ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

36 CFR Parts 1190 and 1191

[Docket No. 99–1]

RIN 3014–AA20

Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

AGENCY: Architectural and Transportation Barriers Compliance Board.

ACTION: Final rule.

SUMMARY: The Architectural and Transportation Barriers Compliance Board (Access Board) is revising and updating its accessibility guidelines for buildings and facilities covered by the Americans with Disabilities Act of 1990 (ADA) and the Architectural Barriers Act of 1968 (ABA). These guidelines cover new construction and alterations and serve as the basis for enforceable standards issued by other Federal agencies. The ADA applies to places of public accommodation, commercial facilities, and State and local government facilities. The ABA covers facilities designed, built, altered with Federal funds or leased by Federal agencies. As a result of this revision and update, the guidelines for the ADA and ABA are consolidated in one Code of Federal Regulations part.

DATES: The guidelines are effective September 21, 2004. The incorporation by reference of certain publications listed in the guidelines is approved by the Director of the Federal Register as of September 21, 2004.

FOR FURTHER INFORMATION CONTACT: Marsha Mazz, Office of Technical and Information Services, Architectural and Transportation Barriers Compliance Board, 1331 F Street, NW., suite 1000, Washington, DC 20004–1111. Telephone numbers (202) 272–0020 (voice); (202) 272–0082 (TTY). These are not toll free numbers. E-mail address: *ta@access-board.gov.*

SUPPLEMENTARY INFORMATION:

Availability of Copies and Electronic Access

Single copies of this publication may be obtained at no cost by calling the Access Board's automated publications order line (202) 272–0080, by pressing 2 on the telephone keypad, then 1 and requesting publication S–50 (ADA and ABA Accessibility Guidelines Final Rule). Please record your name, address, telephone number and publication code. Persons using a TTY should call (202) 272–0082. This document is available in alternate formats upon request. Persons who want a publication in an alternate format should specify the type of format (cassette tape, braille, large print, or ASCII disk). This document is also available on the Board's Web site (*http://www.access-board.gov*).

Statutory Background

The Access Board is responsible for developing and maintaining accessibility guidelines for the construction and alteration of facilities covered by the Americans with Disabilities Act (ADA) of 1990.[1] The Board holds a similar responsibility under the Architectural Barriers Act (ABA) of 1968.[2] The Board's guidelines provide a minimum baseline for other Federal departments responsible for issuing enforceable standards.

The ADA recognizes and protects the civil rights of people with disabilities and is modeled after earlier landmark laws prohibiting discrimination on the basis of race and gender. To ensure that buildings and facilities are accessible to and usable by people with disabilities, the ADA establishes accessibility requirements for State and local government facilities under title II and places of public accommodation and commercial facilities under title III. The law requires that the Board issue minimum guidelines to assist the Department of Justice (DOJ) and the Department of Transportation (DOT) in establishing accessibility standards under these titles. Those standards must be consistent with the Board's guidelines.

The ABA requires access to facilities designed, built, altered, or leased with Federal funds. Similar to its responsibility under the ADA, the Board is charged with developing and maintaining minimum guidelines for accessible facilities that serve as the basis for enforceable standards issued by four standard-setting agencies. The standard-setting agencies are the Department of Defense (DOD), the General Services Administration (GSA), the Department of Housing and Urban Development (HUD), and the U.S. Postal Service (USPS).

Each Federal department responsible for standards based on the Board's guidelines under the ADA or the ABA is represented on the Board. These departments have been closely involved in the development of this rule. Through this process, the Board and the standard-setting agencies coordinated extensively to minimize any differences between the Board's guidelines and their eventual updated standards.

Rulemaking History

ADA Accessibility Guidelines

On July 26, 1991, one year after the ADA was signed into law, the Board published the ADA Accessibility Guidelines (ADAAG).[3] The Board supplemented ADAAG to include additional requirements specific to transportation facilities on September 6, 1991.[4] The Department of Justice (DOJ) and the Department of Transportation (DOT) incorporated ADAAG into their ADA implementing regulations, thus making ADAAG the enforceable standard under titles II and III of the ADA.[5]

In developing the original ADAAG, the Board identified subjects for further rulemaking based on information it received through public comments. Some addressed areas that had not been specifically covered by an access standard or code before. The Board initiated a long-term agenda of rulemaking a year after ADAAG was first published. It proceeded with this agenda independently from its update of the original document. On separate tracks, the Board developed ADAAG supplements covering:

- State and local government facilities (1998)[6]
- building elements designed for children's use (1998)[7]
- play areas (2000)[8]
- recreation facilities (2002)[9]

These supplementary guidelines have not yet been adopted by the DOJ as enforceable standards under the ADA.

In 1994, the Board initiated an effort to update the original ADAAG by establishing an advisory committee to thoroughly review the document and to recommend changes. The ADAAG Review Advisory Committee consisted of 22 members representing the design and construction industry, the building codes community, State and local government entities, and people with disabilities.[10] The committee was

[1] 42 U.S.C. 12101 *et seq.*

[2] 42 U.S.C. 4151 *et seq.*

[3] 56 FR 35408, 36 CFR Part 1191.

[4] 56 FR 45500.

[5] 56 FR 35544, 28 CFR Part 36 (DOJ's ADA regulation implementing title III); 56 FR 45584, 49 CFR Parts 37 and 38 (DOT's ADA regulation implementing titles II and III).

[6] 63 FR 2000 (January 13, 1998).

[7] 63 FR 2060 (January 13, 1998).

[8] 65 FR 62498 (October 18, 2000).

[9] 67 FR 56352 (September 3, 2002).

[10] The American Council of the Blind, the American Institute of Architects, the American Society of Interior Designers, the Arc, Builders Hardware Manufacturers Association, Building Officials and Code Administrators International,

charged with reviewing ADAAG in its entirety and making recommendations to the Board on improving ADAAG's format and usability, reconciling differences between ADAAG and national consensus standards, and updating its requirements so that they continue to meet the needs of persons with disabilities.

Following a consensus-based process for the adoption of recommendations, the committee met extensively over a two-year period and fulfilled its mission with the issuance of a report, ''Recommendations for a New ADAAG,'' in September, 1996.

The advisory committee's report recommended significant changes to the format and style of ADAAG. In fact, its recommendations reorganize much of the document. The changes were recommended to provide a guideline that is organized and written in a manner that can be more readily understood, interpreted, and applied. The recommended changes would also make the arrangement and format of ADAAG more consistent with model building codes and industry standards. The advisory committee coordinated closely with the American National Standards Institute (ANSI) A117 Committee, which was in the process of updating its standard. The ANSI A117.1 standard is a national consensus standard that provides technical requirements for accessible buildings and facilities. The A117.1 standard is referenced by the International Building Code and various state codes, among others. While ADAAG requirements derive in large part from an earlier version of the ANSI standard, there are considerable differences between them. Both the advisory committee and the ANSI committee sought to reconcile differences between ADAAG and the ANSI A117.1–1998 standard.

ABA Accessibility Guidelines

The Board issued minimum guidelines for federally funded facilities under the ABA in 1982. These guidelines served as the basis for enforceable standards known as the Uniform Federal Accessibility Standards (UFAS). The Board has coordinated the update of its ABA guidelines with its review of ADAAG in order to reconcile differences between them and to establish a more consistent level of accessibility between facilities covered by the ADA and those subject to the ABA.

ADA and ABA Accessibility Guidelines

On November 16, 1999, the Board published a proposed rule to jointly update and revise its ADA and ABA accessibility guidelines. This proposal was largely based on the ADAAG Review Advisory Committee's report. In preparing the proposed rule, the Board had reviewed all of the committee's recommendations and adopted most of them with some changes of its own. Additionally, the Board developed new figures to illustrate various provisions and provided updated advisory information. In an accompanying discussion of the proposed revisions, the Board posed a number of questions to the public on a variety of issues to solicit information for its use in finalizing the rule. The proposed rule contained three parts:

- Application and scoping requirements for facilities covered by the ADA.
- Application and scoping requirements for facilities covered by the ABA.
- A common set of technical provisions referenced by both scoping documents.

The proposed rule also incorporated supplements to ADAAG that the Board developed independently from its review of ADAAG. In 1998, the Board issued a supplement to ADAAG covering State and local government facilities, including courthouses and prisons. At the same time, the Board published specifications for building elements designed for children's use as amendments to ADAAG, which, as originally published, only contained requirements based on adult dimensions. The Board also incorporated into the proposed rule requirements for residential housing which were based on those developed by the ANSI A117 Committee in 1998.

The proposed rule was made available for public comment for six months. During this comment period, which ended May 15, 2000, the Board held public hearings in Los Angeles, CA (January 31, 2000) and in the Washington, DC area (March 13, 2000), which provided an additional forum for people to provide comment, either orally or in writing. About 140 persons provided testimony at these hearings.

More than 2,500 comments on the proposed rule were submitted to the Board by mail, e-mail, or fax. Almost three quarters of the comments were submitted by individuals, primarily persons with disabilities. Most of these comments addressed reach range requirements for people of short stature, access for people with multiple chemical sensitivities, movie theater captioning for persons who are deaf or hard of hearing, and access to certain elements, such as automatic teller machines (ATMs) for people with vision impairments. Comments were also submitted by trade associations and manufacturers, disability groups, design and codes professionals, government agencies, and building owners and operators, among others. Some of the most common topics included alarms, handrails, assembly areas, van spaces and ATMs. Comments received after the deadline were entered into the docket as the Board has a policy of considering late comments to the extent practicable.

The Board has finalized the guidelines according to its review and analysis of the comments to the proposed rule. Comments and resulting changes in the rule are discussed below in the Section-by-Section Analysis.

From the outset of this rulemaking, the Board has sought to harmonize the ADA and ABA Accessibility Guidelines with industry standards, particularly the ANSI A117.1 standard and the International Building Code (IBC). On April 2, 2002, the Board placed in the rulemaking docket for public review a draft of the final guidelines to further promote such harmonization.[11] The ANSI A117 Committee and the International Code Council (ICC) were in the process of updating the ANSI A117.1–1998 standard and the IBC, respectively. The Board proposed changes to these documents based on the draft final guidelines, some of which were approved. In addition, the Board made revisions to the guidelines for consistency with proposed changes to the ANSI A117.1 standard and the IBC. As a result, some of the remaining differences between the draft final guidelines and these documents were reconciled. Changes to the guidelines as a result of this harmonization, as well as public comments received on the draft final guidelines, are noted in the Section-by-Section Analysis.

General Issues

Comments were received on the organization and format of the revised guidelines. The final rule has been structurally reorganized in several

Building Owners and Managers Association International, Council of American Building Officials, Disability Rights Education and Defense Fund, Eastern Paralyzed Veterans Association, International Conference of Building Officials, International Facility Management Association, Maryland Association of the Deaf, National Conference of States on Building Codes and Standards, National Easter Seal Society, National Fire Protection Association, National Institute of Building Sciences, Regional Disability and Business Technical Assistance Centers, Southern Building Code Congress International, Texas Department of Licensing and Regulation, Virginia Building and Code Officials Association, and the World Institute on Disability.

[11] 67 FR 15509.

respects. Two technical chapters covering specific occupancies (transportation facilities and residential facilities) were integrated into other chapters. A new chapter was added through the incorporation of guidelines for recreation facilities and play areas that the Board previously finalized in separate rulemakings. These changes are further detailed in this section. In addition, comments were received on issues that the Board is involved in but were not made part of this rulemaking. These issues, further discussed below, concern multiple chemical sensitivities and electromagnetic sensitivities, classroom acoustics, and certain elements specific to public rights-of-ways.

Organization and Format

Most commenters supported the new organizational structure of the guidelines and found it to be clearer and easier to use than the original ADAAG. Several suggested that the final rule contain a subject index, that pages not be numbered separately for each part of the rule, and that a table of contents be provided for advisory material and figures listing the figure with section number, the title of the figure, and page number where it is located. Several commenters recommended that there be one table of contents at the beginning of the document rather than separate tables of contents for each part of the rule. There was support for placing advisory material near the provision it discusses but commenters recommended even greater distinction of their non-legal, non-binding status since the advisory notes stand out more than the requirements. Commenters also recommended that figures should have titles and numbers and be clearly linked to the text. A few commenters recommended that advisory information be adopted as enforceable language or be deleted.

The Board has revised the format and structure of the guidelines in response to these comments. The final rule includes a subject index to facilitate use of the document. In the proposed rule, the ADA and ABA scoping documents and the technical section were paginated separately; in the final rule, the pages are numbered consecutively through the entire document. In addition, the Board has simplified the table of contents structure, provided titles for figures, and reformatted advisory notes so that they appear subordinate to the requirements they discuss. Advisory notes are provided for informational purposes only and are not mandatory. Throughout the final rule, advisory notes have been added or revised based on comments or revisions to text requirements. In most cases, advisory notes clarify the meaning of a requirement or provide recommendations for good practice.

Some commenters felt that the Board should reference other codes and standards for greater consistency with the model building codes and that more cross references should be made to other codes and standards. In the final rule, the Board has added references to other codes and standards to enhance consistency with model building codes and standards. Scoping and technical requirements for accessible means of egress have been replaced with a reference to corresponding requirements in the International Building Code (IBC), as further discussed below in the Section-by-Section Analysis under section 207. Criteria for fire alarm systems have been replaced by a reference to the National Fire Protection Association (NFPA) standard upon which they were based, as discussed below in section 702.

Existing Facilities

Commenters expressed concern about how changes to these guidelines would impact existing facilities that were previously retrofitted under ADA requirements, such as those requiring barrier removal and program access. The ADA requires the removal of barriers in existing places of public accommodation where it is readily achievable. State and local government entities are required to provide access to programs, which may necessitate retrofit of existing facilities. Commenters expressed concern that further retrofit efforts would be triggered due to new requirements in the revised guidelines. Specifically, commenters asked whether elements that comply with the original ADAAG would need to be altered to meet the requirements of the updated guidelines under the obligations for barrier removal or program access.

The Board's authority under the ADA only extends to the development and maintenance of accessibility guidelines for construction and planned alterations and additions. It does not have jurisdiction over requirements for existing facilities that are otherwise not being altered, except for certain types of transit stations (key stations and intercity rail stations). Under the ADA, regulations issued by the Department of Justice (DOJ) and the Department of Transportation (DOT) effectively govern requirements that apply to existing facilities. How, and to what extent, the Board's guidelines are used for purposes of retrofit, including removal of barriers and provision of program access, is wholly within the purview of these departments. It is the Board's understanding that the Department of Justice is aware of the concern outlined in comments and that the Department plans to address these concerns in its rulemaking to revise its ADA standards consistent with the Board's final rule.

Reorganization of Chapters on Transportation Facilities and Residential Facilities

The proposed rule, consistent with the advisory committee's recommendations, minimized classifications and structural delineations in the guidelines based on facility or occupancy type. As a result, special occupancy chapters of the original ADAAG had been integrated into the main body of the document in the proposed rule. It was felt that this change would help underscore the premise that the guidelines must be consulted and applied in its entirety regardless of the facility type. It is also consistent with the overall aim of encouraging an integrated approach to accessibility as reflected by other proposed format and organizational changes. However, the proposed rule did retain two technical chapters based on occupancy types: transportation facilities (Chapter 10) and residential facilities (Chapter 11). In the final rule, the provisions of these technical chapters have been incorporated into other chapters, as appropriate, for greater consistency with the rest of the document. The revisions related to this reorganization are further detailed in the Section-by-Section Analysis.

Incorporation of Guidelines for Play Areas and Recreation Facilities

In separate rulemakings, the Board developed supplements to ADAAG covering play areas and recreation facilities. These supplemental guidelines, developed independently from this rulemaking, were finalized after the Board published the proposed rule.

On October 18, 2000, the Board issued final guidelines for play areas.[12] The guidelines are one of the first of their kind in providing a comprehensive set of criteria for access to play areas. They cover the number of play components required to be accessible, accessible surfacing in play areas, ramp access and transfer system access to elevated structures, and access to soft contained play structures. The guidelines address play areas provided at schools, parks, child care facilities (except those based in the operator's home, which are

[12] 65 FR 62498.

exempt), and other facilities subject to the ADA. The Board developed the guidelines through regulatory negotiation, a supplement to the traditional rulemaking process that allows face-to-face negotiations among representatives of affected interests in order to achieve consensus on the text of a proposed rule. The regulatory negotiation committee represented a variety of interests, including play equipment manufacturers, landscape architects, parks and recreation facilities, city and county governments, child care operators, and people with disabilities. The committee submitted a report to the Board upon which the guidelines are based. The Board published the guidelines in proposed form for public comment in April 1998 and finalized them according to its review and analysis of the comments it received.

On September 3, 2002, the Board finalized guidelines that address access to a variety of recreation facilities covered by the ADA, including amusement rides, boating facilities, fishing piers and platforms, golf courses, miniature golf, sports facilities, and swimming pools and spas.[13] The requirements are largely based on recommendations prepared by the Recreation Access Advisory Committee, which the Board had established for this purpose. These recommendations are contained in a report, ''Recommendations for Accessibility Guidelines: Recreational Facilities and Outdoor Developed Areas,'' which the Board had made widely available as a source of guidance pending the development of guidelines. The Board published the guidelines in proposed form in July 1999, and made them available for public comment for six months. During the comment period, the Board held public hearings on the proposed guidelines in Dallas, TX and Boston, MA. In an effort to provide the public with an additional opportunity for input on the rule before it was finalized, the Board published a summary of changes it intended to make to the guidelines. This summary was published on July 21, 2000, and was made available for public comment for two months. During the comment period, the Board held informational meetings on the summary in Washington, DC and San Francisco, CA. Approximately 70 comments on the summary were received.

The Board issued a notice on September 3, 2002, making the final guidelines issued for play areas and recreation facilities applicable to federally funded facilities covered by the ABA.[14] No comments were received in response to the notice.

The Board has integrated the guidelines for play areas and those for recreation facilities into this final rule. Referenced standards and definitions have been added to Chapter 1 (sections 105 and 106), scoping provisions have been incorporated into Chapter 2 (sections 234 through 243), and technical provisions are provided in Chapter 6 (Plumbing Elements and Facilities) and Chapter 10 (Recreation Facilities and Play Areas). In addition, various provisions and exceptions have been integrated into existing scoping provisions in Chapter 2 (sections 203 through 206, 210, 216, and 221) and technical provisions in Chapter 3 (section 302 and 303). These criteria have been editorially revised to fit into the new structure and format of the revised ADA and ABA accessibility guidelines. No substantive revisions have been made in incorporating them into this final rule. While the Board has otherwise sought to avoid technical chapters that are based solely on an occupancy type, it has located the technical provisions of the play areas and recreation facilities guidelines into a separate chapter. Since these guidelines are new and comprehensive in their coverage of a variety of distinct facility types, the Board felt that users could more readily familiarize themselves with the requirements if they remained localized in a separate chapter.

Multiple Chemical Sensitivities and Electromagnetic Sensitivities

The Board received approximately 600 comments from individuals with multiple chemical sensitivities and electromagnetic sensitivities. They reported that chemicals released from products and materials used in the construction, alteration, and maintenance of buildings; electromagnetic fields; and inadequate ventilation are barriers that deny them access to buildings. They requested the Board to include provisions in this final rule to make the indoor environment accessible to them.

The Board recognizes that multiple chemical sensitivities and electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory, or other functions of an individual that it substantially limits one or more of the individual's major life activities. The Board plans to closely examine the needs of this population, and undertake activities that address accessibility issues for these individuals.

The Board plans to develop technical assistance materials on best practices for accommodating individuals with multiple chemical sensitivities and electromagnetic sensitivities. The Board also is sponsoring a project on indoor environmental quality. In this project, the Board is bringing together building owners, architects, building product manufacturers, model code and standard-setting organizations, individuals with multiple chemical sensitivities and electromagnetic sensitivities, and other individuals. This group will examine building design and construction issues that affect the indoor environment, and develop an action plan that can be used to reduce the level of chemicals and electromagnetic fields in the built environment.

Neither the proposed rule nor the draft final rule included provisions for multiple chemical sensitivities or electromagnetic sensitivities. The Board believes that these issues require a thorough examination and public review before they are addressed through rulemaking. The Board does not address these issues in this final rule.

Classroom Acoustics

Comments were received that urged the Board to address the acoustical performance of buildings and facilities, in particular school classrooms and related student facilities. Research indicates that high levels of background noise in classrooms compromises speech intelligibility for many children to such an extent that their reading, communication, and learning skills may not be developing adequately. At particular risk are children who have mild to moderate hearing loss, temporary hearing loss, speech impairments, or learning disabilities. Instead of undertaking rulemaking of its own on this issue, the Board opted to work with the private sector in the development of classroom acoustic standards. In 1999, the Board partnered with the Acoustical Society of America (ASA) on the development of a new standard for acoustics in classrooms that takes into account children who are hard of hearing. ASA had previously established a special working group for this purpose. The Board helped sponsor the work of this group and expanded its membership through the addition of representatives from disability groups, school systems, designers, and government agencies. At the Board's urging, ASA committed to a two-year time frame for the completion of

[13] 67 FR 56352.

[14] 67 FR 56441.

standards. The standard, completed in 2002, has been approved as ASA/ANSI S12.60–2002, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools. It sets specific criteria for maximum background noise (35 decibels) and reverberation time (0.6 to 0.7 seconds for unoccupied classrooms). These and other specifications are consistent with long-standing recommendations for good practice in acoustical design. Taken by itself, the standard is voluntary unless referenced by a code, ordinance, or regulation. The Board submitted a proposal to the International Code Council (ICC) recommending that core provisions contained in the ASA/ANSI standard be incorporated into the next edition of the International Building Code (IBC). The Board's proposal was taken up for consideration at an ICC hearing in September 2002, but was not adopted. However, school systems in various states and cities are applying the criteria in the ASA/ANSI standard to the design of classrooms. The Board is participating in outreach and education activities to promote greater understanding of the need for good classroom acoustics.

Public Rights-of-Way

Some comments asked that the final rule address certain elements common in public rights-of-ways. These comments addressed roadway design, speed bumps, crosswalks, on-street parking, audible signs and pedestrian signals, and emergency call boxes. The Board will address and invite comment on issues regarding access to public rights-of-way in a separate rulemaking. On June 17, 2002, the Board released for public comment a set of draft guidelines on accessible public rights-of-way in advance of publishing a proposed rule. The guidelines would supplement the ADA and ABA accessibility guidelines by adding new provisions for sidewalks, street crossings, and related pedestrian facilities. The draft guidelines were based on a report submitted to the Board by the Public Rights-of-Way Access Advisory Committee in January 2001. This committee, which the Board created to make recommendations on the guidelines, included representatives from the transportation industry, Federal, State and local government agencies, the disability community, and design and engineering professionals. The advisory committee's report, ''Building A True Community,'' is available from the Board.

Section-by-Section Analysis

In finalizing this rule, the Board has revised various requirements in the guidelines based on its review and analysis of public comments. This section discusses public comments to the rule and details revisions that represent a substantive change from the proposed rule. Not all editorial or non-substantive revisions are addressed in this discussion.

Part I: ADA Application and Scoping

Chapter 1: Application and Administration

This chapter states general principles that recognize the purpose of the guidelines (101), provisions for adults and children (102), equivalent facilitation (103), conventions (104), referenced standards (105), and definitions (106). Revisions have been made in the final rule to the sections covering conventions, referenced standards, and definitions.

104 Conventions

Section 104.1 notes that all dimensions not stated as a ''maximum'' or ''minimum'' are absolute and that all dimensions are ''subject to conventional industry tolerances.'' Conventional industry tolerances recognized by this provision include those for field conditions and those that may be a necessary consequence of a particular manufacturing process. In the final rule, the Board has limited this provision so that it does not apply to requirements where a range is provided since the specified range offers adequate tolerances. Section 104.2 addresses rounding in the case of percentages where fractions result.

Comment. Commenters recommended that a statement be added indicating that the figures in the guidelines are provided for information purposes only, consistent with the ANSI A117.1 standard.

Response. A provision has been added in the final rule which states that the figures contained in this document ''are provided for informational purposes only'' (104.3). This recognizes that all requirements in the guidelines are contained in text and that the figures are provided to illustrate the text-based specifications. Should a figure be interpreted differently from the text, the text governs.

105 Referenced Standards

Section 105 lists the industry standards referenced in the guidelines. It also clarifies that where there is a difference between a provision of the guidelines and the referenced standards, the provision of the guidelines applies. The final rule includes information on where these referenced standards can be obtained or inspected. The Board also has clarified in this section where in the guidelines each standard is referenced.

Standards referenced in the final rule include those issued by the:

- American National Standards Institute (ANSI) and Builders Hardware. Manufacturers Association (BHMA) for power operated and power assisted doors (105.2.1).
- American Society of Mechanical Engineers (ASME) for various elevators and platform lifts (105.2.2).
- American Society for Testing and Materials (ASTM) for use zones, play equipment, and accessible surfaces at play areas (105.2.3).
- International Code Council (ICC), whose International Building Code is referenced with respect to provisions for means of egress and railings (105.2.4).
- National Fire Protection Association (NFPA) for fire alarms (105.2.5).

The Board has revised the rule to reference the most recent editions of the standards and addenda. The final rule includes the addition of ASTM standards and the International Building Code (IBC). Guidelines for play areas previously issued by the Board, which reference ASTM criteria for use zone and accessible surfaces in play areas, have been incorporated into the final rule. Provisions in the guidelines for accessible means of egress have been replaced by references to corresponding requirements in the IBC.

Information on the standards referenced in this rule is available on the Board's Web site at *www.access-board.gov* and in advisory notes.

106 Definitions

Various defined terms and definitions have been revised, removed, or added in the final rule. The following definitions have been removed as unnecessary, in most cases due to changes in certain scoping or technical requirements: ''accessible route,'' ''area of refuge,'' ''automatic door,'' ''destination-oriented elevator,'' ''ground floor,'' ''occupiable,'' ''power-assisted door,'' ''sign,'' and ''wheelchair.'' New definitions included in the final rule address: ''assistive listening system,'' ''equipment,'' ''key station,'' and ''occupant load.'' Definitions contained in the guidelines for recreation facilities and play areas are included in the final rule. Definitions that have been revised include: ''assembly area,'' ''common use,'' ''mezzanine,'' ''residential dwelling unit,'' ''transient lodging,'' ''vehicular way,'' and ''walk.''

Comment. It was suggested that the definition of ''assembly area'' should more clearly address the types of

facilities covered. The definition's reference to spaces used ''for the consumption of food and drink'' may be interpreted as applying to restaurants generally. The definition should also be revised, consistent with building codes, to apply to assembly areas that comprise only a portion of a facility.

Response. The definition of ''assembly area'' has been revised to include ''a building, facility, or portion thereof used for the purpose of entertainment, educational or civic gatherings or similar purposes.'' An illustrative list of examples, previously provided in the scoping provision (221), has been relocated to this definition.

Comment. Consistent with the original ADAAG, the proposed rule defined ''common use,'' in part, as spaces or elements ''made available for a restricted group of people.'' Comments considered the reference to ''restricted'' as a source of confusion and misinterpretation. In addition, it was suggested that ''group'' be replaced by a specific number.

Response. As revised, the definition of ''common use'' refers to ''interior or exterior circulation paths, rooms, spaces, or elements that are not for public use and are made available for the shared use of two or more people.''

Comment. Commenters suggested that the definition for ''mezzanine'' should be revised for consistency with model building codes, including the IBC.

Response. ''Mezzanine'' is now defined by the same definition used in the IBC: ''An intermediate level or levels between the floor and ceiling of any story with an aggregate floor area of not more than one-third of the area of the room or space in which the level or levels are located.'' The Board has included clarification that mezzanines are elevated high enough to accommodate human occupancy on the floor below.

Comment. Commenters considered it important that the definitions for ''dwelling unit'' and ''transient lodging'' be revised and made mutually exclusive to avoid the confusion of potentially overlapping terms. In particular, the hotel and motel industry was concerned about requirements for dwelling units being misapplied to transient lodging facilities.

Response. In the final rule, the definitions for ''dwelling unit'' and ''transient lodging'' have been clarified and made mutually exclusive. The guidelines now use the term ''residential dwelling unit,'' which is defined as ''a unit intended to be used as a residence, that is primarily long-term in nature.'' This definition specifically excludes transient lodging, as well as medical care and long-term care facilities and detention and correctional facilities. ''Transient lodging'' has been revised as applying to any facility ''containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature.'' The term excludes residential dwelling units, among other facility types. In addition, language exempting bed-and-breakfast type facilities with no more than five rooms has been relocated to this definition from the scoping provision for transient lodging in section 224.

ADA Chapter 2: Scoping Requirements

This section discusses comments and changes to scoping provisions for facilities covered by the ADA. These provisions specify which elements and spaces are required to be accessible according to various technical requirements contained in chapters 3 through 10.

Throughout this chapter and the rest of the document, the term ''accessible'' has been replaced with more precise references to applicable criteria in the guidelines. For example, instead of referring to ''accessible'' spaces of one type or another, the guidelines now refer to spaces ''complying with'' the relevant technical criteria that make them accessible. This was done for greater precision and clarity.

201 Application

This section provides that these guidelines apply to the design, construction, or alteration of covered facilities. The requirements apply to both permanent and temporary structures. No substantive changes have been made to this section.

Comment. In the proposed rule, the term ''fixed'' had been removed as a modifier of certain elements covered by the guidelines, such as tables and storage. This was removed, along with references to elements that are ''built-in.'' Some comments argued that this change could be interpreted as broadening the scope of the guidelines to cover elements that are not fixed or built-in.

Response. References to ''fixed'' and ''built-in'' were removed for editorial purposes of clarity and consistency. While the scope of the guidelines does not extend to elements that are not fixed or built-in, the Board believes that such clarification can be appropriately addressed in the regulations that implement the enforceable standards based on the Board's guidelines.

202 Existing Buildings and Facilities

Section 202 establishes the scope and application of the guidelines in the case of alterations or additions to existing facilities. Section 202.3 states that each altered element or space is required to meet the applicable scoping provisions of Chapter 2. There are three exceptions to this requirement, which have been revised for clarity or added in the final rule. Criteria for alterations affecting primary function areas (202.4) and historic facilities (202.5) are also provided. In the final rule, the provision for primary function areas includes a new exception for residential facilities.

Comment. An exception in the proposed rule (202.3, Exception 1) stated that altered elements and spaces are not required to be on accessible routes. This was intended to clarify that an accessible route to an altered space or element does not have to be provided as part of the work, unless the alteration is to a primary function area covered by 202.4. Comments pointed out that while this exception was intended to cover accessible routes *to* an altered space, as worded it would also exempt accessible routes *within* an altered space.

Response. The Board did not intend to exempt requirements for accessible routes within spaces that are altered. The scope of this exception has been limited so that it applies only where elements and spaces are altered, but the circulation path to them is not. Consistent with the proposed rule, this exception is not permitted for alterations to primary function areas, which are required to be connected by an accessible path of travel (unless the cost of providing such a path is ''disproportionate'' to the overall alteration cost).

A second exception notes that compliance is required unless it is technically infeasible, in which case compliance is required to the maximum extent feasible (202.3, Exception 2). In the proposed rule, this exception contained clarifying language related to this provision that has been recast as an advisory note in the final rule.

A third exception has been added in the final rule for residential facilities (202.3, Exception 3). This exception exempts from coverage dwelling units not required to be accessible under the ADA or the Rehabilitation Act of 1973,[15] which requires that federally funded programs and services, including those pertaining to housing, be accessible to persons with disabilities. In finalizing the rule, the Board has reconciled housing requirements with those of

[15] 29 U.S.C. 701 *et seq.*

other Federal regulations, as discussed below in the scoping section on residential dwelling units (233). Regulations issued under title II of the ADA by DOJ and HUD under section 504 of the Rehabilitation Act require each program or activity conducted by a covered entity or a program or activity receiving Federal financial assistance to be readily accessible to and usable by individuals with disabilities when the program or activity is viewed in its entirety. Meeting these requirements may involve retrofit of existing facilities as part of a transition plan for compliance. Dwelling units that are accessible or that are to be made accessible under the requirements of the ADA or the Rehabilitation Act are required to comply with the requirements of section 202 when altered; other dwelling units are exempt under the new exception.

Comment. Commenters expressed concern that the replacement of telephones would trigger more extensive alterations, such as a requirement to lower a telephone installed at 54 inches (currently permitted by ADAAG) to 48 inches.

Response. Where elements are altered or replaced they must comply with these guidelines. However, in some cases the altered element is part of a larger element which is itself not altered. For example, pay telephone providers sometimes replace existing telephones with new telephones and, as part of the telephone replacement project, they do not replace or alter the existing telephone enclosures or pedestals. The new telephones, when replaced, must provide a volume control in compliance with section 704.3 that provides up to 20 decibels of gain; original ADAAG 4.31.5(2) only required 18 decibels of gain. However, the existing unaltered telephone enclosures or pedestals need not be lowered so that the telephones comply with the new 48 inch reach requirement established in section 308. Similarly, if a narrow door is replaced, the doorway need not be widened as a consequence of the door replacement. However, if new operating hardware is provided for the door, the hardware must comply with section 404.2.7.

Comment. Commenters indicated that it is common practice to reduce the number of existing telephones in telephone banks in order to reconcile the supply of pay telephones with the demand; noting also an overall decrease in the demand for pay telephones. The comments requested clarification as to whether the removal of an inaccessible pay telephone would be an alteration that would trigger a requirement to lower an adjacent wheelchair accessible pay telephone from 54 inches (currently permitted by ADAAG) to 48 inches.

Response. Inaccessible pay telephones may be removed without triggering requirements for lowering adjacent wheelchair accessible pay telephones, provided that the telephone enclosure or pedestal is not altered when telephones are removed.

Alterations to areas containing a primary function must include an accessible path of travel to the altered area unless it is disproportionate in cost or scope (202.4). This provision is intended to ensure that such areas, when altered, are on an accessible route and are served by accessible rest rooms, telephones, and drinking fountains. Requirements specific to altered residential dwelling units in section 233.3 effectively substitute for this provision by ensuring an accessible route to those dwelling units required to comply as part of an alteration. For consistency and clarity, the Board has exempted residential dwelling units from the requirements for altered primary function areas.

Comment. Comments from the historic preservation community requested that information be provided on the consultation procedures to be followed when applying the exceptions for alterations to qualified historic buildings or facilities in section 202.5. They also requested that the specific language for the exceptions for accessible routes, entrances, and toilet facilities be included in section 202.5, instead of in the various scoping provisions for those elements. In addition, they requested that information be provided on the obligation of public entities that operate historic preservation programs to achieve program accessibility under the DOJ regulations.

Response. The final rule includes advisory information in section 202.5 on the consultation procedures to be followed when applying the exceptions for alterations to qualified historic buildings or facilities. This information derives from advisory information in the original ADAAG (section 4.1.7). When an entity believes that compliance with the requirements for accessible routes, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility, the entity should consult with its State Historic Preservation Officer. If the State Historic Preservation Officer agrees that compliance with the requirements for a specific element would threaten or destroy the historic significance of the building or facility, use of the exception for that element is permitted. The advisory note to section 202.5 also references the scoping provisions for accessible routes, entrances, and toilet facilities where the specific language for the exceptions for qualified historic buildings and facilities are found. Information has also been included in the advisory note to section 202.5 on the obligation of public entities that operate historic preservation programs to achieve program accessibility under the DOJ regulations.

203 General Exceptions

Certain spaces are generally exempt from the guidelines, including construction sites (203.2), raised areas (203.3), limited access spaces (203.4), machinery spaces (203.5), single occupant structures (203.6), certain areas within detention and correctional facilities (203.7) and residential facilities (203.8), employee work areas (203.9), and various spaces within recreation and sports facilities (203.10 through 203.14). These provisions have been editorially revised and renumbered in the final rule. Specifically, clarification has been added that exempt spaces ''are not required to comply with these requirements or to be served by an accessible route,'' which is more precise than the phrase in the proposed rule that such spaces ''are not required to be accessible.'' This is part of a global editorial revision to replace the term ''accessible'' throughout the text with more specific language. In addition, the reference in the exception at 203.5 to spaces frequented only by service personnel has been changed from ''equipment spaces'' to ''machinery spaces,'' which was considered a more specific and accurate reference to the type of spaces covered by this exception. The Board's guidelines for recreation facilities contain exceptions for certain limited spaces within recreation and sports facilities that have been incorporated into the final rule. These exceptions address raised refereeing, judging, and scoring areas (203.10), water slides (203.11), animal containment areas (203.12), raised boxing and wrestling rings (203.13), and diving boards and platforms (203.14).

Substantive changes are made to the exceptions for limited access spaces and employee work areas. The exception at 203.4 covers limited access spaces, such as those accessed by ladders, catwalks, crawl spaces, or very narrow passageways. A reference to ''tunnels'' has been removed from this list, as this term could apply to spaces intended for coverage, such as underground connections between buildings and pedestrian connections required to be

accessible in provisions for accessible routes (206.4.3).

203.9 Employee Work Areas

Provisions for employee work areas in 203.9 require that accessible routes and accessible means of egress connect with employee work areas so that persons with disabilities can approach, enter, and exit the work area. Employee work areas are also subject to requirements that facilitate the provision of visual alarms. Specifically, employee work areas must meet accessibility requirements for:

- Circulation paths for common use within the area, except for those that are an integral part of equipment or that are located in work areas that are relatively small (*i.e.*, less than 1,000 square feet) or fully exposed to the weather (206.2.8).
- Means of egress (207.1).
- Wiring systems to support later installation of visual alarms as needed where work areas have audible fire alarm coverage (215.2).

There are limitations on the application of these requirements. Small work areas (*i.e.*, less than 300 square feet in area) that need to be elevated at least seven inches due to the function of the space are not required to comply with any of these requirements. In addition, other provisions in section 203 exempt spaces or structures that may function as work areas, such as raised areas, limited access spaces, machinery spaces, and single occupant structures (203.3 to 203.6). Circulation paths within work areas that are not fully exempt from compliance are required to comply with specifications for accessible routes, but exceptions are provided for route widths and handrails in certain instances.

This section differs from the proposed rule, which required a connecting accessible route to work areas for approach, entry, and exit, but which did not specifically address circulation paths within them or requirements for accessible means of egress. In addition, the proposed rule required visual alarms in employee work areas served by audible alarms.

Access to employee work areas was the subject of considerable discussion and a host of questions posed by the Board in the proposed rule. The issues centered on whether, and to what degree, access should be expanded within such areas. The original ADAAG required access to, but not fully within, employee work areas since title I of the ADA generally treats access for employees with disabilities as an individual accommodation handled on a case-by-case basis. Consequently, the original guidelines distinguished spaces used only as employee work areas from public use and common use spaces, which are fully subject to access requirements. In effect, requirements in ADAAG stopped at the entry to work areas by requiring only that such spaces be on an accessible route so that persons with disabilities could approach, enter, and exit the space. Maneuvering space, including wheelchair turning space, was not required within the work area, and elements within used only by employees as part of their job responsibilities were not required to be accessible. Nor was access required to individual work stations within a work area.

The ADAAG Review Advisory Committee recommended that ADAAG be changed to require an accessible route to each ''individual work station'' instead of to ''work areas.'' Other than the connecting route, work stations would not be required to be accessible. The advisory committee recommended this change for consistency with model building codes which, unlike ADAAG, do not provide a similar exception for work areas. Building and fire codes already require connecting paths of travel to work stations for purposes of emergency egress. In the advisory committee's view, this aspect of the model building codes, as well as general exceptions for equipment and other spaces in section 203, would serve to limit the overall impact of this change. Further, the requirement for an ''accessible route'' to individual work stations, as opposed to access for ''approach, entry, and exit'' to work areas, was considered clearer and more easily interpreted.

The Board, while committed to harmonizing the ADAAG requirements with the requirements of the model codes, was concerned about whether such a requirement would be workable in all employment settings. Consequently, the Board posed several questions in the proposed rule on the appropriateness and impact of requiring an accessible route to individual work stations.

Comment. Many comments addressed access to work areas. The majority of comments were from people with disabilities who supported the recommendations of the ADAAG Review Advisory Committee to require an accessible route to all individual work stations. They stated that not providing an accessible route to all work stations would limit employment opportunities, make reasonable accommodation more difficult to implement, and exclude people with disabilities from interacting with other employees while in the workplace. The Board sought comment on what obstacles people with disabilities have encountered as a result of ADAAG requiring access only to work areas and not to individual work stations (Question 1). Responses to this question generally referred to employment or reasonable accommodation of persons with disabilities being made more difficult, although specific cases or instances were not detailed. The majority of comments against providing an accessible route to individual work stations came from organizations representing the business community. These comments considered the original ADAAG requirements to be more consistent with the intent of title I of the ADA and urged that they be retained. Increased costs and design impacts associated with greater access to work areas or individual work stations were generally cited as a concern.

Response. The final rule preserves the general scope of coverage in the proposed rule and current ADAAG by applying requirements to work areas, as opposed to individual work stations. Enhanced specifications for circulation access in work areas will effectively provide access to individual work stations in various types of work areas. However, the Board has limited the requirements for circulation access to interior work areas that are 1,000 square feet or more in size in order to minimize the impact on facilities with small work areas.

Comment. The Board requested comment on the impact of requiring access to ''individual work stations'' rather than to ''employee work areas'' (Question 2). Comments provided no clear consensus on this issue. People with disabilities stated that the impact would be minimal due to requirements in the model codes, a consideration shared by the ADAAG Review Advisory Committee. They also felt that not requiring access to individual work stations would limit their employment opportunities. The business community disputed the assertion that compliance with life safety codes would achieve an accessible route in all circumstances and noted that such a requirement would severely impact many small businesses.

Response. The final rule requires that common use circulation paths within work areas satisfy requirements for accessible routes in section 402. This will facilitate accommodation of employees, while recognizing constraints posed by certain work areas, including various types of equipment within. The final rule does not require full accessibility within the work area or

to every individual work station but does require that a framework of common use circulation pathways within the work area as a whole be accessible. This provision is generally consistent, but somewhat less stringent, than the requirements in the model building codes. In addition, exceptions to certain technical requirements for route width (403.5) and ramp handrails (405.8) are provided for circulation paths in certain work areas in order to prevent design conflicts.

Comment. Information was requested in the proposed rule on specific types of individual work stations, not otherwise exempt in the guidelines, that could not be served by an accessible route (Question 3). People with disabilities generally noted that all areas of a newly constructed building should be on an accessible route. Comments from industry mentioned various types of work stations that would not easily be served by an accessible route. These included press boxes, service bays, including grease pits in automotive centers, the employee side of check-out counters, compact restaurant kitchens, spot light towers, boom and other camera positions, cocktail bars, and lighting control booths.

Response. The Board has added exceptions at 203.9 and 206.2.8 for work areas that are raised, small, exterior, or an integral part of equipment. Work areas that are less than 300 square feet that have to be elevated seven inches or more because it is essential to the space's function are exempt from provisions for work areas entirely. Other exceptions in section 203, such as those covering raised areas (203.3), limited access spaces (203.4), machinery spaces (203.5), and single occupant structures (203.6) would apply to some of the mentioned types of work stations. In addition, an exception to accessible route requirements has been provided for press boxes (206.2.7), which is further discussed below in section 206.

Comment. The Board also sought information about whether the phrase ''areas used only by employees as work areas'' has been misinterpreted or considered unclear, and if it should be clarified in the final rule to prevent misinterpretation (Question 4). People with disabilities wanted clarification that employee common use areas not used as work areas must be fully accessible and do not qualify for the limited level of access permitted for areas used only by employees as work areas. Comments from industry generally supported the interpretation of this phrase. The Board sought information about whether the term ''individual employee work stations'' is sufficiently specific or if further clarification, qualification, or definition would be needed should a requirement be added to the final guidelines. Comments provided no clear consensus on this question.

Response. ''Employee work area'' is defined as spaces or portions of spaces used only by employees for work. This definition, which has been retained in the final rule without change, notes that corridors, toilet rooms, kitchenettes, and break rooms are not employee work areas. A definition for individual employee work station has not been included as the term is not used in the final rule.

204 Protruding Objects

Few comments were received on the scoping provision for protruding objects, which remains unchanged. Exceptions developed for sport activity areas and play areas in separate rulemakings on recreation facilities and on play areas are included in the final rule (204.1 Exceptions 1 and 2).

205 Operable Parts

The guidelines require operable parts on accessible routes and in accessible rooms and spaces to be accessible. Clarification has been added that operable parts on accessible elements are required to comply as well, which is consistent with technical provisions for various types of covered elements.

In the final rule, exceptions to this provision have been added. Some have been relocated from the technical provisions for operable parts in section 309. Exceptions in 205.1 cover:

- Operable parts intended for use only by service or maintenance personnel (Exception 1).
- Electrical or communication receptacles serving a dedicated use (Exception 2).
- Certain outlets at kitchen counters (Exception 3).
- Floor electrical receptacles (Exception 4).
- HVAC diffusers (Exception 5).
- Redundant controls, other than light switches, provided for a single element (Exception 6).
- Boat securement devices (Exception 7).
- Exercise machines (Exception 8).

The proposed rule contained an exception from the technical requirement that operable parts be within accessible reach ranges (309.3). This exception applied ''where the use of special equipment dictates otherwise or where electrical and communication system receptacles are not normally intended for use by building or facility occupants.'' Since such operable parts may merit exception from some of the other technical criteria in 309, the exception has been revised to exempt such equipment generally and has been relocated to the scoping provision in section 205. The original exception has been divided in separate parts covering different types of elements: operable parts intended only for use by service or maintenance personnel (Exception 1); electrical or communication receptacles serving a dedicated use (Exception 2); and floor electrical receptacles (Exception 4).

Three exceptions derive from provisions that were specific to residential dwelling units in the proposed rule (section 1102.9). They were relocated to section 205 and made generally applicable to all types of facilities. These cover certain outlets above kitchen countertops (Exception 3); HVAC diffusers (Exception 5); and redundant controls on elements other than light switches (Exception 6). This latter exception derives from exemptions in the proposed rule for range hood controls and controls mounted on ceiling fans in residential facilities. This exception has been broadened to cover other types of redundant controls, except light switches.

Exceptions the Board developed in rulemaking on recreation facilities are included in the final rule. These exceptions permit cleats and other boat securement devices to be outside accessible reach ranges (Exception 7) and generally exempt exercise machines from requirements for controls and operating mechanisms, including reach range and operating force specifications (Exception 8).

206 Accessible Routes

This section specifies the required number of accessible routes (206.2) and their location (206.3), and addresses elements on accessible routes such as entrances (206.4), doors, doorways, and gates (206.5), platform lifts (206.7), and security barriers (206.8).

Section 206.2 specifies where accessible routes are required within a site, including their connection to accessible buildings, stories, spaces, and elements. In addition, there are provisions specific to restaurants and cafeteria dining areas, performance areas, press boxes, employee work areas, and various types of recreation facilities.

Editorial revisions made to this section include:

- Clarification that ''at least one'' accessible route is required between facilities and public streets and sidewalks, parking, passenger loading

zones, and public transportation stops (206.2.1).

• Revising the requirement for accessible routes between floor levels as applying to ''multi-story'' facilities and ''stories'' within, as opposed to ''levels,'' the term used in the proposed rule (206.2.3, including the exceptions).

• Relocation of an exception for assembly areas in 206.2.3 to 206.2.4 (Exception 2).

• Clarifying an exception for certain raised courtroom stations by adding specific references to the types of spaces covered (206.2.4 Exception 1).

• Incorporation of provisions for recreation facilities that address accessible routes to amusement rides (206.2.9), boating facilities (206.10), bowling lanes (206.11), court sports (206.12), exercise machines (206.13), fishing piers and platforms (206.14), golf facilities (206.15), miniature golf facilities (206.16), and play areas (206.17).

