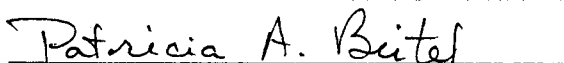


To the Graduate Council:

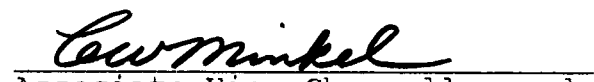
I am submitting herewith a thesis written by Charles Chase Ezell entitled "An Accessibility Evaluation of Selected East Tennessee State Parks For Use By Persons With Disabilities." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Recreation and Leisure Studies.


Dr. Gene A. Hayes
Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:


Associate Vice Chancellor and
Dean of The Graduate School

**AN ACCESSIBILITY EVALUATION OF SELECTED
EAST TENNESSEE STATE PARKS
FOR USE BY PERSONS WITH DISABILITIES**

**A THESIS
PRESENTED FOR THE
MASTER OF SCIENCE DEGREE
THE UNIVERSITY OF TENNESSEE, KNOXVILLE**

CHASE EZELL

December 1993

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I wish to extend my deepest gratitude to my advisor, committee chair, and good friend, Dr. Gene Hayes, who provided leadership, friendship, and an abundance of opportunity throughout my graduate program. I thank, also, Dr. Ken Krick and Dr. Pat Beitel for their substantial contributions not only as committee members, but as teachers and facilitators of higher learning. My thanks is extended to the many Tennessee Park Rangers and professionals who offered assistance in gathering the information contained in this thesis and for their continuing efforts to provide barrier-free recreation opportunities in the State of Tennessee.

DEDICATION

I hereby dedicate this thesis to:

My wife, Melanie, who provided the motivation, the determination, the love, and the sacrifice for me to pursue my masters degree and fulfil my innermost dreams and hopes. I could not have accomplished what I did without you and our relationship; thank for being my closest companion.

To:

My sister, Sara, who has shown me through her life the importance of providing an accessible society, the pride and hardships of being disabled, and the love no other sister could show to a brother. I could not be more proud of you and your accomplishments. You have been a great motivator to me and contributed substantially to my deepest desire to assist persons with disabilities in any way possible.

And to:

My parents, the greatest, most unselfish champions of creating a barrier-free environment. I have been and will always be driven by your untiring efforts and example in providing for an extraordinary family.

Thank you!

ABSTRACT

The Americans with Disabilities Act of 1990 ensures the freedom of movement within our society for nearly 43 million persons with disabilities. It is currently having, and will continue to have, a significant impact on park facilities and programs on the municipal, state, and national levels. Few studies have been conducted to assess the degree to which state parks, particularly, are accessible to users with disabilities.

It was the purpose of this study to evaluate the degree of accessibility of six East Tennessee State Parks for use by persons with disabilities. Sub-problems included:

1. To assess the types of barriers that exist in East Tennessee State Parks that prevent participation by persons with disabilities.

2. To identify the adaptations that would be necessary to make a facility accessible.

Research objectives were:

1. Do the areas and facilities within the selected State Parks conform to the Uniform Federal Accessibility Standards?

2. If not, what recommendations can be made to

rectify inaccessible areas and facilities?

The six State Parks evaluated were Cove Lake State Park, Panther Creek State Recreation Area, Norris Dam State Resort Park, Big Ridge State Rustic Park, Booker T. Washington State Recreation Area, and Frozen Head State Natural Area.

Twenty-one percent of the areas evaluated were accessible, but the majority (65%) of the areas were inaccessible. Three percent of the State Park areas were Challenge Level 1 and ten percent were Challenge Level II, according to the evaluation instruments used. Most barriers to participation found in this study were either architectural (man-made) or environmental (existing naturally). Budget constraints were also indicated by park personnel as a barrier to creating accessible areas. Extensive recommendations were made to increase accessibility within each State Park.

Further efforts included:

1. Efforts should be made to evaluate more parks across the State of Tennessee, especially in the middle and western sections.
2. A similar research study should be conducted within regional National Parks.
3. A users resource guide to Tennessee State

Parks should be developed and available for persons with disabilities.

4. An extensive training effort should be implemented for park rangers/managers to educate personnel on the minimum guidelines for accessibility within state parks.

5. Accessible programming within state parks should be evaluated.

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CHAPTER 1

INTRODUCTION

The passage of the Americans with Disabilities Act of 1990 is bringing the mainstreaming of persons with disabilities into a new perspective. Anti-discrimination and accessibility are key topics in the public and private sectors. For parks and recreation professionals the ADA means not only accessible parks but outdoor experiences for the disabled that parallel the benefits of participation of the able-bodied. The task at hand is complex but far from impossible; the results could be monumental.

Efforts on the national level in the area of accessibility have been more substantial. National parks and recreation areas conduct annual reviews of their park's degree of accessibility but because of the massive volumes of data collected, results of these evaluations were not available for review. However, the National Park Service includes some of these findings in their Guide to National Parks by stating the degree to which each park is accessible.

Serving the needs of persons with disabilities in parks and recreation is not a new issue. Several

studies have been conducted on the municipal, state, and national levels to assess the degree of services being provided. The studies of Austin, Peterson, and Peccarelli (1987), Edginton et al. (1975), Hayes (1969), and Hayes and Smith (1978) indicate a lack of sufficient park and recreation services to meet the needs of persons with disabilities in the municipal and state levels. Schleien and Werder (1985) have further found that parks and recreation service providers did not perceive a responsibility for meeting the recreation and leisure needs of special populations.

Congress has produced several documents addressing the needs of persons with disabilities, the latest and most significant being the Americans with Disabilities Act of 1990. Each piece of legislation since the 1960's leading to the ADA has provided more comprehensive standards and guidelines for making facilities accessible to and usable by persons with disabilities. Efforts are currently underway to synthesize these many guidelines into a standard format of evaluating the degree of accessibility in facilities. However, there are no guidelines available to assist persons with disabilities in overcoming the

many barriers to participation other than physical and environmental. Integrating disabled and able-bodied citizens will provide the synergy necessary to utilize the ADA in providing a truly barrier-free society.

Addressing the recreation needs of persons with disabilities is a process of identifying and overcoming the barriers that inhibit participation. For several years the National Park Service has generated internal, annual evaluations of National Parks to assist in identifying barriers. However, few states have followed the national example. Maine (1986) is the only state in which a comprehensive evaluation and recommendation plan of their state park system was easily retrievable for review. Although many barriers have been identified by Smith (1985), Bedini & McCann (1985), and Oestricher (1990), architectural inaccessibility is a common theme among all and is a major focus of park and recreation professionals in their attempt to comply with the ADA.

STATEMENT OF THE PROBLEM

The purpose of this study is to evaluate the degree of accessibility of six East Tennessee State Parks for use for persons with disabilities.

Subproblems of this study are:

- 1) to assess the types of barriers that exist in East Tennessee State Parks that prevent participation by persons with disabilities,
- 2) to identify the adaptations that would be necessary to make a facility accessible.

RESEARCH OBJECTIVES

The following research objectives were investigated in this study:

1. Do the areas and facilities within the selected State Parks conform to the Uniform Federal Accessibility Standards?
2. If not, what recommendations can be made to rectify inaccessible areas and facilities?

DEFINITIONS

1. Accessibility or Accessible Facilities: usable by persons with disabilities. Three levels of accessibility are used in this study according to the USDA, USDI Design Guide for Accessible Outdoor Recreation (1990):

Accessible- accessible facilities meet or exceed Uniform Federal Accessibility Standards (UFAS) requirements. Sites have accessible parking for

both cars and vans with appropriate aisles and curb cuts. Pathways between the parking and recreation facilities are wide enough for wheelchair and have a firm, smooth surface. Accessible sites are intended for use by the greatest proportion of people with disabilities. They should be useable without assistance by all but the most severely handicapped person.

Challenge level 1- more difficult than "accessible" but generally meets UFAS requirements. Parking is either available or could easily be made available with appropriate access aisles, but pathways and ramps may have slopes steeper than the ANSI standard, and surface materials may be more difficult to traverse. Distances between facilities may be greater than Level 1. Persons with disabilities may have occasional inconvenience, but should face no insurmountable obstacles or danger. Severely handicapped persons may require assistance.

Challenge level 2- this is the most difficult and does not meet all UFAS requirements. Pathways are wide enough for wheelchair use but may be rough.

Slopes of pathways are more challenging and level rest stops are infrequent and unimproved. These sites offer challenge for those who seek it. They are usable for the athletic disabled person, but the "average" disabled citizen would probable need assistance.

2. Persons with Disabilities: "...any person who a) has a physical or mental impairment which substantially limits one or more of such person's major life activities, b) has a record of such an impairment, or c) is regarded as having such an impairment" (ADA, 2 (a)(1), 1990). Persons who are blind, deaf, and persons with developmental and physical disabilities will be utilized in evaluating the sample parks.

3. Recreation and/or Leisure Services: those activities and experiences that may be found in a Tennessee State Park such as, but not limited to, camping, swimming, picnicing, boating, fishing, hiking, playgrounds, horseback riding, and canoeing.

4. Barriers: although these may be manifested in several forms, any hinderance or obstacle that prevents a person with a disability to fully participate in or use a recreation area. Only physical barriers will be

evaluated in this study. In parks, this may be a lack of curb cuts, no handicapped parking spaces, inaccessible bathrooms or buildings, picnic tables built on platforms with no ramps, or slopes that are too steep that lead to park areas, to name a few.

5. East Tennessee: this is the geographical area of Tennessee stretching from Chattanooga north/northwest to the Kentucky state line. The three metropolitan areas included in this region are Knoxville, Chattanooga, and the Tri-cities of Kingsport, Johnson City, and Bristol.

ASSUMPTIONS

The assumptions of this study were:

1. The researcher accurately assessed, completed, and compiled the evaluation data.

DELIMITATIONS

The delimitations of this study were:

1. Only six East Tennessee State Parks were evaluated.
2. Only physical barriers were evaluated.
3. State parks were evaluated during the winter and early spring when some facilities were seasonally not available or open for evaluation.

4. Only state parks in the East Tennessee area were evaluated.

5. Guidelines indicating the degree of "slope" were not evaluated. Instruments needed to accurately measure slope were not available. Accessibility levels were estimated by the evaluator in these measurements.

SIGNIFICANCE OF THE STUDY

The ADA states that there are approximately 43 million Americans with disabilities. However, approximately 10 percent of the population is 65 years or older with cardiac and respiratory problems and possibly another 10 percent who have a temporary disability such as a broken limb at any given time. It is estimated that as much as 57 percent of the total population could benefit from accessible designs (USDI, USDA, 1990). Further, accessible facilities do not hinder the able-bodied, they enhance the functional use of the facility for everyone. And the cost of accessibility has proven to be negligible at the design stage (Oestreicher, 1990; Stein, 1986; Bedini & McCann, 1992), accounting for only one to one and one half percent of the total building cost. With the total population who could possibly benefit from accessible

facilities, the need for such designs is obvious.

Although the benefits of participation in outdoor recreation are known to increase self-actualization (Young & Crandall, 1984), increase life satisfaction in older Americans (MacNeil, et al, 1987), increase self-esteem (Bertolami, 1982), and prove significant improvement in self-concept (Nye, 1976), these are of little significance if opportunities for participation are not available due to inaccessible facilities. This study is to evaluate the level of accessibility of a sample of East Tennessee State Park facilities to identify what barriers prohibit the use of these parks for persons with disabilities.

In that few studies have been conducted on the state level on park accessibility, the significance of this project should prove useful. According to a survey conducted by Louis Harris and Associates for the International Center for Disabilities (1986), access to information about community services that are accessible is a significant barrier to recreation and leisure participation. The results produced from this study can be a valuable resource both for park and recreation professionals and for park users with

disabilities. It can provide park professionals with the data needed to make necessary accessibility improvements, in turn creating parks that are usable by everyone. This could prove to be an important component in increasing park attendance at a time when park use is at its lowest in several years. It can also prove a useful tool for persons with disabilities and organizations that support them in their efforts to locate information on accessible community resources.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this review is to summarize the issues of creating accessible park programs and facilities for persons with disabilities. The review focuses on the following areas of concern: (a) Federal and State of Tennessee legislation pertaining to accessibility, (b) identifying and overcoming barriers to participation, (c) research and studies, and (d) efforts to provide information on accessible parks on the state level. Information contained in this review was abstracted from periodicals, books, manuals, pamphlets, and legal documents.

STATE AND FEDERAL ACCESSIBILITY LEGISLATION

Relative to State Parks in Tennessee, there is little legislation that mandates program and facility accessibility for persons with disabilities. This is due, in large part, to the fact that Tennessee State Parks receive federal funding and are, therefore, responsible for accessibility compliance under Federal law. However, a brief overview of existing State laws regarding park accessibility is included in the following.

According to the Tennessee Public Buildings Accessibility Act of 1970, any public building "constructed, enlarged, or substantially altered or repaired after July 1, 1983" are designed for use under minimum standard specifications contained in the 1976 edition, or any edition that supercedes, of An Illustrated Handbook of the Handicapped section of the North Carolina state building code. This applies to buildings found in Tennessee State Parks with the exception of alterations made to or considered to historically significant structures, which is covered by the Americans with Disabilities Act of 1990.

Specific to State Parks, State legislation found in Title II, 11-3-114 through 11-3-116 is concerned primarily with fee waivers for persons with disabilities, not program or park accessibility. Section 11-3-114 states that residents of Tennessee who are considered by either the Social Security Administration, the Veterans Administration, or a physician licenced to practice in Tennessee to be one hundred percent (100%) disabled, does not have to pay fees assessed by the park for hunting or sports fishing within the park. The exception is for any "managed or

controlled hunt", at which point any fee is not waived. Section 11-3-115 simply states that residents over 65 do not have to pay a park fee for sport fishing and hunting. Section 11-3-116 further states that bona fide residents over 62 years of age and those who are 100% disabled defined in 11-3-114, shall receive a 50% discount on camping fees in State Parks. Lastly, Section 70-2-104 states that persons who are legally blind and any veteran of war who is 80% disabled or more are exempt from paying sport fishing license fees.

As stated earlier, although these citations on the state level are not directly related to accessibility, as the focus of this review is, it does provide insight into the magnitude by which State Parks must comply with accessibility standards according to national law and regulation.

It was in the late 1960's, early 1970's that the results of intense lobbying activities from persons with disabilities and their allies resulted in the passage of several laws advocating and addressing the rights of this large segment of the population. The most notable of these laws as it relates to accessibility, in general as well as in parks, are the

Architectural Barriers Act of 1968 (ABA) and Section 504 of the Rehabilitation Act of 1973, henceforth referred to as "Section 504" (Tucker & Goldstein, 1992)

The Architectural Barriers Act (ABA) of 1968 in a simple form is to help ensure "a barrier-free environment for disabled persons" (Tucker & Goldstein, 1992). Although the ABA is limited in its scope of jurisdiction and contains gaps in its policies regarding what facilities or parts of a facility are required to be accessible, it does however set forth important minimum guidelines and standards in constructing accessible facilities. The ABA authorizes four agencies to issue standards of design, construction, and alteration to particular buildings within their respective organizational scope. These agencies are the General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the U.S. Postal Service. To ensure compliance with each agency's respective standards, Congress established the Architectural and Transportation Barriers Compliance Board. The ATBCB was legally created as Section 502 of the Rehabilitation of 1973 (29 U.S.C. 792). In a 1978

amendment to Section 502, the ATBCB was further required to issue minimum guidelines and requirements by which the standards of the four agencies must comply. These agencies determined that not only would their respective standards comply with the ATBCB criteria, but would also adhere to standards published by the American National Standards Institute (ANSI). The ANSI is a private, national organization composed of 52 organizations that represent the associations of persons with disabilities, rehabilitation professionals, builders, designers, and manufacturers. ANSI standards are recommended for non-federally funded facilities and is accepted generally by the private sector, although they are adopted by the federal government and most state governments. ANSI standards are called ANSI A117.1, "Standards for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People (UFAS 49 FR 31528).

In order to provide uniformity among the many design standards, Congress established the Uniform Federal Accessibility Standards (UFAS), following ANSI A117.1-1980 in format. The UFAS meets or exceeds the provisions of the ATBCB guidelines. The relevance of

this specific discussion regarding the ABA is that the minimum guidelines and specifications found within the the UFAS and the ANSI, have been adapted and used, in whole or in part, by many states such as, Indiana (1988), Ohio (1977), Maine (1986) and Illinois (1978), among others, and in the National Park Service in efforts to make outdoor recreation facilities and programs accessible.

Section 504 is considered to be the genesis of the national declaration of the rights of persons with disabilities and is one of the primary means of eliminating barriers by Congress. In its pertinence, this section states that no person with a disability should be denied from participating in or deriving the benefits of an program or activity receiving Federal funds or under any Executive agency (Tucker & Goldstein, 1992). The important difference between Section 504 and the ABA is that the ABA requires physical accessibility for entities that receive Federal funds; Section 504 extends this accessibility to programs as well (USDA, USDI, 1990). However, the law clearly states that not every part of an existing facility must be accessible to and usable by persons

with disabilities. Only "when viewed in its entirety" must it be accessible under Section 504 (Tucker & Goldstein, 1992). Thus, a picnic area may be termed accessible in only one of four picnic areas is adapted for use by persons with disabilities. Likewise, if an agency offers swimming at various locations, only one location must be accessible, unless federal funds were used to construct each facility (Indiana, 1988).

Termed the "Emancipation Proclamation" for persons with disabilities (Tucker & Goldstein, 1992), the Americans with Disabilities Act (ADA) has been hailed as "the most important piece of antidiscrimination legislation since the Civil Rights Act of 1964" (Lippman, 1991) and a "legal landmark" (Daynes, 1990). The ADA is broad in scope, outlining discriminatory prohibition in the areas of employment (Title I), public services (Title II), public accommodations (Title III), and telecommunications (Title IV). The purpose of the ADA is to outline and enforce standards addressing discriminatory issues against a population of approximately 43 million Americans with disabilities (P.L. 101-336, 1990. ?). Expanding the scope of the Civil Rights Act of 1964 and Title V of the

Rehabilitation Act of 1973 and the Architectural Barriers Act, the ADA prohibits discrimination against persons with disabilities by all public accommodations (Tucker & Goldstein, 1992), not just those receiving Federal funds.

The accessibility guidelines for the ADA are published in the Federal Register, Appendix A of Volume 56, No. 144. Again, these guidelines follow closely with the American National Standards Institute ANSI 117.1-1980 specifications. The differences in specifications of the ADA and ANSI are the minimum requirements for accessible sites, exterior facilities and building of new construction, additions or alterations of existing buildings, and access to historic buildings. Accessibility guidelines for restaurants and cafeterias, medical care facilities, business and mercantile, libraries, transient lodging, and transportation facilities differ in their entirety from the ANSI 117.1-1980 specifications.

IDENTIFYING AND OVERCOMING BARRIERS

There are three important categories of barriers that prevent persons with disabilities from full participation in recreation and leisure activities

according to Smith (1985). A brief synthesis of Smith's (1985) categories are paraphrased in the following:

1. Intrinsic barriers are those that are within the individual, are temporary or permanent, and may or may not be the result of a person's disability. Examples of these barriers are (a) lack of knowledge of recreation or leisure resources, activities, programs, or support services, (b) social ineffectiveness as a result of lack of social skills and development or low self-concept, (c) health problems, (d) physical and psychological dependency resulting from parental overprotection or lack of independent functioning, and (e) skill/challenge gaps resulting from an imbalance of recreation and leisure skill development and the ability to engage in challenging activities.

2. Environmental barriers are those found in society or in the natural world that may be very difficult for a person with a disability to overcome. Examples in this category include (a) attitudinal barriers such as negative, paternalistic, or apathetic behaviors that may come from family, friends, or strangers, (b) architectural barriers or man-made

barriers, (c) ecological barriers are those that are inherent in the terrain or landscape, (d) transportation barriers, (e) economic barriers, encountered as a result of low-paying jobs or unemployment, (f) rules and regulations barriers found in policies and procedures followed by organizations that discriminate against the disabled, and (g) barriers of omission are those as a result of what is not done to assist persons with disabilities. Bedini and McCann (1985) continue by stating that barriers of omission are discriminatory according to the ADA (1990) and eliminating these barriers sends a message of welcome to all individuals in the community.

3. Communication barriers are simply those that exist when a message is sent but is not received, as is often the case with persons with hearing impairments. It is a vital connection between where we are and where we would like to be (Smith, 1985).

Smith (1985) concludes his discussion by stating that barriers can be easily overcome within the framework of the recreator's job description. By taking the role of an initiator of change, careful program planning, and by facilitating greater

communication with the disabled population, the recreation and leisure provider can become the effector of a positive experience in a barrier-free environment.

Stein (1986) advances four goals to assist the recreation manager in overcoming barriers encountered by persons with disabilities within a facility. A summary of Stein's (1986) conclusions are:

1. Accessible and available facilities can be achieved by installing sound and visual emergency warning signals, pictorial and universal signage for the mentally retarded or learning disabled, sound devices to assist those with visual impairments in locating deep and shallow ends of pools, raised letters and braille signage for the visually impaired, using cups at drinking fountains rather than lowering the unit itself, and gradual walkways rather than traditional wheelchair ramps. The author also supports the use of advisory committees of persons with varied handicapping conditions in planning and implementing accessible programs and facilities, stating that designs created by able-bodied architects are usually very different than those advanced by users who are disabled. Farbman and Ellis (1987) recommend that

persons with disabilities should be employed as professionals or advisors in outdoor recreation facilities and programs to assist in identifying and solving accessibility problems. Austin (1987) also supports utilizing perceptions of persons with disabilities in planning and evaluating facilities and programs in outdoor recreation.

2. Accommodations in programs and activities can be readily achieved without changing the structure or experience for the able-bodied. Activities can utilize teams of able-bodied and persons with disabilities, adaptive devices can be jointly designed between leader and participant, management approaches can emphasize ability rather than disability, and modifications in rules are all ways of developing an accessible, integrated program of activities (Stein, 1986).

3. Changing attitudes, such as those behaviors identified by Smith (1985), are difficult to negotiate. Most attitudes stem from a history of myths and stereotypes toward persons with disabilities. Only when a positive relationship is established between able-bodied participants and persons with disabilities can the misperceptions be eliminated (Stein, 1986).

Austin and Austin (1983) also state that attitudes towards persons with disabilities are not necessarily negative, but "stem from feelings of uneasiness and uncertainty about interacting with individuals with disabilities".

4. Advocacy of self-advocacy must exist, personally and professionally, to achieve the aforementioned goals. Persons with disabilities know their needs best and creating an environment in which the needs are mutually met is essential (Stein, 1986).

Oestreicher (1990) identifies common myths, or barriers, that have contributed to inaccessible designs in recreation. His reactions to these myths are: (a) the fact that recreation providers have never seen a person with a disability in a park is because the facility and programs are not adapted to their needs, (b) persons with disabilities do have a desire to be integrated into recreational activities, (c) persons with disabilities "are not more of an insurance risk in a recreational environment than the able-bodied, (d) it is possible that 25% of the U.S. population will be unable to participate in at least one daily life activity by the year 2000, but it is impossible to

accurately predict how many persons with disabilities there really are, (e) the cost of designing accessible facilities is minimal in comparison to designing otherwise if it is planned that way from inception, and (f) trained staff is good but is not a necessity in interacting with persons with disabilities. Stein (1986) also supports that from inception, accessibility designs account for one to one-and-one-half percent of total cost; two to three percent on renovation projects. Bedini and McCann (1992) cite a 1989 study by the Department of Labor indicating that "50% of all workers with disabilities can be employed with changes that cost less than \$50.00". The authors suggest that accessibility changes in recreation are comparatively inexpensive as well.

RESEARCH AND STUDIES

There is an absence of qualitative research focusing on the needs of the disabled, outdoor recreation and persons with disabilities, and substantive research on architectural accessibility of outdoor facilities and spaces (Farbman & Ellis, 1987). Evidence of this is the small number of research

articles and studies contained in this section of the review.

A study was conducted by Edginton, Compton, Ritchie, and Vederman (1975) to determine, among several other factors, the accessibility of parks and recreation facilities in the State of Iowa. The study included the use of questionnaires, primarily, developed by synthesizing the surveys of Hayes in 1969, Munford in 1961, and Cotich in 1970. Ninety two communities were selected and surveyed for the study; of these, 52 percent were returned (49 communities). The authors state that less than 30 percent of the total respondents could indicate one barrier to participation in parks and recreation facilities and, overall, the largest barrier to providing accessible, integrated programs was "lack of funds" (Edginton et al., 1975). The authors concluded that there were minimal recreation services provided to special populations throughout Iowa parks and recreation departments.

Farmer (1976) conducted a study in five Land and Water Conservation Fund Projects funded by the Bureau of Outdoor Recreation (BOR), now non-existent, as to

the accessibility and usability of persons with disabilities. The five projects were randomly selected from Planning Regions 3, 4, and 5 in Georgia. The criteria used to evaluate the degree of accessibility was the American National Standards Institute minimum guidelines. A summary of the findings indicated that only 19% of the minimum standards were met and 63% did not fall within minimum standards criteria for accessible buildings. Farmer (1976) concluded that not only did the BOR not adhere to the minimum guidelines of accessibility that they adopted but that the ANSI standards were inadequate to accurately evaluate the accessibility and usability of these BOR projects. Farbman and Ellis (1987) also advance that although projects of the Land and Water Conservation Fund must comply with the ABA, the monitoring of facility accessibility in these areas has been minimal.

Austin, Peterson, and Peccarelli (1978) conducted a study to determine the status of special population services for persons with disabilities in the State of Indiana. Similar to the Iowa study (Edginton et al., 1975), the researchers utilized questionnaires developed in similar studies completed by Peters in

1967 and Edginton et al. in 1975. Fifty valid questionnaires were used in data analysis from 60 park and recreation departments. Thirty-eight of these 50 respondents indicated that they offered services to special populations. Of those that did not offer these services (12 departments), nine stated that other community programs were meeting such needs and a like number indicated that services were not provided for budgetary reasons. Inadequate facilities and lack of trained personnel to deliver special programs were other reasons given for offering no services to persons with disabilities.

Schleien and Werder (1985) conducted a survey in Minnesota to determine the extent of services provided to persons with disabilities and perceived responsibilities of the agencies to deliver such programs. The three agencies included municipal park and recreation departments, community education agencies, and educational programs serving mentally retarded students. Two versions of the survey forms were sent to 522 community and educational agencies: the community needs assessment inventory was sent to the parks and recreation and community education

agencies, the education needs assessment was sent to supervisors of public school programs serving students with moderate and severe disabilities. Of the total, 403 (73%) surveys were completed and returned. Similar to previously mentioned studies, 43% of the respondents indicated that lack of funds was the primary reason for not providing recreation services to persons with disabilities, and 33% believed that other agencies were providing such services.

Items on the survey also addressed the depth of services provided that integrated the disabled and non-disabled in recreation activities. More than half of the public school respondents indicated that students with disabilities were more often taught recreation skills in segregated groups than integrated classrooms. Less than half of the community agencies indicated that games and sports, special events, swimming and arts and crafts were integrated, even less (less than 10%) indicated integrated programs in camping, nature, and other activities (Schleien and Werder, 1985).

Schleien and Werder (1985) concluded that integrated programs are infrequent and limited program development lacks input from persons with disabilities,

community and educational agencies each perceive the other as being responsible for delivering recreation services and that special recreation service overall are limited. They further state that parks and recreation departments can take a leading role in providing "practice and experience for handicapped individuals to develop preferences and refine recreational skills" only if these programs are accessible to the total population in which it serves (Schleien & Werder, 1985). However, Farbman and Ellis (1987) state that program accessibility is more subject to interpretation than architectural accessibility and there is a great need for clarification of these issues within Section 504 regulations.

Although the evaluations themselves were not available, the results of evaluative measures have yielded material by some states that assists persons with disabilities in locating accessible parks. North Carolina (no date), South Carolina (1986) and Indiana (1984) have all published "Access Guides" outlining which facilities within State Parks, as well as which parks, are accessible. The Tennessee State Park information brochure also indicates 18 of the 50 park

facilities as having barrier-free access, six of which are in East Tennessee: Norris Dam, Cove Lake, Fall Creek Falls, Cumberland Mountain, Big Ridge, and Roan Mountain. However, information compiled in 1982 submitted by park superintendents and area managers indicates 25 parks that have varying accessible facilities. The information is available by request from the Tennessee State Park office in Nashville but is not in publishable form as is the access guides of neighboring states. The evaluation forms and criteria for measuring the level of accessibility of the parks indicated was not available. Maine (1986) was the only state in which a completed, comprehensive accessibility study and proposed recommendations were available, although others may have been done.

The Maine study (1986) reviewed 28 parks over a three month period using, primarily, seven "peer evaluators" from across the state representing a broad range of disabilities. The training of these evaluators lasted two days and consisted of reviewing the American National Standards Institute accessibility guidelines, the New Mexico Park Study, and reviewing two sample park sites. The evaluations were assembled

in two subsequent meetings in January and March of 1986. The results were organized according to park and included a brief narrative on the accessibility of the facility, recommendations for what "should be" done to make a particular area accessible, and a detailed summary of the exact specifications of each area of a park according to the ANSI. The study is concluded with a resource list of organizations that provide accessibility products. The evaluation instrument used in this study was not available, but the guidelines were measured using the ANSI specifications, discussed earlier in this chapter.

The survey package administered by the National Park Service utilizes the guidelines of the Uniform Federal Accessibility Standards (UFAS), developed for all Federal agencies. The forms were designed to evaluate physical and interpretive areas for the hearing, mobility, and visually impaired. The package also contains a series of "yes" and "no" questions as to the accessibility of specific site areas, such as trails, beachfronts, campsites, fishing, piers, and buildings. It generally resembles the format and content of the Indiana survey used in this study.

CHAPTER 3

INTRODUCTION

This evaluation study utilized the characteristics of both evaluation and descriptive research. Evaluation research seeks to judge the worth, utility, or effectiveness of a program or area (Theobald, 1979). The essence of evaluation research is to provide feedback that leads to a successful outcome in well-defined terms (Isaac and Michael, 1990). Isaac and Michael further define the goals of evaluation research as:

"...how effective or ineffective, how adequate or inadequate, how good or bad, how valuable or invaluable, and how appropriate or inappropriate a given action, process, or product is in terms of the perceptions of the individual who makes use of information provided by an evaluator." (p.2)

Evaluation research in parks and recreation departments is in direct relation to the goals and objectives of the programming because it seeks to assist the staff in planning and modifying the program activities to maximize or increase their achievement (Theobald,

1979).

Due to the literal observations of situations, this evaluation study was also descriptive in nature. Descriptive research, opposed to traditional forms of research studies, does not necessarily "explain relationships, test hypothesis, make predictions, or get at meanings and implications" (Isaac and Michael, 1990, p46). It is concerned with what exists in the present and to accurately describe the characteristics of a given area of interest.

The purpose of this study was to evaluate the level of accessibility of selected East Tennessee State Parks. The evaluation instrument (Appendix A) used in this effort was adapted from the instrument used by the Indiana Department of Natural Resources, IDNR, (1988), and the accessibility design guide (Appendix B) drafted by the U.S. Department of Agriculture, USDA, and U.S. Department of the Interior, USDI, (1990). The evaluation instrument used by the IDNR was selected for its congruence with and standards that followed the Architectural and Transportation Barriers Compliance Board and American National Standards Institute guidelines for accessible facilities. It also

contained standards that were specific to park facilities.

Portions of the design guide drafted by the USDA and USDI were incorporated because of the use of "accessibility levels" in evaluating facilities. These levels were adopted from Accessible Fishing: A Planning Handbook by the Resource Management and Development Division, New Mexico Natural Resources. The Americans with Disabilities Act (1990) states that programs and facilities should provide an environment in which persons with disabilities can receive equal benefits of participation parallel to the able-bodied (ADA, 1990). In doing so, outdoor environments should offer varying degrees of challenge and opportunities for which they can choose to participate according to their own ability and desire. All persons' recreation preferences and needs can be met when a variety of opportunities are available (USDA, USDI, 1990). For this reason, the evaluation tool did not indicate whether or not a facility is accessible but to what degree, or level, it was usable.

SELECTION OF SAMPLE PARKS

Six East Tennessee State Parks were selected for evaluation in this study. These parks were chosen for the following reasons: 1) the parks were considered to be in the East Tennessee area, 2) the proximity to the major metropolitan areas of East Tennessee, such as Knoxville, Chattanooga, and the Tri-Cities area, 3) their wide variety of recreation opportunities offered, and 4) the variety of terrain within each park. The evaluation instrument was comprehensive in outlining virtually every type of recreation opportunity that was available in a state park. Therefore, in order to utilize the tool to its fullest potential, state parks offering the greatest recreation potential were chosen.

