum distance of 24 inches (610 mm) where one or more conditions for departure in section 1.1 exist.

2.6 Passing Spaces. Where the clear tread width of an ORAR is less than 60 inches (1525 mm), passing spaces shall be provided at intervals of up to 200 feet (61 m). Passing spaces shall be either at least 60 inches (1525 mm) by 60 inches (1525 mm) or an intersection of two walking surfaces that provide a T-shaped space complying with 304.3.2 of the ABAAS, provided that the arms and stem of the T-shaped space extend at least 48 inches (1220 mm) beyond the intersection. The cross slope of passing spaces shall not exceed 1:33 (3%) in any direction.

Exception. Passing spaces shall be provided at intervals of up to 300 feet (91 m) where one or more conditions for departure in section 1.1 exist.

2.7 Tread Obstacles. Where tread obstacles exist along an ORAR, they shall not exceed 1 inch (25 mm) in height.

Exception. Tread obstacles of up to 2 inches (50 mm) high are permitted where beveled, with a slope no greater than 1:2, where one or more conditions for departure in section 1.1 exist.

2.8 Protruding Objects. Protruding objects along ORARs shall comply with 307 of the ABAAS.

> **Exception.** Where vertical clearance of an ORAR is reduced to less than 80 inches (2030 mm) because one or more conditions for departure in section 1.1 exist, a barrier shall be provided to warn individuals who are blind or visually impaired.

2.9 Openings. Openings in the surface of ORARs shall be small enough to prevent passage of a 1/2-inch (13mm)-diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.

> **Exception.** Openings are permitted to run parallel to the dominant direction of travel, as long as the opening does not permit passage of a 1/4-inch (6.5 mm)-diameter sphere.

2.10 Edge Protection. Where edge protection is provided along an ORAR, it shall be at least 3 inches (75 mm) in height.

3.0 BEACH ACCESS ROUTES

3.1 General. Beach access routes shall be provided in accordance with section 3.0 and, to the extent feasible, shall intersect or be located close to the main path in an outdoor recreation area with a FS Recreation Site Development Scale of 3 or higher.

3.1.1 New Beaches. For new beaches, at least one beach access route complying with sections 3.2 through 3.10 shall be provided for every half mile of linear feet of new beach. The beach access route shall extend to the high tide level, mean river bed level, or normal recreation water level.

3.1.2 Existing Beaches. Beach access routes that are altered or that are constructed along the edge of an existing beach or from a recreation site to an existing beach shall comply with sections 3.2 through 3.10 and shall extend to the high tide level, mean river bed level, or normal recreation water level.

> **Exception 1.** A temporary beach access route is permitted.
>
> **Exception 2.** Routes that are created solely for shoreline maintenance do not have to comply with section 3.0.
>
> **Exception 3.** Routes provided solely as undeveloped public easements do not have to comply with section 3.0.

Exception 4. A beach access route shall not be required if another beach access route exists within a half mile of the outdoor recreation area.

Exception 5. When beaches are replenished, the alteration provisions of the FSORAG do not apply.

Exception 6. A beach access route is not required when a pedestrian route, boardwalk, or pathway along the length of the edge of an existing beach is elevated 18 inches (150 mm) or higher above the surface of the beach.

3.2 Slope. The slope of beach access routes shall comply with sections 3.2.1 and 3.2.2.

3.2.1 Running Slope. The running slope of beach access routes shall comply with this section. No more than 15% of the total length of an ORAR may exceed a slope of 1:12 (8.33%).

3.2.1.1. The running slope of beach access routes shall be no more than 1:20 (5%) for any distance.

3.2.1.2. A running slope of up to 1:12 (8.33%) is permitted for up to 50 feet (15250 mm) of a beach access route. Resting intervals complying with section 3.3 shall be provided at distances of no more than 50 feet (15250 mm) apart.

3.2.1.3. A running slope of up to 1:10 (10%) is permitted for up to 30 feet (9150 mm) of a beach access route. Resting intervals complying with section 3.3 shall be provided at distances of no more than 30 feet (9150 mm) apart.

3.2.2 Cross Slope. The cross slope of beach access routes shall be no more than 1:33 (3%).

3.3 Resting Intervals. Resting intervals shall be at least 60 inches (1525 mm) in length, shall have a width at least as wide as the widest portion of the ORAR leading to the resting intervals, and shall have a slope of no more than 1:33 (3%) in any direction.

3.4 Maneuvering Space. Maneuvering space shall be provided at the high tide level, mean river bed level, or normal recreation water level or at the end of a beach access route. Maneuvering space shall not overlap with a beach access route and shall be at least 60 inches (1525 mm) by 60 inches (1525 mm) or an intersection of two walking surfaces that provide a T-shaped space complying with 304.3.2 of the ABAAS, provided that the arms and stem of the T-shaped space extend at least 48 inches (1220 mm) beyond the intersection. The slope of the maneuvering space shall not exceed 1:33 (3%) in any direction.

3.5 Surface. The surface of a beach access route shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

3.6 Clear Tread Width. The clear tread width of a beach access route shall be at least 36 inches (915 mm).

> **Exception.** The clear tread width of an ORAR shall be at least 32 inches (815 mm) for a maximum distance of 24 inches (610 mm) where one or more conditions for departure in section 1.1 exist.

3.7 Passing Spaces. Where the clear tread width of a beach access route is less than 60 inches (1525 mm), passing spaces shall be provided at intervals of up to 200 feet (61 m). Passing spaces shall be at least 60 inches (1525 mm) by 60 inches (1525 mm) or an intersection of two walking surfaces that provide a T-shaped space complying with 304.3.2 of the ABAAS, provided that the arms and stem of the T-shaped space extend at least 48 inches (1220 mm) beyond the intersection. The cross slope of passing spaces shall not exceed 1:33 (3%) in any direction.

3.8 Obstacles. Obstacles in a beach access route shall not exceed 1 inch (25 mm) in height.

3.9 Protruding Objects. Protruding objects shall comply with 307 of the ABAAS.

> **Exception 1.** Where vertical clearance of a trail is reduced to less than 80 inches (2030 mm) because one or more conditions for departure in section 7.1.1 exist, a barrier shall be provided to warn individuals who are blind or visually impaired.
>
> **Exception 2.** Where exception 1 cannot be met because one or more conditions for departure in section 7.1.1 preclude 80 inches of headroom or installation of a warning barrier, section 7.3.7 does not apply.

3.10 Openings. Openings in the surface of a beach access route shall be small enough to prevent passage of a 1/2-inch (13mm)-diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.

> **Exception.** Elongated openings may run parallel to the dominant direction of travel, if they do not permit passage of a 1/4-inch (6.5 mm)-diameter sphere.

3.11 Edge Protection. If the drop-off from a beach access route to a beach is 6 inches (150 mm) or higher, the beach access route shall have curbs, walls,

railings, or projecting surfaces that prevent people from falling off the route. Where provided, edge protection shall be at least 2 inches (50 mm) high. If the drop-off is greater than 1 inch (25 mm) but less than 6 inches (150 mm), the edge shall be beveled, with a slope no greater than 1:2.

4.0 CONSTRUCTED FEATURES IN PICNIC AREAS

4.1 PICNIC UNITS

4.1.1 General. Site furnishings provided in picnic units shall comply with the applicable provisions of sections 4, 5, and 6. Where 2 or more picnic units are provided, at a recreation site with a FS Recreation Site Development Scale of 3 or higher, at least 20%, but never less than two, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for picnic units provided in GFAs.

4.2 PICNIC TABLES

4.2.1 General

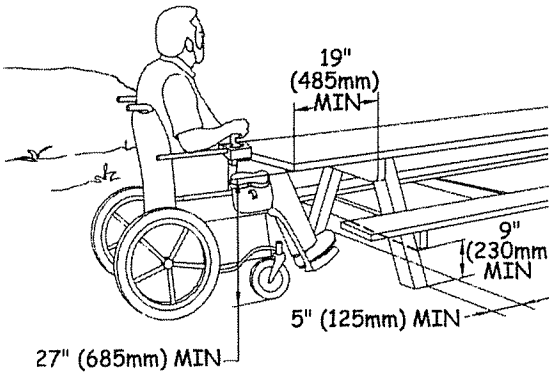
Where picnic tables are provided, each shall comply with section 4.2. At least 20% of the total number of tables provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for picnic tables provided in GFAs.

4.2.2 Number of Wheelchair Seating Spaces. A picnic table shall have at least one wheelchair seating space. The total number of wheelchair seating spaces required shall be determined in accordance with figure 4.2.2. Each wheelchair seating space shall comply with section 4.2.3.

Figure 4.2.2

Table Top Perimeter	Typical Table Length (with a width of 2 ft., 6 in.)	Number of Wheelchair Seating Spaces Required
Less than 25 linear ft.	Up to a 9-ft. table	1 spaces
25 to 44 linear ft.	10-, 12-, 16- or 18-ft. table	2 spaces
45 to 64 linear ft.	Typically custom-built table	3 spaces
65 to 84 linear ft.	Typically custom-built table	4 spaces
85 to 104 linear ft.	Typically custom-built table	5 spaces

4.2.3 Wheelchair Seating Space. Knee space for wheelchair seating shall be at least 27 inches (685 mm) high, 30 inches (760 mm) wide, and 19 inches (485 mm) deep. Toe clearance of at least 9 inches (230 mm) in height shall extend at least an additional 5 inches (125 mm) from the knee clearance. Clear floor or ground space that is at least 30 inches by 48 inches shall be provided at each seating space that is required to be accessible.



4.2.4 Clear Floor or Ground Space. At least 48 inches (1220 mm) of clear floor or ground space surrounding the usable portion of a picnic table, measured from the seat, shall be provided. This space shall not overlap the ORAR.

> **Exception.** The clear floor or ground space for a picnic table may be reduced to no less than 36 inches (915 mm) where one or more conditions for departure in section 1.1 exist.

4.2.5 Slope. The slope of the clear floor or ground space required by sections 4.2.3 and 4.2.4 shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) is permitted.

> **Exception.** Section 4.2.5 does not apply where one or more conditions for departure in section 1.1 exist.

4.2.6 Surface. The surface of the clear floor or ground space required by sections 4.2.3 and 4.2.4 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 4.2.6 does not apply where one or more conditions for departure in section 1.1 exist.

4.3 COOKING SURFACES, GRILLS, AND PEDESTAL GRILLS

4.3.1 General. Where cooking surfaces, grills, or pedestal grills are provided, each cooking surface, grill, or pedestal grill shall comply with section 4.3. At least 20% of the total number of cooking surfaces, grills, or pedestal grills provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for cooking surfaces, grills, or pedestal grills provided in GFAs.

4.3.2 Cooking Surface Height. The cooking surface shall be at least 15 inches (380 mm) and no more than 34 inches (865 mm) above the ground or floor surface.

> **Exception.** Section 4.3.2 does not apply to the height of cooking surfaces attached to fire rings.

4.3.3 Controls. Controls and operating mechanisms shall comply with 308 and 309.4 of the ABAAS.

4.3.4 Clear Floor or Ground Space. All usable portions of the cooking surface shall be provided with a clear floor or ground space that is at least 48 inches (1220 mm) in depth measured from the cooking surface and at least 48 inches (1220 mm) in width. This space shall not overlap the ORAR.

> **Exception.** The minimum depth may be reduced to no less than 36 inches (915 mm) where one or more conditions for departure in section 1.1 exist.

4.3.5 Slope. The slope of the clear floor or ground space required by section 4.3.4 shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) is permitted.

> **Exception.** Section 4.3.5 does not apply where one or more conditions for departure in section 1.1 exist.

4.3.6 Surface. The surface of the clear floor or ground space required by section 4.3.4 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 4.3.6 does not apply where one or more conditions for departure in section 1.1 exist.

5.0 CONSTRUCTED FEATURES IN CAMPGROUNDS

5.1 CAMPING UNITS AND PARKING

5.1.1 General. Where camping units are provided in a campground, section 5.0 shall apply to each camping unit. Camp living areas shall comply with sections 5.1.1, 5.1.2, and 5.1.3. Parking spurs shall comply with sections 5.1.1, 5.1.4, and 5.1.5.

5.1.2 Surface. The ground surface in all camp living areas shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

5.1.3 Camp Living Areas. All constructed features provided in a camp living area shall comply with applicable provisions in sections 4, 5, and 6.

5.1.3.1 Walk-In Camping. Where walk-in camping is provided, an ORAR connecting the camp living area to the parking spur shall be provided in accordance with section 2.0.

5.1.4 Vehicle Parking Areas Parking Spurs – General. Where a parking spur is adjacent or attached to a camp living area, the parking spur shall comply with sections 5.1.1, 5.1.4, 5.1.5, and 5.1.6.

Accessible vehicle parking areas parking spurs for recreational vehicles and trailers shall be provided in accordance with figure 5.1.

Figure 5.1

Number of Camping Units	Minimum Number of Accessible Vehicle Parking Areas of Parking Spurs for Recreational Vehicles and Trailers
1	1
2 to 25	2
26 to 50	3
51 to 75	4
76 to 100	5
101 to 150	7
151 to 200	8
201 to 300	10
301 to 400	12
401 to 500	13
501 to 1000	2 percent of total
1001 and over	20 plus 1 for each 100 over 1000

5.1.5 Parking Spurs. Parking spurs shall comply with applicable provisions of section 5.1.5.

5.1.5.1 Slope of Parking Spurs. The slope of parking spurs shall comply with applicable provisions of section 5.1.5.1.

5.1.5.1.1 Vehicle Parking Areas. The slope of vehicle parking areas shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) in any direction is permitted.

5.1.5.1.2 Running Slope of Driveways. The running slope of driveways shall be no more than 1:12 (8.33%) for no more than 50 feet (15250 mm).

> **Exception 1.** A running slope of up to 1:10 (10%) for driveways is permitted for up to 30 feet (9150 mm).
>
> **Exception 2. For alteration only, not new construction**, if exception 1 of section 5.1.5.1.2 cannot be met because one or more conditions for departure in section 1.1 exist, a running slope of no more than 1:10 (10%) is permitted for no more than 50 feet (15250 mm).

5.1.5.1.3 Cross Slope of Driveways. The cross slope of driveways shall not exceed 1:33 (3%).

> **Exception.** The cross slope of driveways may be no more than 1:20 (5%) where needed to ensure proper drainage or to transition from the running slope of a campground road.

5.1.5.2 Width of Vehicle Parking Areas. The width of vehicle parking areas shall comply with applicable provisions of section 5.1.5.2.

5.1.5.2.1 Vehicle Parking Areas of Parking Spurs . The width of vehicle parking areas shall be at least 16 feet (4880 mm).