Substantive changes, further discussed below, include:

• Modifying the exception for an accessible route in certain public facilities (206.2.3 Exception 2).

• A new exception for mezzanines in one story buildings (206.2.4 Exception 3).

• A new exception for dining areas in sports facilities (206.2.5 Exception 3).

• Revision of the requirement for accessible routes to performance areas (206.2.6).

• A new provision and exception for press boxes (206.2.7).

• A new provision and exceptions for employee work areas (206.2.8).

Comment. Public facilities, which are defined as State and local government facilities, are permitted an exception from the requirement for access between stories (206.2.3, Exception 2). In the proposed rule, this exception pertained to public facilities that are less than three stories and are not open to the public if the level above or below the accessible level houses no more than five persons and is less than 500 square feet. Comments considered the limit based on occupant load to be sufficient and suggested that the square footage cap was unnecessary.

Response. The 500 square foot maximum was based on a floor area allowance of 100 square feet per occupant, which is consistent with model building code requirements for business and industrial occupancies used in determining the occupant load for egress purposes. The Board agrees that the maximum occupant load is an effective cap on the size of buildings eligible for this exception. The square footage specification has been removed as a criterion of this exception.

The Board has clarified requirements for vertical access to mezzanines. While elevators, where provided, must serve all stories, including mezzanines where provided, ADAAG has not been clear on whether some form of vertical access is nonetheless required to a mezzanine level where no elevator is provided, such as a one-story building. Since mezzanines are elevated at heights similar to a full story, access by ramp or certain platform lifts may not provide a practical alternative. The final rule includes an exception at 206.2.4, Exception 3 stating that an accessible route to mezzanines is not required in facilities that are not subject to the requirement for an elevator, including one story buildings and those that qualify for the elevator exemption.

Comment. Designers called attention to dining areas integrated into the seating bowl of sports venues that are tiered in order to provide adequate lines of sight. These comments pointed out that it is difficult to provide accessible routes to much of the seating in such dining areas.

Response. An exception is included in the final rule for tiered dining areas in sports facilities at 206.2.5, Exception 3. Under this exception, access is not required to all dining areas, as is otherwise required. Instead, 25% of the dining area is required to be accessible provided that accessible routes connect seating required to be accessible, and each tier is provided with the same services.

Comment. The proposed rule required that an accessible route be provided where a circulation path ''directly connects'' seating and performance areas (206.2.6). Comments recommended that the accessible route should also directly connect such spaces to provide an equivalent level of access. Otherwise, it may be possible to provide access to performance areas through a more circuitous route and still be in compliance.

Response. Clarification has been added that the accessible route ''shall directly connect the seating area with the performance area'' where a circulation path is provided to do the same. This revision will ensure that the accessible route to a performance area is comparable to the general circulation route.

Since ADAAG was first published, many questions have been received about its proper application to press boxes at various sports facilities, particularly high schools. Such structures, which can be prefabricated, are significantly elevated above ground. Some are located at the top of bleachers. As a result, their design and location have posed unique challenges to the provision of a connecting accessible route. In the final rule, the Board has addressed the concerns raised in many technical inquiries by providing an exception for press boxes at 206.2.7. Press boxes in assembly facilities are required to be on an accessible route except for certain bleacher-mounted and free-standing types. An accessible route is not required to press boxes with 500 square feet or less of aggregate space that are located on bleachers with entrances on only one level (Exception 1). Free-standing structures are exempt if they are elevated more than 12 feet and have an aggregate area that is 500 square feet or less (Exception 2).

Section 206.2.8 establishes new provisions for employee work areas. The proposed rule required such areas to be on an accessible route so that people with disabilities could approach, enter, and exit the space. In the final rule, the Board has added a requirement that common use circulation paths, where provided within employee work areas, also be accessible by meeting the requirements for accessible routes in section 402. The basis for this change is discussed above under section 203.9 (Employee Work Areas). This revision provides for greater maneuvering access within work areas but does not require elements or equipment that are part of a work station to comply with any other requirements. This requirement is limited to relatively sizable, interior work spaces. Exceptions are provided for small work areas that are less than 1,000 square feet in size (Exception 1), circulation paths that are an integral part of equipment (Exception 2), and exterior work areas that are fully exposed to the weather (Exception 3).

Section 206.4 covers entrances. Substantive changes include:

• Increasing scoping for public entrances (206.4.1).

• Removing a requirement for accessible ground floor entrances (206.4.3 in the proposed rule).

• Revision of provision for parking structure entrances (206.4.2).

Editorial changes include reordering of provisions and the addition of requirements specific to transportation facilities (206.4.4) and residential dwelling units (206.4.6) that were previously located in chapters specific to those facilities. Scoping requirements for signs at entrances have been moved to the scoping for signs at section 216.

Comment. The proposed rule specified that at least 50% of public entrances be accessible (206.4.3). Many persons with disabilities urged the

Board to increase this scoping so that they have equal access in terms of convenience, entry options, travel distances, and proximity to accessible parking. Some commenters argued that all public entrances should be accessible.

Response. The minimum number of entrances required to be accessible has been increased from 50% to 60% in the final rule. While access to all entrances is desirable, a variety of conditions on a site can make access to every entrance difficult and costly. For example, facilities located on steep hillsides may have entrances elevated significantly above grade. However, this consideration, in the Board's view, is not as relevant to connections from parking structures. In final rule, the Board has required all pedestrian connections between parking structures and facility entrances to be accessible (206.4.2). This represents an increase from the proposed rule, which required only one to be accessible.

Comment. The proposed rule required that at least one accessible entrance be a ground floor entrance (206.4.3). Commenters recommended that this stipulation be removed since the ground floor may not always be the primary floor. In such conditions, the provision would not enhance accessibility.

Response. The requirement that at least one accessible entrance be a ground floor entrance has been removed in the final rule.

Comment. Section 206.4.2 covers access to pedestrian connections between parking structures and facility entrances. In the proposed rule, this requirement referred to ''parking garages.'' Comments considered that term to be too narrow and recommended alternatives such as ''parking facilities.''

Response. The reference to ''parking garage'' has been changed to ''parking structure'' in the final rule.

Section 206.5 provides scoping requirements for doors, doorways, and gates. Revisions include:

- Clarification of a provision covering doors and doorways in inaccessible transient lodging guest rooms in section 206.5.3 (located at 224.1.2 in the proposed rule).
- Addition of a new exception from this requirement for shower and sauna doors (206.5.3, Exception).

This section also includes a provision for doors and doorways in residential dwelling units (206.5.4) that has been relocated from Chapter 11.

Comment. In transient lodging facilities, doors and doorways in inaccessible guest rooms are required to provide a clear width of at least 32 inches. This specification stems from the original ADAAG and is intended to afford some access to inaccessible guest rooms for visitation purposes. Clarification was requested on which types of doors this is intended to cover and whether it applies to shower doors.

Response. In the final rule, clarification has been added in 206.5.3 that the 32 inch minimum clearance applies to those doors ''providing user passage'' into and within guest rooms not required to be accessible. In addition, the Board has added an exception that exempts shower and sauna doors in inaccessible guest rooms from this requirement. Corresponding changes have been made to a similar provision in the scoping section for transient lodging facilities (224.1.2).

Scoping requirements for elevators in section 206.6 reference technical criteria for standard passenger elevators, destination-oriented elevators, existing elevators that are altered, limited-use/limited-application (LULA) elevators, and private residence elevators. Destination-oriented elevators are different from typical elevators in that they provide a means of indicating the desired floor at the location of the call button, usually through a key pad, instead of a control panel inside the car. Responding cars are programmed for maximum efficiency by reducing the number of stops any passenger experiences. Limited-use/limited-application (LULA) elevators are typically smaller and slower than other passenger elevators and are used for low-traffic, low-rise installations, including residential facilities.

Scoping provisions have been editorially revised to correspond to reorganized technical criteria in Chapter 4. Specifically, requirements for destination-oriented elevators and altered elevators have been integrated into the specifications for standard elevators (407). LULA elevators (408) and private residence elevators (409) are addressed in separate sections since their specifications vary considerably from the other elevator types. Scoping for private residence elevators (206.6, Exception 2) has been relocated from Chapter 11.

Section 206.6 requires each passenger elevator to comply with the requirements for standard elevators or destination-oriented elevators. LULA elevators are permitted in those facilities that are exempt from the requirement for an elevator (206.6 Exception 1).

Comment. Industry, facility operators, designers and some disability groups strongly supported LULA elevators as an alternative where a standard elevator is not required. Some comments from persons with disabilities opposed allowing use of LULA elevators over concern about their size and accessibility.

Response. The ADA's statutory language exempts certain facilities from the requirement for an elevator. The Board has retained the exception permitting LULA elevators, since it offers a more economical alternative than a standard elevator and thus may help encourage inclusion of some vertical access where none is mandated. The technical criteria for LULA elevators specify minimum car sizes that ensure adequate accessibility. In addition, the Board has revised the exception to also allow LULA elevators as an alternative to platform lifts, since such elevators provide an equivalent, if not greater, degree of access.

Comment. The guidelines provide an exception for private sector facilities based on the number of stories or the square footage per floor (206.2.3, Exception 1). A much narrower exception is permitted for State and local government facilities (206.2.3, Exception 2). The Board sought comment on whether LULA elevators should be allowed instead of a standard elevator in certain small State or local government facilities. There were few comments in response to this question.

Response. No changes have been made regarding LULA elevators that are specific to State and local government facilities. Any facility, regardless of whether it is a public or private facility, may be equipped with a LULA elevator if is not required to have an elevator. LULA elevators may also be used as a substitute for platform lifts.

Comment. The guidelines require that when one elevator is altered, the same alteration has to be carried out for all elevators programmed to respond to the same hall call control (206.6.1). Commenters opposed this requirement as excessive and argued that it goes beyond the potential scope of an elevator alteration. Generally under the guidelines, the requirements apply only to the element to be altered and not those outside the intended scope of work (except for alterations to primary function areas and the requirement for accessible paths of travel).

Response. This provision is unique in requiring an alteration to be replicated to corresponding elements (elevator cars) because it addresses an equally unique circumstance. Elevator users typically do not control which elevator will respond to a call. If one car is altered and as a result made accessible, it would make continuous access on that elevator a game of chance, with the

odds higher for each additional car responding to the call that is not similarly altered.

Section 206.7 specifies where platform lifts can be installed. In new construction, platform lifts are permitted as a means of vertical access to certain spaces, including performance areas and speakers' platforms (206.7.1), wheelchair spaces in assembly areas (206.7.2), incidental spaces not open to the public that house no more than five persons (206.7.3), and various work spaces in courtrooms (206.7.4). In the final rule, provisions have been added that permit platform lifts where exterior site constraints make installation of a ramp or elevator infeasible (206.7.5) and in residential dwelling units and transient lodging guest rooms (206.7.6). Also included in the final rule are provisions developed in separate rulemakings on recreation and play facilities that permit platforms lifts to be used to provide access to amusement rides (206.7.7), play equipment and structures (206.7.8), team or player seating areas in sports facilities (206.7.9), and boating facilities, fishing piers, and fishing platforms (206.7.10).

Comment. Comments suggested that the guidelines use the industry term ''platform lifts'' instead of ''wheelchair (platform) lifts.'' The recommended term does not suggest that such platforms are limited to people who use wheelchairs.

Response. The term ''wheelchair (platform) lifts'' has been replaced with ''platform lifts'' throughout the document.

Comment. Original ADAAG allowed use of platform lifts where ramps or lifts are infeasible due to existing site constraints (4.1.3(5), Exception 4(d)). This provision was not included in the proposed rule as it was considered unwarranted in new construction. Strong support was expressed for reinstating this exception, particularly among industry. These comments referred to conditions that could pose significant challenges to access in new construction.

Response. The provision for existing site constraints has been reinserted in the final rule at section 206.7.5. It is intended to apply to instances where exterior site constraints posed by the topography make ramp or elevator access infeasible. Although the triggering condition (site constraints) must be exterior, the permitted platform lift may in fact be located in the interior of a building. This clarification is provided in an advisory note to this provision.

Section 206.7.6 permits platform lifts in residential dwelling units and transient lodging guest rooms. The Board included this provision in the final rule since it considers lift access appropriate in such spaces.

Section 206.8 requires that an accessible route or accessible means of egress be maintained where security barriers or check points are provided. It also requires that people with disabilities be able to maintain visual contact with their personal items to the same extent afforded others passing through barriers.

Comment. The proposed rule specified that people with disabilities be able to maintain visual contact with their personal belongings while ''passing though'' security barriers. Comments stated that the maintenance of visual contact should be ensured from the accessible route, which may not coincide with the route through barriers.

Response. Clarification has been added that ''the accessible route shall permit persons with disabilities passing around security barriers to maintain visual contact with their personal items to the same extent provided others passing through the security barrier.''

207 Accessible Means of Egress

Provisions for accessible means of egress are completely revised in the final rule. Provisions in the proposed rule were intended to be more consistent with model building codes and standards. In the final rule, the Board has taken this a step further by directly referencing the scoping and technical requirements in the International Building Code (IBC) for accessible means of egress. All technical criteria for accessible means of egress (409), including areas of refuge (410) have been removed in the final rule. Information on the IBC requirements for accessible means of egress is available on the Board's website at www.access-board.gov and in advisory notes.

The proposed rule, consistent with model building codes and standards, specified at least one accessible means of egress for all accessible spaces and at least two accessible means of egress where more than one means of egress was required. In addition, it provided a new requirement for an evacuation elevator to be provided as an accessible means of egress in buildings with four or more stories above or below the exit discharge level, which is also consistent with model building codes.

The proposed scoping provisions referenced technical criteria for accessible means of egress, including exit stairways and evacuation elevators (409). These specifications allowed use of exit stairways and elevators that are part of an accessible means of egress when provided in conjunction with horizontal exits or areas of refuge. While typical elevators are not designed to be used during an emergency evacuation, there are elevators that are designed with standby power and other features in accordance with the elevator safety standard that can be used for evacuation. The proposed rule also provided requirements for areas of refuge, which are fire-rated spaces on levels above or below the exit discharge levels where people unable to use stairs can go to register a call for evacuation assistance and wait for it.

Comment. Many comments supported the Board's overall effort to harmonize its guidelines with model building codes and life safety codes. Some considered this particularly important in specifications related to life and fire safety. To further underscore this effort, it was recommended that the Board directly rely on the International Building Code (IBC) in addressing accessible means of egress.

Response. Historically, the Board's guidelines have ''piggybacked'' model building and life safety codes in addressing accessible means of egress, particularly for scoping purposes. The required number was specified according to the number of means of egress or exits required by model building codes. The IBC's scoping and technical requirements for accessible means of egress are substantively consistent with the provisions contained in the proposed rule. For purposes of harmonization and simplicity, the Board has replaced these provisions with a reference in section 207.1 to a specific section of the IBC (1003.2.13 in the 2000 edition and 1007 in the 2003 edition).

Comment. In response to the draft final guidelines, the National Fire Protection Association (NFPA) urged the Board to reference its Life Safety Code (NFPA 101), a voluntary consensus code which contains scoping and technical provisions for accessible means of egress. NFPA requested that the final guidelines reference the 2000 edition of the Life Safety Code in addition to the IBC provisions for accessible means of egress.

Response. Requirements for accessible means of egress in the IBC are consistent with those the Board has proposed. Further, they are provided in the IBC in a discrete section (1003.2.13), which the final guidelines specifically reference. Specifications for accessible means of egress in the Life Safety Code are provided throughout that document. Consequently, NFPA's request would require a reference to the complete Life

Safety Code. For this reason, the Board has retained its references to the IBC for accessible means of egress. The final guidelines do reference NFPA's National Fire Alarm Code (NFPA 72–1999) with respect to technical requirements for visual alarms, further discussed below in section 702.

The Board had considered adding a provision, which was included in the draft of the final guidelines, that would have required accessible means of egress to be connected to the level of exit discharge by an accessible route. This would have been required except where the floor level is 30 inches or more above or below the level of exit discharge. In such cases, areas of rescue assistance would have been permitted in lieu of an accessible route to the level of exit discharge. The Board sought to incorporate a similar provision into the IBC. The IBC Committee on Means of Egress did not approve adding such a provision into the IBC. The IBC Committee and others believed that the rationale for areas of rescue assistance was relevant not just to the levels above and below the exit discharge level, but also to the level of exit discharge itself. The Board's provision recognized elevation differentials that would make connection by an accessible route very difficult even in new construction. This recognition, it was argued, should not be limited by a specific elevation change (*i.e.*, 30 inches). For purposes of harmonization, the Board has removed this provision in the final rule.

Comment. Comments suggested that situations should be addressed where accessible means of egress should be allowed to coincide, such as a space that provides few wheelchair spaces.

Response. The final rule includes an exception acknowledging that accessible means of egress can share a common path of egress travel where this is permitted for means of egress by local building or life safety codes (207.1, Exception 1).

In addition, the Board has retained in the final rule an exemption for detention and correctional facilities from the requirement for areas of refuge (Exception 2). This exception was provided because such areas are considered a security risk and evacuation is typically supervised in these types of occupancies.

The Board has added a new provision specific to platform lifts. The proposed rule allowed accessible routes to serve as accessible means of egress, except for wheelchair lifts, which are not permitted as part of an accessible means of egress because they are not generally provided with standby power that would allow them to remain functional in emergencies when power is lost. The final rule includes a provision that allows platform lifts with standby power to be part of an accessible means of egress where the IBC permits lift access (207.2). This change helps ensure that necessary accessible means of egress from spaces served by platform lifts are maintained in emergencies.

208 Parking Spaces

Section 208 specifies the minimum number of parking spaces required to be accessible. In general, required access is determined by a sliding scale based on the total number of spaces provided (Table 208.2). This section includes scoping requirements specific to hospital outpatient facilities (208.2.1), rehabilitation facilities and outpatient physical therapy facilities (208.2.2), residential facilities (208.2.3), and van spaces (208.2.4). Changes made in the final rule include:

- Removing an exception for ''motor pools'' (208.1, Exception).
- Clarifying scoping, including where multiple parking facilities are provided on a site (208.2).
- Clarifying requirements for parking at residential facilities (208.2.3).
- Increasing the portion of accessible spaces that accommodate vans (208.2.4).
- Relocation of requirements for signage to the scoping section on signs (216.5).

Section 208.1 exempts spaces used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles, and vehicular impound where public access lots are provided with accessible passenger loading zones. The proposed rule included in this list a reference to ''motor pools,'' which the Board has removed in the final rule.

Comment. The scoping table in the proposed rule specified the minimum number based on the total number of parking spaces provided in a parking lot. Commenters indicated that this term could be construed as applying only to surface lots, even though the requirement is intended to apply to parking garages and other types of parking structures as well.

Response. The Board has replaced the references to ''parking lots'' with the term ''parking facility,'' which is more inclusive of the various types of parking covered by this section.

Comment. Persons with disabilities urged an increase in the number of parking spaces required to be accessible. Other commenters, including those representing facility operators, asked for a reduction in this number because existing accessible spaces are believed to be underutilized. Comments also opposed basing scoping on the number of spaces provided at each facility instead of the total number provided on a site, which further serves to inflate the required number of accessible spaces.

Response. Scoping for accessible parking spaces (excluding the portion required to be van accessible) has not been changed in the final rule. A strong difference of opinion exists between those who use such spaces and those who must provide or maintain them. There was no clear consensus among commenters on either side of this issue on an alternative scoping level. Additionally, the final rule preserves the application of scoping on a facility-by-facility basis instead of on the total number provided on a site, consistent with the original ADAAG and the proposed rule. Clarification to this effect that was provided in an advisory note in the proposed rule has been added to the text of the requirement in 208.2.

Parking at residential facilities is addressed in section 208.2.3. Where parking spaces are provided for each dwelling unit, at least one parking space for each accessible dwelling unit is required to be accessible (208.2.3.1). The Board has clarified this provision to apply ''where at least one parking space is provided for each dwelling unit.'' At least 2% of any additional spaces, where provided, are required to be accessible as well (208.2.3.2). The Board has amended requirements for guest parking (208.2.3.3) to include employee spaces, which is consistent with the basic scoping provision applying generally to all facility types in 208.2.

Comment. Section 208.2.4 covers van accessible spaces. The proposed rule specified that one of every eight accessible spaces, or fraction thereof, be designed to accommodate vans. Technical specifications for van spaces provide for a wider access aisle to better accommodate lift-equipped vehicles. Many comments considered this number to be wholly insufficient. People with disabilities who use vans reported difficulty finding available van spaces which, when provided, are too often already occupied. Recommended alternate scoping levels varied, though some urged that all accessible spaces be van accessible.

Response. The final rule has been revised to require one van space for every six accessible spaces, or fraction thereof. This change does not increase the total number of parking spaces required to be accessible, but instead increases the portion of such spaces that must be accessible to vans. The Board made this change due to several factors. In addition to the response from commenters, anecdotal information clearly suggests that the use of vans by

persons with disabilities is on the rise. In addition, the Board is aware of other entities, such as the State of Maryland, that have responded to this demand for more van spaces by doubling the required number. Another consideration is that van spaces are not designated or reserved exclusively for vans; their use by people who do not drive vans can impact their availability among accessible spaces. The primary difference between van spaces and standard accessible spaces is an additional three feet of aisle width. The technical specifications permit the additional space to be provided in either the aisle or the space. The Board believes that the impact of this change is lessened by technical requirements that allow two accessible spaces, including van spaces, to share the same aisle.

The requirement for van spaces applies to all types of facilities, including those that are the subject of special provisions, such as hospital outpatient facilities (208.2.1), rehabilitation and physical therapy facilities (208.2.2), and residential facilities (208.2.3). In the proposed rule, the reference to rehabilitation and physical outpatient therapy facilities covered in 208.2.2 was inadvertently omitted. This reference has been restored in the final rule.

Section 208.3 specifies the location of accessible parking spaces. This section has been edited to clarify:

- The location of accessible spaces generally (208.3.1).
- That an exception allowing van spaces to be clustered applies to ''multi-story'' parking facilities (208.3.1, Exception 1).
- That ''substantially equivalent'' or greater access in terms of travel distance, parking fee, and user cost and convenience is the basis upon which accessible spaces can be located in one facility instead of another (208.3.1, Exception 2).
- That accessible parking serving individual residential dwelling units must be located on the shortest accessible route to the units they serve (208.3.2).

Comment. Spaces can be located in other lots where equal or greater access would result in terms of travel distance, user cost, and convenience (208.3.1, Exception 2). Comments requested clarification of the terms ''user cost'' and ''user convenience.''

Response. In the final rule, the Board has replaced the reference to ''user cost'' with ''parking fee'' which it considered more descriptive. Under this exception, accessible spaces can be located in one parking facility instead of another so long as this does not result in higher parking fees. The Board has clarified the term ''user convenience'' in a new advisory note.

209 Passenger Loading Zones and Bus Stops

In general, at least one accessible passenger loading zone is required for every 100 linear feet of loading zone space provided (209.2.1). Additional requirements address bus loading zones and bus stops (209.2.2 and 209.2.3), medical and long-term care facilities (209.3), valet parking (209.4), and mechanical access parking garages (209.5). Revisions have been made to:

- Clarify the basic scoping provision (209.2.1).
- Integrate requirements for bus loading zones and bus stops previously located in a separate chapter covering transportation facilities (209.2.2 and 209.2.3).
- Modify provisions specific to medical care and long-term care facilities (209.3).
- Address mechanical access parking garages (209.5).

An accessible passenger loading zone is required for every 100 linear feet of loading zone space provided. The Board has clarified in the final rule that this applies to ''fractions'' of this amount as well, which is consistent with the intent of this provision as proposed.

The proposed rule addressed bus loading areas and bus stops in Chapter 10 (section 1002.2), which covered transportation facilities. With the integration of this chapter into the preceding chapters, the provisions for bus loading zones and bus stops have been incorporated into the general scoping provisions for passenger loading zones. This reorganization helps clarify that while these areas function as passenger loading zones, they are subject to different technical criteria. No substantive changes have been made to these requirements as part of this reorganization.

Comment. Accessible passenger loading zones are required at licensed medical care and licensed long-term care facilities. The scope of this requirement was not clear to commenters who asked whether the reference to medical care facilities included doctors' and dentists' offices, clinics, and similar types of health care facilities.

Response. The Board did not intend this provision to apply to medical facilities that do not generally provide overnight stay. In the final rule, this requirement is limited to those medical and long-term care facilities where the period of stay may exceed 24 hours. This change is consistent with original ADAAG's use of the term ''medical care facility'' and corresponds with a similar revision made to scoping provisions for patient bedrooms in such facilities in section 223. In addition, the Board has clarified that this provision applies only to long-term care facilities that are licensed.

Comment. It was recommended that the guidelines address mechanical conveyances used to elevate vehicles to different levels of parking facilities. Comments pointed out that model building codes cover facilities providing these vehicle lifting devices.

Response. The final rule includes a provision for ''mechanical access parking garages'' that requires accessible passenger loading zones at the vehicle drop-off and pick-up areas. This requirement is consistent with model building codes.

210 Stairways

Stairs that are part of a means of egress are required to comply with the guidelines (210.1). Exceptions are provided for certain stairs in detention and correctional facilities and altered stairs. The final rule modifies the exception for altered stairs (Exception 2), adds a new exception for aisle stairs in assembly areas (Exception 3), and incorporates an exception for play components developed in previous rulemaking on play areas (Exception 4).

Comment. In altered facilities, stairs serving levels that are connected by an accessible route do not have to comply, but must be equipped with complying handrails. Comments indicated that this requirement should apply only where an alteration affects stairs. Otherwise, the requirement for complying handrails should not apply.

Response. The requirement for complying handrails was intended to apply only where stairs are modified or replaced as part of an alteration. Clarification has been added in the final rule that the requirement for complying handrails applies ''when the stairs are altered.''

Comment. The International Building Code and other model building codes provide various exceptions for stairs in assembly areas to permit design features used to accommodate sight lines. Such features include unique riser and tread dimensions and handrail configurations. Comments indicated that an exception should similarly be provided in the guidelines to avoid conflict with model building codes.

Response. The final rule exempts aisle stairs in assembly areas from the requirements for stairs.

211 Drinking Fountains

In addressing drinking fountains, the guidelines cover access for people who use wheelchairs and access for standing persons who may have difficulty bending or stooping. Where provided, 50% of drinking fountains are required to be wheelchair accessible and 50% are required to be accessible to standing persons (with rounding up or down permitted in the case of odd numbers). Generally, this requires at least two units in order to provide such access. However, single units that provide dual access, such as those equipped with two spouts or combination high-low types, can substitute for two separate units. Scoping requirements apply where drinking fountains are provided on exterior sites, on floors, and within secured areas.

This section has been editorially revised for clarity and substantively revised in several respects:

- References to ''water coolers'' have been removed (211).
- The application of scoping to exterior sites has been clarified (211.1).
- An exemption for secured areas in detention and correctional facilities has been added (211.1, Exception).

The proposed rule scoped both drinking fountains and water coolers. The term ''water coolers'' typically refers to units that are either identical to drinking fountains or to furnishings that are not fixed or plumbed. The reference to water coolers was removed.

Comment. Many comments considered this section unduly complicated and obscure in potentially requiring at least two units where drinking fountains are provided. Commenters also opposed specific recognition of ''high-low'' units as an alternative to two separate units since other types, such as single bowl units with two spouts, are commercially available.

Response. Section 211 has been editorially revised to enhance clarity. Section 211.2 now states that ''no fewer than two drinking fountains shall be provided'' with one being wheelchair accessible and the other designed to accommodate people who have difficulty bending or stooping. Single units that provide both types of access are permitted as an alternative to multiple installations (211.2 Exception). Where fractions result (*i.e.*, provision of an odd number of units), rounding up or down is permitted.

In the final rule, scoping has been clarified as applying to units provided at ''exterior sites,'' in addition to those installed on floors. For example, if drinking fountains are provided outside a building and on each of its floors, then dual access must be provided at exterior locations and on each floor. If drinking fountains are provided on one floor only, then the requirement for dual access would apply only to that floor.

Scoping is also applied to ensure dual access in secured areas of facilities, such as prisons and jails since circulation among occupants may be restricted to such an area. In the proposed rule, technical criteria applicable to detention and correctional facilities required wheelchair access to drinking fountains serving accessible housing or holding cells (section 807.2.4 in the proposed rule). However, the basic scoping in section 211 would have applied equally to detention and correctional facilities, including the requirement for units designed to accommodate people who have difficulty bending or stooping. In the final rule, an exception has been added to clarify that drinking fountains serving inaccessible cells only are not required to be accessible (211.1, Exception). Those units that serve accessible cells are required to be accessible as required in section 211.

212 Sinks, Kitchens, and Kitchenettes

Scoping provisions in section 212 require access to kitchens and kitchenettes, where provided. Where sinks are provided in each accessible room or space, at least 5% of each type, but no less than one, must be accessible, except for mop or service sinks, which are exempt.

Comment. In the proposed rule, this scoping section referenced ''wet bars'' along with kitchens and kitchenettes. Comments, including those representing the hotel and motel industry, considered this reference to be unnecessary since such elements are adequately covered through references to kitchenettes and sinks. The term ''wet bar'' could pose a source of confusion since the guidelines do not provide a definition or specific technical criteria for such elements.

Response. The reference to ''wet bars'' has been removed in the final rule.

The proposed rule provided several exceptions which clarified that access to kitchens and kitchenettes is not required in inaccessible medical care patient rooms, transient lodging guest rooms, dwelling units, or housing cells (212.1.1, Exceptions 1 though 4). These exceptions have been removed as unnecessary since scoping elsewhere in Chapter 2 indicates the number of rooms, units, and cells required to be accessible. Those not scoped are not required to be accessible. Thus, none of the provisions in the guidelines, including those for kitchens, would apply to rooms, units, and cells not required to be accessible, unless otherwise indicated.

213 Toilet Facilities and Bathing Facilities

Section 213 covers access to toilet and bathing facilities, including elements and fixtures they contain. Access is required where toilet and bathing facilities are provided, though exceptions are provided for certain altered facilities, including qualified historic facilities, single user rooms, and portable units clustered at a single location (213.2, Exceptions 1 through 4).

Substantive changes include an increase in the number of toilet rooms clustered at a single location required to be accessible and revision of criteria for unisex toilet and bathing rooms.

Comment. Where single user toilet rooms are clustered at a single location, not all are required to be accessible (213.2, Exception 4). In the proposed rule, this exception specified access to at least 5% of such toilet rooms. This reduced scoping was limited to those toilet rooms containing fixtures provided in excess of the number required by the local plumbing or building code. Comments from people with disabilities strongly opposed this reduction in access from the original ADAAG, which required all to be accessible. Commenters felt that this would severely limit choice and availability of accessible toilet rooms at such locations. Some urged that all toilet rooms clustered at a location should be required to be accessible.

Response. The exception has been modified to allow only half of the toilet rooms clustered at a single location to be inaccessible. This will enhance choice and availability of accessible toilet rooms while still providing a considerable reduction in the amount required to be accessible relative to the original ADAAG. As revised in the final rule, this scoping is not limited to situations where the fixture count required by the local plumbing or building code is exceeded. Thus, the 50% scoping would apply across the board to facilities clustered at a single location without regard to the required fixture count. The Board made this change in order to facilitate compliance.

Comment. Comments advised revising requirements for unisex toilet and bathing rooms for greater consistency with model building codes. Recommendations also noted that unisex facilities are also referred to as ''single use'' or ''family'' toilet and bathing rooms in some codes.

Response. The requirements for unisex facilities have been revised

according to specifications in the model building codes (213.2.1). Unisex toilet rooms must have a lavatory and privacy latch and cannot have more than two toileting fixtures (*i.e.*, two water closets, or one water closet and one urinal). This differs from the proposed rule which required unisex toilet rooms to have one water closet. Unisex bathrooms must have a lavatory, water closet, privacy latch, and one shower, and may have a tub in addition to a shower. The proposed rule permitted either a shower or tub. The final rule also includes a reference indicating that unisex toilet and bathing rooms are also known as ''single use or family'' facilities.

Editorial revisions made to the scoping provisions for toilet and bathing facilities include:

• Clarification of the requirement that toilet and bathing facilities be provided on an accessible story in facilities exempt from the requirement for an elevator where toilet and bathing facilities are provided (213.1).

• Relocation of requirements for signs (213.2.2 in the proposed rule) to the signage scoping section (216.8).

• Removal of exceptions for toilet and bathing rooms serving inaccessible patient rooms, guest rooms, dwelling units, and cells (213.2, Exceptions 5 through 8 in the proposed rule).

The proposed rule provided several exceptions which clarified that access is not required to toilet and bathing facilities serving inaccessible medical care patient rooms, transient lodging guest rooms, dwelling units, or prison and jail cells (213.2, Exceptions 5 through 8). Similar to corresponding exceptions for kitchens and kitchenettes in 212, these exceptions have been removed as unnecessary since scoping elsewhere in Chapter 2 indicates the number of rooms, units, and cells required to be accessible. Those not scoped are not required to be accessible, including toilet and bathing facilities serving them.

Section 213.3 addresses plumbed fixtures and accessories. Substantive changes have been made to scoping provisions for ambulatory accessible toilet compartments (213.3.1) and urinals (213.3.3).

Comment. The proposed rule, consistent with the original ADAAG, required that access for people who are ambulatory be provided, in addition to wheelchair accessible compartments, in toilet rooms with six or more toilet compartments. Ambulatory accessible stalls feature parallel grab bars on both sides and a self-closing door and are designed to accommodate people who may have difficulty walking, sitting, or rising. Comments pointed to a disparity in the application of this requirement between men's and women's rooms since the provision is triggered by the number of compartments without taking into account urinals. The number of toilet compartments in a men's rooms may be lower than in a women's rooms due to the provision of urinals.

Response. The requirement for ambulatory accessible compartments has been revised so that it applies equitably between men's and women's rooms (213.3.1). The provision has been modified to apply where six or more toilet compartments are provided or where ''the combination of urinals and water closets totals six or more fixtures.''

Comment. Where urinals are provided, the proposed rule specified at least one to be accessible. Comments, particularly those from industry, urged that this requirement be removed. Some comments questioned the degree to which men with disabilities use or prefer urinals over water closets. Several comments indicated that some building codes have been revised to permit stall-type urinals, which can facilitate the emptying of leg bags.

Response. The Board believes that access to urinals should be required to preserve a degree of choice in the type of toilet fixtures available. However, the scoping requirement has been revised to apply where more than one urinal is provided. Thus, accessible urinals are not required in toilet rooms equipped with one urinal.

Editorial changes made to scoping provisions in 213.3 for plumbed fixtures and accessories include:

• Removing as unnecessary the distinction between toilet compartments and toilet rooms in scoping accessible water closets (213.3.1, 213.3.2).

• Clarifying the prohibition on accessible lavatories being placed in toilet compartments (213.3.4).

• Removing references to operable parts dispensers, and receptacles, as such elements are generally covered by scoping in 205 (213.3.6 in the proposed rule).

• Relocation and modification of a scoping provision for coat hooks and shelves in toilet and bathing rooms and toilet compartments (213.3.7).

Comment. At least one accessible lavatory is required in toilet and bathing rooms. This required accessible lavatory cannot be located in a toilet compartment. Comments agreed with this provision, but requested that it be restated more clearly in the final rule.

Response. The provision has been revised for purposes of clarity to state that where lavatories are provided, at least one shall be accessible ''and shall not be located in a toilet compartment.''

Section 213.3.7 addresses coat hooks and shelves provided in accessible toilet rooms, toilet compartments, and bathing facilities and references corresponding technical criteria for such elements in these spaces. This provision has been relocated for clarity from the scoping section covering storage (208). In the proposed rule, this provision at 228.4 required such access only if coat hooks and shelves were provided in inaccessible toilet rooms or toilet compartments. This has been revised in the final rule as applying where such elements are provided without regard to inaccessible rooms and compartments.

214 Washing Machines and Clothes Dryers

No substantive changes have been made to scoping requirements for washing machines and clothes dryers. Editorial changes made to this section include changing the section's title from ''Laundry Equipment'' to ''Washing Machines and Clothes Dryers'' for consistency with the references used in the scoping provisions.

215 Fire Alarm Systems

Section 215 covers fire alarms, which are required to comply where audible fire alarms are provided. Provisions are included that are specific to public use and common use areas (215.2), work areas (215.3), transient lodging guest rooms (215.4), and residential dwelling units (215.5).

Substantive changes made in the final rule concern existing facilities, work areas, and other types of emergency alarm systems. Editorial changes include the addition of references to transient lodging facilities and residential dwelling units, which are subject to specific requirements for fire alarms in other scoping provisions in sections 224 and 233, respectively.

Fire alarm systems required to be accessible must have visual appliances which serve people who are deaf or hard of hearing. The advisory committee had recommended an exception that would require visual appliances in alterations only where a fire alarm system is upgraded or replaced or a new system installed. Such an exception would recognize that fire alarms are often complex building-wide systems that cannot necessarily be brought into compliance with requirements for visual appliances on a piecemeal basis. The Board had not included this exception in the proposed rule because it considered the basic application provisions for alterations in section 202.3 to be sufficient. In general, these

provisions apply requirements of the guidelines according to the scope of an alteration to the degree that compliance is ''technically feasible.'' The Board has reconsidered this decision and has included an exception in the final rule for consistency with the International Building Code and the National Fire Protection Association code (NFPA 72). The exception clarifies that alterations affecting fire alarm systems partially, or in a limited manner, do not trigger requirements for visual appliances (215.1, Exception). However, alterations that involve the upgrade or replacement of an existing alarm system or the installation of a new system are subject to the requirements for visual alarms.

The Board intends the exception at 215.1 to be applied in the same manner and to have the same meaning as is common practice in a similar exception provided in the model codes upon which this exception is based. Upgrades to the fire alarm system are changes to the system infrastructure and are not changes to individual system components. For example, replacing the main fire alarm control panel which permits fire alarms to be better integrated with other building systems or with off-site monitoring services would be considered an upgrade to the fire alarm system. In addition, replacing or increasing the main power supply to the fire alarms would be an upgrade to the fire alarm system. However, adding or relocating individual visible or audible notification devices is not an upgrade to the system.

Comment. The proposed rule included a requirement for visual alarms in employee work areas that are served by audible alarms (203.3). Employee work areas are exempt from most other requirements in the guidelines under an exception at 203.9. In order to gauge the impact of this requirement, the Board posed several questions that sought comment on: how frequently alarm systems are typically replaced or upgraded in such a manner that the requirement would be triggered in existing facilities (Question 5), other alternatives that would provide a comparable level of life safety for employees who are deaf or hard of hearing (Question 6), and limiting the number of visual appliances for the benefit of people who have photosensitive epilepsy (Question 7). Comments indicated that alarm systems are typically replaced on a 10–15 year cycle. However, some indicated that the electrical service supporting the alarms is not necessarily replaced or upgraded when alarms systems are, which may preclude opportunities to easily add more appliances to the system as part of the work. Responses on alternative methods included low tech suggestions such as pagers, a buddy system, and other solutions that involve non-fixed elements or operational methods and are thus outside the scope of these guidelines. Many people who have photosensitive epilepsy and organizations representing them acknowledged that visual alarms are necessary in public use and common use areas but urged the Board to treat employee work areas differently. These commenters expressed concern that visual appliances in employee work areas could pose barriers to the employment of people who have photosensitive epilepsy. Activation of visual appliances in work areas on an as-needed basis does not provide a practicable solution as most codes, standards, and local laws prohibit deactivation of fire alarm appliances.

Response. The Board has removed the requirement for visual alarms in employee work areas. Instead, the final rule only requires that work areas be designed so that compliant visual appliances can be integrated into the alarm system (215.3). This provision, which applies only where work areas have audible alarm coverage, will facilitate accommodation of employees who are deaf or hard of hearing as required under title I of the ADA. The specification does not require electrical service to support wiring for visual appliances throughout all employee work areas. The specification merely requires that the wiring be placed so that it can be tapped into from the location of employee work areas. The Board believes that the surplus electrical service typically provided should be sufficient for the incidental installation of visual alarms.

Comment. The Board proposed covering facility alarm systems (other than fire alarm systems) that do not instruct occupants to evacuate the facility but provide other warning information, such as those used for tornado warnings and other emergencies. The proposed requirement (215.2 in the proposed rule) specified audible and visible signals but did not reference any specific technical criteria, including any addressing placement or photometric characteristics. Instead, the Board sought comment on what these characteristics should be, particularly where differentiation from fire alarm system signals is important (Question 9). Many commenters supported ensuring that such alarm systems are accessible to people who are deaf or hard of hearing, but no information was received on appropriate technical specifications for guidelines that are national in scope.

Response. The scoping requirement for other types of alarms has been removed in the final rule. The Board did not want to scope an element absent reliable technical specifications. The Board will consider bringing this matter to the attention of international model codes and standards organizations in the future.

216 Signs

Scoping requirements for signs cover room designations (216.2) and directional and informational signs (216.3). The guidelines also include provisions specific to certain elements and spaces, including parking, entrances, means of egress, and toilet and bathing rooms. In the proposed rule, these requirements were located at the scoping or technical sections covering the elements and spaces. In the final rule, all scoping requirements specific to signs have been localized in section 216.

Section 216.1 exempts certain types of signs, including building directories, menus, building names, temporary signs, and signs provided in non-public use spaces of prisons and jails. In the proposed rule, these exceptions were listed separately among provisions for room designations and directional or informational signs. For simplicity, they have been relocated as exceptions to the general scoping provision (216.1) which exempts them from this section entirely. In addition, the final rule includes new exceptions for:

- Seat and row designations in assembly areas (Exception 1).
- Occupant names (Exception 1).
- Company names and logos (Exception 1).
- Signs in parking facilities (Exception 2).

The Board included exceptions for occupant names, and company names and logos, which is consistent with its interpretation of the original ADAAG provisions and the intent of the proposed rule. These added exceptions clarify that the names of stores in shopping malls, building names, and similar types of signs are exempt from these requirements. A new exception exempts signs in parking facilities from compliance with the signage provisions of section 216 except those covering means of egress (216.4) and designation of accessible parking spaces (216.5).

Comment. Commenters requested that seat and row designations in assembly areas be exempt from the requirements for signage. It was also suggested that an exemption be provided for signs in

parking facilities which are intended for use by vehicle drivers.

Response. An exception has been included in the final rule for seat and row designations and signs in parking facilities.

Comment. Comments requested clarification on what constitutes a ''temporary'' sign.

Response. The Board has interpreted this reference, which is included in the original ADAAG, as pertaining to signs that are posted for a short duration. For greater clarity, the Board has described temporary as ''seven days or less'' in the final rule.

Section 216.2 covers designations of permanent rooms and spaces, including pictograms provided as part of such signs. These types of signs are required to be tactile through the provision of braille and raised characters. This provision has been editorially revised and simplified in the final rule, though its application remains basically unchanged. For example, the term ''permanent'' as a descriptor of the types of designations covered has been removed as unnecessary since opposite types (''temporary'') are exempted.

Comment. Some comments considered the scoping provision for room designations difficult to understand.

Response. In the final rule, requirements for designations in section 216.2 have been simplified without substantive change.

Information and directional signs are addressed by 216.3. These types of signs are not required to be tactile but are subject to requirements for visual legibility and contrast. Signs providing direction to or information about interior spaces and facilities are required to comply. In the final rule, the Board has removed ''permanent'' as a descriptor of the type of rooms and facilities covered in this provision.

Various signage requirements specific to certain spaces and elements have been relocated for simplicity and ease of reference to section 216. These provisions include:

- 216.4 Means of Egress (from 207.3, 410.7, 410.8).
- 216.5 Parking (from 208.3).
- 216.6 Entrances (from 206.4.8).
- 216.7 Elevators (from 407.5.7).
- 216.8 Toilet Rooms and Bathing Rooms (from 213.2.2 and 213.2, Exception 4).
- 216.9 TTYs (from 217.4.9).
- 216.10 Assistive Listening Systems (from 219.4).
- 216.11 Check-Out Aisles (from 227.2.1).
- 216.12 Amusement Rides (incorporated from guidelines previously issued for recreation facilities).

Substantive changes have been made to provisions for means of egress, parking, assistive listening systems, and check-out aisles.

Section 216.4 provides specific requirements for means of egress, including exit doors, areas of refuge, and directional signs. The proposed rule required tactile signs at exit doors and provided specific requirements for areas of refuge and directional signs. These specifications are substantively revised in the final rule. The requirement for exit doors (216.4.1) has been clarified as applying to ''doors at exit passageways, exit discharge, and exit stairways.'' In the final rule, scoping requirements for means of egress and areas of refuge have been revised to reference provisions in the International Building Code (IBC) as discussed above in section 207. Corresponding changes have been made to signage requirements for areas of refuge (216.4.2) and directional signs (216.4.3) which now reference the respective IBC signage specifications for scoping. Such signs must be provided where required by the IBC but are subject to technical specifications in these guidelines at section 703.

Accessible parking spaces are required to be designated by the International Symbol of Accessibility according to 216.5. This provision was located at 208.3 in the proposed rule. Exemptions are provided for small lots (Exception 1) and spaces individually assigned to residential dwelling units (Exception 2). Under the first exception, accessible spaces in lots with four or fewer spaces are not required to be identified as accessible (*i.e.*, reserved solely for use by people with disabilities). This exception is intended to mitigate the impact of a reserved space in very small lots and stems from model building codes. In the final rule, the scope of this exception was revised by changing the maximum lot size eligible for it from five to four. The exception for residential dwelling unit spaces has not been changed.

Comment. The proposed rule removed a requirement that the access designation for van parking include the term ''van accessible'' to clarify that both car and van drivers can use such spaces, as was the original intent of ADAAG. Many comments strongly opposed this change. While some may have misinterpreted it as removal of the requirement for van accessible spaces, others considered this designation important in encouraging car drivers to use other accessible spaces over those designed to accommodate vans.

Response. The final rule restores the requirement for van spaces to be designated as ''van accessible,'' which is provided in the technical criteria for parking (502).

Comment. Signs are required to indicate the availability of assistive listening systems, which are required in certain assembly areas (216.10). In the proposed rule, such signs were required at ticket offices and windows. Comments pointed out that some assembly areas subject to this requirement may not have ticket offices or windows.

Response. In the final rule, the requirement has been revised to require signs for assistive listening systems at each assembly area required to provide an assistive listening system, but an exception allows such signs to be located at a ticket office or window instead, where provided.

Comment. Section 216.11 requires identification of accessible check-out aisles. The proposed rule required that this identification be placed in the same location as the identifying number or type of check-out aisle. Commenters noted that not all check-out aisles are distinguished by numbers. They recommended that the guidelines should be revised to ensure access to each type of aisle serving a different function, such as express aisles or cash-only aisles.

Response. The requirement for identification of check-out aisles has been revised to require that accessible designations be located in the same area as the number, letter, or function identifying the check-out aisle. The proposed rule required that accessible designations are not required where ''all check-out aisles in the facility are accessible.'' This provision, which is reformatted as an exception in the final rule, has been revised to apply where ''all check-out aisles serving a single function'' are accessible.

217 Telephones

Access to telephones is covered for people who use wheelchairs and those who are deaf or hard of hearing. Scoping applies to various public telephones, including coin and coin-less pay telephones, closed-circuit telephones, courtesy phones, and other types of public telephones (217.1). Provisions are provided for wheelchair access (217.2), volume controls (217.3), and TTYs (217.4), which are devices that enable people with hearing or speech impairments to communicate through the telephone. Revisions made in finalizing the guidelines include:

- Clarifying coverage of courtesy phones (217.1).

• Applying requirements for wheelchair accessible telephones to exterior sites (217.2).
• Adding an exception for drive-up public telephones (217.2).
• Increasing scoping for volume controls on public telephones (217.3).
• Clarifying the application of TTY scoping requirements to exterior sites (217.4.4).
• Incorporating requirements for transportation facilities, including rail stations and airports, that were previously located in Chapter 10 (217.4.7).
• Relocating TTY signage requirements from 217 to the signage scoping section (216.9).