PROCEDURE

Each park was evaluated independently over a period of three weekends in late February and early March, 1993. Each area listed on the evaluation instrument was completed before beginning a new area listing. When all areas applicable had been evaluated, the results were tabulated into accessibility levels based on the criteria found in the U.S. Department of Interior/Department of Agriculture Design Guide for

Accessible Outdoor Recreation (1990). Each area was recorded as being "accessible", "challenge level 1", or "challenge level 2". However, if an area did not fall within the minimum guidelines of any three accessibility levels, it was termed "inaccessible". The following areas were evaluated as to their level of accessibility: parking, trails and pathways, ramps, picnic areas, camping areas, toilets, pools, boating facilities, fishing facilities, playgrounds, amphitheaters, and historic sites. Other areas were also evaluated, such as tennis courts, basketball courts, and showers; however, minimum guidelines for an accessibility level were not provided for these areas, but observations were documented. Not all parks contained the each of the above facilities.

For each park, a brief description was given as to its location, natural features, and a description of the facilities provided. Upon completion of the evaluation of each area, a table was created to show each park's accessibility levels in each area evaluated. The table was similar to that shown in Figure 1.

Table #. Name of Park

AREA	IN	AC	L1	L2	NA
Parking					
Trails and Pathways					
Ramps					
Picnic Areas					
Camping Sites					
Toilets/Restrooms					
Pools					
Boating					
Fishing					
Playgrounds					
Amphitheaters					
Historic Sites					
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

Figure 1. Sample layout of data tables for each park.

CHAPTER IV

FINDINGS AND DISCUSSION

INTRODUCTION

Six State Parks in East Tennessee State Parks were evaluated as to their level of accessibility: accessible, challenge level I, challenge level II, or inaccessible. As stipulated in the USDA, USDI (1990), an area must have met all of the criteria in a given level to be assigned that level of accessibility. For example, if a picnic area met all criteria for a challenge level I site, except that it had no accessible restroom nearby, the picnic area was determined to be inaccessible for failing to meet all criteria for a challenge level I site.

Specific results in all twelve areas in each park were documented individually by park as to what accessibility level criteria was met or not met. Required measurements, distances, locations, and/or materials for a certain level were also given except in situations where no minimum criteria were met in any accessibility level. In these cases, a statement similar to the previous was used in lieu of providing all of the criteria that was supposed to be met but was

not. When all twelve areas within each park were thoroughly discussed and the assigned accessibility level was justified, a table was created to summarize and graphically represent the results of the narrative. This provided easy-to-understand summary of the findings. The only areas not included in the table were "other usable areas", which were observations of area within a park that did not have accessibility level requirements in the USDA, USDI design guide (1990). These observations were documented in each park's narrative section. The following were the findings and discussion thereof based on the observations and evaluations in this study.

FINDINGS AND DISCUSSION

COVE LAKE STATE PARK (Table 1)

Cove Lake Park is located in Caryville, Tennessee, 30 miles northwest of Knoxville on I-75. This 667 acre state recreation area was established in the 1930's, along with its sister parks Norris Dam and Big Ridge, as recreation demonstration areas by the Tennessee Valley Authority, the National Park Service, and the Civilian Conservation Corps. Within the park, users

Table 1. Cove Lake State Park

AREA	IN	AC	L1	L2	NA
Parking		X			
Trails and Pathways: Nature Trail All other trails	X	X			
Ramps					X
Picnic Areas: Shelter #5 All other sites	X	X			
Camping Sites	X				
Toilets/Restrooms: Shelter #4 Recreation Center All other toilets	X	X X			
Pools	X				
Boating	X				
Fishing	X				
Playgrounds	X				
Amphitheaters					X
Historic Sites					X
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

will find 97 family campsites, a park swimming pool, boating and fishing, 112 picnic sites, a family restaurant, tennis courts, badminton, playgrounds, bicycle rental, and other recreation activities. Planned activities and programs include bicycle tours, guided walks, float trips, arts and crafts, archery lessons, campfires, and more.

Parking

There were approximately 260 spaces provided and at least 8 designated handicapped spaces, within accessible limits. All spaces within the park met the criteria for accessible parking, including signage, 8' width with 5' aisle, curb cuts, and end spaces.

Ramps and Curb Cuts

The park was situated on level ground, providing access to recreation areas without the need for ramps or curb cuts.

Trails and Pathways

There were 5 trails within the park. Lake Hollow trail, Quail Valley trail, Cemetery trail, and the Dam trail did not meet any accessibility level criteria. However, there was a fitness/nature trail that wound throughout the park that was fully accessible for one

way travel; in some places, two-way travel (5' wide). This trail was concrete, well maintained, and provided an accessible pathway to all recreation areas except the campground. This was the most outstanding accessible feature of the park.

Restrooms

Both male and female restrooms located at the recreation center and by picnic shelter #4 met all requirements for an accessible restroom and alternate stall. It was also observed that the restrooms and shower facilities at the campground were accessible pending construction of a ramp to the facility, to be completed in the summer of 1993, although no campground site was accessible.

Picnic Areas

Picnic shelter #5 met all criteria for an accessible picnic area. The remaining picnic areas lacked a stable, slip resistant surface leading to them, a 24" extension of the table on both ends, and no accessible restrooms nearby (within 200").

Swimming Pool

The only accessible criteria met at the swimming area was parking, route of travel with a curb cut, and

lifeguard station at the shallow end. All other areas within the pool site met no accessibility level requirements.

Fishing and Boating

Fishing was permitted year-round, but no designated fishing pier was constructed in this park. Fishing was permitted from the bank or from rental rowboats. Natural areas along the bank did not meet any accessibility level criteria due to lack of railings and curbs for safety. No other accessible criteria were provided for non-platformed areas. The boat dock met no criteria for any accessibility level.

Campground

There were no accessible or challenge level sites at the campground site.

Playground

The playground areas met all criteria for an accessible area except the following, which made the playgrounds inaccessible: no drinking fountain or restrooms nearby.

Other accessible areas

The tennis courts met all accessible criteria according to the USDI, USDA guidelines (1990).

Although no specific guidelines were provided for such building, the recreation center did provide an accessible entrance, accessible parking, and accessible restrooms as did the family restaurant.

PANTHER CREEK STATE RECREATION AREA (Table 2)

This park is located off U.S. 25E, accessible from I-81 North, 40 miles northeast of Knoxville. Covering approximately 1,435 acres, Panther Creek Park is on the shores of Cherokee Reservoir, an impoundment of the Holston River, making the area a popular boating and fishing area. The State of Tennessee began acquiring land to develop the park in 1965. Panther Creek contains a large, fan-shaped swimming pool, tennis courts, playground, a softball field, and a soccer field as well as 4.5 miles of hiking trails, 60 picnic tables and grills with two shelters, and 50 new campsites.

Parking

There were just under 200 parking spaces by the swimming pool, and approximately 52 spaces by picnic area #1. Parking lots by the visitors center and trail heads were constructed of packed stone with no lines indicating spaces, so the total number of parking

Table 2. Panther Creek State Recreation Area

AREA	IN	AC	L1	L2	NA
Parking	X				
Trails and Pathways: "Handicapped Trail"				X	
Trout Trail			X		
All other trails	X				
Ramps					X
Picnic Areas: Shelters #1, #2	X				
Camping Sites	X				
Toilets/Restrooms: Swimming Pool		X			
All other toilets	X				
Pool	X				
Boating					X
Fishing					X
Playgrounds	X				
Amphitheaters					X
Historic Sites					X
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

spaces was undeterminable. However, there was no signage or designated parking spaces within the park, although many spaces could have been readily provided.

Trails and Pathways

There were 4.5 miles of hiking trails at Panther Creek Park. One trail of .33 miles was designated on the map as a "handicapped trail" and indeed met the criteria of a challenge level II trail: its estimated slope did not exceed 12.5%, it exceeded the minimum 32" width, the slope leveled within 300' (max.), and the surface was packed and natural, passable in a wheelchair. The trout trail met challenge level I criteria and was constructed of natural, firm, compacted surface. The other trails met no other criteria. The pathway leading to picnic area #2 and adjacent restrooms met challenge level I criteria having an 8.3% maximum slope (estimated), leveling at areas less than 100' for rest, with a hard smooth surface. All recreation areas within the park were accessed by main road; no other pathways than those discussed were identified.

Ramps

Most areas within the park were approachable on a level surface, therefore no ramps were needed. The exceptions were the soccer field, accessible down a long, sloping, grassy hill or the Trout trail, and picnic area #2, located on top of a hill. Access to both areas were discussed in previous sections.

Picnic Areas

Picnic areas #1 and #2 were inaccessible for failing to meet the following criteria: no designated parking, no room for maneuvering around tables, no 24" extension of tables on either side, no accessible drinking fountains, no accessible restroom.

Camping

Camp sites and camping areas met no criteria for any accessibility level.

Restrooms

The restroom located nearest the swimming pool met all accessible criteria. Restrooms located at picnic areas #2 did not include grab bars in the toilet stall, dispensers and mirror were not hung below 40" high, and no signage, all required for all accessibility levels. The restrooms at picnic area #1 and the campground met

no accessibility level criteria.

Pool

The pool was inaccessible for having no ramp or stairs into the shallow end, no lift into pool, no portable steps for transfer into the pool and no designated parking spaces.

Boating and Fishing

Both of these recreation activities were popular on Cherokee Lake and Holston River, but neither were coordinated activities offered in park programming.

Playgrounds

The playground area was inaccessible due to the fact that there was no accessible route to the equipment; there were three distinct areas containing different equipment but all areas were surrounded by 4'x 4' timber pieces approximately 4" high with no accessible cuts in them for entrance. Support facilities such as restrooms, drinking fountains, and shade were accessibly available, however.

Other useable areas

The tennis courts met accessibility requirements under the USDA, USDI guidelines (1990).

NORRIS DAM STATE RESORT PARK (Table 3)

Norris Dam Park is located on the shores of Norris Lake at the site of Norris Dam, the first of a series of dams built by the Tennessee Valley Authority beginning in 1933. The park's more than 4,000 acres is most noted for excellent boating, skiing, fishing, hiking, and mountain biking. Camping, picnicking, swimming, rustic and modern cabins are among the many other recreation opportunities at Norris Dam Park.

It was extremely difficult to evaluate the accessibility of Norris Dam Park because of its historical significance. The state park is part of the Norris, Tennessee community, one that is on the National Register of Historic Places. Accessibility provisions for these historic areas are both unique and difficult to assess, and are influenced by the National Historic Preservation Act of 1966. Historic places are not exempt from accessibility requirements nor do preservation laws prohibit modification. The UFAS clearly encourages some modification of historical sites; the issue is how to provide alterations without significant impact to the historic preservation, which can be complicated and is subjective in nature. Any

Table 3. Norris Dam State Resort Park

AREA	IN	AC	L1	L2	NA
Parking				X	
Trails and Pathways: All trails	X				
Ramps					X
Picnic Areas: Shelters/Tables	X				
Camping Sites	X				
Toilets/Restrooms: Visitor Center All other toilets	X	X			
Pool	X				
Boating					X
Fishing	X				
Playgrounds	X				
Amphitheaters					X
Historic Sites	X				
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

alteration to a historic building on the National Register must be evaluated by the Advisory Council, on Historic Preservation on a case-by-case basis, to determine whether alterations for accessible routes, ramps, entrances, toilets, parking, and displays would impact the historical significance of the facility (USDA, USDI, 1990).

It was unknown whether or not Norris Dam State Park was evaluated by the Advisory Council to determine what modifications, if any, could be made. However, the observations made in this study found that no accessibility alterations or modifications were made to historical sites. The east section of the park, containing 20 rustic cabins built by the Civilian Conservation Corps 60 years ago (historically significant), a camping area, trails, and picnic area (not historically significant facilities but adjacent to the cabins), met no criteria in any accessibility level. The gristmill, threshing barn, and shop were all inaccessible as well. It was observed that the east section of the park, viewed in its entirety, was considered a historically significant area.

However, much of the more modern west section of

the park did not meet any three accessibility level criteria as well, as was the case for the camping area, bathhouse, restrooms, playground, and trails in this area. The facility housing the park office provided some recreation opportunities, the evaluation results provided as follows:

Parking

Parking for the visitor center contained just under 150 spaces with 3 spaces designated for handicapped parking. Five spaces were required. Two spaces were approximately 11'8", exceeding the accessible standard of 8' but short of the 13' required with an accessible aisle. They were 20'5" deep, meeting the challenge level II requirement. The other space was a drop-off zone, also within level II limits.

Trails

All trails within the park did not meet any accessibility level requirements.

Playgrounds

The Village Green playground was inaccessible for not having an accessible route of travel and enough maneuvering space around equipment. A soft surface under the equipment and accessible restrooms and

drinking fountain were available.

Swimming Pool

The pool was not ramped at the shallow end, had no steps or handrails into the pool and no lift, therefore inaccessible. The bathhouse was seasonally closed and was not observable.

Restrooms

The restrooms in the visitors center met all accessible criteria with an alternate stall. A notable modification was the mirror. Hung at 50" (40" maximum required), the top was angled down to provide a person in a wheelchair or small children accessible viewing.

Boating

Boating was a major recreation activity at Norris Dam but the boating facilities were commercially owned and operated outside park management. Although it was within the park boundaries, the dock was not evaluated for this reason.

Fishing

No fishing platform was constructed within the park; fishing could be done from the bank of Norris Lake or in the Clinch River. Neither area provided accessible fishing opportunities under any

accessibility level.

Other useable areas

Although the cabins were occupied and not available for evaluation, according to park rangers, deluxe cabins #2 and #5 were designated by the park as accessible for persons with disabilities. It was observed that there was accessible parking, route of travel, and entrance into these cabins, though the accessibility level of the interior was not observed or evaluated. The tennis courts met USDA, USDI (1990) accessibility requirements. The Lenoir Pioneer Museum was also accessible including parking, route of travel, entrance into the museum, drinking fountain, and restroom.

BIG RIDGE STATE RUSTIC PARK (Table 4)

This 3,687 acre park lies on the southern shore of TVA's Norris Lake, 25 miles north of Knoxville on Hwy. 61, off I-75. Big Ridge was one of five demonstration parks developed by the TVA, National Park Service, and Civilian Conservation Corps, as an example of public recreation development along TVA lakeshores. Within the park are 19 rustic cabins, 56 camping sites, a group camp accommodating 120 persons in 18 bunkhouses,

Table 4. Big Ridge State Rustic Park

AREA	IN	AC	L1	L2	NA
Parking		X			
Trails and Pathways: All trails	X				
To snack bar		X		X	
To tennis courts		X			
To all other areas		X			
Ramps			X		
Picnic Areas: Shelters/Tables	X				
Camping Sites	X				
Toilets/Restrooms: Visitor Center	X				
Pool	X				
Boating	X				
Fishing	X				
Playgrounds	X				
Amphitheaters	X				
Historic Sites	X				
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

boating, fishing, swimming beach, three picnic areas, and 15 miles of hiking trails.

Parking

Of approximately 182 spaces provided throughout the park, 4 were designated for handicapped use; 6 are required. Spaces closest to the visitors center were 13.5" wide, within accessible parameters. Other spaces provided were parallel the main road, providing ample, but possibly unsafe, room to accommodate vehicle lifts. Spaces were accessible, but fell short of the recommended minimum number.

Ramps

The ramp leading into the visitors center was accessibility level I because of its slope of approximately 1:15. Curb cuts, level landings below and on top of the ramp fell within accessible standards.

Trails and Pathways

There were 8 trails totalling 15 miles for hiking in Big Ridge. Steep slopes, natural surfaces, and narrow trails contributed to the inaccessibility of all 8 trails. The pathway leading from the main parking lot to the tennis courts and basketball courts was

accessible for one-way travel. Pathways to other areas were via the main road and were accessible, except those leading to the snack bar and picnic area beyond. The surface is eroded asphalt, passable in a wheelchair, but challenging. With an estimated slope of approximately 10%, the pathway leading to these areas fell within a challenge level II.

Restrooms

Restrooms were located at the visitors center, the snack bar, and the campgrounds. Only the visitors center restrooms were available for evaluation. This restroom did not meet minimum guidelines for any accessibility level due to the following: no signage, no 5' x 5' clear floor space in male side, no pipe insulation and dispensers and accessories hung above grab bars.

Picnic Areas

Although parking was nearby, all picnic areas and shelters were located on natural surfaces with inaccessible routes to them, no table extensions (24" required), and no maneuvering room around tables. No picnic area or shelter was found accessible.

Swimming Pool

In Big Ridge there was an interesting swimming facility. It was constructed in an inlet of the Big Ridge Lake. It had a floor surface of concrete in the shallow end similar to a pool but extended into the lake to become a natural swimming beach. The shallow area was surrounded by a concrete walkway approximately 8' wide and did not have an accessible entrance route. There were no steps into the shallow end, no accessible restrooms, or drinking fountain. The beach area was closed and not evaluated.

Fishing and Boating

There were no designated fishing piers or docks, though fishing could be done from the boat dock. No natural area met any accessibility level requirements nor did the boat dock.

Playgrounds

There were 3 inaccessible playground areas within the park. No area provided nearby access to restrooms or water fountains as stipulated under accessible or challenge level I. Challenge level II guidelines indicate "advanced level challenges" which did not apply to these sites, either.

Campgrounds

Evaluation of the 56 campground sites yielded the following: surfacing was loose gravel, picnic tables and grills did not meet specifications mentioned under picnic areas, and water was inaccessible. Restrooms were seasonally closed but one bathhouse was observed as being signed for handicapped use.

Amphitheater

There was one location for persons with disabilities to view programs at the amphitheaters: the parking lot overlooking the theater. Accessible design at any level requires seating in various places along slip resistant paths.

Historic Places

Norton Grist Mill was not accessible, providing no curb cuts or accessible routes of travel to the mill, no parking, and no accessible entrance. It was observed that no suitable modification could be made in this area without interfering with the historical significant of the structure.

BOOKER T. WASHINGTON STATE RECREATION AREA (Table 5)

Located on the Chickamuga Lake, approximately 12 northeast of Chattanooga, this site is perfect for

Table 5. BOOKER T. WASHINGTON STATE RECREATION AREA

AREA	IN	AC	L1	L2	NA
Parking		X			
Trails and Pathways: Fitness trail To picnic/play area To all other areas	X	X		X	
Ramps: To boat dock To all other areas	X				X
Picnic Areas: Shelters/Tables	X				
Camping Sites	X				
Toilets/Restrooms: Fishing Pier	X				
Pool	X				
Boating					X
Fishing		X			
Playgrounds	X				
Amphitheaters					X
Historic Sites					X
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

boating and fishing enthusiasts. Facilities include a swimming pool, picnic areas, and a group camp. The year-round lodge is equipped with complete kitchen facilities and can accommodate 40 people. There is also a concession building, boat ramp, fitness trail, and fishing pier.

Parking

There were approximately 142 parking spaces provided with a required number of handicapped spaces of 5, which Booker T. Washington contained. All spaces were signed and were located at the end of the parking lot closest to entrances. Spaces were 12' wide, the requirement being 8' wide with a minimum 5' adjacent access aisle. Although the spaces were 1' short of the required 13' total, end spaces provided for a far greater are beyond the actual parking space to provide necessary space to enter or exit a van lift. Parking was accessible.

Ramps

With the exception of the boat dock, discussed later, all recreation areas within the park were located on flat, level surfaces. Ramps were neither existent nor required.

Trails and Pathways

There was one exercise trail in this park and it met no requirements for any accessibility level. The pathways between the recreation areas- swimming pool, fishing pier, boat dock, and visitors center- were accessed via the main road and were accessible. The pathway to the picnic area and playground, however, was constructed of asphalt and crushed stone, both elements acceptable for challenge level II passage and designation.

Restrooms

Restrooms were located at the fishing pier, the swimming pool and picnic area. However, only the restrooms at the fishing pier were open for evaluation. The restrooms evaluated were not accessible in the following areas: they were not signed, they had spring loaded faucets, and the mirror hung at 44" (40" max. required). All other requirements for an accessible alternate stall were met, however.

Picnic Areas

One picnic area was provided at Booker T. Washington State Park that met the following guidelines: the area was located on untreated soil, a

challenge level I surface; accessible parking and route of travel to the site were provided, there was 30" clear space underneath the table and 24" extended at both ends; 3' clearance around the table and 32" to the cooking surface, all within accessible parameters. However, grills did not rotate, no accessible water was provided, and this site was segregated from the other picnic sites. In that all criteria was not met under an accessibility level, the picnic area was inaccessible.

Swimming Pool

There was no ramp or lift into the pool, no handrails on the steps into the shallow end, no underwater bench, no accessible drinking fountain nearby, and no modifications to aid a person in a wheelchair in transferring into the pool. The pool was therefore inaccessible. The bathhouse was seasonally closed and not available for evaluation.

Fishing

Full access to the fishing pier was provided, including surface material, railings and curbs, shade, shelter, and seating. This was the most outstanding accessible site in this park.

Boating

The boat dock area met no minimum guidelines for any accessibility level.

Playground

There were no accessible restrooms, parking spaces, drinking fountains, stable, slip-resistant surfaces to the playground. There was, however, enough space between elements for wheelchair to maneuver, climbing ropes to the apparatus, some swings had safety seats, and ample room for free play.

Other usable areas

Although no accessibility guidelines were provided, the basketball court had an accessible route of travel to it and a stable, firm playing surface.

FROZEN HEAD STATE NATURAL AREA

The 11,869 acres of Frozen Head contain some of the most beautiful scenery and natural features in the Tennessee State Park system. It is located in the Cumberland Mountains of East Tennessee, near Wartburg, between Oak Ridge and Crossville. From the observation tower on a clear day one can view the Cumberland Plateau, Tennessee Ridge and Valley, and the Great Smokey Mountains. The park features, and is best

Table 6. FROZEN HEAD STATE NATURAL AREA

AREA	IN	AC	L1	L2	NA
Parking				X	
Trails and Pathways:					
Interpretive trail				X	
All other trails	X				
To shelter C		X			
To amphitheater				X	
All other pathways		X			
Ramps					X
Picnic Areas:					
Shelters/areas	X				
Camping Sites	X				
Toilets/Restrooms	X				
Pool					X
Boating					X
Fishing					X
Playgrounds	X				
Amphitheaters	X				
Historic Sites					X
IN = Inaccessible AC = Accessible L1 = Challenge Level I NA = Not Available L2 = Challenge Level II					

known for, over 50 miles of hiking and backpacking trails, many originally established by the Civilian Conservation Corps in the 1930's. The park also hosts 32 picnic sites and 3 group shelters, 20 campsites, a self-guided interpretive loop trail, an amphitheater, a general store, basketball, volleyball, and field sports.

Parking

There were approximately 94 parking spaces at Frozen Head, 4 of which were designated for handicapped use, meeting the minimum number required. Two spaces were provided at the visitors center and two provided near picnic shelter C. The latter spaces measured 9' wide with a 4' access aisle. The accessible criteria is 8' and 5' respectively. The challenge level II criteria requires a 12' space, 20' deep which these spaces met. The spaces provided at the visitors center met challenge level II criteria for the same dimensions. No designated parking was provided by picnic shelter B or the trailhead to Debord Falls/Emory Gap Falls.

Trails and Pathways

All trails within Frozen Head were inaccessible except the interpretive loop trail, .6 miles in length, that met challenge level II criteria. The pathway from picnic shelter C to the restroom was accessible. The pathway to the amphitheater was a challenge level II because of natural, wood chipped construction of the path's surface. Other routes of travel were via the main road, which were accessible, yet dangerously narrow to accommodate cars and pedestrians.

Ramps

No ramps were located with this park.

Picnic Areas

Picnic shelters A, B, and C were inaccessible for not providing accessible support facilities such as restrooms and drinking fountains and tables did not extend 24" past the benches and were too close together to provide maneuvering room. All picnic areas outside of the shelters were inaccessible as well.

Camping

No campsite at Frozen Head met any accessibility level requirement, including the bathhouse.

Restrooms

Restrooms at picnic area C did not meet the following accessible criteria: they were not signed, entrance was not accessible, mirrors, shelf tops, and dispensers were hung above 40" and there were no adapted toilet stalls. Restrooms at picnic shelter A and the campground met no accessibility criteria.

Swimming Pool, Boating, and Fishing

None of these recreation activities were offered at Frozen Head Park.

Playground

Neither playground area at picnic shelter B or C contained accessible support facilities to be accessible under any level.

Amphitheater

The amphitheater contained no alternative seating for persons with disabilities other than a ground level location in the actual route of travel that spectators use. For this reason the amphitheater was inaccessible.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to evaluate the degree of accessibility of six East Tennessee State Parks for use by persons with disabilities. The following research objectives were investigated: 1) Do the areas and facilities within the selected parks conform to the Uniform Federal Accessibility Standards, as adopted in the USDA, USDI Design Guide for Accessible Outdoor Recreation (1990) and, 2) if not, what recommendations can be made to rectify inaccessible areas and facilities?

SUMMARY AND CONCLUSIONS

The following summary and conclusions were based on the findings of this study:

1. Did the areas and facilities evaluated in the six survey parks meet the Uniform Federal Accessibility Standards? Of the 70 areas evaluated in all six parks, 15 were accessible (21%), 2 were challenge level I (3%), 7 were challenge level II (10%), and 46 (65%) were inaccessible. With the majority of areas being inaccessible, results of this study indicate that UFAS guidelines are not being met.

Subproblem 1.: It was important to address this subproblem of assessing the types of barriers that exist in the sample parks that prohibit participation for persons with disabilities. This may give insight into the reasons why the UFAS guidelines are not being followed.

A. Attitudes: The nature of this study was discussed with at least one park ranger at each park. Although neither a questionnaire nor formal survey were administered to these personnel, they were unaware of the necessary minimum guidelines for accessible facilities within their parks. They consistently cited budget constraints as the reason that more facilities were not, and could not be made, accessible. They were, however, eager for information on adapting park facilities for persons with disabilities, such as the recommendations resulting from this study.

B. Information: Each park brochure contained a statement of policy regarding the equal opportunity to use facilities and participate in programs: "It is the policy of the Department of Conservation to provide its facilities, accommodations, services, and programs to all persons without regard to sex, race, color, age,

religion, national origin, or handicap." And yet little or no information was printed in the brochures regarding accessible facilities or programs.

Accessible areas and facilities were found at every state park evaluated, and with minor adaptations, many more areas could be made accessible. This information would be beneficial to the disabled population if it were printed in park brochures and literature.

Accessible facilities could be a strong marketing tool to attract park users of various ability levels, but accessibility information must be provided to the general public.

C. Architectural Barriers: These barriers were found most in the sample parks. Inaccessible areas were often found because of construction that met no accessible criteria. Restrooms, picnic areas, campgrounds, pools, and playgrounds were all areas in which construction of the facility was the primary reason for inaccessibility.

D. Environmental Barriers: All other barriers, except architectural, found in the sample parks resulted from the natural characteristics of the area. Trails and pathways were areas in which inaccessibility

was directly linked with the terrain. Some camping sites and picnic areas were also environmentally prohibitive for persons with disabilities. However, minor adaptations in surfacing, support facilities, and parking in these areas could have met challenge level I or II criteria in some cases.

2. What adaptation can be made to rectify inaccessible areas and facilities? Based on the observations in this study, the following are some recommendations that each park could consider that would make the respective parks more accessible:

Cove Lake State Park

1. Outdoor picnic areas: provide tables that extend 24" at both ends located on smooth, slip resistant surface with a firm, stable approach to it.
2. Provide a ramp and pathway to the boat dock not to exceed a 12.5% slope. Also, provide railings and curbs on the dock for safety.
3. Provide at least one accessible campground site with a stable, firm surface, accessible picnic table and grill. Designate using the proper international symbol for handicapped use.
4. The swimming pool requires steps or a ramp, at

least 5' wide, with railings at the shallow end. The bathhouse would also need to be accessible.

5. If the restrooms were made accessible near the playground area, the playground would also be accessible. The restroom would require at least one adapted toilet stall, male and female or unisex, including grab bars 33"-36" high, 42" long, dispensers and accessories hung below them, a mirror hung no higher than 40" high (to the bottom), and 27" minimum under the sink. Proper signage indicating handicapped restrooms should be on the door. An alternative solution would be to build another playground area near shelter #4 or the recreation center where accessible restrooms are already located.

Panther Creek State Park

1. Paint parking space lines at the visitors center and trail head parking (if possible) and designate at least 7 spaces throughout the park as handicapped, 8' wide with a 5' access aisle. Two spaces can use the same aisle. End spaces are preferred.
2. Picnic areas: At least one shelter and/or site should be accessible and would require accessible parking, at least 3' around the table for maneuvering a

wheelchair, 24" table extension at both ends, accessible drinking fountains and restrooms, and a stable, slip resistant path leading to the site.

3. The pool could be made accessible with a ramp or stairs into the shallow end with railings, designated parking, and an accessible bathhouse.

4. The playground area could easily be made accessible by cutting an entrance in the 4'x4' beams surrounding the equipment, at least 32" wide, with a stable, firm pathway to the area. Challenge level II materials include woodchips, packed gravel, or dirt.

5. Camp sites: at least one campsite would need to be accessible with a stable, firm surface, accessible picnic table and grill, and a designated sign. The restrooms/bathhouse would also need to be accessible.

Norris Dam State Resort Park

1. Designate two additional parking spaces at the visitors center, preferably the end spaces closest to the visitors center.

2. Provide at least one accessible camping area in the west section following the guidelines previously mentioned for other parks. Restrooms and bathhouse must also be accessible in this area.

3. Adapt a trail, possibly within the High Point Trail system, reconstructing the slope not to exceed 12.5%, at least 32" wide with level areas at distances less than 200'-300'. Designate the trail with proper signage and accessible parking nearby.
4. The playground at the Village Green could be made accessible with a stable, slip resistant pathway leading to the area.
5. Steps or a ramp with railings into the shallow end of the pool would help make it accessible. Although not observed, the bathhouse would also need to be accessible, if not so already.
6. An assessment of the rustic cabins in the east sections would be advisable. Cabins #5 and #14 could be ramped to provide an accessible entrance. Although maneuvering space inside would be limited, it would provide a challenging opportunity for those willing to try.
7. Designate and provide accessible parking at the picnic areas in the east section could readily be achievable; tables would need to be extended 24" on both ends, an accessible route of travel provided (level with the surface around the table), accessible

restrooms and drinking fountains would also be required for an accessible picnic area in the east section. If accessible picnic sites were provided in the west section, this would not be necessary.

Big Ridge State Rustic Area

1. Provide 2 additional accessible parking spaces to meet the minimum guidelines for 182 total spaces.
2. A nature/interpretive trail around a portion of Norris Lake or Big Ridge Lake might accommodate a challenge level II experience in that no other trail is accessible at any level.
3. The picnic area above the snack bar is accessed with a challenge level II pathway. Extend tables 24" on both sides, provide at least 3' of maneuvering room around tables, and make the surface of the area level with the surface of the route to it. At least one picnic area should be accessible.
4. Steps should be added to the shallow end of the pool with railings. An accessible entrance must be provided as well. A pathway could be added from the snack bar to the swimming area that would be within accessible limits if hard surfacing was used; challenge level I or II if other surfacing was used.

Although not observed, the restrooms would need to be accessible in this area as well.

5. Accessible boating and fishing could be accomplished with curbs and railings on the boat dock and an accessible route of travel; a ramp could be constructed where the stairs are currently located.

Railings should be constructed at 32" and 42" to assist a person standing or sitting, respectively.

6. Playgrounds could be accessible with the addition of accessible restrooms and drinking fountains within 300'. The restrooms at the visitors center require signage, dispensers and accessories hung below the grab bars in the toilet and less than 40" high near the sink. There was not a 5'x5' clear floor space in the male restroom, but the usable amount of space provided should suffice.

7. The USDI and USDA (1990) state that at least 5% of all campsites should be accessible. Three campsites should therefore be provided at Big Ridge by surfacing with firm, stable material with level areas between parking, picnic table, grill, and tent pad. Accessible water and bathhouse must be provided.

Booker T. Washington State Recreation Area

1. With simple modifications, the restroom at the fishing/boating dock could be accessible: designate with signage on the door, lower the mirror to 40" maximum height, and replace spring loaded faucets with lever-type handles.
2. An accessible water fountain and rotating grill would create an accessible picnic area. However, if other sites were located nearby it would not be segregated; other sites should be located within 30'.
3. Steps and/or a ramp with handrails should be constructed in the shallow end of the pool. An accessible drinking fountain should be provided as well. The bathhouse, closed for evaluation, needs to be accessible, if not so already.
4. The boat dock would require a ramp with substantially less slope, not to exceed 8.3% for a challenge level I. Curbs and handrails would need to be installed afterward.
5. The playground area itself was accessible, but support facilities, such as restrooms, drinking fountains, and parking must be accessible, as well as a route of travel to the area constructed of a stable,

slip resistant surface.

Frozen Head State Natural Area

1. If restrooms and drinking fountains at Picnic Shelter C were accessible, the shelter would be also. The restroom would require signage, dispensers and accessories hung below 40" high, and grab bars in the furthest stall. Bars should be hung between 33"-36" high on both sides of and behind the toilet. Dispensers should be hung underneath the grab bar. The entrance threshold should be level with the walkway. Tables in the shelter should be spaced further apart for maneuvering and tables should be extended 24" on both sides.
2. Make at least one campsite accessible including smooth, firm surfaces for parking, picnic tables and grill. Crushed, packed stone may be used as a challenge level II surfacing material.
3. If restrooms and drinking fountains at picnic shelter C were made accessible, the playground adjacent would be accessible.
4. The route of travel to the amphitheater met challenge level II criteria, however a variety of seating options would need to be available for the

would prove difficult considering the terrain but spaces could be provided at various places along the first two rows.