> **Exception 1.** Where the width of a vehicle parking area cannot be at least 16 feet (4880 mm) because one or more conditions for departure in section 1.1 exist, the width of the parking vehicle area shall be at least 13 feet (4880 mm).
>
> **Exception 2.** Where the width of a vehicle parking area cannot be at least 13 feet (4880 mm) because one or more conditions for departure in section 1.1 exist, section 5.1.5.2.1 does not apply.

5.1.5.2.2 Vehicle Parking Areas of RV Parking Spurs. Vehicle parking areas in parking spurs that are required to be accessible under section 5.1.4 (Fig.5.1) for recreational vehicles and trailers shall be at least 20 feet (6100 mm) wide. The 20-foot width requirement does not apply to the driveway of a parking spur.

> **Exception.** Where a double camping unit is provided to accommodate two recreational vehicles or trailers side-by-side in a vehicle parking area in an accessible parking spur, the total width of the vehicle parking area may be reduced from 40 feet (12,200 mm) to 36 feet (10980 mm).

5.1.6 Identification of Accessible Camping Units. Accessible camping units shall be identified at an entrance kiosk, on a bulletin board, or on a sign at the registration area of a campground.

> **Exception 1.** Identification of accessible camping units is not required at campgrounds where all camping units are accessible.
>
> **Exception 2.** Identification of accessible camping units is not required where camping units are assigned upon arrival or through a reservation system.

5.2 TENT PADS AND TENT PLATFORMS

5.2.1 General. At least 20% of the tent pads and tent platforms provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall comply with section 5.2 and shall be connected to an ORAR complying with section 2.0.

5.2.1.1. At least 5% of the tent pads and tent platforms provided in a GFA shall comply with section 5.2. Connection to an ORAR is not required.

5.2.2 Clear Floor or Ground Space. Tent pads and tent platforms shall have clear floor or ground space surrounding the tent that is at least 48 inches (1220 mm) wide. This space shall not overlap the ORAR.

> **Exception.** The clear floor or ground space for tent pads and tent platforms may be reduced to no less than 36 inches (915 mm) where one or more conditions for departure in section 1.1 exist.

5.2.3 Slope. The slope of tent pads and tent platforms shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for tent pads and tent platforms is permitted.

5.2.4 Tent Pad Surface. Tent pads shall have a surface that is firm and stable and designed to allow use of tent stakes and other securing devices.

> **Exception.** Section 5.2.4 does not apply where one or more conditions for departure in section 1.1 exist.

5.2.5 Tent Platform Surface. The surface of tent platforms shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

5.2.6 Edge Protection. Where provided, edge protection for tent platforms shall be at least 3 inches (75 mm) high.

5.2.7 Connection. The surface of tent platforms shall be accessible by a ramp or transfer or directly from adjacent ground surface.

5.3 FIRE RINGS

5.3.1 General. Where fire rings are provided, each shall comply with section 5.3. Each fire ring provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for fire rings provided in GFAs.

5.3.2 Height of Fire-Building Surface. The fire-building surface within a fire ring shall be at least 9 inches (230 mm) above the ground or floor.

> **Exception.** Section 5.3.2 does not apply in GFAs where one or more conditions for departure in section 1.1 exist.

5.3.3 Raised Edge. In custom-built fire rings with a raised edge, the combined distance over the edge down to the fire-building surface shall be no more than 24 inches (610 mm).

5.3.4 Clear Floor or Ground Space. All usable portions of a fire ring shall have clear floor or ground space extending at least 48 inches (1220 mm) deep from the fire ring and at least 48 inches (1220 mm) wide. This space shall not overlap the ORAR.

> **Exception.** The minimum clear floor or ground space for fire rings may be reduced to no less than 36 inches (915 mm) where one or more conditions for departure in section 1.1 exist.

5.3.5 Slope. The slope of the clear floor or ground space for fire rings shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear floor or ground space for fire rings is permitted.
>
> **Exception.** Section 5.3.5 does not apply where one or more conditions for departure in section 1.1 exist.

5.3.6 Surface. The surface of the clear floor or ground space for fire rings shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 5.3.6 does not apply where one or more conditions for departure in section 1.1 exist.

5.4 WOOD STOVES AND FIREPLACES

5.4.1 General. Where fireplaces and wood stoves are provided, each shall comply with section 5.4. Each fireplace and wood stove provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for wood stoves and fireplaces provided in GFAs.

5.4.2 Clear Floor or Ground Space. All usable portions of a wood stove or fireplace shall have clear floor or ground space extending at least 48 inches (1220 mm) deep from the wood stove or fireplace and at least 48 inches (1220 mm) wide. This space shall not overlap the ORAR.

> **Exception.** The minimum depth for wood stoves and fireplaces may be reduced to no less than 36 inches (915 mm) where one or more conditions for departure in section 1.1 exist.

5.4.3 Slope. The slope of the clear floor or ground space for wood stoves and fireplaces shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear floor or ground space for wood stoves and fireplaces is permitted.
>
> **Exception.** Section 5.4.3 does not apply where one or more conditions for departure in section 1.1 exist.

5.4.4 Surface. The surface of the clear floor or ground space for wood stoves and fireplaces shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

Exception. Section 5.4.4 does not apply where one or more conditions for departure in section 1.1 exist.

5.4.5 Controls. Controls shall comply with 308 and 309.4 of the ABAAS.

5.5 UTILITIES

5.5.1 General. Electric, water, sewage, and other types of utilities shall comply with section 5.5.

5.5.2 Controls and Operating Mechanisms. Controls and operating mechanisms shall comply with 308 and 309.4 of the ABAAS.

Exception. 308 and 309.4 of the ABAAS do not apply to sewage hookups or to handpumps, if there is no readily available model to meet the specifications of the well.

5.5.3 Clear Floor or Ground Space. Clear floor or ground space that complies with 305.3 of the ABAAS and is positioned for a forward or parallel approach shall be provided around all usable sides of utilities. The clear floor or ground space for utilities may overlap adjacent clear floor or ground spaces.

5.5.4 Fixed Water Spouts. Fixed water spouts shall be located at least 28 inches (710 mm) and no more than 36 inches (915 mm) above the ground or floor and shall be on the perimeter of at least 60 inches (1525 mm) by 60 inches (1525 mm) of clear floor or ground space.

5.5.5 Slope. The slope of the clear floor or ground space required by sections 5.5.3 and 5.5.4 shall not exceed 1:50 (2%) in any direction.

Exception. Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear floor or ground space required by sections 5.5.3 and 5.5.4 is permitted.

5.5.6 Surface. The surface of the clear floor or ground space required by sections 5.5.3 and 5.5.4 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

5.6 UTILITY SINKS

5.6.1 General. Where utility sinks are provided, at least 5%, and at least one of each type of sink provided in each accessible room or space, shall comply with section 5.6 and shall be connected to an ORAR complying with section 2.0.

5.6.2 Clear Floor or Ground Space. Clear floor or ground space for utility sinks that complies with 305.3 of the ABAAS for a forward or parallel approach shall be provided. This space shall not overlap the ORAR.

5.6.3 Slope. The slope of the clear floor or ground space for utility sinks shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear floor or ground space for utility sinks is permitted.

5.6.4 Surface. The surface of the clear floor or ground space for utility sinks shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

5.6.5 Height. The counter or rim shall be no more than 34 inches (865 mm) above the ground or floor.

5.6.6 Depth. The bottom of the bowl shall be at least 15 inches (380 mm) above the ground or floor.

5.6.7 Controls. Controls and operating mechanisms shall comply with 308 and 309.4 of the ABAAS.

6.0 OTHER CONSTRUCTED FEATURES

6.1 BENCHES

6.1.1 General. Where benches are provided, each shall comply with section 6.1. At least 20% of the benches provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0. Connection to an ORAR is not required for benches provided in a GFA.

> **Exception.** Section 6.1.1 does not apply to built-in benches provided in assembly areas. These benches are covered by F221.2.1.1, F221.2.2, and 903 of the ABAAS.

6.1.2 Height. The front edge of the seat of a bench shall be at least 17 inches (430 mm) and no more than 19 inches (485 mm) above the ground or floor.

6.1.3 Backrest and Armrest. When more than one bench is provided, at least 50% of the benches shall have a backrest running the full length of the bench. In addition, one armrest shall be provided at an end or in the middle of at least 50% of the benches with backrests. The structural strength of backs, armrests, and

mounting devices shall comply with 903.6 of the ABAAS, which states: "Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device or supporting structure."

6.1.4 Clear Floor or Ground Space. At least one clear floor or ground space for benches that complies with 305.3 of the ABAAS for a forward or parallel approach shall be provided. This space shall not overlap with the ORAR .

6.1.5 Slope. The slope of the clear floor or ground space for benches shall not exceed 1:33 (3%) in any direction.

> **Exception.** Section 6.1.5 does not apply where one or more conditions for departure in section 1.1 exist.

6.1.6 Surface. The surface of the clear floor or ground space for benches shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 6.1.6 does not apply where one or more conditions for departure in section 1.1 exist.

6.2 TRASH, RECYCLING, AND OTHER ESSENTIAL CONTAINERS

6.2.1 General. Where trash, recycling, and other essential containers are provided, each shall comply with section 6.2.1. Each trash, recycling or other essential container provided at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be connected to an ORAR complying with section 2.0.

Connection to an ORAR is not required for trash, recycling, and other essential containers provided in a GFA.

> **Exception.** Fifty percent of the bins in multi-bin containers are exempt from section 6.2.1.

6.2.2 Clear Floor or Ground Space. Clear floor or ground space for trash, recycling, and other essential containers that complies with 305.3 of the ABAAS and is positioned for a forward or parallel approach shall be provided. This space shall not overlap the ORAR.

6.2.3 Slope. The slope of the clear floor or ground space for trash, recycling, and other essential containers shall not exceed 1:50 (2%) in any direction.

> **Exception.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear

floor or ground space for trash, recycling, and other essential containers is permitted.

6.2.4 Surface. The surface of the clear floor or ground space for trash, recycling, and other essential containers shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

6.2.5 Controls and Operating Mechanisms. Controls and operating mechanisms shall comply with 308 and 309.4 of the ABAAS.

> **Exception.** The requirements of 309.4 of the ABAAS do not apply to hinged lids and controls on trash, recycling, and other essential containers until hinged lids and or other controls that comply with 309.4 of the ABAAS while meeting animal control requirements are readily available.

6.3 VIEWING AREAS AT OVERLOOKS

6.3.1 General. Where viewing areas at overlooks are provided, each shall comply with section 6.3. Each viewing area at overlooks at a recreation site, with a FS Recreation Site Development Scale of 3 or higher, shall be located along an ORAR complying with section 2.0.

> **Exception 1.** Where multiple viewing areas at overlooks are provided, at least one of each viewing opportunity for distinct points of interest shall be accessible.
>
> **Exception 2.** Section 6.3.1 does not apply where one or more conditions for departure in section 1.1 exist.

6.3.2 Unrestricted Viewing Opportunities. Each viewing area that is required to be accessible by section 6.3.1 shall provide at least one unrestricted viewing opportunity that accommodates eye levels between 32 inches (815 mm) minimum and 51 inches (1295 mm) maximum above the ground or floor.

> **Exception.** Section 6.3.2 does not apply where one or more conditions for departure in section 1.1 exist.

6.3.3 Maneuvering Space. Each viewing area that is required to be accessible by section 6.3.1 shall have at least one maneuvering space that complies with 304.3 of the ABAAS.

6.3.4 Slope. The maneuvering space required by section 6.3.3 shall have a slope of no more than 1:50 (2%) in any direction.

Exception. Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the maneuvering space required by section 6.3.3 is permitted.

Exception. Section 6.3.4 does not apply where one or more conditions for departure in section 1.1 exist.

6.3.5 Surface. The surface of maneuvering space required by section 6.3.3 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

Exception. Section 6.3.5 does not apply where one or more conditions for departure in section 1.1 exist.

6.4 TELESCOPES AND PERISCOPES

6.4.1 General. Where telescopes or periscopes are provided, at least 20% but no less than 1 shall comply with section 6.4. Where only one telescope or periscope is provided, it shall comply with section 6.4 and shall also be usable from the standing position. Telescopes and periscopes required to comply with section 6.4.1 shall be connected to an ORAR complying with section 2.0.

6.4.2 Controls. Controls and operating mechanisms for telescopes and periscopes shall comply with 308 and 309.4 of the ABAAS.

6.4.3 Eye Piece. The eye piece shall be usable from the seated position for viewing each point of interest.

6.4.4 Maneuvering Space. Each viewing area required to be accessible by section 6.3.1 shall have at least one maneuvering space that complies with 304.3 of the ABAAS.

6.4.5 Slope. The slope of the maneuvering space required by section 6.4.4 shall not exceed 1:50 (2%) in any direction.

Exception. Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than1:33 (3%) is permitted.

6.4.6 Surface. The surface of the maneuvering space required by section 6.4.4 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

6.5 MOBILITY DEVICE STORAGE

6.5.1 General. Where storage facilities are provided for mobility devices (such as wheelchairs), each shall comply with section 6.5 and shall be connected to an

ORAR complying with section 2.0.

6.5.2 Size. Mobility device storage facilities shall be at least 38 inches (965 mm) high, at least 28 inches (710 mm) wide, and at least 40 inches (1015 mm) long.

6.5.3 Clear Floor or Ground Space. Clear floor or ground space for mobility device storage facilities shall comply with 305.3 of the ABAAS.

6.5.4 Slope. The slope of the clear floor or ground space for mobility device storage facilities shall not exceed 1:33 (3%) in any direction.

6.5.5 Surface. The surface of the clear floor or ground space for mobility device storage facilities shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 6.5.5 does not apply where one or more conditions for departure in section 1.1 exist.

6.5.6 Controls and Operating Mechanisms. Controls and operating mechanisms for mobility device storage facilities shall comply with 308 and 309.4 of the ABAAS.

6.6 TOILET BUILDINGS AT RECREATION SITES

6.6.1 General. At recreation sites, with a FS Recreation Site Development Scale of 3 or higher, toilet buildings with one riser shall comply with 603, 604.5, 604.6, and 604.7 of the ABAAS. Toilet buildings with multiple risers shall comply with 604 of the ABAAS.

6.7 PIT TOILETS IN GENERAL FOREST AREAS (GFAs)

6.7.1 General. All pit toilets provided in GFAs, with a FS Recreation Site Development Scale of 2 or less, shall comply with section 6.7.

6.7.2 Height. The total height of the toilet seat and the riser for a pit toilet shall be between 17 to 19 inches above the ground or floor.

6.7.3 Clear Floor or Ground Space in Pit Toilets Enclosed by Walls. In pit toilets with 4 walls or privacy screens, a clear floor or ground space of 60 inches (1525 mm) by 56 inches (1420 mm) that complies with 604.3.1 of the ABAAS shall be provided. Turning space that complies with 304.3 of the ABAAS must also be provided. The space must be either 60 inches (1525 mm) in diameter or a 60 inch x 60 inch (1525 mm x 1525mm) "T" shape with minimum 36 inch (915mm) wide arms and base. Portions of this turning space may overlap the interior clear floor or ground space or be located directly outside the entrance.