Comment. Section 217.1 lists various types of public telephones covered by this section. Commenters requested that courtesy phones be addressed along with other types of public phones.

Response. The Board has interpreted the reference to ''public telephones'' as including courtesy phones but has included a specific reference to them in 217.1 so that their coverage is clear. Such phones are subject to requirements for wheelchair access and volume controls, but they are not covered by TTY requirements, which apply only to public pay telephones.

Comment. Some commenters seemed unclear on whether requirements for wheelchair access applied to exterior installations.

Response. Scoping for wheelchair access in 217.2 was intended to cover interior and exterior public telephones. As proposed, this provision required access to at least one telephone on a floor or level and, where multiple banks are provided, each bank. In the final rule, the Board has added clarification that the requirements for wheelchair accessible phones apply to exterior sites, in addition to floors and levels.

Comment. Comments to the draft of the final guidelines noted that some public telephones are intended for use only from vehicles and recommended that they be exempt from the requirements for wheelchair access.

Response. An exception has been added in the final rule that exempts drive-up-only public telephones from the requirements for wheelchair access (217.2, Exception).

Comment. Comments from persons who are hard of hearing sought an increase in the number of phones required to have volume control. The proposed rule specified a minimum of 25%, but many urged that all public phones should have volume control.

Response. In the final rule, all public telephones are required to be equipped with volume control instead of 25%, as was proposed. This is consistent with other Board guidelines and standards covering access to telecommunications products and electronic and information technology. Section 255 of the Telecommunications Act of 1996,[16] a comprehensive law overhauling regulation of the telecommunications industry, requires telecommunications products and services to be accessible. The Board was assigned responsibility to issue guidelines pursuant to section 255, which are known as the Telecommunications Act Accessibility Guidelines.[17] These guidelines require all public telephones to be equipped with volume controls. A similar requirement is contained in standards [18] the Board issued under section 508 of the Rehabilitation Act of 1973, as amended,[19] which requires access to electronic and information technology developed, procured, maintained, or used by Federal agencies. Since all new phones are to be equipped with volume controls, the requirement for identifying signage (a specified pictogram featuring a handset with radiating sound waves) has been removed.

General scoping for TTYs in 217.4 includes provisions specific to floors, buildings, and exterior sites and distinguishes between private and public facilities. In private buildings (*i.e.*, places of public accommodation and commercial facilities) where four or more pay phones are provided at a bank, within a floor, building, or on an exterior site, a TTY is required at each such location. A lower threshold is provided for public buildings (*i.e.*, State and local government facilities) where one pay telephone on a floor or within a public use area of a building triggers the requirement for a TTY. In the final rule, the Board has clarified references to ''site'' as being specific to ''exterior sites'' to avoid confusion that may arise since the term ''site,'' by itself, can be read to include the buildings on a site. This change helps clarify that TTY scoping requirements for exterior installations is to be satisfied independently from those applicable to interior locations.

218 Transportation Facilities

Section 218 provides requirements for rail stations, fixed guideway systems, bus shelters, and other transit facilities, such as airports. These provisions are based on requirements located in Chapter 10 in the proposed rule. They have been relocated without substantive change from the technical section to this section as they scope specific technical provisions. These technical provisions are now located in section 810.

219 Assistive Listening Systems

This section covers requirements for assistive listening systems and receivers in assembly areas. Section 219.2 requires an assistive listening system in each assembly area where audible communication is integral to the space and audio amplification is provided. However, in courtrooms this requirement applies whether or not audio amplification is provided. Section 219.3 specifies the minimum number of receivers according to a sliding scale based on the seating capacity of the assembly area.

Comment. Facility operators urged the Board to lower the required number of receivers because, in their view, the vast majority of provided receivers go unused. This is especially true at facilities with multiple assembly areas, such as multi-screen movie theaters, where receivers are provided for each assembly area.

Response. In the final rule, the Board has clarified that the minimum number is to be based on each assembly area. Thus, where a facility has multiple assembly areas, the required number is to be determined individually for each assembly area based on its seating capacity. However, the Board also has included an exception which would permit the minimum number to be based on the combined seating capacity of multiple assembly areas as an alternative if two conditions are met: all receivers are usable with all provided assistive listening systems; and all assembly areas required to have such systems are under the same management (219.3, Exception 1). This allows ''mix and match'' types of receivers to generally serve such facilities.

Comment. Assistive listening systems are generally categorized by their mode of transmission. There are hard-wired systems and three types of wireless systems: induction loop, infrared, and FM radio transmission. Induction loop systems use a wire loop to receive input from a sound source and transmit sound by creating a magnetic field within the loop. The loop may surround all or part of a room and can be installed in ceilings, floors, or walls. Listeners must be sitting within the loop and have either a receiver or a hearing aid with a telecoil. People with telecoil hearing aids do not need to use a receiver. In view of this benefit, comments to the draft of the final guidelines recommended that the requirement for

[16] 47 U.S.C. 153, 255.
[17] 36 CFR part 1193.
[18] 36 CFR part 1194.
[19] 29 U.S.C. 794 (d).

receivers specifically recognize that fewer hearing-aid compatible receivers can be specified for induction loop systems.

Response. Section 219.3 specifies the minimum number of receivers for assistive listening systems, including the number of receivers that are hearing-aid compatible. In the final rule, the Board has added an exception for assembly areas where all seats are served by an induction loop system (219.3, Exception 2). Under this exception, the additional amount of receivers required to be hearing-aid compatible is not required at all. For example, at an assembly area with a seating capacity of 500, a total of 20 receivers would generally be required and at least 5 of this number would have to be hearing-aid compatible. Under the exception for induction loop systems that serve all seats of an assembly area, at least 15 receivers would be required instead of 20.

Requirements for signs indicating the availability of assistive listening systems has been relocated from this section to the scoping section on signage (216.10). Revisions to these provisions are discussed above in section 216.

220 Automatic Teller Machines and Fare Machines

No substantive changes have been made to the scoping provisions for automatic teller machines and fare machines. Most comments on these types of machines concerned technical specifications and are discussed below in section 707.

221 Assembly Areas

Provisions in section 221 for accessible assembly areas cover general scoping (221.1), wheelchair spaces (221.2), companion seats (221.3), aisle seating (221.4), and new provisions for lawn seating (221.5).

Section 221.1 contains a general charging statement that assembly areas provide wheelchair spaces, companion seats, and designated aisle seats. The proposed rule contained a similar statement that provided an illustrative list of assembly areas covered by this section, such as motion picture houses, theaters, stadiums, arenas, concert halls, courtrooms, and others. This list has been incorporated into the definition of ''assembly area'' in section 106.5.

Section 221.2 covers the required number, integration, and dispersion of wheelchair spaces. The minimum number of wheelchair spaces is specified according to the total number of seats provided in an assembly area (Table 221.2.1.1). This requirement applies to seating generally, as well as luxury boxes, club boxes, suites, and other types of boxes. Substantive changes made in the final rule include:

- Limiting the requirements for wheelchair spaces to assembly areas with fixed seating (221.2).
- Lowering scoping for assembly areas with over 500 seats (Table 221.2.1.1).
- Adding a new provision for box seating (221.2.1.3).
- Clarifying requirements for integration of wheelchair spaces (221.2.2).
- Revising and relocating dispersion requirements for wheelchair spaces (221.2.3).
- Modifying provisions for companion seating (221.3) and designated aisle seating (221.4).
- Adding a new provision for lawn seating (221.5).
- Removing a specification concerning vertical access (221.5 in the proposed rule).

The Board has clarified in the final rule that wheelchair spaces are required in assembly areas with ''fixed seating.'' This is consistent with the original ADAAG, but not the proposed rule, which did not specify that seating had to be fixed. This descriptor was restored because it is fixed seating that typically defines wheelchair spaces as a permanent feature, consistent with the scope of these guidelines.

Comment. The minimum number of wheelchair spaces is specified according to a sliding scale. A lower percentage is specified for larger facilities. The proposed rule specified 1% scoping (on top of 6 required wheelchair spaces) for assembly areas with over 500 seats. Comments from industry recommended that scoping should be lowered for larger facilities since industry surveys indicate that the vast majority of wheelchair spaces, particularly in stadiums and arenas, often go unused. A coalition representing major sports leagues, teams, and facilities throughout the U.S. conducted a two-year survey of usage of wheelchair spaces at 40 major arenas and stadiums during basketball, hockey, and baseball events. This survey found that of the 1% of seats made accessible in arenas, approximately 12% (0.12% of the total number of seats) were occupied by persons using wheelchairs; the assessed usage rate at baseball stadiums was 7% of the accessible seats (0.07% of the total number of seats). The coalition considered the 1% minimum scoping far in excess of the demonstrated need in large sports arenas. These and other industry comments urged the Board to reduce the required number to at least the amount recommended by the ADAAG Review Advisory Committee. The advisory committee had recommended a 0.5% scoping requirement for assembly areas with over 500 seats based on similar information concerning usage. Industry comments considered 0.5% as more than adequate in meeting the demand for accessible seating.

Response. The Board has reduced the scoping for wheelchair spaces in assembly areas with more than 500 seats. Scoping has been reduced from 1% to a ratio of 1 wheelchair space for every 150 seats in assembly areas with 501 to 5,000 seats. This is required on top of a requirement of six wheelchair spaces, consistent with the scoping count for the first 500 seats. A further reduction to 0.5% scoping, the level recommended by the ADAAG Review Advisory Committee, is specified for assembly areas with over 5,000 seats. The 0.5% scoping requirement is applied on top of a requirement for 36 spaces, which follows the scoping level for the first 5,000 seats. For example, in assembly facilities with 5,000 seats, the final rule requires that at least 36 spaces be accessible, whereas the scoping in the proposed rule would have specified 51 spaces minimum. The minimum number for facilities with 10,000 seats is 61 (reduced from 101), and for those with 50,000 seats is 261 (reduced from 501).

Comment. In certain performing arts facilities, seating may be provided in tiered boxes for spatial and acoustical purposes. Often, steps are located on the route to these boxes. The proposed rule was not clear on how the scoping and dispersion requirements would apply in these types of facilities. Comments noted that requiring accessible routes to all boxes would fundamentally affect this type of design and recommended that an exception be made for such venues.

Response. Wheelchair spaces are required to be provided in each luxury box, club box, and suite according to a scoping table (221.2.1.2). The Board has clarified in the final rule that this requirement applies where such boxes and suites are provided in ''arenas, stadiums, and grandstands.'' A new provision has been added for other types of assembly facilities, such as certain performing arts facilities, that may have tiered box seating (221.2.1.3). Under this provision, wheelchair spaces are determined according to the total number of fixed box seats and are required to be dispersed among at least 20% of the boxes. For example, if an assembly area has 20 boxes with five fixed seats each (totaling 100 seats), at least four wheelchair spaces would be

required according to the scoping table. These four wheelchair spaces would have to be dispersed among at least four (20%) of the 20 boxes. This requirement clarifies that each box does not have to be treated separately as a discreet assembly facility individually subject to the scoping table, as is the case with luxury boxes and club boxes.

A provision for team and player seating areas is included in the final rule (221.2.1.4). This provision, which derives from the Board's guidelines for recreation facilities, requires at least one wheelchair space in team or player seating areas serving areas of sports activity. An exception is provided for seating areas serving bowling lanes.

Under section 221.2.2, wheelchair spaces must be integrated throughout seating areas. In the final rule, the Board has clarified this requirement to state that wheelchair spaces ''shall be an integral part of the seating plan.''

The original ADAAG required that wheelchair spaces be provided so that users are afforded a choice in sight lines that is comparable to that of the general public. Thus, while individuals who use wheelchairs need not be provided with the best seats in an assembly area, neither may they be relegated to the worst. In this rulemaking, the Board has sought to clarify specifications for lines of sight from wheelchair spaces. Specifically, the final rule clearly recognizes that viewing angles are essential components of lines of sight and that various factors, such as the distance from performance areas and the location of wheelchair spaces within a row, also greatly determine the quality of sight lines.

Section 221.2.3 covers dispersion of wheelchair spaces and lines of sight. Wheelchair spaces are required to be dispersed to provide users with choices of seating locations and viewing angles substantially equal to or better than the choices afforded all other spectators. Spaces must be dispersed horizontally and vertically. Horizontal dispersion pertains to the lateral, or side to side, location of spaces relative to the ends of rows. Provisions for vertical dispersion address the placement of wheelchair spaces at varying distances front to back from the performance area, screen, or playing field. Exceptions from the dispersion requirements are provided for assembly areas with 300 seats or less. In addition, an exception from the lines of sight and dispersion requirements is provided for wheelchair spaces in team or player seating areas serving areas of sports activity. Various changes have been made to the requirements for dispersion based on comments and responses to a number of questions posed by the Board in the proposed rule. The specifications of section 221.2.3 replace those in the proposed rule that were included in the technical criteria for wheelchair spaces at section 802.6.

In the final rule, the Board has added exceptions to the requirement for horizontal dispersion. Horizontal dispersion is not required in assembly areas with 300 seats or less where wheelchair spaces and companion seats are provided in the center sections of a row (the second or third quartile) instead of at the ends (221.2.3.1, Exception 1). This exception derives from the ANSI A117.1–2003 standard and recognizes that viewing angles at the mid-sections of rows are generally better than those at the ends of rows. In addition, the Board has clarified that two wheelchair spaces can be paired, but each must have a companion seat, as required by 221.3 (221.2.3.1, Exception 2). This exception applies to all assembly areas, not just those with 300 or fewer seats.

Assembly areas with 300 or fewer seats are not required to have vertically dispersed wheelchair spaces so long as the spaces provide viewing angles that are equal to or better than the average viewing angle (221.2.3.2, Exception 1). An exception from the vertical dispersion requirement is provided for bleachers which allows spaces to be provided only in the point of entry (221.2.3.2, Exception 2).

Comment. The proposed rule required dispersion that provides ''a choice of admission prices * * * comparable to that provided to other spectators.'' Comments from designers indicated that the admission price criterion is problematic since prices are not typically known in the design and construction phase. Accommodating choice in admission price is more realistically addressed as an operational matter by facility operators and managers.

Response. The Board believes that the dispersion requirement pertaining to admission prices is better addressed by regulations, such as those maintained by the Department of Justice under the ADA, that govern policies and procedures, instead of by these design guidelines. The reference to admission prices has been removed from the requirement for dispersion.

Comment. The proposed rule also addressed dispersion in terms of sight lines and required ''a choice of * * * viewing angles comparable to that provided to other spectators.'' This provision was intended to clarify a requirement in the original ADAAG that wheelchair spaces provide a choice in lines of sight comparable to those available to the general public. The Board questioned whether this restatement was sufficient and sought comment on whether this provision should be enhanced to require ''lines of sight equivalent to or better than'' those afforded the majority of other spectators in the same seating class or category (Question 43). Disability groups and persons with disabilities strongly favored such a change to ensure equivalency in the viewing experience. According to these comments, the proposed rule would permit location of wheelchair spaces in a manner that compromises the quality of viewing angles. Industry opposed holding wheelchair spaces to a higher standard in terms of the quality of viewing angles. Such commenters pointed to practical complications in comparing viewing angles between wheelchair spaces and inaccessible seating.

Response. The Board has revised the specification for dispersion so that persons using wheelchair spaces are provided ''choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators' (221.2.3). This provision ensures equivalency in the range of viewing angles provided between wheelchair seating and all other seats. It recognizes, but does not mandate, a better range of viewing angles for the users of wheelchair spaces.

Comment. The proposed rule, like the original ADAAG, required dispersion of wheelchair spaces in assembly areas with more than 300 seats. The Board sought comment on whether this trigger should be lowered so that dispersion would be provided in smaller assembly spaces (Question 42). The Board was concerned about the possible impacts of such a change on certain assembly types, such as stadium-style cinemas, and sought further information on their design, including the average number of seats provided per screen. Designers and operators of all types of assembly facilities were encouraged to comment on the impact of reducing the triggering point from 300 to 250, 200, or 150 seats. Quality sight lines in facilities where dispersion may not be required, such as stadium-style theaters, was a primary concern voiced by commenters with disabilities. The majority of comments recommended lowering the threshold for dispersion requirements, though there was little consensus on a specific alternative number.

Response. The point at which dispersion is required (over 300 seats) has been retained in the final rule.

Dispersion is not required in assembly areas with 300 or fewer seats provided that certain conditions concerning viewing angles are met. These conditions are specified in relation to horizontal and vertical dispersion.

Comment. In smaller facilities where dispersion of wheelchair spaces is not required (*i.e.*, those with no more than 300 seats), the placement of the wheelchair spaces in relation to other seating acquires greater significance because wheelchair users are not offered a choice of viewing angles. Therefore, in order to ensure equal opportunity for people who use wheelchairs in assembly areas in which dispersion is not required, wheelchair spaces must provide lines of sight that are comparable to those provided for most of the other patrons in the assembly area. The Board sought comment on whether this requirement, specific to facilities where dispersion is not mandated, should require lines of sight from wheelchair spaces that are equivalent to or better than the line of sight provided for the majority of event spectators (Question 44). Persons with disabilities and organizations representing them unanimously backed this provision. The issue was considered particularly relevant in stadium-style seating and other smaller assembly areas where, despite the requirements for comparable lines of sight in the original ADAAG, wheelchair spaces are typically located only in the front or back rows.

Response. The final rule makes the provision of equivalent lines of site a specific condition for not having to disperse wheelchair spaces in assembly areas with 300 or fewer seats. Wheelchair spaces do not have to be dispersed vertically (*i.e.*, front to back), so long as the viewing angle from them is equal to, or better than, the average viewing angle provided in the facility (221.2.3.2). Wheelchair spaces and companion seats do not have to be dispersed horizontally (*i.e.*, side to side) if they are located in the mid-sections of rows (second or third quartile of the total row length) instead of at or near the ends of rows (221.2.3.1). This condition for horizontal dispersion is required to the extent that the mid-section row is long enough to accommodate the requisite number of wheelchair spaces and companion seats; if it is not, some may be located beyond the mid-section portion (in the first or fourth quartile of the total row length).

Comment. The proposed rule specified vertical dispersion so that wheelchair spaces are located at ''varying distances'' from the performing area (802.6.3). Comment was sought on whether the term ''varying distances'' provides sufficient guidance in achieving dispersion (Question 41). The Board asked whether a minimum separation between horizontal rows should be specified. Most comments, including those from individuals with disabilities and from industry, considered this term too vague and supported a more specific or quantifiable requirement. Few specific alternatives to this language were recommended.

Response. The Board has retained the reference to ''varying distances'' in the final rule (221.2.3.2). Since the requirement applies to a wide variety of assembly facilities of different sizes and designs, the Board does not consider it practical to specify a particular vertical separation or distance requirement. Meeting the requirement for vertical dispersion is highly relevant to the size of the facility, the range of sight lines available, elevation changes, and other design characteristics. Clarification has been added that the dispersion requirement pertains to the distance from the ''screen, performance area, or playing field.'' The proposed rule made reference only to performance areas. This revision clarifies coverage of elements and events, such as movie screens and sporting events.

Comment. The proposed rule reflected the importance of providing individuals with disabilities with selections from a variety of vantage points to enjoy performances and sporting events. The Board requested comment on whether there are conditions where vertical (*i.e.*, front to back) separation between wheelchair spaces is not desirable and if there is a point at which increased distance fails to improve accessibility or to contribute significantly to equal opportunity (Question 40). Of the few comments which addressed this question, the majority called attention to the importance of vertical dispersion in providing equivalency in the quality of the viewing experience. Some comments considered adequate integration of wheelchair spaces to be equally important or expressed concern about vertical separation that results in longer travel distances from restrooms, concessions, and other amenities.

Response. The Board has not included any new conditional limitations on the requirements for vertical dispersion of wheelchair seating in achieving appropriate viewing angles (other than an exception for bleacher seating).

Comment. Bleacher manufacturers requested clarification on how dispersion requirements would apply to bleachers, which have been interpreted as exempt under original ADAAG specifications.

Response. The final rule includes an exception for bleacher seating that allows spaces to be provided in the point of entry only (221.2.3.2, Exception 2). An advisory note clarifies that ''points of entry'' at bleachers may include cross aisles, concourses, vomitories, and entrance ramps and stairs.

Comment. In costing out changes made in the proposed rule, the Board estimated that vertical dispersion requirements could cost as much as $11 million for each ''large'' (50,000 seats) stadium or arena to provide vertical dispersion in uppermost decks. According to the Board's regulatory assessment, ''in order to accommodate the additional dispersion required by this item, it is assumed that an upper deck concourse will be required for the facility. These large facilities generally have a lower deck, a middle deck (with suites and/or club level amenities), and an upper deck. The steep slopes used in the upper deck make it impractical to accommodate accessible routes with more than a minimal change in level up or down from the vomitory access point within the seating bowl. The dispersion requirement based on admission pricing and the vertical dispersion requirement will generally require that a more substantial change in level be accommodated outside the seating bowl for the upper deck area. It is assumed that an additional concourse, of 50,000 square feet in area, will be used to provide access to the upper deck at an additional level.'' The Board sought information on alternatives to constructing a secondary concourse that would provide vertical dispersion in upper decks of larger stadiums (Question 39). Few comments or suggested alternatives were provided in response. A few comments stressed the importance of vertical dispersion, while others felt it was necessary to weigh such requirements against the possible design and cost impacts.

Response. The Board has retained requirements for vertical dispersion that are substantively similar to the specifications in the proposed rule. However, as noted above, the final rule does not require wheelchair spaces to be dispersed based on admission prices since pricing is not always established at the design phase and may vary by event. Instead of requiring wheelchair spaces to be vertically dispersed on each accessible level, the final guidelines require wheelchair spaces to be vertically dispersed at varying distances from the screen, performance area, or playing field. The final guidelines also

require wheelchair spaces to be located in each balcony or mezzanine served by an accessible route. In most sports facilities, these requirements can be met by locating some wheelchair spaces on each accessible level of the sports facility.

Comment. The proposed rule contained a requirement that where elevators or wheelchair lifts are provided on an accessible route to wheelchair spaces or designated aisle seats, they shall be provided in ''such number, capacity, and speed'' in order to provide a level of service equivalent to that provided in the same seating area to patrons who can use stairs or other means of vertical access (221.5 in the proposed rule). This requirement was included to ensure an equal level of convenience between accessible seating and inaccessible seating in terms of travel between the entry gate and seats or between the seats and concession stands. Most commenters did not support this requirement, and considered it unenforceable and confusing. Some commenters misunderstood the intent of this provision and thought it pertained specifically to egress routes.

Response. The Board has removed the requirement concerning the number, capacity, and speed of elevators and wheelchair lifts in providing an equivalent level of service.

Section 221.3 covers companion seats which are to be paired with wheelchair spaces. The proposed rule specified that companion seats be readily removable so as to provide additional space for a wheelchair. In the final rule, companion seats are permitted to be movable. Thus, they are not required to double as an alternative wheelchair space.

Comment. The Board sought information on the impact of the requirement that each wheelchair space have an adjacent companion seat that can be removed to provide an adjoining wheelchair space (Question 10). Comments noted that this requirement effectively doubles the scoping requirements for wheelchair spaces and that the required extra space would significantly increase construction costs. Several comments noted that more flexibility for both wheelchair spectators and the facility could be achieved by allowing companion seats to be movable; however, comments noted that some building codes may require companion seats to be fixed. Another solution put forward was the use of seating that folded and swung away, leaving enough space for a wheelchair position.

Response. The final rule requires one companion seat for each wheelchair space, but allows the seat to be movable. This seat is not required to provide an additional wheelchair space when removed.

Comment. In the belief that readily removable seats should provide a companion with virtually the same experience in terms of comfort and usability as other fixed seats, the Board asked what specific characteristics they should have relative to other seats (Question 11). The majority of comments strongly favored requirements for companion seats to be equivalent or comparable to other provided seating in the same assembly area.

Response. The Board has included technical criteria for companion seats that requires them to be equivalent to other seats in the immediate area in terms of quality, size, comfort, and amenities (802.3).

Section 221.4 addresses designated aisle seats. The Board has significantly lowered the number of designated aisle seats required to be accessible. An exception from the requirement for designated aisle seats for team or player seating areas serving areas of sports activity has been incorporated into the final rule from the guidelines for recreation facilities.

Comment. The proposed rule specified that 1% of all seats be designated aisle seats, a quarter of which were to be located on accessible routes and the rest not more than 2 rows from an accessible route. The Board requested information on the cost and related design impacts of this requirement, particularly in locating aisle seats at or no more than two rows from an accessible route (Question 12). Comments stated that requiring designated aisle seats to be on an accessible route would require more space and entrances to seating areas and would result in the loss of seating space. Comments further stated that this would require a significant increase in the cost of such facilities.

Response. The Board has reduced the overall scoping for designated aisle seats. The final rule requires that 5% of aisle seats, not all seats, be designated aisle seats. These seats are required to be those closest to, but not necessarily on, an accessible route. Technical requirements for aisle seats at 802.4 have also been modified.

Section 221.5 provides a new requirement that addresses lawn seating and exterior overflow areas. Such areas are required to be connected by an accessible route. The accessible route is required to extend up to, but not through, lawn seating areas. Since such areas typically do not provide fixed seating, this provision does not require wheelchair spaces, companion seats, or designated aisle seats.

Comment. Where public address systems are provided in transportation facilities to convey public information, a means of conveying the same or equivalent information to persons who are deaf or hard of hearing is required. In the proposed rule, the Board sought comment on whether additional provisions for an equivalent means of communication should be applied to other types of facilities (Question 45). The Board was specifically interested in how captioning can be associated with electronic scoreboards in stadiums to convey audible public announcements. People who are deaf or heard of hearing strongly urged that requirements for access to information conveyed through public address systems be applied to all types of facilities, not just transportation facilities.

Response. The Board considered adding a provision (included in the draft final rule) that would have required the visual display of audible pre-recorded or real-time messages where electronic signs are provided in stadiums, arenas, or grandstands. This provision would not have required provision of electronic signs, but instead would have specified that, where provided, they be used to display information to deaf or hard-of-hearing spectators provided audibly during an event. Since this requirement would have been more pertinent to facility operations than to facility design, the Board did not include it in the final rule. Providing ''effective communications'' is within the purview of the Department of Justice and is addressed in the Department's title II and III regulations. See 28 CFR 35.160 and 28 CFR 36.203(c).

222 Dressing, Fitting, and Locker Rooms

Section 222 covers dressing rooms, fitting rooms, and locker rooms. At least 5% of each type, in each cluster, is required to be accessible. A requirement for coat hooks and shelves located at 228.4 in the proposed rule has been relocated for clarity to this section (222.2).

223 Medical Care and Long-Term Care Facilities

This section indicates the number of patient or resident sleeping rooms required to be accessible in medical care and long-term care facilities. The general scoping provision at 223.1 indicates that the facilities covered by this section include medical care facilities and licensed long-term care

facilities where the period of stay exceeds 24 hours. Section 223.2 covers hospitals, rehabilitation facilities, psychiatric facilities, and detoxification facilities. In general, those facilities are held to a 10% scoping requirement, but those that specialize in the treatment of conditions affecting mobility are subject to a 100% scoping requirement. In long-term care facilities, 50% of the rooms must be accessible.

Changes made in the final rule include:

- Modifying the description of the facilities covered by this section (223.1).
- Adding a new exception for toilet rooms in critical care and intensive care patient sleeping rooms (223.1).
- Clarifying the application of scoping requirements to rehabilitation facilities (223.2).
- Revising the scoping requirement for long-term care facilities to apply to ''each type'' of resident sleeping room (223.3).

Comment. Comments considered it unnecessary to qualify covered medical care facilities as those that are licensed, since all are typically licensed.

Response. The general charging statement (223.1) has been changed to refer to ''medical care facilities and licensed long-term care facilities.'' In addition, the Board has removed as unnecessary language describing these facilities as places ''where people receive physical or medical treatment or care.''

Comment. There are certain types of patient rooms, such as those provided in critical or intensive care units where patients who are critically ill are immobile or confined to beds and thus generally not expected to use adjoining toilet rooms. Typically, such patients are relocated to other types of rooms when no longer confined to beds. Comments recommended that toilet rooms serving these types of rooms should not have to be accessible.

Response. An exception has been added that permits toilet rooms in critical care and intensive care patient sleeping rooms to be inaccessible (223.1, Exception).

Section 223.2 addresses scoping for hospitals, rehabilitation facilities, psychiatric facilities, and detoxification facilities. The Board has clarified the distinction made in scoping between facilities that specialize in the treatment of conditions affecting mobility (100%) and those that do not (10%), including rehabilitation facilities.

Comment. The Board sought comment on how dispersion of accessible sleeping rooms can be effectively achieved and maintained in medical care facilities such as hospitals and long-term care facilities (Question 13). Commenters with disabilities supported a requirement for dispersion of accessible sleeping rooms among all types of medical specialty areas, such as obstetrics, orthopedics, pediatrics, and cardiac care. Conversely, commenters representing the health care industry pointed out that treatment areas in health care facilities can be very fluid due to fluctuation in the population and other demographic and medical funding trends. Comments indicated that in long-term care facilities, access is provided at rooms that are less desirable than others available in the facility. Commenters recommended that the final rule should include a requirement that ensures that accessibility is fairly dispersed among different types of rooms in long-term care facilities.

Response. The Board has not added a requirement for dispersion in medical care facilities because compliance over the life-time of the facility could prove difficult given the need for flexibility of spaces within such facilities. However, an advisory note has been added to encourage dispersion of accessible rooms within the facility so that accessible rooms are more likely to be proximate to appropriate qualified staff and resources. Since these considerations are not as relevant to long-term care facilities, the Board has added a requirement that the 50% scoping requirement for long-term care facilities be applied to ''each type'' of resident sleeping room provided to ensure dispersion among all types (223.3).

224 Transient Lodging Guest Rooms

The minimum number of guest rooms required to be accessible in transient lodging facilities is covered in section 224. Access is addressed for people with disabilities, including those with mobility impairments (224.2) and people who are deaf or hard of hearing (224.4). In addition to rooms, there is a provision which addresses the number of beds required to be accessible in facilities such as homeless shelters, where a room may have a large number of beds. (224.3). Revisions of this section include:

- Removal of the exception for certain bed-and-breakfast facilities (224.1), which are now exempted through the definition of ''transient lodging'' provided in section 106.
- Clarification of a provision covering doors and doorways in inaccessible transient lodging guest rooms (224.1.2).
- Revised scoping for accessible beds (224.3).
- Reduced scoping for guest rooms with accessible communication features (224.4).
- Modified dispersion requirements (224.5).

The definition of ''transient lodging'' in section 106.5 has been revised to exclude, in part, ''private buildings or facilities that contain not more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.'' As a result, an exception for such facilities in 225.1 has been removed.

Comment. In transient lodging facilities, doors and doorways in inaccessible guest rooms are required to be at least 32 inches wide (224.1.2). This specification stems from the original ADAAG and is intended to afford some access to inaccessible guest rooms for visitation purposes. Clarification was requested on which types of doors this is intended to cover and whether it applies to shower doors.

Response. In the final rule, clarification has been added that the 32 inch minimum clearance applies to those doors ''providing user passage'' into and within guest rooms not required to be accessible. In addition, the Board has added an exception that exempts shower and sauna doors in inaccessible guest rooms from this requirement. Corresponding changes have been made to a similar provision in the general scoping section for doors (206.5.3).

Comment. A hotel and motel trade group opposed any increase in the number of guest rooms required to be accessible and submitted a study it commissioned on the usage of such rooms. According to this study, 80% of accessible guest rooms remain unused by people with disabilities. This trade group also submitted comments to the draft final guidelines that included a statistical study of the number of persons who use wheelchairs based on U.S. census data (1.03% of the population age 15 years and older). Based on this information, this commenter requested that the required number of accessible guest rooms be reduced to a level consistent with assessed usage rates and population estimates.

Response. The proposed rule was consistent with the recommendations of the ADAAG Review Advisory Committee and preserved, without increase, the number of accessible guest rooms (224.2). The number of accessible guest rooms is also consistent with the International Building Code. Accessible guest rooms include features such as grab bars and other elements that benefit not only people who use wheelchairs,

but also people who use crutches, canes, and walkers. Data provided by the Disability Statistics Center at the University of California, San Francisco shows that the number of adults who use wheelchairs has been increasing at the rate of 6 percent per year from 1969 to 1999; and by 2010, it is projected that 2 percent of the adult population will use wheelchairs. In addition to people who use wheelchairs, 3 percent of adults used crutches, canes, walkers and other mobility devices in 1999; and the number is projected to increase to 4 percent by 2010. Thus, by 2010, up to 6 percent of the population may need accessible guest rooms.

Data submitted by the hotel and motel trade group showed that hotel stays are almost equally divided between business travel and non-business travel. Non-business travelers usually travel as members of a household or group for vacation, special events, or leisure. In 1999, 2.3 percent of households had an adult member who uses a wheelchair; and by 2010, it is projected that 4 percent of households will have an adult member who uses a wheelchair. In addition to households with an adult member who uses a wheelchair, 7 percent of households had an adult member who used canes, crutches, walkers or other mobility devices in 1999; and the number is projected to increase to 9 percent by 2010. Thus, by 2010, up to 13 percent of households will have adult members who may need accessible guest rooms.

The Board recognizes that all the people and households that may benefit from an accessible guest room may not specifically request an accessible room, and the scoping levels reflect this fact. The statistical study submitted by the hotel and motel trade group assumed independence in accessible room requests. In reality, accessible room requests are likely to be somewhat correlated, due to hotel preferences or group travel. For smaller hotels, a slight violation of the independence assumption could lead to a higher sellout rate, as these hotels have relatively fewer accessible rooms. The hotel and motel trade group also submitted data on actual accessible room reservation requests for select hotels that implied the current demand for accessible rooms is closer to 0.8 percent than 1 percent, as in their original study. However, this sample was likely not representative and the study did not take into account data showing that the population who needs accessible rooms is growing. Hotels constructed in the next few years will serve the population for decades to come. Because of the problems with the assumptions used in the statistical study and the failure to consider future needs, the Board concluded that a reduction in the number of accessible guest rooms is not warranted.

The hotel and motel trade group has pointed out that the Board has reduced the scoping for wheelchair spaces in assembly areas by 0.33 percent for assembly areas with 501 to 5,000 seats, and by 0.5 percent for assembly areas with more than 5,000 seats. However, the hotel and motel trade group has proposed a much greater reduction in the number of accessible rooms for all size hotels with more than 50 rooms. For example, they proposed that hotels with 100 rooms provide 40 percent fewer accessible rooms (3 accessible rooms, instead of the 5 accessible rooms currently required). There are important difference between large assembly areas such as sports stadiums which may have 50,000 to 70,000 seats, and hotels. Only 1 percent of hotels have more than 500 rooms. These hotels cater to meetings and conferences sponsored by groups who reserve large numbers of rooms. Disability groups and organizations may hold meetings and conferences at these hotels and need large numbers of accessible rooms. For all these reasons, the number of accessible guest rooms has not been changed in the final rule.

Comment. The proposed rule addressed access to beds according to a table based on the total number provided in a guest room. This table, as recommended by the ADAAG Review Advisory Committee, included bed counts well into the hundreds. The table followed a sliding scale that started with roughly a 4% requirement (1 per 25 beds provided in a room) which decreased to 3% (for over 500 beds) and then to 2% (for over 1,000 beds). Comments considered the upper levels covered by the table as ridiculously high and suggested a simpler and more realistic provision.

Response. The scoping table for beds has been removed in the final rule and replaced by a flat 5% requirement that applies where more than 25 beds are provided in a guest room. Technical requirements for guest rooms require at least one bed in a sleeping room to be accessible. This provision would govern in rooms with 25 or fewer beds.

The guidelines address rooms required to provide communication features accessible to persons who are deaf or hard of hearing, including visual notification of fire alarms, telephone calls, and door knocks or bells. Telephones in such rooms must have volume controls and nearby outlets for the installation of TTYs. The Board had proposed increasing the minimum number of such guest rooms to 50% of the total number of guest rooms provided. This contrasted significantly with the original ADAAG, which specified the minimum number according to a sliding scale. It required 1 in 25 rooms to comply up to a guestroom count of 100. Scoping successively decreased to 1 for every 50 rooms for the next 101 to 200 rooms and to 1 for every 100 rooms for the next 201 to 500 rooms. For facilities with 501 to 1,000 rooms, 2% of rooms were required to comply, and where the room count exceeded 1,000, the scoping dropped to 1% (ADAAG 9.1.3). The original ADAAG also required that all accessible guest rooms be equipped with communication features in addition to the number of rooms required to provide communication access only (ADAAG 9.2.2(8)).

The Board had proposed the increased scoping for guestrooms with accessible communication for several reasons. The communication features addressed in this requirement address life safety in providing visual notification of fire alarms for people who are deaf or hard of hearing. The Board also felt that the increased scoping would afford greater flexibility in the guest room assignment of people who are deaf or hard of hearing, especially in light of revisions to the technical requirements that effectively preclude the use of portable visual alarm devices. In addition, permanent installation of visual alarm appliances is considerably less expensive and easier to achieve as part of facility design and construction than as a retrofit.

Comment. The Board sought information on the new construction cost impact of the proposed increased scoping and also asked whether exceptions should be provided for altered facilities or additions (Question 14). The hotel and motel industry strongly opposed increasing scoping for rooms providing communication access to 50%, which it considered unsubstantiated and unsupported by the assessed need. The industry considers the original ADAAG specification, which is substantially lower than 50%, to be excessive in view of its assessments on the usage rate of such rooms by persons with disabilities. People who have photosensitive epilepsy also opposed the proposed increase because the potential for triggering seizures would be too great. On the other hand, many comments from persons who are deaf or hard of hearing voiced strong support for maintaining or further increasing the proposed 50% requirement. In the belief

that some transient lodging facilities have adopted voluntary policies requiring permanently installed visual alarms in all or a majority of newly constructed guest rooms, the Board sought information on such cases (Question 15). Commenters responded that they were unaware of any such corporate policies.

Response. In the final rule, the Board has reduced the scoping for guest rooms with accessible communication features to the level specified by the original ADAAG. The Board has included some limited changes from the original ADAAG scoping for consistency with the International Building Code (IBC). The minimum number required to comply is based on the number of rooms provided: 2–25 (2), 26–50 (4), 51–75 (7), 76–100 (9), 101–150 (12), 151–200 (14), 201–300 (17), 301–400 (20), 401–500 (22), 501–1,000 (5% of total), 1,001 and over (50, plus 3 for each 100 over 1,000). These levels slightly differ from the original ADAAG at the higher levels (401 rooms and above). The numbers are consistent with the IBC except that the IBC scoping does not apply to facilities with less than 6 guest rooms.

Comment. The industry also objected to requiring alarm appliances to be permanently installed. One hotel chain commented that their deaf and hard of hearing guests preferred portable appliances because these can be used in any guest room. This point was contradicted by comments from deaf and hard of hearing commenters and advisory committee members who urged permanent installation.

Response. The Board has elected to reference the NFPA 72–1999 National Fire Alarm Code and has included a requirement that appliances be permanently installed. The Board believes that the hospitality industry can best guarantee deaf and hard of hearing guests the same level of protection as hearing guest by providing them visual devices that are part of the same fire alarm system that alerts hearing guests. Fire alarm systems must pass rigorous installation standards and frequent inspections. To date, the Board is unaware of any portable equipment that satisfies the requirements of the referenced standard. Even if portable equipment satisfying this standard were available, there is still a key concern that their installation, when not supervised by a trained professional, would not guarantee proper location and visibility of the signal. The NFPA 72 includes criteria for the appropriate location of the visual alarm appliance within the guest room. Deaf and hard of hearing travelers have reported that hotel staff have installed portable alarms on the floor, under furniture, and in other locations that do not satisfy the requirements of the referenced standard.

Section 224.5 requires dispersion of accessible rooms among the various classes of rooms provided, including room type, bed count, and other amenities to a degree comparable to the choices provided other guests. When complete dispersion is not possible due to the number of rooms required to be accessible, dispersion is to be provided in the following order of priority: room type, bed count, and amenities.

The proposed rule required communication access in half of the accessible guestrooms in addition to the number required in section 224.4. The Board considered removing this requirement and stipulating that there be no overlap between the dispersion of accessible rooms and communication accessible rooms, as indicated in the draft of the final guidelines. The Board sought to prevent such overlap to maximize the availability of each room type and proposed that a similar change be made in the IBC. This change was not adopted into the IBC, in part due to consideration of persons using wheelchairs who may need accessible communication features. The IBC does not require or prohibit overlap between both types of rooms. In the final rule, the Board has revised the dispersion requirement to allow some overlap (10% maximum) between rooms and to ensure that at least one room provides both wheelchair access and communication access. Thus, no more than 10% of the accessible rooms can be used to satisfy the required number of rooms providing communication access. Communication access can be provided in a greater number of accessible rooms, but the amount in excess of 10% cannot count toward the number of rooms required to provide communication access.

Comment. Comments urged that dispersion should be based on bed count, instead of bed type. People with disabilities, especially those who traveled with attendants, felt that bed type or size was not as important as the number of beds.

Response. The criteria for dispersion is also modified. In the list of factors that define various classes of rooms, the Board has replaced ''types of beds'' with ''number of beds.''

225 Storage

This section covers storage elements and facilities, including lockers, self-service shelving, and self-service storage facilities. In the proposed rule, these elements and spaces were covered in two separate sections: 225 (Self-Service Storage Facilities) and 228 (Storage). In the final rule, these sections have been combined into one for clarity. No substantive changes have been made to these provisions.

A scoping provision for coat hooks and shelves that was located at 228.4 has been moved and revised. Since this provision is specific to certain types of spaces, it is now located among scoping requirements covering toilet rooms and compartments (213.3.8), and dressing, fitting, and locker rooms (222.2), as discussed above at these sections.

226 Dining Surfaces and Work Surfaces

Provisions for access to dining and work surfaces have been revised to:

- Further define dining surfaces as those used ''for the consumption of food or drink'' (226.1).
- Clarify that the types of work surfaces covered do not include those surfaces used by employees, since elements of work stations are not required to comply with these guidelines (226.1).
- Exempt sales and service counters from this section, which are covered instead by section 227 (226.1, Exception 1).
- Exempt check-writing surfaces at inaccessible check-out aisles (226.1, Exception 2).

Comment. These guidelines generally do not require elements of a work station to be accessible. Concern was expressed that the reference to ''work surfaces'' may be confused as covering surfaces that are part of a work area or station.

Response. Clarification has been added that this section applies to work surfaces that are provided ''for use by other than employees.'' In addition, the Board has specified that the type of dining surface covered are those provided ''for the consumption of food or drink.''

Comment. Some comments reflected a misunderstanding that this section also applied to sales counters and other elements that are addressed in section 227 (Sales and Service).

Response. The final rule includes two clarifying exceptions. Exception 1 indicates that sales and service counters, which are addressed in section 227 (Sales and Service), are not required to comply with the requirements for dining and work surfaces. Exception 2 acknowledges that check writing surfaces are a type of work surface and that those provided at inaccessible check-out aisles are not required to comply.

227 Sales and Service

Section 227 covers access to check-out aisles (227.2), sales and service counters (227.3), food service lines (227.4), and queues and waiting lines (227.5). The general charging statement has been editorially revised to clearly indicate coverage of these various elements. The title of this section has been changed to ''Sales and Service'' instead of ''Sales and Service Counters'' since some of the provisions it contains apply to elements that may not have a counter, such as check-out aisles and waiting lines.

Requirements for check-out aisles have been revised to clarify access to check-out aisles serving different functions (227.2). In addition, the final rule restores an exception for smaller facilities that allows one check-out aisle to be accessible (227.2, Exception). Signage requirements for accessible check-out aisles have been modified and relocated to section 216.11, as discussed above.

Generally, check-out aisles are required to be accessible according to a scoping table in 227.2. In the proposed rule, this table specified access according to the number of check-out aisles provided for ''each function.'' However, the corresponding scoping provision did not fully correlate with the table because it specified that ''at least one'' accessible check-out aisle be provided for each function. In the final rule, this provision has been revised to be consistent with the scoping of the table.

Comment. The original ADAAG provided an exception for facilities with less than 5,000 square feet of selling space which allowed only one check-out aisle to be accessible regardless of the number or different types of aisles provided. This exception has been provided to limit the impact of accessible check-out aisles on smaller facilities. The Board had removed this exception in the proposed rule because it reasoned that most facilities that would qualify for it would likely have only one check-out aisle or use sales counters instead of check-out aisles. Commenters disagreed, indicating that such facilities may have multiple check-out aisles. Thus, the exception should be restored.

Response. The exception has been included in the final rule (227.2, Exception).

228 Depositories, Vending Machines, Change Machines, and Mail Boxes

No substantive changes have been made to the scoping requirements for depositories, vending machines, change machines, mail boxes, and fuel dispensers in section 228 (229 in the proposed rule). Few comments addressed this section. In the final rule, the Board has added a reference to fuel dispensers to clarify their coverage by the guidelines. The proposed rule included requirements intended to apply to fuel dispensers such as gas pumps. Gas pump manufacturers expressed concerns about reach range requirements and operating force specifications which have been addressed in the final rule, as discussed in sections 308 and 309 below.

229 Windows

Scoping provisions for windows require that at least one glazed opening, where provided for operation by occupants, meet technical criteria for operable parts. Access is also required to each glazed opening required by the administrative authority to be operable. In the final rule, the Board has included an exception from this requirement for windows in residential dwelling units. Devices that make window controls and latches accessible can be provided as a supplementary add-on feature instead of installed as a permanent fixture. For this reason, the Board believes that such access can be effectively provided as a reasonable accommodation under Federal regulations for program access. These regulations govern the types of residential facilities covered by these guidelines.

Comment. Concern was expressed that reference to glazed openings provided for ''operation by occupants'' would be interpreted to apply to those operated by employees.

Response. Scoping provisions in 203.9 exempt employee work areas from the guidelines except for requirements concerning accessible routes, circulation paths, and wiring for visual alarms. Other elements of employee work areas are not required to comply.

Comment. The referenced technical criteria address the operable parts of windows, including that such parts be within accessible reach ranges, but they do not address the height of glazed openings. The Board sought comment on whether a maximum sill height should be specified so that people who use wheelchairs can look through the window to view ground level activities (Question 16). The Board also requested information on any design requirements, practices, or considerations that would specify installation above an accessible height in certain occupancies for security or safety reasons, such as to guard against break-ins or to prevent improper use by building occupants, including children. Information was sought on any other design impacts, such as the use of the space or cavity below windows for mechanical or other building systems. Comments from people with disabilities supported the idea of a specified sill height, though few recommended a particular height. Comment from industry opposed such a requirement. Some pointed to concerns about child safety and the impact on heating, ventilation, and air conditioning (HVAC) systems and other mechanical systems that use the cavity for duct work.

Response. No additional criteria for windows, including the sill height, have been included in the final rule.

230 Two-Way Communication Systems

Scoping for two-way communication systems remain unchanged in the final rule. Few comments addressed this section.

231 Judicial Facilities

This section covers courthouses and other judicial facilities and provides requirements for courtrooms (231.2), holding cells (231.3), and visiting areas (231.4). This section has not been changed except for a few editorial revisions:

- Provisions specific to courtrooms have been relocated without substantive change to a new technical section on courtrooms (808) in Chapter 8, which covers special rooms, spaces, and elements.
- A scoping provision for partitions in visiting areas (231.4.2) has been revised for consistency with the technical criteria it references.

Comment. Commenters indicated that provisions specific to courtrooms in section 232.2 of the proposed rule functioned more as technical requirements and should be relocated to the appropriate technical chapter.