RECOMMENDATIONS

As a result of this study, future related research efforts include the following:

1. Efforts should be made to evaluate more parks across the State of Tennessee, especially in the middle and western sections.
2. A similar evaluation study should be conducted within regional National Parks, such as the Great Smokey Mountains National Park or the Big South Fork National Recreation Area.
3. Accessible programming within state parks should be evaluated.

Recommendations as a result of this study are:

1. A users resource guide to Tennessee State Parks should be developed and available for persons with disabilities.
2. An extensive training effort should be implemented for park rangers/managers to educate personnel on the minimum guidelines for accessibility within state parks.

3. Accessibility guidelines and standards should be created specific to park facilities and programs and implemented across the State of Tennessee.

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APPENDIX A

Access to Recreation Survey Tool

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Parking

	Recommendations:
Is parking paved with a stable, firm, slip-resistant surface? (at least at the accessible parking spaces)	_____
Are there parking spaces designated for use by handicapped visitors? (each space should be signed)	_____
If not, can they be provided?	_____
Where?	_____
Are parking regulations enforced?	_____
How many spaces are designated? (See table on page 5 of Recreation Areas without Barriers: Design Criteria for required number of accessible parking spaces.)	_____
How wide are the designated spaces? (8' minimum with an adjacent access aisle of at least 5' wide [if vans will use the spaces, then the access aisle must be a minimum of 8' wide]; the preferred width is a 12'6" parking space with an adjacent 4' wide access aisle; two adjacent parking spaces can share the same access aisle.)	_____
Are they end spaces?	_____
If not, could end spaces be provided?	_____
Can a handicapped person leave the parking lot without having to negotiate behind parked cars or through traffic?	_____
How far are designated spaces from the destination? (200' maximum)	_____
If there are wheel stops, is there at least a 36" break between them so that a person in a wheelchair can get between them? (located nearby the designated spaces, so that people do not have to go behind parked cars)	_____
If there is a fence or bollards connected by a chain, is there at least a 36" break so that a person in a wheelchair can get through? (located nearby the designated spaces, so that people do not have to go behind parked cars)	_____
If there is a curb, is there a curb cut by each designated space, so that a handicapped person can exit the parking lot?	_____
If the parking lot is used at night, is it lighted?	_____

Curb Cuts

- Are there curb cuts where needed? _____
- If not, can they be provided? _____
- Where? _____
- If there are curb cuts, is the slope a maximum of 12:1 (8.33%)? _____
- Is it at least 36" wide? (42" preferred) _____
- Is it properly installed, so that there is no more than 1/2" vertical rise at either top or bottom? _____
- Is it readily visible? _____
- Is it located in a "No Parking" zone? _____
- Are "No Parking" zones enforced? _____
- If not, could a "No Parking" zone be designated? _____
- If not, can a new curb cut be installed in an area that will not be blocked by parked cars or other obstacles? _____
- Where? _____
- Will the new curb cut location be in a convenient route of travel from the parking area or drop-off point? _____
- Is it properly maintained? _____
- Is the immediate approach to the curb cut (12" minimum) surfaced with a contrasting color or surface texture to alert visually impaired people? _____
- If painted, has sand been mixed in with the paint to provide traction? _____
- If the surface is corrugated, are the corrugations parallel to or perpendicular to the route of travel? (If perpendicular [across the curb cut], they should be filled in; they will hold water and become slippery when frozen) (If parallel, are they narrow enough so that they will not put people off balance?) _____

Recommendations

Route of Travel-Walkways (excluding trails)

Recommendations

Do walkways have a stable, firm, slip-resistant surface?
(need not be concrete or asphalt; can be crushed limestone aggregate [In. Dept. of Highways Type P, Size 73], mixed with calcium chloride [over a prepared subgrade], rolled and compacted periodically; other compacted surfaces may also be acceptable)

Is the gradient no greater than 5% (20:1)?

Is the clear width at least 36" (48" preferred)?

If less than 60" wide, are there places along the walk that are at least 60" wide, no more than 200' apart, to allow two wheelchairs to pass?

If not, could such areas be provided?

If the walk is long (more than 100'), is the slope less than 5% (20:1)?

If not, are there level areas, at least 42" long, every 100' where people can stop and rest?

Where there are joints, are they no greater than 1/2" wide?

Where there are joints, is there no greater than 1/2" difference in height?

(If the height is no more than 1/4", the edge may be vertical; if the height is between 1/4" and 1/2", then the edge shall be beveled with a slope no greater than 2:1.)

Is the walk properly maintained?

Is there a curb or guard rail at dangerous places?

Are there branches, signs, or other hazards which could trip people or cause difficulties for people in wheelchairs?

Are there low hanging branches or signs (7' minimum clearance) that would be hazardous to visually impaired people?

If the walk is used at night, is it lighted?

Is the walk level for 5' before an entrance?

Are there rest areas with benches along the way?

Are each of them shaded?

Is the area at least 48" deep (measured from the edge of the walk) to allow for extended legs, crutches?

Is there a minimum of 36" at one end of the bench where a person in a wheelchair can rest?

Ramps

- Is the slope a maximum of 12:1 (8.33%)? _____
- Does it have a stable, firm, and slip-resistant surface? _____
- If the ramp is intended for one-way travel, is it at least 36" wide between rails or curbs? (42" preferred) _____
- If the ramp is intended for two-way travel, is it at least 60" wide between rails or curbs? (72" preferred) _____
- If the ramp is more than 6' long, are there handrails on both sides? _____
- Does it have a 2" high curb on both sides of the ramp? _____
- If not, does the ramp extend 12" past each handrail? _____
- How long is the ramp? _____
- Is there a level resting place at least 60" long every 30'? _____
- Is there a 60" long level area:
 At the top of the ramp? _____
 At the bottom of the ramp? _____
 At each turning point? _____
- Is the ramp maintained properly? _____
- Are handrails 30"-34" high? _____
- Is there a second handrail 24" high for children? _____
- Do handrails extend a minimum of 12" beyond the top and bottom of the ramp, parallel to the walk? _____
- Are posts and rails free of dangerous projections? _____
- Is there 1 1/2" clear space between the rail and a wall or obstacle?
 (If more than 1 1/2", arms can slide down between and get caught.) _____
- If the ramp is used at night, is it lighted? _____

Recommendations

Stairs

- Is the tread at least 11" deep? _____
- Is the rise a maximum of 7"?
(no open risers allowed) _____
- Is the stairway at least 44" wide? _____
- Is the total vertical rise no greater than 9' per flight? _____
- Is the nosing angled?
(If the nosing is abrupt or square, a wedge-shaped filler
should be installed on each step to prevent tripping.) _____
- Is the nosing a contrasting color? _____
- If the stairs are in the direct route of travel, are there tactile
warning strips for 24"-36" before the top of the stairs,
placed crosswise on the walk or floor? _____
- Is there a level landing at least 4' x 4' at the top and bottom
of each flight? _____
- Are the stairs properly maintained? _____
- Are there handrails on both sides of the steps? _____
- Are they 30"-34" high, measured from the top of the face
of the riser? _____
- Is there a second rail 24" high for children? _____
- Do the railings extend 12" past the top stair, parallel to the
walk? _____
- Do the railings extend 12" + the depth of one tread past
the bottom stair, parallel to the walk?
(Only the last 12" shall be parallel to the walk.) _____
- Are posts and rails free of dangerous projections? _____
- Is there 1 1/2" clear space between the rail and the wall or
obstacle?
(A larger space can be hazardous—arms get caught.) _____

Recommendations _____

Entrances

How wide is the door?

(clear opening of 32" is minimum [36" preferred]; actual door width must be at least 34" to allow for thickness of door and hinge when door is open in 90° position)

Is it operable by a single effort?

Is there a 5' x 5' clear, level area on either side of the door? (especially on the pull side of the door; 4' x 5' may be acceptable on the push side of the door [see p. 11 of Recreation Areas without Barriers: Design Criteria])

Is there 1' clear and level on each side of the door opening?

Is there a minimum of 24" clear on the pull side of the door on the handle side next to the door?

Is there a 10"-16" high metal kick plate on the door to protect it?

Is there a metal edge strip extending from the bottom of the door to 40" high to protect it?

Is there a sign to identify the building at 60" height on the wall on the handle side of the door with raised or recessed lettering?

Does the door close slowly?

(5 lbs. pressure maximum for interior and sliding or folding doors; 8 lbs. pressure maximum preferred for exterior doors)

Where there is not an automatic door closer, is there an auxiliary handle 36"-42" high near the hinge?

Are there door handles or bars rather than knobs?

Is the handle 36"-42" high (no higher than 48")?

If the door opens into a dangerous area or into an area where the public is not allowed, is the handle knurled (or roughened) to alert visually impaired people?

Is there no more than 1/2" difference in height at the threshold?
(3/4" for exterior sliding doors)

Are there loose door mats?
(If so, stick down or remove.)

Are there thick door mats?

If so, does the edge slope up onto it?
(rather than abrupt difference in height)

Recommendations:

	Recommendations
If there are snow grates, are the grid openings no greater than 1/2" x 1/2"?	_____
If there are two doors in a series, what is the distance between the doors? (minimum distance of 48" + door width between doors)	_____
In what direction do the doors swing? (both same direction or both away from space between doors)	_____
If the entranceway has two doors (side by side), are they both operable by a single effort?	_____
If not, would opening one of the doors provide a 32" minimum clear opening?	_____
Are there accessible/usable fire exits?	_____
Once inside, is there a minimum width of 42" (48" preferred) for one-way travel?	_____
Is there a minimum corridor width of 60" (72" preferred) for two-way travel?	_____
Is there a minimum clear height of 7'?	_____
Are there turnstiles or revolving doors? (If there are, another accessible entrance must be provided.)	_____
Is the accessible entrance a main entrance?	_____
If not, will use of the accessible entrance make a handicapped person feel conspicuous?	_____

Restrooms

	Men	Women	Recommendations
Is there an accessible route of travel? (See Route of Travel-Walkways, Ramps.)	_____	_____	
If not, what needs to be done?	_____	_____	
Are accessible restrooms signed?	_____	_____	
Does the entrance to the building conform to the specifications listed under Entrances?	_____	_____	
If not, what needs to be done?	_____	_____	
How wide is the door? (32" wide clear opening is minimum; 36" preferred)	_____	_____	
If there is a privacy screen, how far back from the door is it? (36" minimum; 4' preferred)	_____	_____	
If there are two doors, what is the distance between them? (minimum distance of 48" + door width between doors)	_____	_____	
If the distance is smaller, do both doors swing away from the area between them? (If not, remove one door.)	_____	_____	
Is there a 5' x 5' area of clear floor space (not in stall) to allow a person in a wheelchair to turn around?	_____	_____	
If not, could such a space be provided?	_____	_____	
If not, is there a clear T-shaped area, where each part is at least 36" wide, the stem of the "T" is at least 60" long (measured to the top of the "T"), and the cross bar of the "T" is at least 60" long (with at least 12" on each side of the 36" wide stem of the "T")?	_____	_____	
If not, could such a space be provided?	_____	_____	
Is there clear space (27" minimum; 29" minimum preferred) under a sink for a person in a wheelchair to pull up to it? (34" maximum to the top of the sink)	_____	_____	
Are pipes insulated or covered with a protective housing?	_____	_____	
Are faucets lever or paddle-shaped (or easy-to-push knobs), rather than knobs? (Standards require that controls and operating mechanisms be operable with one hand and not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls can be no greater than 5 lbs. If using a push type faucet control, it should be slow release, so that the water stays on without continual pressure and shuts off automatically.)	_____	_____	

	Men	Women	Recommendations
Are faucets not spring-loaded? (With spring-loaded faucets, the water shuts off when you take your hand off the faucet. Where possible, faucets should not be spring-loaded [otherwise a one-handed person cannot wash his/her hand].)	_____	_____	
Is the water no hotter than 120°F?	_____	_____	
Is the bottom of the mirror a maximum of 38"-40" high?	_____	_____	
Are shelf tops a maximum of 38"-40" high?	_____	_____	
Are the following items a maximum of 38"-40" high:			
Towel racks?	_____	_____	
Towel dispensers?	_____	_____	
Hand dryers?	_____	_____	
Other dispensers?	_____	_____	
Are there stall type or wall mounted urinals with an elongated rim no higher than 17" (15" preferred)? (flush controls no higher than 44")	_____	_____	
How much clearance is there in front of the toilet stall? (42" minimum for a latch-side approach; 48" minimum for other approaches)	_____	_____	
Is there at least one adapted toilet stall?	_____	_____	
How wide are the stall doors? (32" clear minimum; 36" preferred)	_____	_____	
Does the door swing out? (If not, rehang so that it does.)	_____	_____	
What are the dimensions of the stall? (The standard accessible stall, which is required, measures 60" wide by 56" deep with a wall mounted toilet or 59" deep with a floor mounted toilet. EXCEPTION: In cases of alteration, where providing a standard stall is structurally impracticable or where plumbing code requirements prevent combining stalls to provide space, an alternate stall design may be provided. It measures at least 36" wide by 66" deep with a wall mounted toilet or 69" deep with a floor mounted toilet; the toilet is centered on the back wall. A second alternate stall layout measures at least 48" wide by 54" deep.)	_____	_____	
Standard Stall (60" by 56" or 59") or second Alternate Stall (48" by 54")			
On the back stall wall, is there a 1 1/4"-1 1/2" diameter horizontal grab bar, 1 1/2" from the wall, 33"-36" high, starting no more than 6" from the wall closest to where the toilet is mounted and extending for a minimum of 36"?	_____	_____	

	Men	Women	Recommendations
On the side stall wall closest to the toilet, is there a 1 1/4"-1 1/2" diameter horizontal grab bar, 1 1/2" from the wall, 33"-36" high, starting no more than 12" from the back wall and extending for a minimum of 40"?	_____	_____	
Is the toilet mounted close to the side wall diagonally opposite the stall door (generally)? (18" from center line of toilet to side wall is required)	_____	_____	
Alternate Stall (36" x 66" or 69")			
Is there 48" of clear space in front of the toilet? (so that the stall door can be closed when occupied)	_____	_____	
Is there a 1 1/4"-1 1/2" diameter horizontal grab bar on each side, 1 1/2" from the wall, 33"-36" high, and 42" long?	_____	_____	
Standard and Alternate Stalls			
Is the toilet seat 17"-19" high?	_____	_____	
Are dispensers and accessories mounted under the bars?	_____	_____	
Is there a hook on the door 40"-48" high to the side close to the hinges?	_____	_____	
Is there a unisex restroom? (Many handicapped people need assistance; often someone of the opposite sex [husband, wife, mother, father] is the only one available to provide assistance, and a restroom is needed where they are both allowed.)	_____	_____	
If not, could one be provided? (If so, be sure that it is in an accessible area.)	_____	_____	
Vault Toilets			
Is there an accessible route of travel to the building? (See Route of Travel-Walkways.)	_____	_____	
Is there a 47" wide concrete ramp or walk to the entrance? (42" minimum)	_____	_____	
Is the door at least 32" wide (36" preferred) when open?	_____	_____	
Is the threshold level (1/2" maximum difference)?	_____	_____	
Are stalls at least 36" wide?	_____	_____	
Is there at least 36" clear in front of partitions?	_____	_____	
Are there 1 1/4"-1 1/2" diameter horizontal grab bars on each side, 1 1/2" from walls, 33"-36" high, 36" long, starting with the back edge of the toilet?	_____	_____	

Showers

	Men	Women	Recommendations
In the dressing area, is there at least one bench 17"-19" high, 18"-24" wide, and 6'-8' long? (Some people must lay down to be dressed.)	_____	_____	
Is the floor slip-resistant?	_____	_____	
How high are controls for dryers? (38"-48" height; 38"-40" for hand dryers)	_____	_____	
How high is the dryer nozzle? (48" height maximum for at least one dryer; 38"-40" for at least one hand dryer)	_____	_____	
Are electrical outlets 38"-48" high?	_____	_____	
Are they in reachable locations? (no obstructions)	_____	_____	
Shower Stalls			
Does the door swing outward or is there a curtain?	_____	_____	
Does the doorway provide at least a 32" clear opening?	_____	_____	
What are the stall dimensions? (36" x 36" is required; if it is larger or smaller, it becomes more difficult to use.)	_____	_____	
Is there a seat on one wall?	_____	_____	
Is it 17"-19" high?	_____	_____	
Does it extend the full length of the wall?	_____	_____	
Does it measure a maximum of 23" deep for a maximum width of 15", then curving down to a maximum of 16" deep for the remainder of the seat? (maximum seat depths include a 1 1/2" maximum gap between the walls and the seat)	_____	_____	
Does the seat fold up?	_____	_____	
Are the seat and controls on opposite sides of the stall?	_____	_____	
Are the controls and soap dish 38"-48" high?	_____	_____	
Are they within reach of the seat?	_____	_____	
Are the controls lever or paddle-shaped (or easy-to-push knobs), rather than knobs?	_____	_____	
Is there a 1 1/4"-1 1/2" diameter horizontal L-shaped grab bar, 33"-36" high, on the wall opposite the seat, extending around onto the back wall for a distance of 18"?	_____	_____	

	Men	Women	Recommendations
Is there no curb, so that one can enter the stall?	_____	_____	
Is the floor slip-resistant?	_____	_____	
Are the shower heads on the wall opposite the seat?	_____	_____	
Is there a hand held shower head on a 60" long flexible hose? (required; EXCEPTION: In unmonitored facilities where vandalism is a consideration, a fixed shower head mounted at a height of 48" [with the spray directed toward the seat] may be used instead.)	_____	_____	
If not, is there a shower head at 48" height? (only allowed in cases of "EXCEPTION" noted above)	_____	_____	
Are the showers maintained properly?	_____	_____	
Does the water drain adequately out of the shower? (no puddled water)	_____	_____	

Drinking Fountains

- Is the spout at the front (or at the side near the front edge)? _____
- Are the controls at the front? _____
- Is it hand operated or hand and foot operated? _____
- Are controls operable by one hand, not requiring tight grasping, pinching, or twisting of the wrist? _____
- Is the spout a maximum of 33"-36" high? _____
- If not, how high is the spout? _____
- Is the flow of water high enough to insert a 4" drinking cup? _____
- If inside, is it wall mounted? _____
- If it is recessed into the wall, is the front of the fountain even with the surface of the wall? _____
- If outdoors, is the structure (either freestanding or wall mounted) cantilevered, so that a person in a wheelchair can pull up to it? _____
- Is the underside of the fountain high enough to allow a person in a wheelchair to pull up to it? (27" minimum) _____
- Is the surface of the approach stable, firm, and slip-resistant? _____
- Is there at least a 4' x 4' level area in front of the fountain? _____
- Is there no greater than 1/2" difference in height between the walk and the level area? _____
- If the spout height is over 33"-36", is there a cup dispenser with the opening at a maximum of 40" high? _____
- If so, is the dispenser kept filled with cups? _____
- Is there a waste basket nearby? _____

Recommendations _____

Telephones

Is there at least one wall-mounted (or post-mounted outside phone) that has a maximum height of 48" to the coin slot and dial or buttons (push buttons preferred)? (required; EXCEPTION: For exterior phones only, if dial tone first service is not available, then a phone at a height of 54" may be installed instead.)

Does the approach to outside phones have a stable, firm, slip-resistant surface?

Is there at least a 4' x 4' level area in front of the phone?

Is there no greater than 1/2" difference in height between the walk and the level area?

Is there at least one telephone equipped with a volume control?

If so, is it marked?

Is a TDD available?
(telecommunications device for deaf people)

If there is a shelf, is there 30" clear (27"-30" is usable) to the underside of it?

Is it a maximum of 38" high?

Is the cord at least 29" long?
(60" preferred for booths with narrow entrances)

If there is a booth, is the entrance at least 30" wide with no obstructions (seats, doors, etc.)?
(This entrance will be too small for some people to use.)

If not, is the cord at least 60" long?

Recommendations

Picnic Tables and Shelters

Is there parking that conforms to the criteria listed under Parking?

If not, what needs to be done?

Is there an accessible route of travel to the picnic area with curb cuts where needed?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is there an accessible restroom within 200'?

Is access over a stable, firm, slip-resistant surface?

Is there an accessible drinking fountain within 200'?

Is access over a stable, firm, slip-resistant surface?

Is the shelter threshold even with the walkway surface?
(If not, add a ramp; most shelters should be accessible.)

Is there room for a person in a wheelchair to maneuver around the tables?
(3' between table sides [3'6" preferred]; 6' between table ends to allow wheelchair users to sit there)

Is there a height of 30" (27"-30" is usable) to the underside of the table?

Do the ends of tables extend 24" past the ends of benches?

Do tables not in shelters have a stable, firm, slip-resistant surface up to and around the table, so that a person in a wheelchair can maneuver around it?
(5' minimum around table) (10% of the total number of picnic tables should be accessible.)

Are accessible tables not segregated in one area?

Are some picnic tables shaded?

Are there trash cans with a stable, firm, slip-resistant surface up to them?

Are there grills with a stable, firm, slip-resistant surface up to them?

Is the grill surface 18"-24" high, or are there post-mounted grills with a 30" height to the underside?

Are grills insulated to avoid burns?

Are they properly maintained?

Recommendations

Swimming Beaches

Is there accessible parking?

(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Bathhouse

Is the bathhouse entrance accessible?

(See Entrances.)

If not, what needs to be done?

Do some lockers not have benches in front of them to allow wheelchair access?

Is there at least one bench 17"-19" high, 18"-24" wide, and 6'-8" long?

(Some people must lay down to be dressed.)

If so, is there a privacy curtain?

Do dressing stalls have a minimum clear opening of 32"?

If not, how wide is the opening?

Is there a curtain or does the door swing outward?

If the door swings in, could it be rehung?

Is there a bench inside?

(12" deep)

Are there grab bars 33"-36" high?

How large are the dressing stalls?

(48" x 48" recommended)

Are there accessible showers?

(See Showers.)

Are there accessible restrooms?

(See Restrooms.)

If there is a footbath, is it ramped rather than curbed?

If not, is there a piece of plywood (3/4" minimum thickness), for example, that could be used to bridge the footbath?

Recommendations

Men Women

	Recommendations
Is there a "loaner" wheelchair at the property that a handicapped person can use to wheel down into the water?	
Is there a safe, dry place to park wheelchairs, canes, crutches, braces, and prosthetic devices?	
Is there a paved walkway/ramp from the bathhouse across the beach to the water? (maximum slope of 12:1 (8.33%)) (See Ramps, Route of Travel-Walkways.)	
Is the ramp to the water located away from the center of beach activity?	
Is there a rail on one side of the walk?	
Does the rail have a 6' break in it for maintenance vehicles?	
Is there a concrete pad in the water?	
Is the maximum water depth 30" at the pad?	
Does the handrail continue down into the water at a 36" height?	
Does the handrail extend around to the deep water side of the pad?	
Is there no handrail on the other two sides of the pad, so that people can swim out of the area of the concrete pad?	
Is there a curb on the deep water side of the pad?	
Are the ramp and pad maintained properly? (kept clear of sand and algae)	
Are lifeguards stationed at the ramp?	

Swimming Pools

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is the bathhouse usable?
(See Swimming Beaches.)

Can a handicapped person enter the pool area at the same entrance which an able-bodied person can use?

If not, will use of the accessible entrance make a handicapped person feel conspicuous?

If there is a footbath, is it ramped rather than curbed?

If not, is there a piece of plywood (3/4" minimum), for example, that could be used to bridge the footbath?

Is there a lifeguard stationed at the shallow end of the pool?

Is there a ramp into the shallow end of the pool?

Is the ramp at least 3' wide?

Are there handrails on both sides 30"-34" high?

Is there a "loaner" wheelchair at the property that a handicapped person can use to wheel down into the water?

Is there an 18" high portable block of steps, with 6" high handrails, 18" deep treads, 6" high risers, placed at the edge of the pool to aid people in transferring from wheelchairs into the pool?

Are there steps at the shallow end of the pool?

Are they at least 5' wide?

Are there handrails on both sides 30"-34" high?

If the stairway is very wide, is there a third handrail in the center?

What is the rise of each step?
(4" recommended)

How deep are the treads?
(18" recommended)

Recommendations

	Recommendations
Is there an underwater bench at 2 1/2'-3' deep?	_____
If there is no ramp (or steps), is there a curb 18" high, 12"-18" wide at the edge of the pool?	_____
(If there is a curb, it must not exist all around the edge of the pool; slope the surrounding pavement down [12:1 maximum slope] to form the curb where wanted.)	
Are there grab bars on the top of the curb at the 4' depth to aid a person in transferring from his/her chair to the curb?	_____
Is the water close to the top of the curb?	_____
Is there a lift mounted on the side of the pool at the 4' depth?	_____
Is there a safe, dry place to park wheelchairs, canes, crutches, braces, and prosthetic devices?	_____
Is there shade in some places around the pool? (either natural or a shelter)	_____
Is there an accessible drinking fountain? (See Drinking Fountains.)	_____
Is there an accessible telephone? (See Telephones.)	_____

Fishing

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is there a fishing pier that handicapped persons can use?
(A T-shaped pier provides the most frontage.)

Is the pier constructed so that there is no more than 1/2" between the walkway and the pier decking?

Is the part of the pier that is perpendicular to shore at least 6' wide?

Are there 30"-34" high handrails on both sides of the pier?

Is there a curb or kick plate on both sides?

Is the decking perpendicular to the route of travel?

Is the distance between deck members a maximum of 3/8"?

Is the surface slip-resistant?

Is the part of the pier that is parallel to shore at least 8' wide?
(length will depend on number of people expected to use it at one time)

Is there a curb or kick plate all the way around?

Are there handrails 30"-34" high all around?

Does the top member slant in toward the pier to provide an armrest?

Are there benches in various places on the pier?

Are there shelves to put fishing tackle, etc. on?
(30" height to underside)

Is there shade on the pier?
(either natural or a shelter)

Recommendations

Is there someplace where a handicapped person can fish from the shore?

Is there a stable, firm, slip-resistant surface walk with a curb or railing to act as a wheel stop?

Is the walk at least 6' wide?
(8' preferred; room for parked person in wheelchair with room for circulation behind)

Are there benches?

Are the areas with benches a minimum depth of 48"?
(to allow for extended legs)

Is the walkway behind the bench at least 48" wide?
(36" minimum)

Is there shade?
(either natural or a shelter)

How far is the nearest accessible restroom?
(200' maximum) (See Restrooms.)

Is access over a stable, firm, slip-resistant surface?

Is there an accessible drinking fountain within 200'?
(See Drinking Fountains.)

Is access over a stable, firm, slip-resistant surface?

Recommendations

Boat Docks

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is there a boat dock that a handicapped person can use?

Is it at least 6' wide?

Are there 30"-34" high railings on both sides?

Is there a curb or kick plate on both sides?

Is there a maximum difference of 1/2" between the dock and the walk?

Is the decking perpendicular to the route of travel?

Is the distance between deck members a maximum of 3/8"?

Is the surface slip-resistant?

Are there curved grab bars at the end of the dock at the ends of the railings?

Is there a curb at the end of the dock?

Is there a lift mounted at the end of the dock on one side?
(can swing away when not in use)

If not, is there some other transfer assistance device?

If so, what?

Is there a life ring or other water rescue equipment available?

Recommendations

Campgrounds

	Recommendations
Do campsites have a stable, firm, slip-resistant surface? (hard surface between car, table, tent or trailer site, and grill)	
How many accessible sites are there? (10% of total number should be accessible)	
Are accessible restrooms nearby? (See Restrooms.)	
How far? (200' maximum)	
Is there a stable, firm, slip-resistant surface route of travel between the restrooms and campsites?	
Is there accessible water nearby?	
How far? (200' maximum; lever controls preferred)	
Is access over a stable, firm, slip-resistant surface?	
Is the picnic table accessible? (See Picnic Tables and Shelters.)	
Is the grill accessible? (See Picnic Tables and Shelters.)	

Trails

- Is there accessible parking?
(See Parking.)
- If not, what needs to be done?
- Is there an accessible route of travel to the trailhead with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)
- If not, what needs to be done?
- What is the trail's length?
- How wide is it?
(36" minimum; 72" minimum for two-way travel)
- What is it surfaced with?
- What type of terrain does it cross?
- Are there any obstacles that must be overcome?
(such as rocks, tree roots, steps)
- If so, can they be removed or covered over?
- Are there level rest areas with benches along the way?
- Are rest areas at least 48" deep, measured from the edge of the trail?
- Is there at least 36" clear at one end of the bench to allow a person in a wheelchair to rest?
- Is there a definite edge to the trail?
(such as a wooden edge or different surface texture from surroundings to keep visually impaired people from wandering off the trail)
- If not, are there guide ropes to aid visually impaired people?
- Are there railings or curbs at dangerous areas?
- If it is an interpretive trail, are signs next to the trail within reach, approximately 36" high?
(Interpretive trails should be accessible if the terrain allows it.)
- Is the language on signs simple?
- Are the letters large and raised (or routed)?

Recommendations

Playgrounds/Play Areas

- Is there accessible parking nearby?
(See Parking.) _____
- If not, what needs to be done? _____
- Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.) _____
- If not, what needs to be done? _____
- Does the approach to the equipment have a stable, firm, slip-resistant surface?
(otherwise, for safety, a soft surface under equipment) _____
- Is there enough space between individual equipment pieces to maneuver a wheelchair? _____
- Is there shade (trees, shelters)? _____
- Are benches provided in shady areas? _____
- Are there accessible drinking fountains nearby?
(100'-200' maximum) (See Drinking Fountains.) _____
- Is access over a stable, firm, slip-resistant surface? _____
- Are there accessible restrooms 100'-200' away?
(See Restrooms.) _____
- Is access over a stable, firm, slip-resistant surface? _____
- For climbing apparatus, are there ropes and handrails to aid in climbing? _____
- Is there a change of surface texture before an opening to alert a visually impaired child?
(can be on platform, railings, or any other surface the child would come in contact with; rubber pads or sand-based paint are suitable substances) _____
- Do some swings have safety seats?
(other than swings intended for infants) _____
- Are there usable areas for:
- Water play? _____
 - Sand play? _____
 - Throwing and catching? _____
 - Racing? _____
 - Handicrafts? _____
- (Accessible picnic tables with holes for paint pots will suffice.) _____

Recommendations.

Inns, Cabins

Is there parking that conforms to the specifications listed under Parking?

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is the entrance approach level?

If there are stairs outside, do they conform to Stairs?

If not, what needs to be done?

If there are stairs outside, is there also a ramp that conforms to Ramps?

If not, what needs to be done?

Does the entrance conform to the section on Entrances?

If not, what needs to be done?

Is the accessible entrance a main entrance?

Are hallways a minimum of 60" wide?

Is there a minimum clear height of 7'?

Is the hallway free of projections that would be dangerous to visually impaired people?

Is carpet pile low enough to allow people to maneuver through it easily?

Do indoor ramps and stairs conform to the specifications listed under Ramps and Stairs?

Are there smoke detectors that provide audible and visual warning?

Dining Areas

Is there at least 60" between tables?

(measured from table edge to table edge)

Is there a height of 30" (27"-30" is usable) to the underside of the table?

Do tables have recessed supports to allow for extended legs, crutches, etc.?

Recommendations

Are menus available in braille?

Are menus available in large print?
(at least 18 point, which is roughly 1/4")

Elevators

Does the cab measure at least 68" x 51" or 80" x 51"?

Does the door have at least a 36" clear opening?

Is the elevator self-leveling within 1/2"?

How high are the controls?

(48" maximum; unless there is a substantial increase in cost, in which case the maximum height may be 54")

Are buttons labeled with raised numbers beside them?

Are there braille numbers beside the buttons?

Is there a horizontal handrail 30"-34" high on at least one side of the cab?
(three sides preferred)

Is there a visual signal to indicate elevator arrival?

Is there an audible signal to indicate elevator arrival?

Are there 2" high, raised numbers at 60" height on both elevator door jambs to let visually impaired people know what floor they are on?

Rooms

Are all rooms labeled with large, raised (or recessed) letters/numbers at 60" height either on the wall by the handle side of the door or on the door itself?

Do doors provide a minimum clear opening of 32"?
(36" preferred)

If not, how wide are they?

How many rooms/cabins are adapted to be usable by handicapped persons?

(If accessible rooms are above the first floor, there must be an evacuation plan in case of fire.)

Is there room to maneuver around furniture?

(52" between major pieces of furniture; 38" is acceptable between the side of a bed and a wall)

Is the height of the mattress top 17"-23"?