The center line of the toilet riser shall be 16 to 18 inches from the back wall, and the back of the riser shall be flush with a sidewall.

> **Exception.** The clear floor or ground space required by 604.3.1 of the ABAAS may be reduced to 56 inches (1420 mm) by 48 inches (1220 mm) where one or more conditions for departure in section 1.1 exist.

6.7.4 Doorways. Doorways of pit toilets shall have a clear width of at least 32 inches (815 mm) to comply with 308 and 404.2.7 of the ABAAS. If a door is provided, it shall open out, slide, or otherwise not obstruct the clear floor or ground space inside a pit toilet. To comply with 404.2.7 of the ABAAS, any door hardware provided shall be operable with one hand, without pinching, grasping, or twisting the wrist, with no more than 5 pounds of pressure.

6.7.5 Grab Bars. If a pit toilet has walls that can withstand 250 pounds of force, grab bars complying with 604.5 and 609 of the ABAAS shall be provided. Grab bars shall not be installed in a pit toilet with lightweight privacy screens.

6.7.6 Clear Floor or Ground Space in Pit Toilets That Are Not Enclosed by Walls. In pit toilets with fewer than 4 walls or privacy screens, a clear floor or ground space of 60 inches (1525 mm) by 56 inches (1420 mm) that complies with 604.3.1 of the ABAAS shall be provided.

> **Exception.** The clear floor or ground space required by 604.3.1 of the ABAAS may be reduced to 56 inches (1420 mm) by 48 inches (1220 mm) where one or more conditions for departure in section 1.1 exist.

6.7.7 Slope. The slope of the clear floor or ground space required by sections 6.7.3, 6.7.6, and 6.7.9 shall not exceed 1:50 (2%) in any direction.

> **Exception 1.** Where surface conditions require a slope greater than 1:50 (2%) for proper drainage, a slope of no more than 1:33 (3%) for the clear floor or ground space required by sections 6.7.3, 6.7.6, and 6.7.9 is permitted.
>
> **Exception 2.** Section 6.7.7 does not apply where one or more conditions for departure in section 1.1 exist.

6.7.8 Surface. The surface of the clear floor or ground space required by section 6.7.3, 6.7.6, and 6.7.9 shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

> **Exception.** Section 6.7.8 does not apply where one or more conditions for departure in section 1.1 exist.

6.7.9 Entrance. The entrance to a pit toilet should be at ground level.

Exception 1. If the floor of a pit toilet has to be located above the ground because of operation and maintenance requirements for the pit toilet, a trail shall be provided from the ground to the entrance. The trail shall comply with section 7.3 of the FSTAG.

Exception 2. Where the floor of a pit toilet is located above the ground and a trail from the ground to the entrance is not feasible because one or more conditions for departure in section 1.1 exist, steps may be provided. The steps that lead up to the toilet building shall comply with the following:

(1) Step Tread. The step tread shall be at least 14 inches (355 mm) deep and at least 36 inches (610 mm) wide.

(2) Step Riser. The step riser shall be no more than 9 inches (205 mm) high and shall be uniform for all connected steps. Where multiple steps are required, one step shall be at least 17 inches (430 mm) but no more than 19 inches (485 mm) above the ground, so that the step can function as a transfer platform.

(3) Clear Floor or Ground Space. To comply with 305.3 of the ABAAS, clear floor or ground space of at least 30 inches (760 mm) by 48 inches (1220 mm) shall be provided adjacent to one unobstructed side of the steps and shall be positioned so that a person in a wheelchair can transfer onto a step that is at least 17 inches (430 mm) but no more than 19 inches (485 mm) above the clear floor or ground space.

6.8 WARMING HUTS

6.8.1 General. Each warming hut shall comply with applicable provisions in sections 1 through 5, shall contain a turning space complying with 304 of the ABAAS, and shall be connected by an ORAR complying with section 2.0. Connection to an ORAR is not required for warming huts provided in GFAs.

6.9 OUTDOOR RINSING SHOWERS

6.9.1 General. Where outdoor rinsing showers are provided, at least one shall be a low shower complying with sections 6.9.2 and 6.9.4 through 6.9.7, and at least one shall be a high shower complying with sections 6.9.3 and 6.9.4 through 6.9.7. Where only one outdoor rinsing shower is provided, it shall comply with sections 6.9.2, 6.9.3, and 6.9.4 through 6.9.7. Outdoor rinsing showers that are required to comply with section 6.9 shall be connected to an ORAR complying with section 2.0.

6.9.2 Low Outdoor Rinsing Showers

6.9.2.1 Height. A fixed showerhead on a low outdoor rinsing shower shall be located at least 48 inches (1220 mm) but no more than 54 inches (1370 mm) above the ground or floor.

> **Exception.** A hand-held shower spray unit complying with 608.6 of the ABAAS is permitted.

6.9.2.2 Grab Bars. Grab bars complying with 609 of the ABAAS shall be provided for low outdoor rinsing showers and shall be mounted to withstand 250 pounds of force. In addition, at least one grab bar shall comply with section 6.9.2.3, 6.9.2.4, or 6.9.2.5.

6.9.2.3 Vertical Grab Bar. Where the shower head for a low outdoor rinsing shower is mounted on a post and a vertical grab bar is provided, the grab bar shall be installed under the shower head no more than 33 inches (840 mm) above the floor and shall extend at least to within 3 inches (75 mm) of the shower head.

6.9.2.4 Circular Grab Bar. Where the shower head for a low outdoor rinsing shower is mounted on a post and a circular grab bar is provided, the grab bar shall be installed under the shower head at least 33 inches (840 mm) but no more than 36 inches (915 mm) above the floor.

6.9.2.5 Horizontal Grab Bar. Where a horizontal grab bar is provided for a low outdoor rinsing shower, the grab bar shall extend at least 18 inches (455 mm) in both directions from the center line of the shower head and shall be installed under the shower head at least 33 inches (840 mm) but no more than 36 inches (915 mm) above the floor.

6.9.3 High Outdoor Rinsing Showers

6.9.3.1 Height. A fixed shower head on a high outdoor rinsing shower shall be located at least 72 inches (1830 mm) above the ground or floor.

> **Exception.** A hand-held shower spray unit complying with 608.6 of the ABAAS is permitted.

6.9.3.2 Grab Bars. Grab bars complying with 609 of the ABAAS shall be provided for high outdoor rinsing showers and shall be mounted to withstand 250 pounds of force. In addition, at least one grab bar shall comply with section 6.9.3.3, 6.9.3.4, or 6.9.3.5.

6.9.3.3 Vertical Grab Bar. Where the shower head for a high outdoor rinsing shower is mounted on a post and a vertical grab bar is provided, the grab bar

shall be installed under the shower head no more than 33 inches (840 mm) above the floor and shall extend at least to within 3 inches (75 mm) of the shower head.

6.9.3.4 Circular Grab Bar. Where the shower head for a high outdoor rinsing shower is mounted on a post and a circular grab bar is provided, the grab bar shall be installed under the shower head at least 33 inches (840 mm) but no more than 36 inches (915 mm) above the floor.

6.9.3.5 Horizontal Grab Bar. Where a horizontal grab bar is provided for a high outdoor rinsing shower, the grab bar shall extend at least 18 inches (455 mm) in both directions from the center line of the shower head and shall be installed under the shower head at least 33 inches (840 mm) but no more than 36 inches (915 mm) above the floor.

6.9.4 Controls. Controls for outdoor rinsing showers shall comply with 308 and 309.4 of the ABAAS. If self-closing controls are used, the controls shall remain open for at least 10 seconds.

6.9.5 Clear Floor or Ground Space. A clear floor or ground space of at least 60 inches (1525 mm) in diameter shall be provided for outdoor rinsing showers and shall be located so that the water from the shower head is directed toward the center of the clear floor or ground space.

6.9.6 Slope. The slope of the clear floor or ground space for outdoor rinsing showers shall not exceed 1:33 (3%) in any direction.

6.9.7 Surface. The surface of the clear floor or ground space for outdoor rinsing showers shall be firm and stable. The type of surface should be appropriate to the setting and level of development.

6.10 Use of the International Symbol of Accessibility (ISA) and Other Signs

6.10.1 General. Per F216 of the ABAAS, the ISA shall be posted at the following six locations:

- Accessible parking spaces in parking lots where there are 5 or more designated parking spaces, including accessible parking spaces.
- Accessible loading zones.
- Accessible restrooms and bathing facilities.
- If the main entrance to a building is not accessible, in the vicinity of the closest accessible entrance.

- Accessible means of egress out of a building.

- Accessible areas of refuge inside multi-story buildings.

In addition, the ISA may be posted at the entrance to recreation areas, with a FS Recreation Site Development Scale of 3 or higher, but only where all constructed features of the recreation area comply with applicable provisions of the ABAAS or FSORAG. The ISA shall not be posted at accessible camping units or other accessible constructed features.

6.10.2 Color of the ISA. Per 703.7 of the ABAAS, the ISA shall be posted in high-contrast colors. The ISA is not required to be blue and white when posted on federal lands. To be enforceable at accessible parking spaces, the ISA must comply with Manual on Uniform Traffic Control Devices (MUTCD) 2B.35, which requires the ISA to be displayed in blue and white. Pavement markings designating accessible parking spaces must be blue, per MUTCD 3A.05.

6.10.3 Signs in General. If materials need to be obtained from or manipulated on a sign or kiosk, the sign or kiosk shall be designed to meet the reach ranges in 308 of the ABAAS.

APPENDIX

FOREST SERVICE RECREATION SITE DEVELOPMENT SCALE DEFINITIONS

Developmen Scale	Modification Definition
0	**No site modification** o No constructed features evident at the site.
1	**Almost no site modification.** o Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. o Use of synthetic materials excluded. o Minimum controls are subtle. o No obvious regimentation. o Primary access usually over primitive roads o Spacing informal and extended to minimize contacts between users.
2	**Minimal site modification.** o Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. o Use of synthetic materials avoided. o Minimum controls are subtle. o Little obvious regimentation. o Spacing informal and extended to minimize contacts between users. o Primary access usually over primitive roads. o Interpretive services informal, almost subliminal.
3	**Moderate site modification.** o Facilities about equal for protection of natural site and comfort of users. o Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. o Roads may be hard surfaced and trails formalized. o Development density about 3 family units per acre. o Primary access may be over high standard roads. o Interpretive services informal if offered, but generally direct.
4	**Heavy site modification.** o Some facilities designed strictly for comfort and convenience of users. o Luxury facilities not provided. o Facility design may incorporate synthetic materials. o Extensive use of artificial surfacing of roads and trails. o Vehicular traffic control usually obvious. o Primary access usually over paved roads. o Development density 3-5 family units per acre. o Plant materials usually native. o Interpretive services, if offered, often formal or structured.
5	**Extensive site modification.** o Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. o Synthetic materials commonly used. o Formal walks or surfaced trails. o Regimentation of users is obvious. o Access usually by high-speed highways. o Development density 5 or more family units per acre. o Plant materials may be non-native. o Formal interpretive services usually available. o Designs formalized and architecture may be contemporary. o Mowed lawns and clipped shrubs not unusual.

http://www.fs.fed.us/r3/measures/Cost/Infra_RS.htm

APPENDIX

Provisions of the Architectural Barriers Act Accessibility Guidelines that are referenced in the FSORAG Technical Provisions

The Architectural Barriers Act Accessibility Guidelines are contained in the ABA chapters 1 and 2 and 3 through 10 of the Americans with Disabilities Act / Architectural Barriers Act Accessibility Guidelines. (www.access-board.gov).

F221.2.1.1 - Assembly Areas

(a) In places of assembly with fixed seating accessible wheelchair locations shall comply with 802 of the Architectural Barriers Act Accessibility Guidelines and shall be provided consistent with the following table:

F221.2.1.1 Number of Wheelchair Spaces in Assembly Areas

Number of Seats	Minimum Number of Required Wheelchair Spaces
4 to 25	1
26 to 50	2
51 to 150	4
151 to 300	5
301 to 500	6
501 to 5000	6, plus 1 for each 150, or fraction thereof, between 501 through 5000
5001 and over	36, plus 1 for each 200, or fraction thereof, over 5000

F221.2.2 - Integration

Wheelchair spaces shall be an integral part of the seating plan.

304 - Turning Space

304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

Advisory 304.2 Floor or Ground Surface Exception. As used in this section, the phrase "changes in level" refers to surfaces with slopes and to surfaces with abrupt rise exceeding that permitted in Section 303.3. Such changes in level are prohibited in required clear floor and ground spaces, turning spaces, and in similar spaces where people using wheelchairs and other mobility devices must park their mobility aids such as in wheelchair spaces, or maneuver to use elements such as at doors, fixtures, and telephones. The exception permits slopes not steeper than 1:48.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

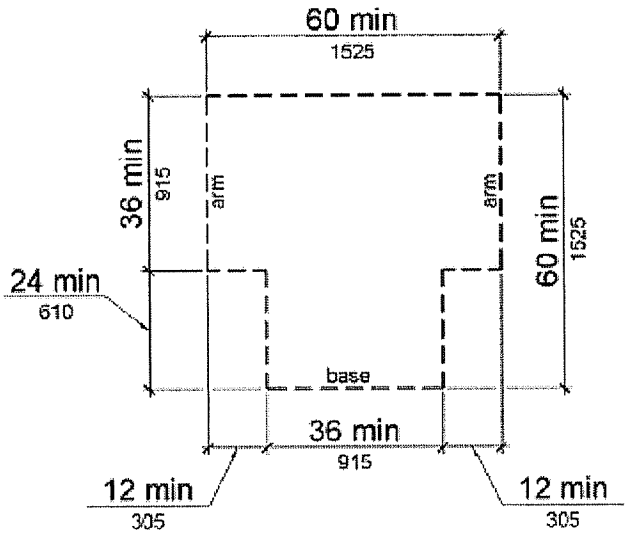


Figure 304.3.2 T-Shaped Turning Space

305 - Clear Floor or Ground Space for Wheelchairs.