Response. The Board agrees and has relocated these provisions to a new technical section in Chapter 8 (Special Rooms, Spaces, and Elements) at section 808 that is specific to courtrooms.

Comment. A commenter pointed out that the provision for solid partitions or security glazing in visiting areas should be revised to be more consistent with the technical provision it references, which requires some method to facilitate voice communication.

Response. The Board has revised this provision to clarify that ''at least one of each type'' is required to comply, consistent with the referenced technical requirement in section 904.6.

232 Detention and Correctional Facilities

This section provides scoping criteria specific to prisons, jails, and other types of detention and correctional facilities.

Several provisions in this section have been revised:

• This section has been revised to refer to ''cells'' as opposed to ''cells or rooms'' for purposes of simplicity.

• Scoping for beds in cells (232.2.1.1) references a provision for beds in transient lodging guest rooms which has been revised, as discussed above in section 224.

• A provision for partitions in visiting areas (232.5.2) has been revised for consistency with the technical criteria it references, consistent with a similar provision for judicial facilities (231.4.2) discussed above in section 231.

• A dispersion requirement for wheelchair and communication accessible cells has been removed, as discussed below (232.2.4 in the proposed rule).

• An exception from the requirement for grab bars in cells specially designed without protrusions for purposes of suicide prevention (233.3, Exception 1 in the proposed rule) has been moved to the technical requirement for grab bars, which is a more appropriate location (604.5).

Scoping provisions for detention and correctional facilities require access to at least 2% of the general housing and holding cells provided (232.2.1). In addition, where emergency alarm systems and telephones are provided in general housing or holding cells, at least 2% of the cells must be equipped with accessible communication features, such as visual alarms and telephones equipped with volume controls, to accommodate persons with hearing impairments (232.2.2). The proposed rule contained a requirement that half of the accessible communication features be provided in accessible cells, consistent with a dispersion requirement provided for transient lodging guest rooms. This provision was changed, as indicated in the draft of the final guidelines, to prohibit any overlap between accessible cells and those equipped with accessible alarms and telephones. In the final rule, the Board has removed this provision. Scoping for accessible communication features is triggered only where cells are equipped with alarms and telephones. In facilities without such cells, only scoping for accessible cells would apply, making provisions for required overlap irrelevant. Where such cells are provided, the final rule does not prohibit the location of accessible communication features in accessible cells.

233 Residential Facilities

Requirements for residential facilities address access for persons with disabilities, including persons with mobility impairments and those who are deaf or hard of hearing. This section specifies the minimum number of residential dwelling units required to be accessible. The term ''residential dwelling units'' pertains to facilities used as a residence. A revised definition for the term used in the final rule, ''residential dwelling units,'' is provided in section 106.5. These facilities have been redefined to further distinguish them from other types of facilities, such as transient lodging, that provide living accommodations on a short-term basis. This section has been significantly revised in the final rule for consistency with other Federal regulations that address access to residential facilities, particularly those issued by the U.S. Department of Housing and Urban Development (HUD).

The ADA's coverage of residential facilities extends primarily to entities subject to title II such as public housing and other types of housing constructed or altered by, on behalf of, or for the use of State or local governments. Title III of the ADA does not generally apply to private housing, including apartments and condominiums, except for spaces within that serve as places of public accommodations, such as sales and rental offices. HUD administers a variety of programs that fund or subsidize housing. Many of these programs are subject to section 504 of the Rehabilitation Act of 1973 [20] which requires that those receiving Federal financial assistance be accessible to persons with disabilities. HUD's section 504 regulations [21] apply access requirements to residential facilities and include specific provisions for the minimum number of dwelling units required to be accessible. Specifically, they require at least 5% of dwelling units in multi-family projects of 5 or more dwelling units to be accessible and at least 2% to be equipped with communication features accessible to persons with hearing impairments. While these requirements are consistent with those in the proposed guidelines, the HUD regulations further specify how this scoping is to be applied to housing ''projects,'' a term specifically defined in the HUD regulations. To avoid any potential conflicts in this area, the Board has referenced HUD's section 504 regulations for purposes of scoping (233.2). Thus, entities subject to HUD's section 504 regulations are required to apply the technical requirements for new construction and alterations of this rule to the number of units required to be accessible under HUD's regulations.

Scoping provisions for facilities not subject to HUD's section 504 regulations are addressed in a separate section (233.3). Requirements for these residential facilities address new construction, dwelling units for sale, additions, alterations, and dispersion. Substantive revisions made in the final rule concern:

• Residential facilities with a limited number of dwelling units (233.3.1, Exception).

• Dwelling units for sale (233.3.2).

• Alterations (233.3.4).

In addition, references to technical requirements have been editorially revised consistent with the integration of a separate chapter on residential facilities (11) into other chapters of the guidelines.

New construction scoping for facilities not subject to HUD's section 504 regulations is substantively consistent with the level specified in the proposed rule (233.3.1). At least 5% of the total number of residential dwelling units must be accessible to persons with mobility impairments and at least 2% must be equipped with communication features accessible to persons who are deaf or hard of hearing.

For newly constructed residential facilities with less than 5 units, the proposed rule provided an exception that allowed the minimum number to be applied to the total number of dwelling units constructed under a single contract, or developed as whole, whether or not located on a common site. In the final rule, this exception has been revised to apply to facilities with 15 or fewer units, a level which derives from UFAS, which the Board considered more appropriate (233.3.1, Exception).

The Board had considered adding a provision stipulating that units providing mobility access and those providing communication access are to be satisfied independently (*i.e.*, both types of access cannot be provided in the same unit to satisfy the minimum number of each type required to be accessible). The Board did not include such a requirement in the final rule for consistency with requirements in the International Building Code (IBC). The IBC specifies that multi-family dwelling units required to have fire alarm systems also have the capability to support visible alarms. This

[20] 29 U.S.C. 794.

[21] 24 CFR 8.22(b).

requirement facilitates installation of visual alarms as needed, including in units providing access for persons with mobility impairments. To avoid any conflict with the IBC requirement, the Board has removed its provision prohibiting the location of required accessible communication features in dwelling units that are accessible to persons with mobility impairments.

The final rule includes a provision that specifically covers residential units that are constructed for purchase (233.3.2). This provision does not apply the scoping percentages otherwise required in new construction, but instead references regulations issued under the ADA or section 504 of the Rehabilitation Act. DOJ's title II ADA regulation and section 504 regulations contain provisions that ensure access to programs and activities. These regulations require that each program or activity conducted by a covered entity or a program or activity receiving Federal financial assistance be readily accessible to and usable by individuals with disabilities when viewed in its entirety. A public entity that conducts a program to build housing for purchase by individual home buyers must provide access according to the requirements of the ADA regulations and, where Federal financial assistance is provided, the applicable section 504 regulation. The Board determined that access to dwelling units for purchase is better addressed by the program access obligation of these regulations instead of by the across-the-board scoping percentages of this rule.

Scoping for additions applies the minimum number according to the number of units added (233.3.3). No substantive changes have been made to this requirement in the final rule.

Scoping provisions for alterations have been revised in the final rule (233.3.4). The Board determined that applying requirements to dwelling units in alterations should be further tailored to conditions specific to residential facilities. As a result, the final rule focuses on alterations where the planned scope of work is extensive enough to achieve fully accessible units that are on accessible routes. Provisions are included that specifically address residential facilities vacated as part of an alteration and those that are substantially altered. Consistent with these provisions, the Board has included exceptions to the general scoping provisions for alterations, as discussed above (sections 202.3 and 202.4).

Where a building is vacated for purposes of alteration and has more than 15 dwelling units, at least 5 percent of the altered dwelling units are required to be accessible to persons with mobility impairments and to be located on an accessible route (233.3.4.1). In addition, at least 2 percent of the dwelling units are to be equipped with accessible communication features. Facilities vacated for purposes other than alteration, such as asbestos removal or pest control, are not subject to this requirement.

Where individual dwelling units are altered and, as a result, a bathroom or a kitchen is substantially altered and at least one other room is also altered, the dwelling unit is required to comply with the scoping requirements for new construction until the total number of accessible units is met (233.3.4.2). A substantial alteration to a kitchen or bathroom includes, but is not limited to, changes to or rearrangements in the plan configuration, or replacement of cabinetry. Substantial alterations do not include normal maintenance or appliance and fixture replacement, unless such maintenance or replacement requires changes to or rearrangements in the plan configuration, or replacement of cabinetry. As with new construction, the final rule permits facilities that contain 15 or fewer dwelling units to apply the scoping requirements to all the dwelling units that are altered under a single contract, or are developed as whole, whether or not located on a common site.

An exception to these alteration scoping requirements is provided in the final rule where full compliance is technically infeasible (233.3.4, Exception). Technical infeasibility, as defined in the rule, pertains to existing structural conditions or site constraints that effectively prohibit compliance in an alteration. Under this exception, where it is technically infeasible to provide a fully accessible unit or an accessible route to such a unit, then a comparable unit at a different location under an entity's purview can be used as a substitute provided that it fully complies with the access requirements. A substituted dwelling unit must be comparable to the dwelling unit that is not made accessible. Factors to be considered in comparing one dwelling unit to another should include the number of bedrooms; amenities provided within the dwelling unit; types of common spaces provided within the facility; and location with respect to community resources and services, such as public transportation and civic, recreational, and mercantile facilities.

Dispersion of accessible units is required among the various types of units provided so that people with disabilities have choices of dwelling units comparable to and integrated with those available to other residents (233.3.5). Single-story units can substitute for multi-story units provided they have equivalent amenities and spaces. These provisions have not been substantively revised in the final rule.

234 Through 243 Recreation Facilities and Play Areas

Sections 234 through 243 address various types of recreation facilities, including play areas. These requirements were developed in separate rulemakings that were finalized after the proposal for this rule was published. They have been incorporated into the final rule and have been reformatted and editorially revised for consistency with the document. No substantive changes have been made. Scoping provisions, which reference technical provisions in chapters 6 and 10, address:

- Amusement rides (234).
- Recreational boating facilities (235).
- Exercise machines (236).
- Fishing piers and platforms (237).
- Golf facilities (238).
- Miniature golf facilities (239).
- Play areas (240).
- Saunas and steam rooms (241).
- Swimming pools, wading pools, and spas (242).
- Shooting facilities with firing positions (243).

Part II: ABA Application and Scoping

This part provides application and scoping requirements for facilities subject to the ABA. The ABA covers facilities that are designed, built, altered, or leased with Federal funds. The Board's ABA guidelines serve as the basis for standards issued by four standard-setting Federal agencies: the General Services Administration (GSA), the Department of Defense (DOD), the Department of Housing and Urban Development (HUD), and the U.S. Postal Service (USPS). The standards originally issued by these agencies are known as the Uniform Federal Accessibility Standards (UFAS).

The Board based the ABA application and scoping documents (Chapters 1 and 2) on those in Part 1 for ADA facilities to ensure greater consistency between the level of access required for ADA and ABA facilities. While differences or departures from the ADA scoping and application sections have been minimized, some are unavoidable due to differences between the ABA and ADA statutes and regulations issued under them. For example, the ABA covers facilities leased by Federal

agencies and the guidelines for the ABA reflect this statutory difference.

In the final rule, differences between the ADA and ABA application and scoping chapters pertain to modifications and waivers, definitions, additions, leases, general exceptions (specifically existing elements and employee work areas), and provisions specific to private buildings and facilities. In the proposed rule, the Board raised a question concerning housing on military installations that was applicable only to the ABA guidelines.

F103 Modifications and Waivers

The ABA recognizes a process under which covered entities may request a modification or waiver of the applicable standard. The standard-setting agencies may grant a modification or waiver upon a case-by-case determination that it is clearly necessary. This modification and waiver process is recognized in section F103 as a substitute to the provision for ''equivalent facilitation'' in section 103 provided for facilities subject to the ADA.

F106 Definitions

Definitions for ''joint use,'' ''lease,'' and ''military installation,'' are included that pertain to provisions specific to the ABA covering leased facilities. Definitions of ''private building or facility'' and ''public building or facility'' are not included because these terms are used to distinguish between places of public accommodation and commercial facilities covered by title III of the ADA (private) and State and local government facilities covered by title II of the ADA (public). In addition, a definition of ''employee work area'' has been included in the ABA guidelines, consistent with the ADA guidelines.

F202.2 Additions

Section F202.2 addresses additions to existing facilities and provides specific criteria for accessible routes, entrances, and toilet and bathing facilities that derive from UFAS. These provisions have been retained but are not provided in the ADA scoping document. Provisions in this section for public pay telephones and drinking fountains have been included for consistency with a requirement in the ADA scoping document for an accessible path of travel for certain additions (202.2).

F202.6 Leases

The ABA requires access to facilities leased by Federal agencies. Section F202.6 contains scoping requirements for facilities that are newly leased by the Federal government, including new leases for facilities previously occupied by the Federal government. The negotiation of a new lease occurs when (1) the Federal government leases a facility that it did not occupy previously; or (2) an existing term ends and a new lease is negotiated for continued occupancy. The unilateral exercise of an option which is included as one of the terms of a preexisting lease is not considered the negotiation of a new lease. Negotiations which do not result in a lease agreement are not covered by this section. Provisions in this section address joint-use areas, accessible routes, toilet and bathing facilities, parking, and other elements and spaces. Corresponding changes concerning coverage of leased facilities appear in the sections stating the purpose (F101) and the overall scope of the guidelines (F201.1).

F203 General Exceptions

Section F203.2 establishes a general exception for elements complying with earlier standards issued pursuant to the ABA or to section 504 of the Rehabilitation Act of 1973. This exception, or ''grandfather clause,'' applies only to individual elements and applies only to the extent that earlier standards contain specific provisions for the required element. For example, UFAS Section 4.17 contains provisions for wheelchair accessible toilet compartments, but does not contain provisions for ambulatory accessible toilet compartments. The technical criteria for wheelchair accessible toilet compartments in these guidelines at section 604.8.1 differ from UFAS 4.17; however, if an existing wheelchair accessible toilet compartment complies with UFAS 4.17 it need not comply with 604.8.1. On the other hand, where a Federal facility is altered, the toilet room may be subject to new accessibility requirements. In such cases, elements that were not addressed in earlier standards, such as the ambulatory accessible toilet stall, must be provided, unless it is technically infeasible to comply or a waiver or modification of the standards is obtained.

The Board has added the exception at F203.2 because Federal agencies raised concerns that these guidelines contain provisions for leasing at section 202.6 that could require alterations to elements that would have been deemed accessible under UFAS. For example, when a new lease is negotiated, certain elements within the space must comply with 202.6 even if the space was previously occupied by the Federal agency. UFAS Section 4.1.6(1) (f) contains a provision that exempts elements in both federally owned and leased facilities from any new requirements for accessibility unless altered. These guidelines require leased facilities to provide certain accessible elements such as accessible routes, toilets, drinking fountains, and telephones. Where these elements comply with earlier standards, they need not comply with these guidelines. For example, section 602.2 of these guidelines requires drinking fountains to provide a forward approach while UFAS 4.15.5 permits either a forward or parallel approach. Therefore, an existing drinking fountain providing a parallel approach and complying with UFAS 4.15.5 need not comply with section 602.2. An advisory note further clarifies that this exception does not effect a Federal agency's responsibilities under the Rehabilitation Act.

The ADA guidelines specify a limited degree of access within employee work areas (203.9). The level of access is not similarly limited in ABA facilities, consistent with the ABA's statutory language. Consequently, there are specifications for work areas that apply to ADA facilities but not to ABA facilities. These provisions address circulation paths (206.2.8) and visual alarms (215.3), and include exceptions concerning technical specifications for accessible routes (403.5) and ramp handrails (405.8). Also, ADA scoping provisions for work surfaces are clarified in the final rule as not applying to those provided for use by employees (226.1). However, an exception is provided in the ABA guidelines for laundry equipment used only by employees (F214.1).

F214 Washing Machines and Clothes Dryers

The ABA guidelines specifically exempt washing machines and clothes dryers provided for employee use (214.1). Other types of employee use equipment are not exempted. General exceptions for employee work areas in the ADA guidelines (203.9) effectively exempt laundry and other types of equipment used only by employees for work purposes. Laundry equipment that is provided for use by employees as part of their housing, recreation, or other accommodation must be accessible because that equipment is not used by the employee to perform job related duties.

Private Buildings and Facilities

Certain provisions in the ADA scoping document are specific to private buildings and facilities (*i.e.*, places of public accommodation and commercial facilities). These include an exception

from the requirement for an accessible route in private multi-level buildings and facilities that are less than three stories or that have less than 3,000 square feet per floor (206.2.3, Exception 1) and TTY scoping provisions specific to private buildings (217.4.2.2 and 217.4.3.2). These provisions are not included in the ABA guidelines.

F228 Depositories, Vending Machines, Change Machines, and Mail Boxes

The Board has clarified coverage of fuel dispensers in the final rule by adding a reference to them in the both the ADA scoping document (section 228) and the ABA scoping document (section F228). These elements are subject to requirements for operable parts in section 309, which specify location within accessible reach ranges and maximum operating forces. Exceptions to these requirements are provided for fuel dispensers. In the final rule, the Board has exempted coverage of fuel dispensers used only for fueling official government vehicles, such as postal and military vehicles. The Board considered such an exception appropriate to minimize the impact on elements used only by employees as part of their work responsibilities. A similar exception was not included in the corresponding provision for facilities covered by the ADA because such facilities are held to a different level of access with respect to work areas. The ADA scoping document, unlike its ABA counterpart, does not require elements within work areas used only by employees to be accessible.

F234 Residential Facilities

Requirements for residential dwelling units subject to the ABA are substantively consistent with the ADA scoping document in distinguishing between residential facilities subject to HUD regulations (F233.2) and those that are not (F233.4). As discussed above in section 233, the Board has sought to ensure consistency between the requirements of this rule and regulations for housing issued by HUD. In addition, the Board has included provisions specific to housing provided on military installations (F233.3) which are consistent with those for facilities not covered by HUD regulations. The term ''military installation,'' as defined in the final rule (F106.5), applies to all facilities of an installation, whether or not they are located on a common site.

The proposed rule did not include an exception for military housing that is provided in the current standards used to enforce the ABA (UFAS). UFAS (4.1.4(3)) permits the Department of Defense (DOD) the option of modifying dwelling units as needed on an installation-by-installation basis (4.1.4(3)), as opposed to providing access at the time of construction as is required for other types of dwelling units. This flexibility allows the military departments to modify units for access to suit the needs of families with disabilities.

Comment. The Board sought comment on whether the final rule should include a similar provision that would permit accessible dwelling units under control of the DOD to be designed to be readily and easily modifiable to be accessible provided that modifications are accomplished on a first priority basis when a need is identified (Question 17). The vast majority of comments, most of which were from persons with disabilities, opposed such a provision. DOD supported retaining this exception, consistent with UFAS, since it provides appropriate flexibility in accommodating families with disabilities at military installations.

Response. The Board has not included an exception for military housing in the final rule. Consistent with the proposed rule, certain exceptions are provided for residential dwelling units generally that permit the installation of accessible features after construction if specified conditions are met. For example, grab bars do not have to be installed during the construction of residential dwelling units if the proper reinforcement is provided to facilitate their later installation as needed.

Chapter 3: Building Blocks

Chapter 3 contains basic technical requirements that form the ''building blocks'' of accessibility as established by the guidelines. These requirements address floor and ground surfaces (302), changes in level (303), wheelchair turning space (304), clear floor or ground space (305), knee and toe clearance (306), protruding objects (307), reach ranges (308), and operable parts (309). They are referenced by scoping provisions in Chapter 2 and by requirements in subsequent technical chapters (4 through 10).

Most comments addressed requirements for reach ranges and operable parts. Substantive revisions made in the final rule include:

- Lowering the maximum height for side reaches from 54 to 48 inches (308.3.1).
- Providing a limited exception from this requirement for gas pumps (308.3.1 and 308.3.2, Exception 2) and an exception for the operable parts of gas pumps (309.4).
- Adding an exception from requirements for obstructed side reaches to accommodate the standard height of laundry equipment (308.3.2, Exception 1).

302 Floor or Ground Surfaces

Section 302 requires floor or ground surfaces to be stable, firm, and slip resistant and provides specifications for carpets and surface openings.

Comment. Slip-resistance is based on the frictional force necessary to keep a shoe heel or crutch tip from slipping on a walking surface under conditions likely to be found on the surface. The Board was urged to reference specifications and testing protocols for slip resistance, in particular those developed by Voices of Safety International.

Response. Historically, the Board has not specified a particular level of slip resistance since it can be measured in different ways. The assessed level (or static coefficient of friction) varies according to the measuring method used. It is the Board's understanding that various industries each employ different testing methods and that there is no universally adopted or specified test protocol. The final rule does not include any technical specifications or testing methods for slip resistance as recommended by comments. The Board has chosen not to reference specifications that have not been vetted by the model codes community or developed through established industry procedures governing the adoption of consensus standards and specified test methods.

The final rule includes exceptions developed in a separate rulemaking on recreation facilities that exempts animal containment areas and areas of sports activity from the requirements for floor or ground surfaces.

303 Changes in Level

Section 303 addresses vertical changes in level in floor or ground surfaces. No changes have been made to this section. Exceptions for animal containment areas and areas of sports activity established in rulemaking on recreation facilities are included in the final rule.

304 Turning Space

Minimum spatial requirements are specified for wheelchair turning space. This section permits either a 60 inch diameter circle or a T-shaped design. Objects that provide sufficient knee and toe clearance can overlap a limited portion of the turning space.

Comment. Comments urged that the minimum dimensions for turning space be increased to better accommodate scooters and motorized wheelchairs.

Recommendations ranged from 64 to 68 inches for the diameter of circular space and the overall dimensions of the T-shaped space. The overlap of this space by other elements should be prohibited or further restricted according to some of these comments because knee and toe clearances do not accommodate the front tiller of scooters.

Response. The lack of consensus on the dimensions for larger turning space and the absence of supporting data points to the need for research on the spatial turning requirements for scooters and other powered mobility aids. The Board believes that such research is needed before any changes to the long-standing criteria for turning space are made. The Board is sponsoring a long-term research project on scooters and other powered mobility aids through the Rehabilitation Engineering Research Center on Universal Design.

305 Clear Floor or Ground Space

Section 305 provides requirements for the basic space allocation for an occupied wheelchair. Few comments addressed this section, and no substantive changes have been made.

306 Knee and Toe Clearance

Section 306 defines the minimum clearances for knees and toes beneath fixed objects. Few comments addressing this section were received. The only changes made to this section are editorial in nature for purposes of clarity.

307 Protruding Objects

Objects mounted on walls and posts can be hazardous to persons with vision impairments unless treated according to the specifications in section 307 for protruding objects. Objects mounted on walls above the standard sweep of canes (*i.e.*, higher than 27 inches from the floor) and below the standard head room clearance (80 inches), are limited to a 4 inch depth. Objects mounted on posts within this range are limited to a 12 inch overhang.

Comment. Several commenters called for the 27 inch triggering height to be reduced. Recommendations ranged from 15 to 6 inches. Comments also recommended that post-mounted objects be held to the requirements for wall-mounted objects.

Response. Post-mounted objects are common along sidewalks, street crossings, and other public rights-of-way. The Board intends to develop guidelines specific to public rights-of-way in a separate rulemaking. This other rulemaking will address and invite comment on protruding objects in public rights-of-way. With respect to the mounting height above which requirements for protruding objects apply (27 inches), the Board believes research is needed to further assess this specification. No substantive changes have been made to the provisions for protruding objects in the final rule.

308 Reach Ranges

Accessible reach ranges are specified according to the approach (forward or side) and the depth of reach over any obstruction. The proposed rule, consistent with the original ADAAG, specified maximum heights of 48 inches for a forward reach and 54 inches for a side reach. In the final rule, the maximum side reach has been lowered to the height specified for forward reaches. Exceptions to this requirement and a related provision for reaches over obstructions have been added for gas pumps, laundry equipment, and elevators.

The ADAAG Review Advisory Committee's report, upon which the proposed rule was largely based, recommended that the side reach range, including obstructed reaches, be changed to those required for forward reaches. This recommendation was based on a report from the Little People of America which considered the 54 inch height beyond the reach for many people of short stature. The advisory committee also considered the 48 inch maximum for side reaches as preferable for people who use wheelchairs. The Board proposed retaining the 54 inch side reach maximum pending further information on the need for, and impact of, such a change in view of its application to a wide and varied range of controls and elements. However, the Board acknowledged that the ANSI A117.1–1998 standard included such a change, which would mitigate the impact of similar action by the Board in view of new codes based on the ANSI A117.1 standard.

Comment. Several hundred comments, almost a fifth of the total received in this rulemaking, addressed the merits of lowering the side reach maximum. The vast majority urged lowering the side reach, consistent with the advisory committee's recommendation. Most of these comments were submitted by persons of short stature and disability groups. These commenters, as well as the ANSI A117 Committee and the Little People of America, stated that the unobstructed high reach range requirement should be lowered to 48 inches to help meet the needs of people of short stature, people with little upper arm strength and movement, and people with other disabilities. This change would enhance consistency between the guidelines and other codes and standards. Comments called attention to difficulties people encounter accessing ATMs, vending machines, and gas pumps. Various trade and industry groups opposed lowering the side reach range due to concerns about the impact and cost on various types of equipment, including those highlighted by other comments as difficult to reach. In particular, gas pump manufacturers outlined the difficulties in designing a fuel dispenser that would meet the 48 inch requirement. Gas pumps are often located on curbs at least 6 inches high for safety reasons. In addition, safety and health regulations require distance between the electronics of the pump and the dispenser. Comments from the elevator industry noted that a 48 inch maximum height would adversely impact the design of elevator controls.

The Board held a public meeting in October, 2000 to collect further information on this issue. Persons of short stature and disability groups reiterated the need for lowering the side reach to 48 inches. ATM manufacturers noted that they could meet the 48 inch maximum height for most new models of ATMs. Gas pump manufacturers demonstrated the difficulties in meeting the 48 inch height requirement in view of their current designs and safety and health design requirements. The gas pump manufacturers impressed upon the Board the great difficulty of installing a redesigned gas pump on an existing curb. They contended that although it would be possible to redesign gas pumps to be 48 inches to the highest operable part, even when installed on a curb, such gas pumps would have non-uniform fittings. They noted that installing them would be costly and could necessitate removing the entire curb.

Response. The maximum side reach height has been lowered from 54 to 48 inches. An exception is provided for the operable parts of fuel dispensers, which are permitted to be 54 inches high maximum where dispensers are installed on existing curbs. This exception responds to industry's concern regarding costs associated with alterations and will permit the existing stock of gas pumps that are currently within 54 inches to be used. In addition, certain exceptions are provided for elevators in section 407, consistent with the ANSI A117.1 standard.

Comment. Requirements for side reaches over an obstruction in 308.3.2 limit the height of the obstruction to 34 inches maximum. A major manufacturer of laundry equipment indicated that this specification would significantly impact

the standard design of clothes washers and dryers, which have a standard work surface height of 36 inches. Complying with a 34 inch maximum height would decrease machine capacity and involve substantial redesign and retooling to develop compliant top-loading and front-loading machines.

Response. An exception has been added that permits the top of washing machines and clothes dryers to be 36 inches maximum above the floor.

309 Operable Parts

Specifications for operable parts address clear floor space, height, and operating characteristics. Operable parts are required to be located with the reach ranges specified in 308. In addition, they must be operable with one hand and not require tight grasping, pinching, twisting of the wrist, or more than 5 pounds of force to operate.

Comment. The proposed rule included an exception from the height requirements in 309.3 for special equipment and electrical and communications systems receptacles. This exception's coverage of various operable parts was considered to be too broad.

Response. This exception has been revised to specifically cover operable parts that are ''intended for use only by service or maintenance personnel,'' ''electrical or communication receptacles serving a dedicated use,'' and ''floor electrical receptacles.'' However, since such equipment may merit exception from other criteria for operable parts besides the height specifications, this exception has been recast as a general exception from section 309 and has been relocated to the scoping requirement for operable parts in Chapter 2 (see section 205.1, exceptions 1, 2, and 4).

Comment. Gas pump manufacturers indicated that the safety requirements for the operation of gas pump nozzles effectively preclude a maximum operating force of 5 pounds.

Response. An exception has been added to 309.4 that permits gas pump nozzles to have an activating force greater than 5 pounds.

Comment. The Board sought comment on whether the maximum 5 pounds of force was appropriate for operating controls activated by a single finger, such as elevator call and control panel buttons, platform lift controls, telephone key pads, function keys for ATMs and fare machines, and controls for emergency communication equipment in areas of refuge, among others. Usability of such controls also may be affected by how far the button or key must be depressed for activation. Specifically, the Board asked whether a maximum 3.5 pounds of force and a maximum 1/10 inch stroke depth provide sufficient accessibility for the use of operable parts activated by a single finger (Question 18) and whether there were any types of operable parts that could not meet, or would be adversely affected by such criteria (Question 19). The few comments received on this issue were evenly divided on the merits of adding these specifications. Comments noted that they would pose problems for fare machines and interactive transaction machines designed to withstand vandalism and misuse, various types of plumbing products, dishwashers and laundry machines, and amusement games and attractions. The elevator industry indicated that the noted specifications would not pose a problem in the design of elevators.

Response. Due to the limited support expressed and the potential impacts raised by commenters, a maximum 3.5 pounds of force and a maximum 1/10 inch stroke depth for operable parts activated by a single finger has not been included in the final rule.

Chapter 4: Accessible Routes

Chapter 4 contains technical requirements for accessible routes (402) and the various components of such routes, including walking surfaces (403), doors, doorways and gates (404), ramps (405), curb ramps (406), elevators (407 through 409), and platform lifts (410). In the proposed rule, this chapter included requirements for accessible means of egress and areas of refuge (409 and 410). These sections have been removed, as discussed above at section 207. The scoping provisions for accessible means of egress at section 207 now reference corresponding requirements in the International Building Code (IBC). Information on the IBC is available on the Board's Web site at *www.access-board.gov* and in advisory notes.

402 Accessible Routes

Section 402 lists the various elements that can be part of an accessible route: walking surfaces, doorways, ramps, elevators, and platform lifts. Walking surfaces must have a running slope of 1:20 or less. Those portions of accessible routes that slope more than 1:20 must be treated as ramps or curb ramps.

Comment. Comments noted that curb ramps should be included in the list of accessible route components.

Response. A reference to curb ramps has been added to this list in the final rule (402.2). In addition, the Board has clarified that only the run of curb ramps, not the flared sides, can be considered part of an accessible route.

403 Walking Surfaces

Requirements in 403 for walking surfaces apply to portions of accessible routes existing between doors and doorways, ramps, elevators, or lifts. The requirements for walking surfaces derive from existing specifications for accessible routes covering floor or ground surfaces, slope, changes in level, and clearances. Revisions made to this section include:

- Adding an exception for circulation paths in employee work areas (403.5, Exception).
- Removing redundant specifications for protruding objects (403.5.3 in the proposed rule).
- Addressing handrails provided along walking surfaces (403.6).

The final rule requires that common use circulation paths within work areas satisfy requirements for accessible routes (203.9). This provision does not require full accessibility within the work area or to every individual work station, but does require that a framework of common use circulation pathways within the work area as a whole be accessible. These circulation paths must be accessible according to requirements for accessible routes and walking surfaces. Section 403.5 includes requirements for the clear width of walking surfaces. The Board has included an exception to section 403.5 which recognizes constraints posed by various types of equipment on the width of circulation paths. Under this exception, the specified clearance for common use circulation paths within employee work areas can be reduced by equipment where such a reduction is essential to the function of the work being performed.

The proposed rule included a requirement that protruding objects not reduce the required clear width of walking surfaces (403.5.3). The Board has removed this requirement as redundant. Section 307, which addresses protruding objects, specifies that such objects not reduce the clear width of accessible routes (307.5).

Comment. Requirements for handrails in the proposed rule applied only to those provided along ramps and stairs. The handrail requirements in section 505 address specifications for continuity, height, clearance, gripping surface, cross section, fittings, and extensions. The Board sought comment on whether these requirements should also be applied to handrails that are provided along portions of circulation paths without ramps or stairs (Question 20). The few comments that addressed

this question supported the inclusion of such a requirement.

Response. In the final rule, the Board has included a requirement at section 403.6 that handrails, where provided along walking surfaces not treated as a ramp (*i.e.*, those with running slopes no steeper than 1:20), meet the technical criteria in section 505. The Board has included provisions in section 505 that exempt walking surfaces from requirements for handrails on both sides and from requirements for handrail extensions.

Comment. Section 403.5 specifies a continuous clearance of 36 inches minimum for walking surfaces. Wider clearances are specified for wheelchair passing space (60 inches minimum) and certain sharp turns around narrow obstructions. Several comments urged an increase in the specified clearances for walking surfaces, such as a 48 inch minimum for exterior routes, and an increase in wheelchair passing space to 66 inches.

Response. No revisions have been made to the specified clearance of walking surfaces. The minimum width of exterior routes on public streets and sidewalks will likely be revisited in supplementary guidelines specific to public rights-of-ways that the Board intends to develop. These supplementary guidelines will be proposed for public comment.

404 Doors, Doorways, and Gates

This section covers both doors, doorways, and gates that are manually operated (404.2) and those that are automated (404.3). Changes made to the requirements for manually operated doors:

- Clarify coverage of gates and the application of this section to manual doors and doorways intended for user passage (404.2).
- Clarify and modify maneuvering clearance requirements (404.2.4).
- Modify requirements for doors and gates in series (404.2.6).
- Clarify the height of door and gate hardware and add an exception for gates at pools, spas, and hot tubs (404.2.7).
- Revise an exception for door and gate surface requirements (404.2.10, Exception 2) and add a new exception for existing doors and gates (Exception 4).

In the proposed rule, section 404 referenced doors and doorways. The original ADAAG included a provision for gates which were subject to all relevant specifications for doors and doorways. The final rule includes references to gates throughout section 404 so that they are equally covered, consistent with the intent of this section and with scoping provisions for doors, doorways, and gates in section 206.5. In addition, clarification has been added that the requirements for manual doors, doorways, and gates in section 404.2 apply to those ''intended for user passage.''

Comment. Commenters requested that the Board specifically address doors which do not provide user passage.

Response. Section 404, as all of Chapter 4, addresses accessible routes and components of such routes. Doors which do not provide user passage would not be considered part of an accessible route. However, doors not providing user passage, such as those at many types of closets and wall mounted cabinets, are subject to requirements for storage (811) and for operable parts (309) where they are required to be accessible.

Section 404.2.4 addresses maneuvering clearances at manual doors, doorways, and gates. It includes tables that specify these clearances according to the type of door, doorway, or gate (swinging, sliding, folding, and doorways without doors or gates) and the approach (front, latch side, hinge side). Clearances are specified for the pull side and the push side in the case of swinging doors. The final rule includes clarification, which was partially contained in a previous footnote to Table 404.2.4.1, that maneuvering clearances ''shall extend the full width of the doorway and the required latch side or hinge side clearance,'' consistent with corresponding figures.

Comment. The proposed rule exempted doors to hospital patient rooms that are at least 44 inches wide from the specifications for latch side clearances. This exception derives from the original ADAAG and was intended to apply to those types of patient rooms where patients are typically transported in and out by hospital staff. Commenters pointed out that this exception should be limited to acute care patient bedrooms, as in the original ADAAG. The 44 inch specification pertains to the clear opening width of doors intended to accommodate gurneys.

Response. The exception, located at section 404.2.4 in the final rule, remains generally applicable to entry doors serving hospital patient rooms. The 44 inch width criterion has been removed so that the exception may be applied without regard to the door width. The Board opted not to limit the application of this exception due to concerns about the impact on the standard design and size of patient rooms. Doors to patient rooms are often located close to adjacent interior walls in order to facilitate circulation and to enhance privacy. As a matter of design, practice, or code requirement, such doors are typically wider in order to accommodate beds and gurneys.

Comment. Table 404.2.4.1 specifies maneuvering clearances for manual swinging doors and gates. At doors that provide a latch side approach, the minimum depth of this clearance is increased where a closer is provided because additional space is needed to counteract the force of closers while maneuvering through the door from either the push or the pull side. In the proposed rule, this additional depth (6 inches) was specified when both a closer and a latch are provided. Comments indicated that this requirement should apply based on the provision of a closer since the addition of a latch does not impact the need for additional maneuvering clearance.

Response. The specification in Table 404.2.4.1, footnote 4, has been revised to apply where a closer is provided at doors with latch side approaches. The reference to latches has been removed.

Comment. Section 404.2.5 addresses the height of thresholds. A maximum height of ½ inch is generally specified, although an exception permits a maximum height of ''inch at existing or altered thresholds that have a beveled edge on each side. Many comments opposed any threshold height above ½ inch. Conversely, a few comments urged that this exception be broadened to restore a similar allowance for exterior sliding doors.

Response. The Board has retained the ¾ inch height allowed for thresholds with a beveled edge on each side that are existing or altered because compliance with the ½ inch requirement can, in some cases, significantly increase alteration costs and necessitate replacement of door assemblies. An exception in original ADAAG that allowed a ¾ inch threshold at exterior sliding doors was removed in the proposed rule because products are available, including swinging doors, that meet the ½ inch maximum specified for all other doors. No changes to the criteria for thresholds have been made in the final rule.

Section 404.2.6 specifies the minimum separation between doors and gates in series (48 inches plus the width of doors or gates swinging into the space). The proposed rule, consistent with the original ADAAG, included a requirement that doors and gates in series swing either in the same direction or away from the space in between. The Board has removed this requirement for consistency with the ANSI A117.1 standard. The required separation

between doors and gates in series and specifications for maneuvering clearances at doors will ensure sufficient space regardless of the door swing.

The height of door and gate hardware (34 to 48 inches) is specified in section 404.2.7. In the final rule, the Board has clarified that this height pertains to the operable parts of hardware, consistent with the ANSI A117.1 standard.

In finalizing this rule and incorporating its guidelines for recreation facilities, the Board determined that the specified height for door and gate hardware conflicts with industry practice or safety standards for swimming pools which specify a higher range for the location of latches beyond the reach of young children. The Model Barrier Code for Residential Swimming Pools, Spas, and Hot Tubs (ANSI/NSPI–8 1996) permits latch releases for chain link or picket fence gates to be above 54 inches. The model safety standard does not apply this requirement to key locks, electronic openers, and integral openers which have a self-latching device that is also self-locking. To reconcile this conflict, the Board has added an exception in the final rule for barrier walls and fences protecting pools, spas, and hot tubs (404.2.7, Exception 2). Under this exception, a 54 inch maximum height is permitted for the operable parts of the latch release on self-latching devices. Although the final guidelines specify 48 inches as the maximum forward or side reach, the original ADAAG recognized a maximum of 54 inches for side reach. Consistent with the model safety standard, this exception is not permitted for self-locking devices operated by keys, electronic openers, or integral combination locks.

Comment. Section 404.2.7 also covers the operating characteristics and height of door and gate hardware. An exception is provided for ''existing locks at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.'' The advisory committee had recommended a broader exception that would have permitted any location for locks used only for security purposes and not for normal operation. Several comments preferred the exception put forth by the advisory committee over the one proposed by the Board.

Response. The Board sought to limit the exception to existing doors or grilles because design solutions for accessible doors and gates are available in new construction. In addition, the Board felt that the advisory committee's language concerning ''locks used only for security purposes'' could be construed as applying to any lock. No changes have been made to the exception.

Comment. Section 404.2.9 addresses the opening force of doors and gates. The provisions are consistent with existing ADAAG specifications by requiring a maximum 5 pounds of force for sliding, folding, and interior hinged doors. Fire doors are required to have the minimum opening force permitted by the appropriate administrative authority. No maximum opening force was proposed for exterior hinged doors. Many comments urged the Board to address exterior hinged doors, with a majority proposing a maximum of 8.5 pounds of force. Where this maximum cannot be met, the door should be required to be automatic or power-assisted, according to these comments. Some commenters felt that automatic doors should be made mandatory regardless of the opening force of manual hinged doors.

Response. Historically, the Board has not specified a maximum opening force for exterior hinged doors to avoid conflicts with model building codes. The closing force required by building codes usually exceeds 5 pounds, the maximum considered to be accessible. Factors that affect closing force include the weight of the door, wind and other exterior conditions, gasketing, air pressure, heating, ventilation, and air conditioning (HVAC) systems, and energy conservation, among others. Research previously sponsored by the Board indicates that a force of 15 pounds is probably the most practicable as a specified maximum. Considering that closing force is 60% efficient, a 15 pound maximum for opening force may be sufficient for closure and positive latching of most doors, but is triple the recognized maximum for accessibility. A maximum opening force for exterior hinged doors has not been included in the final rule.

Section 404.2.10 requires that swinging doors and gates have a smooth surface on the push side that extends their full width. This provision derives from the ANSI A117.1–1992 standard and is intended to permit wheelchair footrests to be used in pushing open doors without risking entrapment on the stile. This provision requires that parts creating joints in the smooth surface are to be within 1/16 inch of the same plane as the other. Also, cavities created by added kick plates must be capped. Exceptions from this requirement are recognized for sliding doors (Exception 1), certain tempered glass doors without stiles (Exception 2), doors and gates that do not extend to within 10 inches of the floor or ground (Exception 3), and existing doors and gates (Exception 4).

Comment. Exception 2 exempts tempered glass doors without stiles that have a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal. Comments indicated that these types of doors should be exempt from the requirement for the smooth surface area on the push side, but should be subject to other portions of the provision covering surface joints and added kick plates.

Response. In the final rule, section 404.2.10, Exception 2 has been revised to exempt the type of tempered glass doors described only from the requirement for a smooth surface on the push side that extends the full width of the door. Such doors remain subject to specifications for parts creating joints in the surface and for provided kick plates.

In finalizing the rule, the Board determined that the cost of making existing doors or gates comply with the smooth surface requirement in alterations can be significant. An exception from this requirement for existing doors and gates is provided in the final rule (404.2.9, Exception 4). Under this exception, such doors or gates do not have to comply with the surface requirements, provided that cavities created by added kick plates are capped.

Section 404.3 addresses automatic doors and gates, including those that are full-powered, low-energy, and power-assisted. In addition to the provisions of section 404.3, such doors are subject to industry standards (ANSI/BHMA 156.10 and 156.19). The reference to these standards in section 105.2 has been updated in the final rule to refer to the most recent editions: ANSI/BHMA A156.10–1999 Power-Operated Pedestrian Doors and the 1997 or 2002 editions of ANSI/BHMA A156.19 Power-Assist and Low-Energy Power-Operated Doors. The Board's Web site at *www.access-board.gov* provides further information on these referenced standards. Provisions in section 404.3 address clear width; maneuvering clearance; thresholds; doors and gates in series; operable parts; break out opening; and revolving doors, gates, and turnstiles.

Changes made to this section include:

- Removal of unnecessary language from the charging statement (404.3).
- Modification of maneuvering clearance specifications (404.3.2).
- Removal of requirements for door labels and warnings (404.3.6 in the proposed rule).
- Revision of specifications for break out opening (404.3.6).

• Addition of a provision for revolving doors, gates, and turnstiles (404.3.7).

Comment. In the proposed rule, section 404.3 noted that ''[a]utomatic doors shall be permitted on an accessible route.'' Commenters indicated that this language was unnecessary since any type of door complying with section 404 may be on an accessible route (404.1).

Response. The statement permitting automatic doors on accessible routes in section 404.3 has been removed.

In the proposed rule, section 404.3.2 required that maneuvering clearances specified for swinging doors be provided at power-assisted doors and gates since their activation, unlike those that are fully automated, involves manual operation. In the final rule, this provision has been revised to also apply to automatic doors and gates not equipped with standby power that are part of an accessible means of egress. In cases of building power failure, this will help provide access where manual operation of the door or gate is required, unless the opening device has its own back-up power supply. A new exception exempts those automatic doors or gates that remain open in the power-off condition since manual operation is not necessary during power outages.

The proposed rule included a requirement that labels and warning signs for automatic doors meet requirements in section 703.4 for non-tactile signage (404.3.6). The Board has removed this requirement in the final rule since the referenced industry standards address the characteristics of these signs and labels.

Comment. In the proposed rule, the Board included a requirement that the clear break out opening for swinging or sliding automatic doors be at least 32 inches in emergency mode so that an accessible route through them is maintained in emergencies (404.3.7). Several comments opposed this requirement because of a common accessibility retrofit in which 60 inch wide double doors are automated so that both 30 inch leaves open simultaneously to meet the minimum 32 inch clear opening requirement. However, neither leaf would provide the minimum 32 inch clearance in emergency mode required by this provision.

Response. The Board has revised the requirement so that it applies only to those automatic doors and gates without standby power that are part of a means of egress (404.3.6). Automatic doors equipped with backup power would meet this requirement, including those with double leaves less than 32 inches wide. In addition, the Board has added an exception under which compliance with this provision is not required where accessible manual swinging doors or gates serve the same means of egress.

Comment. A commenter advised that no revolving doors or turnstiles should be permitted on an accessible route.

Response. As indicated in the proposed rule, manual revolving doors, gates, and turnstiles cannot be part of an accessible route (404.2.1). The Board has included a provision clarifying that automatic types of revolving doors, gates, and turnstiles cannot be the only means of passage at an accessible entrance (404.3.7). While automated revolving doors, if large enough, may be usable by people with disabilities, certain questions remain about the appropriate maximum speed, minimum diameter, compartment size, width and configuration of openings, break out openings, and safety systems such as motion detectors that stop door movement without contact. An alternate door in full compliance with 404 is considered necessary since some people with disabilities may be uncertain of their usability or may not move quickly enough to use them.

405 Ramps

Section 405 provides technical criteria for ramps. Revisions made to this section include:

• A new exception for ramps in assembly areas (405.1).

• Removal of an exception for ramp slopes in historic facilities (405.2).

• Addition of exceptions for ramps in employee work areas (405.5 and 405.8).

• Clarification of specifications for ramp landings (405.7).

Comment. Requirements for ramps apply to portions of accessible routes that slope more than 1:20. Technical provisions address running slope, cross slope, handrails, landings, edge protection, and other elements. Comments from designers of assembly areas requested that the guidelines make clear that ramps adjacent to seating in assembly areas that are not part of a required accessible route do not have to comply with the guidelines. Often, it is not practicable that such ramps meet requirements for handrails, edge protection, running slope, and other specifications.

Response. An exception has been added in the final rule (405.1) for ramps adjacent to seating in assembly areas, which are not required to comply with the guidelines provided that they do not serve elements required to be on an accessible route.

Section 405.2 specifies a maximum running slope of 1:12 for ramps. Alternate slope requirements are permitted for short ramps in existing facilities where space constraints effectively prohibit a 1:12 running slope. A 1:10 maximum slope is permitted for ramps with a rise of up to 6 inches, and a maximum 1:8 slope is allowed for ramps with a rise of up to 3 inches.

Comment. Commenters recommended that language in the original ADAAG be restored calling for the ''least possible slope'' to be used, with 1:12 being the maximum allowed.

Response. While the least possible slope is generally desired for easier access, this language had been removed because it is considered too vague from a compliance standpoint and thus difficult to enforce. The final rule, consistent with the proposed rule, specifies only that the maximum slope shall be 1:12.

Comment. The proposed rule included an exception for qualified historic structures (405.2, Exception 2) that would have permitted a running slope of 1:6 maximum for ramps no longer than 24 inches. Commenters urged that this exception be removed for consistency with the ANSI A117.1–1998 standard and the International Building Code (IBC).

Response. This exception for qualified historic facilities has been removed in the final rule. Such facilities, however, may qualify for the exceptions generally permitted for existing facilities that have been retained in the final rule.