Recommendations

Are windows easily operated by a person seated in a wheelchair?	_____
Are clothes poles a maximum of 54" high?	_____
Are all controls placed 18"-48" high, within reach (no obstructions)? (temperature controls, light switches, electrical outlets, door locks, TV, etc.)	_____
How wide is the bathroom door? (32" minimum clear; 36" preferred)	_____
Is there enough clear floor space for a person in a wheelchair to close the bathroom door once inside?	_____
If not, can the door be rehung so that it swings away from the bathroom?	_____
Are there grab bars in usable positions?	_____
Is there enough clear space under a sink for a person in a wheelchair to pull up to it? (27" minimum; 29" minimum preferred)	_____
Are pipes insulated or covered with a protective housing?	_____
Is the hottest water temperature 120°F to prevent scalding?	_____
Are there lever or paddle-shaped controls (or easy-to-push knobs) as opposed to knobs?	_____
If there is a shower stall instead of a bathtub, does it conform to the criteria listed in the section on Showers? (It need not measure 36" x 36"; it can be 30" x 60" which would fit in the space where a bathtub would normally be.)	_____
If not, what needs to be done?	_____
Is the bathtub furnished with grab bars in usable positions?	_____
Is there a place that a handicapped person can sit? (seat on bathtub edge)	_____
Are the controls 38"-48" high?	_____
Is there a hand held shower head with a 60" long flexible hose?	_____
Is the bottom of the mirror a maximum of 38"-40" high?	_____
Are towel bars and other accessories 38"-40" high in usable locations?	_____

Recommendations

Kitchens in Cabins**Recommendations 5**

How high are counter tops?

(30"-33" recommended; 34" maximum)

If the counters are higher, is there a pull-out shelf at 30" height?

Is there clearance under counters to allow a person in a wheelchair to pull near the counter?

Is there clearance under the sink for knees?
(30" wide clear, 19" deep clear)

Are pipes insulated or covered?

Is the oven at counter level?

If not, how high (or low) is it?

Are the stove/oven controls a maximum of 48" high?
(A stove with controls at the front is most usable.)

Is there unobstructed floor space, so that a person in a wheelchair can easily get to the refrigerator, stove, sink, storage areas, and table, etc.?

Are electrical outlets 18"-48" high in reachable locations?

If there is a table, is the underside 30" high?
(27"-30" is usable)

Are table supports recessed?
(to allow for extended legs, crutches, etc.)

Historic Buildings

Is there parking which meets the specifications listed under Parking?

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is there an accessible entrance?

(32" minimum clear, level threshold; see Entrances)

If not, what needs to be done?

If the building has more than one story, is there an accessible elevator?

(See Inns, Cabins.)

If there is no usable entrance, and if constructing one would interfere with the building's historical significance, could a "rollway" be constructed around the outside of the building?

(Construction of a ramp and a level platform with railings, at a height such that people in wheelchairs could see inside through the windows; or if windows are low enough, construction of a stable, firm, slip-resistant surface 3' wide around the building; where either of these would interfere with the building's historical significance, these would not be suitable solutions.)
(See pages 13-14 of the *Uniform Federal Accessibility Standards* for information on historic buildings.)

Recommendations

Archery

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is there a stable, firm, slip-resistant surface area to shoot from?

(72" minimum width to allow for a person in a parked wheelchair plus the passage of a person in a wheelchair behind)

Is there audible signaling to aid visually impaired people?

Recommendations

Horseback Riding/Bicycling

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel, with curb cuts where needed, to the saddle barn/bike rental and area where horses/bicycles are mounted?

(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Is the saddle barn/bike rental entrance accessible?
(See Entrances.)

Are people available to assist handicapped riders?

Is there a platform (with ramp approach and railings) or some other means to assist people in transferring from wheelchairs to horses?

Is adaptive equipment available?
(special saddles, helmets)

Where bicycles are available, are there any hand-pedalled bicycles?

Are there tandem bicycles?
(for visually impaired people)

Are there tri-bikes?
(three-wheeled cycles provide stability)

Tennis Courts

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Does the gate in the fence have at least a 32" clear opening?

What is the court surfaced with?

Is the maximum difference in height between the walk and the court surface 1/2"?

Are the court and fence properly maintained?

Is there an accessible drinking fountain 100'-200' away?
(See Drinking Fountains.)

Is access over a stable, firm, slip-resistant surface?

Recommendations

Amphitheaters

Is there accessible parking?
(See Parking.)

If not, what needs to be done?

Is there an accessible route of travel with curb cuts where needed?
(Refer to Route of Travel-Walkways, Curb Cuts.)

If not, what needs to be done?

Does the amphitheater have a maximum slope of 8.33% (12:1)?
(stable, firm, slip-resistant surface)

Are there level spaces to park wheelchairs?

Are wheelchair spaces at the front, middle, and back of the amphitheater to give people a seating choice?

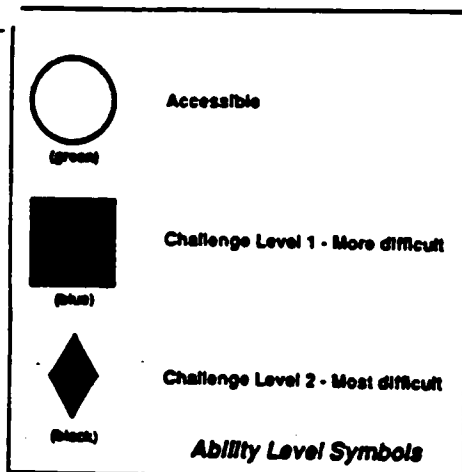
Is the stage accessible (see Stairs, Ramps) to enable a handicapped person to perform?

APPENDIX B

LEVELS OF ACCESSIBILITY

The concept of different ability levels can be understood within the context of the following guiding principle: We want to offer persons with disabilities the chance to experience a full range and variety of recreation opportunities. The variety of people's preferences and abilities can best be accommodated if a range of opportunities is available. Individuals who enjoy challenge should be accommodated, as well as those who prefer easier, non-strenuous outdoor recreation. This Design Guide uses three accessibility levels for outdoor recreation:

- **Accessible**—Meets or exceeds UFAS requirements.
- **Challenge Level 1**—More difficult than "Accessible;" generally meets UFAS requirements.
- **Challenge Level 2**—Most difficult; does not meet UFAS, but has safety features.



Persons with disabilities who are more venturesome should have the opportunity for a challenging recreational experience. This approach will increase outdoor recreational opportunities for *all people*, including those

who are not traditionally classified as disabled—such as elderly people, parents with small children, very large or very small people, or those with temporary disabilities.

The ability levels for accessibility are briefly described below. *The most difficult component determines the level of ability for the entire network.*

ACCESSIBLE (Easy)

All programs, services, and facilities that are provided are fully accessible. These sites are designed for the most independent and easy use feasible for the majority of persons with disabilities. Generally, these sites are usable without assistance by all but the most severely disabled persons, and are in full compliance with all applicable UFAS provisions.

CHALLENGE LEVEL 1 (More Difficult)

These sites have a greater degree of difficulty and are a more challenging experience than an Accessible site. Parking, restrooms, visitor centers, and interpretive exhibits are all fully accessible. Grades and surface materials may be more challenging to persons with limited mobility. Some disabled users may need assistance.

CHALLENGE LEVEL 2 (Most Difficult)

These sites are indeed most difficult and offer a higher level of risk and challenging experience to all those seeking such. They are usable by the more athletic person with a disability without assistance but, generally, a person with limited mobility would probably need assistance. Severely disabled users would not be encouraged to use these sites without assistance. Physical improvements such as the grades and surfacing materials on trails are limited to preserve the natural surroundings, but with safety considerations designed into the site. Buildings, such as restrooms, are accessible.

Levels of ability for outdoor recreation are influenced by certain physical characteristics of the site, such as the slope of a trail, surface materials, and safety features. Site characteristics may affect people in different ways. A person with a mobility impairment might have certain problems at a site; someone with a visual impairment might also have problems, but not necessarily the same ones. People with learning disabilities may have still different problems.

SITE PLANNING, EVALUATION, AND DESIGN

During the outdoor recreation planning process certain issues and elements pertaining to accessibility need to be considered at each step. The levels of accessibility come into play as follows:

1. Site characteristics can be evaluated to determine the current level of accessibility.
2. Improvements or new sites can be designed to meet a desired level of accessibility.
3. Information identifying the level of ability of an outdoor recreation site can help visitors decide whether the site is appropriate for their interests and abilities before entering or using.

Recreation site designers should make their guiding light be "use common sense." This Design Guide presents standards, guidance, and helpful suggestions. Users of this Guide must also consider consequences to the environment and the total user community. As previously stated, persons with disabilities who have appropriate expertise should be encouraged to participate in all aspects of the planning and development process to help assure the appropriateness and usability of programs, services, and facilities. An outline of the evaluation and design process, presenting what accessibility issues or elements need to be considered at each stage, follows.

I. EVALUATION STAGES/ISSUES

A. Identification of Potential Sites

- Determine what areas are appropriate for development based on management objectives and policy. An example would be use of the ROS, Recreation Opportunity Spectrum (USDA Forest Service publication, "1986 ROS Book"), which defines outdoor recreation environments and opportunities.
- Analyze existing sites and identify potential sites for their accessibility problems and opportunities.

B. Site Evaluation

- Determine the existing level of accessibility for the site.
- Determine the potential level of accessibility.
- Determine if the site's physical characteristics lend themselves to development within the management objectives for the area.

C. Site Selection

- Determine which sites should be selected for more detailed analyses.
- Document which sites were not selected and why they were not.

D. Detailed Evaluation

- Determine current levels of accessibility for each site.
- Identify specific problems.
- Determine what can be done to achieve the potential and desired levels of accessibility.

E. Review

- Determine if the recommended level of accessibility can be achieved within the overall management objectives for the area's settings and experience level.
- Identify the most critical problems and important opportunities.
- Recommend a level or levels of accessibility for the entire site.

II. DESIGN STAGES/ISSUES

A. Planning

- Inventory, analyze, and propose levels and types of uses to meet established needs and desired objectives.
- Actions:
 - Evaluate the site's potential for accessibility.
 - Set goals for levels of accessibility.
 - Determine how a site fits into an area-wide accessibility plan; will there be a balance of levels of accessibility?

B. Conceptual Site Plans

- Identify the uses and facilities proposed for development on a specific area of land.

- Use to determine physical feasibility and display the functions, size, scale, locations, and relationships of the various proposed uses.

- Actions:

- Review evaluation and recommendations from the evaluation phase.

- Confirm the site's level of accessibility.

- Make final determination of the levels of accessibility for the site.

C. Preliminary Site Plan

- Verify and quantify, in graphic format, proposed activities, functions, relationships, impact on existing conditions, the area of land, and site materials for a predetermined combination of land uses.

- Modify and refine the design concept for the best arrangement of uses, functions, and activities in a manner which best achieves the desired objectives.

- Actions:

- Develop design solutions to meet accessibility goals and management objectives.

- Determine if the design is appropriate for the site, expense level, and management objectives.

D. Final Site Plan

- Illustrate in graphic format the existing conditions and proposed changes for specific uses, activities, and structures within a designated area of land.

- Ensure that there is adequate planning to protect major investments and that the accessibility goals are achieved.

E. Construction Drawings

- Develop construction drawings and specifications using appropriate standards and guidelines.

F. Construction

- Develop an inspection and monitoring process which ensures that accessibility goals are met.

G. Project Evaluation

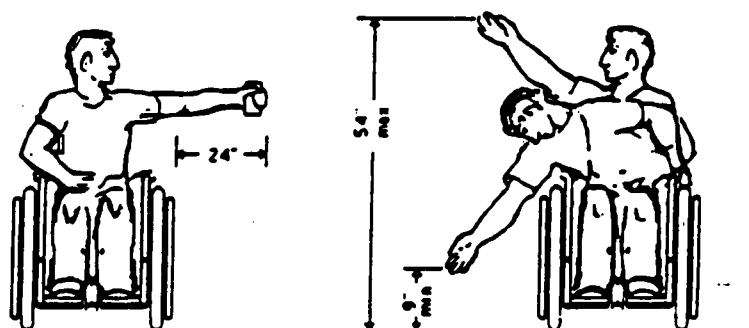
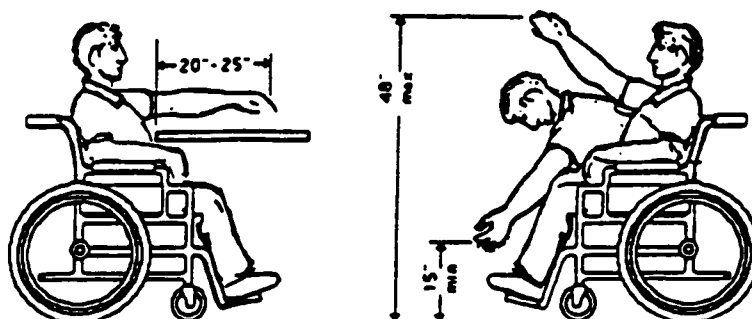
- Determine if project meets predetermined goals and standards for accessibility.
- Evaluate the use of the project.

H. Maintenance

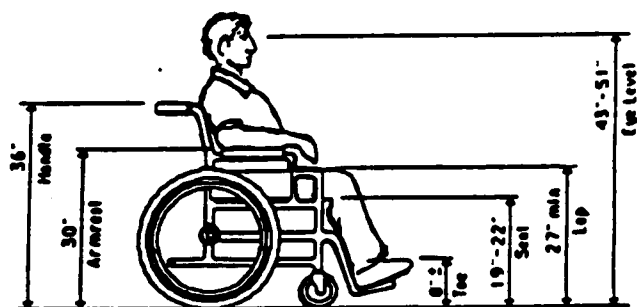
- Develop a maintenance plan.
- Continue to monitor site to ensure access.

REFERENCE DIMENSIONS

The dimensions of a wheelchair determine the clearance needed for maneuvering and also the user's range of reach.



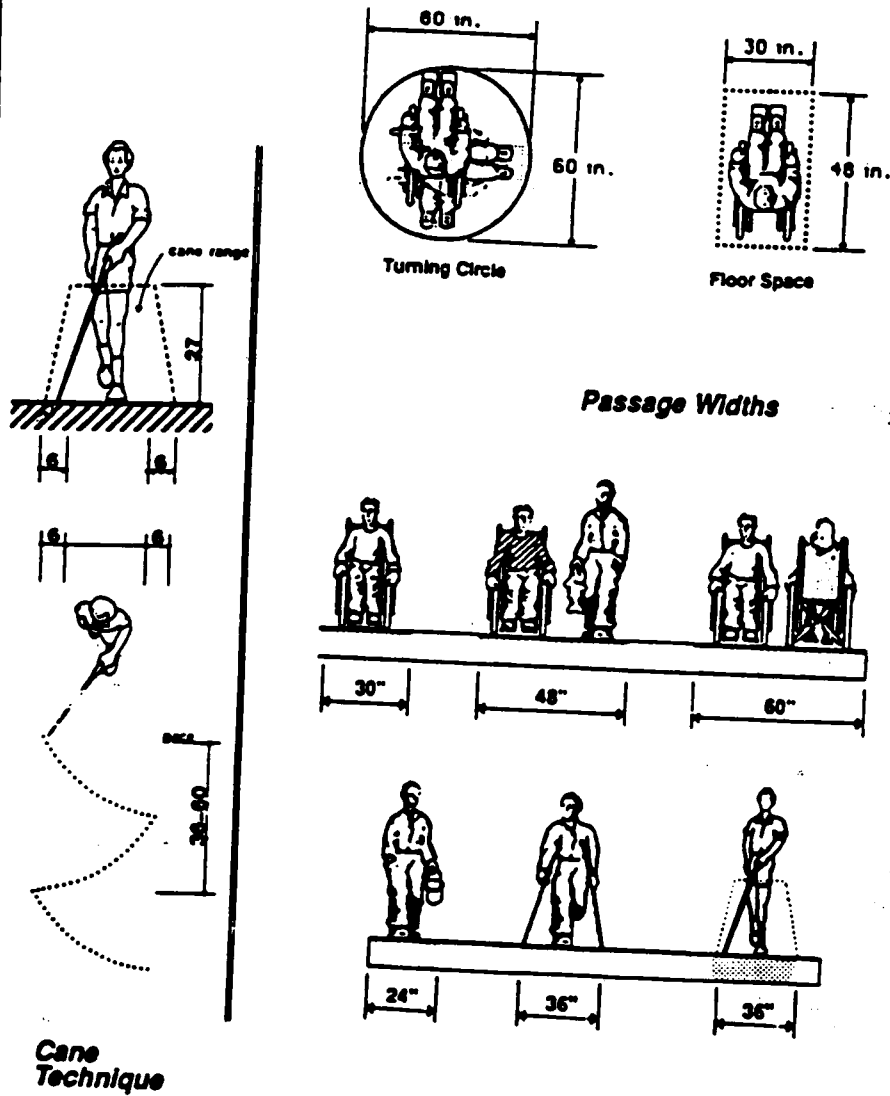
REACH DIMENSIONS FROM A WHEELCHAIR



DIMENSIONS OF ADULT-SIZED WHEELCHAIR

Reference Dimensions

Areas Required for Wheelchairs



PARKING, ACCESS ROUTES, AND ENTRYWAYS

PARKING

If parking spaces are provided, then (in new construction) the parking area must have accessible spaces in accordance with table 1. Designate those parking spaces reserved for persons with disabilities by a sign showing the international symbol of accessibility. Select as accessible parking spaces those nearest an accessible building entrance along an accessible route.

Accessible parking spaces must be at least 8-ft wide and have an adjacent access aisle that is a minimum of 5-ft wide for autos and 8-ft wide for vans. Two accessible parking spaces may share a common access aisle. Parking spaces and access aisles are to be level, with surface slopes not exceeding 1:50 in all directions.

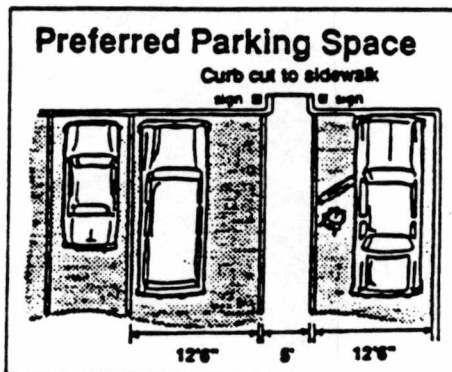


Table 1. Required accessible parking spaces.

Total lot spaces	Required accessible spaces (min).
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 % of total
1001 and over	20 + 1 for each 100 over 1000

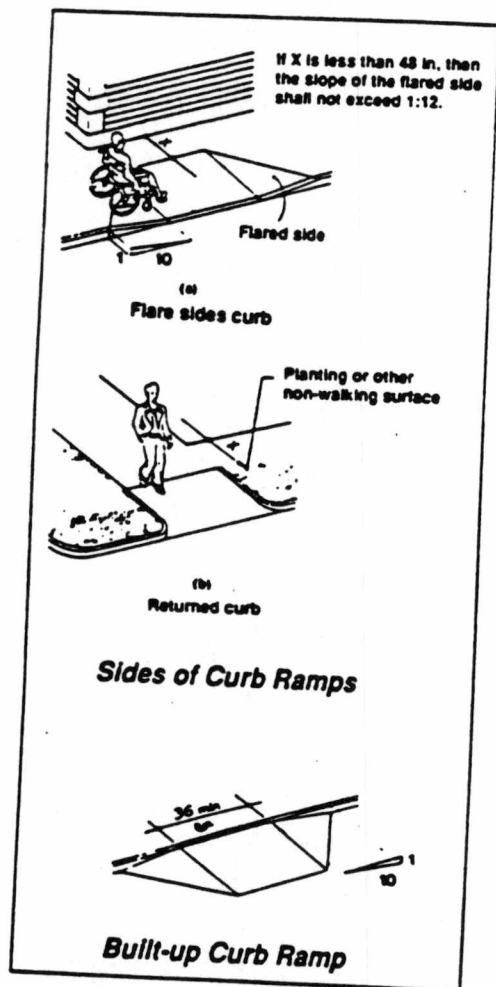
ACCESS ROUTES

At least one accessible route is to be provided from public transportation stops, accessible parking, and public streets to the accessible building entrance they serve. At least one accessible route must connect all buildings, facilities, elements, and spaces that are on the same site. And, at least one accessible route must connect the accessible entrance with all interior and exterior spaces used by the public and employees.

Accessible routes must be as level as possible. Any access route with a running slope greater than 1:20 is a ramp and must conform with the requirements for ramps, including level landings and handrails. The maximum running slope for an access route is 1:12. Stairs cannot be part of an accessible route.

The minimum clear width of an accessible route is to be 36 in, except at doors where the minimum doorway clearance is 32 in and

where extra width must be provided for maneuvering. If an accessible route has less than 60-in clear width, then passing spaces at least 60 by 60 in should be located at reasonable intervals, not to exceed 200 ft. Walks, halls, corridors, aisles, or other circulation spaces are to have 80-in minimum clear head room. Ground and floor surfaces along accessible routes and in accessible rooms and spaces are to be stable, firm, and slip-resistant.

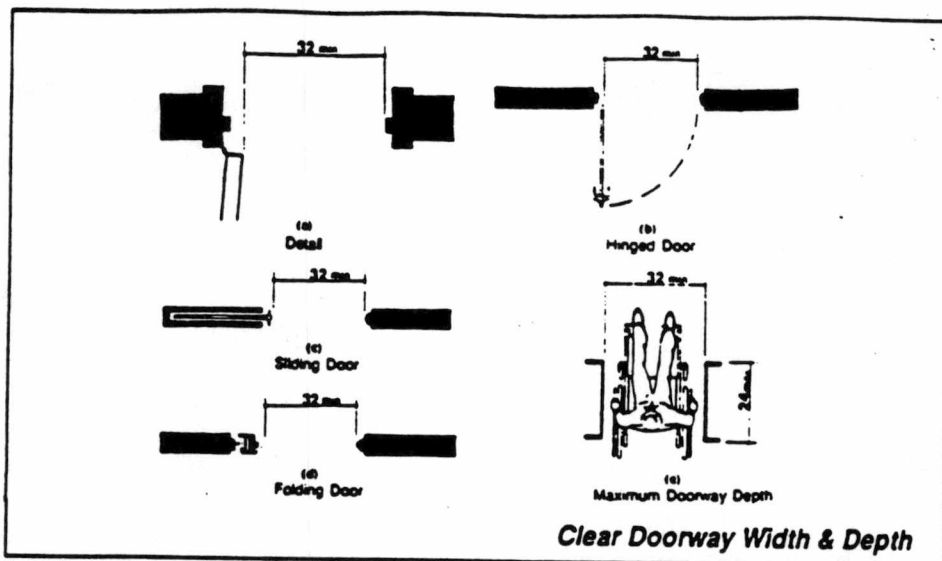


ENTRYWAYS

Accessible entrances are to be connected by an accessible route to public transportation stops, to accessible parking and passenger loading zones and to public streets or sidewalks (if available). They shall also be connected by an accessible route to all accessible spaces or elements within the building or facility.

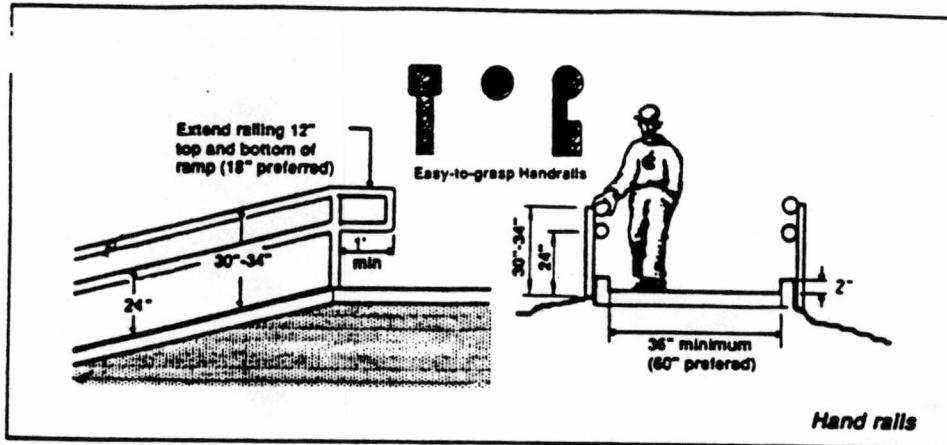


In new construction, at least one principal entrance at each grade floor level shall be made accessible. In alterations to existing buildings at least one accessible entrance shall be provided. When a building or facility has entrances which serve functions such as transportation, parking, taxi stands, public streets and sidewalks, or accessible vertical access, then at least one entrance serving each function shall be made accessible. Because entrances also serve as emergency exits, whose proximity to all parts of buildings and facilities is essential, it is preferable that all or most entrances be accessible.

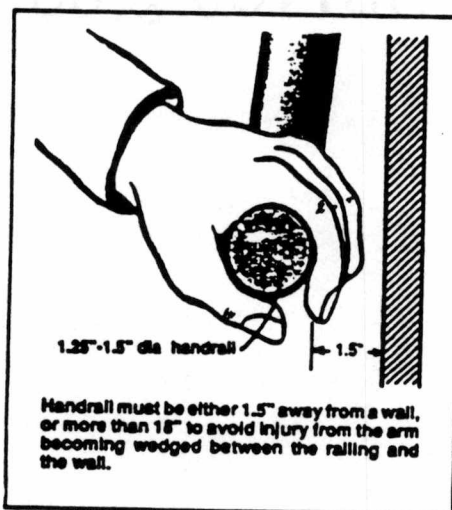


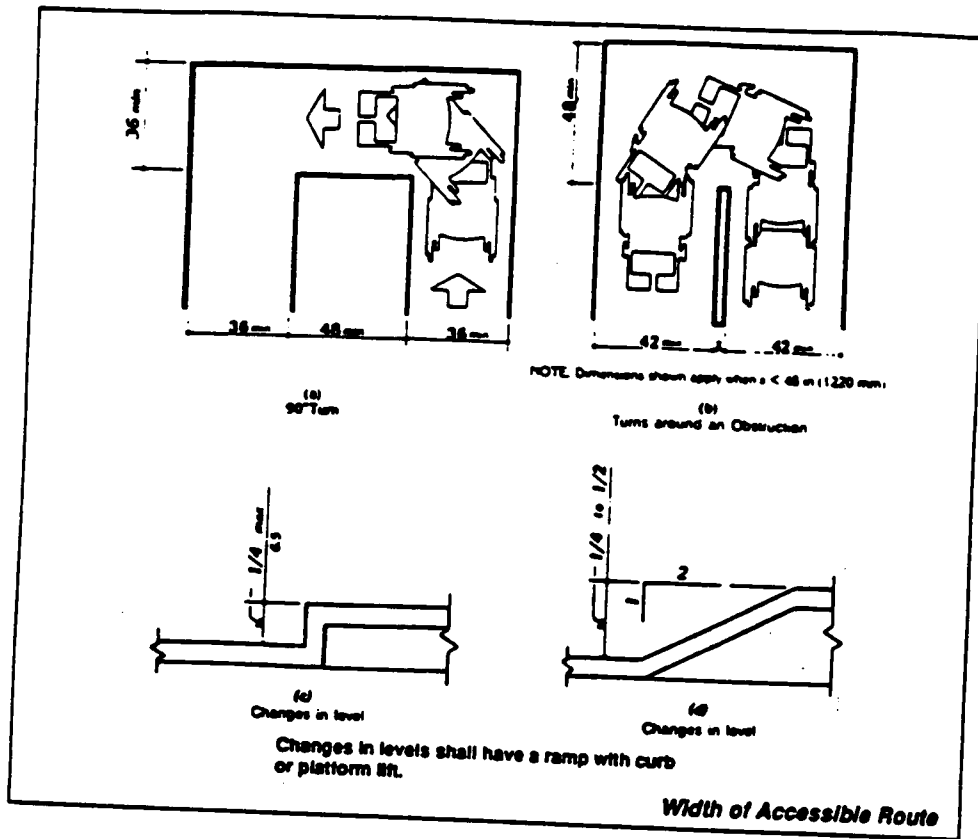
Doorways shall have a minimum clear opening of 32 in with the door open 90 degrees, measured between the face of the door and the stop. Handles, pulls, latches, locks, and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching or twisting of the wrist to operate. Lever-operated or push-type mechanisms and U-shaped handles that can be operated with a maximum pressure of 5 lb are acceptable designs. Hardware shall be mounted no higher than 48 in above the floor.





The surface of a ramp on an accessible route must be stable, hard, nonslip, with slight texture for increased traction. Its color should contrast with that of the path surface and it shall not collect standing water or ice. Asphalt should be used with caution as a ramp surface as it becomes soft in hot weather.





	Accessible	Challenge Level 1	Challenge Level 2
Ramps	A ramp is any section of a pathway that is steeper than the maximum pathway slope for an ability level. Ramp slopes and requirements vary by ability level. A ramp which is part of a pathway system must be designed at the same (or easier) ability level as the pathway. For example if a Challenge Level 1 ramp is in an Accessible pathway, the pathway becomes a Challenge Level 1.		
Ramp Running Slope	Between 1:20 (5%) and 1:16 (6.25%); a slope flatter than 1:20 is not a ramp. Use a ramp slope of 1:14 (7%) or flatter, if possible. (Many people with mobility impairments have difficulty with 1:12) 	1:16 (6.25%) to 1:12 (8.3%) 	
Cross slope	Less than 1:50 (2%)	Less than 1:30 (3.3%)	
Ramp landings	5 ft by 5 ft level landing every 30 in of vertical rise	5 ft by 5 ft level landing every 48 in of vertical rise	
Ramp width	3 ft min, required width	3 ft min; 4 ft recommended.	
	If possible, ramps should be the same width as a pathway: 4 ft min; 5 ft recommended.		

Accessible	Challenge Level 1	Challenge Level 2
Ramp handrails	Use railings at both sides of ramps that rise 6 in or more. Extend railings past the top and bottom of the ramp: 12 in min (18 in preferred). Diameter of grip surface must be 1-1/4 to 1-1/2 in and must be continuous, smooth, and nonslip. The handrails must be spaced either exactly 1-1/2 in or more than 18 in from a wall or other vertical surface. Have top railing mounted 30 to 34 in above ramp surface; 32 in is recommended.	
Curbs	2-in high curbs on both sides of ramp; curbs at landings that drop off at the edge.	2-in high curb at ramp edges that drop off to the side.
Ramp surface and texture	Hard, nonslip surface with texture elements less than 1/8-in high. Texture should drain water off the ramp.	Firm surface with moderate texture. Texture elements less than 3/8 in.

TRAILS AND PATHWAYS

Trail planning should also not just provide a means to access an area—but should also include consideration of the experience. We need to provide increasing attention to the design and modification of hiking and nature trails to make them accessible and usable to persons with disabilities and to older people. As more of these individuals seek outdoor recreation experiences, we can expect an increasing demand for trail systems that accommodate mobility, visual, and hearing impairments.

Generally speaking, people with a disability want to enjoy the trail experience with other visitors and with their families, friends, and companions. They do not want to be separated or labeled as "special." Consequently, most planning today emphasizes the design of trails for use by the widest possible cross-section of the public, which includes individuals who happen to have disabilities, families with young children, and older people.

Because official standards specifically for trails do not exist, it is difficult to develop a precise definition of "an accessible trail." The *Uniform Federal Accessibility Standards* (UFAS) provide a basis for developing appropriate standards. For example, official standards exist for "accessible routes of travel." These criteria are based on analysis of research to determine which design approaches allow the majority of disabled persons to traverse a space independently and safely. However, because outdoor trails may differ in function from routes connecting facilities, additional specifications are proposed to make a trail accessible to the majority of people with disabilities.

Not all trails can be designed to meet these recommended specifications. A variety of trails should be provided in different settings and recreation areas. Often trails are designed to blend with the topography. Some are simple footpaths through wilderness areas; others are well developed and involve sig-

nificant modification of the natural environment. To make all trails conform to the standards for accessible routes of travel in every instance is neither feasible nor desirable. All individuals, including those who are disabled, desire to choose trails that provide different experiences and varying degrees of challenge and difficulty. This Design Guide proposes a trail classification system that grades trails according to degrees of difficulty.



Accessible trail

We use all three ability levels for trails. The Accessible trail may have grades up to 5 percent and can accommodate all people with disabilities. The more difficult Challenge Level 1 trail would have grades that exceed 5 percent but are less than 8.3 percent. The most difficult (Challenge Level 2) trails would not accommodate a large portion of disabled people. These trails may contain grades which exceed 8.3 percent but are below 12 percent.



Challenge Level 1 trail



Challenge Level 2 trail

Managers should provide one trail or a portion of a trail that conforms to the recommended guidelines for each ability level. This would assure that all visitors would have the opportunity to participate in a trail experience. Trails designated Accessible should

meet the criteria presented here. When a trail does not meet these criteria, it is essential to inform people about the character of the trail to assist them in deciding whether or not to attempt it. At the head of such trails, "level of difficulty" details—in print and audio formats—should state (at a minimum) the trail length, distance between rest places, handrails and/or edge protection, width (including width at points of obstruction), running slope, and surface material. An even more complete profile for a trail may be provided, when possible. By doing this, all users, including those with varying degrees of disabilities, would be in a position to choose opportunities that are in line with their self-assessed abilities.