305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

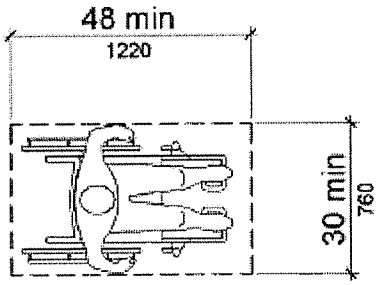


Figure 305.3 Clear Floor or Ground Space

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

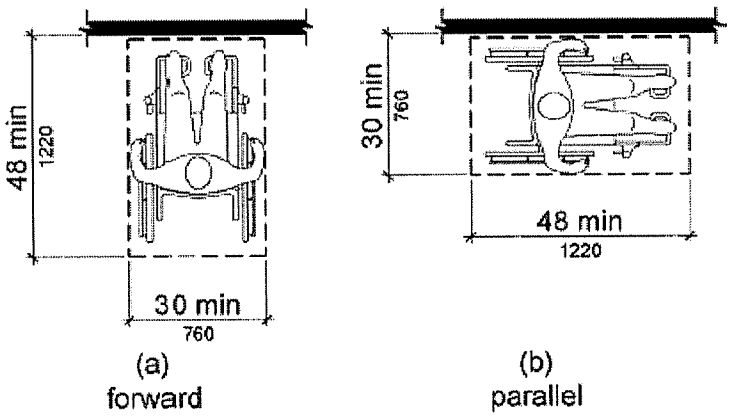


Figure 305.5 Position of Clear Floor or Ground Space

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm)wide minimum where the depth exceeds 24 inches (610 mm).

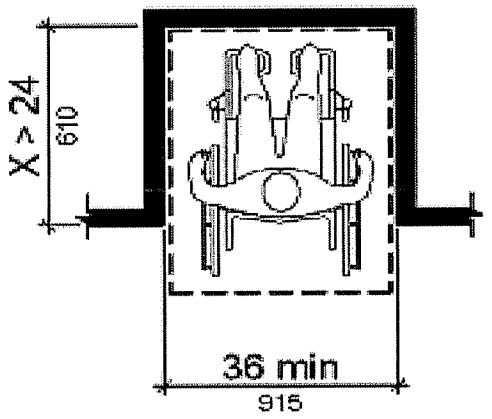


Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

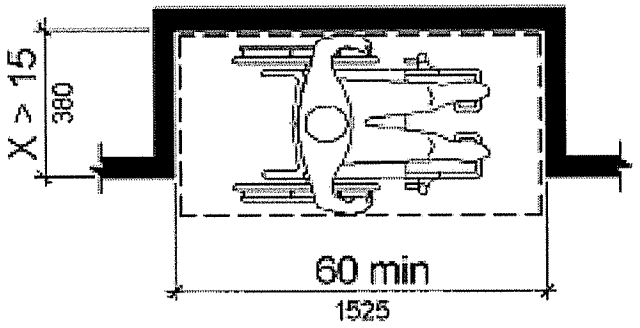


Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

306 Knee and Toe Clearance

306.1 General. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

Advisory 306.1 General. Clearances are measured in relation to the usable clear floor space, not necessarily to the vertical support for an element. When determining clearance under an object for required turning or maneuvering space, care should be taken to ensure the space is clear of any obstructions.

306.2 Toe Clearance.

306.2.1 General. Space under an element between the finish floor or ground and 9 inches (230 mm) above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.

306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches (430 mm) minimum under the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the finish floor or ground shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

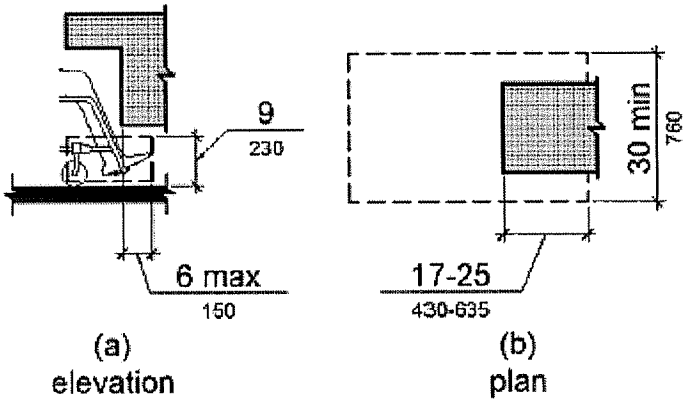


Figure 306.2 Toe Clearance

306.3 Knee Clearance.

306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish floor or ground, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

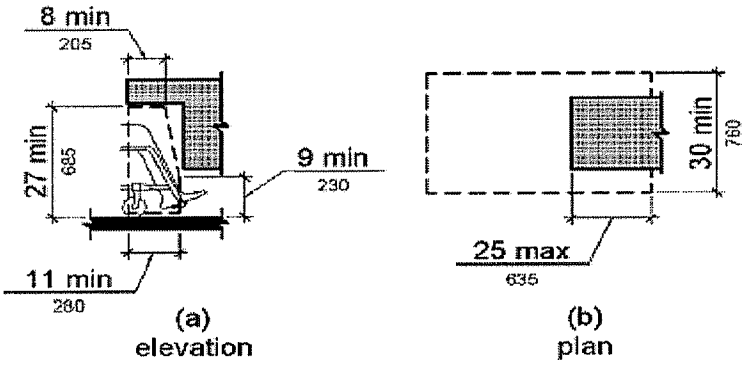


Figure 306.3 Knee Clearance

307 Protruding Objects

307.1 General. Protruding objects shall comply with 307.

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.
EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

Advisory 307.2 Protrusion Limits. When a cane is used and the element is in the detectable range, it gives a person sufficient time to detect the element with the cane before there is body contact. Elements located on circulation paths, including operable elements, must comply with requirements for protruding objects. For example, awnings and their supporting structures cannot reduce the minimum required vertical clearance. Similarly, casement windows, when open, cannot encroach more than 4 inches (100 mm) into circulation paths above 27 inches (685 mm).

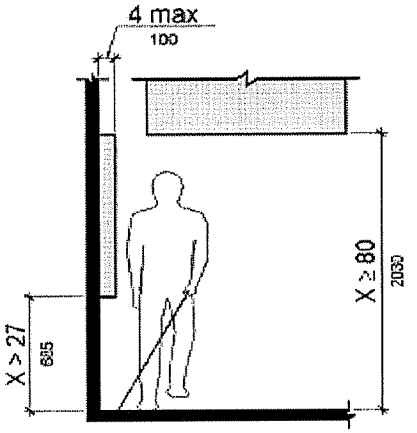


Figure 307.2Limits of Protruding Objects

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.
EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

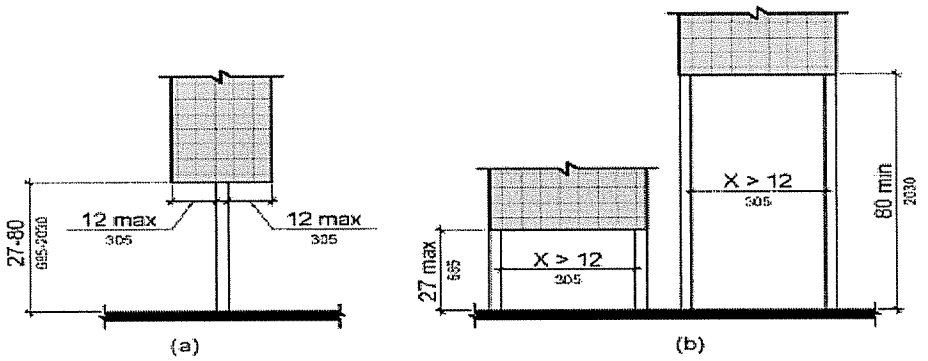


Figure 307.3 Post-Mounted Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.
EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

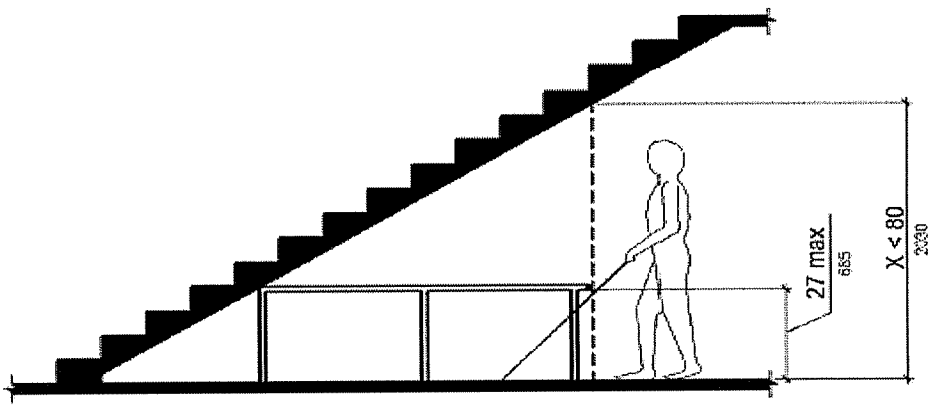


Figure 307.4 Vertical Clearance

. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with 308.

Advisory 308.1 General. The following table provides guidance on reach ranges for children according to age where building elements such as coat hooks, lockers, or operable parts are designed for use primarily by children. These dimensions apply to either forward or side reaches. Accessible elements and operable parts designed for adult use or children over age 12 can be located outside these ranges but must be within the adult reach ranges required by 308.

Children's Reach Ranges			
Forward or Side Reach	**Ages 3 and 4**	**Ages 5 through 8**	**Ages 9 through 12**
High (maximum)	36 in (915 mm)	40 in (1015 mm)	44 in (1120 mm)
Low (minimum)	20 in (510 mm)	18 in (455 mm)	16 in (405 mm)

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

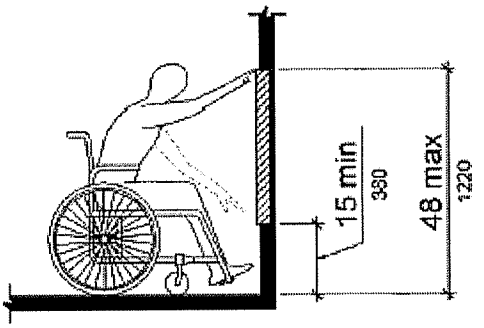


Figure 308.2.1 Unobstructed Forward Reach

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

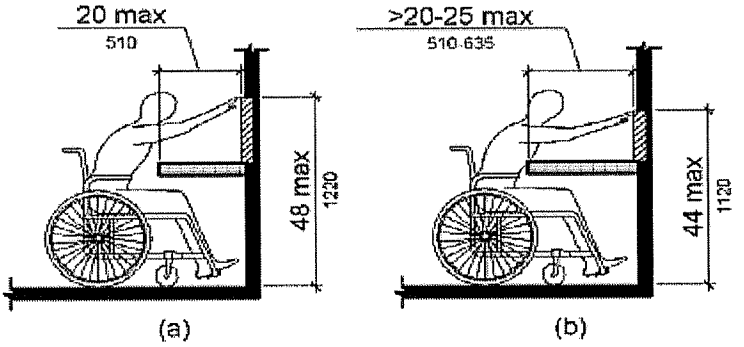


Figure 308.2.2 Obstructed High Forward Reach

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

EXCEPTIONS:

1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.

2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

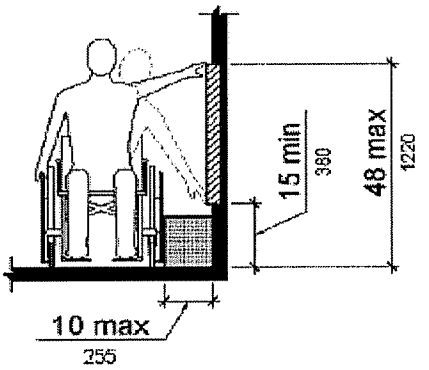


Figure 308.3.1 Unobstructed Side Reach

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

EXCEPTIONS:

1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

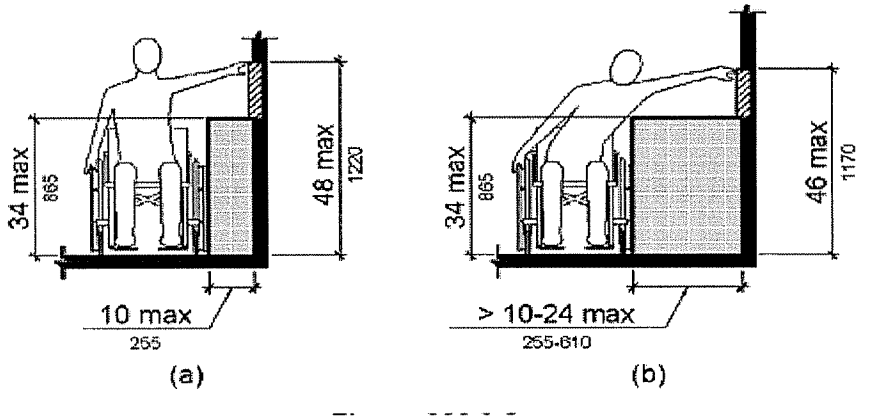


Figure 308.3.2 Obstructed High Side Reach

309 Operable Parts

309.1 General. Operable parts shall comply with 309.

309.2 Clear Floor Space. A clear floor or ground space complying with 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

EXCEPTION:

Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.

404.2.3 Doorways - Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

EXCEPTIONS: 1. In alterations, a projection of 5/8 inch (16 mm) maximum into the required clear width shall be permitted for the latch side stop.

2. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

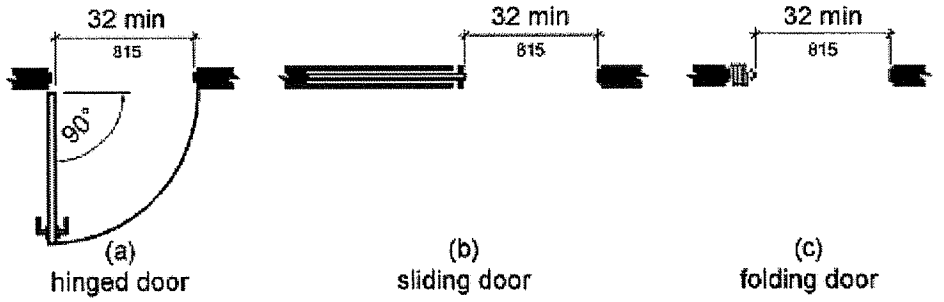


Figure 404.2.3 Clear Width of Doorways

404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

504 Stairways

504.1 General. Stairs shall comply with 504.

504.2 Treads and Risers. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum.

504.3 Open Risers. Open risers are not permitted.

504.4 Tread Surface. Stair treads shall comply with 302. Changes in level are not permitted.**EXCEPTION**: Treads shall be permitted to have a slope not steeper than 1:48.

Advisory 504.4 Tread Surface. Consider providing visual contrast on tread nosings, or at the leading edges of treads without nosings, so that stair treads are more visible for people with low vision.

504.5 Nosings. The radius of curvature at the leading edge of the tread shall be 1/2 inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2 inches (38 mm) maximum over the tread below.