The final rule includes exceptions for ramps located in employee work areas. Common use circulation paths within such areas are subject to requirements for accessible routes (203.9). These circulation paths must be accessible according to requirements for accessible routes, including ramps. Exceptions included in the final rule for the clear width (405.5) and handrails (405.8) of ramps located in employee work areas recognize constraints posed by various types of equipment. Employee work area ramps do not have to meet the specified 36 inch minimum clear width where a decrease is necessary due to equipment within the work area so long as the decrease is essential to the work being performed. Ramps within employee work areas are not required to have handrails if they are designed to permit the later installation of complying handrails. A clearance of 36 inches between handrails is required, except at those ramps that qualify for the clear width exception in 405.5.

Comment. Section 405.7 addresses ramp landings, including the minimum

width and length (405.7.2 through 405.7.4). A commenter suggested that these provisions be revised to the ''clear'' dimension for clarity and consistency.

Response. Specifications for ramp landings have been revised in the final rule, as suggested, to refer to the ''clear'' dimension.

406 Curb Ramps

Section 406 provides requirements specific to curb ramps and also applies requirements for other types of ramps covered by section 405. These include specifications for running slope, surface, clear width, and wet conditions. Consistent with the scope of the guidelines, these requirements apply to facilities on sites. The Board will address and invite comment on requirements for curb ramps located in public streets and sidewalks in upcoming rulemaking to develop supplementary guidelines specific to public rights-of-way. This supplement will be proposed for public comment based on recommendations from the Board's Public Rights-of-Way Access Advisory Committee, which was comprised of representatives from the transportation industry, Federal, State and local government agencies, the disability community, and design and engineering professionals. This committee's recommendations are contained in a report, ''Building a True Community,'' which was submitted to the Board in January 2001.

Provisions for curb ramps in section 406 have been revised to:

- Clarify requirements for cross slope (406.1).
- Modify specifications for side flares (406.3) and landings (406.4).
- Delete unnecessary language concerning handrails (406.4 in the proposed rule).
- Clarify the specified location of curb ramps (406.5).
- Change specifications for diagonal curb ramps (406.6).

Comment. Comments indicated that specifications for cross slope (1:48 maximum) are not referenced in the curb ramp section.

Response. In the final rule, the Board has clarified that curb ramps, like other elements of accessible routes, cannot have a cross slope steeper than 1:48, by adding a reference to the cross slope specification for ramps in section 405.3.

Section 406.3 addresses the sides of curb ramps and specifies that side flares, where provided, have a slope of 1:10 maximum. In the proposed rule, this provision required flared sides where pedestrians must walk across the curb ramp. Returned sides were permitted where pedestrians would not normally walk across the ramp. In the final rule, this distinction has been removed. However, curbs with returned sides remain an alternative to flared sides. In addition, the specification for shallower (1:12) side flares for curb ramps with limited space at the top has been removed in conjunction with revisions to the criteria for landings (406.4).

Comment. Commenters advised that landings should be specified at the top of curb ramps.

Response. Section 406.4 is new to the final rule in clarifying requirements for landings at the top of curb ramps. Curb ramps must be connected by an accessible route which, in effect, requires space at least 36 inches in length at the top of curb ramps. Otherwise, maneuvering at the top of ramps would require turning on the flared sides. Landings must also be as wide as the curb ramp they serve. The proposed rule specified that side flares of 1:12 maximum must be provided when space at the top of curb ramps is less than 48 inches long. This specification has been removed. However, a similar exception has been added for alterations. Under this exception, 1:12 maximum side flares are required where there is no landing at the top of curb ramps. This exception was provided to address situations where existing space constraints or obstructions may prohibit a landing at the top of curb ramps.

The proposed rule noted that handrails are not required on curb ramps (406.4 in the proposed rule). This language, though accurate, has been removed as unnecessary since the technical provisions for curb ramps in section 406 do not include or reference requirements for handrails.

Section 406.5 specifies the location of curb ramps at marked crossings. In the final rule, requirements for the general location of curb ramps that were provided at section 406.8 in the proposed rule have been integrated into this provision for simplicity. As reformatted, section 406.5 covers the location of curb ramps, including at marked crossings.

Comment. Curb ramps must be located so that they do not project into vehicular traffic lanes or parking spaces and access aisles. Commenters noted that this requirement should be clarified to apply not only to the run of the curb ramp, but also to flared sides, where provided.

Response. Consistent with the intent of the requirement in section 406.5, the Board has clarified that the specified location applies to curb ramps ''and the flared sides of curb ramps.''

Comment. Section 406.6 provides specifications for diagonal (or corner type) curb ramps. These curb ramps must have a 48 inch minimum clear space at the bottom. Comments advised that this space should be provided outside active traffic lanes of the roadway so that persons traversing the ramp are not in the way of oncoming traffic from either direction at an intersection.

Response. Clarification has been added in the final rule that the clear space at the bottom of diagonal curb ramps must be located ''outside active traffic lanes of the roadway.''

Comment. Requirements for diagonal curb ramps in section 406.6 also specify that a segment of straight curb at least 2 feet long must be provided on each side of the curb ramp and within the marked crossing. This portion of curb face provides a detectable cue to people with vision impairments traveling within the crosswalk. Comments noted that this segment of curb does not have to be horizontally straight to provide such a cue and that achieving straight segments two feet long within marked crossings is very difficult under standard intersection design conventions.

Response. The requirement in section 406.6 that the 2 foot curb segment aside diagonal curb ramps be ''straight'' has been removed. The segment can be provided at arced portions of the curb, but must still be located within marked crossings.

Comment. Comments, most from groups representing persons with vision impairments, called attention to the need for detectable warnings at curb ramps, blended curbs, and cut-through islands. They requested that such a requirement be reinstated in the final rule. A few comments opposed such a change.

Response. The original ADAAG contained a requirement that curb ramp surfaces have a raised distinctive pattern of truncated domes to serve as a warning detectable by cane or underfoot to alert people with vision impairments of the transition to vehicular ways (ADAAG 4.7.7). This warning was required since the sloped surfaces of curb ramps remove a tactile cue provided by curb faces. In response to concerns about the specifications, the availability of complying products, proper maintenance such as snow and ice removal, usefulness, and safety concerns, the Board, along with the Department of Justice (DOJ) and the Department of Transportation (DOT), suspended the requirement for

detectable warnings at curb ramps and other locations pending the results of a research project sponsored by the Board on the need for such warnings at these locations.[22] The research project showed that intersections are very complex environments and that pedestrians with vision impairments use a combination of cues to detect intersections. The research project suggested that detectable warnings had a modest impact on detecting intersections since, in their absence, pedestrians with vision impairments used other available cues. The results of this research indicated that there may be a need for additional cues at some types of intersections, but did not identify the specific conditions where such cues should be provided.

Suspension of this requirement continued until July 26, 2001, to accommodate the advisory committee's review of ADAAG and resulting rulemaking by the Board.[23] The advisory committee recommended that the requirement for detectable warnings at platform edges in transportation facilities be retained, but it did not make any recommendations regarding the provision of detectable warnings at other locations within a site. The advisory committee suggested that the appropriateness of providing detectable warnings at vehicular-pedestrian intersections in the public right-of-way should be established first, and that the application to locations within a site should be considered afterward. Consequently, the Board did not include requirements for detectable warnings in the proposed rule, except at boarding platforms in transit facilities. Nor did the Board further extend the suspension, which expired on July 26, 2001. Since the enforcing agencies did not extend the suspension either, the detectable warning requirements are technically part of the existing standards again. DOJ and DOT can provide additional guidance on their enforcement of these requirements pending the update of their standards according to these revised guidelines.

The Board will address and invite comment on detectable warnings on curb ramps in its development of guidelines covering public rights-of-way. Those guidelines will be proposed for public comment based on recommendations from the Public Rights-of-Way Access Advisory Committee. This committee's report to the Board makes recommendations for detectable warnings at curb ramps. Consistent with the ADAAG Review Advisory Committee's recommendation, the Board intends to address detectable warnings in public rights-of-way before including any specification generally applicable to sites. Thus, this final rule does not reinstate requirements for detectable warnings at curb ramps or hazardous vehicular areas.

407 Elevators

Section 407 covers passenger elevators, including destination-oriented elevators and existing elevators. This section also requires compliance with the industry safety code, ASME/ANSI A17.1–2000 Safety Code for Elevators and Escalators. The Board has revised the rule to reference the most recent edition of this code (105.2.2).

The requirements for elevators have been extensively revised and reformatted. In the proposed rule, different types of elevators were covered by separate subsections: standard elevators (407.2), destination-oriented elevators (407.3), limited-use/limited-application elevators (407.4), and existing elevators (407.5). In addition, residential elevators were addressed in a separate chapter covering residential facilities (11). Since there was considerable redundancy in the specifications between some types of these elevators, the Board has integrated into one section (407) the requirements for standard, destination-oriented, and existing elevators. Basically, this revised section tracks the requirements for standard elevators in 407.2 of the proposed rule, but the provisions have been renumbered and formatted. Various exceptions specific to destination-oriented and existing elevators have been incorporated into this section to preserve the substance of differing specifications. Requirements for limited-use/limited-application (LULA) elevators and residential elevators are provided in sections 408 and 409, respectively.

Comment. The proposed rule applied requirements specifically to ''new'' elevators, including destination-oriented and LULA types, and to ''existing'' elevators. However, substantive differences between requirements for ''new'' and ''existing'' elevators applied only to standard elevators. Comments recommended that references to ''new'' be removed for consistency with the rest of the document.

Response. The Board has removed references to ''new'' in the requirements for elevators in sections 407 and 408 for consistency with the scoping of the guidelines. The requirements of these sections apply to existing elevators that are altered, consistent with the basic application of the guidelines. Provisions specific to ''existing'' elevators in section 407 address certain allowances permitted in the alteration of standard elevators.

Substantive changes made to requirements for elevators in section 407 include:

- Revision of the height of call controls (407.2.1.1).
- Removal of a specification concerning objects located below hall call buttons (407.2.2 in the proposed rule).
- Modification of specifications for audible hall signals (407.2.2.3) and audible car position indicators (407.4.8.2).
- Revision of the height of tactile floor designations at hoistways (407.2.3.1).
- Addition of an exemption for destination-oriented elevators from the requirements for door and signal timing (407.3.4).
- Addition of a new exception for the height of car controls (407.4.6.1, Exception 1).
- Modification of requirements for keypads (407.4.7.2).
- Clarification that requirements for operable parts in 309 apply to call controls (407.2.1) and car controls (407.4.6).
- Removal of redundant specifications for emergency communication systems (407.4.9).
- Relocation of requirements for existing elevator cars to be labeled by the International Symbol of Accessibility, unless all cars are accessible, to the signage scoping section (216.7).

Section 407.2 provides specifications for elevator halls and lobbies. In the final rule, this provision has been editorially revised to refer to elevator ''landings,'' consistent with the ANSI A117.1–2003 standard.

Comment. The proposed rule specified that call buttons be located 35 to 48 inches above the floor (407.2.2). These controls should be held to the basic reach range specifications in section 308 like any other operable part, according to commenters.

Response. In the final rule, call controls are required to be located within one of the reach ranges specified in section 308 (407.2.1.1). In addition, the Board has removed a requirement that objects mounted beneath hall call buttons protrude no more than 4 inches into the clear floor space. Such protrusions are adequately addressed by requirements for clear floor space in 305

[22] 59 FR 17442 (April 12, 1994).

[23] 61 FR 39323 (July 29, 1996) and 63 FR 64836 (November 23, 1998).

and for protruding objects in section 307.

Comment. Audible hall signals must indicate the direction of a responding car by the number of sounds (once for up and twice for down) or by verbal announcements (407.2.2.3). The proposed rule included a maximum frequency (1,500 Hz) for audible signals. The Board sought comment on whether a frequency band width should be specified for verbal annunciators (Question 21). Specifically, the Board asked whether a band width of 300 to 3,000 Hz for hall signals would be appropriate. Information on the availability and cost of products meeting this specification was also requested. Comments from the elevator industry indicated that hall signals currently fall within this range.

Response. The Board has added a requirement in the final rule that hall signal verbal annunciators have a frequency of 300 Hz minimum and 3,000 Hz maximum. For consistency, a similar requirement is specified for verbal car position indicators (407.4.8.2.3). In the proposed rule, these verbal annunciators were subject to a maximum frequency of 1,500 Hz. In addition, the Board has modified hall signal verbal annunciators by requiring that they ''indicate the direction of elevator car travel,'' instead of specifying the content (''up,'' ''down'') as required in the proposed rule.

Comment. The proposed rule specified a decibel range of 20 to 80 decibels for hall signals and annunciators (407.2.3.1) and car position annunciators (407.3.4.2). Comments recommended that the minimum be changed to 10 decibels above the ambient noise level for consistency with the ANSI A117.1–2003 standard.

Response. The minimum decibel range for hall and car position signals has been changed to 10 decibels above ambient. In addition, the provision for audible indicators (407.4.8.2) has been revised to require floor announcement when the car is about to stop, instead of when it has stopped, consistent with the ANSI A117.1 standard.

The proposed rule specified that tactile floor designations at the hoistway be 60 inches above the floor, measured from the baseline of the characters (407.2.4). In the final rule, this specification, now located at section 407.2.3.1, applies the mounting height generally required for other types of tactile signs by 703.2 (48 to 60 inches above the floor). The Board felt that there was little reason to hold hoistway signs to a more restrictive location than that specified for other types of tactile signs.

Comment. Section 407.3.1 recognizes acceptable types of elevator doors. The proposed rule recognized horizontal sliding doors. A comment indicated that other door types recognized by the elevator code should be recognized, such as vertical sliding doors.

Response. In the draft of the final guidelines, the Board had included a reference to vertical sliding doors permitted by the elevator safety code (ASME A17.1) in response to this comment. A similar change was not approved for the ANSI A117.1 standard due to concerns about such doors posing a tripping hazard to persons with vision impairments. For consistency, the Board has removed the reference to vertical sliding doors in the final rule.

Section 407.3.4 specifies door and signal timing. This provision helps ensure that elevator doors remain open long enough for persons with disabilities to travel from call buttons to the responding car and is based on a travel speed of 1½ feet per second. Destination-oriented elevators may have call buttons located outside elevator landing areas and have enhanced programming features for the response time of cars. In recognition of this, the Board has included in the final rule an exception from the door and signal timing requirements for destination-oriented elevators (407.3.4, Exception 2).

Comment. Comments recommended that the height of elevator car controls be harmonized with the ANSI A117.1 standard. Specifically, the ANSI standard specifies a maximum reach height of 48 inches for forward or side reaches. It also provides an exception that allows a maximum height of 54 inches for elevators with more than 16 openings where a parallel approach to the car controls is provided. The advisory committee also recommended lowering the maximum height for control buttons from 54 to 48 inches, consistent with its recommendations for reach ranges generally. The advisory committee recognized a potential adverse impact of a lower maximum height on elevators with panels that must have a large number of buttons in a limited amount of space and recommended an exception that would allow the 54 inch maximum height for elevators with more than 16 stops.

Response. As discussed above in section 308, the Board lowered the maximum side reach height from 54 to 48 inches. This height is the same as that specified for forward reaches. Elevator car controls are required to be within these reach ranges (407.4.6.1). Consequently, the Board has included an exception, consistent with the ANSI A117.1 standard and the advisory committee's recommendation, that allows a maximum height of 54 inches where the elevator serves more than 16 openings and a parallel approach is provided (407.4.6.1, Exception 1).

Comment. The proposed rule, in addressing elevator car controls, required that telephone-style keypad buttons, where provided, be identified by raised characters centered on the keypad button (407.2.11.2). Comments indicated that tactile characters for each button are not needed on such keypads. Support was expressed for making this requirement consistent with the ANSI A117.1–1998 standard which requires a standard keypad arrangement with a raised dot on the number 5 key which is held to specifications for braille dots and a base diameter of 0.118 to 0.120 inch. Raised characters are not required.

Response. The Board has revised the requirements for elevator keypads, now located at 407.4.6.3 and 407.4.7.2, that are consistent with the ANSI A117.1 standard. The final rule requires a standard telephone keypad arrangement with the number 5 key identified by a raised dot that complies with specifications for the base diameter and specifications for braille dots in section 703.3.1. In addition, the Board has included a requirement that the characters provided on buttons comply with visual characteristics specified in section 703.5, which covers finish and contrast, character proportion and height, stroke thickness, and other criteria.

Section 407.4.9 provides criteria for emergency two-way communication systems in elevator cars which address the height of operable parts and identification by tactile characters. The proposed rule included requirements for the cord length of provided handsets and instructions. It also required that emergency signaling devices not be limited to voice communication. These requirements have been removed in the final rule because the referenced elevator safety code (ASME A17.1), as revised, adequately addresses these features or makes them unnecessary. For example, the ASME code prohibits the use of handsets since they are easily subject to vandalism, which obviates the need for specifications concerning the cord length.

Comment. Comments recommended that the guidelines address emergency communication systems located in a closed compartment and apply the specifications for operable parts in section 309 to compartment door hardware.

Response. The Board had included such a requirement in the draft of the final guidelines (407.4.9.6). In the final rule, the Board has removed this requirement since the ASME A17.1 safety code no longer permits emergency communication systems to be located within a closed compartment. However, the Board has retained provisions it had included that clarify the application of requirements for operable parts in 309.4 to call controls (407.2.1) and car controls (407.4.6).

Comment. In order to accommodate people with hearing or speech impairments, the proposed guidelines specified that the emergency communication system not rely solely on voice communication (407.2.13 in the proposed rule). The Board sought information and product literature on emergency communication devices and communication technologies that provide two-way communication in a manner accessible to people who are deaf and others who cannot use voice communication (Question 22). Comments, particularly those from groups representing persons who are deaf or hard of hearing, strongly supported such a requirement. They considered some form of interactive communication similar to that available through TTYs essential for providing equivalent access in emergencies. However, these comments did not specifically mention any technologies that are currently available to provide such access within elevator cars.

Response. Additional requirements for emergency communication systems are not included in the final rule. Further, the Board has removed specifications concerning the method of communication since the referenced elevator safety standard contains analogous provisions. Under such provisions, emergency communication systems cannot rely solely on voice communication. The ASME A17.1 code (section 2.27) requires provision of a push button labeled ''HELP'' which, when activated, initiates a call for help and establishes two-way communication. A visual signal is required on the same panel as the ''HELP'' button to notify persons with hearing impairments that the call for help has been received and two-way communication has been established. Voice (or other audible systems) with a visual display that provides information on the status of a rescue will meet this requirement. Clearly labeled visual displays can be as simple as lighted jewels that indicate that the call for help has been activated and that the message has been received. The visual signal is also required to indicate termination of the two-way communication link.

408 Limited-Use/Limited-Application Elevators

Section 408 provides requirements for limited-use/limited-application (LULA) elevators which correspond to section 407.4 in the proposed rule. LULA elevators are typically smaller and slower than other passenger elevators and are used for low-traffic, low-rise installations. This section provides specific criteria for these elevators and also references various provisions for standard elevators covered in section 407. Thus, some changes discussed above for standard elevators also pertain to LULA elevators as well. For example, the revision to the height of call buttons in section 407.2.1.1 (which are now subject to the basic reach range requirements instead of the previously specified range of 35 to 48 inches) also applies to LULA elevators. Additional changes in the final rule that are substantive in nature pertain to hoistways, car controls, and car sizes.

Comment. Some individuals and disability groups opposed the allowance of LULA elevators due to concerns about their size and accessibility. Industry, facility operators, designers and some disability groups strongly supported LULA elevators as an alternative where a standard elevator is not required.

Response. The Board has retained provisions for LULA elevators which are only permitted in facilities not required to have any elevator or as an alternative to platform lifts (206.6). Since this kind of elevator requires less space and costs less than standard elevators, LULA elevators will provide a more viable option where a form of vertical access would otherwise not be provided. The technical criteria for LULA elevators specify minimum car sizes that ensure adequate accessibility. In addition, they are required to comply with the applicable section of the elevator safety code (ASME/ANSI A17.1, Chapter XXV).

Comment. Requirements for standard elevators require that the main entry level be labeled by a tactile star at the hoistway (407.2.3.1). In the proposed rule, such a requirement was not included for LULA elevators. Comments suggested that such a requirement be included in the final rule for consistency.

Response. Requirements for hoistway signs for LULA elevators in section 408.2.3 have been replaced with a reference to corresponding requirements for standard elevators in section 407.2.3.1. This provision includes a requirement for a tactile star at the hoistway of the main entry level.

The guidelines specify that LULA elevator cars be at least 42 inches wide and 54 inches deep with a door on the narrow end providing at least 32 inches clear width (408.4.1). In the final rule, the Board has added alternate dimensions which are substantively consistent with the latest edition of the ANSI A117.1 standard. These dimensions permit a car at least 51 inches by 51 inches provided that the door has a clear width of at least 36 inches (408.4.1, Exception 1).

409 Private Residence Elevators

Residential dwelling units may be equipped with either a LULA elevator or a private residential elevator instead of a standard passenger elevator (206.6). Section 409 provides requirements for private residential elevators, which were located at section 1102.7 in the proposed rule. In the final rule, call buttons are subject to requirements in section 309 for operable parts, including clear floor space (309.2), height (309.3), and operation (309.4) according to section 409.2. In the proposed rule, they were subject only to requirements for height. In addition, the Board has applied requirements for the operation of operable parts (309.4) to controls (409.4.6) and the operable parts of emergency communication systems (409.4.7.2). No other substantive changes have been made to this section.

410 Platform Lifts

Section 410 provides requirements for platform lifts and addresses floor surfaces, clear floor space, operable parts, and doors and gates. This section has been updated to reference the new ASME A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts (410.1). This standard was under development when the proposed rule was published. This section has been reformatted and changes made to the specifications for doors and gates.

Comment. Platform lifts are required to have power-operated doors or gates. Those with doors or gates on opposing sides generally facilitate lift use by permitting a forward approach to both entry and exit doors or gates. As a result, these types of lifts are permitted to have a manual door or gates. The guidelines specify that manual doors or gates be ''self-closing'' (410.5, Exception). Comments noted that since the ASME/ANSI A18.1 standard requires such doors and gates to be self-closing, the specification in the rule was redundant.

Response. The Board has retained the requirement that manual doors or gates

be self-closing (401.5, Exception) for consistency with the new ANSI A117.1 standard. In addition, the Board has added clarification, consistent with the ANSI standard, that the exception in section 410.5 does not apply to platform lifts serving more than two landings.

Comment. Commenters stressed that platform lifts should not be key operated.

Response. Previous editions of the safety code for lifts, not the Board's guidelines, required platform lifts to be key operated. The most recent edition of the ASME standard, which the final rule references, does not contain a requirement for key operation.

Chapter 5: General Site and Building Elements

Chapter 5 provides technical criteria for parking spaces (502), passenger loading zones (503), stairways (504), and handrails (505).

502 Parking Spaces

Section 502 addresses car parking spaces and van parking spaces. Substantive changes pertain to the:

- Width of spaces, including van spaces, and access aisles (502.1 and 502.2).
- Location of access aisles for angled van spaces (502.3.4).
- Identification of van spaces (502.6).
- Adjacent accessible routes (502.7).

In the final rule, the Board has clarified how parking spaces and access aisles are to be measured. Where parking spaces are marked with lines, the width of parking spaces and access aisles is to be measured from the centerline of the markings (502.1). However, at spaces or access aisles not adjacent to another parking space or access aisle, width measurements are permitted to include the full width of the line defining the parking space or access aisle (502.1, Exception).

Comment. The proposed rule specified that car and van spaces be at least 8 feet wide and that access aisles be at least 5 feet wide for car spaces and at least 8 feet wide for van spaces. These specifications are consistent with the original ADAAG. However, that document also recognized an alternative ''universal'' design under which all spaces are designed to be accessible for vans or cars by incorporating additional space in the parking space instead of the access aisle. Under this design, parking spaces are at least 11 feet wide and access aisles at least 5 feet wide. Commenters requested that this design be recognized in final rule, at least for the portion of spaces required to be van accessible. Comments pointed out certain benefits of the alternative design, such as access aisles that are less likely to be mistaken for another parking space.

Response. The final rule includes specifications for alternative van parking spaces based on the ''universal'' design specifications (502.2). Van spaces are required to be at least 11 feet wide and to have an access aisle at least 5 feet wide. An exception allows van spaces to be 8 feet wide where the access aisle is at least 8 feet wide, which is consistent with the specifications of the proposed rule and the original ADAAG.

Comment. Requirements for access aisles in section 502.3 address width, length, marking, and location. Two spaces are permitted to share an access aisle. The proposed rule, consistent with the original ADAAG, allowed access aisles to be provided on either side of the parking space. Many commenters urged the Board to revisit this issue, particularly with respect to van parking. The lift provided on vans is typically located on the passenger side. It is important, especially where front-in only parking is provided, that the access aisle be located on the passenger side of van spaces.

Response. The Board has included a requirement that where angled spaces are provided, the access aisle must be located on the passenger side of van spaces (502.3.4). Otherwise, this provision permits access aisles to be located on either side of the space since drivers can pull in or back into spaces as needed.

To harmonize the guidelines with the ANSI A117.1–2003 standard, the Board has added clarification that access aisles are not permitted to overlap vehicular ways (502.3.4).

Comment. The proposed rule removed a requirement that the access designation for van parking include the term ''van accessible'' to clarify that both car and van drivers can use such spaces, as was the original intent of ADAAG. Many commenters strongly opposed this change. While some may have misinterpreted it as removal of the requirement for van accessible spaces, others considered this designation important in encouraging car drivers to use other accessible spaces over those designed to accommodate vans.

Response. The Board has restored the requirement that the designation of van spaces include the term ''van accessible'' (502.6). This designation is not intended to restrict the use of spaces to vans only, but instead to identify those spaces better suited for vans. An advisory note to this effect is included in the final rule.

Comment. The proposed rule removed language in the original ADAAG that vehicles parked in accessible spaces not reduce the clear width of connecting accessible routes. The Board had considered this requirement redundant in view of specifications for accessible routes in section 402. Many commenters disagreed and urged that such a requirement be restored in the final rule. Some comments pointed out that the ANSI A1171.1 standard, like the original ADAAG, specifies that ''parked vehicle overhangs shall not reduce the clear width of an accessible route.''

Response. The Board has added a requirement that spaces and access aisles be designed so that parked vehicles ''cannot obstruct the required clear width of adjacent accessible routes'' (502.7). A typical design solution where accessible routes run in front of spaces is the provision of wheel stops that help prevent encroachment into the accessible route.

503 Passenger Loading Zones

Few comments addressed the technical requirements for passenger loading zones, and no substantive changes to them have been made. For consistency with the ANSI A117.1 standard, the Board has clarified in the final rule that access aisles required at passenger loading zones are not permitted to overlap vehicular ways (503.3).

504 Stairways

Section 504 covers stairways, including treads, risers, nosings, and handrails. This section requires that landings subject to wet conditions be designed to prevent the accumulation of water (504.7). In the final rule, the Board has revised this requirement to apply to stair treads, as well as landings. No other substantive changes have been made to this section.

505 Handrails

Specifications for handrails in section 505 apply to those provided at ramps, stairs, and along walking surfaces. Revisions made to this section concern:

- Coverage of handrails provided along walking surfaces (505.1).
- Exceptions for aisle stairs and short ramps (505.2).
- Handrails at switchback or dogleg stairs and ramps (505.3).
- Gripping surfaces (505.6 and 505.8).
- Extensions (505.10).

Handrails are required along both sides of ramps and stairs. The Board has included a requirement (403.6) that handrails, where provided along walking surfaces, comply with section

505, as discussed above. The term ''walking surfaces'' applies to portions of accessible routes that are not treated as ramps because the running slope is less than 1:20. Consistent with this change, provisions in section 505 have been modified to specifically reference walking surfaces, including the general charging statement at 505.1. Walking surfaces are not subject to requirements for handrails on both sides (505.2) or handrail extensions (505.10).

In the final rule, an exemption from the requirements for stairways, including handrails, has been included for aisle stairs in assembly areas (210.1, Exception 3). An exception from the requirement for handrails on both sides for aisle ramps and aisle stairs has been revised for consistency. Specifically, the reference to aisle stairs in this exception has been removed as redundant.

Specifications for ramps require handrails only at ramps with a rise greater than 6 inches (405.8). Curb ramps are not subject to handrail requirements. The Board has removed as redundant an exception in the handrail section for ramps with a rise of 6 inches maximum (505.2, Exception 2).

The guidelines require handrails to be continuous within the full length of stair flights and ramp runs (505.3). The Board has added clarification, consistent with the original ADAAG, that the inside handrail at switchback or dogleg stairs and ramps be continuous. This change was made for consistency with the ANSI A117.1 standard.

Comment. The proposed rule specified that gripping surfaces be continuous and unobstructed by elements, including newel posts (505.6). An exception permitted brackets and balusters attached to the bottom of a handrail provided they did not obstruct more than 20% of the handrail length, their horizontal projection was at least 2½ inches from the bottom of the handrail, and their edges had a radius of at least ⅛ inch. Comments from the handrail industry, including manufacturers, trade associations, and others, indicated that these stipulations would effectively prohibit many common fabrication methods and would be unduly costly and burdensome on the industry while promising limited access benefits. Specifically, these comments indicated that many materials currently used will not meet the minimum ⅛ inch radius specifications. In addition, commenters claimed many current mounting brackets do not meet the 2½ inch minimum requirement for horizontal projections below the handrail, which is inconsistent with the 1½ inch minimum specified by model building codes. They also would preclude use of panels below handrails, which have become popular in meeting code requirements that prohibit openings in railings through which a 4 inch sphere can pass. Manufacturers stated that they have not received complaints about sharp edges and that some railing cross sections have been used for many years without injury. Opposing comments referred to ergonomic studies which support a 2¼ inch clearance below the handrail.

Response. The Board has revised some of the specifications for gripping surfaces in section 505.6 in order to accommodate a wider range of handrail materials and designs. The revised provisions prohibit obstructions on the top and sides of handrails, while the bottom may be obstructed up to 20% of the handrail length. This is generally consistent with the proposed rule. The Board believes that such a requirement will still permit popular designs such as panels under handrails so long as they are not directly connected to the entire length of the bottom of the handrail gripping surface. The requirement that horizontal projections occur 2½ inches minimum below the bottom of gripping surfaces has been changed to 1½ inches, consistent with model building codes and industry practice. In addition, the Board has added an exception for handrails along walking surfaces that permits obstructions along the entire bottom length that are integral to crash rails and bumper guards (505.6, Exception 1). Another exception, consistent with the ANSI A117.1–2003 standard and recommended by a comment to the draft of the final guidelines, allows the distance between horizontal projections and the gripping surface bottom to be reduced by ⅛ inch for each ½ inch of additional handrail perimeter dimension exceeding 4 inches (505.6, Exception 2). A requirement that bracket or baluster edges have a radius of ⅛ inch minimum has been removed. A similar specification for handrail surface edges in section 505.8 has been replaced with a requirement for ''rounded edges.''

Comment. Handrail extensions are required at the top and bottom of stairs. In the proposed rule, bottom extensions were required to extend one tread depth beyond the last riser nosing and an additional 12 inches (505.10.3). Comments advised that the requirement for the additional 12 inch segment should be removed, consistent with the ANSI A117.1 standard. Some comments also questioned the need for this segment at the bottom of stairs.

Response. The Board has removed the requirement that handrails extend an additional 12 inches at the bottom of stairs.

Chapter 6: Plumbing Elements and Facilities

Chapter 6 provides criteria for drinking fountains (602), toilet and bathing rooms (603), water closets and toilet compartments (604), urinals (605), lavatories and sinks (606), bathtubs (607), shower compartments (608), grab bars (609), tub and shower seats (610), laundry equipment (611), and saunas and steam rooms (612). Alternate specifications are provided for plumbing elements designed for children's use as exceptions to requirements based on adult dimensions. These exceptions address drinking fountains, water closets, toilet compartments, lavatories and sinks.

602 Drinking Fountains

Specifications for drinking fountains in section 602 address access for people who use wheelchairs (602.2 through 602.6) and for people who do not, but who may have difficulty bending or stooping (602.7). Substantive changes to this section include:

- Removal of references to water coolers (602.1).
- Requiring all wheelchair accessible drinking fountains to provide knee and toe clearance for a forward approach (602.2).
- Lowering the minimum height of drinking fountains for standing persons (602.7).

Comment. The proposed rule, consistent with the original ADAAG, addressed both drinking fountains and water coolers. Comments advised that the guidelines should not address ''water coolers,'' a term which is often used to refer to bottled units that are not plumbed or permanently fixed.

Response. The Board has removed the references to ''water coolers'' in section 602.1 for clarity and consistency with the scope of the guidelines.

Comment. For wheelchair access, the proposed rule required a forward approach at cantilevered units but allowed a parallel approach at other types of units, such as those that are floor mounted. A forward approach provides easier access than a parallel approach for people using wheelchairs. The Board sought comment on whether it should require a forward approach, which includes knee and toe clearances below the unit, at all wheelchair accessible drinking fountains (Question 24). Commenters overwhelmingly supported such a requirement as more appropriate for wheelchair access.

Response. The Board has revised the rule to require a clear floor space for a

forward approach at all wheelchair accessible drinking fountains (602.2). Corresponding changes have been made to the specifications for spout location (602.5). An existing exception for units designed specifically for children's use permits a parallel approach if certain criteria for spout height and location are met.

Comment. The proposed rule required spouts to provide a flow of water at least 4 inches high ''to allow the insertion of a cup or glass.'' A comment noted that the rationale for this specification is not needed in the text of the requirement and might be misinterpreted as allowing cup dispensers as an alternative to accessible units.

Response. Language concerning the insertion of cups has been removed as unnecessary to the water flow specification. The minimum 4 inch height is intended to allow use of cups for persons who may need to use them. However, providing cup dispensers as an alternative to a compliant unit is not recognized by these guidelines in new construction or alterations.

Comment. Specifications for drinking fountains for standing persons address the height of the spout outlet (602.7). The proposed rule required a height of 39 to 43 inches above the floor or ground, a range that derives from the standard height of models on the market. A drinking fountain manufacturer requested that the minimum height be changed from 39 to 38 inches, consistent with referenced ergonomic data. This commenter advised that a 38 inch height will accommodate units that are intended to serve both adults and children.

Response. The minimum height for the spout outlet of units designed for use by standing persons has been lowered from 39 to 38 inches.

603 Toilet and Bathing Rooms

Section 603 covers toilet and bathing rooms and includes requirements for clear floor space, wheelchair turning space, permitted overlaps of various space requirements, and doors. Doors are not permitted to swing into clear floor space or clearance required for any fixture except under certain conditions (603.2.3). The Board has added clarification to this requirement, previously located in an advisory note, that doors are permitted to swing into the required wheelchair turning space.

The guidelines specify that accessible mirrors be mounted so that the bottom edge of the reflecting surface is no higher than 40 inches (603.3). The ANSI A117.1–2003 standard contains a new requirement that specifies a height of 35 inches maximum for accessible mirrors not located above a lavatory or countertop. This specification was adopted to accommodate persons of short stature. The Board has included a similar requirement in the final rule.

604 Water Closets and Toilet Compartments

Section 604 addresses access to water closets and toilet compartments. Revisions to the requirements for water closets concern:

- Location (604.2).
- Clearance (604.3).
- Grab bars (604.5).
- Flush controls (604.6).
- Dispensers (604.7).
- Toilet compartments (604.8), including those designed for children's use (604.9).

In addition, provisions specific to water closets in residential dwelling units that were located in Chapter 11 in the proposed rule have been incorporated into this section. These include requirements for space at water closets (604.3), seat height (604.4), and grab bars (604.5).

Water closets are to be located so that the centerline is 16 to 18 inches from the side wall compartment partition (604.2). Water closets can be located so that this dimension is met on either the left side or the right side of the fixture. The Board has added clarification in the final rule that water closets shall be arranged for a left-hand or a right-hand approach. The proposed rule specified that water closets in ambulatory accessible stalls (which are required to be 36 inches wide) be ''centered.'' In the final rule, the Board has revised this provision to recognize a range (17 to 19 inches) for the centered location that is consistent in scope (2 inches) with the specification for water closets in wheelchair accessible compartments. A corresponding change has been made to the provisions for water closets designed for children's use (604.9.1).

Comment. Clearance requirements for water closets are covered in section 604.3. The proposed rule stated that no fixtures (other than the water closet) or obstructions were to be located within the clear floor space (604.3.1). Comments noted that this seemed to contradict a subsequent provision that allowed grab bars and dispensers to overlap this space (604.3.2).

Response. Language prohibiting fixtures and obstructions within the required clearances in section 604.3.1 has been removed. Section 604.3.2 recognizes those elements that are permitted to overlap this clearance.

Comment. The proposed rule identified certain elements that could overlap the clear floor space at water closets: associated grab bars, tissue dispensers, accessible routes, clear floor space at other fixtures, and wheelchair turning space (604.3.2). Commenters advised that other elements, such as coat hooks should be included, as well as other types of dispensers, such as those for toilet seat covers. In addition, the new ANSI A117.1 standard includes a reference to sanitary napkin disposal units.

Response. In the list of elements permitted to overlap water closet clearances, the Board has added references to ''dispensers,'' ''sanitary napkin disposal units,'' ''coat hooks,'' and ''shelves'' (604.3.2).

Comment. Water closets not in compartments require clearance that is at least 60 inches wide and 56 inches deep. Many comments urged the Board to increase this depth so that at least 48 inches is provided in front of the water closet. Others recommended an overall depth of 78 inches.

Response. The Board has not revised the minimum dimensions for the clear floor space at water closets. Other criteria for toilet rooms, including turning space, maneuvering space at doors, and clearances at other fixtures, typically results in additional clearance at water closets not in compartments. The 48 inch specification measured from the leading edge of the water closet is derived from the ANSI A117.1–1992 standard. That specification was removed from the 1998 edition of the ANSI standard because it was extremely difficult to enforce due to the varying installation styles and sizes of water closets. However, the Board has revised the specified depth in residential dwelling units where lavatories are permitted to overlap the space aside water closets.

Other fixtures, such as lavatories, generally are not permitted to overlap the clearance required at water closets. However, in residential dwelling units, an accessible lavatory adjacent to water closets can overlap this space (18 inches minimum from the water closet centerline) if additional space is provided in front of the water closet. Specifically, the depth of the clearance must be at least 66 inches instead of 56 inches (604.3.2, Exception). The proposed rule required this additional space in front of the fixture where only a forward approach to the water closet is provided (1102.11.5.2). It did not require additional space where a side approach to the water closet is provided. Locating lavatories outside the specified water closet clearance allows more options in the approach and transfer to water closets. The overlap of an adjacent lavatory

effectively precludes side transfers to the water closet. The Board believes that additional space where lavatories overlap water closet clearances can be beneficial regardless of the approach direction. In the final rule, the 66 inch minimum depth applies whether a forward or a parallel approach to the water closet is provided. The proposed rule also allowed a minimum width for the clearance of 48 inches instead of 60 inches where a lavatory overlaps the space, regardless of the approach (1102.11.5.2). In effect, however, space at least 60 inches wide is needed in meeting other requirements, such as the clear floor space required at the adjacent lavatory and wheelchair turning space. Consequently, the Board has removed the 48 inch specification in the final rule.

Specifications for grab bars are addressed in section 604.5. Grab bars are required on one side wall and the rear wall. Exceptions from this requirement are provided for residential dwelling units, where grab bars can be installed later so long as the proper reinforcement is installed in walls as part of design and construction (Exception 2), and for holding or housing cells specially designed without protrusions for purposes of suicide prevention (Exception 3). In the proposed rule, these exceptions were located in the chapter on residential dwelling units (1102.11.5.4) and the scoping section for detention and correctional facilities (233.3).

Comment. The proposed rule specified that the rear grab bar be 24 inches long minimum, centered on the water closet, or at least 36 inches long ''where wall space permits'' (604.5.2). Commenters considered this provision confusing and requested clarification on where the 24 inches would be permitted. Some comments urged removal of the 24 inches specification.

Response. The proposed rule included provisions that make clear floor space requirements at water closets more stringent by not allowing other fixtures, such as lavatories to overlap the space. Saving space by locating a lavatory closer to the water closet on the same plumbing wall could only be accomplished by recessing the lavatory so that it does not overlap the clear floor space at the water closet. A grab bar 36 inches long would limit the amount of space saved in recessing an adjacent lavatory. For clarity, the Board has revised this allowance as an exception. In the final rule, section 604.5.2 requires the rear grab bar to be 36 inches long minimum. An exception allows a 24 inch long minimum grab bar, centered on the water closet, ''where wall space does not permit a length 36 inches minimum due to the location of a recessed fixture adjacent to the water closet'' (604.5.2, Exception 1).

Comment. Section 604.6 covers flush controls, which must be hand operated or automatic. Hand operated types are subject to requirements for operable parts, including reach ranges, addressed in section 309. The original ADAAG specified that the controls be located on the wide side of the water closet. Comments requested that this specification be restored since controls on the wide side of water closets are easier to access.

Response. The final rule includes a requirement that ''flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments' (604.6).

Comment. Requirements for toilet paper dispensers in section 604.7 include specifications for height. They must be mounted at least 1½ inches below grab bars or, according to the proposed rule, at least 12 inches above. Commenters noted that the 12 inch minimum was inconsistent with provisions for grab bars in section 609 which specify a minimum clearance of 15 inches between grab bars and protruding objects above them (609.2). Some commenters felt that toilet paper dispensers should not be allowed above grab bars in any case since the large roll type, which often cannot fit below grab bars, compromise the usability of the grab bar.

Response. In the final rule, the specified clearance between grab bars and dispensers mounted above them has been revised for consistency with the grab bar specifications in section 609. Specifications in section 604.7 concerning this clearance have been removed since the required clearance between dispensers and grab bars is adequately covered in section 609, which, as revised, requires a minimum clearance of 12 inches above grab bars and a minimum clearance of 1½ inches below grab bars (609.3). This may effectively preclude some dispensers from being located above grab bars in view of the minimum mounting height of grab bars (33 inches, measured to the top of the gripping surface) and the maximum height for the dispenser outlet (48 inches). Since some dispensers may be recessed, the Board has added clarification in section 604.7 that dispensers cannot be located behind grab bars.

Section 604.8 provides requirements for wheelchair accessible compartments and those that are designed to accommodate persons with disabilities who are ambulatory.

Comment. Commenters noted that baby changing tables should not be permitted in accessible compartments since they can interfere with access. On the other hand, some comments advised that baby changing tables need to be accessible.

Response. The specified dimensions of toilet compartments provide the minimum amount of space necessary for wheelchair maneuvering into the compartment, positioning at the fixture, and exit from the compartment. Certain elements are permitted to overlap space at water closets, such as grab bars, paper dispensers, and coat hooks (604.3.2). Other elements, including baby changing tables, are not allowed to overlap the minimum amount of space required in compartments. Where such elements are provided in accessible compartments, they must be located outside the minimum space dimensions (when folded up in the case of baby changing tables). In addition, convenience fixtures, such as baby changing tables, must be accessible to persons with disabilities under scoping provisions for operable parts (205) and work surfaces (226). This information is provided in the final rule in an advisory note at section 604.8.1.1.

Comment. Specifications are provided for doors, including their location. The proposed rule specified the location of doors in the front partition, which were required to be hinged 4 inches from the side wall or partition farthest from the water closet (604.8.1.2). Comments suggested that an alternate location in the side partition farthest from the water closet should be allowed, consistent with the original ADAAG. Commenters also pointed out that the specified location should refer to the door opening, instead of the hinge.

Response. Specifications for the location of compartment doors in side partitions are included in the final rule, consistent with the original ADAAG. The specified location in either front and side locations has been revised to apply to the door opening, instead of the hinge.

Comment. The proposed rule referred to ambulatory accessible compartments as ''non-wheelchair accessible'' compartments. Commenters considered this term confusing since it also encompasses inaccessible compartments. Preference was expressed for ''ambulatory accessible'' compartments, the term used by the advisory committee.

Response. The term ''non-wheelchair accessible'' compartments has been replaced with ''ambulatory accessible'' compartments.

Ambulatory accessible compartments were specified to be 36 inches wide absolute in the proposed rule, consistent with the original ADAAG. Throughout the new guidelines, the Board has sought to specify dimensions as a range instead of in absolute terms where practicable to facilitate compliance without compromising accessibility. The width of ambulatory compartments is specified to ensure that the grab bars required on both sides are simultaneously within reach. In the final rule, the Board has replaced the 36 inch wide specification with a range of 35 to 37 inches.

Section 604.9 provides specifications for water closets designed for children's use. In the proposed rule, this section included criteria for wheelchair accessible compartments. In the final rule, requirements have been integrated in the section covering wheelchair accessible compartments for adults (604.8.1) to reduce redundancy.

605 Urinals

Section 604.5 provides criteria for accessible urinals, including the height and depth, clear floor space, and flush controls.

Comment. In the proposed rule, the Board sought to clarify the requirement in the original ADAAG that accessible urinals have an ''elongated'' rim by specifying a minimum dimension of 13½ inches, measured from the outer face of the urinal rim to the back of the fixture (605.2). Comments were evenly divided on this new specification.

Response. The Board has retained the minimum depth specification without modification. However, in the final rule scoping for accessible urinals has been revised to apply only where more than one urinal is provided in a toilet or bathing room (213.3.3).

Requirements for urinal flush controls are provided in section 605.4. The proposed rule specified a maximum height of 44 inches (the maximum height for obstructed forward reaches). In the final rule, this requirement has been revised to reference section 309 which provides specifications for operable parts, including accessible reach ranges. This change is consistent with the ANSI A117.1–2003 standard.

606 Lavatories and Sinks

Section 606 provides technical criteria for lavatories and sinks. Various scoping and technical provisions invoke these requirements for lavatories in toilet and bathing facilities and for sinks provided in dwelling unit kitchens, kitchenettes in transient lodging guest rooms, and other spaces, such as break rooms. Revisions made to this section include:

- Clarifying the scope of this section (606.1).
- Adding a new exception that allows a parallel approach at kitchen sinks in spaces where a cook top or conventional range is not provided (606.2, Exception 1).
- Clarifying coverage of metering faucets (606.4).

In addition, allowances specific to lavatories and kitchen sinks in residential dwelling units have been relocated to this section from Chapter 11. These specifications concern clear floor space requirements (606.2, Exception 3) and heights (606.3, Exception 2).

Comment. The proposed rule included references to ''lavatory fixtures'' and to ''vanities.'' Commenters indicated that such references were redundant or inaccurate and should be removed.

Response. References to ''lavatory fixtures'' and ''vanities'' have been removed in the final rule (606.1).

Accessible lavatories and sinks must provide knee and toe clearance for a forward approach (606.2). Consistent with the proposed rule, exceptions from the requirement for forward approach clearances are provided for certain types of spaces and fixtures, such as single-user toilet or bathing facilities accessed only through a private office (Exception 2), lavatories and kitchen sinks in residential dwelling units provided certain conditions to facilitate retrofit for a forward approach are met (Exception 3), and fixtures designed specifically for children 5 years and younger (Exception 5).

Comment. Commenters recommended that a parallel approach should be allowed at kitchen sinks in spaces without a cook top or conventional range, consistent with the ANSI A117.1 standard. Several comments considered a parallel approach to be appropriate at kitchenette sinks in transient lodging guest rooms, consistent with the original ADAAG, and sinks in employee break rooms, since such fixtures are typically used for limited purposes or durations.

Response. The final rule includes an exception, consistent with the ANSI A117.1 standard, that allows a complying parallel approach to kitchen sinks in spaces where a cook top or conventional range is not provided (606.2, Exception 1). This exception also applies to wet bars.

Comment. Faucets, including hand-operated metering faucets, must remain open for at least 10 seconds (606.4). The proposed rule referred to these as ''self-closing'' faucets. Commenters indicated that ''metering'' is a descriptor that is more accurate and consistent with plumbing codes.