The Accessible trail must also meet a number of specifications addressing width, passing space, surface, running slope, cross slope, edging, clear headroom, rest area(s), signage, and information points. Most of the provisions relate to access for persons with impaired mobility. However, some criteria are provided to improve access for persons with vision impairments as well. For example, if interpretive information is provided as part of the trail experience, it is important to assure that persons with visual or hearing impairments also have access to the information.

An Accessible trail shall meet all of the specifications that follow. (NOTE: Most of these specifications are taken directly from the UFAS section on accessible routes. Exceptions have been made in width surface, edging, and rest areas to address the functional requirements of trails.)

Passing space: If the trail width is less than 5 ft, passing spaces shall be provided at least every 200 ft. The minimum width which allows a person in a wheelchair and a pedestrian to pass is 4 ft; 5 ft is the minimum width to allow two wheelchairs to pass.

Rest areas: Accessible trails shall provide rest areas at intervals of 200 to 300 ft. These shall be out of the travel way and should have benches. Providing shelter at rest stops

is optional—shelter from weather may be desirable where it is very hot or has frequent rainfall. Use natural shade where possible. Because the grade is steeper on a Challenge Level 1 trail, the rest areas should only be 100 to 200 ft apart. The rest stops on the Challenge Level 2 trails should be at least 200 to 300 ft apart to maintain the desired experience. Plan rest stops to take advantage of natural level spaces with interesting features, such as vistas, interpretative opportunities, shorelines, etc.

Signage: Because UFAS 4.1.1(5), 4.3, and 4.6 requires display of the international symbol of access at parking areas, passenger loading zones, access routes, and trailhead areas, the symbol is not required on other elements of the trail. When a sign is provided on an accessible trail, it shall conform with UFAS 4.30 (character proportion, color contrast, raised characters or symbols, symbol of accessibility and mounting location and height).

Change in materials, texture, color: Use separate textural and color cues to indicate: (a) high risk areas such as steep embankment, steps or intersections and (b) functional changes such as seating areas, fountains, or plazas. Tactile cues alert the blind as well as the sighted who are approaching an area of concern or interest. Keep in mind that a height difference in surfaces, if it occurs, must be less than 1/4 in vertically. Differentiate color of material when change in level occurs—otherwise the visually impaired may overlook stairs, ramps, or steps. Bold patterns or colors may be disorienting over a continuous surface.

The accompanying illustration has a description of a few of the surfacing materials that can be used for pathways and other outdoor activity areas. The presentation is limited to a few materials that can be used effectively at the three ability levels. Other possibilities should be considered if appropriate to local conditions and needs.

Surfacing Material	Ability Level		
	Accessible	Challenge Level 1	Challenge Level 2
Concrete			
Pavers on Conc.			
Asphalt			
✓Crushed Stone			
✓Wood Decking			
Soil Cement			
✓Wood Chips			
Untreated Soil			
Grass			
✓Packed Gravel			

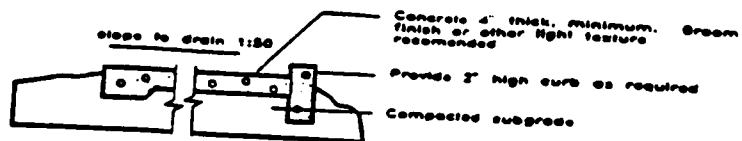
Materials which are appropriate for a given ability level

Materials which may be used for a given ability level if designed and constructed properly

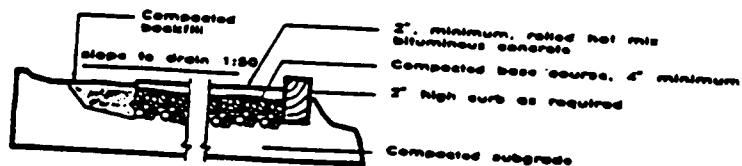
Pathway Materials

Some materials have broad application, while others may not be suitable for all ability levels. Materials to be considered include:

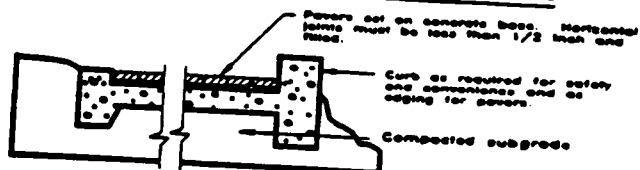
Concrete Pathways	Concrete must be poured on a well-prepared base that is clean and free of debris. Finishes should have a light texture—such as a broom finish—so that the surface will not be slippery when wet. The texture should drain water off the pathway so it does not stand or freeze.
Asphalt Pathways	Asphalt pathways may be used if they are carefully constructed and maintained. Typical construction should include: • Subgrade cleaned and cleared to a depth of 6 in below finished grade, compacted to 95%. A soil sterilant may be utilized to control weed growth. • 4-in base course of coarse aggregate, compacted to 95%. • Primer coat. • 2-in surface course of hot mix bituminous concrete, compacted to 95% density. An epoxy finish, coated with sand, may be used to give a natural appearance and reduce softening problems in hot climates. Asphalt surfaces may become soft in very hot climates, causing difficulty for people in wheelchairs, and thus may not be a suitable material in extremely sunny locations.
Pavers on Concrete	Brick, tile, or concrete pavers, set on a properly constructed concrete base can provide a Level 1 pathway surface. Joints between pavers must meet the requirements of the designated level of accessibility.
Crushed Stone	Crushed stone can form an accessible surface, if it is correctly designed and constructed: • Subgrade cleaned and cleared to a depth of 6 in below finished grade, compacted to 95% density. The use of a soil sterilant is recommended. • 4-in base course, 3/4-in crushed stone, compacted to 95% density. A binder of 2 to 3% Portland cement with water and gravel may be used. • 2-in surfacing course of crusher fines, rolled and compacted to 95% density. Cement binder recommended.
Wood Decking	Wood decking may be used as a pathway and flooring surface for all levels of accessibility, providing joints meet the requirements of the Level. Warpage and movement of the material must also be controlled.
Pavers on Sand	Brick, tile, concrete, or other paving materials set in sand are not recommended for easy access. Movement of the material over time may cause unacceptable irregularities. Suitable for more difficult access if properly installed.
Grass	A grass surface can be passable if it is level and well maintained.
Untreated soil	Untreated soil is highly variable. Some situations may be acceptable or more difficult. Soil is likely to change significantly due to precipitation, erosion, wear, etc.
Gravel	Loose gravel is not recommended. It can be very difficult for a person in a wheelchair or with walking aids. Packed gravel may be suitable for challenge opportunities.



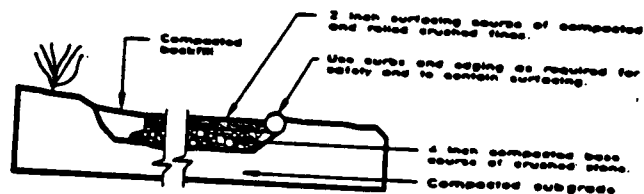
CONCRETE SURFACING



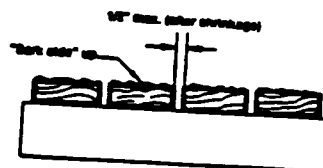
ASPHALT SURFACING



PAVERS SET ON CONCRETE



CRUSHED STONE



Wood planking may be used as a surfacing material, but joints between planks must not be more than 1/2 inch and planks must be securely fastened so they do not warp. Wood must be maintained and treated with an appropriate preservative to avoid decay or drying.

WOOD DECKING

	Accessible	Challenge Level 1	Challenge Level 2
Trails and Pathways			
General	Pathways are the pedestrian connections between facilities or activity areas. The entire length of a pathway must meet or surpass the guidelines for its ability level. The <i>length</i> of a pathway is the distance between two facilities such as a parking area and a fishing dock. The <i>width</i> of a pathway is the narrowest clear dimension along its length. A pathway that averages 5 ft across but narrows to 3 ft is defined as a 3-ft path.		
Distances	Distances between facilities will vary widely from site to site. The recommended distances are reasonable maximum distances for each ability level. A much shorter distance will often be desirable, particularly at Accessible sites.		
Grade	1:20, 5% max.	1:12, 8.3% max.	1:8, 12.5% , not to exceed 200 ft.
Width	1-way, 4 ft; 2-way, 5 ft.	32 in min.	32 in min.
Cross slope	2% max.	2% max.	3% max.
Gates	Gates must have a clear 32-in opening. Clear approach space must be provided.		
Surface	Hard surface.	Very firm, compacted surface.	Natural surface, passable in a wheelchair.
Edge	Provide 2-in curb on downhill side.	Provide 2-in curb on downhill side at dangerous and difficult locations.	Not defined.
Curbs/railings	Provide 32-in railings at dangerous and difficult locations.		

Accessible	Challenge Level 1	Challenge Level 2
Detectable area	The detectable area is the area of space within which a visually impaired person, using a cane, can detect an obstacle. No obstacle may overhang the edge of a pathway by more than 4 in, if the bottom of the obstacle is more than 27 in above the walking surface.	
Tactile warnings	Tactile warnings on walking surface should be provided at locations that are potentially dangerous to people with severe visual impairments, such as crosswalks/water areas.	
"Shoreline"	If curbs or handrails are not provided, one side of path should have a distinctive edge to serve as a "shoreline" for cane users.	
Rest areas	200-300 ft max.	100-200 ft max.
		At reasonable distance—not closer than 200 or 300 ft; consider natural level spaces.
Maintenance	Maintenance is important so that the pathway is not degraded by weeds, cracks, or erosion.	



PICNIC AREAS AND CAMPGROUNDS

Some of the most popular recreation activities in America are picnicking and camping. These enable individuals, families, and groups to relax, eat, and play together in the out-of-doors. Comprehensive design efforts in these areas are critical to assure accessibility. All elements and spaces in an accessible picnic area and/or campground must be accessible to, and usable by, persons with mobility and communication impairments—including ground surface, tent pad, clear ground space at the site, clear head room—and, if provided, table(s), water source, grill or fireplace, and trash receptacle. An accessible area must include at least one accessible site with parking, routes, signage, support facilities, and activity areas that comply with the specifications in UFAS.

Every effort should be made to incorporate the principles of universal design in designing all the sites to be as accessible as practicable. At larger facilities, the accessible sites should be situated in different locations throughout the picnic area and campground to provide a variety of choices. For example, outdoor experiences in shady spots are favored by some, while others prefer to spend their time in sunny locations. Some families may want to be near athletic facilities, while others may wish a more secluded site if they are involved in bird watching, nature study, or just want solitude.

Persons with disabilities who require accessible sites are not likely to use a picnic area unless they can be reasonably assured that an accessible site will be available when they arrive. When feasible, a site reservation system should be provided. Policies to assure that accessible sites are used by those who need them should be established and made known to all visitors.

When the following components are provided, they must be accessible.

1. REGISTRATION AREA

a. **Parking.** The number and design of accessible parking spaces shall comply with UFAS 4.1.1(5) and 4.6.

b. **Route or routes.** The route or routes connecting accessible parking with the accessible registration area and other support facilities and activity areas shall comply with UFAS 4.3.

c. **Entrance.** The registration area entrance shall comply with UFAS 4.14.

d. **Registration desk.** If an information or registration desk is provided, one section of the desk shall be designed to be used by a person in a wheelchair. The specifications shall comply with UFAS 4.32 or 4.34.6.4.

2. DEVELOPED PICNIC OR CAMP SITE

a. **General.** As many as possible, but a minimum of 5 percent, of the sites shall be accessible and shall comply with the specifications that follow.

b. **Tent pad.** If provided, it shall be flat, stable, and located adjacent to hard surface areas. The tent pad shall be a minimum of 14 by 16 ft.

c. **Hookups.** If provided, water and electrical hookups shall comply with UFAS 4.27 with regard to clear floor space, height, and operation.

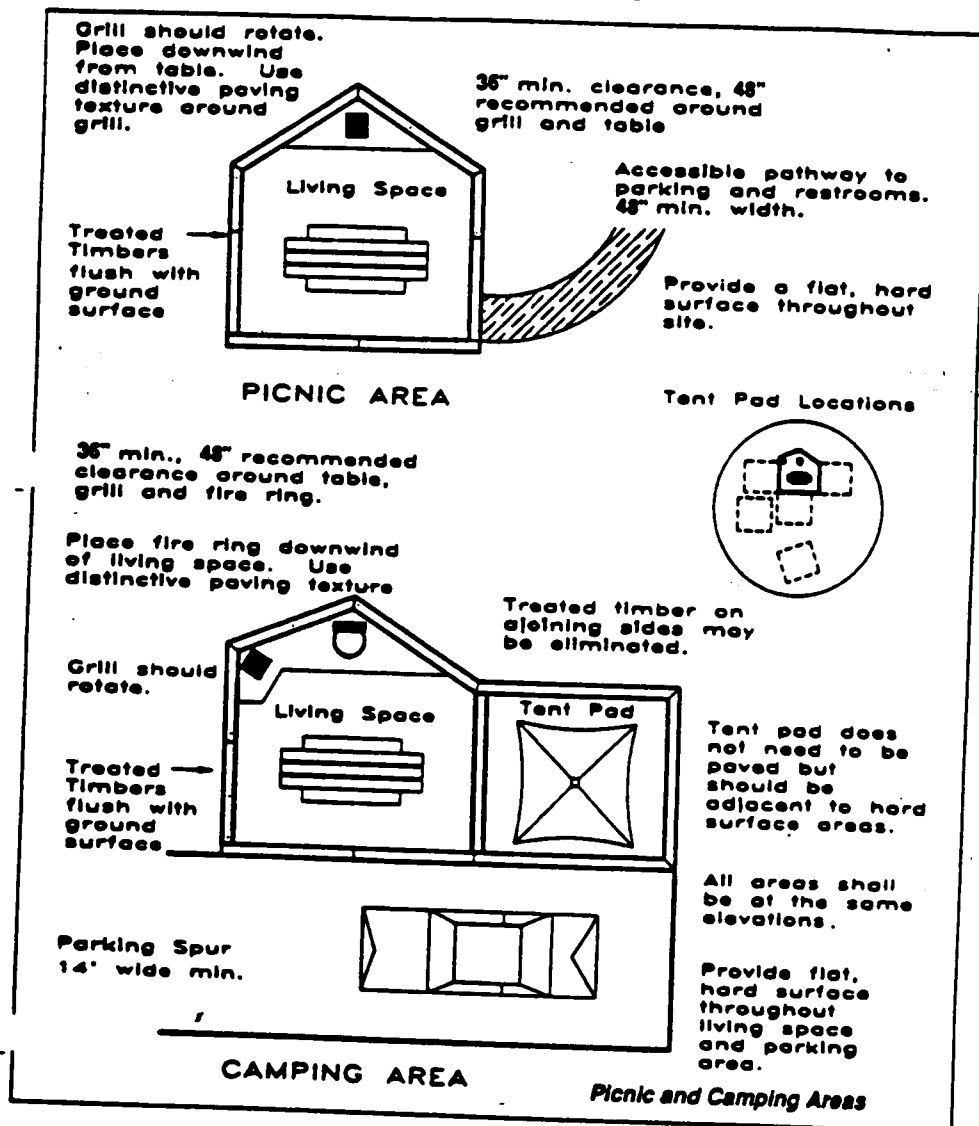
d. **Storage facilities.** If provided, any buildings or structures available for storage of food or other supplies shall be located on an accessible route and shall be designed in compliance with UFAS 4.25 and 4.34.6.10.

f. **Parking.** Accessible parking shall be a minimum of 8-ft wide, with a 6-ft (min.) access aisle alongside, and 20-ft long. It shall be level and constructed of a hard, stable surface material.

3. **PASSENGER LOADING ZONES.** If provided, the number and identification of passenger loading zones shall comply with UFAS 4.1.1(5) and 4.6.

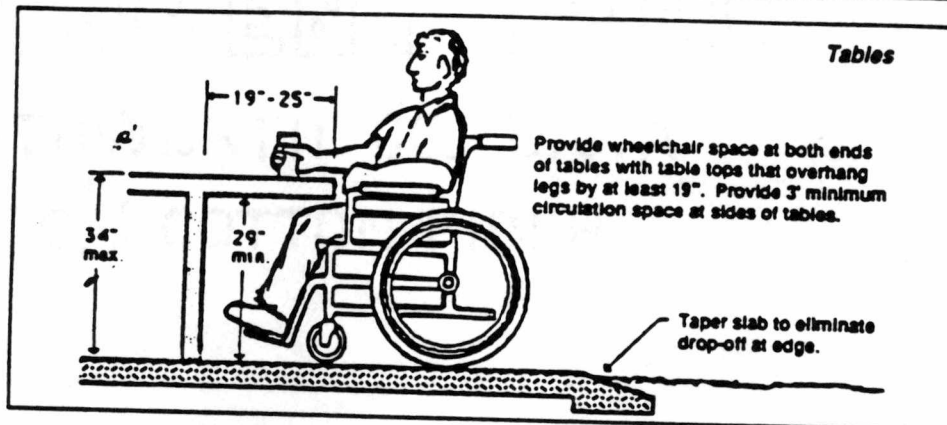
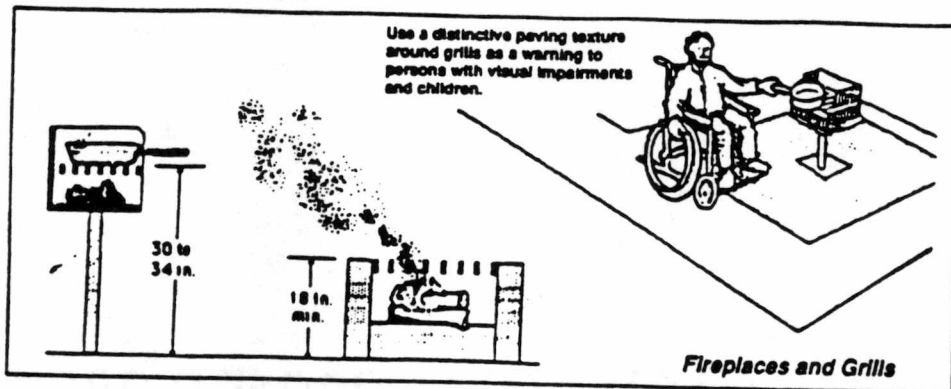
4. COMMUNICATION SYSTEMS. Information about the ability levels of the site's features shall be obvious and available to the visitors.

5. SUPPORT FACILITIES AND ACTIVITY AREAS. If support facilities and activity areas (e.g., restrooms, bathing facilities, amphitheaters, restaurants) are provided, they shall comply with the applicable sections of UFAS.



	Accessible	Challenge Level 1	Challenge Level 2
Picnic Area & Campground Guidelines			
Furniture and equipment	Picnic areas and camp sites for people with disabilities should have the same amenities as other areas and sites.		
Camp sites	Provide hard surfacing for wheelchair circulation within the camp site, accessible table and grill, and tent area (if appropriate). Water and restrooms should be nearby.	Provisions similar to Accessible, but surface materials may be Challenge Level 1.	
Signs	Accessible parking, routes, and sites shall be signed in compliance with UFAS 4.1.1(7) and 4.30. If specific facilities are reserved or assigned, the international symbol of accessibility may not be necessary.		
Tables & Seating	All tables at accessible locations should have tops that extend past the legs by at least 19 in at both ends with 29 in minimum clearance between the underside of the table and the ground.		
	NOTICE: This Guide differs from UFAS on tables. UFAS requires 27 in clearance for knee space beneath tables; this Guide uses 29 in.		
	Provide a minimum of 3 ft clearance around the table (4 ft is preferred).	Provide a minimum of 3 ft clearance on two sides of table.	
	Benches and tables should be made of materials that are comfortable to touch in hot and cold weather.		

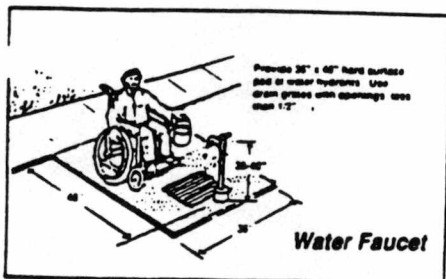
Accessible	Challenge Level 1	Challenge Level 2
Tables and Seating (Continued)	Tables and seating should be placed on level, hard-surface pads. Use Accessible materials. Connection between pad and pathway should meet the requirements for an Accessible pathway.	Requirements similar to Accessible except Challenge Level 1 materials may be used for the pad.
Grills and Fireplaces	Grills are preferred to fireplaces. Cooking surface should be 30 to 36 in high, and within comfortable horizontal reach from a wheelchair (15 in). If fireplaces are used, the grates should be raised 18 to 24 in. Use rotating grills; place them downwind from camping and seating areas. Handles should not conduct heat and must be easy to grasp. Use a distinctive paving texture around grills and fireplaces.	Tables should be on firm ground, passable and usable for a wheelchair.



Water Sources: A water source should be accessible to camp sites and picnic areas.

- **Faucets:** Water sources must be placed within reach of a person in a wheelchair.
 - Faucet height between 36 and 40 in.
 - Faucet should be located on a hard surface pad adjacent to an accessible pathway. Use material that will not become soft or slippery when wet. **Do NOT use gravel.**
 - Pad should be a minimum of 3-ft wide by 4-ft long.
 - Openings in drain gratings must be less than 1/2 in.
 - Use lever-type or other accessible controls.

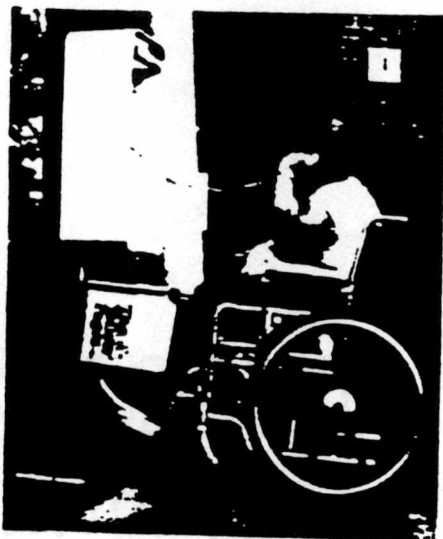




• **Drinking fountains:** Drinking fountains must be usable by a person in a wheelchair

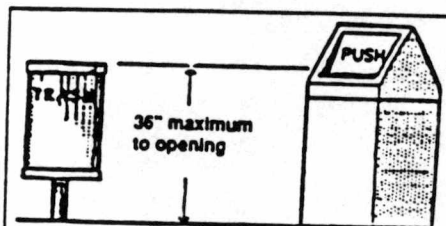
- Controls and spout at the front with the water stream parallel to the front of the fountain.

- Lever controls are preferred.
- Spouts no more than 36 in above floor; 34 in preferred.
- 27-in high knee space
- 30 by 48 in clear floor space.
- Alcoves 30-in wide, minimum.



Accessible telephone.

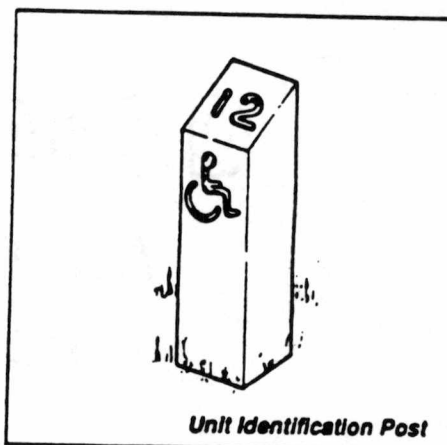
Trash Receptacles: Trash receptacles should be located near picnic areas and camp sites on a hard-surface pad adjacent to an accessible pathway. The opening mechanism must be within comfortable horizontal reach from a wheelchair with the opening 36 in, or less, above the ground. The opening mechanism should be operable with one hand.

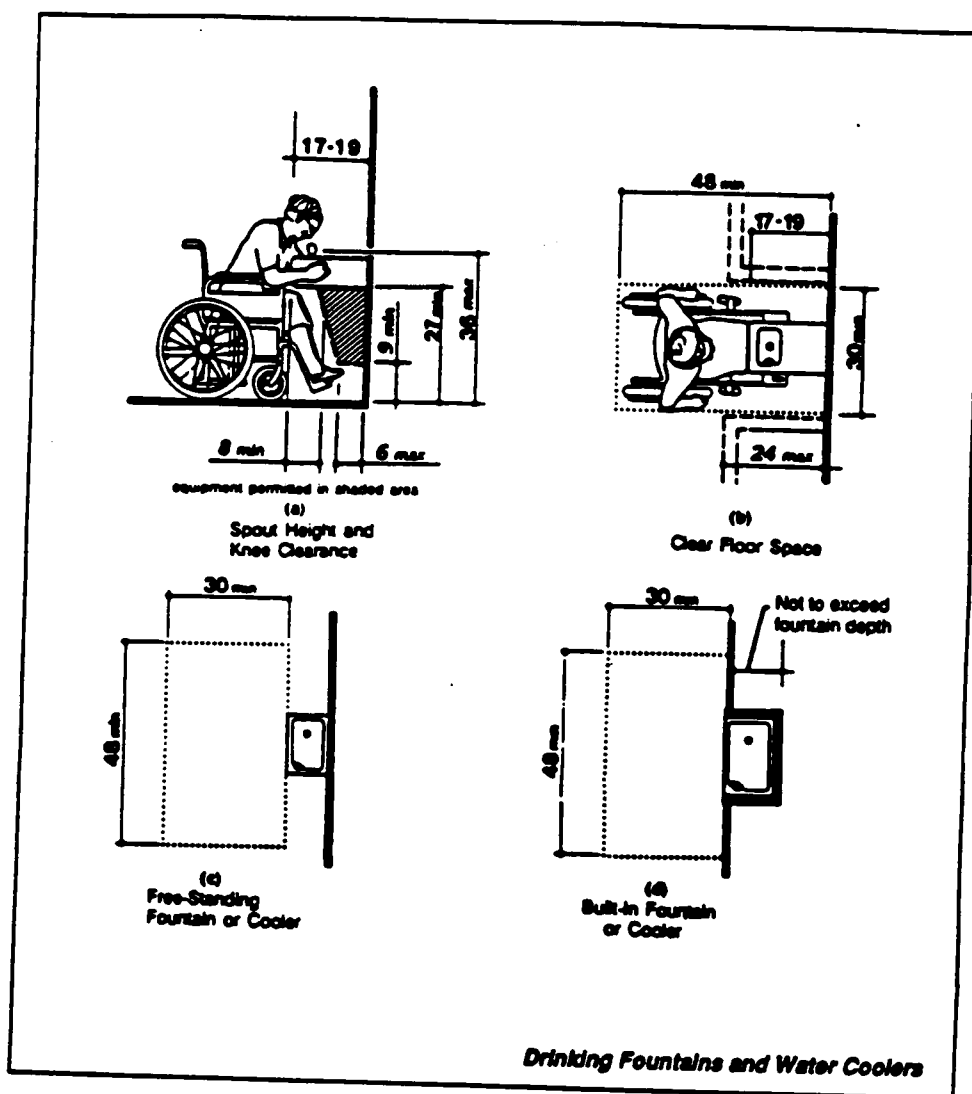


Trash receptacles should be adjacent to an accessible hard surface pathway.

Trash receptacles

Shade: In hot climates, provide shade with shelters or planting. Avoid vegetation that drops debris (seeds, fruits, etc). Prune branches at least 8-1/2 ft above the ground.





TOILET FACILITIES

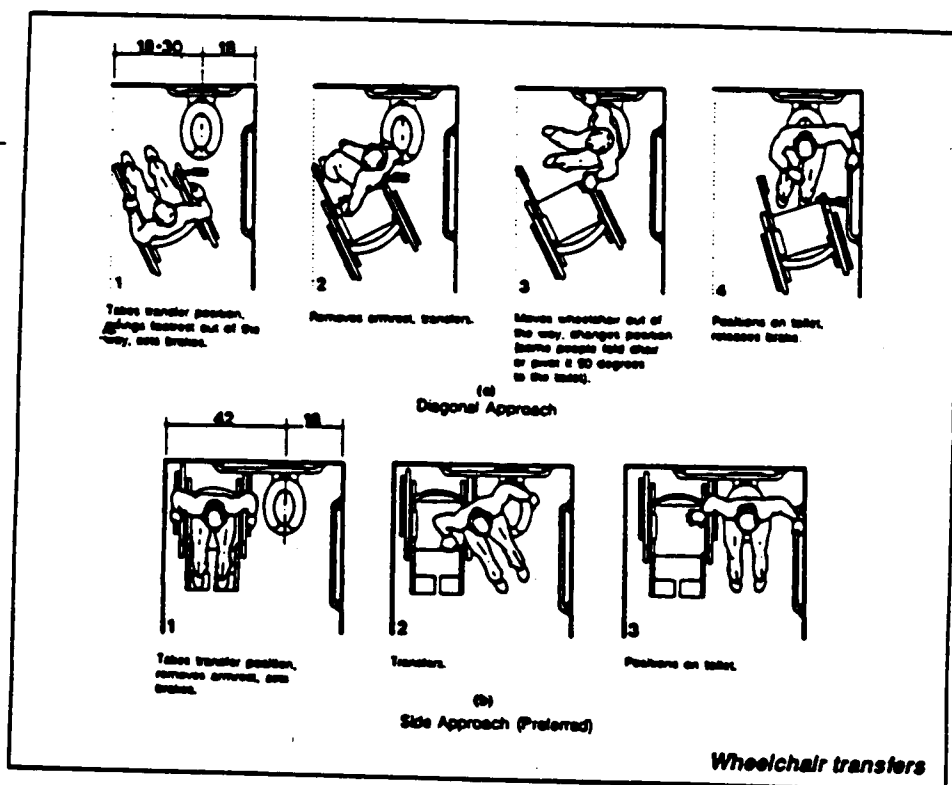
RESTROOMS

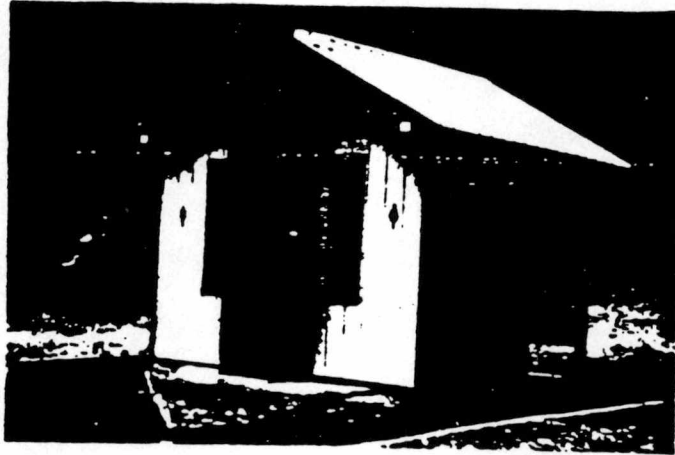
If restrooms are provided to the public and/or employees, it is imperative that an adequate number be provided for persons with disabilities and that they, and the approach to them, be accessible. Toilets at all accessible sites must be accessible. All new or altered toilets must comply with UFAS. Standards for accessible toilets have been developed based upon the space and criteria that allow people with disabilities to use them independently and with maximum safety. The following diagrams show two ways that a disabled person may transfer into an accessible toilet stall. The side approach is

the easiest and safest one for many wheelchair users.

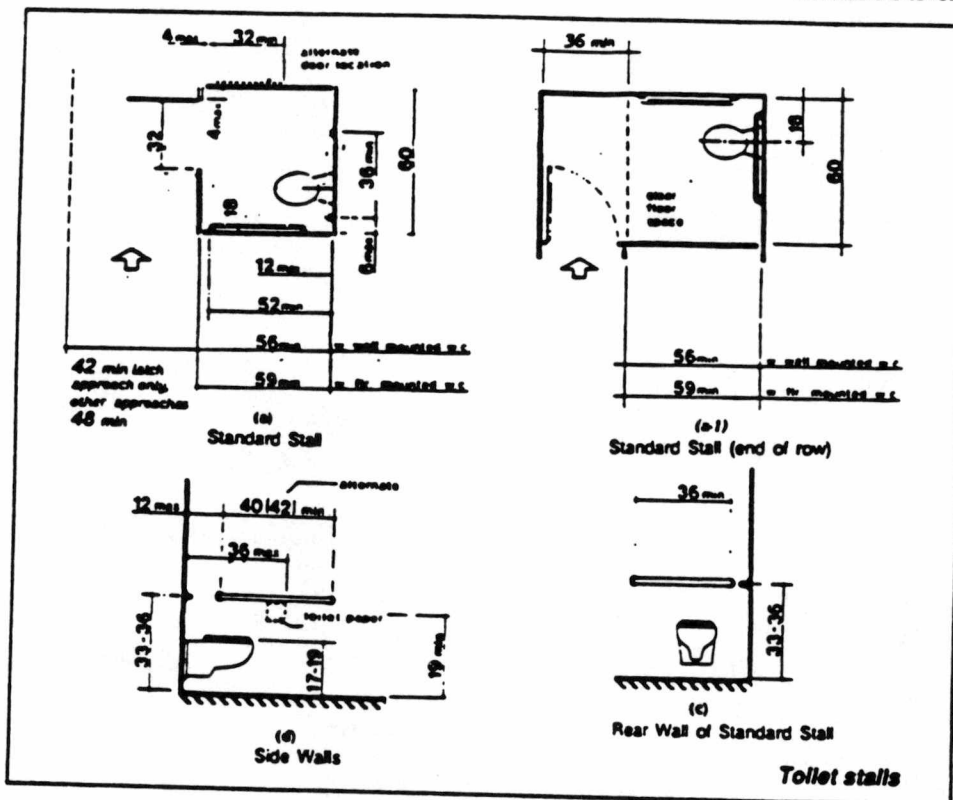
Accessible restrooms must be located on an accessible route. In new construction, each public toilet shall be made accessible. In alterations to existing facilities, at least one toilet facility for each sex, on each substantially altered floor, shall be made accessible.