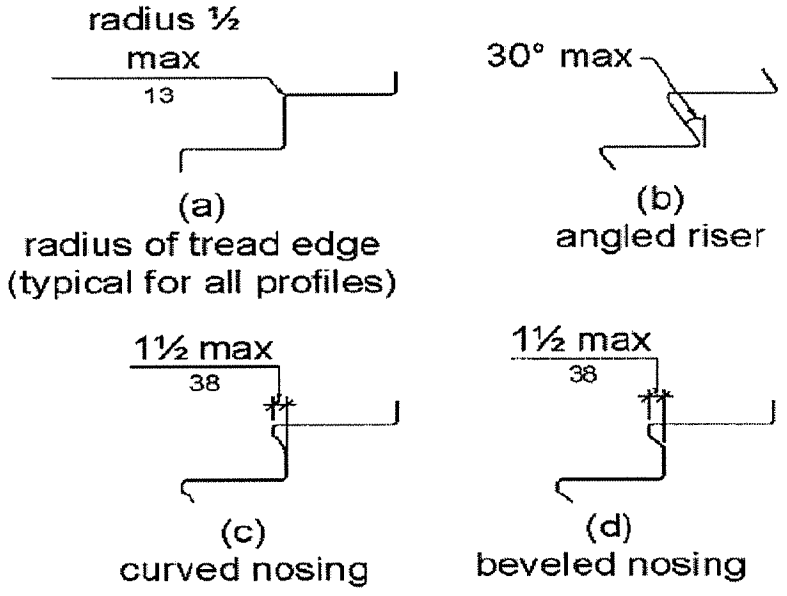


Figure 504.5 Stair Nosings

504.6 Handrails. Stairs shall have handrails complying with 505.

504.7 Wet Conditions. Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water.

505 Handrails

505.1 General. Handrails provided along walking surfaces complying with 403, required at ramps complying with 405, and required at stairs complying with 504 shall comply with 505.

Advisory 505.1 General. Handrails are required on ramp runs with a rise greater than 6 inches (150 mm) (see 405.8) and on certain stairways (see 504). Handrails are not required on walking surfaces with running slopes less than 1:20. However, handrails are required to comply with 505 when they are provided on walking surfaces with running slopes less than 1:20 (see 403.6). Sections 505.2, 505.3, and 505.10 do not apply to handrails provided on walking surfaces with running slopes less than 1:20 as these sections only reference requirements for ramps and stairs.

505.2 Where Required. Handrails shall be provided on both sides of stairs and ramps.
EXCEPTION: In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs.
EXCEPTION: In assembly areas, handrails on ramps shall not be required to be continuous in aisles serving seating.

505.4 Height. Top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.

Advisory 505.4 Height. The requirements for stair and ramp handrails in this document are for adults. When children are the principle users in a building or facility (e.g., elementary schools), a second set of handrails at an appropriate height can assist them and aid in preventing accidents. A maximum height of 28 inches (710 mm) measured to the top of the gripping surface from the ramp surface or stair nosing is recommended for handrails designed for children. Sufficient vertical clearance between upper and lower handrails, 9 inches (230 mm) minimum, should be provided to help prevent entrapment.

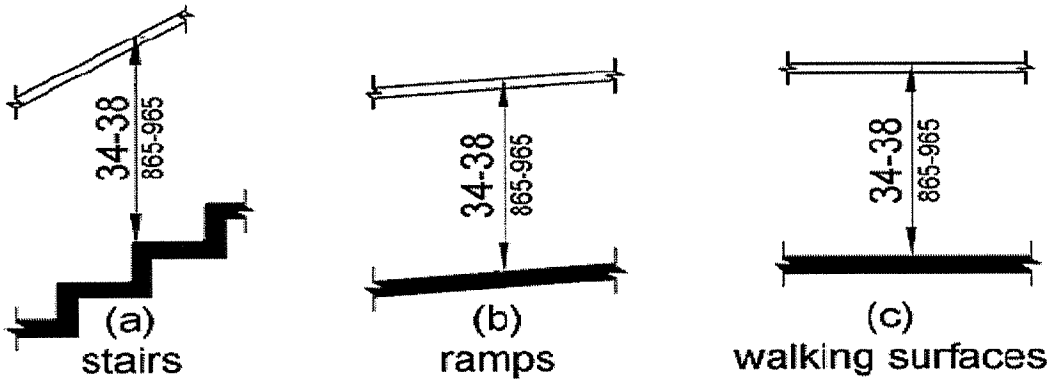


Figure 505.4 Handrail Height

505.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inches (38 mm) minimum.

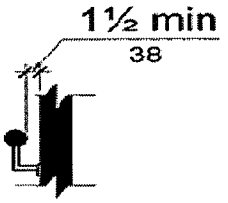


Figure 505.5 Handrail Clearance

505.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1 1/2 inches (38 mm) minimum below the bottom of the handrail gripping surface.

EXCEPTIONS: 1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch (3.2 mm) for each 1/2 inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

Advisory 505.6 Gripping Surface. People with disabilities, older people, and others benefit from continuous gripping surfaces that permit users to reach the fingers outward or downward to grasp the handrail, particularly as the user senses a loss of equilibrium or begins to fall.

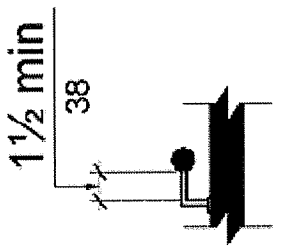


Figure 505.6 Horizontal Projections Below Gripping Surface

505.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with 505.7.1 or 505.7.2.

505.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

505.7.2 Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6 1/4 inches (160 mm) maximum, and a cross-section dimension of 2 1/4 inches (57 mm) maximum.

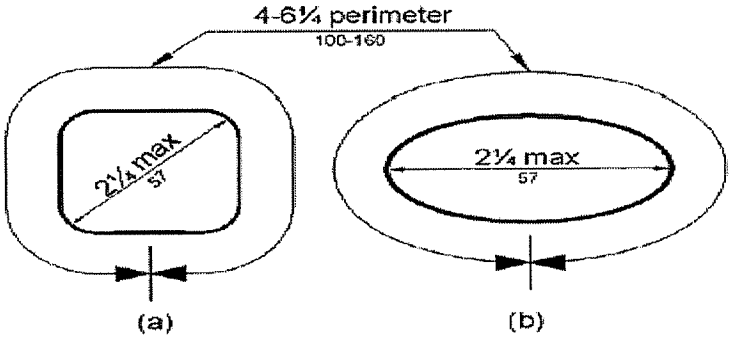


Figure 505.7.2 Handrail Non-Circular Cross Section

505.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

505.9 Fittings. Handrails shall not rotate within their fittings.
505.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with 505.10.
EXCEPTIONS: 1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.
2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.
3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

505.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

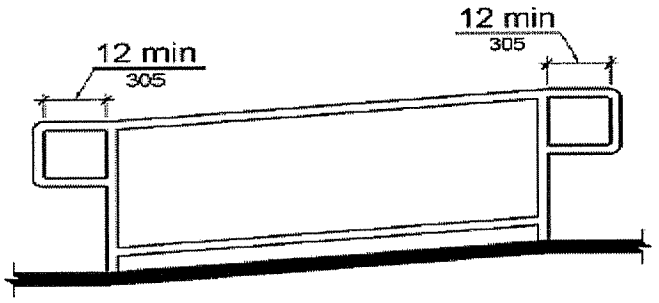


Figure 505.10.1 Top and Bottom Handrail Extension at Ramps

505.10.2 Top Extension at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

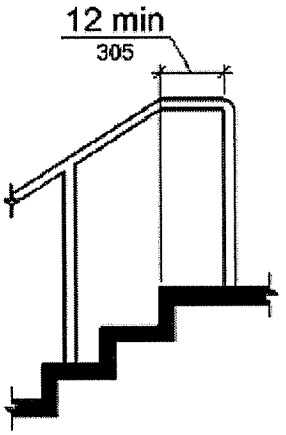
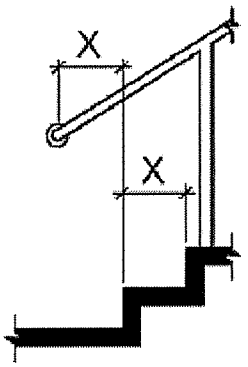


Figure 505.10.2 Top Handrail Extension at Stairs

505.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



Note: X = tread depth

Figure 505.10.3 Bottom Handrail Extension at Stairs

603 Toilet and Bathing Rooms (for toilet buildings with a single riser such as SSTs etc.- but not for Pit toilets...see definition of pit toilet in Technical Provisions section of FSORAG)

603.1 General. Toilet and bathing rooms shall comply with 603.

603.2 Clearances. Clearances shall comply with 603.2.

603.2.1 Turning Space. Turning space complying with 304 shall be provided within the room.

603.2.2 Overlap. Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.

603.2.3 Door Swing. Doors shall not swing into the clear floor space or clearance required for any fixture. Doors shall be permitted to swing into the required turning space.
EXCEPTIONS: 1. Doors to a toilet room or bathing room for a single occupant accessed only through a private office and not for common use or public use shall be permitted to swing into the clear floor space or clearance provided the swing of the door can be reversed to comply with 603.2.3.
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.

Advisory 603.2.3 Door Swing Exception 1. At the time the door is installed, and if the door swing is reversed in the future, the door must meet all the requirements specified in 404. Additionally, the door swing cannot reduce the required width of an accessible route. Also, avoid violating other building or life safety codes when the door swing is reversed.

603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above the finish floor or ground.

Advisory 603.3 Mirrors. A single full-length mirror can accommodate a greater number of people, including children. In order for mirrors to be usable by people who are ambulatory and people and people who use wheelchairs, the top edge of mirrors should be 74 inches (1880 mm) minimum from the floor or ground.

603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

604 Water Closets and Toilet Compartments (for toilet buildings with multiple risers provided at recreation sites, with a FS Recreation Site Development Scale of 3 or higher, and for the Exception under Pit Toilets in General Forest Areas FSORAG 6.6)

604.1 General. Water closets and toilet compartments shall comply with 604.2 through 604.8.**EXCEPTION:** Water closets and toilet compartments for children's use shall be permitted to comply with 604.9.

604.2 Location. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16 inches (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.

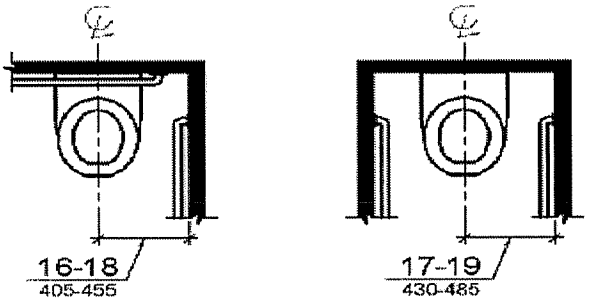


Figure 604.2 Water Closet Location

604.3 Clearance. Clearances around water closets and in toilet compartments shall comply with 604.3.

604.3.1 Size. Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.

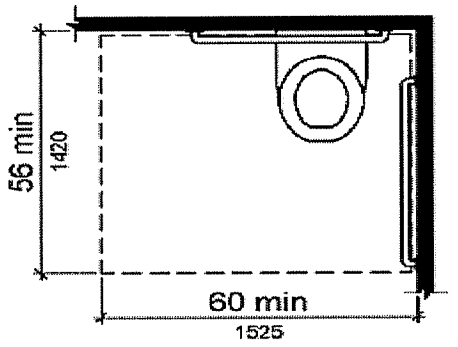


Figure 604.3.1 Size of Clearance at Water Closets

604.3.2 Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

EXCEPTION: In residential dwelling units, a lavatory complying with 606 shall be permitted on the rear wall 18 inches (455 mm) minimum from the water closet centerline where the clearance at the water closet is 66 inches (1675 mm) minimum measured perpendicular from the rear wall.

604.4 Seats. The seat height of a water closet above the finish floor shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

EXCEPTIONS: 1. A water closet in a toilet room for a single occupant accessed only through a private office and not for common use or public use shall not be required to comply with 604.4.

2. In residential dwelling units, the height of water closets shall be permitted to be 15 inches (380 mm) minimum and 19 inches (485 mm) maximum above the finish floor measured to the top of the seat.

604.5 Grab Bars. Grab bars for water closets shall comply with 609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall.

Advisory 604.5 Grab Bars Exception 2. Reinforcement must be sufficient to permit the installation of rear and side wall grab bars that fully meet all accessibility requirements including, but not limited to, required length, installation height, and structural strength.

604.5.1 Side Wall. The side wall grab bar shall be 42 inches (1065 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall.

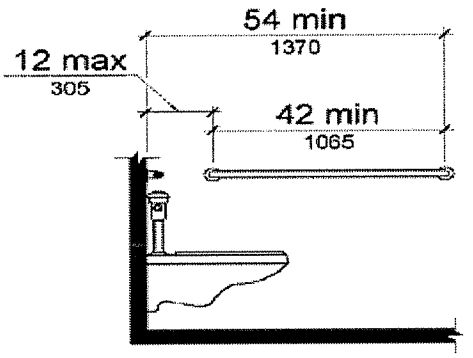


Figure 604.5.1 Side Wall Grab Bar at Water Closets

604.5.2 Rear Wall. The rear wall grab bar shall be 36 inches (915 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side.

EXCEPTIONS: 1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water closet, where wall space does not permit a length of 36 inches (915 mm) minimum due to the location of a recessed fixture adjacent to the water closet.

2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.

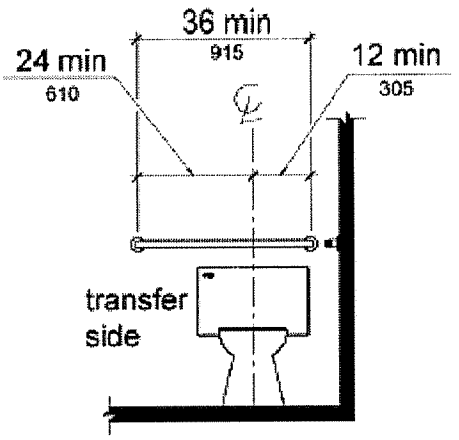


Figure 604.5.2 Rear Wall Grab Bar at Water Closets

604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

Advisory 604.6 Flush Controls. If plumbing valves are located directly behind the toilet seat, flush valves and related plumbing can cause injury or imbalance when a person leans back against them. To prevent causing injury or imbalance, the plumbing can be located behind walls or to the side of the toilet; or if approved by the local authority having jurisdiction, provide a toilet seat lid.

604.7 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches (380 mm) minimum and 48 inches (1220 mm) maximum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

Advisory 604.7 Dispensers. If toilet paper dispensers are installed above the side wall grab bar, the outlet of the toilet paper dispenser must be 48 inches (1220 mm) maximum above the finish floor and the top of the gripping surface of the grab bar must be 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish floor.