Response. The reference to ''self-closing'' faucets has been replaced with ''metering'' faucets in the final rule.

607 Bathtubs

Specifications for bathtubs in section 607 address clear floor space, seats, grab bars, operable parts, shower spray units, and enclosures. Changes made to this section include:

- Revision of grab bar mounting heights (607.4).
- Integration of provisions for grab bars specific to residential dwelling units that were located in Chapter 11 (607.4, Exception 2).
- Revision of specifications for shower spray units and water temperature (607.6).

Two parallel grab bars are required on the back wall of bathtubs with seats (607.4.1.1) and without seats (607.4.2.1). The proposed rule, consistent with the original ADAAG, specified that the lower grab bar be located 9 inches absolute above the bathtub rim. In finalizing this rule, the Board has sought to specify dimensions as a range instead of in absolute terms where possible to facilitate compliance without compromising accessibility. With respect to the lower grab bar at bathtubs, the specified mounting height has been changed to a range of 8 inches minimum to 10 inches maximum above the rim of the bathtub.

Comment. The guidelines require tubs to have shower spray units that can be used as both a fixed-position shower head and a hand-held shower (607.6). In the proposed rule, the Board included a requirement that shower spray units have a water on/off control for greater access. It was also specified that units deliver water that is thermal shock protected to 120 degrees. Comments from persons with disabilities strongly supported the requirement for the on/off control. However, comments from the plumbing industry indicated that the requirement, as worded, would pose cross connections and thermal shock hazards and would conflict with model codes and industry standards. Comments also noted that delivered water should be ''temperature limited'' to the specified maximum (120 degrees) for consistency with American Society of Safety Engineers (ASSE) standards.

Response. In response to concerns raised about the on/off control for spray units the Board has modified this requirement to include an on/off control ''with a non-positive shut-off.'' This will prevent cross connections and does not conflict with plumbing codes. In

addition, while the phrase ''temperature limited'' was not deemed necessary, the specification for water temperature has been revised to require that delivered water be 120 degrees maximum for consistency with ASSE standards. Corresponding revisions have been made to similar requirements for shower compartments (608.6).

608 Shower Compartments

Section 608 addresses transfer showers and roll-in showers and provides specifications for size and clearances, grab bars, seats, operable parts, shower spray units, thresholds, and enclosures. Revisions made to this section address:

- Clearance requirements for roll-in showers (608.2.2).
- Alternate roll-in showers (608.2.3).
- Shower seats (608.4).
- The location and operation of controls, faucets, and spray units (608.5).
- Shower spray units and water temperature (608.6.)
- A new exception for fixed shower heads (608.6).
- Thresholds (608.7).

In addition, provisions specific to showers in residential dwelling units that were located in Chapter 11 have been incorporated into this section. These provisions concern grab bars (608.3, Exception 2) and shower seats (608.4, Exception).

Comment. Specifications for roll-in shower compartments indicate that an accessible lavatory can overlap the required clear floor space opposite the end with a seat and shower controls (608.2.2). Comments recommended that this provision be revised to recognize that a seat may not always be located in a roll-in shower.

Response. The Board has clarified that accessible lavatories are permitted to overlap clear floor space ''opposite the shower compartment side where shower controls are positioned or where a seat is positioned'' (608.2.2.1, Exception). Clarification is also provided that lavatories can be provided at either end of the space at roll-in showers without seats where controls are mounted on the back wall.

Comment. Specifications are provided for alternate roll-in showers, including their size and the location of entries (608.2.3). Comments indicated that this provision should be more specific in detailing the design illustrated (Figure 608.2.3).

Response. More detail is provided in the final rule for the configuration of alternate roll-in type showers consistent with the intent of the proposed rule. The revised language clarifies the location of the entry at the end of the long side of the compartment (608.2.3).

Comment. Seats are required in transfer compartments and roll-in showers in transient lodging guest rooms (608.4). The proposed rule indicated that transfer compartments may have ''attachable or integral seats,'' while folding seats were specified for roll-in showers provided in transient lodging guest rooms.

Response. The Board has revised the rule to permit ''folding or non-folding'' seats in transfer compartments. A certain portion of accessible guest rooms are required to have bathrooms with roll-in showers (224.2). The requirement for folding seats has been revised to apply only to those roll-in showers ''required'' in transient lodging guest rooms. For example, a hotel with 100 guest rooms would be required to have at least 5 guest rooms that are accessible, one of which would have to provide a roll-in shower; the shower provided in this room would be required to have a folding seat, while the other 4 rooms could be equipped with either tubs, transfer showers, roll-in showers with or without seats, or some combination thereof.

Comment. In transfer compartments, controls, faucets, and shower spray units were to be located no more than 15 inches on either side of the seat centerline, according to the proposed rule (608.5.1). Comments indicated that this specification was not consistent with a corresponding figure showing the location on the side closest to the shower opening.

Response. The final rule has been revised to require that controls and operable parts be located 15 inches maximum from the centerline of the seat toward the shower opening. This is consistent with the intent of the specification so that users can activate the controls before entering the shower.

Specifications for controls, faucets, and shower spray units for alternate roll-in showers are provided in section 608.5.3. In the final rule, the Board has clarified these specifications and provided more detail on their location depending on whether the shower is equipped with a seat. In addition, the final rule allows shower controls, faucets, and shower spray units to be located on the wall adjacent to the seat, as proposed, or on the back wall opposite the seat. These revisions are consistent with similar clarifications in the latest edition of ANSI A117.1 standard.

Showers, like bathtubs, are required to be equipped with movable shower spray units that can be used as a fixed-position shower head and a hand-held shower (608.6). Specifications have been revised in the final rule, consistent with similar requirements for bathtubs, in response to concerns raised by commenters about the on/off control and water temperature as specified in the proposed rule, discussed above at section 607.6.

Comment. The original ADAAG allowed fixed shower heads 48 inches high maximum to be used instead of the required hand-held unit in ''unmonitored facilities where vandalism is a consideration.'' This exception had been removed in the proposed rule due to a lack of clarity on the types of facilities that qualify for this exception. Commenters urged the Board to retain this exception due to problems with vandalism which would increase maintenance at accessible transfer showers.

Response. The final rule includes an exception permitting a fixed shower head in certain facilities (608.6, Exception). The Board has limited this exception so that it does not apply to facilities where vandalism is less likely to occur because the use of bathing facilities is controlled or because incidents of vandalism are traceable. These include bathing facilities in medical care facilities, long term care facilities, transient lodging guest rooms, and residential dwelling units.

Comment. The proposed rule specified a maximum threshold height of ½ inch, provided that those greater than ¼ inch are beveled with a slope of 1:2 maximum (608.7). This provision applied to roll-in showers and to transfer showers. Commenters recommended that a higher threshold be permitted for transfer showers since wheelchair maneuvering over the threshold is not necessary in using the shower.

Response. The Board retained the ½-inch threshold height since positioning for transfer to the seat of transfer showers can be aided where a close approach enables footrests to clear the threshold. However, the Board has revised the specification to allow thresholds at transfer compartments to be vertical or rounded instead of beveled. In addition, the Board has provided an exception for existing facilities to address situations where meeting the maximum threshold height, which is typically achieved by recessing shower pans into the floor, is difficult, if not infeasible, due to certain floor slabs. The final rule includes an exception that permits a threshold up to 2 inches high at transfer showers in existing facilities where providing a ½-inch threshold would disturb the

structural reinforcement of the floor slab (608.7, Exception).

609 Grab Bars

Section 609 covers grab bars at water closets, bathtubs, and showers. Specifications address size, spacing, position, surfaces, fittings, and structural strength. Changes to this section address:

- Cross section specifications (609.2).
- Spacing (609.3).
- Location (609.4).
- Surface hazards (609.5).

The proposed rule specified 1¼ to 1½ circular cross sections. Non-circular cross sections were to have maximum cross section dimensions of 2 inches, a perimeter dimension between 4 and 4 11/16 inches, and edges with a ⅛-inch minimum radius. For consistency with specifications for handrails, the Board has revised requirements for size (609.2) and spacing (609.3). In the final rule, the maximum circular cross section has been changed from 1½ inches to 2 inches. Edges must be rounded, and the requirement that edges have a ⅛-inch minimum radius (609.2 in the proposed rule) has been removed. The Board has clarified that the space between grab bars and projecting objects below and at the ends shall be 1½ inches minimum, consistent with criteria for water closets, tubs, and showers (609.3). In addition, the minimum clearance between grab bars and protruding objects above has been changed from 15 inches to 12 inches (609.3), consistent with specifications for toilet paper dispensers included in the proposed rule (604.7) and the ANSI A117.1–2003 standard.

Comment. Commenters pointed out the proposed rule was not clear on whether the height of grab bars was to be measured to the top or to the centerline.

Response. The Board has clarified that the height of grab bars is measured to the top of the gripping surface (609.4).

610 Seats

Requirements for bathtub and shower seats are provided in section 610.

Comment. Specifications are provided for rectangular and L-shaped shower seats (610.3). The Board sought comment on whether one shape is more usable and accessible than the other (Question 25). Comments were evenly divided in supporting one design over the other. Some comments supported both designs or indicated that there was little difference in access or usability between the two.

Response. No changes have been made to the specifications for shower seats. Either rectangular or L-shaped seats may be provided in transfer and roll-in showers.

The guidelines specify the location of seats in tubs, transfer-type showers, and roll-in showers. In the final guidelines, the Board has clarified the location of seats in roll-in showers and alternate roll-in type showers. These changes are consistent with revisions to the placement of shower controls and spray units in alternate roll-in shower stalls (605.8.3).

611 Washing Machines and Clothes Dryers

Section 611 covers washing machines and clothes dryers and provides specifications for clear floor space, operable parts, and height.

Comment. The proposed rule required the door of top loading machines and the door opening of front loading machines to be 34 inches maximum above the floor (611.4). This dimension stems from specifications for obstructed side reaches (308.3). Laundry machine manufacturers stated that this specification is inconsistent with standard industry design, which allows a 36-inch height. Commenters indicated that compliance with the proposed specification would reduce machine capacity and would be difficult to achieve.

Response. The Board has revised the maximum height for doors on top loading machines and the door opening of front loading machines from 34 inches to 36 inches (611.4).

612 Saunas and Steam Rooms

Section 612 provides requirements for saunas and steam rooms and includes requirements for benches and turning space. This section derives from the guidelines the Board developed for recreation facilities and has been included in the final rule without substantive change.

Chapter 7: Communication Elements and Features

Chapter 7 covers communication elements and features, including fire alarm systems (702), signs (703), telephones (704), detectable warnings (705), assistive listening systems (706), automatic teller machines and fare machines (707), and two-way communication systems (708).

702 Fire Alarm Systems

The proposed rule provided detailed specifications for the audible and visual characteristics of fire alarm systems, including the sound level and the color, intensity, flash rate, location, and dispersion of visual appliances. Through coordination with the National Fire Protection Association (NFPA) and ANSI, which were represented on the ADAAG Review Advisory Committee, the proposed criteria were virtually identical to updated requirements in the NFPA 72 (1996) and the ANSI A117.1 standards. However, the Board had proposed a lower maximum sound level for audible alarms (110 decibels instead of 120 decibels) as more appropriate and to guard against tinnitus.

Comment. Comments from the codes community and designers urged the Board to reference the NFPA alarm criteria for purposes of consistency and simplicity, instead of restating very similar requirements in the guidelines.

Response. Since the technical provisions in the proposed rule were substantively identical to the NFPA 72, except for the maximum sound level, the Board has replaced the technical requirements for fire alarm systems with a requirement that such systems comply with NFPA 72, Chapter 4 (702.1). However, the Board has retained the specification that the maximum sound level of audible notification appliances be 110 decibels, as well as an exception for medical care facilities that permits fire alarm systems to be provided in accordance with industry practice. In addition, the Board has clarified that compliant fire alarm systems must be ''permanently installed.'' The Board is not aware of portable systems currently available that meet the referenced NFPA specifications. Information on the referenced NFPA requirements for fire alarm systems is posted on the Board's Web site at www.access-board.gov and in advisory notes.

Comment. Commenters supported limiting the sound level to 110 decibels, as proposed. However, some commenters noted that this did not conform with the maximum of 120 decibels specified in NFPA 72.

Response. The Board has retained the 110 decibel specification as more appropriate, which, as a lower maximum, does not contradict the NFPA 72. In the final rule, the Board has clarified that the maximum sound level applies to the ''minimum hearing distance from the audible appliance,'' which is consistent with the NFPA 72.

Comment. In the proposed rule, the Board sought comment on whether the frequency of audible alarms should be addressed and requested information on the optimal frequency range for people who are hard of hearing along with any available supporting data (Question 26). Most commenters favored a specified frequency range but few provided information, including supporting data, on what the range should be.

Response. The Board has not included in the final rule a specification for the frequency of audible alarms.

703 Signs

Requirements for signs provide specifications for raised characters (703.2), braille characters (703.3), the height and location of signs with tactile characters (703.4), visual characters (703.5), pictograms (703.6), and symbols of accessibility (703.7). This section has been reorganized and simplified in the final rule. Substantive changes include:

- Reorganizing and simplifying criteria for signs required to provide both tactile and visual access (703.2).
- Revising specifications for raised characters that cover height (703.2.5), stroke thickness (703.2.6), and spacing (703.2.7).
- Modifying specifications for braille (703.3 and 703.4.1).
- Recognizing elevator car controls in specifications for the height of visual characters (703.5.6).
- Revising the location of text descriptors of pictograms (703.6.3).

Scoping requirements for signs in section 216 cover room designations, which are required to be tactile, and directional and informational signs which are not required to be tactile but must meet requirements for visual access. The proposed rule specified that tactile signs, where required, meet specifications for both tactile and visual characteristics. The proposed rule also applied specifications based on whether the requirements were met with one sign or separately through two signs. There were some differences between the requirements for combined tactile-visual signs and those provided separately, which represented slight compromises in the desired level considered necessary for signs providing both tactile and visual access. The proposed rule provided criteria where characters are both tactile and visual (703.2) and criteria for tactile characters (703.3) and visual characters (703.4) that are provided separately.

Comment. Commenters considered the section on signs to be unduly complex and redundant and urged the Board to simplify the signage criteria.

Response. The repetition and complexity of the signage section stemmed from detailing requirements separately for signs where one set of character forms meet the tactile and visual specifications and for signs where such criteria are met separately through two set of character forms. Many of the specifications were the same for both types of signs. In the final rule, the Board has simplified the section and removed repetitive specifications while preserving most of the substance of the requirements as proposed. As reorganized, signs required to provide tactile and visual access must meet criteria for tactile characters (703.2), braille (703.3), mounting height and location (703.4), and visual characters (703.5). However, where access is provided through one set of characters, not all the requirements for visual access must be met. This is clarified in an exception which, consistent with the proposed rule, applies only the specifications for finish and contrast to tactile characters that are also visual (703.5, Exception).

Specifications for raised characters in section 703.2 address the depth, case, style or font type, character proportion and height, stroke thickness, and character and line spacing. The proposed rule, consistent with the original ADAAG, specified a character height between 5/8 inch and 2 inches. However, the proposed rule provided a tighter specification (1/2 to 3/4 inch) for raised characters on signs where visual access is provided on a separate sign face because it is believed that smaller characters can be easier to read tactually. Since the specification for combination signs acknowledges that 2 inch characters are readable tactually, setting a different maximum seems unnecessary. The final rule retains the specified range of 5/8 to 2 inches, but an exception allows a 1/2-inch minimum where the same information is provided separately on a visual sign (703.2.5).

In the proposed rule, specifications for stroke thickness were based on the type of character cross section on signs providing both tactile and visual access (703.2.3.5). For characters with rectangular cross sections, a stroke thickness of 10% to 15% of the character height was specified (based on the uppercase ''I''). For those with non-rectangular cross sections, the stroke thickness was specified to be 15% maximum of the character height (measured at the top of the cross section) and 10% to 30% (measured at the base). Where tactile and visual characters are provided on separate signs, the proposed rule specified that the stroke thickness of tactile characters be no greater than 15% of the character height (703.3.2.5).

Comment. Comments, including those from the signage industry, considered the specification based on the type of cross section to be unnecessarily complicated. Some comments pointed out that measurement and tactile reading of characters occur at the face, regardless of the cross section shape. Distinctions based on the cross section may be difficult to distinguish and enforce with respect to characters that are raised 1/32 inch, according to commenters. They advised that a single specification would facilitate compliance while having little effect on access.

Response. The Board has simplified the requirement for stroke thickness by relying solely on the specification that was included in the proposed rule for signs with tactile characters only. This specification requires a stroke thickness that is 15% of the character height (based on an uppercase ''I''), regardless of the type of cross section (703.2.6).

As with stroke thickness, the proposed rule specified character spacing based on the type of cross section where signs provide both tactile and visual characters (703.2.4). A space of 1/8 inch to 3/8 inch was specified for characters with rectangular cross sections. For those with non-rectangular cross sections, this range applied to the top of the cross section and a range of 1/16 inch to 3/8 inch was permitted at the base. Where visual characters are provided on a separate sign, the proposed rule required spacing of 1/8 inch to 1/4 inch between characters (703.3.3).

Comment. Comments advised that this specification was too restrictive and did not take into account increased spacing for larger size characters (the permitted range allows heights up to 2 inches). It was recommended that spacing based on the stroke thickness of characters will provide proper spacing for tactile recognition and facilitate compliance. Some commenters pointed out that good practice may include varying the space between characters for optimum visual legibility. Some comments recommended a spacing range that was at least as wide as the stroke thickness and no more than four times this width.

Response. In the final rule, the Board has revised the specification for character spacing (703.2.7). As recommended by commenters, the specified spacing range has been broadened to allow spacing up to four times the stroke width of raised characters. The Board has retained the minimum spacing requirements of the proposed guidelines and the distinction between characters with rectangular cross sections (1/8 inch minimum) and those without (1/8 minimum measured at the top and 1/16 minimum measured at the base).

Section 703.3 provides specifications for braille, including the dimensions and position.

Comment. Braille is to be located below the corresponding text. Commenters noted that it is common

practice to locate braille next to the text on some signs, such as room numbers. These comments urged the Board to revise this specification to allow braille placement adjacent to text, as is permitted on elevator car controls.

Response. The Board believes that a uniform location facilitates the use of braille. No changes have been made to the specified position below corresponding text.

Braille does not include different upper and lower case letters. Instead, a character symbol is used to indicate capitalization. In the final rule, the Board has clarified that indication of uppercase letters is to be used only before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms (703.3.1). A similar clarification has been included in the new ANSI A117.1 standard.

The proposed guidelines specified that braille be separated at least ¼ inch from other tactile characters and at least ⅜ inch from raised borders and other decorative elements (703.3.2). In the final rule, the Board has revised the minimum separation between braille and tactile characters from ¼ inch to ⅜ inch for consistency with the ANSI A117.1 standard.

Section 703.4 covers the mounting height and location of signs with tactile characters. Such signs are to be mounted so that the tactile elements (raised characters and braille) are between 48 to 60 inches high, measured to the baseline of characters.

Comment. The proposed rule specified a range of height of 48 to 60 inches for raised characters and a range of 40 to 60 inches for braille. Commenters considered the 40 inch specification too low, as research suggests that braille mounted below 48 inches can be difficult to read. Further, comments noted that the minimum 40 inch height did not correlate with the minimum specified for raised characters.

Response. The Board combined the height and location requirements for raised and braille characters into one section (703.4) for clarification and simplicity. As a result, the height of braille and raised characters are held to the same range: 48 to 60 inches above the floor or ground (703.4.1).

Tactile signs are required to be located alongside the latch side of doors so that clear floor space at least 18 by 18 inches, centered on the tactile characters, is provided outside the door swing (703.4.2). At double doors with two active leafs, signs are to be located on the right-hand side or, if no wall space is available, on the nearest adjacent wall. Signs are permitted on the push side of doors with closers and without hold-open devices.

Comment. A commenter advised that the specification should address double doors with only one active leaf.

Response. The Board has added a provision for double doors with one active leaf which requires the location of signs on the inactive leaf (703.4.2).

Section 703.5 provides specifications for visual characters which address finish and contrast, case, style, character proportions and height, height, stroke thickness, and character and line spacing. As part of the reorganization of the signage requirements, the Board has added an exception, consistent with the proposed rule, which applies only the specifications for finish and contrast (703.5.1) where tactile and visual access are provided through the same characters. Where signs provide tactile and visual access separately, visual characters must comply with all applicable specifications in section 703.5.

Visual characters are required to be located at least 40 inches high (703.5.6). For consistency with specifications for elevators in section 407, the Board has added an exception noting that the 40 inch minimum does not apply to visual characters indicating elevator car controls (703.5.6, Exception).

Section 703.6 contains requirements for pictograms. This section applies to those pictograms, where provided, that are used to label permanent interior rooms and spaces. The specifications of 703.6 do not apply to other types of pictograms, including those specified in section 703.7 to label various accessible elements and spaces. Under 703.6.3, text descriptors with raised and braille characters are required below pictograms. The proposed rule allowed alternative placement adjacent to pictograms. The Board has removed this alternative in the final rule to enhance uniformity in the location of tactile text descriptors.

704 Telephones

Section 704 provides technical criteria for telephones, including provisions for wheelchair access (704.2), volume control (704.3), and TTYs (704.4). Most comments addressed specifications for volume controls and TTYs.

All public telephones are required to be equipped with volume control, as discussed above in section 217. This is consistent with other Board guidelines covering access to telecommunications products issued under section 255 of the Telecommunications Act of 1996, which requires telecommunications products and services to be accessible. Section 704.3 requires volume controls that provide a gain up to at least 20 decibels and an intermediate gain of 12 decibels, and have an automatic reset.

Comment. Persons who are hard of hearing and disability organizations urged an increase in the sound level of phones equipped with volume control. Some commenters specifically recommended a minimum 25 decibels or greater. The Board sought comment from pay telephone manufacturers and providers on the time frame necessary to produce products that meet the proposed specifications for volume control (Question 27). Few comments from industry addressed this question, though other commenters suggested that meeting the proposed volume control specifications should not be difficult under current telephone technology.

Response. The proposed specification was consistent with accessibility guidelines the Board issued under section 255 of the Telecommunications Act and standards issued under section 508 of the Rehabilitation Act Amendments. In rulemaking on the Telecommunications Act Accessibility Guidelines, similar comments were received from persons who are hard of hearing who reported having trouble using public pay telephones because of inadequate receiver amplification levels and who supported adjustable amplification ranging from 18–25 decibels of gain. However, several telephone manufacturers cited the National Technology Transfer and Advancement Act of 1996, which requires the Federal government to make use of technical specifications and practices established by private, voluntary standard-setting bodies, wherever possible.

The ANSI A117.1 standard requires certain public pay telephones to provide 12 decibels of gain minimum and up to 20 decibels maximum and that an automatic reset be provided. In recognition of the National Technology Transfer and Advancement Act, this amplification level was specified in the Telecommunications Act Accessibility Guidelines. The Board has retained the 20 decibel specification in this final rule (704.3) for consistency with the ANSI A117.1 standard, the Telecommunications Act Accessibility Guidelines, and the Board's section 508 standards.

Comment. Mute features on public pay telephones can increase audibility by temporarily disconnecting the telephone's microphone while the user listens through the earpiece so that background noise is not amplified through the earpiece. In the proposed

rule, the Board requested information on the feasibility and cost of equipping new and existing public pay telephones with a mute button and whether such a requirement should be included in the final rule (Question 28). Few comments addressed this issue. Those that did generally supported such a requirement, although information on feasibility and cost was not received.

Response. While the Board believes that mute buttons could benefit all telephone users in noisy environments, particularly those who are hard of hearing, the Board has opted not to establish such a requirement at this time due to the absence of product information and cost data.

The proposed guidelines included a provision that applied the criteria for protruding objects in section 307 to wheelchair accessible telephones and enclosures (704.2.3). The Board has removed this provision as unnecessary in the final rule. Section 307 applies to a variety of building elements, including telephones and enclosures, under the scoping provision for protruding objects (204). This revision is consistent with the ANSI A117.1–2003 standard.

Section 704.4 provides specifications for TTYs. The proposed rule included requirements so that TTYs were accessible to persons who use wheelchairs. This included a requirement that the touch surface of TTY keypads be 30 to 34 inches high (704.4.1).

Comment. Many commenters indicated that TTYs are mounted too low to be used comfortably by people not using wheelchairs. According to these commenters, compliance with wheelchair access provisions greatly compromises their usability by the majority of persons with hearing or speech impairments who do not use wheelchairs. Commenters urged that a higher surface height for TTY keypads be specified. Organizations representing persons who are deaf recommended a keyboard height of 33 to 35 inches where users are expected to stand. A manufacturer of TTY-equipped pay telephones indicated that its products provide TTY keypads at a height of 36 to 40 inches and requested that this range be permitted.

Response. The Board has revised the specified height of TTY keypads from the proposed range of 30 to 34 inches to a minimum of 34 inches (704.4.1). In addition, the Board has removed other specifications concerning wheelchair access, which is consistent with the original ADAAG. These specifications include a requirement that the operable parts of both the TTY and the telephone be accessible according to section 309, which specifies accessible reach ranges, and provide clear floor space for a forward approach to the TTY. However, these changes do not impact the requirements for other types of telephones required to be wheelchair accessible according to section 704.2.

Comment. The proposed rule provided an exception from the height and clearance requirements for TTYs at telephones located in cubicles equipped with fixed seats (704.4.1). As proposed, this exception applied only to assembly occupancies and allowed half of TTYs at telephones with seats not to comply. Comments recommended that this exception apply to other types of facilities since seats at phones may provide a desired convenience for TTY users.

Response. As a result of the changes concerning wheelchair access, the exception applies only to the specified keypad height and allows a height below 34 inches where seats are provided at telephones with TTYs. In the final rule, the Board has broadened this exception to apply to all telephones with seats in any type of facility.

Comment. The requirements for TTYs do not address the height of display screens. Due to the typical character size displayed, users must be in close proximity to the screen. The Board requested information on TTY screen heights that are appropriate for people who use wheelchairs and for standing persons and whether the requirement for ATM display screens is appropriate for TTYs as well (Question 29). Little information was received in response to this question. Respondents to this question reiterated their concern about wheelchair access resulting in TTYs that are too low for persons who are standing. Other commenters recommended that research be conducted to develop information on the appropriate height of display screens.

Response. The Board has not included any specifications concerning the height of TTY display screens in the final rule.

705 Detectable Warnings

Section 705 provides the technical specifications for detectable warnings, a distinctively textured surface of truncated domes identifiable by cane and underfoot. This surfacing is required along the edge of boarding platforms in transit stations. The original ADAAG included a requirement for detectable warnings on the surface of curb ramps to provide a tactile cue for persons with vision impairments of the boundary between sidewalks and streets where the curb face had been removed. It also required them at locations where pedestrian areas blend with vehicular areas without tactile cues, such as curbs or railings, and at reflecting pools. Certain requirements for detectable warnings were temporarily suspended in the original ADAAG and were not included in the proposed rule, as further discussed in section 406 above. Consequently, the requirements in section 705 are required only at boarding platforms in transportation facilities (810.5.2). Revisions made in the final rule include:

- Revising specifications for the diameter and spacing of truncated domes to allow a range (705.1.1 and 705.1.2).
- Clarifying the square grid pattern of truncated domes (705.1.2).
- Simplifying requirements for contrast between detectable warnings and adjoining walking surfaces (705.1.3).
- Removing provisions generally recognizing alternatives to the detectable warnings specified.
- Clarifying the application of the requirements to the edges of boarding platforms (705.2).

The detectable warning criteria specify a pattern of evenly-spaced truncated domes. The Board has added clarification, consistent with provided figures, that the domes be aligned in a square grid pattern (705.1).

Comment. The proposed rule specified that the truncated domes have a diameter of 0.9 inch, measured at the base. A commenter cited research conducted in Japan which indicated that a surface very similar to that specified by section 705 ranked high in detectability. It was recommended, based on this research, that a diameter of 0.4 inch to 0.9 inch be specified for domes, measured at the top. In addition, this commenter recommended that the spacing between domes be revised from an absolute of 2.35 inches to a range of 1.6 to 2.35 inches.

Response. In the final rule, the Board has revised the specification for the diameter and spacing of truncated domes to permit a range of dimensions (705.1.1). A range of 0.9 inch to 1.4 inches is specified for the base diameter. The top diameter range is specified to be 50% to 65% of the base diameter, which approximates the recommended 0.4 inch to 0.9 inch range. The center-to-center spacing of domes has been changed from 2.35 inches absolute, to a range of 1.6 inches minimum to 2.4 inches maximum, with a minimum separation measured at the base of 0.65 inch (705.1.2). The revised base diameter and spacing dimensions will accommodate existing detectable warning products that were previously

deemed to provide an equivalent level of accessibility. ADAAG permits departures that provide equal or greater access as an ''equivalent facilitation.'' The Department of Transportation (DOT), which enforces the ADA's design requirements as they apply to various transportation facilities, reviews requested departures based on equivalent facilitation in consultation with the Board. Over the years, DOT has approved various detectable warning products that differ slightly from the ADAAG specifications. The specifications in the final rule derive from a review of these products and will encompass the variations among products previously approved by DOT under the equivalent facilitation clause.

Detectable warnings are required to contrast visually from adjacent walking surfaces, either light-on-dark or dark-on-light. The proposed rule required the material used to provide contrast be an integral part of the truncated dome surface (705.2.2). This specification was intended to preclude the painting of detectable warning surfaces to meet the contrast requirements since painted surfaces would not be adequately slip resistant. However, requirements for ground and floor surfaces in section 302, which require slip resistance, apply to those surfaces with detectable warnings as well. The Board believes that the requirement for slip resistance in section 302 effectively prevents the painting of detectable warning surfaces. Consequently, it has removed the specification that the material used to provide contrast be an integral part of the detectable warning surface.

Comment. The proposed rule specified that detectable warnings in interior locations differ from adjoining walking surfaces in resiliency or sound-on-cane contact (705.2.3). Commenters considered this provision to be of questionable usefulness and difficult to meet absent a recognized method of measuring resiliency or sound-on-cane contact.

Response. The requirement for contrast in resiliency or sound-on-cane contact between detectable warnings and adjoining walking surfaces in interior locations has been removed in the final rule.

Comment. The proposed rule included provisions that generally recognized alternative tactile surfaces equally detectable underfoot or other designs or technologies that provide equal or superior drop-off warning at boarding platforms (705.3 and 705.4). Commenters opposed these provisions without further guidance or specificity on the type of alternatives that would be acceptable. Some commenters recommended that these provisions were unnecessary in view of the general provision for equivalent facilitation in section 103 permitting departures from this or any other requirement in the guidelines where equal or greater access is provided.

Response. The Board has removed the provisions concerning equivalent products and technologies as an alternative to the detectable warnings specified by section 705. This change is consistent with the effort the Board made in the proposed rule to remove specific provisions concerning equivalent facilitation. The general provision for equivalent facilitation remains the basis upon which alternatives to the specified detectable warnings may be pursued. DOT's ADA regulations provide a process for the review of requested departures as an equivalent facilitation in relation to public transportation facilities.[24]

Section 705.2 specifies that detectable warnings along boarding platform edges be 24 inches wide. In the final rule, the Board has added clarification that the detectable warning is to extend the full length of the public use areas of platforms.

706 Assistive Listening Systems

Section 706 provides specifications for assistive listening systems. Assistive listening systems pick up sound at or close to its source and deliver it to the listener's ear. This more direct transmission improves sound quality by reducing the effects of background noise and reverberation and, as needed, increasing the volume. These devices serve people who are hard of hearing, including those who use hearing aids. Assistive listening systems are generally categorized by their mode of transmission. Acceptable types of assistive listening systems include induction loops, infrared systems, FM radio frequency systems, hard-wired earphones, and other equivalent devices. A definition for ''assistive listening systems'' has been included in the final rule (section 106). Provisions address receiver jacks (706.2), compatibility with hearing aids (706.3), and system quality and capability (706.4 through 706.6).

Comment. Receivers are required to have a ⅛-inch standard mono jack so that users can use their own cabling as necessary. The proposed rule allowed other types of jacks where compliant adapters were provided (706.3). Comments strongly supported the requirement for the ⅛-inch mono jack. Some commenters noted that this type of jack should be provided in all cases and that alternative types should not be allowed to avoid issues such as who is responsible for the provision of adapters.

Response. In the final rule, the Board has specified that receivers include a ⅛-inch (3.5 mm) standard mono jack and has removed language concerning other jack types and adapters (706.2).

Section 706.3 specifies that receivers required to be compatible with hearing aids (25%) must be neck loops since this type interfaces with hearing aid T-coils. Many comments supported this provision and no changes to it have been made in the final rule.

The performance of assistive listening systems is a concern among users. The quality and capability of systems largely determine the quality of sound transmission. Sound quality, internal noise, signal-to-noise ratio, signal strength, and boost vary among products. As a result, some systems do not adequately meet the needs of people who are hard of hearing. For example, the boost of some products may amplify sound adequately for people with mild hearing loss but not for those with profound hearing loss.

In the belief that standards should be developed to provide guidance in selecting products of sufficient quality and capability, the Board funded a study on assistive listening systems that was completed in 1999. Conducted by the Lexington Center, this project included collecting information on assistive listening systems, a review of the state-of-the-art with respect to assistive listening systems, and a survey of consumers, service providers, dispensers and manufacturers to determine how effective assistive listening systems are at present and what the major problems, limitations, and complaints are regarding existing systems. With this information, the researchers developed objective means for specifying the overall characteristics of any assistive listening system, from sound source to listener's ear, to be able to predict how well the system will work in practice and to determine objective criteria for establishing guidelines or recommendations for the use of assistive listening systems in public places. The criteria recommended by this research include:

- A signal-to-noise ratio of at least 18 decibels measured at the earphones.
- The capability of receivers to deliver a signal with a sound pressure level of at least 110 decibels and no more than 118 decibels with a dynamic range on the volume control of 50 decibels.

[24] 49 CFR 37.9(d).

• Peak clipping levels at or below 18 decibels down from the peak level of the signal.

Comment. The Board sought comment on whether the criteria developed through the Lexington Center research should be included in the final rule (Question 30). Commenters overwhelmingly supported the inclusion of specifications for the performance and sound quality of assistive listening systems.

Response. The Board has included performance criteria for assistive listening systems based on the Lexington Center research that address the sound pressure level (706.4), signal-to-noise ratio (706.5), and peak clipping level (706.6).

A report from the Lexington Center on this research, ''Large Area Assistive Listening Systems: Review and Recommendations,'' is available from the Board and its Web site at *www.access-board.gov.* Additional resources stemming from the project, including a series of technical bulletins on assistive listening systems, are also available.

707 Automatic Teller Machines and Fare Machines

Section 707 provides specifications for Automatic Teller Machines (ATMs) and fare machines. Requirements address clear floor or ground space (707.2), operable parts (707.3), privacy (707.4), speech output (707.5), input (707.6), display screens (707.7), and braille instructions (707.8). In the final rule, this section has been significantly reorganized and criteria for output and input substantially revised due to comments submitted by persons with disabilities, various disability groups, ATM manufacturers, banking institutions and trade associations, and others.

Comment. Comments from the banking industry opposed the specific criteria proposed for ATMs in favor of a more flexible performance standard. Conversely, many comments from persons with vision impairments supported the proposed specifications or urged the Board to make them more stringent.

Response. The original ADAAG relied on a performance criterion in specifying access to ATMs for people with vision impairments: ''instructions and all information for use shall be made accessible to and independently usable by persons with vision impairments'' (4.34.5). Based on the level of access provided at ATMs under the original ADAAG, it is the Board's belief, consistent with the ADAAG Review Advisory Committee's recommendations, that a descriptive set of technical criteria is essential to ensure that ATMs are adequately accessible to, and usable by, persons with vision impairments. The Board has taken into consideration concerns raised by industry concerning various specifications, as well as information on improved technological solutions, in finalizing these criteria. A number of revisions have been made to the ATM requirements which are detailed below.

Comment. Section 707 specifically covers ATMs and fare machines. In the proposed rule, the Board sought comment on whether this section should be extended to cover other types of interactive transaction machines (ITMs), such as point-of-sale machines and information kiosks, among others (Question 31). Information was requested on any possible design conflicts between the requirements of this section and any specific types of interactive transaction machines. Comments from disability groups and individuals with disabilities generally supported coverage of ITMs and point-of-sale machines. Most industry commenters opposed such an expansion since, in their opinion, such devices differ in structure and use from ATMs. Comments noted that computers used in point-of-sale machines rarely have the capacity for added functions, especially for speech. Commenters were particularly concerned that manufacturers, installers, and property owners would be held responsible for the content of web-based dynamic information. Several suggested that unlike ATMs, which are considered primarily single-purpose devices, information kiosks are multi-purpose devices that cannot produce audio files anticipating the content of the video display.

Response. The Board has elected not to broaden the scope of the rule to address all types of interactive transaction machines at this time. However, the Board has issued standards covering various types of electronic and information technology purchased by the Federal government under section 508 of the Rehabilitation Act. These standards encompass various types of interactive transaction machines that are procured by the Federal government. The Board intends to monitor the application of the performance-based section 508 standards to ITMs in the Federal sector for its consideration in future updates of these guidelines.

Revisions made to this section include:

• Revising exceptions for drive-up ATMs to also cover drive-up fare machines (707.2, 707.3, and 707.7).

• Modifying specifications for operable parts (707.3).

• Limiting privacy requirements to ATMs (707.4).

• Revamping and clarifying speech output capabilities and specifications (707.5).

• Modifying specifications for input controls (707.6).

• Adding a requirement for braille instructions (707.8).

Sections 707.2 and 707.3 address clear floor or ground space requirements and operable parts, respectively. These provisions include exceptions for drive-up only ATMs. In the final rule, the Board revised these exceptions to cover fare machines as well.

Comment. The proposed rule specified that operable parts be able to be differentiated by sound or touch without activation (707.3). Comments from industry noted that it would be difficult to achieve this requirement in the design of controls activated by touch. Some commenters advised that compliance would be more feasible if the provision recognized an allowable level of force that could be applied without the control being activated. Since many ATMs and fare machines allow users to cancel operations, including when a control is inadvertently activated, commenters questioned the need for this provision.

Response. The Board agrees that keys which enable users to readily clear or correct input errors obviate the need for controls that can be differentiated by sound or touch without activation. In the final rule, the Board has revised the requirement to apply only at ATMs and fare machines that are not equipped with ''clear'' or ''correct'' keys.

Section 707.4 ensures an equivalent level of privacy in the use of ATMs for all individuals, including those who use a machine's accessible features. In the final rule, this requirement has been made specific to ATMs, since privacy is generally of less concern in the use of fare machines.

Section 707.5 provides requirements for speech output of ATMs and fare machines.

Comment. ATM manufacturers and the banking industry opposed the specific criteria for audible output in the proposed rule (707.5) and urged the Board to replace them with more flexible performance requirements that would focus on the desired outcome instead of detailing how and to what extent access was to be achieved. Comments from disability groups strongly supported the approach taken

in the proposed rule. Some of these comments requested that the specifications cover the full range of machines used and types of output. For example, some pointed out that certain types of information, such as error messages, are often overlooked in the provision of audible output.

Response. The Board has revised the requirements for audible output to emphasize the minimum performance capabilities necessary for access. This will allow room for technological innovations and improvements in providing access solutions, particularly with respect to audible output. On the other hand, the Board has also retained or added specific criterion so that a minimum level of accessibility is clearly established to avoid confusion or misinterpretation. The final rule clearly requires machines to be speech enabled, as opposed to the proposed rule's call for ''audible instructions.'' As revised, it requires that ''all displayed information for full use shall be accessible to and independently usable by individuals with vision impairments.'' The specification lists particular types of output, such as operating instructions and orientation, visible transaction prompts, user input verification, and error messages. However, the over-arching performance criterion governs, as the list of particulars is not exhaustive. Consistent with the proposed rule, the speech output must be delivered through devices readily available to all users, such as a telephone handset or an industry standard connector (*e.g.*, an audio mini jack to accommodate a user's audio receiver).

Comment. The Board sought information on the availability of ATMs that meet the audible output requirements of the proposed rule and any impact, including costs and technological difficulties, in developing new products that would comply (Question 35). Information was also requested on the practice of redeploying ATM equipment and the impact of the output requirements on this practice. Industry commenters expressed strong concerns about the cost and feasibility of providing speech output for new and refurbished machines. Industry commenters claimed that voice output would be burdensome by necessitating both hardware and significant software investments, including on-going maintenance to support changes in the services offered by the institution. Analysis of industry comments reveals an underlying concern that manufacturers, property owners, installers, and networks must coordinate to provide anything more than limited voice output. According to these comments, such coordination is not customary in the U.S. The banking industry expressed particular concern about the application of the guidelines to ATMs that are refurbished and redeployed. According to the industry, there is a large market for used ATMs, which have an average life of 10 years, though some can last up to 20 years; as new machines are installed in existing locations, those replaced are commonly redeployed elsewhere. Since the specifications apply not only to new ATMs, but to altered machines as well, commenters expressed concern about the cost and feasibility of retrofitting existing machines as part of their relocation. On the other hand, comments from disability groups indicated that satisfactory voice output is not only feasible but is actually being accomplished by various banking institutions, including through the retrofit of existing machines.

Response. Many of the comments submitted by industry concerning the cost and impact of the requirements for audible output appeared based on the provision of recorded human speech. However, the Board intended other alternatives, which are considerably less expensive, such as digitized human speech and synthesized speech. Clarification of these permitted types of output are included in the final rule (707.5). New technologies for text-to-speech synthesis are becoming available that offer less expensive solutions in equipping machines with speech output. Such technologies, which can be installed through software or hardware enhancements, can generate all of the information required to be accessible in audible output. In the past year, the Board has become aware of various banks in different areas of the country that have provided new talking ATMs that take advantage of improved speech output technologies. With respect to refurbished machines, the requirements of these guidelines as they apply to altered elements permit departures where compliance is not technically feasible; in such cases, compliance is required to the maximum extent feasible (202.3, Exception 2). Some industry commenters expressed concern about the proposed requirements and existing machines, including those that are not altered. However, the scope of these guidelines, consistent with the Board's mandate, extends only to new construction and planned alterations and additions. The Board does not generally have jurisdiction over requirements for existing facilities that are otherwise not being altered. Under the ADA, regulations issued by the Department of Justice (DOJ) effectively govern requirements that apply to existing places of public accommodation. How, and to what extent, the Board's guidelines are used for purposes of retrofit, including removal of barriers and provision of program access, is wholly within the purview of DOJ. It is the Board's understanding that DOJ is aware of the concern as raised by various commenters generally and that DOJ plans to address these concerns in its rulemaking to revise its ADA standards pursuant to the Board's final rule.

Comment. In the proposed rule, the Board requested comment on whether ATM manufacturers or banks intend to provide audio output receivers for customers who need them to access audible output and whether customers needing such output could reasonably be expected to provide their own receivers (Question 34). Few comments addressed this question. Several individuals with vision impairments indicated that they carry headphones for talking book players and other audio devices.

Response. The Board has not included any requirements concerning the provision of audio output receivers.

Comment. The proposed rule included an advisory note indicating that audible tones can be used instead of speech for personal input that is not displayed visually for security purposes, such as personal identification numbers (707.5.3). Comments from industry supported this clarification but noted that it would be more appropriately located within the text.

Response. The Board agrees that the advisory note actually functioned as an exception to the requirement for speech output and has added it to the text in the final rule (707.5, Exception 1).

Comment. Comments from persons with disabilities requested that all visually displayed information, including advertisements, should be covered by the requirement for speech output.

Response. The Board disagrees with coverage of extraneous information not needed in the conduct of all available transactions. In the final rule, an exception has been added which notes that advertisements and similar information are not required to be audible unless they convey information that can be used in the transaction being conducted (707.5, Exception 2). This exception helps further clarify the scope of the general performance requirement of 707.5 by describing the type of information that is not covered.

Comment. Comments from industry pointed out that compliance will be difficult and extremely costly, if not impossible, for certain types of machines that cannot support speech synthesis. Some machines cannot ''read'' or ''pronounce'' dynamic alphabetic text. Dynamic alphabetic text includes words that cannot be known in advance by the machine or its host. Audible dynamic text requires either pre-recorded files or a text-to-speech synthesizer to convert electronic text into speech using pre-programmed pronunciation rules.

Response. Because it would be impossible to pre-record files to anticipate all the possible dynamic alphabetic combinations in the English language, speech synthesis is the only practicable solution for producing dynamic alphabetic audible output. The Board has added an exception for machines that cannot support speech synthesis. Under this exception, dynamic alphabetic output is not required to be audible (707.5, Exception 3).

Comment. Persons with vision impairments and disability groups indicated that ''repeat'' and ''interrupt'' functions greatly facilitate use of speech output. Such commenters also stated that volume control is an important feature in accommodating the full range of users. Industry commenters pointed out that interruption of speech output is critical because such output, even when not accessed through a handset or earphones, is continuously running and will otherwise lengthen the time of all operations and transactions.

Response. The Board has added a provision that machines allow users to repeat or interrupt speech output (707.5.1). An exception allows speech output for any single function to be automatically interrupted once a transaction is selected. This specification replaces a requirement in the proposed rule that users be able to expedite transactions (707.5.4.2). In addition, the Board has included a requirement for a volume control.

Comment. The proposed rule contained a requirement that ATMs dispense paper currency in descending order with the lowest denomination on top (707.5.7). Comments from the banking industry noted that while this requirement is feasible, the denominations of currency dispensed varies depending on which bills are still available in a machine before it is re-supplied.

Response. The Board has removed the requirement for bills to be dispensed in descending order since the order of dispensation will not ensure that users will be able to identify each bill's denomination.

Comment. The proposed rule required that machines have the capability to provide information on receipts in an audible format as well (707.5.8). Some comments from individuals with vision impairments urged the Board to revise this requirement to clearly apply to all data contained on a receipt. Industry representatives, however, advised that the requirement should apply only to essential information concerning a transaction. These comments noted that some information that may not be of interest or use to customers is nevertheless required to appear on printed receipts under Federal mandates. In addition, the banking industry indicated that some ATMs have the capability to provide copies of records, such as bank statements, which should not be subject to the speech output requirements.

Response. The Board has revised the requirement for receipt information to more clearly distinguish the type of information required to be provided through speech output and the type that is not. The final rule requires that speech output devices provide all information on printed receipts, where provided, necessary to complete or verify a transaction, including balance inquiry information and error messages (707.5.2). Extraneous information that may be provided on receipts, such as the machine location and identifier, the date and time, and account numbers is not required to be provided through speech output (Exception 1). In addition, the Board has also exempted receipt information that duplicates audible information on-screen (Exception 2) and printed materials that are not actual receipts, such as copies of bank statements and checks (Exception 3).

Section 707.6 covers input controls, including numeric and function keys.

Comment. The proposed rule required all keys used to operate a machine to be tactually discernable (707.4.2). It included specifications for key surfaces to be raised 1/25 inch minimum and that outer edges have a radius of 1/50 inch maximum (707.4.2). It also required a minimum separation between keys of 1/8 inch and specified a distance between function and numeric keys based on the distance between numeric keys (707.4.3). Comments from industry pointed to these provisions as unduly restrictive and raised questions about supporting data for the specified dimensions. These commenters urged a performance-based requirement as more appropriate.

Response. The Board has revised the final rule to require at least one input control for each function (as opposed to ''all keys'') to be tactually discernable (707.6.1). Key surfaces are required to be raised from surrounding surfaces, but the proposed 1/25 inch minimum has been removed. In addition, the Board has also added a requirement specific to membrane keys. Such keys must also be tactually discernable from surrounding surfaces and other keys where they are the only method of input provided.