There are accessible portable toilets. If portable toilets are used, at least one out of five shall comply with UFAS standards.

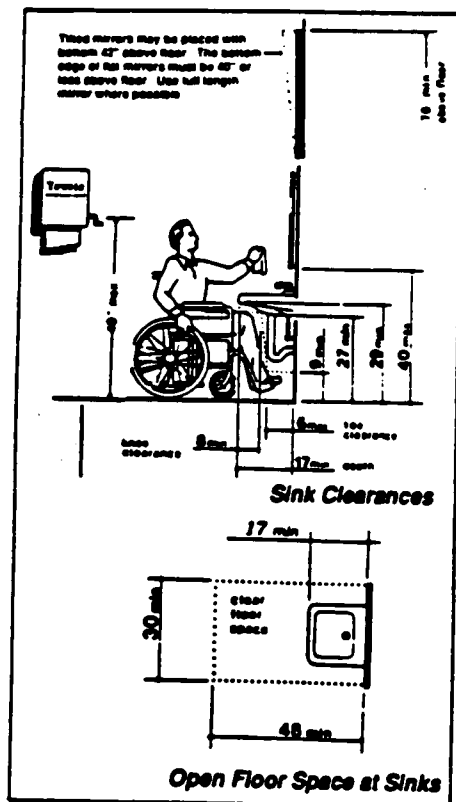




Accessible toilet



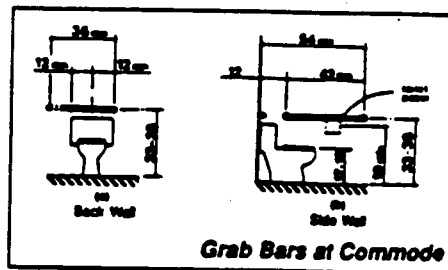
Clear Floor Space: The accessible fixtures and controls in the restroom must allow the necessary unobstructed turning space needed for a wheelchair user to move about and use the necessary features such as sinks, dispensers, toilet stalls, and urinals. The minimum necessary turning circle for a wheelchair is 5-ft in diameter. Floors are to have nonskid surfaces and shall comply with UFAS 4.5.



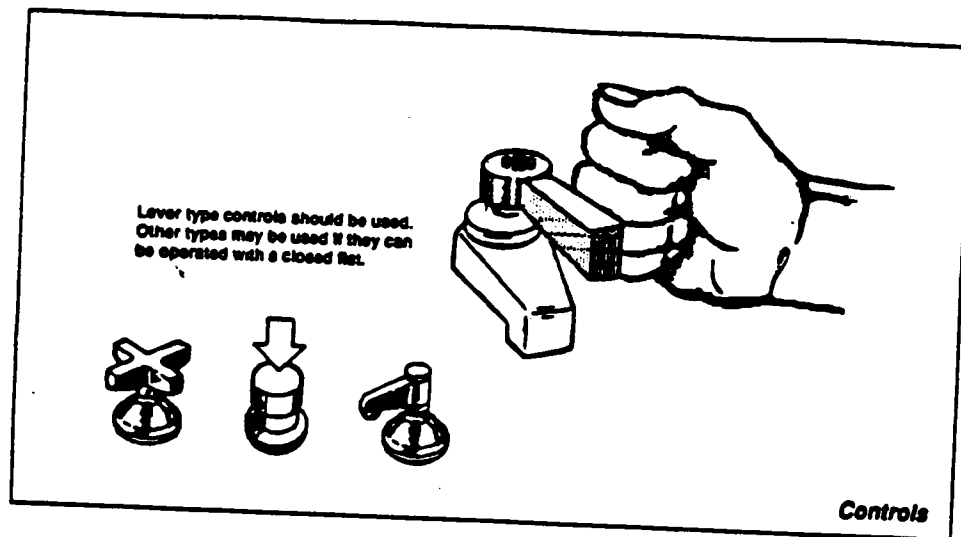
Sinks and Mirrors: If sinks and mirrors are provided, then at least one of each shall be made accessible. Sinks shall be mounted with the rim and counter surface no higher than 34 in above the finished floor, and a clearance of at least 29 in shall be provided from the floor to the bottom of the apron.

TOILET STALLS

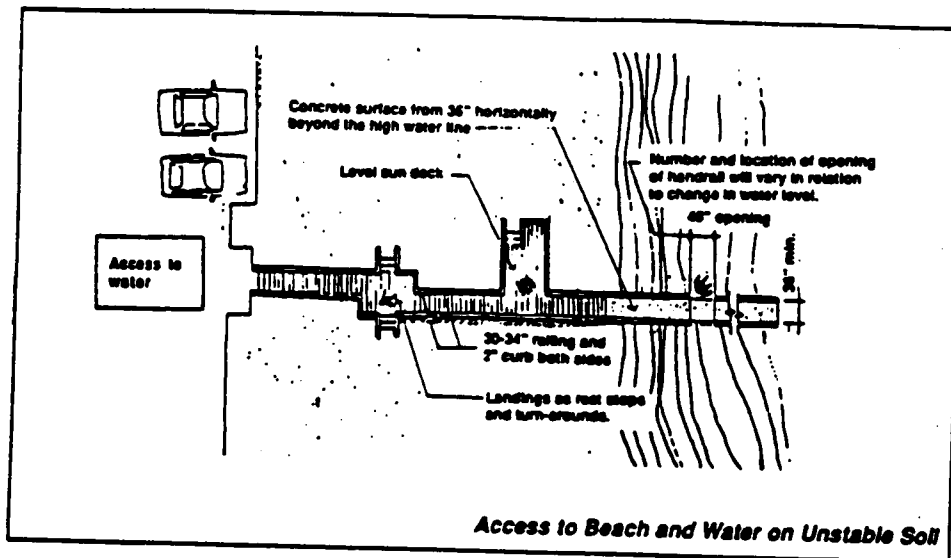
The size and arrangement of the accessible toilet stall must be 60-in wide by 60-in deep; this provides space to the side of the toilet for the wheelchair user to make a side transfer. If a wall-mounted toilet is used, the depth can be reduced to 56 in. (**NOTE:** The alternate stall is only allowed in the alteration of existing facilities and only when it is structurally impracticable to provide the standard stall—refer to UFAS.)



Grab bars shall be located on the wall to the side and to the rear of the toilet and shall be affixed at the height of 33 to 36 in from the floor. The diameter or width of the gripping surface of the bars shall be 1-1/4 to 1-1/2 in, or the shape shall provide an equivalent gripping surface. The space between the wall and the grab bar shall be exactly 1-1/2 in.



WATER ACTIVITIES



For all users to fully participate in water activities, the designated area must include a variety of interconnected elements, including parking, access route(s), entryway, communications system (signing, information, etc.).

necessary facilities and activity areas (toilets, docks, piers, etc.), and potable water, if provided. Accessible water activities of swimming, fishing, and boating can be categorized as follows:

ACTIVITY	PLACE	ISSUE
Swimming Fishing Boating	Beach & shore	Access to place. Access to water's edge. Transfer to boat.
Swimming	Pools & decks	Access to place. Transfer to water.
Boating	Docks & piers	Access to place. Transfer to boat.
Fishing	Docks & piers	Access to place. Access to water's edge.

BEACHES AND SHORES

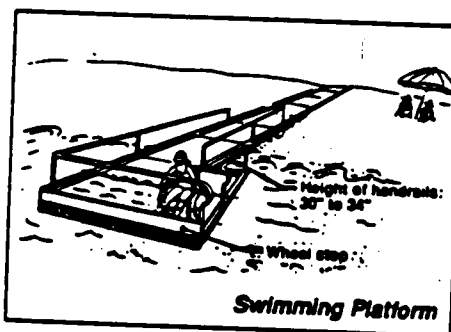
Access: For some water activities—such as fishing or swimming—it is necessary to have direct physical contact with the water from the beach/shore. Access for these activities involves two basic considerations:

- Access to the place of the beach or shore—usually from accessible parking.
- Access to the element of the activity; i.e., the water.

Of course, beaches and shores available to the public (even to those who only wish to sunbathe or picnic) shall be located along a continuous access network having appropriate support facilities. For Challenge Level 1 and 2 sites, the level of accessibility will vary in accordance with management goals and site conditions. The major obstacle to beach/shore use by persons with mobility impairments is the difficulty in crossing sandy or loose soil to get to the water. Integration of permanent hard-surface paths into the environment may not be easy. For example, weather and tidal erosion could require sand, stabilized with clay, to be frequently reconstructed. Nevertheless, an accessible walking surface, that is firm, hard, stable, safe, appropriate to site conditions, and in compliance with maximum slope requirements, has to be provided.

Accessible walking surfaces over unstable soil should include, but not be limited to, either flexible rolled mats that grip the sand or soil to form a firm, stable, continuous surface or a fixed or moveable boardwalk. These should have a minimum clear width of 4 ft. If boardwalk, the decking boards should lay perpendicular to the direction of travel with a 1/2-in (max.) space—after shrinkage—between boards and 2-in (min.) high curbs at the edges. The pathway should be raised above the level of the dry sand, or have kickplates providing protection from blowing sand.

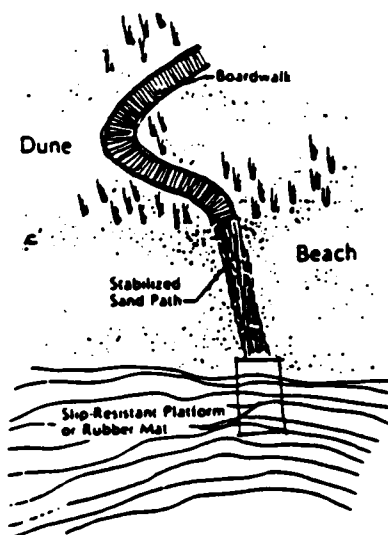
Handrails: Paths, with a running slope of 0 to 5 percent (1:20), should have continuous handrails at one or both sides, depending upon safety needs and local site conditions. Use handrails on boardwalks both to aid people who need them for support or balance and also to prevent beach users from tripping over a pathway that could be partially hidden by drifting sand. Handrails across beach areas may be interrupted to allow clear passage for pedestrians and/or maintenance vehicles.



Water Access: The accessible walking surface described above can extend into the water to a depth of 30 in below the water surface at low water line. The ramp or path extending into the water shall end at a flush, hard surface (i.e., concrete) pad, 6 by 6 ft (min.) with a 2-in (min.) high curb at the sides and the deepest end. The pad should have a railing firmly attached on at least one side. The surface of water entryways should have a slip- and glare-resistant surface that does not retain excessive heat or cold.

The following figure shows the elements necessary for entering the water. (NOTE: Swimming areas must be clearly defined by highly visible floating devices.)

The sandy beaches that make swimming and sunbathing so popular actually prevent some of us from reaching the water. Soft, unstable sand impedes anyone with mobility problems. Therefore, good access to a beach site requires consideration of three separate areas:



Pathway from Beach to Water

Stabilized sand or wood plank minimizes impact to beach while still providing good access.

A wooden boardwalk built in sections can be used seasonally on beaches with severe winter ice problems.

Repair and maintenance of the boardwalk is usually limited to periodically scraping algae and sand from the path and removing handrailings before winter.

Sand stabilized with hardened clay will need to be reconstructed each season.

Handrails may obstruct view or movement across beach and should be used with discretion.

Entering the Water

Provide handrails 30-34" high and sloped curb along edge of platform to gently stop wheelchairs.

The handrailing gives added assurance and serves as a grab bar for beginning swimmers.

A rubber mat (laid directly on the sand) can also improve access to the water. Although it offers the swimmer less support, it is less subject to water erosion or displacement by waves.

Pathway from Parking to Beach

Provide a firm stable path such as concrete, asphalt or wood plank 4-5" wide.

Handrails, 30-34" high, assist path users but may restrict movement of maintenance vehicles.

POOLS

A truly accessible, usable pool encourages each of us to have fun and participate to the best of our ability. Design considerations such as ramps, handrails, and textured surfaces can be easily incorporated in the design of a new swimming facility or into modification plans for older pools. Give people the option of entering the water from a ramp with handrails or from extra wide steps where they can also sit and relax.

Design considerations for accessibility include:

- Dressing rooms, restrooms, and available services must be available along firm paths.
- Use slip-resistant walkway surfaces throughout the pool area.
- Both stairs and ramps must have slip-resistant surfaces; the ramp shall have a maximum slope of 1:12 (8.3 percent), with handrails along both sides.

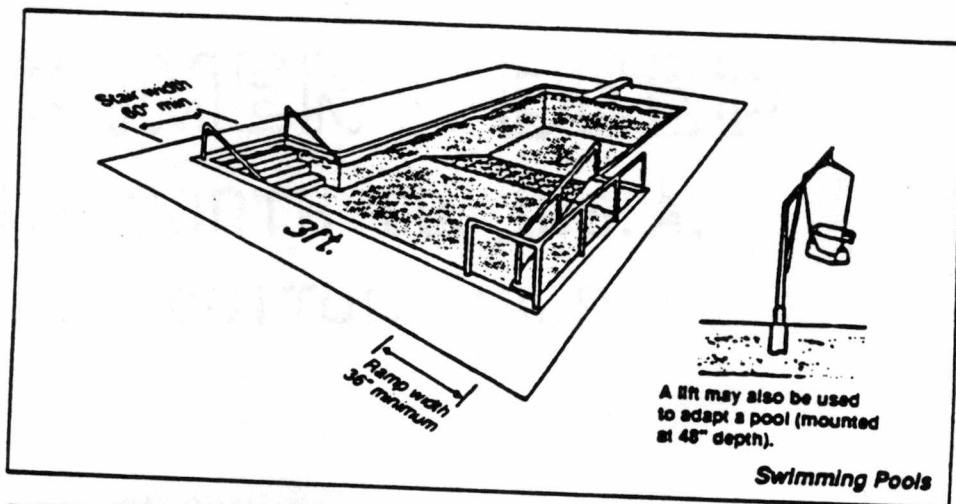
- A ramp 3-ft wide would allow an individual to grasp both rails at once, whereas a wider ramp (approximately 5 ft) allows two people to pass freely.

- Use color and textural cues to indicate edges and other high risk areas.

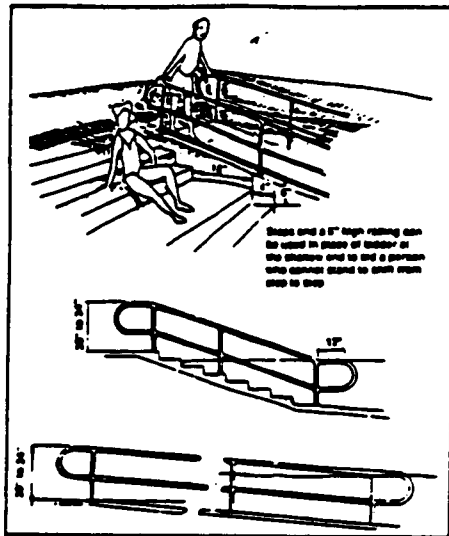
Swimming Pools: An accessible swimming pool shall include an accessible bathhouse which conforms to UFAS. A person with a disability should be able to use the same

route of travel from the parking lot through the bathhouse to the pool area as a nondisabled person.

While mechanical lifts represent the least desirable form of pool entry, several types are available; the most popular is illustrated. It fits into a sleeve on the deck and is removable. Removable types of lifts prevent children from playing on the lift when not in use.



Ramps enable a disabled person to wheel a chair into the water until it is possible for the person to float off the chair. Wheelchairs specifically designed for use in the water must be available if a ramp is to be truly usable. Steps into the water provide an easier form of entry. To make these steps accessible, portable deck steps should be added. An 18-in high block of steps permit a person to get out of the wheelchair and enter the water totally unassisted; 6-in risers with 18-in treads are recommended.



Some persons may still prefer to park their chairs next to the pool edge and fall into the water. This point is used to emphasize the need for all life guards to learn how to assist disabled persons with whatever entry or exit is being used, as requested by the person and with the least amount of attention.

General comments on accessibility for pools include:

- Surfaces around the pool shall be nonabrasive and nonslip.
- Use color and texture changes to indicate pool and ramp edges and other high risk areas to aid visually impaired persons.

(A NOTE ABOUT COLOR CHANGES, wherever they might be used: The key is contrasting value rather than color per se—dark vs. light. Certain shades of red and green at approximately the same value may be perceived as being alike by a person with a visual impairment, although the colors are highly contrasting.)

- If lockers are provided, reserve lower lockers for wheelchair users. Do not place a bench in front of the lockers or a wheelchair user cannot get to the lockers. A minimum of 36 in between bench and lockers is recommended.

- Float dividers, color, textural colors and pavement markings should be used to clearly indicate increasing water depth.

BOATING FACILITIES

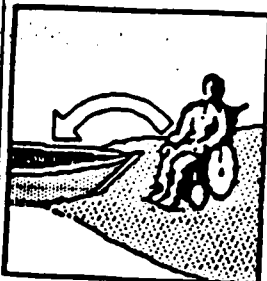
BOAT FISHING

Fishing from boats is common at still water locations. People with disabilities often have difficulty with boat access. Major issues that must be addressed here are (1) safety, (2) boating facility access, and (3) transferring to boats.

Safety: Safety equipment should be provided at docks and piers—including ladders, and rescue equipment (such as life rings and rescue poles). Also, personal flotation devices (PFD's) are to be available for all boaters at all times, since the record shows that the majority of small boat fatalities occur in good weather on calm water.

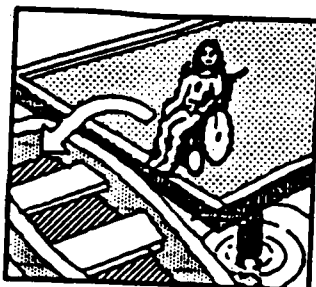
Boaters with physical disabilities should water test their PFD under controlled conditions to be certain that it performs as designed. The weight of braces or shift in center of gravity when used by an amputee may adversely effect the way a PFD holds a person in the water.

Boating Facility Access: A boat transfer facility (dock or pier) should be considered an extension of a pathway system. And, requirements for pathways and ramps also apply to gangways, bridges, etc. Particular attention must be paid to locations with changing water levels. Connections between the shore and a dock must not be too steep at low-water levels.



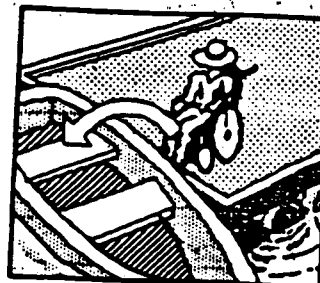
Shore transfer

Transfer can be made to small boats on a gently sloping bank.



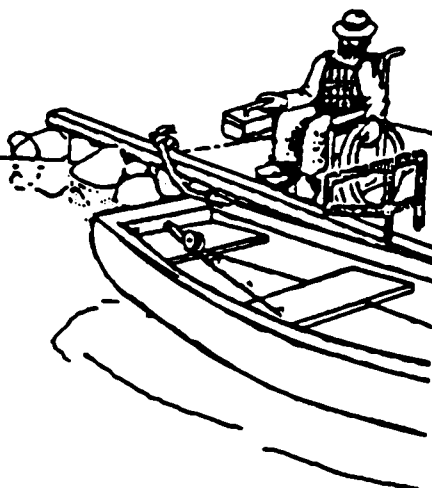
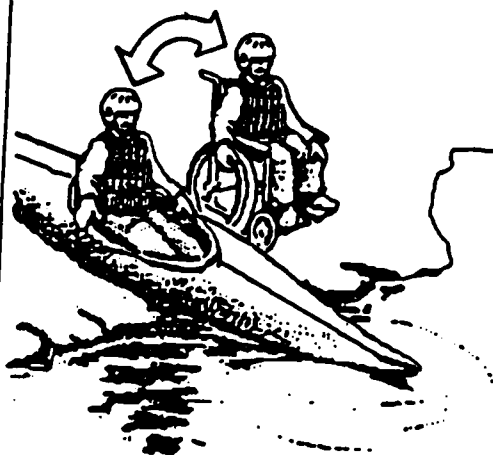
Fixed dock transfer

Transfer to any size boat from a fixed dock or pier. Vertical distance from dock to water may vary. Access to small boats may be difficult if dock height is more than 18".

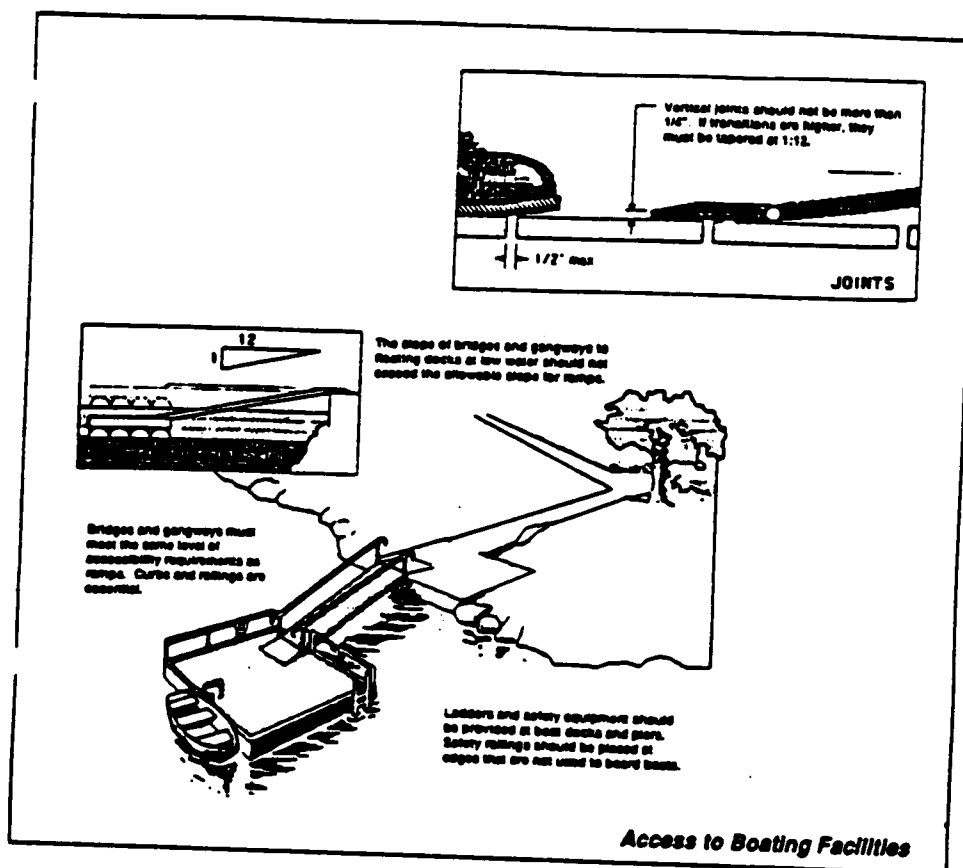


Floating dock transfer

The height of a floating dock above the water will remain constant. A height of 18" is recommended for small boats.



Transfer to Boats from Shore



Boat Transfer: Methods used by people with disabilities to transfer to boats vary widely, depending on the topography of the waterfront, the type of boat, available facilities, types of disability, and personal preferences. The most important types of transfer facilities are fixed docks and piers and floating docks and shore ramps or banks.

Shore Transfer: Shore transfers may be made with the boat on the shore or in the water. If the bank slopes gently into the water, a transfer from a wheelchair to a small boat may be made relatively easily. Assis-

tance may be required to launch the boat. Transfer from a wheelchair to a boat floating against a shore will be more difficult. An overhanging railing is essential. Facilities such as those seen in the illustration here should be provided to assist people having impairment of mobility, balance, or strength to enter and leave boats.

To be Accessible, shallow banks should be of hard, nonslip materials that do not soften or erode from water and steep banks should have curbing and boat cleats. A hand rail perpendicular to the shoreline is recommended.

DOCKS AND PIERS

Fixed Docks and Piers: These are appropriate for locations with stable water levels.

- To be Accessible, railings should be 32-in high, minimum; curbs 2-in high; Challenge Level 1 will have just the 2-in curbs.

- Challenge Level 1 docks and piers should be of nonslip materials and there should be transfer aids. Vertical joints of less than 1/4 in should be used and horizontal joints of less than 1/2 in.

- Challenge Level 2 sites are defined as passable in a wheelchair.

Floating Docks: Floating docks are appropriate for locations where the water level rises and falls. A major advantage of this is that a consistent relationship between the dock surface and the water level is maintained. Disadvantages are instability and motion from waves, movement of people, and a variable connection to the pathway system on shore. There must be sufficient flotation to support both people and equipment without any significant tipping.

- To be Accessible, curbs should be 4 in, and the railings at edges not used for boarding boats should be 30- to 34-in high. Shore connections should not have a slope greater than 1:20 (5 percent).

- The shore connection on a Challenge Level 1 site should not exceed 1:12 (8.3 percent).

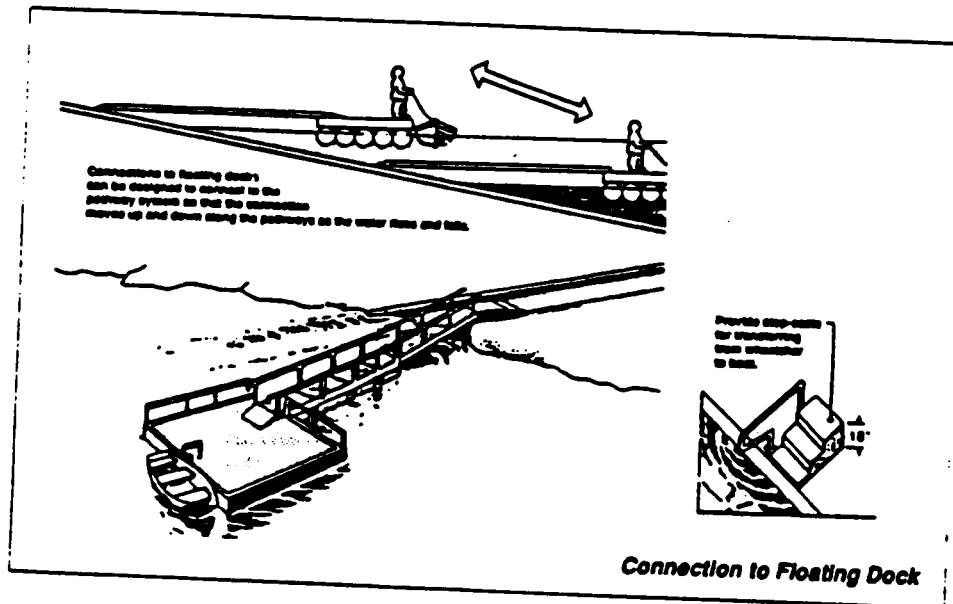
Boat Docks: A properly designed dock provides safety without restricting access to boats.

- Access to dock site should be across a hard-surfaced path.

- Accessible ramps should have a slope no greater than 1:20; Challenge Level 1 ramps 1:12, although this may be difficult to achieve for floating docks where great variation exists.

- Ramps 3- to 5-ft wide allow unencumbered access to docks.

- Easy-to-grasp safety railings 30- to 34-in high should be provided in all areas where they will not interfere with boating activities.



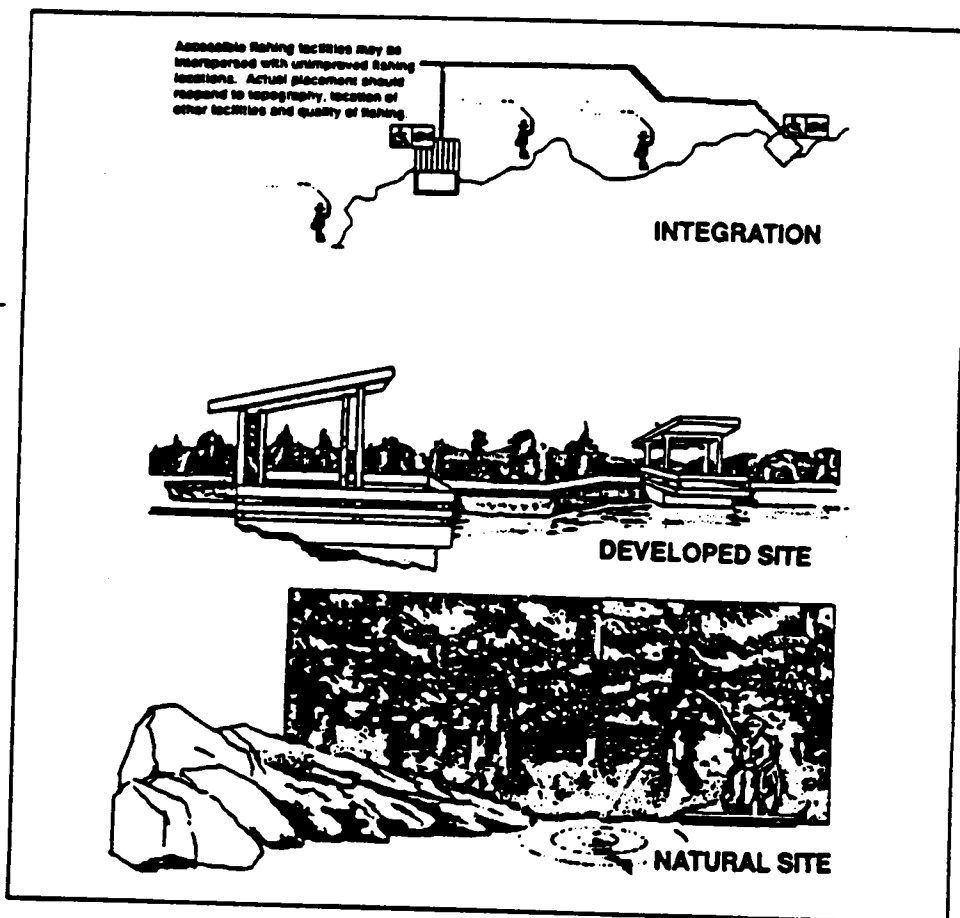
FISHING FACILITIES

INTEGRATION OF ACCESSIBLE FACILITIES

Anglers with disabilities should not be segregated from the rest of the fishing public. Careful planning and management can provide accessible facilities that are integrated into the total site area. A facility (such as a fishing pier) should be shared by disabled and nondisabled anglers. The facility can

be used on a first-come, first-served basis. If the use is heavy, signs may ask a nondisabled angler to yield a place to a person with a disability.

Accessible fishing stations should be interspersed within the existing pattern of fishing spots along a stream or lake shore, so that the desirable fishing locations are equitably divided. Facilities for the exclusive use of people with disabilities are discriminatory and should not be marked as such.



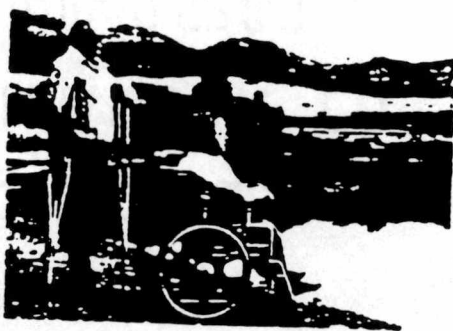
Sites can be planned as *developed* or *natural* recreation areas. Very different design approaches may be appropriate for the two types. In practice, most areas will be neither fully developed nor completely natural. Planning and design decisions about appropriate accessibility improvements will be a question of judgement.



Accessible Fishing Platform



Challenge Level 1 Fishing Platform



Challenge Level 2 Fishing

Developed Sites: These are sites that have been significantly modified by construction. Often heavily used sites must be developed to control damage to the natural environment. "Accessible" will be relatively easy to achieve at developed sites.

Natural Sites: These are sites that have not been significantly modified by construction, or minimal improvements have been designed to maintain a natural appearance. Full accessibility may be difficult at some natural sites.