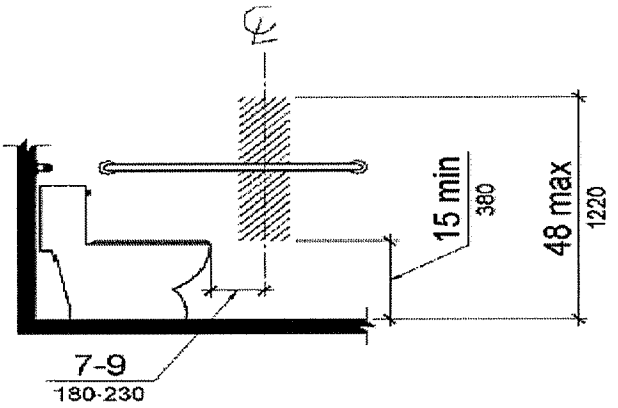


Figure 604.7 Dispenser Outlet Location

604.8 Toilet Compartments. Wheelchair accessible toilet compartments shall meet the requirements of 604.8.1 and 604.8.3. Compartments containing more than one plumbing fixture shall comply with 603. Ambulatory accessible compartments shall comply with 604.8.2 and 604.8.3.

604.8.1 Wheelchair Accessible Compartments. Wheelchair accessible compartments shall comply with 604.8.1.

604.8.1.1 Size. Wheelchair accessible compartments shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1420 mm) deep minimum for wall hung water closets and 59 inches (1500 mm) deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1500 mm) deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

Advisory 604.8.1.1 Size. The minimum space required in toilet compartments is provided so that a person using a wheelchair can maneuver into position at the water closet. This space cannot be obstructed by baby changing tables or other fixtures or conveniences, except as specified at 604.3.2 (Overlap). If toilet compartments are to be used to house fixtures other than those associated with the water closet, they must be designed to exceed the minimum space requirements. Convenience fixtures such as baby changing tables must also be accessible to people with disabilities as well as to other users. Toilet compartments that are designed to meet, and not exceed, the minimum space requirements may not provide adequate space for maneuvering into position at a baby changing table.

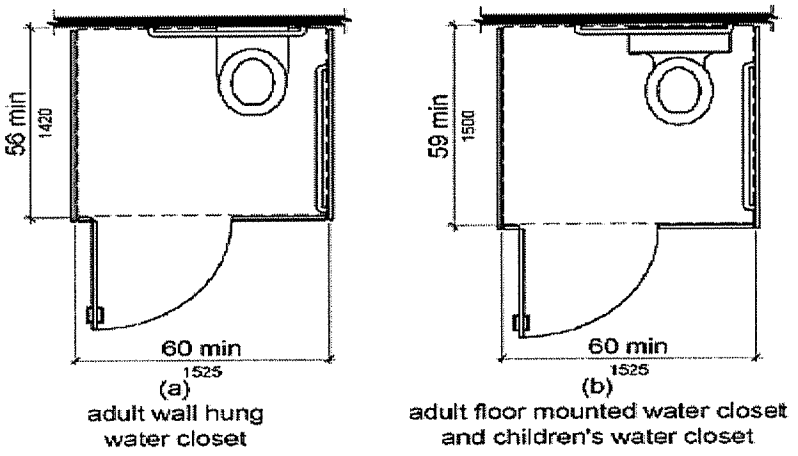


Figure 604.8.1.1 Size of Wheelchair Accessible Toilet Compartment

604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

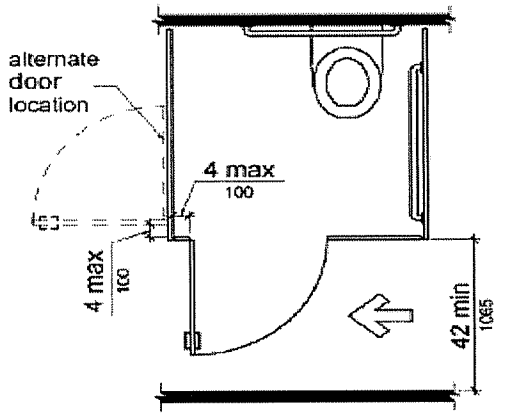


Figure 604.8.1.2 Wheelchair Accessible Toilet Compartment Doors

604.8.1.3 Approach. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

604.8.1.4 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish floor and 6 inches (150 mm) deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish floor.

EXCEPTION: Toe clearance at the front partition is not required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a floor-mounted water closet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches (1650 mm) deep.

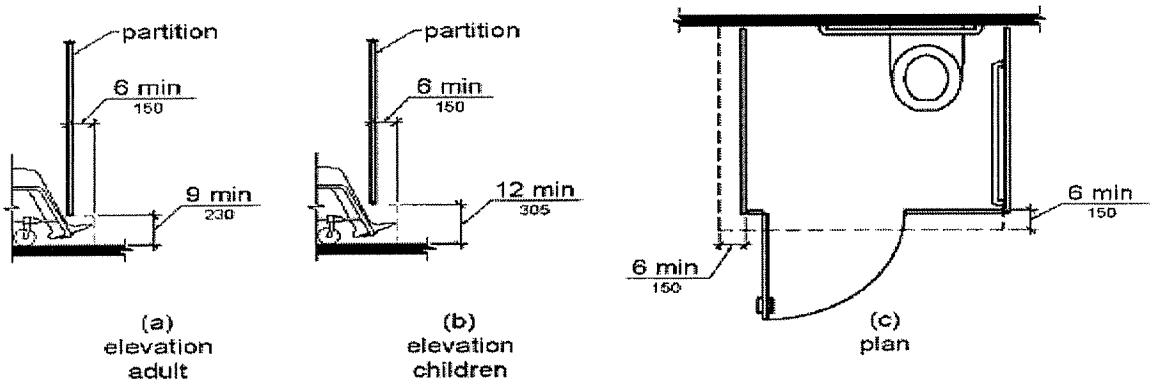


Figure 604.8.1.4 Wheelchair Accessible Toilet Compartment Toe Clearance

604.8.1.5 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with 604.5.2 shall be provided.

604.8.2 Ambulatory Accessible Compartments. Ambulatory accessible compartments shall comply with 604.8.2.

604.8.2.1 Size. Ambulatory accessible compartments shall have a depth of 60 inches (1525 mm) minimum and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.

604.8.2.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404, except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.8.2.3 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided on both sides of the compartment.

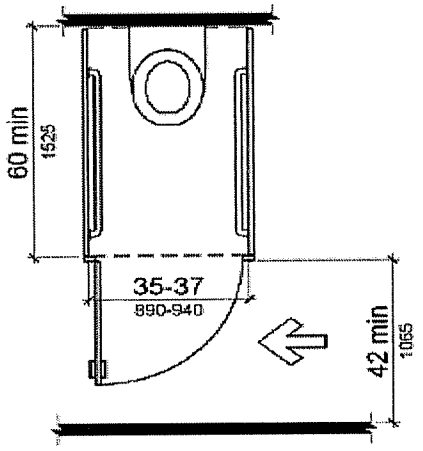


Figure 604.8.2 Ambulatory Accessible Toilet Compartment

604.8.3 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

608.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Shower spray units shall deliver water that is 120°F (49°C) maximum.

EXCEPTION: A fixed shower head located at 48 inches (1220 mm) maximum above the shower finish floor shall be permitted instead of a hand-held spray unit in facilities that are not medical care facilities, long-term care facilities, transient lodging guest rooms, or residential dwelling units.

Advisory 608.6 Shower Spray Unit and Water. Ensure that hand-held shower spray units are capable of delivering water pressure substantially equivalent to fixed shower heads.

609 Grab Bars

609.1 General. Grab bars in toilet facilities and bathing facilities shall comply with 609.

609.2 Cross Section. Grab bars shall have a cross section complying with 609.2.1 or 609.2.2.

609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum. 609.2.2 Non-Circular Cross Section. Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (100 mm) minimum and 4.8 inches (120 mm) maximum.

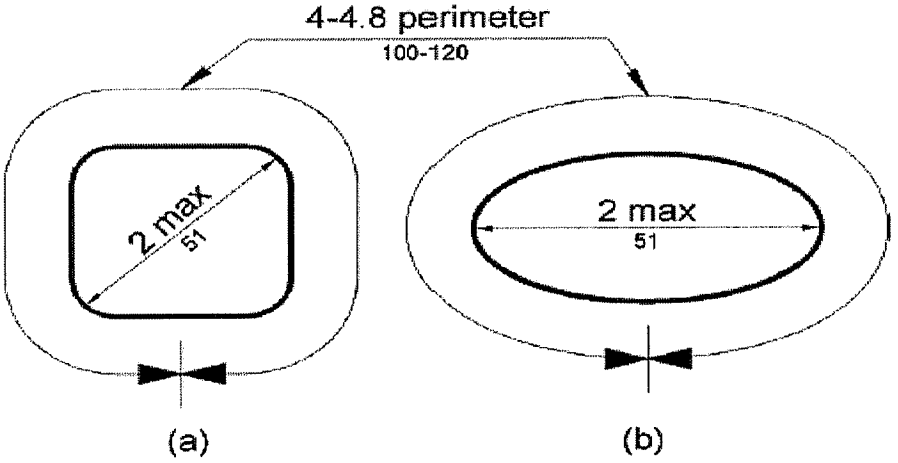


Figure 609.2.2 Grab Bar Non-Circular Cross Section

609.3 Spacing. The space between the wall and the grab bar shall be 1 1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.
EXCEPTION: The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1 1/2 inches (38 mm) minimum.

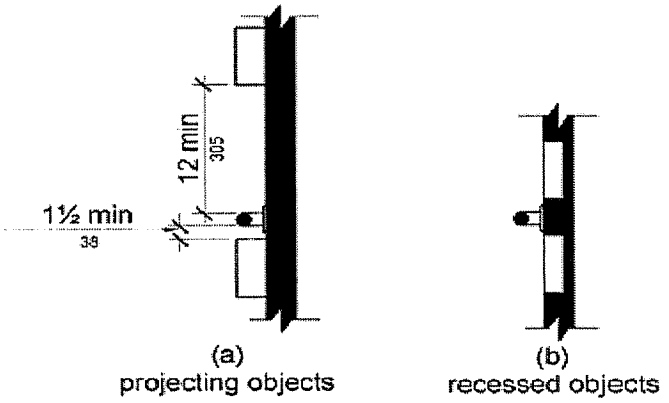


Figure 609.3 Spacing of Grab Bars

609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with 604.9, grab bars shall be installed in a horizontal position 18 inches

(455 mm) minimum and 27 inches (685 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with 607.4.1.1 or 607.4.2.1.

609.5 Surface Hazards. Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges.

609.6 Fittings. Grab bars shall not rotate within their fittings.

609.7 Installation. Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space.

609.8 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

SIGNAGE

F216 Signs

703.7 Symbols of Accessibility. Symbols of accessibility shall comply with 703.7.

703.7.1 Finish and Contrast. Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.

Advisory 703.7.1 Finish and Contrast. Signs are more legible for persons with low vision when characters contrast as much as possible with their background. Additional factors affecting the ease with which the text can be distinguished from its background include shadows cast by lighting sources, surface glare, and the uniformity of the text and background colors and textures.

703.7.2 Symbols.

703.7.2.1 International Symbol of Accessibility. The International Symbol of Accessibility shall comply with Figure 703.7.2.1.

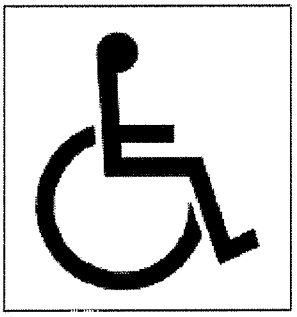


Figure 703.7.2.1 International Symbol of Accessibility

Elements and spaces of accessible facilities that shall be identified by the International Symbol of Accessibility:

- Accessible parking spaces in parking lots with designated parking spaces (F216.5)
  - where a total of 5 or more, including accessible parking spaces, on a site, (F216.5.1)
  - No ISA at parking spurs provided at camping unit
- Accessible restrooms and bathing facilities.(F216.8)
- If the main entrance to a building is not accessible, the ISA and an arrow are to be posted to direct to closest accessible. (F216.6)
- Accessible Area of Refuge inside multi story buildings (F216.4.2)
- Accessible means of egress out of a building (F216.4.3)

APPENDIX C

Public Survey Results

LAKE ANTOINE PARK SURVEY RESULTS

Background Information and Demographics

A total of 796 surveys were sent to individuals who had reserved a campsite or pavilion at Lake Antoine Park in 2011 and 2012. **140** surveys were returned for a **response rate of 17.5%,** which yielded a **sampling error rate of ± 8%**. Participants were asked to respond to this series of questions to provide background information:

What year did you last visit Lake Antoine Park and Campground? _____

Was this your first visit? YES_____ NO_____ Did you rent a Pavilion? YES_____ NO_____

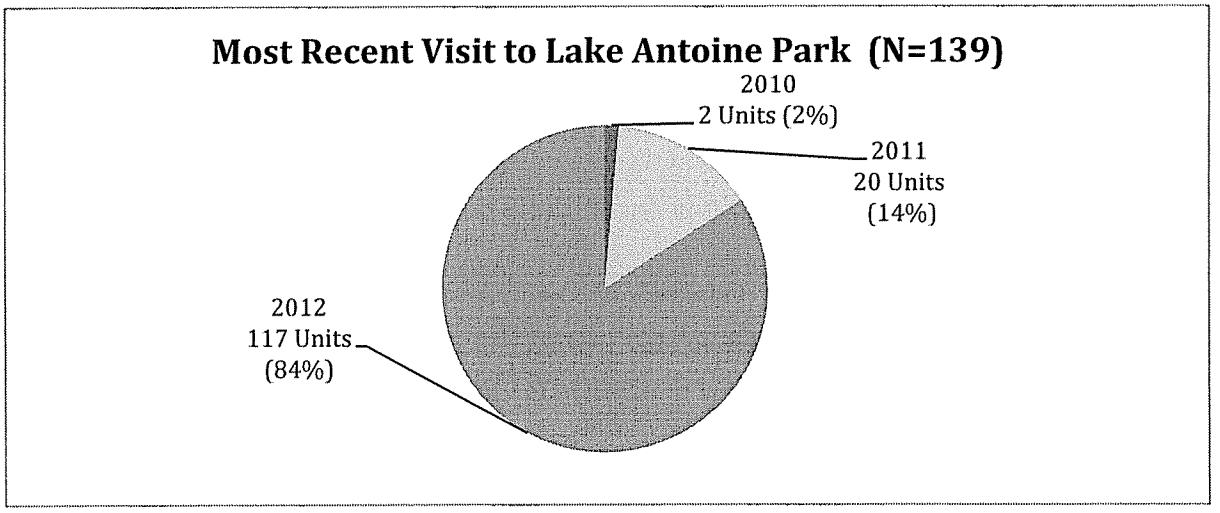
Number of Adults in your party: _____ Number of Children in your party: _____