Comment. Comments from persons with disabilities called attention to the importance of access to touch screens at fare machines and ATM machines. The proposed rule provided an exception for the touch screens of video display screens (707.4.2, Exception). This exception was meant to apply only to that method of input, since the Board intended that alternative method of input that is tactually discernable would be provided in addition to the touch screen. Commenters misread this exception as completely exempting touch screens from providing tactually discernable controls.

Response. The Board has removed the exception for touch screens in the proposed rule to avoid misinterpretation of its intent. Instead, the Board has revised the requirement for tactually discernable input controls as applying to those key surfaces that are not on active areas of display screens (707.6.1). All machines with touch screens must have tactually discernable input controls as an additional alternative to those activated by touching the screen.

Comment. The proposed rule specified the arrangement of numeric keys according to the standard 12-key telephone keypad layout, which provides numbers in ascending order (707.4.4). The ATM and banking industries indicated that numbers may be arranged in descending order, similar to the arrangement of numeric keys on standard computer keyboards as required by other national standards, such as those issued in Canada. Since ATM manufacturers operate internationally, consistency with other national standards is a key industry concern.

Response. The final rule requires numeric keys to be arranged in an ascending or descending telephone keypad layout (707.6.2). The number five key is required to be tactually distinct from the other keys (a raised dot is commonly used).

Comment. The proposed rule required function keys to be arranged in a specific order and specified particular tactile symbols and colors for standard keys (707.4.5). Comments from industry

opposed the mandate for a particular key arrangement which it considered impractical due to various factors that influence the design and layout of function keys. Further, these commenters questioned the need for such a requirement in view of provisions concerning the tactile labels of keys and audible operating instructions and orientation. In addition, comments noted that the tactile symbol assigned to ''clear'' or ''correct'' keys (vertical line or bar) was inconsistent with the symbol specified by Canadian standards (raised left arrow).

Response. The Board has removed the requirement for function keys to be arranged in a particular horizontal or vertical order, which it considers unnecessary since such keys are to be labeled by standardized tactile symbols. This revision permits manufacturers flexibility in the design of function key layouts. In addition, the Board has changed the required symbol for ''clear'' or ''correct'' keys to a raised left arrow for consistency with Canadian standards (707.6.3.2).

Comment. The Board specified colors for standard function keys in the proposed rule and sought comment on the appropriateness of this specification, particularly for people who are color blind (Question 32). Few comments addressed this question. Instead most commenters pointed out that the specified colors did not correlate with standards used in Canada.

Response. Since many ATM manufacturers operate internationally, the Board has elected to withdraw its color specification for function keys to avoid conflict with other existing national standards.

Comment. ATMs often reject input when maximum time intervals are exceeded. Users are at risk of having the ATM card withheld and may encounter additional transaction charges due to repeated attempts to access the machine. The Board sought comment on whether it should include a specific requirement that would allow users to extend the maximum time intervals between transactions beyond the amount of time typically allotted (Question 33). Commenters from the banking industry and ATM manufacturers noted that ATMs include standard features that ask if users want more time to conduct transactions. The requirements for speech output will ensure that such questions are accessible to users with vision impairments.

Response. The Board has not included a requirement for extending transaction time intervals in view of industry practice.

Section 707.7 addresses visual display screens and provides specifications for the screen height and the legibility of visual characters. An exception is provided for drive-up ATMs, which the Board modified in the final rule to also cover drive-up fare machines (707.7, Exception). Few comments addressed these provisions and no further substantive changes have been made.

Comment. Persons with vision impairments requested the inclusion of a specific requirement for braille instructions. While braille instructions for full use of the machine are not necessary in view of the speech output requirements, these comments noted that instructions indicating how the speech mode is activated are needed in tactile form. For example, some machines may provide a jack through which users can access speech output by connecting personal earphones or other types of audio receivers. Without braille instructions, users may not readily determine the method for accessing speech output, which otherwise would only be tactually indicated by the jack itself.

Response. The Board has included a requirement for braille instructions on initiating the speech mode (707.8).

708 Two-Way Communication Systems

This section provides criteria for two-way communication systems where they are provided to gain admittance to a facility or to restricted areas within a facility. These systems must provide audible and visual signals so that they are accessible to people with vision or hearing impairments. As part of the integration of requirements for residential dwelling units from a separate chapter, provisions specific to communication systems in such facilities have been relocated to this section (708.4). No further changes have been made to section 708.

One of the technical provisions requires that handsets, where provided, have cords long enough (at least 29 inches) to accommodate people using wheelchairs (708.3). The proposed guidelines included an exception from this requirement for communication systems located at inaccessible entrances. The Board has removed this exception in the final rule, consistent with the new ANSI A117.1 standard. This action was taken in view of situations where an entrance may be inaccessible, but a two-way communication serving it is on an accessible route. In such cases, the availability of a two-way communication system may be of particular benefit to people unable to access an entrance.

Captioning

ADAAG and the Department of Justice's ADA regulations do not require captioning of movies for persons who are deaf. However, various technologies have been developed to provide open or closed captioning for movie theaters. One closed caption method for making movies accessible is a system that synchronizes captions and action by projecting reverse text images onto a wall behind an audience. The reverse text is then reflected by transparent screens at individual seats where movie goers can read the script on the screen and view the movie through the screen simultaneously. This type of auxiliary aid and others may require built-in features to make them usable.

Comment. In the proposed rule, the Board requested information on other types of captioning as it relates to the built environment and preferences among users (Question 36). Specifically, the Board sought information regarding the technical provisions that would be necessary to include in ADAAG to facilitate or augment the use of auxiliary aids such as captioning and videotext displays. Most comments from people with disabilities and disability organizations supported a requirement for captioning. However, most of these commenters stated a strong preference for open captioning over closed captioning because it provides easier viewing and seating flexibility. Some commenters expressed concerns about the reliability or convenience of particular closed captioning systems. Comments from the movie theater industry pointed out that the Department of Justice's ADA regulations issued under title III state that movie theaters are not required to present open captioned films, but are encouraged to voluntarily provide closed captioning.[25]

Response. In the final rule, the Board has not included a requirement for built-in features that can help support the provision of captioning technologies.

Convenience Food Restaurants

Convenience food restaurants, otherwise known as fast food restaurants, often provide people with the opportunity to order food from a drive-through facility. These facilities usually require voice intercommunication. The Department of Justice (DOJ) has required restaurants to accept orders at pick-up windows when

[25] 28 CFR part 36, section 36.303.

the communications system is not accessible to people who are deaf or hard of hearing.

Comment. The Board requested comment on whether accessible communication should be required at drive-through facilities (Question 37). Few comments addressed this question. Disability groups representing people who are deaf supported a requirement to ensure an equivalent level of access. Comments from the restaurant industry opposed such a requirement in favor of the approach taken by DOJ. Industry comments expressed concern about a mandated design solution's potential cost and the impact on drive-through communication devices.

Response. The Board believes that further information needs to be developed on the technologies available to provide access for persons who are deaf to communication devices at drive-through facilities before specifying a requirement in these guidelines. A requirement for such access has not been included in the final rule.

Chapter 8: Special Rooms, Spaces, and Elements

Chapter 8 covers various types of elements, rooms and spaces, including assembly areas (802), dressing, fitting, and locker rooms (803), kitchens and kitchenettes (804), medical care and long-term care facilities (805), transient lodging guest rooms (806), holding and housing cells in detention and correctional facilities (807), courtrooms (808), residential dwelling units (809), transportation facilities (810), and storage (811). In the final rule, requirements from other chapters have been relocated to this chapter. These include requirements for:

- Courtrooms at 808 (relocated from 232).
- Residential dwelling units at 809 (relocated from Chapter 11).
- Transportation facilities at 810 (relocated from Chapter 10).
- Storage at 811(relocated from 905).

Substantive changes to these sections are discussed below.

802 Wheelchair Spaces, Companion Seats, and Designated Aisle Seats

Section 802 provides requirements for wheelchair spaces, companion seats, and designated aisle seats in assembly areas. Requirements have been reorganized and renumbered. Substantive changes include:

- Revision of requirements for the approach to, and overlap of, wheelchair spaces (802.1.4 and 802.1.5).
- Clarification of lines of sight specifications for wheelchair spaces (802.2).
- New requirements for companion seats (802.3).
- Revision of criteria for designated aisles seats (802.4).

Comment. Wheelchair spaces may be placed side-by-side, as reflected in specifications for width that are specific to adjoining spaces. The proposed rule specified that the approach to a wheelchair space could pass through one adjoining wheelchair space, but not others (802.5). This was done to limit the inconvenience to those occupying wheelchair spaces who would otherwise have to move, possibly from the space or row entirely, to accommodate others traveling to and from other wheelchair spaces in the same row. Comments from persons with disabilities urged that the rule be modified to prohibit travel through any wheelchair space.

Response. In the final rule, the Board has modified specifications for the approach to wheelchair spaces so that travel through any wheelchair space is not required in accessing a wheelchair space (802.1.4). As a result, accessible routes cannot overlap wheelchair spaces.

Comment. The Board sought comment on whether it should clearly prohibit circulation paths (not just accessible routes) from overlapping wheelchair spaces (Question 38). Persons with disabilities overwhelmingly supported such a change to ensure that people using wheelchair spaces do not have to shift or move out of the way of other pedestrian traffic while occupying spaces. Comments from industry noted that such a requirement would increase space requirements at wheelchair seating areas.

Response. The Board agrees with the majority of comments that persons using wheelchair spaces should not have to contend with overlapping pedestrian traffic. Nor should occupied spaces obstruct circulation paths, particularly means of egress. A requirement that wheelchair spaces not overlap circulation paths is included in the final rule (802.1.5). This requirement is intended to apply only to the circulation path width required by applicable building and fire codes and helps ensure consistency between accessibility and life safety criteria. Such codes generally do not permit wheelchair spaces to block the required width of a circulation path. In various situations, the new requirement is expected to have modest impacts. For example, where a main circulation path located in front of a seating row with a wheelchair space is wider than required by applicable building and fire codes, the wheelchair space may overlap the portion of the path width provided in excess of code requirements. Where a main circulation path is located behind a seating row with a wheelchair space that is entered from the back, the aisle in front of the row may need be to be wider in order not to block the required circulation path to the other seats in the row, or a mid-row opening may need to be provided to access the required circulation path to the other seats.

In the proposed rule, the Board posed several questions concerning the requirements for the dispersion of wheelchair spaces (which were located in section 802.6). These requirements have been revised and relocated to the scoping section for wheelchair spaces at section 221. As discussed above, the Board has clarified the intent of the proposed rule in calling for a choice in viewing angles comparable to that provided other spectators. In addition, the Board removed a criterion for dispersion based on a comparable choice in admission prices. In the final rule, it is required that wheelchair spaces be dispersed so that persons using them have ''choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators'' (221.2.3). Like the proposed rule, specifications are provided for horizontal (side to side) and vertical (front to back) dispersion. Wheelchair spaces must be located at ''varying distances from the screen, performance area, or playing field'' to achieve effective vertical dispersion. Exceptions from the requirements for horizontal and vertical dispersion requirements are provided for assembly areas with 300 seats or fewer.

Section 802.2 covers lines of sight to the screen, performance area, or playing field for persons using wheelchair spaces. These technical provisions address sight lines over seated and standing spectators. The Board has revised these requirements (located in section 802.9 in the proposed rule). In the proposed rule, it was specified that wheelchair space sight lines be ''comparable'' to those provided ''in the seating area in closest proximity to the location of the wheelchair spaces, but not in the same row.'' In venues where people are expected to stand at their seats during events, wheelchair spaces were to be located so that users have lines of sight over standing spectators comparable to those provided others in nearby seats not in the same row.

Comment. The proposed rule required that wheelchair spaces offer lines of sight ''comparable'' to those provided other spectators (802.9). Corresponding elevation drawings (Figures 802.9.1 and

802.9.2) illustrated lines of sight over the head of persons in the preceding row. Designers of assembly facilities expressed concern that these requirements, as illustrated, might be read to require this kind of sight line in all cases. However, a conventional practice is to design seating so that lines of sight are provided between, not over, the heads of persons in the preceding row through staggered seating. Generally, where the sight line is between the heads in the row immediately in front, it is also over the head of the second row. According to these commenters, comparable access at wheelchair seating should be based on the type of sight line (over heads or between heads) provided at inaccessible seats.

Response. The final rule has been modified to clarify what constitutes comparable lines of sight over seated spectators (802.2.1) and standing spectators (802.2.2). Specifically, the revised specifications distinguish between sight lines provided over and between heads of spectators in the row ahead. Where lines of sight over the heads of spectators in the first row in front is provided, then those occupying wheelchair spaces must also be provided lines of sight over the heads of spectators in the first row in front of the spaces (802.2.1.1). A similar requirement for equivalency is specified where sight lines are provided over the shoulders and between the heads of spectators in the first row in front (802.2.1.2). Parallel provisions are provided for assembly areas where spectators are expected to stand during events (802.2.2.1 and 802.2.2.2).

Section 802.3 addresses companion seats, which are required to be paired with wheelchair spaces (221.3). In the final rule, the Board has clarified that companion seats are to be located to provide shoulder alignment with adjacent wheelchair spaces (802.3.1). Consistent with the ANSI A117.1–2003 standard, the provision in the final rule specifies that shoulder alignment is to be measured 36 inches from the front of the wheelchair space and that the floor surface of companion seats is to be at the same elevation as that of wheelchair spaces. In the proposed rule (802.7), companion seats were required to be ''readily removable.'' As discussed above in section 221, the final rule allows, but does not require, companion seats to be removable (802.3.2). In addition, the Board has added a requirement that companion seats be ''equivalent in quality, size, and comfort and amenities'' to seating in the immediate area (802.3.2). Amenities include, but are not limited to, cup holders, arm rests, and storage pockets.

Section 802.4 provides technical criteria for designated aisle seats. These seats are intended to provide access for people with disabilities who do not need or prefer wheelchair spaces.

Comment. The proposed rule required that such seats have removable or folding armrests or no armrests on the aisle side. Comments noted that this should apply only where armrests are provided on seats in the same area. Comments from persons with disabilities felt that armrests should be required at designated aisle seats if other seats have armrests. Facility operators noted that it is not practical to provide removable armrests because they become misplaced, lost, or stolen over time.

Response. Requirements for armrests have been revised to apply only where armrests are provided on seating in the immediate area. Armrests on the aisle side of the seat are required to be folding or retractable. Complying armrests are not required where no armrests are provided on seats.

803 Dressing, Fitting, and Locker Rooms

Requirements for dressing rooms, fitting rooms, and locker rooms are contained in section 803.

Comment. Section 803.2 requires wheelchair turning space in accessible rooms. In the proposed rule, an exception to this provision noted that a portion of this space (6 inches maximum) could extend under partitions or openings without doors that provide toe clearance at least 9 inches high. Many comments opposed this exception since, as written, it would allow a 6-inch portion of the 5-foot turning space on both sides to be located beyond two side partitions, possibly resulting in dressing or fitting rooms that are only 4 feet wide.

Response. This exception concerning wheelchair turning space has been removed in the final rule (803.2). Requirements for wheelchair turning space in section 304 specify dimensions and recognize knee and toe space. However, permitted overlaps are limited. For example, an object with knee and toe clearance can overlap only one arm or the base of T-shaped turning space (304.3.2).

The proposed rule prohibited doors from swinging into the turning space (803.3). In the final rule, the Board has revised this requirement for consistency with the ANSI A117.1 standard. As revised, this provision permits doors to swing into the room where wheelchair space beyond the arc of the door swing is provided. This specification is consistent with provisions for single-user toilet rooms and bathrooms (603.2.3, Exception 2).

804 Kitchens and Kitchenettes

Requirements in section 804 apply to kitchens and kitchenettes, including those provided in transient lodging guest rooms and residential dwelling units. They also apply to spaces, such as employee break rooms, located in other facility types. In the final rule, requirements specific to kitchens in residential dwelling units have been folded into this section as part of the integration of the chapter on residential dwelling units (Chapter 11) into the rest of the document. Certain requirements intended only for dwelling unit kitchens have been modified accordingly. For example, requirements for clearances in pass through and U-shaped kitchens apply only to kitchens with cooktops or conventional ranges (804.2), and specified kitchen work surfaces are required only in kitchens in residential dwelling units (804.3). This reorganization does not substantively change the requirements of section 804 as they apply to kitchens not located in residential dwelling units. These include requirements for sinks (804.4), storage (804.5), and appliances (804.6).

Substantive changes apply primarily to requirements for dwelling unit kitchens. These revisions concern:

- Clearances in pass through kitchens (804.2.1).
- Storage (804.5).
- Operable parts of appliances (804.6.2).
- Oven controls (804.6.5).

Clearances for pass through kitchens address counters, appliances, or cabinets on two opposing sides. In the final rule, this provision has been revised to more clearly address situations where counters, appliances, or cabinets are opposite a parallel wall. In addition, the Board has changed references to ''galley kitchens'' with ''pass through kitchens'' for clarity.

At least 50% of shelf space in storage facilities is required to be accessible (804.5). This is consistent with the proposed rule with respect to kitchens generally, but differs from proposed specifications for dwelling unit kitchens, which only addressed clear floor space at cabinets (1102.12.5). The final rule clarifies access requirements for storage in dwelling unit kitchens that is consistent with specifications for other types of kitchens.

Requirements for appliances include provisions for operable parts (804.6.2), which are required to be accessible according to section 309. Section 309

includes specifications for clear floor space (309.2), height (309.3), and operating characteristics (309.4). The proposed rule contained an exception for controls mounted on range hoods. This provision has been replaced by an exception to general scoping provisions for operable parts that addresses redundant controls (205.1, Exception 6). In the addition, the Board has added exceptions for appliance doors and door latching devices in section 804.6.2.

Comment. Operable parts must be designed so they can be operated with one hand and without tight grasping, pinching, twisting of the wrist, or more than 5 pounds of force (309.4). Appliance manufacturers called attention to various appliances that cannot be easily redesigned to meet the maximum 5 pounds of force. At refrigerator and freezer doors, a tight seal is necessary for energy efficiency, as required by other Federal laws, which may result in an opening force that exceeds 5 pounds of force. The latch used to secure dishwasher doors and create a water-tight seal also typically requires a force that may exceed 5 pounds which would be difficult and costly to reduce.

Response. The final rule provides an exception under which appliance doors and their latching devices are not required to comply with the specified operating characteristics for operable parts in section 309.4, including the maximum pounds of force for operation (804.6.2, Exception 1).

Comment. Accessible reach ranges specify a minimum height of 15 inches (308.3) for unobstructed reaches. The appliance industry called attention to certain types of doors that, when fully open, cannot easily meet this specification, such as dishwasher doors and doors of ovens and broilers that are part of free-standing ranges. Compliance with the reach range requirement when the door is fully open would severely impact the design and size of such appliances.

Response. The Board has included an exception for bottom-hinged appliance doors, which do not have to be within reach range requirements specified in 309.3 when open (804.6.2, Exception 2).

Ovens are required to have controls on front panels (804.6.5.3). A specification that these controls be to the side of the door has been removed in the final rule as unnecessarily restrictive.

805 Medical Care and Long-Term Care Facilities

Section 805 addresses access to patient or resident sleeping rooms in medical care and long-term care facilities. Revisions made to this section include:

- Removing a stipulation that wheelchair turning space not extend beneath beds (805.2).
- Clarifying fixture requirements in accessible toilet and bathing rooms (805.4).

Comment. Wheelchair turning space is required in patient rooms and resident sleeping rooms. The proposed rule prohibited this space from extending under beds (805.2). Commenters opposed this requirement, noting that it is inconsistent with specifications for wheelchair turning space in section 304 which recognize knee and toe clearances for specified portions of the turning space. Commenters questioned why space at beds are held to a higher standard. A similar requirement was included for transient lodging guest rooms (806.2.6) and holding and housing cells (807.2.1).

Response. For consistency with specifications for wheelchair turning space in section 304, the Board has removed the requirement prohibiting beds from overlapping this space. Beds can overlap turning space up to six inches where adequate toe clearance (9 inches high minimum) is provided. This change was also made for transient lodging guest rooms and holding and housing cells.

The Board has added clarification that toilet and bathing rooms provided as part of a patient or resident sleeping room contain at least one water closet, lavatory, and bathtub or shower (805.4).

806 Transient Lodging Guest Rooms

Section 806 addresses access to accessible guest rooms (806.2) and those guest rooms that provide access to persons who are deaf or hard of hearing (806.3). Substantive changes made to this section revise requirements for:

- Vanity counter spaces in accessible toilet or bathing rooms (806.2.4.1).
- Wheelchair turning space (806.2.6).
- Visual alarms (806.3.1).
- Telephones (806.3.2).

Comment. Requirements for accessible toilet and bathing rooms include a provision for vanity counter top spaces, which in the past have been omitted from accessible guest rooms even where provided for inaccessible rooms. This provision requires accessible vanity counter tops at lavatories in accessible guest rooms if vanity counter tops are provided in other guest rooms (806.2.4.1). The proposed rule required the vanity top in accessible rooms to be at least 2 square feet. Industry commenters considered this specification unduly restrictive while persons with disabilities considered it inadequate in ensuring equivalent access. The proposed rule also applied requirements for reach ranges and operable parts (sections 308 and 309) which would have effectively required knee and toe clearances below the vanities.

Response. The Board has removed the minimum surface requirement (2 square feet) for vanity counter tops. The revised provision requires vanity counter top space in accessible rooms to be comparable, in terms of size and proximity to lavatories, to those provided in other rooms of the same type. In addition, the requirement for compliance with sections 308 and 309 has been removed in the final rule. This change is consistent with the ANSI A117.1 standard.

A provision in section 806.2.6 prohibiting beds from overlapping wheelchair turning space has been removed for consistency with specifications for such space in section 304, as discussed above in section 805.2.

Guest rooms required to have accessible communication features are required to have visual alarms. As discussed above in section 702, technical requirements for visual alarms in the proposed rule have been replaced with references to criteria in the NFPA 72. Corresponding revisions have been made to the provision for visual alarms in guest rooms (806.3.1). This provision references both the visual and audible criteria for alarms in the NFPA standards.

Guest rooms providing communication access are also subject to requirements for notification devices and telephones (806.3.2). Telephones must have volume control. Also, telephones must be served by an accessible outlet not more than 4 feet away to facilitate use of TTYs. In the proposed rule, both of these requirements applied to ''permanently installed'' telephones. The Board has removed the term ''permanently installed'' because it is the Board's understanding that the Department of Justice will clarify the application of the guidelines to permanently installed elements in its rulemaking to update its standards for consistency with these guidelines.

807 Holding Cells and Housing Cells

This section provides requirements for cells or rooms required to be accessible in detention or correctional facilities and judicial facilities. Revisions made to this section include:

- Removing a provision that wheelchair turning space not extend beneath beds (807.2.1).

• Clarifying fixture requirements in accessible toilet and bathing rooms (807.2.4).

• Relocating requirements for drinking fountains to the general scoping provision (211.1).

• Revising requirements for telephone volume controls (807.3.2).

A provision in section 807.2.1 prohibiting beds from overlapping wheelchair turning space has been removed for consistency with specifications for such space in section 304, as discussed above in section 805.2.

The Board has added clarification that at least one water closet, lavatory, and bathtub or shower, where provided, must be accessible (807.2.4). In addition, a requirement for drinking fountains has been removed (807.2.4 in the proposed rule) due to revisions made to the scoping provisions for drinking fountains in section 211, as discussed above.

Telephones, where provided within cells, must be equipped with volume controls (807.3.2). In the proposed rule, this requirement applied to telephones that are ''permanently installed.'' As discussed above in section 806, the Board has removed this qualifier for consistency with the rest of the document.

808 Courtrooms

Section 808 provides requirements for courtrooms. These requirements have been relocated without substantive change from the scoping section for judicial facilities (231).

809 Residential Dwelling Units

The format and structure of these guidelines are designed to encourage an approach to accessibility that is more integrated than that of the original ADAAG. As a result, distinctions between facility types are minimized both in terms of substance and structure. The Board has sought to further this approach and to make the document more internally consistent by folding those remaining chapters specific to a facility type (residential and transportation) into the other chapters which apply to facilities more generally. Section 809 is based on requirements for residential dwelling units contained in Chapter 11 in the proposed rule. Other provisions have been integrated into other chapters as appropriate. In some cases, the Board determined that scoping or technical provisions applicable to facilities generally were sufficient without the addition of language specific to residential facilities. Most of the provisions, including those in section 809, have not been substantively changed. Those that have are discussed at the new location. The following list identifies the new location of the provisions that were contained in Chapter 11:

• 1101.1 and 1102.1 Scoping, covered by 233.

• 1102.2 Primary Entrance, now at 206.4.6.

• 1102.3 Accessible Route, now at 809.2.

• 1102.4 Walking Surfaces, covered generally by 403.

• 1102.5 Doors and Doorways, now at 206.5.4.

• 1102.6 Ramps, covered generally by 405.

• 1102.7 Private Residence Elevators, now at 206.6 (scoping) and 409 (technical).

• 1102.8 Platform Lifts, covered generally by 206.7 (scoping) and 410 (technical).

• 1102.9 Operable Parts, now at 205.

• 1102.10 Washing Machines and Clothes Dryers, covered generally by 214.

• 1102.11 Toilet and Bathing Facilities, now at 809.4 and Chapter 6.

• 1102.12 Kitchens, now at 809.3 and 804.

• 1102.13 Windows, covered generally by 229.

• 1102.14 Storage Facilities, covered generally by 225 (scoping) and 811 (technical).

• 1103 Dwelling Units with Accessible Communication Features, now at 809.5 and 708.4.

Comment. Several commenters expressed concern about these requirements and their relationship to those issued by the Department of Housing and Urban Development under the Fair Housing Act.[26] These commenters urged the Board and the Department of Justice to clarify which types of housing facilities are subject to the ADA and to make the requirements consistent with the Fair Housing Accessibility Guidelines.[27] Other commenters recommended that the Board reconcile differences with the standards for residential facilities contained in the ANSI A117.1 standard.

Response. This rule updates guidelines used to enforce the design requirements of the ADA and the ABA. While the ADA does not generally cover private residential facilities, its coverage is interpreted as extending to housing owned and operated by State and local governments. Under the ADA, the Department of Justice determines the application of the guidelines to residential facilities. In addition, the ABA, which applies to federally funded facilities, may apply to public housing and other types of residential facilities that are designed, built, or altered with Federal funds. Section 809 serves to update the requirements for dwelling units contained in the current ABA requirements, the Uniform Federal Accessibility Standards (UFAS), while providing new criteria in the ADA guidelines. Both the ADA and ABA establish design requirements for new construction and alterations that ensure full access for persons with disabilities. This mandate is considerably different than that established by the Fair Housing Act, which applies to covered multi-family housing in the private and public sectors. Consequently, the level of access specified by the ADA and ABA guidelines differs from that specified by the Fair Housing Accessibility Guidelines. The requirements proposed by the Board derive from guidelines for residential facilities contained in the ANSI A117.1–1998 standard. However, in both the proposed and final rule, the Board has found it necessary to deviate from the ANSI A117.1 in limited areas. The Board intends to continue to work with the ANSI A117 Committee to reconcile differences between both documents in this and other areas.

The proposed rule, consistent with the ANSI A117.1–1998 standard, required all toilet and bathing facilities to comply in accessible dwelling units. The new ANSI standard requires that at least one toilet and bathing facility be accessible. The ANSI Committee adopted this change due to concerns about the impact of full scoping in light of revisions to its technical requirements for toilet and bathrooms. The technical revisions it approved are consistent with those finalized by the Board in this rulemaking. The Board also had concerns about the application of the proposed requirement to certain types of housing, such as group homes. In the final rule, the Board has revised the provision (809.4) to require access to at least one toilet and bathing facility, consistent with the ANSI A117.1–2003 standard.

Other comments concerning provisions for residential dwelling units that have been relocated to other sections are discussed at the new location.

[26] The Fair Housing Amendments Act of 1988 expanded coverage of Title VII of the Civil Rights Act of 1968 (42 U.S.C. 3601–3620) to prohibit discriminatory housing practices based on handicap and familial status.

[27] 24 CFR part 100.

810 Transportation Facilities In the final rule, provisions in Chapter 10 for transportation facilities have been integrated into other chapters. Most of these requirements are now located in section 810, but some provisions have been integrated into other sections:

- 1001.1 Scope, now at 218.
- 1002.1 through 1002.4, Bus Stops and Terminals, located at 810.2 through 810.4.
- 1002.5 Bus Stop Siting, now at 209.
- 1003.1 Facilities and Stations, now at 218.
- 1003.2 New Construction, now at 218.
- 1003.2.1 Station Entrances, now at 206.4.4.
- 1003.2.2 Signs, now at 810.6.
- 1003.2.3 Fare Machines and Gates, covered generally by 220 (Fare Machines) and 206.5 (Gates).
- 1003.2.4 Detectable Warnings, now at 810.5.
- 1003.2.5 Rail-to-Platform Height, now at 810.5.
- 1003.2.6 TTYs, now at 217.4.7.
- 1003.2.7 Track Crossings, now at 810.10.
- 1003.2.8 Public Address Systems, now at 810.7.
- 1003.2.9 Clocks, now at 810.8.
- 1003.2.10 Escalators, now at 810.9.
- 1003.2.11 Direct Connections, now at 206.4.4.
- 1003.3 Existing Facilities, now at 218.
- 1003.3.1 Accessible Route, covered generally by 206 (Accessible Routes) and by 810.9 (Escalators).
- 1003.3.2 Rail-to-Platform Height, now at 810.5.
- 1003.3.3 Direct Connections, now at 206.4.
- 1004.2 TTYs (in airports), now at 217.4.7.
- 1004.3 Terminal Information Systems (in airports), now at 810.7.
- 1004.4 Clocks (in airports), now at 810.8.

Section 810 provides requirements for bus boarding and alighting areas (810.2), bus shelters (810.3), and bus signs (810.4). Revisions address:

- Bus boarding and alighting areas, including specified dimensions (810.2.2).
- Clarification of requirements for bus shelters (810.3).

Comment. Specifications in 810.2 for bus stops applied to ''bus stop pads'' in the proposed rule. Comments noted that this reference has been misinterpreted as applying to the vehicle space for buses which are sometimes provided with concrete pads, instead of to adjacent boarding areas.

Response. For clarity, the Board has applied requirements to ''bus stop boarding and alighting areas'' instead of to ''bus stop pads.''.

Comment. Bus stop boarding and alighting areas are required to be at least 96 inches long and 60 inches wide. The proposed rule specified that these dimensions were required to ''the maximum extent allowed by legal or site constraints'' (1002.2.2). Comments considered this language unclear or unnecessary.

Response. The reference to legal or site constraints was intended to cover existing conditions that would effectively preclude sizing boarding and alighting areas to the minimum dimensions specified, such as narrow sidewalks. The Board has removed this language in section 810.2.2 in favor of a general scoping provision for alterations (202.3) which recognizes instances where compliance is not technically feasible. In such cases, compliance is required to the maximum extent feasible.

Section 810.3 addresses bus shelters, which are required to provide wheelchair space. The Board has included clarification that this space be located ''entirely within the shelter'' so that persons occupying the space can be adequately sheltered from the elements.

Requirements for rail stations and airports are provided in sections 810.5 through 810.10. Most of these provisions apply specifically to rail stations, but some are applicable to airports as well, such as requirements for public address systems (810.7) and clocks (810.8). Revisions made to these provisions address:

- Rail platforms (810.5).
- Rail station signs (810.6).
- Public address systems (810.7).
- Escalators (810.9).
- Track crossings (810.10).

Comment. Commenters advised that the specifications should address platforms for light rail vehicles which should be allowed to conform to the grade of the street.

Response. The Board has explicitly specified that rail platforms shall slope no more than 1:48 in any direction, consistent with cross slope provisions for walking surfaces in section 403. An exception has been added for platforms at existing tracks or tracks laid in existing roadways (810.5.1). Such platforms are permitted to have a slope parallel to the track that is equal to the slope (grade) of the roadway or existing track.

Rail platform requirements include specifications for detectable warnings along platform boarding edges not protected by screens or guards (810.5.2). The Board has added clarification that detectable warnings be provided ''along the full length of the public use area of the platform.''

The proposed rule, consistent with the original ADAAG, provided specifications for the coordination of vehicles and platforms, including maximum changes in level (plus or minus 5/8-inch) and horizontal gaps (3 inches for rail vehicles, 1 inch for automated guideway systems). Alternate specifications were provided for existing vehicles and stations. These requirements are paralleled in the Board's ADA Accessibility Guidelines for Transportation Vehicles.[28] For simplicity, the Board has replaced requirements in section 810.5 with references to these specifications as contained in the guidelines for transportation vehicles (810.5.3). This revision does not substantively change the requirements for the coordination of platforms and vehicle floors.

Comment. The referenced vehicle guidelines (like those of the proposed rule) permit the use of mini-high platforms, car-borne or platform-mounted lifts, ramps or bridge plates, or manually deployed devices where it is not operationally or structurally feasible to meet the specified changes in level or horizontal gaps. In the case of commuter and intercity rail systems, this is often due to track that is also used by freight trains because the passage of oversized freight precludes a high level platform. The American Railway Engineering and Maintenance of Way Association had previously recommended a new platform height of 8 inches above top of rail. This height allows for freight passage while reducing the height of the first step of a rail car above the platform. Often a portable step stool is used to make up the height difference between a lower platform and the first step. Negotiating such a step can be difficult for ambulatory passengers, especially since handrails are usually not available. Also, requiring the 8 inch height would reduce the vertical travel distance for a lift. The Board sought comment on whether new platforms for commuter or intercity rail stations should have a height of 8 inches above top of rail (Question 47). Most comments supported such a requirement.

Response. The Board had added a requirement that low level platforms be at least 8 inches above top of rail (810.5.3). An exception intended for light rail systems allows a height below 8 inches where vehicles are boarded from sidewalks or at street level.

[28] 36 CFR part 1192.

Comment. Section 810.6 addresses requirements for station signage, including signs at entrances, route and destination signs, and station names. These provisions reference requirements for tactile and visual characteristics in section 703. Commenters urged the Board to recognize audible signs as an alternative to tactile signs since they can provide equal or greater access to information.

Response. The Board has added an exception under which entrance, route, and destination signs do not have to comply with visual and tactile specifications where certain audible sign technologies are provided. The exception specifically recognizes those technologies that involve hand-held receivers, activation by users, or detection of people in proximity to the sign.

Comment. Requirements for route and destination signs are subject to specifications for visual signs in section 703, including character height (810.6.2). The proposed rule allowed certain signs to have a 3 inch minimum height where space is limited and a 1½ inch height for characters on signs not essential to the use of the transit system (1003.2.2.3, Exception). Comments pointed out that this exception should allow characters to be less than 3 inches high for consistency with the character heights specified for signs generally in section 703.

Response. The Board has corrected this exception so that characters are not required to be more than 3 inches high where sign space is limited. This would apply to conditions where signs are more than 10 feet above the ground or floor and the viewing distance is 21 feet or more (the only types of signs required by section 703.5 to have characters more than 3 inches high). The Board has removed as unnecessary the exception for signs not essential to the use of the transit system, such as exit street names.

Section 810.7 covers public address systems in rail stations and airports. The proposed rule required that where public address systems are provided to convey information to the public, a means of conveying the same or equivalent information to persons who are deaf or hard of hearing be provided. The Board has simplified this provision so that it requires ''the same or equivalent information * * * in a visual format.''

Comment. In the proposed rule, the Board sought information for its use in future rulemaking to update the Board's transportation vehicle guidelines. Specifically, the Board requested information on technologies for providing train announcements, including station announcements and emergency announcements, in a visual format so that this information is conveyed to people who are deaf or hard of hearing (Question 46). Recommendations included use of message boards for verbal announcements and visual signals, such as a flashing light, or audible signals such as bells and chimes. Some commenters recommended that this issue be revisited in rulemaking specific to the vehicle guidelines.

Response. The Board intends to further explore this issue during rulemaking to update its accessibility guidelines for transportation vehicles.

Comment. Escalators must have a clear width of 32 inches minimum (810.9). The original ADAAG contained a requirement that at least two contiguous treads be level beyond the comb plate at the top and bottom before risers begin to form (ADAAG 10.3.1(16)). It also required color contrast on treads. Both provisions were removed in the proposed rule as recommended by the advisory committee, which questioned the need for such criteria in guidelines for accessibility. Comments requested that these specifications be restored for greater access. Commenters noted that the required color contrast benefits persons with low vision.

Response. In the final rule, the Board has added a reference to relevant provisions in the ASME A17.1 Safety Code for Elevators and Escalators instead of providing its own specification (810.9). This will ensure consistency with the safety code. The ASME code requires steps to be demarcated by yellow lines 2 inches wide maximum along the back and sides of steps (ASME A17.1, section 6.1.3.5.6). It also requires at least two flat steps and no more than four flat steps at the entrance and exit of every escalator (ASME A17.1, section 6.1.3.6.5). Consistent with the original ADAAG, an exception from these requirements is provided for existing escalators in key stations (810.9, Exception).

Section 810.10 addresses track crossings at transportation facilities. The proposed rule required route surfaces to be level with the rail top, but permitted a 2½ inch gap at the inner edge of rails to accommodate wheel flanges (1003.2.7). Where this gap is not practicable, an above-grade or below-grade accessible route was specified. In the final rule, the Board has simplified this provision by applying specifications for accessible routes. An exception preserves the permitted 2½ inch gap for wheel flanges.

811 Storage

Requirements in section 811 address storage. In the proposed rule, these provisions had been provided in Chapter 9 (section 905), which addresses built-in furnishings and equipment. These provisions have been moved to Chapter 8, which the Board considers a more appropriate location because it covers accessible spaces and elements. Provisions of this section address clear floor or ground space (811.2), the height of storage elements (811.3), and operable parts, such as storage hardware (811.4). In the final rule, the Board has clarified the application of the height specifications in section 811.3 to storage elements and has removed specific references to clothes rods and hooks, which it considers redundant. No substantive changes have been made to the criteria for storage.

Chapter 9: Built-In Elements

Chapter 9 covers built-in elements, including dining surfaces and work surfaces (902), benches (903), and sales and service counters (904). Changes made to this section include:

- Clarification of provisions for benches concerning clear floor or ground space (903.2), back support (903.4), and height (903.5).
- Addition of a requirement for check writing surfaces at check-out aisles (904.3.3).
- Clarification of requirements for accessible sales and service counters that are less than 36 inches long (904.4.1).
- Revision of requirements for communication devices where security glazing is provided (904.6).
- Relocation of provisions for storage from section 905 to Chapter 8 (811).

902 Dining Surfaces and Work Surfaces

Section 902 provides specifications for seating at dining and work surfaces. Clear floor space is required for a forward approach (902.2), and a surface height of 28 to 34 inches is specified (902.3). Alternate specifications for surfaces designed for children's use are also provided (902.4).

Comment. Commenters expressed concern about use of the terms ''dining surfaces'' and ''work surfaces'' and urged the Board to include definitions of the terms in the final rule. Comments considered the term ''dining surfaces'' insufficient in covering bars where only drinks are consumed. Questions were also raised about the term ''work surfaces'' which some commenters thought might be misconstrued as

applying only to surfaces in employee work areas. Some commenters considered the term too limiting and questioned whether it would apply, as they felt it should, to surfaces used for purposes not necessarily considered ''work,'' such as counters that support credit card readers or video games. These comments urged the requirement to be modified to apply to all built-in tables and counters used by the public for any purpose.

Response. The Board has clarified the application of this section by revising scoping provisions for accessible dining and work surfaces, as discussed above in section 226. The term dining surface has been clarified as applying to those dining surfaces used ''for the consumption of food or drink'' (226.1). In addition, the Board has indicated in the ADA scoping provisions that the types of work surfaces covered do not include those surfaces used by employees since elements of work stations subject to the ADA are not required to comply with these guidelines (226.1). A similar clarification is not provided in ABA scoping provisions since work stations covered by the ABA are fully subject to the guidelines.

Comment. Persons with disabilities considered the 34 inch maximum height too high for surfaces used for any length of time. These commenters recommended that where only a portion of counters are made accessible, the accessible height should be 31 inches maximum. Some commenters also recommended a higher minimum height of 29 inches instead of 28 inches to allow a more comfortable knee clearance.

Response. The Board has not revised the specified height for dining and work surfaces or the minimum clearances for knee and toe space required below since it believes further research is needed on these long-standing specifications, particularly in relation to people who use scooters and other powered mobility aids. Research on powered mobility aids the Board is currently sponsoring through the Rehabilitation Engineering Research Center on Universal Design will provide information on various fundamental specifications the Board may use in future updates of the guidelines.

903 Benches

Specifications for benches address clear floor or ground space (903.2), size (903.3), back support (903.4), height (903.5), structural strength (903.6), and slip resistance in wet locations (903.7).

Comment. The proposed rule specified that the wheelchair space be positioned so that it provides a parallel approach to an end of the bench seat (903.2). Commenters indicated that this provision could be misinterpreted as allowing the space to be provided in front of the bench at one end. Comments suggested clarifying that the clear floor or ground space is to be located parallel to the short axis of the bench.

Response. The Board has clarified that the clear floor or ground space is to be ''parallel to the short axis of the bench.''

Comment. The proposed rule required back support to be provided that extends vertically from a point no more than 2 inches above the bench to a height of at least 18 inches above the bench and that extends horizontally at least 42 inches (903.3). Commenters recommended clarification on the permitted horizontal distance of the back support from the rear edge of the seat. It was also recommended that the criteria for back support, which were included in the specifications for bench size, be relocated into a separate provision specific to back support.

Response. In the final rule, the specifications for back support have been clarified and relocated to a separate provision (903.4). The Board has added clarification that the back support may be located up to 2½ inches from the rear edge of the seat, measured horizontally. This specification is similar to one provided for shower seats (610.3). In addition, clarification has been added that the dimensions for back support are measured from the surface of the seat.

Comment. Commenters requested clarification as to whether walls can be used to provide back support where the seat is attached to walls. Most of these comments urged the Board to clearly allow the use of walls in providing back support. This would be consistent with an advisory note in the proposed rule which made reference to ''dressing rooms where benches are fixed to the wall for back support'' (Advisory 903.3).

Response. It was the Board's intent in the proposed rule to allow the use of walls for back support where benches are attached to walls. In the final rule, the Board has added clarification to the text of the requirement stating that benches shall provide back support or shall be affixed to the wall (903.4).

Comment. The proposed rule specified that the bench seat be 17 to 19 inches above the floor or ground (903.4). Commenters noted that this specification should be clarified as applying to the height as measured at the top of the seat surface.

Response. In the final rule, the specification for height (renumbered as 903.5) has been revised as applying to the top of the bench seat surface.

904 Sales and Service Counters

This section covers the approach to counters (904.2), check-out aisles (904.3), sales and service counters (904.4), food service lines (904.5), and security glazing (904.6).

Comment. Specifications are provided for the counter surface height of check-out aisles, including the height of counter edge protection, which is limited to 2 inches above the counter surface (904.3.2). Commenters requested that clarification be added that the edge protection height limitation applies only to the aisle of the check-out counter.

Response. The Board has added clarification that the specified height for edge protection at check-out aisle counters applies to the aisle side of the counter (904.3.2).

Comment. The counter surface of check-out aisle counters is required to be 38 inches high maximum. Comments from persons with disabilities considered 38 inches to be too high.

Response. The Board has clarified requirements for check-out aisles by adding a provision specific to check-writing surfaces (904.3.3). Under this requirement, the height of check-writing surfaces, where provided, is to comply with the height of work surfaces addressed in section 902.3 (34 inches maximum), consistent with the Board's intent in the proposed rule.

Comment. Accessible sales or services counters, or portions of them, must be no higher than 36 inches where either a parallel or forward approach is provided (904.4). Comments from persons with disabilities considered this too high to be used as a writing surface. Where only a portion of a counter is made accessible, these commenters advised that the maximum height should be 32 inches. Comments from the retail industry advised that a higher surface height is needed to accommodate various types of counters, such as glass display cases, which are typically manufactured at a height of 38 inches.

Response. The Board has retained the specified height of 36 inches for sales and service counters, which is consistent with the original ADAAG, to accommodate both persons who use wheelchairs and those that do not. Even where only a portion of the counter is accessible, in some cases that portion may serve as the transaction area for all customers. In the final rule, the Board has clarified that the accessible portion of counters must extend the full depth of the counter (904.4.1 and 904.4.2), consistent with the new ANSI A117.1

standard. Where a parallel approach is provided, the accessible portion must be at least 36 inches long. The Board has added an exception that where a provided counter surface is less than 36 inches long, the entire surface shall be accessible to clarify that in such cases the counter does not have to be lengthened (904.4.1, Exception).

Section 904.6 requires that where counter or teller windows have security glazing to separate personnel from the public, at least one of each type must provide a method to facilitate voice communication.

Comment. The proposed rule referenced examples of acceptable methods (grilles, slats, talk-through baffles, intercoms, and telephone handset devices) and required access both for persons who use wheelchairs and for persons who may have difficulty bending or stooping. Commenters indicated that access for persons who have difficulty bending or stooping is unclear absent specific technical criteria. Such criteria should be provided or the requirement removed according to these comments. In addition, it was recommended that the requirement for volume control for ''hand-operable communication devices'' be revised for clarity as applying to telephone handset devices.

Response. The requirement that methods to facilitate voice communication be accessible both to persons who use wheelchairs and to persons who may have difficulty bending or stooping has been removed in the final rule (904.6). The Board has also clarified that the requirement for volume controls applies to telephone handset devices, where provided. In addition, the Board has relocated information concerning acceptable types of communication methods to the corresponding advisory note which is a more appropriate location for this kind of information.

Chapter 10: Recreation Facilities

Chapter 10 contains technical provisions for various types of recreation facilities. These requirements were developed separately from this rulemaking and have been incorporated into the final rule without substantive change. Sections of this chapter address:

- Amusement rides (1002).
- Recreational boating facilities (1003).
- Exercise machines (1004).
- Fishing piers and platforms (1005).
- Golf facilities (1006).
- Miniature golf facilities (1007).
- Play areas (1008).
- Swimming pools, wading pools, and spas (1009).
- Shooting facilities with firing positions (1010).

1002 Amusement Rides

Provisions for amusement rides require either a wheelchair space on the ride, a ride seat designed for transfer, or a device designed for transfer to the ride. This section also addresses access at loading and unloading areas and provides criteria for wheelchair spaces, ride seats designed for transfer, and transfer devices.

1003 Recreational Boating Facilities

This section provides requirements for gangways, boating piers at boat launch ramps, and boat slips. Requirements for accessible routes and ramps are applied to gangways, but exceptions to criteria for maximum rise and slope, handrail extensions, and level landings are provided.

1004 Exercise Machines

This section requires clear floor space for transfer to, or use of, exercise machines.

1005 Fishing Piers and Platforms

Specifications for fishing piers and platforms address accessible routes, railings, edge protection, clear floor space, and turning space.

1006 Golf Facilities

Provisions of this section recognize that access to golf courses is typically achieved through the use of golf cars. Golf car passages are permitted in lieu of accessible routes throughout golf courses. Technical criteria are provided for golf car passages, accessible routes, teeing grounds, putting greens, and weather shelters.

1007 Miniature Golf Facilities

This section covers miniature golf courses and contains specifications for accessible routes that take into account design conventions for miniature golf courses, such as carpeted play surfaces and curbs. All level areas of an accessible hole where a ball may come to rest are to be within golf club reach of the accessible route.

1008 Play Areas

The play area specifications address accessible routes, ground level and elevated play components, play structures, and ground surfaces.

1009 Swimming Pools, Wading Pools, and Spas

This section addresses access to swimming pools, wading pools, and spas. Specifications are provided for various means of providing pool access, including pool lifts, sloped entries, transfer walls, transfer systems, and stairs.