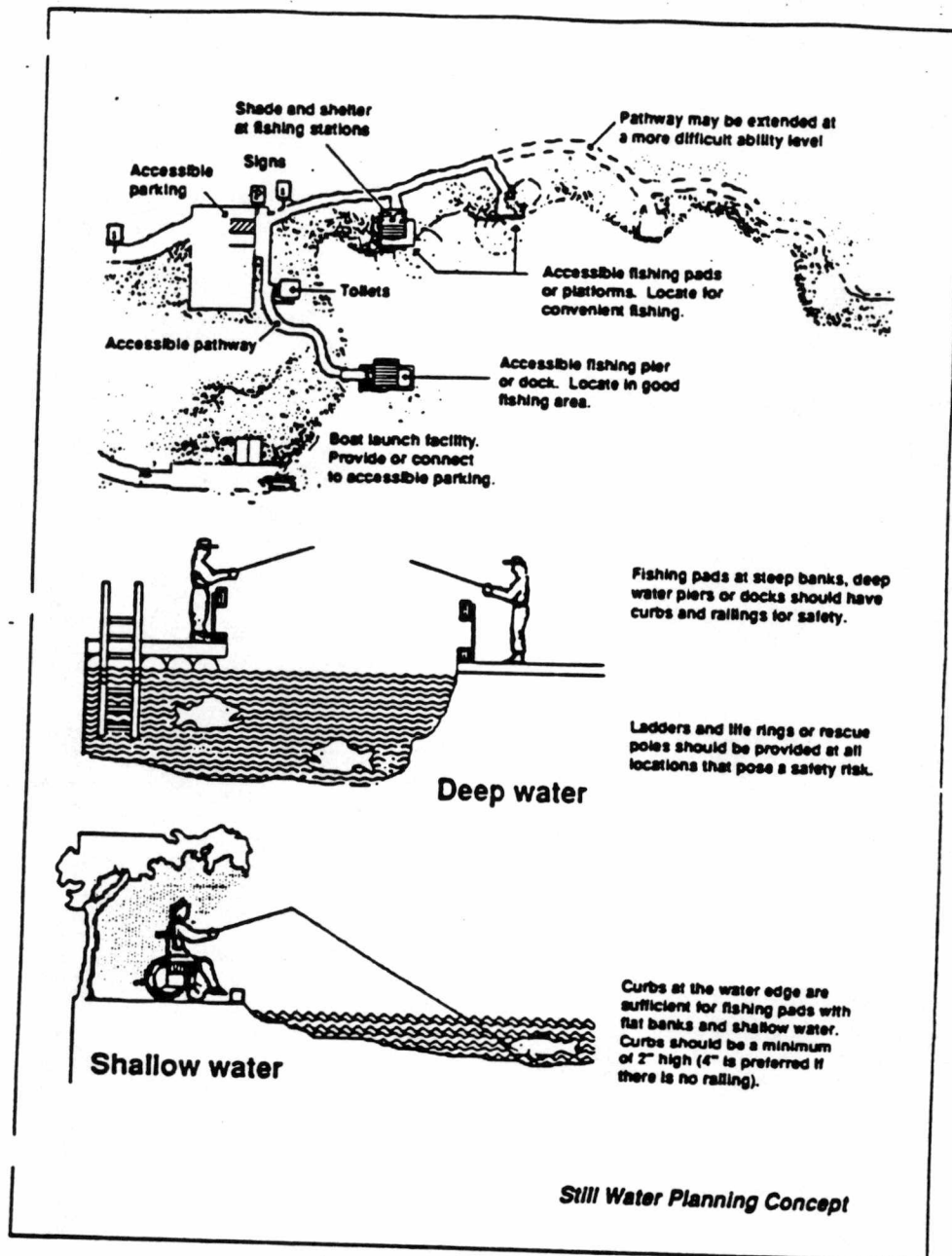
TYPES OF FISHING WATER

Fishing situations are categorized as *still water* and *moving water*. Overall planning for the two types will differ, although the design and detailing of fishing facilities may be quite similar.

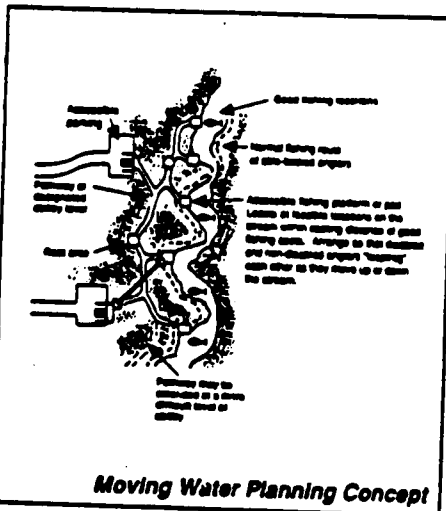
Still Water: Fishing at these sites is usually done from a stationary location or from a boat. The planning and design of a still water site focuses on the development of permanent fishing stations on the shore, the design of fishing docks or piers over the water, and/or the development of boat launching and docking facilities. Some of the important planning and design issues for still water sites are:

- Providing access to good fishing locations.
- Designing for changing water levels.
- Safety.

Still water fishing stations will vary greatly, depending on the nature of the site, the climate, and the preferences of the fishing population. A highly visible fishing pier may be appropriate at a developed site, but a fishing pad which blends into the landscape would be preferred at a natural site. Different types of fishing stations will require different safety features. A dock over deep water would need railings, while a pad on a gently sloping shore would not.



Moving Water: Accessible fishing on moving water offers a challenging design problem that will vary greatly from site-to-site due to differences in the type of fishing, the size and nature of the body of water, and the topography of the banks. Fishing in moving water often requires the angler to "work" the stream, constantly moving to new locations. Many individual fishing stations may be needed, and they must be carefully placed at good pools and riffles. The stations must be spaced within casting distance of the fish. A reasonable clear backcasting area must be provided for fly casting, and concealment is often necessary on small streams so that fish are not spooked.



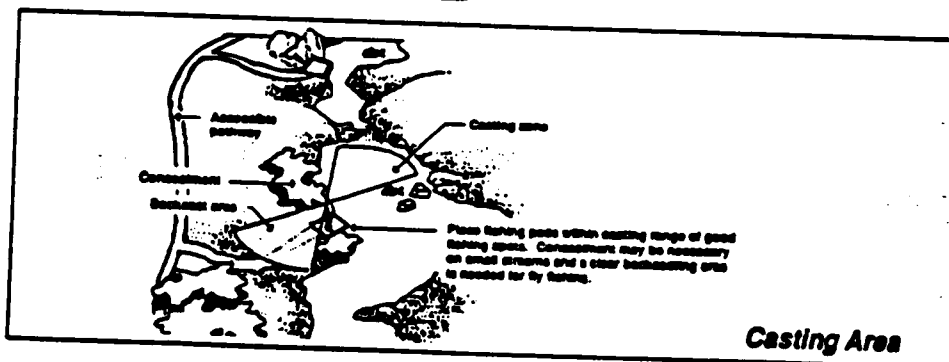
Major moving water issues include:

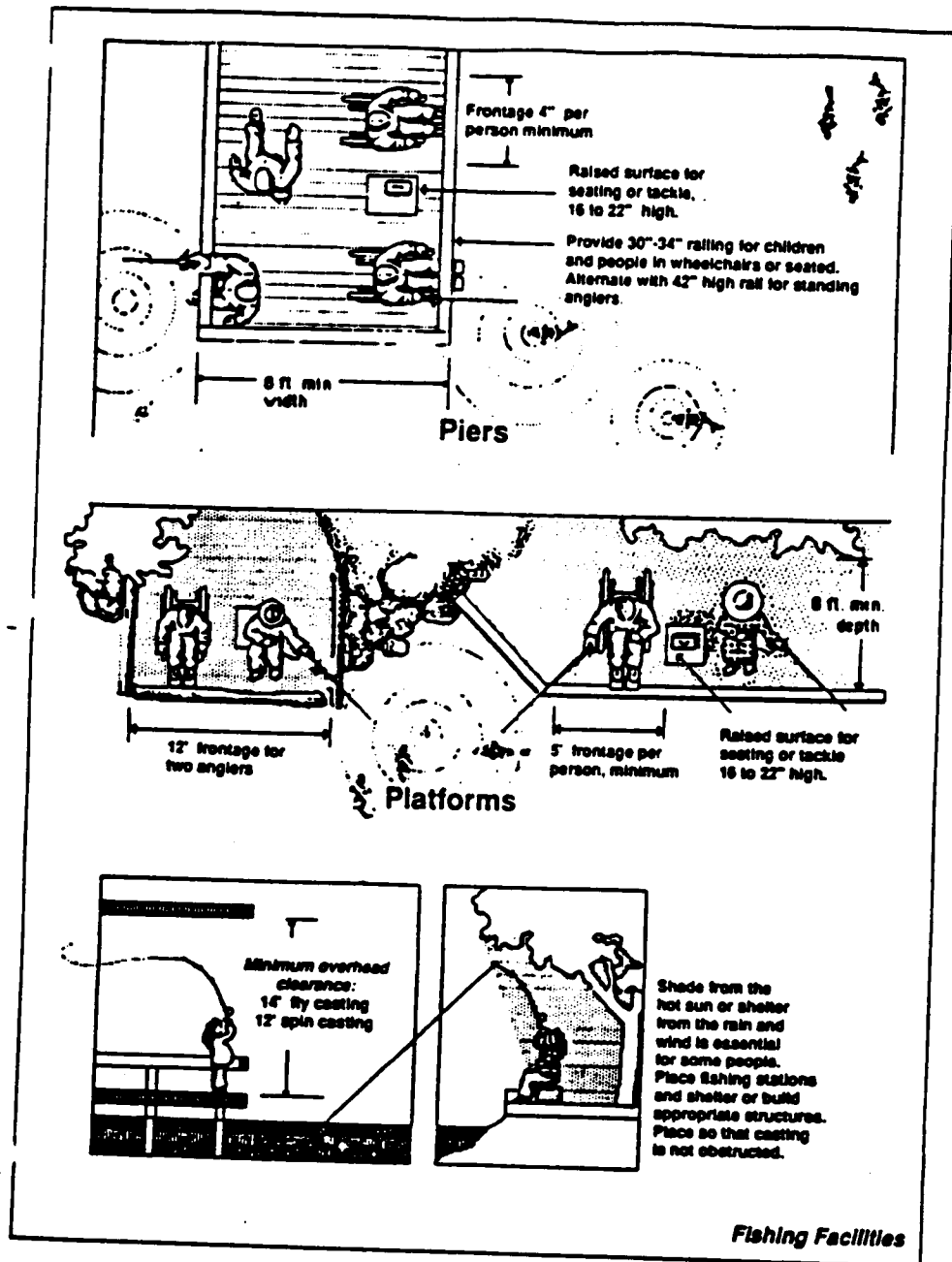
- Placing fishing sites at areas which offer quality experience.
- Identifying good fishing spots that are stable from year-to-year and can be developed as fishing stations.
- Designing a pathway system at the designated ability level that is convenient, but doesn't interfere with the fishing.
- Placing fishing stations so that anglers are concealed from the fish, but have a clear casting area.

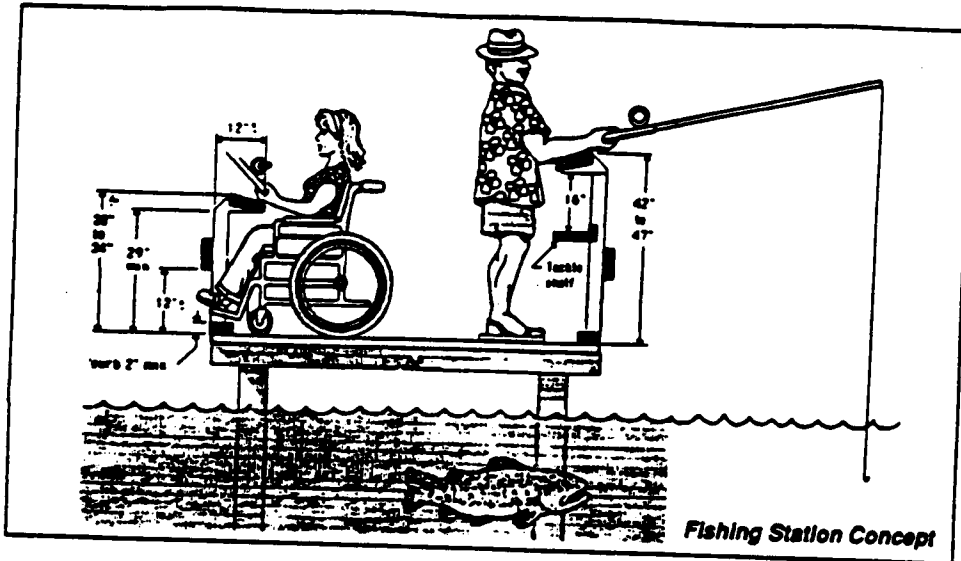
The safety concerns for still water also apply to moving water sites. However, many moving water sites, particularly on small streams, will not have the deep water requirement for railings, ladders, life rings, etc. (See still water safety requirements.)

Fishing pads on small streams should be designed for one angler with enough space for a companion. Shade and shelter should be available, but they do not have to be placed at the fishing station itself if the angler is moving from place to place.

Transitions between pathways and fishing docks and piers must meet all of the requirements for pathways or ramps at the designated level of accessibility of the network.





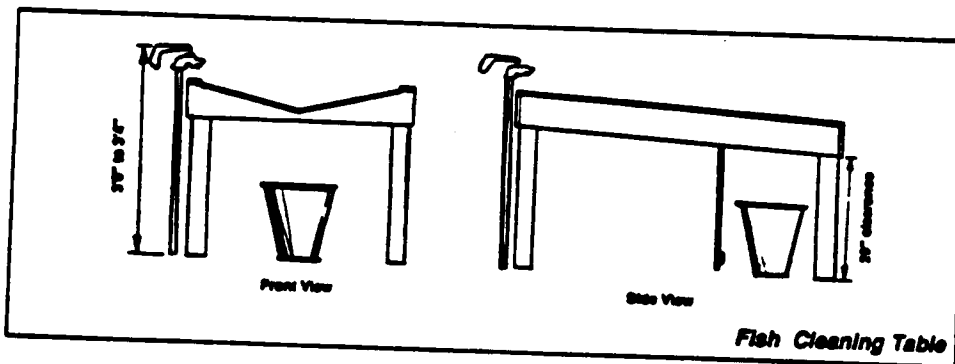


FISHING PIERS

Fishing piers should provide shade, space for gear, and benches (optional). Allow enough space for free movement behind seated persons fishing.

- Piers should be accessible by firm-surfaced trail, flush with pier surface.

- A bait shelf, 8- to 12-in wide, and an arm/pole rest inclined about 30 degrees, may be provided to assist seated person fishing.
- Provide 4-in curb along edge of pier for safety.
- Spacing between planks on deck should be less than 1/2 in.



FISHING FACILITIES

	Accessible	Challenge Level 1	Challenge Level 2
Safety	Each type of fishing facility has its own unique safety requirements. A steep bank or a dock over deep water must have railings, while a pad on a gently sloping shore might not have such a need.		
Deep Water	Curbs and railings. Ladders and life rings at docks, piers, and at shore as appropriate.	Curbs and railings. Life rings available.	Curbs at shore pad. Railings recommended for docks and piers.
Shallow water	Curbs at water edge.	Curbs at water edge.	No requirement.
Fishing Stations	The number of fishing stations that will be needed at a site is difficult to estimate. Recommendations here are minimums. Facilities should be designed with flexibility to accommodate more people, if possible.		
	Two accessible fishing stations for each accessible parking space.	One accessible fishing stations for each accessible parking space.	
Frontage	Allow a min. of 4 linear ft per angler at docks and other heavily used facilities; 5 ft (min.) should be allowed at shore pads.	3 linear ft (min.) of fishing frontage for each angler.	

	Accessible	Challenge Level 1	Challenge Level 2
Fishing Stations (Continued)			
Width	8 ft min. width to allow pedestrian movement behind anglers.	6-ft min. width	
Seating	1 seat for each 2 fishing stations. Seats can double as tackle shelf.	1 seat for 4 fishing stations.	
Shade and shelter	Shade and shelter, appropriate to the local climate, are highly recommended for each station.	Fishing stations should be located to take advantage of natural shade and shelter.	Natural shade and shelter near fishing stations, if available.
Railings	Railings at fishing locations must protect people from accidents, but not hinder fishing activities. A typical 42-in high guardrail is convenient for a standing angler, but not for a seated person or a child. Railings should be designed to provide reasonable security and convenient fishing for both standing and seated anglers. Two heights are recommended, 42 in (min.) for standing; 32 in (min.) for sitting. For fishing stations at deep water or with steep banks, provide both high railings (42 in) for standing anglers and low railings (32 in, min.) for seated anglers and children.		
Curbs	Curbs should be provided at the water edge of all fishing stations. Minimum curb height is 2 in; 4 in recommended where no railing is provided.	Railings recommended for deep water locations, particularly floating docks.	Curbs strongly recommended for any locations where there is a risk of a wheelchair rolling into the water.

Accessible	Challenge Level 1	Challenge Level 2
Fishing Stations (Continued)		
Transitions to pathways	Transitions between pathways and fishing docks and piers must meet all of the requirements for pathways or ramps at the designated ability levels of the network.	
Surface materials	Hard, nonslip surface materials.	Very firm, compacted surface.
		Natural surface. Passable in a wheelchair.

EQUESTRIAN ACTIVITIES

When planning for equestrian activities, total accessibility must be considered. Access to equestrian activities involves four basic considerations:

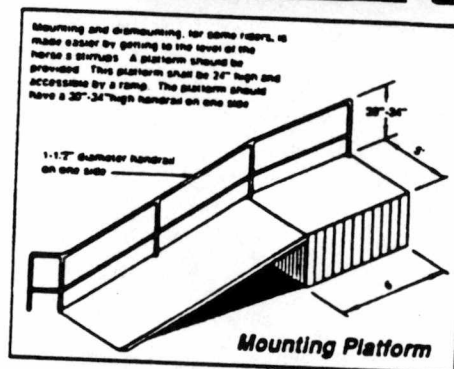
- Access to the place where horses are available.
- Transfer capabilities onto and off of the horse that are safe and secure.
- Access to the facilities to facilitate horse care.
- Provide facilities such as water hydrants, and corral gates that are accessible.



Equestrian facilities should be located on a continuous access network with appropriate support facilities.

MOUNTING PLATFORM

The transfer of the rider from a mounting platform to the horse, and vice versa, shall be facilitated with maximum dignity and independence. Mounting and dismounting, for some riders, is made easier by getting to the level of the horse's stirrups. For this purpose, a platform similar to the illustration should be provided.



PLAYGROUNDS

By participating in challenging play activities, children develop muscles and coordination, self-esteem and the ability to work with others. Playgrounds can offer a spectrum of challenges in a safe and accessible environment if the following considerations are kept in mind:

- Level, firm paths and surfacing allow the equipment, courts, bathrooms, and drinking fountains to be used by people with limited mobility.
- Carefully designed equipment permits each child to develop abilities at an individual pace. By designing equipment that can be

used by all children, the cost and stigma of special "handicapped playgrounds" can be avoided:

GENERAL RECOMMENDATIONS

General site considerations should accommodate both children and any supervising adults:

- Provide comfortable seating for children and adults in areas with plentiful shade (trees or shelters) and water.
- Provide paths at least 5-ft wide with some slope variations for riding and racing wagons, wheelchairs, bikes, and skate boards.
- Leave plenty of space between pieces of play equipment for maneuvering wheelchairs.

When choosing equipment usable by all youngsters, do not worry about disabilities and look at equipment with the following guidelines in mind:

- Will it offer a sense of security to the child?
- Is there a low-level challenge and an opportunity for advanced challenges?
- Can it be handled by a youngster with poor coordination?
- Can it be used by a child with slow muscular action and reaction?

SURFACES

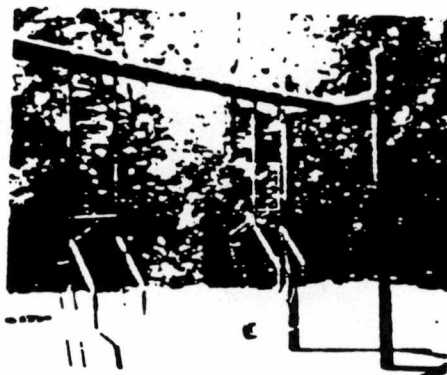
Surfacing under and around equipment should provide adequate protection from injury under all weather conditions even after continuous service. Decisions on surfacing must weigh considerations such as cost, maintenance, and replacement over time against safety. Following are some of the characteristics to be considered in choosing playground surface material:

- Hard-surfaced materials such as asphalt and concrete have high installation costs but low maintenance. Hard surfaces are the most durable, but offer the least protection against injury.



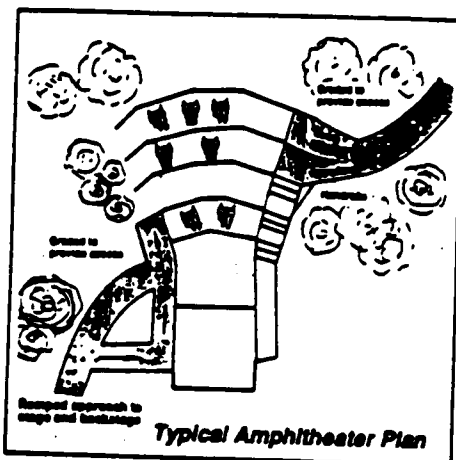
- Soft-surfacing materials (sand, pea gravel, wood mulch) can effectively cushion falls, but only with continuous maintenance. Soft-surfacing materials can also conceal glass and other sharp objects.

- Protective cushioning mats under playground equipment can only be used on level, uniform surfaces. They can provide recommended levels of protection only for equipment of limited height.



AMPHITHEATERS

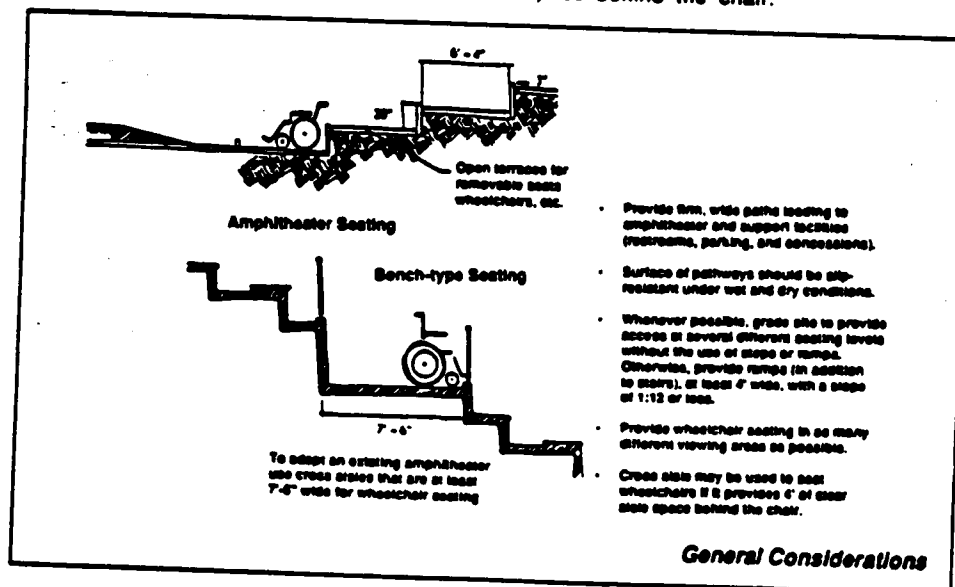
Steps and narrow aisles in amphitheaters can be troublesome for all of us. They pose formidable barriers for wheelchair users. Designing an accessible amphitheater will benefit all patrons by allowing them to choose and get to their seats with minimum effort and maximum safety.



This amphitheater is raked steeply enough to require steps, but is also graded and ramped to provide wheelchair access to four of the five seating levels and the stage. The design can easily be adapted to fit most topography and programming needs.

GENERAL CONSIDERATIONS

- Provide firm, wide paths leading to amphitheater and support facilities (restrooms, parking, concessions).
- Surface of pathways should be slip-resistant under wet and dry conditions.
- Whenever possible, grade site to provide access at several different seating levels without the use of steps or ramps. Otherwise, provide ramps (in addition to stairs), at least 48-in wide, with a slope of 1:20 or less for Accessible sites and 1:12 for Challenge Level 1 sites.
- Provide wheelchair seating in as many different viewing areas as possible.
- Cross aisle may be used to seat wheelchairs if it provides 4 ft of clear aisle space behind the chair.



EXHIBITS, AUDIOVISUAL PROGRAMS, AND WAYSIDE SITES

EXHIBITS

Numerous factors affect the design of exhibits, especially the unique circumstances of the specific space and the nature of the materials to be interpreted. Thoughtful, sensitive design can go a long way in producing exhibits that can be enjoyed by a broad range of people. Yet, due to the diversity of situations encountered, specific guidelines can only be provided for clearance, height of exhibits, and signage.

Visitors with Mobility Limitations



- Exhibit space must be free of architectural barriers, or a method of alternate accommodation is to be provided, such as slide programs, videotaped tours, visual aids, dioramas, etc.
- All pathways, ramps, aisles, and clearances should be accessible.
- Important artifacts, labels, and graphics are to be placed at a comfortable viewing level relative to their size. Important text should be viewable to all visitors. Display cases should allow short or seated people to view the contents and the labels. Video monitors associated with exhibits are to be

positioned so they can comfortably be viewed by all visitors.

- Lighting is to be designed to reduce glare or reflections, especially when viewed from a wheelchair.
- Ground and floor surfaces must be stable, firm, and slip resistant.
- Operating controls, or objects to be handled by visitors, are to be located in an area between 15 and 48 in from the ground and be no more than 24-in deep.
- Horizontal exhibits (e.g., terrain models) are to be in a comfortable viewing area.
- At least a portion of information desks and sales counters shall be designed for use by visitors and employees in wheelchairs, and are to have a section with a height no greater than 32 in.
- Information about the accessibility of the exhibit and any adjoining recreation site should be available at the information desk, and the international symbol of accessibility should be visible.
- Railings and other barriers should be positioned in such a way as to provide an unobstructed view to persons in wheelchairs.

Visitors with Vision Impairments

- Select exhibit typography with readability and legibility in mind.
- Windows should be treated to provide balanced light levels and minimize glare.
- Where appropriate, visitor-controlled, rheostat-type lighting should be provided to augment general room lighting.
- Characters and symbols shall contrast with their backgrounds—either light characters on a dark background or vice versa.
- Where possible, tactile and participatory elements are to be included.
- Provide audio descriptions where applicable.
- Provide signage to indicate accessible restrooms and telephones.

Visitors with Hearing Impairments

- Where available, signage to indicate communication accessibility should be displayed at the information desk and other appropriate areas. As applicable, the international symbol for deafness (ear with slash), Telecommunications Devices for the Deaf (TDD) symbol, amplified telephone symbol, or closed caption symbol should be visible at appropriate locations.
- Audio information should be duplicated in a visual medium, either on the exhibit or in a printed handout.
- All new narrated audiovisual programs are to be captioned.
- Exhibit areas should be designed to minimize background noise. The use of listening systems is encouraged at staffed interpretive sites.
- Lighting should be adequate to view guides giving tours or narrations. Glare and backlit lighting should be minimized.

Learning-Impaired Visitors

- Avoid unnecessarily complex and confusing topics.
- Develop graphic elements to communicate nonverbally.
- Avoid unfamiliar expressions and technical terms; provide pronunciation aids where appropriate.
- To the extent possible, provide information in a manner suitable to a diversity of abilities and interests.
- Where possible, have multisensory exhibits; maximize the number of senses that must be utilized to examine the exhibit.
- Be cognizant of directional handicaps; utilize color and other creative approaches to exhibit design to facilitate comprehension.

AUDIOVISUAL PROGRAMS

Audiovisual programs include motion pictures, sound slide programs, video programs, and oral history programs. All audiovisual programs should include some method of captioning; this method should be identified

as early as possible in the planning process. The approach used will vary according to the conditions of the installation area and the media format used.

To the maximum extent possible, visitors will be offered a choice in viewing captioned or uncaptioned versions, but in situations where a choice is not possible or feasible, a captioned version will always be provided.

Visitors with Mobility Limitations

- The theater, auditorium, or viewing area shall be accessible and free of architectural barriers.
- Provide adequate locations to accommodate anticipated numbers of wheelchairs.
- Viewing heights and angles will be favorable for those in designated wheelchair locations.
- In designing video or interactive components, control mechanisms will be placed in an accessible location, usually between 15 and 48 in from the ground and not more than 24-in deep.

Visitors with Vision Impairments

- Simultaneous audio description will be considered for installations where the equipment can be properly installed and maintained.

Visitors with Hearing Impairments

- All audiovisual programs will be produced with appropriate captions.
- Audio amplification and listening systems should be provided where feasible or applicable—see UFAS 4.1.2(18)(b).
- Provide seating or viewing areas for those needing an unobstructed view of captions.

Learning-Impaired Visitors

- Unnecessarily complex and confusing concepts should be avoided.
- Graphic elements will be chosen to communicate without reliance on the verbal message.

- Narration will be concise and free of jargon and unnecessary technical information.

WAYSIDE SITES

Wayside exhibits, which include outdoor interpretive exhibits and signs, orientation shelter exhibits, and trailhead exhibits, offer special advantages to disabled visitors. The liberal use of photographs, artwork, diagrams, and maps, combined with the highly readable type, make wayside exhibits an excellent medium for visitors with hearing and learning impairments. For visitors with sight impairments, use large type with high legibility.

Although a limited number of wayside exhibits will always be inaccessible to visitors with mobility impairments, the great majority should be placed at pullouts, viewpoints, parking areas, and trailheads that are accessible. Using accessibility guidelines for wayside exhibits helps ensure a standard of quality that will be appreciated by all visitors. Everyone benefits from high-quality graphics, readable type, comfortable base designs, accessible locations, hard-surfaced exhibit pads, and well-designed exhibit sites.

While exhibits are valuable on-site "interpreters," it should be remembered that the outdoor experiences are the primary things visitors come to enjoy. Good exhibits focus attention on the features they interpret, and not on themselves. A wayside exhibit is only one of the many interpretive tools which visitors can use to enhance their appreciation of the outdoors.

Visitors with Mobility Limitations

- Wayside exhibits will generally be installed at accessible locations.
- Wayside exhibits will be installed at heights and angles favorable for viewing by most visitors, including those in wheelchairs.
- Trailhead exhibits will include information on the trail ability level.
- Wayside exhibit sites will have level, hard-surfaced exhibit pads.

Visitors with Vision Impairments

- Exhibit type will be as legible and readable as possible.
- Panel colors will be selected to reduce eye strain and glare, and to provide excellent readability under field conditions.
- Where applicable, selected wayside exhibits will incorporate tactile elements such as models, texture blocks, and relief maps.
- Where applicable, selected wayside exhibit developments will incorporate audiostations.

Visitors with Hearing Impairments

- Wayside exhibits will communicate visually, and will rely on graphics as well as text to interpret information.
- The wayside exhibit sites will offer clear, unobstructed views of the feature or resource to be interpreted.
- Essential information included in audio messages will be duplicated in written form, either as part of the exhibit copy or in separate printed literature.

Learning-Impaired Visitors

- Topics for wayside exhibits will be specific and of general interest. Unnecessary complexity will be avoided.
- Whenever possible, easy to understand graphics will be used to convey ideas, rather than text alone.
- Unfamiliar expressions and technical terms should be avoided, and pronunciation aids will be provided where appropriate.
- Text will be concise and free of long paragraphs and wordy language.

PUBLICATIONS

Visitors should be offered publications that provide an overview, orientation, and a brief description of services available to people with disabilities, including a list of any significant barriers, TDD numbers, and any services that make a site communication accessible—both for the vision and the hearing impaired. In addition, site bulletins are to provide more

specialized information about a specific site or topic. An "Accessibility Site Bulletin" could provide detailed information about specific programs, services, and opportunities available for people with disabilities and describe remaining barriers still in the area.

Visitors with Mobility Limitations

- Park folders, site bulletins, and sales literature will be distributed from accessible locations.
- Park folders should endeavor to carry information on the accessibility of buildings and programs for people with disabilities.

Visitors with Vision Impairments

- Publications will be designed with the largest type size appropriate for the format. Use 14 point or larger type size.

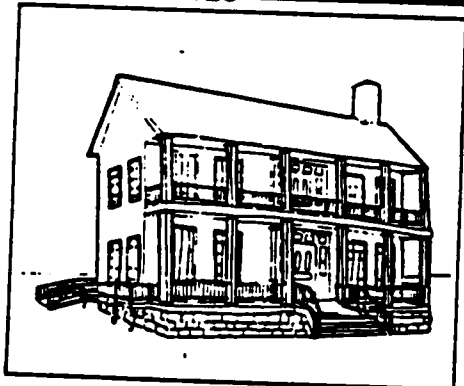
Visitors with Hearing Impairments

- Bulletins will note the availability of such special services as sign language interpretation, captioned programs, listening systems, and TDD phone numbers.

Learning-Impaired Visitors

- The bulletin should list any services available to people with learning disabilities.

HISTORIC SITES



Expanding opportunities for persons with disabilities in a variety of programs and facilities, include making historic properties accessible. The latter is a complicated undertaking and it is important to clarify the requirements of accessibility laws, design standards, and guidelines as they relate to historic properties.

Historic preservation laws do not prohibit modification to properties that are listed (or are eligible for listing) on the National Register of Historic Places. Historic properties are not exempt from accessibility requirements. There is a complex array of historic preservation laws, including the *National Historic Preservation Act of 1966*, State and local guidelines, individual agency policies, etc. Under the collective and specific authorities of these, a wide range of management options is available for treatment of historic properties. Even though a waiver from accessibility requirements can be requested, it may not be appropriate because the impact on the structure may be unacceptable.