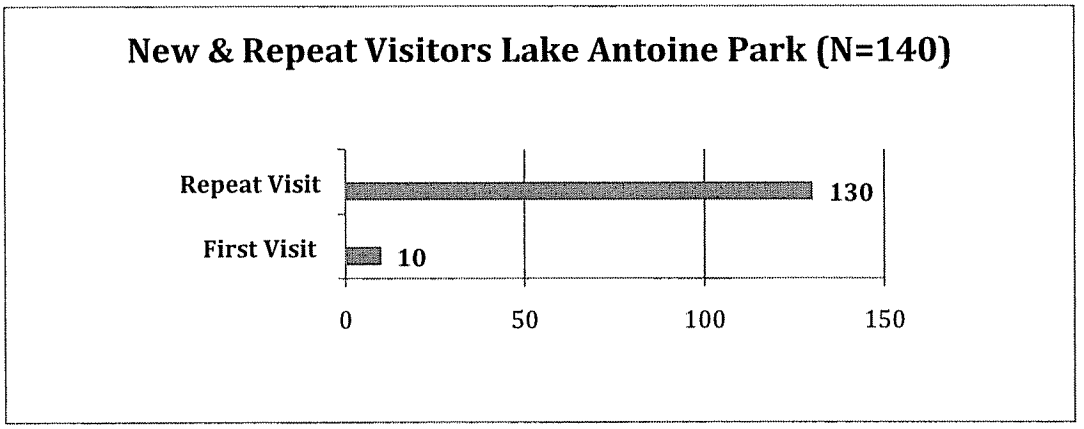
Yearly, how many days do you spend camping? ❍1 – 10 ❍11 – 20 ❍21 – 30 ❍31+ ❍N/A

Yearly, how many days do you camp at Lake Antoine? ❍1 – 10 ❍11 – 20 ❍21 – 30 ❍31+ ❍N/A

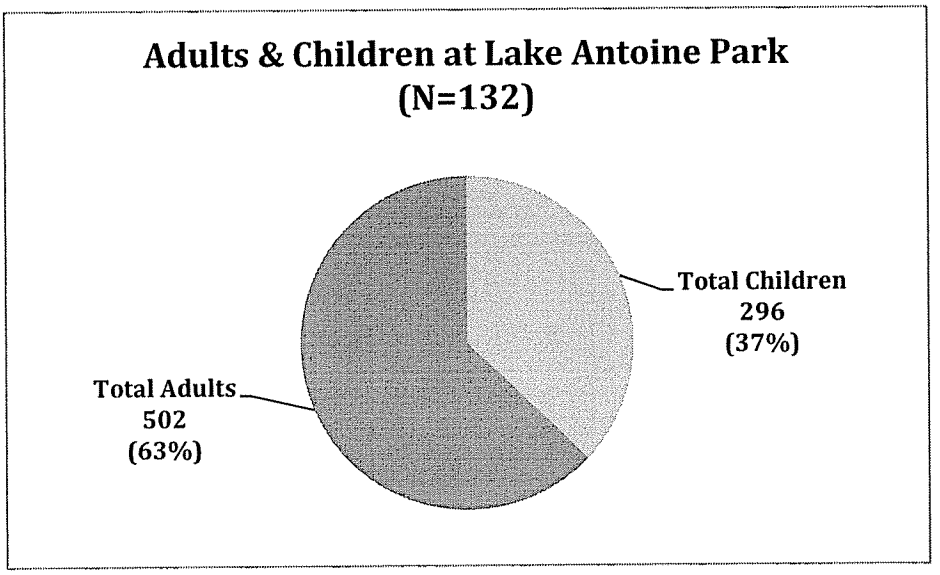
I camp in a: ❍Class A ❍Class B ❍Class C ❍Towable (describe)_____ ❍ Tent ❍ N/A

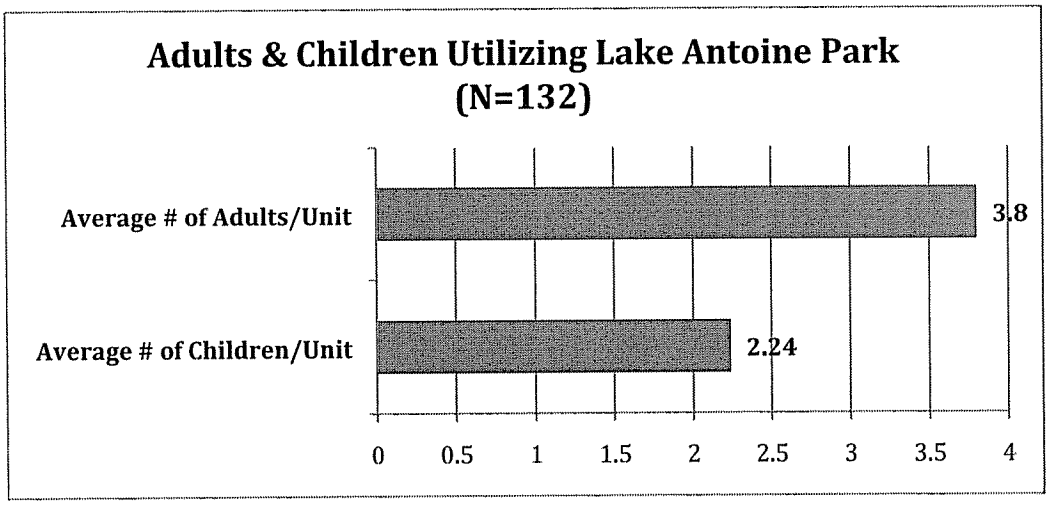
Of 140 total respondents, only 9 (6.4%) indicated that they had rented a pavilion. The remaining individuals indicated they had camped at Lake Antoine Park. The number of responses (N=) is indicated for these graphs.



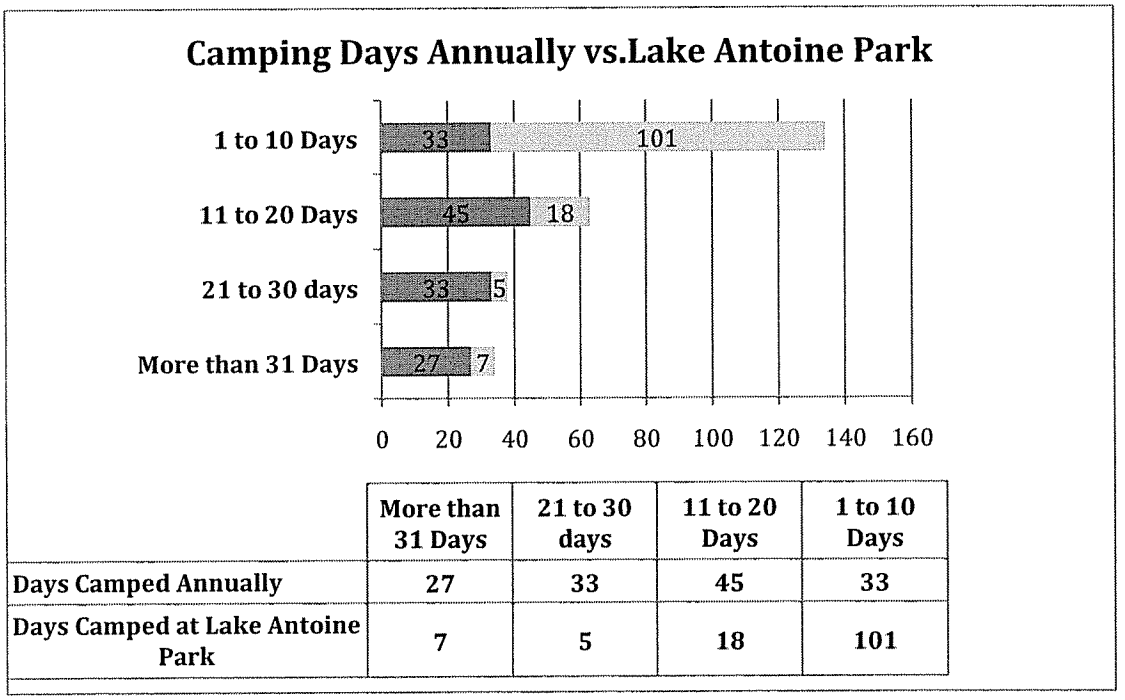


This data demonstrates utilization rates for adults and children. Adult park users appear to outnumber children at nearly 2 to 1. It includes respondents who rented Pavilions:

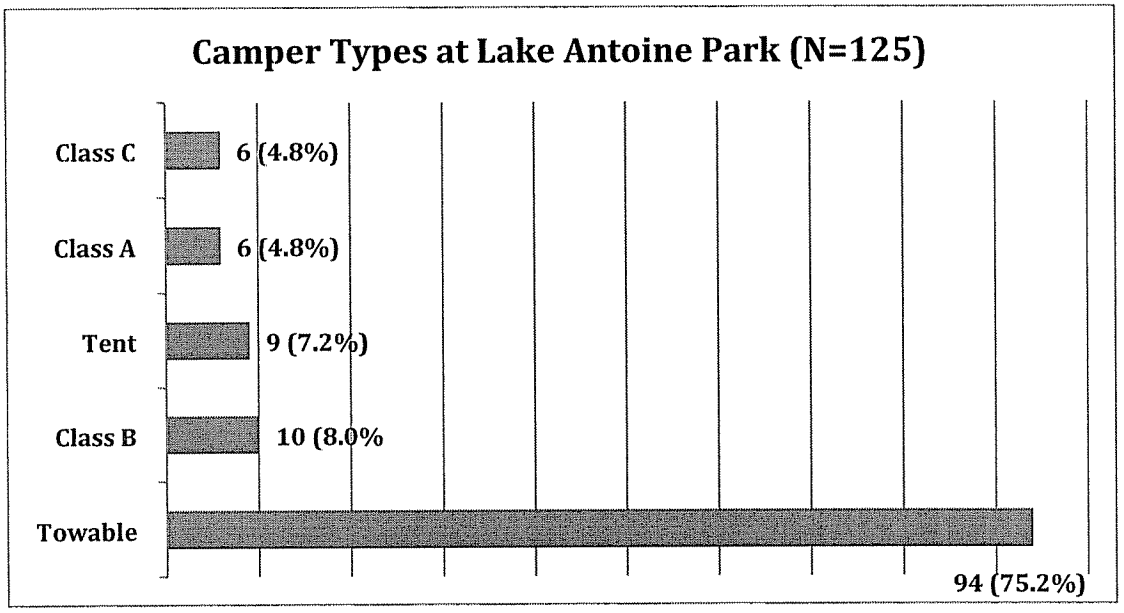




Respondents were asked how many days they spent camping each year and how many days they spent camping at Lake Antoine Park. Note that although annual campers are relatively evenly distributed across the choice of ranges, the majority of campers at Lake Antoine Park spend only 1 to 10 days. Towable campers, which may require more space, are utilized at a significantly higher rate than other types of camping units.



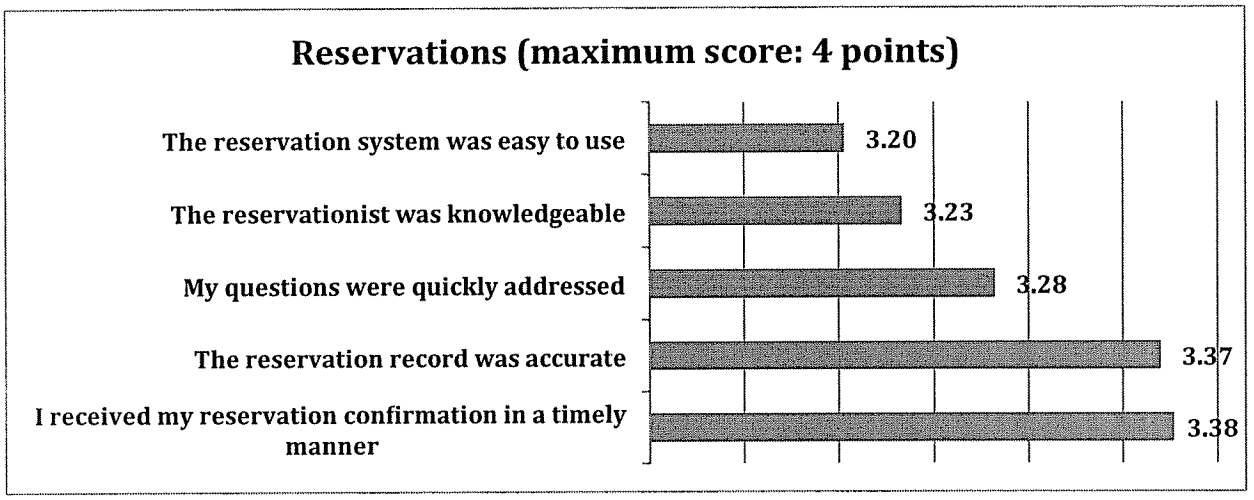
	More than 31 Days	21 to 30 days	11 to 20 Days	1 to 10 Days
Days Camped Annually	27	33	45	33
Days Camped at Lake Antoine Park	7	5	18	101

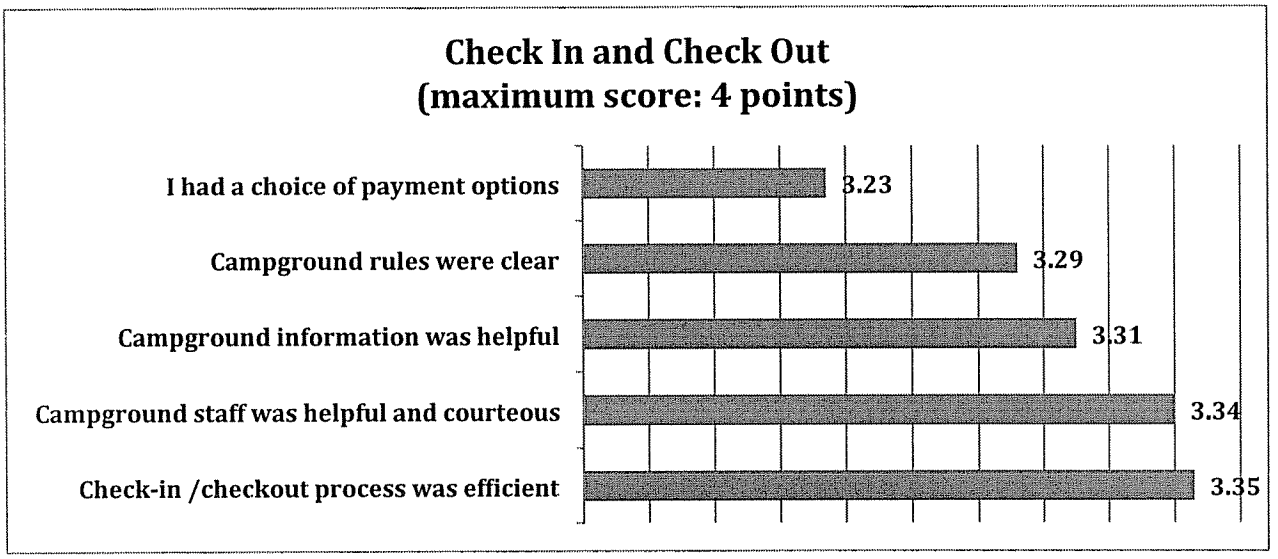


Data in the following tables shows the average score from all of the participants in the survey who responded to the questions or statements. "Not applicable" and "No answer" responses were removed from the survey and the averages were calculated based on the actual number of responses made. Results are arranged in order of value. Each of the responses was weighted as follows:

4 = STRONGLY AGREE
3 = AGREE
2= DISAGREE
1= STRONGLY DISAGREE

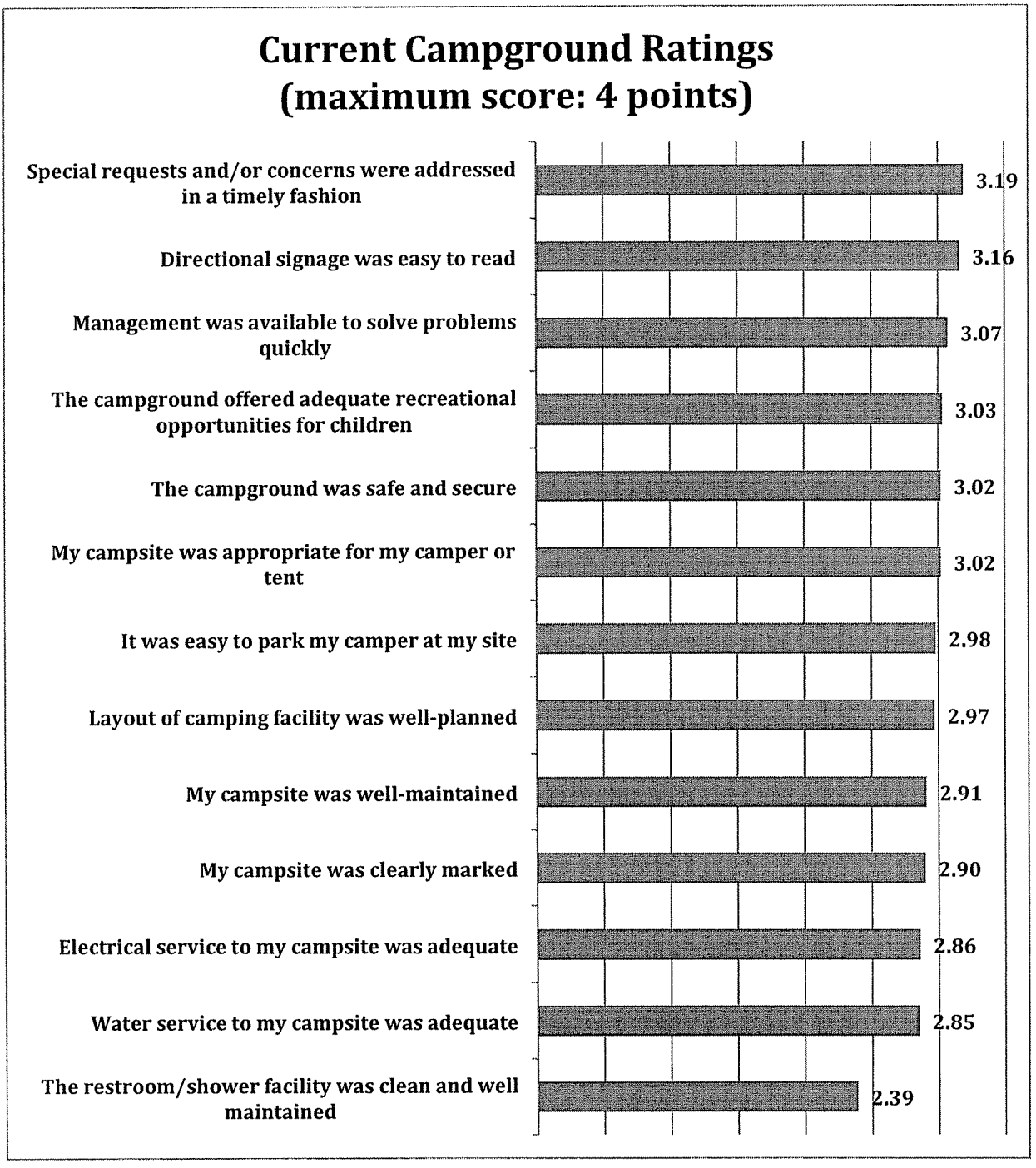
In general, respondents appeared to be satisfied with the Reservations and Check-in and Check-out process.





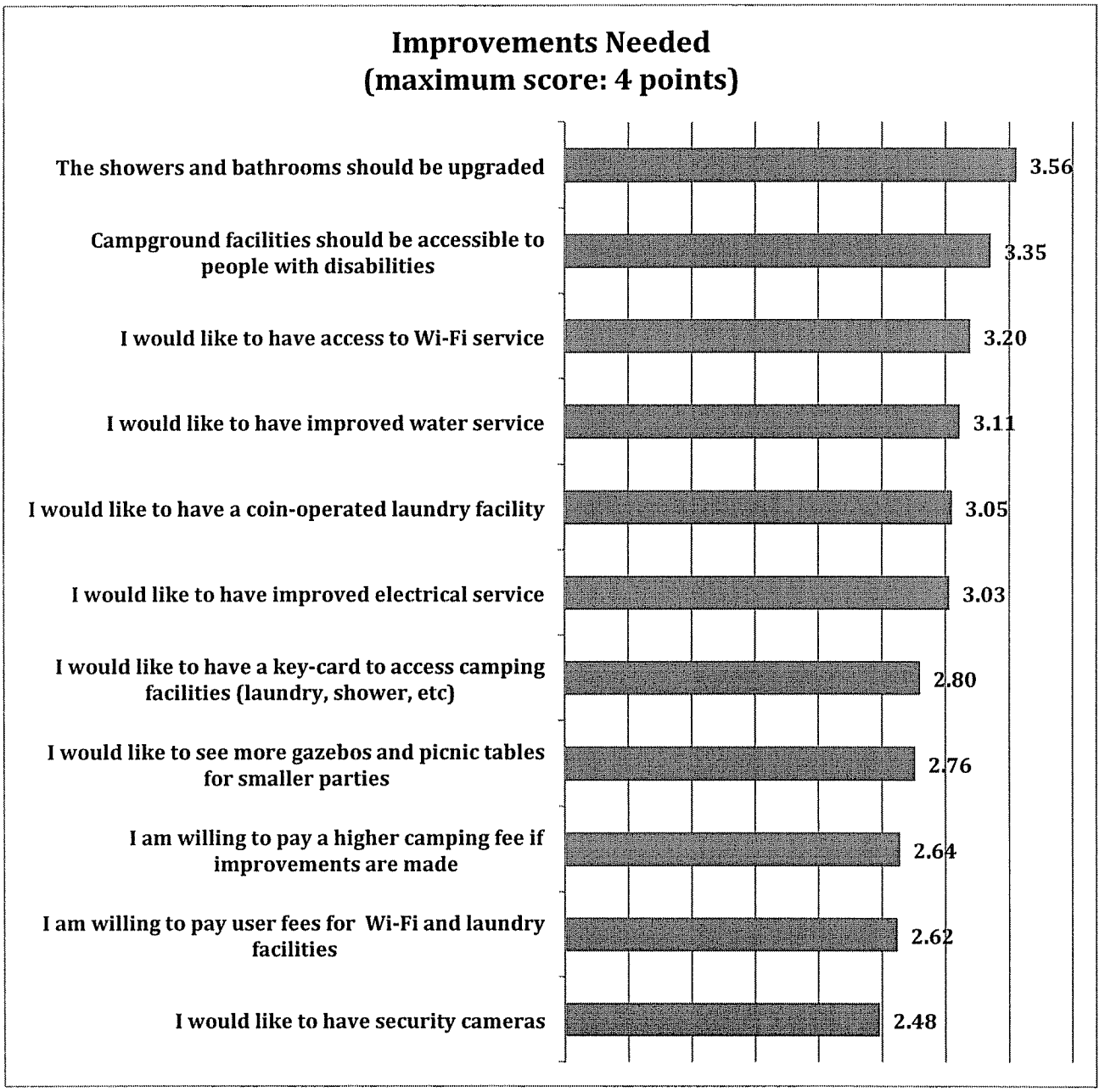
Current campground ratings appear to support the need for upgrades and improvements in many areas at Lake Antoine Park. Each of the responses was weighted as follows:

4 = STRONGLY AGREE
3 = AGREE
2= DISAGREE
1= STRONGLY DISAGREE



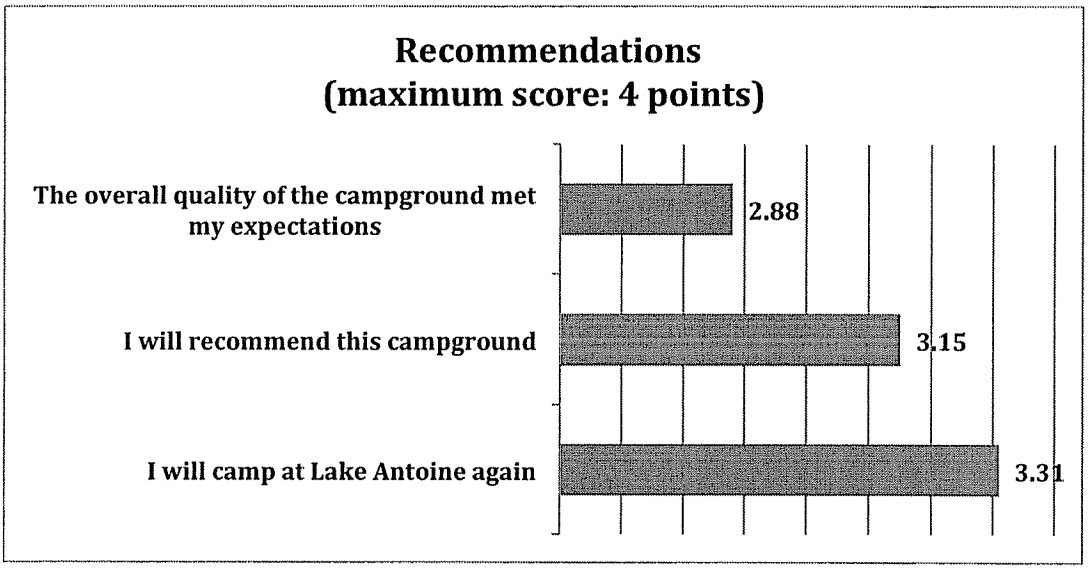
The Improvements section reflects what respondents believed to be most important with respect to upgrades at Lake Antoine Park. Each of the responses was weighted as follows:

4 = STRONGLY AGREE
3 = AGREE
2= DISAGREE
1= STRONGLY DISAGREE



Campers appear to be satisfied with Lake Antoine Park but are less likely to recommend this campground to others. Their expectations of the Park appear to be below what is acceptable for a quality campground. Each of the responses was weighted as follows:

4 = STRONGLY AGREE
3 = AGREE
2= DISAGREE
1= STRONGLY DISAGREE



Attachment 1: Written Comments from Participants

Prepared and Submitted by:
Barbara J. Kramer
Dickinson County Commissioner
March 21, 2013

LAKE ANTOINE PARK SURVEY RESULTS- SUMMARY

1. BACKGROUND INFORMATION- Please provide to help us to get to know you better: TOTAL N = 140

What year did you last visit Lake Antoine Park and Campground? 2010 = 2, 2011 = 20, 2012 = 117

Was this your first visit? YES 10 NO 130 Did you rent a Pavilion? YES 9 NO 131

Number of Adults in your party: 3.84 (avg) Number of Children in your party: 2.24 (avg)

Yearly, how many days do you spend camping? 1 – 10 =33 11 – 20 =45 21 – 30= 33 31+ = 27

Yearly, how many days do you camp at Lake Antoine? 1 – 10= 101 11 – 20= 18 21 – 30= 5 31+ = 7

I camp in a: Class A= 6 Class B= 10 Class C= 6 Towable= :94 (pop-ups to 37' 5th wheels) Tent= 9

Please indicate your level of agreement with the following statements:

2. RESERVATIONS	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE
The reservation system was easy to use		3.2			
The reservationist was knowledgeable		3.23			
My questions were quickly addressed		3.28			
I received my reservation confirmation in a timely manner		3.38			
The reservation record was accurate		3.37			

3. CHECK-IN / CHECK-OUT:	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE
Check-in /checkout process was efficient		3.35			
Campground information was helpful		3.31			
Campground rules were clear		3.29			
Campground staff was helpful and courteous		3.34			
I had a choice of payment options		3.24			

4. CAMPGROUND:	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE
Directional signage was easy to read		3.16			
Layout of camping facility was well-planned		2.97			
My campsite was appropriate for my camper or tent		3.02			
My campsite was clearly marked		2.90			
My campsite was well-maintained		2.91			
It was easy to park my camper at my site		2.98			
The restroom/shower facility was clean and well maintained			2.39		
Electrical service to my campsite was adequate		2.86			
Water service to my campsite was adequate		2.85			
Special requests and/or concerns were addressed in a timely fashion		3.19			
Management was available to solve problems quickly		3.07			
The campground was safe and secure		3.02			
The campground offered adequate recreational opportunities for children		3.03			

LAKE ANTOINE PARK SURVEY RESULTS- SUMMARY

5. IMPROVEMENTS:	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE
I would like to have access to Wi-Fi service		2.98			
I would like to have a coin-operated laundry facility		3.05			
I would like to have improved electrical service		3.03			
I would like to have improved water service		3.11			
I would like to have security cameras			2.48		
I would like to see more gazebos and picnic tables for smaller party venues		2.76			
Campground facilities should be accessible to people with disabilities		3.35			
The showers and bathrooms should be upgraded	3.56				
I would like to have a key-card to access camping facilities (laundry, shower, etc)		2.80			
I am willing to pay user fees for additional amenities such as Wi-Fi and laundry facilities		2.62			
I am willing to pay a higher camping fee if improvements are made		2.64			
The overall quality of the campground met my expectations		2.88			
I will camp at Lake Antoine again		3.31			
I will recommend this campground		3.15			

6. COMMENTS: (Please reference your comments to the section numbers above. If more space is needed, use an additional sheet of paper)

95 Individuals made comments

7. OPTIONAL: If you provide the following information, your name will be entered into a drawing for 1 *FREE PARK PASS and 1 FREE NIGHT AT LAKE ANTOINE PARK CAMPGROUND*. Two prizes will be awarded. Thank you for your participation.

Name: **121 Individuals provided Optional Information**
Age:

Address:

City: **State:** **Zip:**

Phone: ( ) **Email:**

APPENDIX D

Notices

APPENDIX E

Meeting Minutes and Resolution of Adoption

APPENDIX F

Letters of Transmittal