Alternative approaches are available to meet accessibility requirements without modification. For most historic properties, however, substantial modification for accessibility or other purposes is entirely acceptable. Because of this, the Secretary of the Interior's Standards for Historic Preservation projects have been developed to guide four levels of treatment: Preservation, restoration, rehabilitation, and reconstruction. The decision as to which approach to take is made in the general planning process, concerning management of cultural resources.

The official standards for accessibility in the Code of Federal Regulations (41 CFR 101-19.6, the *Uniform Federal Accessibility Standards*, UFAS, and 43 CFR, Part 17, Enforcement of Nondiscrimination on the Basis of Handicap) clearly indicate that historic properties are not exempt from accessibility requirements. Thus, the issue is not if we should make historic properties accessible, but how to provide the highest level of access with the lowest level of impact.

LAWS AND REGULATIONS

As a general rule, the accessibility provisions UFAS shall be applied to "qualified" historic buildings and facilities. "Qualified" buildings or facilities are those buildings and facilities that are eligible for listing in the National Register of Historic Places, or such properties designated as historic under a statute of the appropriate state or local government body. Comments of the Advisory Council on Historic Preservation shall be obtained when required by Section 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 and 36 CFR Part 800, before any alteration to a qualified historic building.



The Advisory Council shall determine, on a case-by-case basis, whether provisions required by UFAS for accessible routes (exterior and interior), ramps, entrances, toilets, parking, and displays would threaten or destroy the historic significance of the building or facility. If the Advisory Council determines that any of the accessibility requirements for features listed in UFAS would threaten or destroy the historic significance of a building or facility, then the special application provisions of UFAS for that feature may be utilized. The special application provisions may only be utilized following a written determination by the Advisory Council that application of a requirement contained in part 4 would threaten or destroy the historic integrity of a qualified building or facility.

NOTE: In cases where Federal financial involvement of any kind results directly or indirectly in accessibility alterations to a building either listed on the National Register of Historic Places or officially determined eligible for National Register listing, Federal historic preservation protection procedures must be observed. These protections are the compliance procedures of the Advisory Council on Historic Preservation as authorized by the Historic Preservation Act of 1966. These procedures must be followed to determine the effect the alterations may have on the historic character of the building, and if necessary, to explore acceptable alternatives. To determine whether a building is listed on the National Register (either individually or as part of a historic district) or is eligible for listing, and to initiate advisory Council compliance procedures in such cases, the State Historic Preservation Officer (SHPO) should be contacted.

To provide access while maintaining significant historic features, consider a step-by-step approach. First, identify those architectural features of the building which are historically significant and should be preserved. Next, try to devise alteration solutions that provide good access without adversely affecting historic features.

If any alteration of the structure or site proposed alteration threatens an important historic feature, you may be able to provide an equivalent experience for the disabled user which does not require alteration. Finally, if an acceptable solution cannot be found, it may be necessary to alter the building with some loss to its historic character. In these cases every attempt should be made to minimize the impact of the solution.

To assure that we are providing the highest level of access with the lowest level of impact, it is imperative that we conduct a careful assessment of alternatives, and that persons with expertise in accessibility and historic preservation be involved in the assessment.

and subsequent planning. When making historic properties accessible, use techniques which minimize any impact on the historic quality. Access to historic buildings has three interdependent components which must be considered: Access to (1) the site (approach access), (2) into the building (entrance access), and (3) within the building (internal access).

APPROACH

Make the entire building exterior and surrounding area as accessible as possible without disturbing the historic character of the site. Keep in mind that landscaping may be an important aspect of the site's historic significance.

- Provide designated parking in reasonable proximity, but not so close as to have a negative visual impact on the building.
- Use appropriate standards for paths and ramps that lead from the parking lot to the site.
- Develop an historical interpretive program which can be presented at a completely accessible location on the site.

ENTRANCE



- Wherever possible, provide access through careful grading rather than structural additions which may affect the historic character of the site.

- Where needed, design and locate ramps, steps, or railings which are in harmony with the building and its surroundings.

- Ramps and chairlifts which are removable provide access without permanently damaging historic materials.

- If absolutely necessary to preserve the historic character of architecturally significant entrances, provide primary access for all visitors at an alternate entrance.

INTERNAL

Access within historic buildings may require alterations to provide horizontal and vertical circulation. If access to all levels of the historic structure cannot be provided, at least provide access to the level of the accessible entrance.

- Provide structural alterations (such as elevators, lifts, or ramps) in locations which do not negatively affect significant features or destroy historic materials.

- If possible, provide an alternate experience of inaccessible areas through the use of architectural models (which can also provide a tactile experience for the visually impaired) and audiovisual presentations.

- Devices such as narrow wheelchairs or "wheelchair narrowers" can assist people with disabilities gain access to restricted locations. Knowledgeable staff members can also facilitate access to otherwise inaccessible areas, although liability must be taken into account.

MINIMUM REQUIREMENTS

Exterior

- At least one accessible route from a site access point to an accessible entrance shall be provided. For historic sites, a ramp with a slope no greater than 1:6 for a run not to exceed 2 ft may be used as part of

an accessible route at an entrance, as long as level maneuvering space at the door is provided.

- At least one accessible entrance which is used by the public shall be provided. If it is determined that no entrance used by the public can be made accessible, then access at any entrance not used by the general public but open (unlocked) with directional signs at the primary entrance may be used.

- If toilets are provided, then at least one toilet facility along an accessible route shall be accessible. Such toilet facility may be "unisex" in design.

- Accessible routes from an accessible entrance to all publicly used spaces on at least the level of the accessible entrance shall be provided. Access should be provided to all levels of a building or facility whenever practical.

- Displays and written information, documents, etc., should be located where they can be seen by a seated person. Exhibits and signage displayed horizontally (e.g., books) should be no higher than 44 in above the floor surface.

Interior

- Ramps, curb ramps, and ramps to be constructed on existing sites or in existing buildings or facilities may have slopes and rises as shown below if space limitations prohibit the use of a 1:12 slope or less.

Slope*	Maximum rise (in)	Maximum run (ft)
Steeper than 1:10 but no steeper than 1:8	3	2
Steeper than 1:12 but no steeper than 1:10	6	5

*A slope steeper than 1:8 is allowed in historic structures.

- Stairs—full extension of stair handrails shall not be required in alterations where such extensions would be hazardous or impossible due to plan configuration.

- Elevators—if a safety door edge is provided in existing automatic elevators, then the automatic door reopening devices may be omitted (see UFAS 4.10.6). Where existing shaft or structural elements prohibit space for maneuvering a wheelchair inside the elevator, then the minimum floor area dimensions may be reduced by the minimum amount necessary, but in no case shall they be less than 48 by 48 in.

- Doors—where existing elements prevent having a minimum clear door opening at 32 in, a projection of 5/8 in maximum will be permitted for the latch side door stop. If existing thresholds measure 3/4 in high or less, and are beveled or modified to provide a beveled edge on each side, then they may be retained.

- Restrooms—where alterations to existing facilities make strict compliance with UFAS structurally impracticable, the addition of one "unisex" toilet per floor containing one commode and one sink, located adjacent to existing toilet facilities, will be acceptable in lieu of making existing toilet facilities for each sex accessible. In instances of alteration work where provision of a standard stall is structurally impracticable or where plumbing code requirements prevent combining existing stalls to provide space, a 36 in (or a 48 in, min., wide) alternate stall, may be provided in lieu of the standard stall.

- Assembly areas—in alterations where it is structurally impracticable to disperse seating throughout the assembly area, seating may be located in collected areas as structurally feasible. Seating shall adjoin an accessible route that also serves as a means of emergency egress. In alterations where it is structurally impracticable to alter all performing areas to be on an accessible route, then at least one of each type shall be made accessible.

INFORMATION SYSTEMS

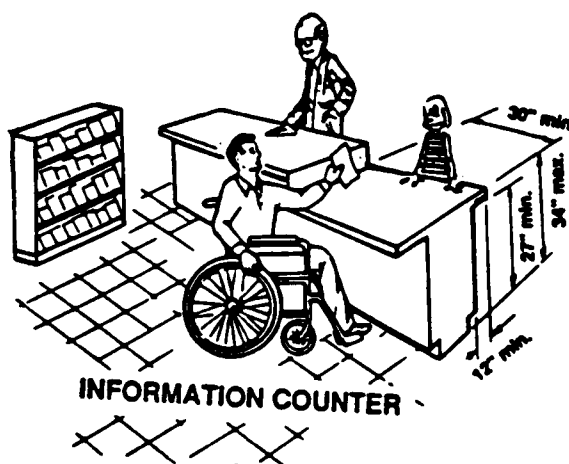
Concept

Information stations include entrance stations, visitor centers and campground offices.

Information stations shall be operated from accessible locations. Information available to the public shall be available by alternative means. For example:

- Verbal/auditory information shall be available in a written form.
- Visual/graphic information shall be available in audio form and in large print form.

Material shall be provided which describes what information is available and the various means by which it is communicated.



Counters

Information counters shall have a portion of the counter surface accessible to persons that use a wheelchair. Such space shall be a minimum of 30\"

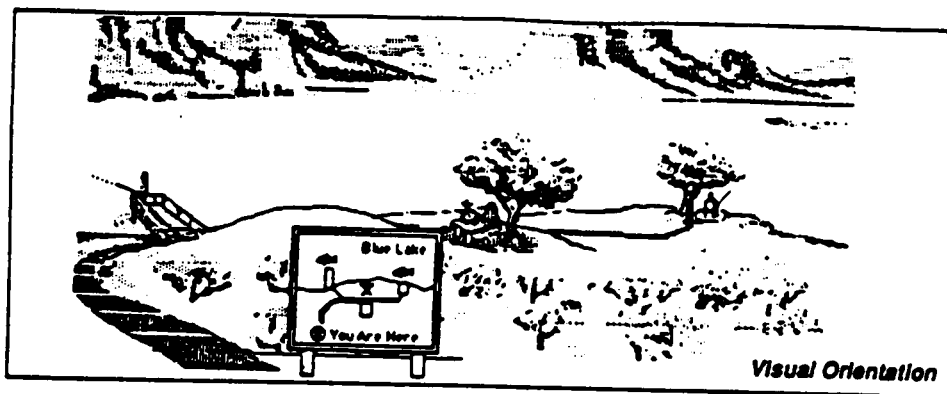
Information Counter

MEDIUM OF COMMUNICATION

Besides the obvious media of signs and publications, there is verbal communication, visual orientation, and tactile information, which can be considered a subset of signage.

VERBAL COMMUNICATION

This can be very helpful to a visitor. If a recreation area has a staff, they should be knowledgeable about the access networks at the site and the needs of people with disabilities. Recordings can also be used.



VISUAL ORIENTATION

This is the capacity to see pathways, facilities, and landmarks from a distance. Site planning should take advantage of visual orientation whenever possible. In fact, careful site planning can often make facilities and important landmarks visible from pathways. A direct view of a facility is the simplest and most effective means of orientation. Directional "You Are Here" signs help people find their way around a site. "You Are Here" signs should be oriented in the same direction as the visitor and show prominent landmarks within view.

TELECOMMUNICATIONS

Consider the following:

- Public telephones required to be accessible by UFAS 4.1 shall comply with UFAS 4.31.
- Installation of public pay phones with built-in Telecommunications Devices for the Deaf (TDD) is encouraged.
- Where telephones are installed, all new instruments shall be hearing aid compatible (*Hearing Aid Compatibility Act of 1988*).
- A TDD shall be included at all developed and staffed offices and/or interpretive sites.

TACTILE INFORMATION

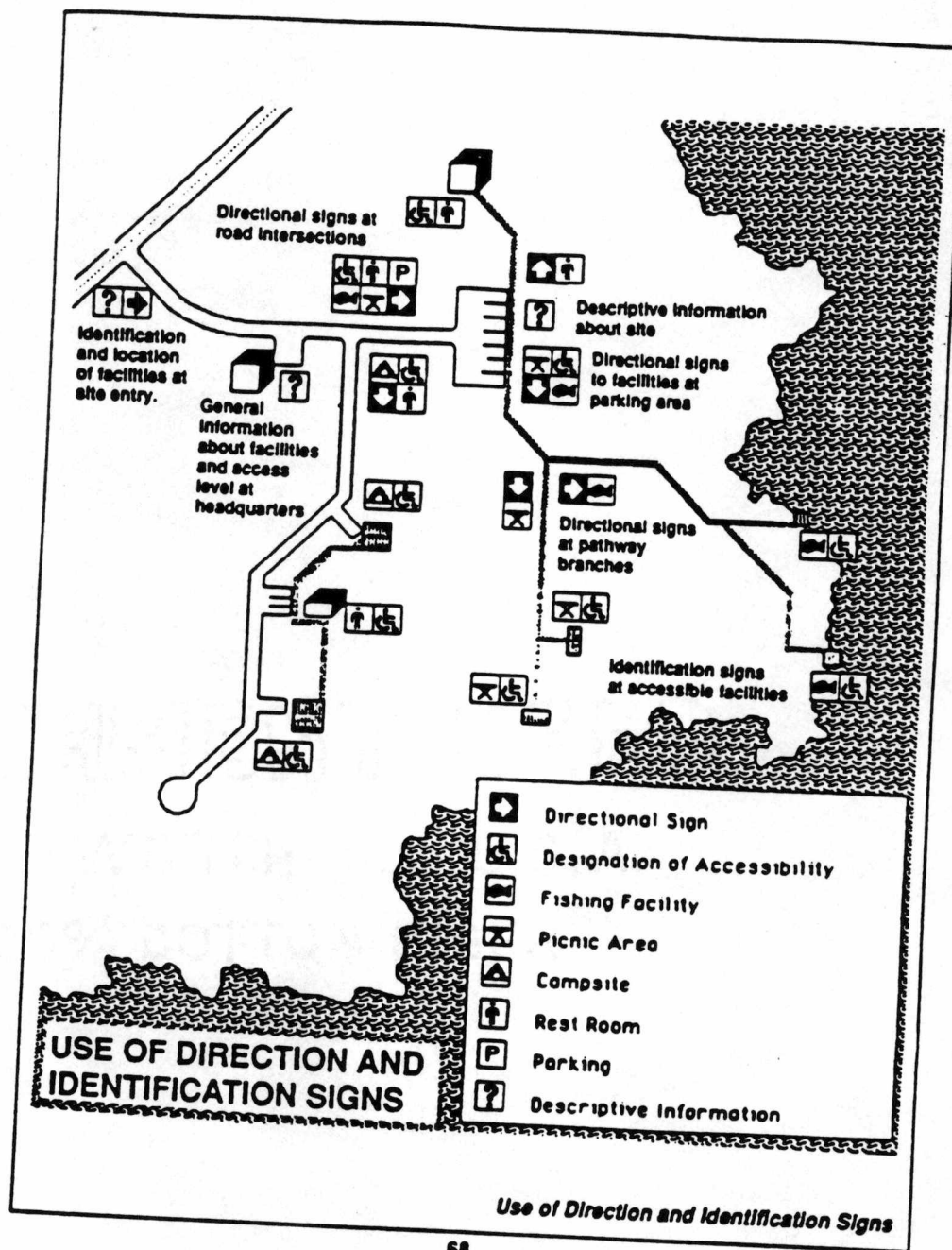
This can be provided by selective use of different surface materials on pathways, through the use of raised characters on signs, and through the use of tactile maps of the site.

SIGNS

These should be used throughout a recreation area for all categories of information (description, direction, identification, and regulation). Signs that everyone can "read" are vital for a recreation area that is usable by all. They not only orient visitors to the area but also direct traffic flow, identify points of interest, and warn of hazards. Signs should be "readable" by senses other than vision, such as touch or hearing. Raised lettering and symbols easily convey information to people reading with either their hands or eyes. (For the visually impaired, however, a sighted guide or audio tape device is often a more effective way to convey information at nature centers, historical sites, and other recreation areas.)

A well-planned and designed system of signage is an essential component of an access network. Signs must be clearly visible and logically placed. Eggshell finish and at least 70 percent contrast between characters and backgrounds are important for people with limited vision. General guidelines for readable signs include:

- Place signs within easy range of vision and reach; use a precise and clear message.
- Keep signs free of obstructing branches and buildings.
- Place signs at a height comfortable for children and seated/standing adults. Use consistent mounting height and location; i.e., exterior identification signs on restrooms are



placed 54-to 66-in high and 4-in from corner of structure.

- Signs identifying rooms and spaces shall be placed on the wall at the latch side of the door, 54 to 66 in above the floor.

- Greatest readability is achieved through the use of light-colored characters or symbols on a dark background.

- Raised characters should be of contrasting color, at least 5/8-in high, but no higher than 2-in, and raised at least 1/32-in from the background to be "legible" to visually impaired persons. Symbols or pictographs on signs should be accompanied below by a written designation.

- Letters on signs intended to be read by touch should be in raised, upper case, sans serif or simple serif type.

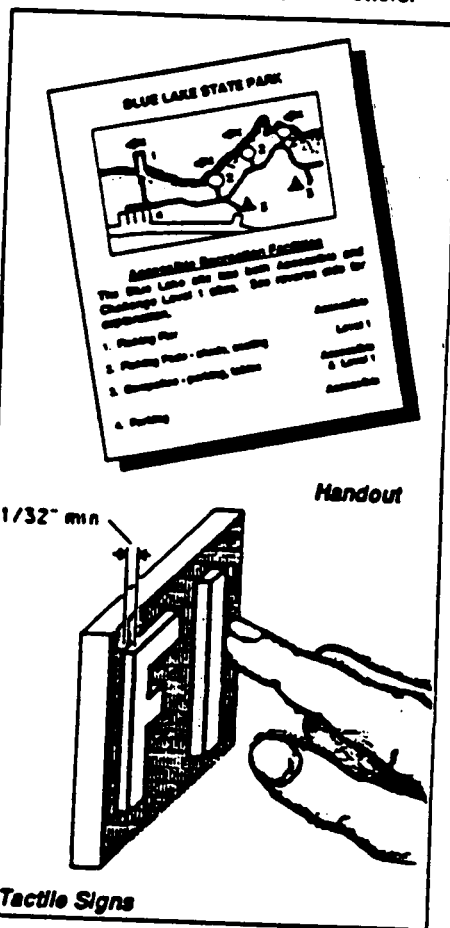
- UFAS requires raised characters on certain signs, such as permanent interior room and space identification; outdoor signs should also have raised characters. The addition of Braille text enhances accessibility.

Pictographs

Pictographs should be used in addition to written information. Use simple, high contrast graphics. Symbols must be understandable as well as visible. Use standard symbols (such as those used by the U.S. Department of Transportation) for ease of recognition.

Tactile Signs

Many visually impaired people can read signs by touch if the characters are raised from the background by at least 1/32 in. Incised letters are not recommended. They are more difficult to read than raised letters, and tend to collect dirt. Use letters without serifs. Braille can enhance accessibility even though it is not used by many people with severe visual impairments. The use of Braille alone does not comply with the standards. Men's and women's toilet signs shall be tactile. Where possible, use letters and symbols; if not possible to use both, use letters.

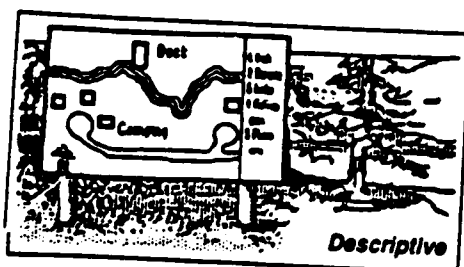


Pictographs and Tactile Signs

SIGN CATEGORIES

Site Entry

Descriptive signs placed at the entry to a recreation area should identify and locate accessible facilities, describe in some detail the level of accessibility of the site, what challenges one might encounter, and indicate where additional assistance may be obtained.

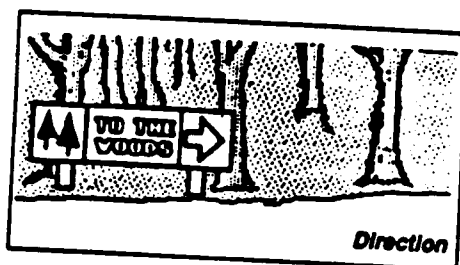


Directional Signs

Directional signs should be systematically placed on the site to direct visitors to appropriate pathways and facilities including:

- Signs at site entry, indicating direction of parking and facilities.
- Signs at parking areas, identifying access to pathways and direction to facilities.
- Signs at all decision points along a pathway.

Signs should be visible from pathways and within reach for touch reading. Indication of direction must be clear.

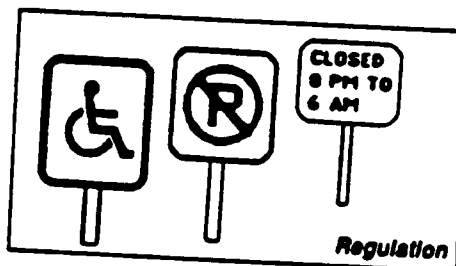
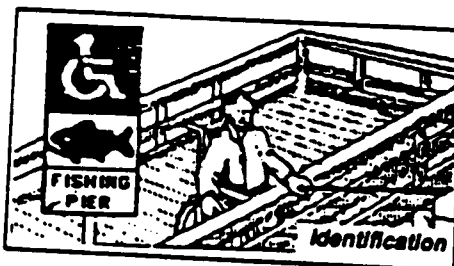


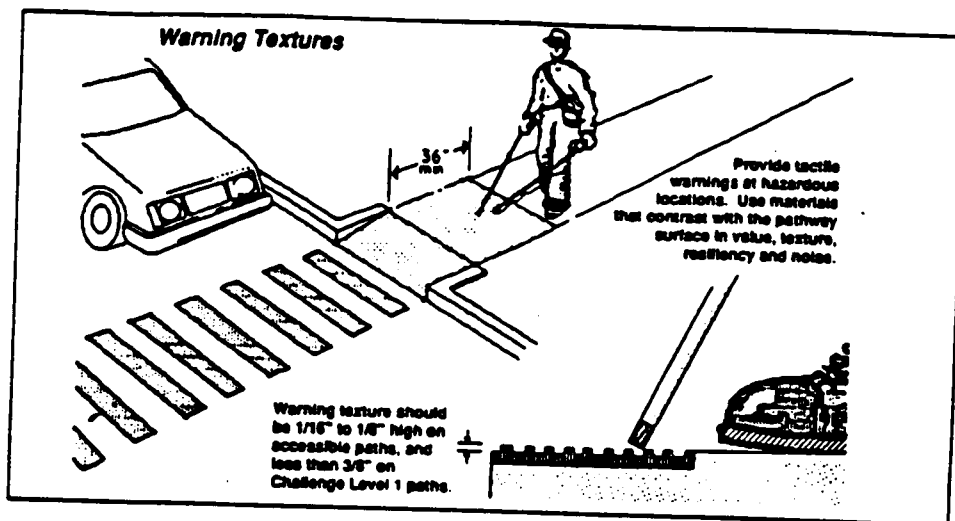
Identification Signs

Identification signs should be placed at all accessible facilities and pathways. The signs should:

- Visibly and unambiguously identify the facility from the approaching pathway or road.
- Indicate the ability level of the facility.
- Use both letters and standard pictograph symbols.

Identification signs at Challenge Level 1 facilities are recommended.





Warning Textures

Changes in texture and material may be used as tactile warnings of hazards and dangerous locations for people with severe visual impairments. However, since there are no established standards as of now, people may not recognize it. Research indicates that a difference in resilience can most reliably be detected. If warning textures are used at a site, they must be used consistently throughout. Partial or inconsistent use may be dangerous.

- Warning textures should begin a minimum of 36 in before a hazard is encountered.
- Textures should be 1/16 to 1/8 in high. The texture and pattern should contrast strongly with the pathway.
- Materials with different noise and resilience characteristics are more detectable than changes of texture alone. Warnings should be reinforced by contrasts in value (light/dark).
- Changes in pathway texture may also be used to indicate a point of interest, seating area, sign location, etc. Textures used for communication must be used consistently throughout the site.
- Tactile warnings on the walking surfaces should be provided at locations that are potentially hazardous to people with severe

visual impairments, such as cross walks at roads, open stairs or steps, water areas, etc.

International Symbol of Accessibility

The international symbol of accessibility is a standard symbol which indicates that a facility or route is fully Accessible. The symbol should not be modified, nor should extraneous elements be added. Supplemental signs and symbols which indicate ability levels, directions to, or identification of a facility may be used in combination with the symbol of accessibility.

Parking spaces and restrooms have to be signed with the international symbol of accessibility. Others areas; such as trails and camping sites should only be signed when it is necessary to indicate that it is accessible. Using the concept of universal design will make many areas usable for most of the population. In these areas extensive use of the symbol might not be necessary. The symbol should only be used where absolutely necessary to either prohibit use of something by a nondisabled person or assist a person with a disability find an accessible feature. For example, parking spaces must



The international symbol of accessibility consists of a wheelchair figure on a square background. The proportions of the symbol must be maintained; regardless of size.

Recommended dimensions:

Viewing Distance	Overall Dimensions
Interior	
25 ft. or less	2 1/2" x 2 1/2"
more than 25 ft.	4 1/2" x 4 1/2"
Exterior	
60 ft. or less	4 1/2" x 4 1/2"
more than 60 ft.	8 1/2" x 8 1/2"

The international symbol of accessibility may be displayed as a white figure on a blue background or as a blue figure on a white background with a blue border.

The color should match the blue of international road signs indicating hospitals and parking.

The wheelchair figure should always face right unless it is used as a directional sign pointing to the left.

The width of the border should be equal to the stroke width of the figure.

The background size within the border should equal the size of the square background without the border.



International Symbol of Accessibility

be clearly marked, toilet stalls do not. Curb ramps do not need to be marked, whereas an accessible route should be marked if there are also inaccessible ones.

The symbol must be obvious and easily recognizable. However, it should be used in a very sensitive manner. It should not draw attention to the user or infer that the

site is to be used only by people with disabilities. For instance, if a camp site needs to be identified with the international symbol of accessibility, consider using a sign that can be turned away from the road, covered up, or folded while the site is in use.

The symbol of accessibility should be used as follows:

Accessible	Challenge Level 1	Challenge Level 2
Mark accessible parking spaces. Each space shall be marked with a vertical signpost; in addition a symbol painted on the pavement is allowed.	Similar to Accessible. Supplemental signs should clearly indicate that parking, pathways and facilities are Challenge Level 1.	Supplemental signs should indicate that pathways and facilities are Challenge Level 2.
Indicate beginning of pathways with symbol and level of accessibility sign.		
Indicate all accessible facilities as necessary.		

PUBLICATIONS

These should describe the level of difficulty, and should be readily available at the entry point to a recreation area. They include brochures, pamphlets, leaflets, and maps. Site handouts should provide complete information on the site access network, describing and showing location of all accessible facilities. Publications covering an entire region should identify and locate all sites, providing information on types, availability, and accessibility of facilities; regulations; and sources of additional facts. It should be updated periodically.

A publication that describes the ability level of accessibility system and identifies accessible sites and facilities should be distributed so that people with disabilities can plan their trips in advance. Handout pamphlets or maps which describe a site and guide people to specific facilities that meet their needs should be distributed at the entry to the recreation area. Information on special services or reserved facilities should be included. Handout material should also be available by mail.

SUMMARY**Minimum Requirements for Ability Levels**

	Accessible	Challenge Level 1	Challenge Level 2
General	All facilities are accessible for most people with disabilities without assistance. Facilities meet UFAS standards.	Most facilities are usable with effort by the "average" person with a disability. Generally meets UFAS requirements.	Site and facilities are usable unaided by an athletic disabled person, or by an "average" disabled person with assistance.
Site Organization	Site access network Accessible guidelines.	Site access network meets Level 1 (or easier) guidelines.	Site access network meets Level 2 (or easier) guidelines.
Parking			
No. of spaces	<u>Total</u>	<u>Access</u>	Drop-off zone.
	1-25	1	
	26-50	2	
	51-75	3	
	76-100	4	
	101-150	5	
Car and Van	<u>Total</u>	<u>Access</u>	12-ft wide, 20-ft depth.
	151-200	6	
	201-300	7	
	301-400	8	
	401-500	9	
	501-1000	2%	
Space width	50% van, 50% car.	Van spaces not required, but recommended.	14-ft wide at camping units.
	8 ft	8 ft	
	8 ft	8 ft	
	8 ft	8 ft	
	8 ft	8 ft	
	8 ft	8 ft	
Alse width	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
	5 ft auto, 8 ft van.	5 ft auto, 8 ft van.	
Trails & Pathways			
Running slope	1:20 (5%) max.	1:12 (8.3%) max.	1:8 (12.5%) max.
Cross slope	1:50 (2%) max.	1:50 (2%) max.	1:30 (3.3%) max.
Width	4 ft 1-way/5 ft 2-way.	32 in min.	32 in min.
Rest stops	Level rest area every 200 ft max.	Level rest area every 100 to 200 ft max.	Level area at reasonable distance; 300 ft max.
Edges	Curbs at drop-offs	Curbs and railings at different locations.	
	Railings if drop more than 30 in		

	Accessible	Challenge Level 1	Challenge Level 2
Trails & Pathways (Continued)			
Surface	Hard, smooth texture.	Very firm compact surface.	Passable in a wheelchair.
Ramps			
Slope	<1:16 to 1:20.	<1:12 to 1:16.	
Landings	Every 30 in of vertical rise.	Every 48 in of vertical rise.	
Edges	Curbs and railings.	Curbs and railings at difficult locations.	
Picnic Areas & Camping			
	Accessible tables, grills. Hard surface. Adjacent parking recommended.	Firm surfacing under site furniture and equipment. Parking adjacent or nearby.	
Toilets & Restrooms			
	If restrooms are provided, they must be accessible.	If restrooms are provided, they must be accessible.	
Beaches			
	Firm, hard walking surface to water.	Provide access to water.	
	Firm, safe access into water, if appropriate.		
Pools			
	If provided, pool & support facilities must meet UFAS.	If provided, pool & support facilities must meet UFAS.	
Boating Facilities			
	Docks, piers, gangways meet Accessible pathways and ramp requirements.	Docks, piers, gangways meet Level 1 pathways and ramp requirements.	
	Curbs and railings.	Curbs and railings at floating docks.	

	Accessible	Challenge Level 1	Challenge Level 2
Boating Facilities (Continued)	Safety equipment. Boat transfer aids.		
Fishing Facilities	Shade, shelter & seating. Access and materials meet Accessible guidelines.	Natural shading and shelter where available. Access and materials meet Level 1 guidelines.	
Deep water	Curbs and railings.	Curbs and railings.	Curbs and railings recommended for docks and piers.
Shallow water	Curbs.	Curbs.	No requirement.
Equestrian Facilities	If provided, the support facilities, such as water hydrants, corrals, and gates, shall be accessible.	If provided, the support facilities, such as water hydrants, corrals, and gates, shall be accessible.	
Playgrounds	Play areas and support facilities, such as restrooms & drinking fountains, shall be accessible. Low-level challenges.	Play areas and support facilities, such as restrooms & drinking fountains, shall be accessible. Low-level challenges.	Advanced level challenges.
Amphitheaters	If appropriate, grade site to provide wheelchair access at several different levels. Firm, hard surface paths.	If appropriate, grade site to provide wheelchair access at several different levels. Firm, slip-resistant paths.	

	Accessible	Challenge Level 1	Challenge Level 2
Exhibits, Audiovisual Programs, & Wayside Sites	All exhibits & programs are fully accessible. Trailhead exhibits will include an ability level advisory.	All exhibits & programs are fully accessible. Trailhead exhibits will include an ability level advisory.	Signage is accessible. Trailhead exhibits will include an ability level advisory.
Historic Sites	Provide the highest level of access practicable.	Provide the highest level of access practicable.	Provide equivalent experience as allowed by standards.
Information System	Site information in publications. Complete on-site signage. Warning textures.	Site information in publications. Identification & regulation signage. Warning textures.	Directional & regulation signage. Provide for safety.

VITA

Chase Ezell is a native of Nashville, Tennessee where he currently resides with his wife, Melanie. Chase received his Bachelor of Science degree in Business Administration from Samford University in Birmingham, Alabama in 1988. He then worked professionally with the Middle Tennessee Council of the Boy Scouts of America in Nashville for two years before enrolling in the University of Tennessee, Knoxville. Mr. Ezell received his Master of Science in Recreation with a concentration in Therapeutic Recreation from UTK in August of 1993.

Mr. Ezell has spoken at several state and regional conferences on such topics as processing and facilitating ropes course experiences and initiative games, the impact of the Americans with Disabilities Act on outdoor recreation, and understanding Federal accessibility legislation. Mr. Ezell is a member of the Association of Experiential Education (AEE), the Wilderness Education Association (WEA), and the Tennessee Recreation and Parks Association (TRPA). Mr. Ezell is currently eligible for the November 1993 National Council for Therapeutic Recreation Certification examination.

Mr. Ezell enjoys outdoor adventure recreation as well as facilitating groups of all ages on challenge ropes courses and initiative games.