1010 Shooting Facilities With Firing Positions

This section requires turning space at firing positions required to be accessible.

Regulatory Process Matters

Executive Order 12866: Regulatory Planning and Review

This final rule has been reviewed by the Office of Management and Budget pursuant to Executive Order 12866. The Board has prepared a regulatory assessment for the final rule. The assessment has been placed in the docket and is available for public inspection. The assessment is also available on the Board's web site at *www.access-board.gov.* The assessment is summarized below.

Benefits

Since the enactment of the Americans with Disabilities Act (ADA), accessibility requirements have been increasingly incorporated in the model codes. The Board worked collaboratively with the International Code Council (ICC) and the ANSI A117 Committee to harmonize the final rule with the International Building Code, which was initially published in 2000 and was revised in 2003, and the ICC/ANSI A117.1 Standard on Accessible and Usable Buildings and Facilities, which is referenced in the International Building Code. The International Building Code has been adopted statewide by 28 States, and by local governments in another 15 States.

Harmonizing the accessibility guidelines for the ADA and the Architectural Barriers Act (ABA) with the International Building Code and the ICC/ANSI A117.1 standard promotes increased compliance, efficiency, and economic growth. It is difficult and time consuming for business owners, builders, developers, and architects to deal with different accessibility requirements at the Federal, State, and local government levels. Differing requirements can contribute to mistakes resulting in litigation and costly retrofitting of facilities after they are constructed. The ADA authorizes the Department of Justice (DOJ) to certify State or local codes that meet or exceed Federal accessibility requirements. State and local governments that adopt the International Building Code will find it easier to have their codes certified, and more State and local governments are expected to submit their codes to DOJ

for certification. In jurisdictions where codes have been certified by DOJ, business owners, builders, developers, and architects can rely on their State or local government building plan approval and inspection processes as a ''check-point'' for ensuring that their facilities comply with Federal accessibility requirements. Potential mistakes can be corrected early in the construction process when adjustments can be made easily and inexpensively compared to costly retrofitting after a facility is constructed. Compliance with a certified code is also rebuttable evidence of compliance with Federal accessibility requirements in litigation to enforce the ADA.

The Board also revised some requirements in the existing guidelines for the ADA and the ABA to reduce the impacts on facilities, including lowering the number of wheelchair spaces and assistive listening devices required in large sports facilities; exempting small raised press boxes in sports facilities from the accessible route requirements; exempting parking lots with a few parking spaces from signage requirements for accessible parking spaces; and reducing the number of toilet rooms required to be accessible where multiple single user toilet rooms are clustered at the same location.

Regulatory Alternatives That Eliminate Impacts Estimated for the Proposed Rule

The regulatory assessment for the proposed rule estimated that the rule would have an annual impact of $87.5 million on newly constructed office buildings, hotels, and sports stadiums and arenas. The Board adopted alternatives in the final rule that eliminate these impacts as shown in Table 1.

TABLE 1.—ALTERNATIVES THAT ELIMINATE IMPACTS ESTIMATED FOR THE PROPOSED RULE

Proposed rule	Final rule
Visible alarms required in all employee work areas, including individual offices. Estimated cost: $16 million annually.	Visible alarms required in public and common use areas, which is consistent with existing guidelines. Where employee work areas have audible alarm coverage, wiring system required to be designed so that visible alarms can be added to the system as needed.
Communication features required in 50 percent of hotel guest rooms. Estimated cost: $31 million annually.	Existing guidelines retained, which require substantially less than 50 percent of hotel guest rooms to provide communication features.
Elevators and platform lifts required to be provided in sufficient number, capacity, and speed so that persons using wheelchair spaces and designated aisle seats have equivalent level of service as persons in the same seating area who can use stairs. Estimated cost: $1.5 million annually.	Existing guidelines retained, which require at least one accessible route to connect each story and mezzanine in multi-story facilities.
Wheelchair spaces and designated aisle seats required to be dispersed vertically on each accessible level. Estimated cost: $33.5 million annually.	Wheelchair spaces required to be dispersed vertically at varying distances from the screen, performance area, or playing field, which is consistent with existing guidelines.
Companion seats required to be readily removable and to provide additional wheelchair spaces. Estimated cost: $4 million annually.	Companion seats permitted to be removable, but not required to provide additional wheelchair spaces.
One percent of seats required to be designated aisle seats; 25 percent of designated aisle seats required to be on an accessible route; and rest of designated aisle seats required to be not more than two rows from an accessible route. Estimated cost: $1.5 million annually.	Five percent of aisle seats required to be designated aisle seats and to be aisle seats closest to accessible routes.

Baseline

The assessment compares the final rule to ADAAG and the International Building Code in order to evaluate the potential impacts of the rule. In the absence of the final rule, newly constructed and altered facilities covered by the ADA would have to comply with ADAAG as initially issued in 1991, which has been adopted as enforceable standards by DOJ. Many newly constructed and altered facilities covered by the ABA are also required to comply with ADAAG when it provides a greater level of accessibility compared to the Uniform Federal Accessibility Standards (UFAS). Comparing the final rule to ADAAG is the upper bound of the range of potential impacts. The International Building Code has been adopted statewide by 28 States and by local governments in another 15 States. In the absence of the final rule, newly constructed and altered facilities are required to comply with the International Building Code in jurisdictions that have adopted the model code. Comparing the final rule to the International Building Code is the lower bound of the range of potential impacts, and assumes that facilities covered by the ADA or the ABA are also required to comply with equivalent requirements in the International Building Code. The actual impacts will be between the lower and upper bound of the range.

Potential Impacts of Final Rule

The final rule reorganizes and renumbers ADAAG, and rewrites the text to be clearer and easier to understand. Most of the scoping and technical requirements in ADAAG have not been changed. An independent codes expert compared the final rule and ADAAG to identify revisions that add new features or space to a facility, or present design challenges. The codes expert identified 27 revisions that are expected to have minimal impacts on the new construction and alteration of facilities, including adding scoping requirements and exceptions for common use circulation paths in employee work areas; revising scoping requirements for public entrances; referencing the International Building Code for accessible means of egress; adding scoping requirements for dwelling units with mobility features in Federal, State, and local government housing; lowering the high side reach; and adding technical requirements for automated teller machines and fare machines.

The codes expert also identified 14 revisions that are expected to have monetary impacts on the new construction and alteration of facilities. An independent cost estimator prepared cost estimates for these revisions using standard industry procedures. The revisions that are expected to have monetary impacts on the new construction and alteration of facilities are summarized in Table 2.

TABLE 2.—REVISIONS WITH MONETARY IMPACTS ON NEW CONSTRUCTION AND ALTERATIONS

Final rule	ADAAG	International building code	Unit cost
Where circulation path directly connects assembly seating area and performing area, accessible route required to directly connect both areas.	Accessible route required to connect assembly seating area and performing area.	IBC 2000 & 2003 have equivalent requirements to final rule.	Will vary from $0 to $15,674 depending on specific design of facility.
Where platform lift serves as part of accessible means of egress, standby power required.	No requirement	IBC 2003 has equivalent requirement to final rule.	Will vary from $0 to $2,353 depending on specific design of facility.
One in every 6 accessible parking spaces required to be van accessible.	One in every 8 accessible parking spaces required to be van accessible.	IBC 2003 has equivalent requirement to final rule.	$75 to $344.
Toilet rooms with 6 or more toilet compartments, or combination of 6 or more water closets and urinals, required to provide ambulatory accessible toilet compartment with grab bars.	Toilet rooms with 6 or more toilet compartments required to provide ambulatory accessible toilet compartment with grab bars.	IBC 2000 & 2003 have equivalent requirements to final rule.	$145.
Private facilities required to provide public TTY in building with 4 or more public telephones and on floor with 4 or more public telephones. Government facilities required to provide public TTY in building with public telephone and on floor with public telephone Private and government facilities required to provide public TTY on site with 4 or more public telephones, and in bank of 4 or more public telephones. Banks of public telephones located within 200 feet of, and on same floor as, another bank of telephones with public TTY exempt. Bus or rail station with public telephone at entrance required to provide public TTY. Public rest stops with public telephone required to provide public TTY	Private facilities with 4 or more public telephones required to provide public TTY.. Government facilities with public telephone in public use area of building required to provide public TTY. Rail stations with 4 or more public telephones at entrance required to provide public TTY.	IBC 2000 (Appendix E) has equivalent requirement to final rule for private facilities. IBC 2003 (Appendix E) has equivalent requirement to final rule for private and government facilities	$2,320.
At least one operable window in accessible rooms required to comply with technical requirements for operable parts. Hotel guest rooms that are not required to provide mobility features and dwelling units are exempt.	No requirement	IBC 2000 & 2003 have equivalent requirements to final rule for certain occupancies.	$505.
Two-way communication systems at entrances required to provide audible and visual signals.	No requirement	No equivalent requirement to final rule.	$1,392.
Automatic doors serving accessible means of egress required to provide maneuvering clearance or to have standby power.	No requirement	No equivalent requirement to final rule.	$2,353.
Doors on platform lifts required to be power operated. Platform lifts serving only 2 landings and with self-closing doors on opposite sides exempt.	Doors required to provide maneuvering clearance or to be power operated.	IBC 2000 & 2003 have equivalent requirements to final rule.	Will vary from $0 to $569 depending on specific design of facility.
Minimum clearance at water closet in accessible single user toilet rooms: 60 × 56 inches.	Minimum clearance at water closet in accessible single user toilet rooms based on approach: Forward: 48 × 60 inches; Parallel: 48 × 56 inches; Both forward and parallel: 60 × 56 inches.	IBC 2000 & 2003 have equivalent requirements to final rule, except for dwelling units.	$286 for dwelling units $667 for other facilities.

TABLE 2.—REVISIONS WITH MONETARY IMPACTS ON NEW CONSTRUCTION AND ALTERATIONS—Continued

Final rule	ADAAG	International building code	Unit cost
Shower spray unit with on-off control required in bathtubs and shower compartments in accessible toilet rooms and bathing rooms.	Shower spray unit required in bathtubs and shower compartments in accessible toilet rooms and bathing rooms.	No equivalent requirement to final rule.	$161.
Minimum clearance between opposing base cabinets, countertops, appliances, or walls in accessible galley kitchens where two entries not provided: 60 inches. Kitchens without cooktop or conventional range exempt.	Minimum clearance between opposing base cabinets, countertops, appliances, or walls in accessible galley kitchens: 40 inches.	No equivalent requirement to final rule.	$993.
Comparable vanity countertop space required in hotel guest rooms with mobility features.	No requirement	No equivalent requirement to final rule.	$752.
Two percent of dwelling units in Federal, State, and local government housing required to provide communication features.	No requirement	No equivalent requirement to final rule.	$96 for visual signal if door bell and peephole provided. $322 for doorbell with visual signal and peephole. $353 for TTY connection if voice communication system provided at entrance.

National Costs

Office buildings, hotels, hospitals and nursing homes, and Federal, State, and local government housing will be affected by many of the revisions in Table 2, and are likely to experience relatively higher monetary impacts than other facilities. The assessment estimates the national costs of the revisions on these facilities based on annual construction data. The national costs are summarized in Table 3.

TABLE 3.—NATIONAL COSTS FOR FACILITIES LIKELY TO EXPERIENCE RELATIVELY HIGHER MONETARY IMPACTS

Facility	National costs compared to	
	ADAAG upper bound (millions)	International building code lower bound (millions)
Office Buildings	$1.5	$0.7
Hotels	$6.2	$4.1
Hospitals & Nursing Homes	$13.6	$2.4–$2.9
Government Housing	$5.4	$5.4
Total	$26.7	$12.6–$13.1

The assessment also estimates the additional costs imposed on individual facilities as a percentage of total construction costs as shown in Table 4.

TABLE 4.—ADDITIONAL COSTS FOR INDIVIDUAL FACILITIES

Facility	Additional costs as percentage of total construction costs compared to	
	ADAAG upper bound (percent)	international building code lower bound (percent)
Office Buildings	0.02 to 0.10	0.01 to 0.08
Hotels	0.06 to 0.50	0.04 to 0.30
Hospitals & Nursing Homes	0.02	0.00
Government Housing	0.01	0.01

The final rule will potentially impact the new construction and alteration of other types of facilities. Industry reports estimate $152 billion of non-residential building construction projects were started in 2002; and government reports estimate $264 billion of non-residential building construction work and $6 billion of Federal, State and local government housing construction work was installed in 2002. In order to be considered an economically significant

regulatory action (*i.e.*, annual impact on the economy of $100 million or more), the final rule would need to have impacts ranging from 0.04 percent to 0.07 percent of industry and government construction estimates. The final rule will have impacts within or above this range on office buildings and hotels, and it is likely that the impacts on some other facilities will be within or above this range. Although the impacts are not significant for an individual facility, when added together across the economy the impacts can be economically significant. Because an extremely low threshold of impacts on individual facilities can render the final rule economically significant, and because the benefits of the final rule are unquantifiable but substantial, the Board has classified the final rule as an economically significant regulatory action.

The final rule will also affect leased postal facilities. When the United States Postal Service enters into a new lease for a postal facility, including previously occupied space, it will have to comply with the accessibility requirements in the final rule for facilities leased by Federal agencies, including providing accessible customer service counters and van accessible parking spaces. The United States Postal Service leases 27,000 postal facilities, and estimates that it will cost $9,234 per facility to comply with the final rule. The United States Postal Service enters into an average of 1,661 new leases per year for postal facilities, and estimates it will cost $15.3 million annually for leased postal facilities to comply with the final rule.

Regulatory Flexibility Act

For the proposed rule, the Board certified that the rule had no significant economic impact on a substantial number of small entities for purposes of the Regulatory Flexibility Act. The Board based the determination on the regulatory assessment prepared for the proposed rule under Executive Order 12866 which showed that, except for large sports facilities, the rule added less than 0.5 percent to the total construction costs of the affected facilities compared to ADAAG; the 1998 edition of the ICC/ANSI A117.1 Standard on Accessible and Usable Buildings and Facilities; and the new International Building Code, which was under development and was expected to be widely adopted by State and local governments.

The Small Business Administration and business groups objected to the certification of no significant economic impact. They noted that the ICC/ANSI A117.1 standard is a voluntary consensus standard, and there was no factual information presented in the regulatory assessment for the proposed rule showing the ICC/ANSI A117.1 standard had actually been adopted by State and local governments. Since the proposed rule was published in November 1999, the new International Building Code has been published. The 2000 and 2003 editions of the International Building Code reference the 1998 edition of the ICC/ANSI A117.1 standard for technical requirements. The International Building Code has been adopted statewide by 28 States, and by local governments in another 15 States.

For the final rule, the regulatory assessment evaluates the impacts of the rule by separately comparing the revisions to ADAAG and the International Building Code. The assessment estimates the additional costs of the revisions as a percentage of the total construction costs for office buildings, hotels, hospitals and nursing homes, and Federal, State, and local government housing. These facilities are likely to experience relatively higher monetary impacts than other facilities. The final rule adds 0.01 to 0.5 percent to the total construction costs of the facilities compared to ADAAG; and 0.00 to 0.3 percent to the total construction costs of the facilities compared to the International Building Code. These monetary impacts are not significant for individual facilities.

The Small Business Administration and business groups request the Board to analyze the impacts of the final rule on alterations to existing facilities. The impacts will be facility specific and will depend on the elements and spaces that are altered in an existing facility. The regulatory assessment examines the impacts of the revisions that have monetary impacts on alterations to existing facilities by answering a series of questions about whether the element or space is typically altered; whether the element or space is part of the ''path of travel'' serving a primary function area; and whether the general exception for technical infeasibility may apply to alterations of the element or space. The regulatory assessment also includes alteration projects in the national cost estimates of the revisions.

Finally, the Small Business Administration and business groups request the Board to analyze the impacts of the final rule on the obligation of businesses under the ADA to remove architectural and communication barriers in existing facilities, where it is readily achievable. DOJ will revise the accessibility standards for the ADA after this final rule is published. Business groups are concerned that, when the accessibility standards for the ADA are revised, existing facilities that were constructed or altered in compliance with earlier accessibility standards will have to undergo ''barrier removal'' and meet any new or different scoping and technical requirements in the revised accessibility standards. Business groups recommend that existing facilities constructed or altered in compliance with earlier accessibility standards be ''grandfathered'' for purposes of ''barrier removal.'' The Board acknowledges that ''barrier removal'' obligations need to be clarified when the accessibility standards are revised. However, the Board has no authority to issue regulations regarding ''barrier removal'' obligations. DOJ is the agency responsible for issuing regulations regarding ''barrier removal'' obligations, and is required to analyze the impacts of any new or different scoping and technical requirements on ''barrier removal'' obligations when the accessibility standards are revised.

On the basis of the regulatory assessment for the final rule, the Board certifies that the final rule has no significant economic impact on a substantial number of small entities for purposes of the Regulatory Flexibility Act.

Executive Order 13132: Federalism

The final rule adheres to the fundamental federalism principles and policy making criteria in Executive Order 13132. The final rule is issued pursuant to the ADA and the ABA to ensure that facilities covered by those laws are readily accessible to and usable by people with disabilities. Ensuring the civil rights of groups that have been subject to discrimination has long been recognized as a national issue and a proper function of the Federal government. The ADA was enacted ''to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities'' and ''to ensure that the Federal government plays a central role in enforcing the standards established in this chapter on behalf of individuals with disabilities.'' 42 U.S.C. 12101 (b) (1) and (3). The ADA recognizes the authority of State and local governments to enact and enforce laws that ''provide greater or equal protection for the rights of individuals with disabilities than are afforded by this chapter.'' 42 U.S.C. 12201 (b). The ABA applies to federally financed facilities. The final rule has been harmonized with model codes and standards that are adopted by State and local governments to regulate building

construction. The Board consulted with State and local governments throughout the rulemaking process. State and local governments were on the advisory committee which recommended revisions to the guidelines, participated in public hearings, and submitted comments on the proposed rule.

Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act does not apply to rules that enforce the constitutional rights of individuals or enforce statutory rights that prohibit discrimination on the basis of race, color, sex, national origin, age, handicap, or disability. Since the final rule is issued under the authority of the ADA and the ABA, an assessment of the rules impacts on State, local, and tribal governments, and the private sector is not required by the Unfunded Mandates Reform Act.

List of Subjects

36 CFR Part 1190

Buildings and facilities, Individuals with disabilities.

36 CFR Part 1191

Buildings and facilities, Civil rights, Incorporation by reference, Individuals with disabilities, Transportation.

Emil H. Frankel,

Chair, Architectural and Transportation Barriers Compliance Board.

■ For the reasons stated in the preamble, under the authority of 29 U.S.C. 792(b)(3) and 42 U.S.C. 12204, the Architectural and Transportation Barriers Compliance Board amends chapter XI of Title 36 of the Code of Federal Regulations as follows:

PART 1190—[REMOVED]

■ 1. Part 1190 is removed.

■ 2. Part 1191 is revised to read as follows:

PART 1191—AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES; ARCHITECTURAL BARRIERS ACT (ABA) ACCESSIBILITY GUIDELINES

Sec.

1191.1 Accessibility guidelines.

Appendix A to Part 1191—Table of Contents

Appendix B to Part 1191—Americans With Disabilities Act: Scoping

Appendix C to Part 1191—Architectural Barriers Act: Scoping

Appendix D to Part 1191—Technical

Appendix E to Part 1191—List of Figures and Index

Authority: 29 U.S.C. 792(b)(3); 42 U.S.C. 12204.

§ 1191.1 Accessibility guidelines.

(a) The accessibility guidelines for buildings and facilities covered by the Americans with Disabilities Act are set forth in Appendices B and D to this part. The guidelines serve as the basis for accessibility standards adopted by the Department of Justice and the Department of Transportation under the Americans with Disabilities Act.

(b) The accessibility guidelines for buildings and facilities covered by the Architectural Barriers Act are set forth in Appendices C and D to this part. The guidelines serve as the basis for accessibility standards adopted by the General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the United States Postal Service under the Architectural Barriers Act.

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ADA CHAPTER 1: APPLICATION AND ADMINISTRATION

101 Purpose

101.1 General. This document contains scoping and technical requirements for *accessibility* to *sites*, *facilities*, *buildings*, and *elements* by individuals with disabilities. The requirements are to be applied during the design, construction, *additions* to, and *alteration* of *sites*, *facilities*, *buildings*, and *elements* to the extent required by regulations issued by Federal agencies under the Americans with Disabilities Act of 1990 (ADA).

> **Advisory 101.1 General.** In addition to these requirements, covered entities must comply with the regulations issued by the Department of Justice and the Department of Transportation under the Americans with Disabilities Act. There are issues affecting individuals with disabilities which are not addressed by these requirements, but which are covered by the Department of Justice and the Department of Transportation regulations.

101.2 Effect on Removal of Barriers in Existing Facilities. This document does not address existing *facilities* unless *altered* at the discretion of a covered entity. The Department of Justice has authority over existing *facilities* that are subject to the requirement for removal of barriers under title III of the ADA. Any determination that this document applies to existing *facilities* subject to the barrier removal requirement is solely within the discretion of the Department of Justice and is effective only to the extent required by regulations issued by the Department of Justice.

102 Dimensions for Adults and Children

The technical requirements are based on adult dimensions and anthropometrics. In addition, this document includes technical requirements based on children's dimensions and anthropometrics for drinking fountains, water closets, toilet compartments, lavatories and sinks, dining surfaces, and work surfaces.

103 Equivalent Facilitation

Nothing in these requirements prevents the use of designs, products, or technologies as alternatives to those prescribed, provided they result in substantially equivalent or greater *accessibility* and usability.

> **Advisory 103 Equivalent Facilitation.** The responsibility for demonstrating equivalent facilitation in the event of a challenge rests with the covered entity. With the exception of transit facilities, which are covered by regulations issued by the Department of Transportation, there is no process for certifying that an alternative design provides equivalent facilitation.

104 Conventions

104.1 Dimensions. Dimensions that are not stated as "maximum" or "minimum" are absolute.

104.1.1 Construction and Manufacturing Tolerances. All dimensions are subject to conventional industry tolerances except where the requirement is stated as a range with specific minimum and maximum end points.

Advisory 104.1.1 Construction and Manufacturing Tolerances. Conventional industry tolerances recognized by this provision include those for field conditions and those that may be a necessary consequence of a particular manufacturing process. Recognized tolerances are not intended to apply to design work.

It is good practice when specifying dimensions to avoid specifying a tolerance where dimensions are absolute. For example, if this document requires "1½ inches," avoid specifying "1½ inches plus or minus X inches."

Where the requirement states a specified range, such as in Section 609.4 where grab bars must be installed between 33 inches and 36 inches above the floor, the range provides an adequate tolerance and therefore no tolerance outside of the range at either end point is permitted.

Where a requirement is a minimum or a maximum dimension that does not have two specific minimum and maximum end points, tolerances may apply. Where an element is to be installed at the minimum or maximum permitted dimension, such as "15 inches minimum" or "5 pounds maximum", it would not be good practice to specify "5 pounds (plus X pounds) or 15 inches (minus X inches)." Rather, it would be good practice to specify a dimension less than the required maximum (or more than the required minimum) by the amount of the expected field or manufacturing tolerance and not to state any tolerance in conjunction with the specified dimension.

Specifying dimensions in design in the manner described above will better ensure that facilities and elements accomplish the level of accessibility intended by these requirements. It will also more often produce an end result of strict and literal compliance with the stated requirements and eliminate enforcement difficulties and issues that might otherwise arise. Information on specific tolerances may be available from industry or trade organizations, code groups and building officials, and published references.

104.2 Calculation of Percentages. Where the required number of *elements* or *facilities* to be provided is determined by calculations of ratios or percentages and remainders or fractions result, the next greater whole number of such *elements* or *facilities* shall be provided. Where the determination of the required size or dimension of an *element* or *facility* involves ratios or percentages, rounding down for values less than one half shall be permitted.

104.3 Figures. Unless specifically stated otherwise, figures are provided for informational purposes only.

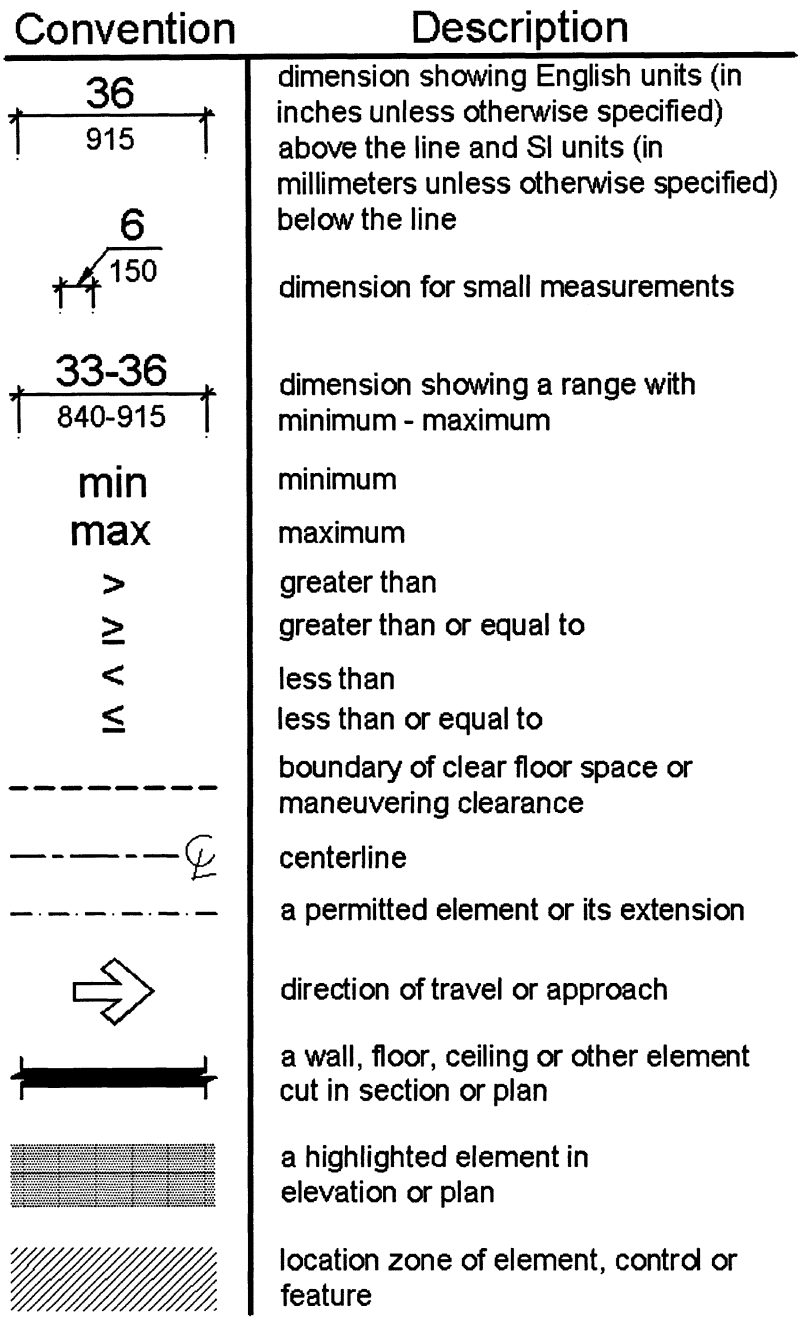


Figure 104
Graphic Convention for Figures

105 Referenced Standards

105.1 General. The standards listed in 105.2 are incorporated by reference in this document and are part of the requirements to the prescribed extent of each such reference. The Director of the Federal Register has approved these standards for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the referenced standards may be inspected at the Architectural and Transportation Barriers Compliance Board, 1331 F Street, NW, Suite 1000, Washington, DC 20004; at the Department of Justice, Civil Rights Division, Disability Rights Section, 1425 New York Avenue, NW, Washington, DC; at the Department of Transportation, 400 Seventh Street, SW, Room 10424, Washington DC; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

105.2 Referenced Standards. The specific edition of the standards listed below are referenced in this document. Where differences occur between this document and the referenced standards, this document applies.

105.2.1 ANSI/BHMA. Copies of the referenced standards may be obtained from the Builders Hardware Manufacturers Association, 355 Lexington Avenue, 17th floor, New York, NY 10017 (http://www.buildershardware.com).

ANSI/BHMA A156.10-1999 American National Standard for Power Operated Pedestrian Doors (see 404.3).

ANSI/BHMA A156.19-1997 American National Standard for Power Assist and Low Energy Power Operated Doors (see 404.3, 408.3.2.1, and 409.3.1).

ANSI/BHMA A156.19-2002 American National Standard for Power Assist and Low Energy Power Operated Doors (see 404.3, 408.3.2.1, and 409.3.1).

Advisory 105.2.1 ANSI/BHMA. ANSI/BHMA A156.10-1999 applies to power operated doors for pedestrian use which open automatically when approached by pedestrians. Included are provisions intended to reduce the chance of user injury or entrapment.

ANSI/BHMA A156.19-1997 and A156.19-2002 applies to power assist doors, low energy power operated doors or low energy power open doors for pedestrian use not provided for in ANSI/BHMA A156.10 for Power Operated Pedestrian Doors. Included are provisions intended to reduce the chance of user injury or entrapment.

105.2.2 ASME. Copies of the referenced standards may be obtained from the American Society of Mechanical Engineers, Three Park Avenue, New York, New York 10016 (http://www.asme.org).

ASME A17.1- 2000 Safety Code for Elevators and Escalators, including ASME A17.1a-2002 Addenda and ASME A17.1b-2003 Addenda (see 407.1, 408.1, 409.1, and 810.9).

ASME A18.1-1999 Safety Standard for Platform Lifts and Stairway Chairlifts, including ASME A18.1a-2001 Addenda and ASME A18.1b-2001 Addenda (see 410.1).

ASME A18.1-2003 Safety Standard for Platform Lifts and Stairway Chairlifts, (see 410.1).

Advisory 105.2.2 ASME. ASME A17.1-2000 is used by local jurisdictions throughout the United States for the design, construction, installation, operation, inspection, testing, maintenance, alteration, and repair of elevators and escalators. The majority of the requirements apply to the operational machinery not seen or used by elevator passengers. ASME A17.1 requires a two-way means of emergency communications in passenger elevators. This means of communication must connect with emergency or authorized personnel and not an automated answering system. The communication system must be push button activated. The activation button must be permanently identified with the word "HELP." A visual indication acknowledging the establishment of a communications link to authorized personnel must be provided. The visual indication must remain on until the call is terminated by authorized personnel. The building location, the elevator car number, and the need for assistance must be provided to authorized personnel answering the emergency call. The use of a handset by the communications system is prohibited. Only the authorized personnel answering the call can terminate the call. Operating instructions for the communications system must be provided in the elevator car.

The provisions for escalators require that at least two flat steps be provided at the entrance and exit of every escalator and that steps on escalators be demarcated by yellow lines 2 inches wide maximum along the back and sides of steps.

ASME A18.1-1999 and ASME A18.1-2003 address the design, construction, installation, operation, inspection, testing, maintenance and repair of lifts that are intended for transportation of persons with disabilities. Lifts are classified as: vertical platform lifts, inclined platform lifts, inclined stairway chairlifts, private residence vertical platform lifts, private residence inclined platform lifts, and private residence inclined stairway chairlifts.

This document does not permit the use of inclined stairway chairlifts which do not provide platforms because such lifts require the user to transfer to a seat.

ASME A18.1 contains requirements for runways, which are the spaces in which platforms or seats move. The standard includes additional provisions for runway enclosures, electrical equipment and wiring, structural support, headroom clearance (which is 80 inches minimum), lower level access ramps and pits. The enclosure walls not used for entry or exit are required to have a grab bar the full length of the wall on platform lifts. Access ramps are required to meet requirements similar to those for ramps in Chapter 4 of this document.

Each of the lift types addressed in ASME A18.1 must meet requirements for capacity, load, speed, travel, operating devices, and control equipment. The maximum permitted height for operable parts is consistent with Section 308 of this document. The standard also addresses attendant operation. However, Section 410.1 of this document does not permit attendant operation.

105.2.3 ASTM. Copies of the referenced standards may be obtained from the American Society for Testing and Materials, 100 Bar Harbor Drive, West Conshohocken, Pennsylvania 19428 (http://www.astm.org).

ASTM F 1292-99 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment (see 1008.2.6.2).

ASTM F 1292-04 Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment (see 1008.2.6.2).

ASTM F 1487-01 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use (see 106.5).

ASTM F 1951-99 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment (see 1008.2.6.1).

Advisory 105.2.3 ASTM. ASTM F 1292-99 and ASTM F 1292-04 establish a uniform means to measure and compare characteristics of surfacing materials to determine whether materials provide a safe surface under and around playground equipment. These standards are referenced in the play areas requirements of this document when an accessible surface is required inside a play area use zone where a fall attenuating surface is also required. The standards cover the minimum impact attenuation requirements, when tested in accordance with Test Method F 355, for surface systems to be used under and around any piece of playground equipment from which a person may fall.

ASTM F 1487-01 establishes a nationally recognized safety standard for public playground equipment to address injuries identified by the U.S. Consumer Product Safety Commission. It defines the use zone, which is the ground area beneath and immediately adjacent to a play structure or play equipment designed for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting a play structure or equipment. The play areas requirements in this document reference the ASTM F 1487 standard when defining accessible routes that overlap use zones requiring fall attenuating surfaces. If the use zone of a playground is not entirely surfaced with an accessible material, at least one accessible route within the use zone must be provided from the perimeter to all accessible play structures or components within the playground.

ASTM F 1951-99 establishes a uniform means to measure the characteristics of surface systems in order to provide performance specifications to select materials for use as an accessible surface under and around playground equipment. Surface materials that comply with this standard and are located in the use zone must also comply with ASTM F 1292. The test methods in this standard address access for children and adults who may traverse the surfacing to aid children who are playing. When a surface is tested it must have an average work per foot value for straight propulsion and for turning less than the average work per foot values for straight propulsion and for turning, respectively, on a hard, smooth surface with a grade of 7% (1:14).

105.2.4 ICC/IBC. Copies of the referenced standard may be obtained from the International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, Virginia 22041 (www.iccsafe.org).

International Building Code, 2000 Edition (see 207.1, 207.2, 216.4.2, 216.4.3, and 1005.2.1).

International Building Code, 2001 Supplement (see 207.1 and 207.2).

International Building Code, 2003 Edition (see 207.1, 207.2, 216.4.2, 216.4.3, and 1005.2.1).

Advisory 105.2.4 ICC/IBC. International Building Code (IBC)-2000 (including 2001 Supplement to the International Codes) and IBC-2003 are referenced for means of egress, areas of refuge, and railings provided on fishing piers and platforms. At least one accessible means of egress is required for every accessible space and at least two accessible means of egress are required where more than one means of egress is required. The technical criteria for accessible means of egress allow the use of exit stairways and evacuation elevators when provided in conjunction with horizontal exits or areas of refuge. While typical elevators are not designed to be used during an emergency evacuation, evacuation elevators are designed with standby power and other features according to the elevator safety standard and can be used for the evacuation of individuals with disabilities. The IBC also provides requirements for areas of refuge, which are fire-rated spaces on levels above or below the exit discharge levels where people unable to use stairs can go to register a call for assistance and wait for evacuation.

The recreation facilities requirements of this document references two sections in the IBC for fishing piers and platforms. An exception addresses the height of the railings, guards, or handrails where a fishing pier or platform is required to include a guard, railing, or handrail higher than 34 inches (865 mm) above the ground or deck surface.

105.2.5 NFPA. Copies of the referenced standards may be obtained from the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02169-7471, (http://www.nfpa.org).

NFPA 72 National Fire Alarm Code, 1999 Edition (see 702.1 and 809.5.2).

NFPA 72 National Fire Alarm Code, 2002 Edition (see 702.1 and 809.5.2).

Advisory 105.2.5 NFPA. NFPA 72-1999 and NFPA 72-2002 address the application, installation, performance, and maintenance of protective signaling systems and their components. The NFPA 72 incorporates Underwriters Laboratory (UL) 1971 by reference. The standard specifies the characteristics of audible alarms, such as placement and sound levels. However, Section 702 of these requirements limits the volume of an audible alarm to 110 dBA, rather than the maximum 120 dBA permitted by NFPA 72-1999.

NFPA 72 specifies characteristics for visible alarms, such as flash frequency, color, intensity, placement, and synchronization. However, Section 702 of this document requires that visual alarm appliances be permanently installed. UL 1971 specifies intensity dispersion requirements for visible alarms. In particular, NFPA 72 requires visible alarms to have a light source that is clear or white and has polar dispersion complying with UL 1971.

106 Definitions

106.1 General. For the purpose of this document, the terms defined in 106.5 have the indicated meaning.

> **Advisory 106.1 General.** Terms defined in Section 106.5 are italicized in the text of this document.

106.2 Terms Defined in Referenced Standards. Terms not defined in 106.5 or in regulations issued by the Department of Justice and the Department of Transportation to implement the Americans with Disabilities Act, but specifically defined in a referenced standard, shall have the specified meaning from the referenced standard unless otherwise stated.

106.3 Undefined Terms. The meaning of terms not specifically defined in 106.5 or in regulations issued by the Department of Justice and the Department of Transportation to implement the Americans with Disabilities Act or in referenced standards shall be as defined by collegiate dictionaries in the sense that the context implies.

106.4 Interchangeability. Words, terms and phrases used in the singular include the plural and those used in the plural include the singular.

106.5 Defined Terms.

Accessible. A *site*, *building*, *facility*, or portion thereof that complies with this part.

Accessible Means of Egress. A continuous and unobstructed way of egress travel from any point in a *building* or *facility* that provides an *accessible* route to an area of refuge, a horizontal exit, or a *public way*.

Addition. An expansion, extension, or increase in the gross floor area or height of a *building* or *facility*.

Administrative Authority. A governmental agency that adopts or enforces regulations and guidelines for the design, construction, or *alteration* of *buildings* and *facilities*.

Alteration. A change to a *building* or *facility* that affects or could affect the usability of the *building* or *facility* or portion thereof. *Alterations* include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, resurfacing of *circulation paths* or *vehicular ways*, changes or rearrangement of the structural parts or *elements*, and changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, reroofing, painting or wallpapering, or changes to mechanical and electrical systems are not *alterations* unless they affect the usability of the *building* or *facility*.

Amusement Attraction. Any *facility*, or portion of a *facility*, located within an amusement park or theme park which provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats.

Amusement Ride. A system that moves persons through a fixed course within a defined area for the purpose of amusement.

Amusement Ride Seat. A seat that is built-in or mechanically fastened to an *amusement ride* intended to be occupied by one or more passengers.

Area of Sport Activity. That portion of a room or *space* where the play or practice of a sport occurs.

Assembly Area. A *building* or *facility*, or portion thereof, used for the purpose of entertainment, educational or civic gatherings, or similar purposes. For the purposes of these requirements, *assembly areas* include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers.

Assistive Listening System (ALS). An amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical *space* between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment.

Boarding Pier. A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking.

Boat Launch Ramp. A sloped surface designed for launching and retrieving trailered boats and other water craft to and from a body of water.

Boat Slip. That portion of a pier, main pier, finger pier, or float where a boat is moored for the purpose of berthing, embarking, or disembarking.

Building. Any structure used or intended for supporting or sheltering any use or occupancy.

Catch Pool. A pool or designated section of a pool used as a terminus for water slide flumes.

Characters. Letters, numbers, punctuation marks and typographic symbols.

Children's Use. Describes *spaces* and *elements* specifically designed for use primarily by people 12 years old and younger.

Circulation Path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, *walks*, hallways, courtyards, elevators, platform lifts, *ramps*, stairways, and landings.

Closed-Circuit Telephone. A telephone with a dedicated line such as a house phone, courtesy phone or phone that must be used to gain entry to a *facility*.

Common Use. Interior or exterior *circulation paths*, rooms, *spaces*, or *elements* that are not for *public use* and are made available for the shared use of two or more people.

Cross Slope. The slope that is perpendicular to the direction of travel (see *running slope*).

Curb Ramp. A short *ramp* cutting through a curb or built up to it.

Detectable Warning. A standardized surface feature built in or applied to walking surfaces or other *elements* to warn of hazards on a *circulation path*.

Element. An architectural or mechanical component of a *building*, *facility*, *space*, or *site*.

Elevated Play Component. A *play component* that is approached above or below grade and that is part of a composite play structure consisting of two or more *play components* attached or functionally linked to create an integrated unit providing more than one play activity.

Employee Work Area. All or any portion of a *space* used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not *employee work areas*.

Entrance. Any access point to a *building* or portion of a *building* or *facility* used for the purpose of entering. An *entrance* includes the approach *walk*, the vertical access leading to the *entrance* platform, the *entrance* platform itself, vestibule if provided, the entry door or gate, and the hardware of the entry door or gate.

Facility. All or any portion of *buildings*, structures, *site* improvements, *elements*, and pedestrian routes or *vehicular ways* located on a *site*.

Gangway. A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. *Gangways* that connect to vessels are not addressed by this document.

Golf Car Passage. A continuous passage on which a motorized golf car can operate.

Ground Level Play Component. A *play component* that is approached and exited at the ground level.

Key Station. Rapid and light rail stations, and commuter rail stations, as defined under criteria established by the Department of Transportation in 49 CFR 37.47 and 49 CFR 37.51, respectively.

Mail Boxes. Receptacles for the receipt of documents, packages, or other deliverable matter. *Mail boxes* include, but are not limited to, post office boxes and receptacles provided by commercial mail-receiving agencies, apartment *facilities*, or schools.

Marked Crossing. A crosswalk or other identified path intended for pedestrian use in crossing a *vehicular way*.

Mezzanine. An intermediate level or levels between the floor and ceiling of any *story* with an aggregate floor area of not more than one-third of the area of the room or *space* in which the level or levels are located. *Mezzanines* have sufficient elevation that *space* for human occupancy can be provided on the floor below.

Occupant Load. The number of persons for which the means of egress of a *building* or portion of a *building* is designed.

Operable Part. A component of an *element* used to insert or withdraw objects, or to activate, deactivate, or adjust the *element*.

Pictogram. A pictorial symbol that represents activities, *facilities*, or concepts.

Play Area. A portion of a *site* containing *play components* designed and constructed for children.

Play Component. An *element* intended to generate specific opportunities for play, socialization, or learning. *Play components* are manufactured or natural; and are stand-alone or part of a composite play structure.

Private Building or Facility. A place of public accommodation or a commercial *building* or *facility* subject to title III of the ADA and 28 CFR part 36 or a transportation *building* or *facility* subject to title III of the ADA and 49 CFR 37.45.

Public Building or Facility. A *building* or *facility* or portion of a *building* or *facility* designed, constructed, or *altered* by, on behalf of, or for the use of a public entity subject to title II of the ADA and 28 CFR part 35 or to title II of the ADA and 49 CFR 37.41 or 37.43.

Public Entrance. An *entrance* that is not a *service entrance* or a *restricted entrance*.

Public Use. Interior or exterior rooms, *spaces*, or *elements* that are made available to the public. *Public use* may be provided at a *building* or *facility* that is privately or publicly owned.

Public Way. Any street, alley or other parcel of land open to the outside air leading to a public street, which has been deeded, dedicated or otherwise permanently appropriated to the public for *public use* and which has a clear width and height of not less than 10 feet (3050 mm).

Qualified Historic Building or Facility. A *building* or *facility* that is listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate State or local law.

Ramp. A walking surface that has a *running slope* steeper than 1:20.

Residential Dwelling Unit. A unit intended to be used as a residence, that is primarily long-term in nature. *Residential dwelling units* do not include *transient lodging*, inpatient medical care, licensed long-term care, and detention or correctional *facilities*.

Restricted Entrance. An *entrance* that is made available for *common use* on a controlled basis but not *public use* and that is not a *service entrance*.

Running Slope. The slope that is parallel to the direction of travel (see *cross slope*).

Self-Service Storage. *Building* or *facility* designed and used for the purpose of renting or leasing individual storage *spaces* to customers for the purpose of storing and removing personal property on a self-service basis.

Service Entrance. An *entrance* intended primarily for delivery of goods or services.

Site. A parcel of land bounded by a property line or a designated portion of a public right-of-way.

Soft Contained Play Structure. A play structure made up of one or more *play components* where the user enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting, or fabric.

Space. A definable area, such as a room, toilet room, hall, *assembly area*, *entrance*, storage room, alcove, courtyard, or lobby.

Story. That portion of a *building* or *facility* designed for human occupancy included between the upper surface of a floor and upper surface of the floor or roof next above. A *story* containing one or more *mezzanines* has more than one floor level.

Structural Frame. The columns and the girders, beams, and trusses having direct connections to the columns and all other members that are essential to the stability of the *building* or *facility* as a whole.

Tactile. An object that can be perceived using the sense of touch.

Technically Infeasible. With respect to an *alteration* of a *building* or a *facility*, something that has little likelihood of being accomplished because existing structural conditions would require removing or *altering* a load-bearing member that is an essential part of the *structural frame*; or because other existing physical or *site* constraints prohibit modification or *addition* of *elements*, *spaces*, or features that are in full and strict compliance with the minimum requirements.

Teeing Ground. In golf, the starting place for the hole to be played.

Transfer Device. Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an *amusement ride seat*.

Transient Lodging. A *building* or *facility* containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature. *Transient lodging* does not include *residential dwelling units* intended to be used as a residence, inpatient medical care *facilities*, licensed long-term care *facilities*, detention or correctional *facilities*, or *private buildings or facilities* that contain not more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.

Transition Plate. A sloping pedestrian walking surface located at the end(s) of a *gangway*.

TTY. An abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across the telephone network. *TTYs* may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. *TTYs* are also called text telephones.

Use Zone. The ground level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F 1487 (incorporated by reference, see "Referenced Standards" in Chapter 1) for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment.

Vehicular Way. A route provided for vehicular traffic, such as in a street, driveway, or parking *facility*.

Walk. An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts.

Wheelchair Space. *Space* for a single wheelchair and its occupant.

Work Area Equipment. Any machine, instrument, engine, motor, pump, conveyor, or other apparatus used to perform work. As used in this document, this term shall apply only to equipment that is permanently installed or built-in in *employee work areas*. *Work area equipment* does not include passenger elevators and other accessible means of vertical transportation.

ADA CHAPTER 2: SCOPING REQUIREMENTS

201 Application

201.1 Scope. All areas of newly designed and newly constructed *buildings* and *facilities* and *altered* portions of existing *buildings* and *facilities* shall comply with these requirements.

> **Advisory 201.1 Scope.** These requirements are to be applied to all areas of a facility unless exempted, or where scoping limits the number of multiple elements required to be accessible. For example, not all medical care patient rooms are required to be accessible; those that are not required to be accessible are not required to comply with these requirements. However, common use and public use spaces such as recovery rooms, examination rooms, and cafeterias are not exempt from these requirements and must be accessible.

201.2 Application Based on Building or Facility Use. Where a *site*, *building*, *facility*, room, or *space* contains more than one use, each portion shall comply with the applicable requirements for that use.

201.3 Temporary and Permanent Structures. These requirements shall apply to temporary and permanent *buildings* and *facilities*.

> **Advisory 201.3 Temporary and Permanent Structures.** Temporary buildings or facilities covered by these requirements include, but are not limited to, reviewing stands, temporary classrooms, bleacher areas, stages, platforms and daises, fixed furniture systems, wall systems, and exhibit areas, temporary banking facilities, and temporary health screening facilities. Structures and equipment directly associated with the actual processes of construction are not required to be accessible as permitted in 203.2.

202 Existing Buildings and Facilities

202.1 General. *Additions* and *alterations* to existing *buildings* or *facilities* shall comply with 202.

202.2 Additions. Each *addition* to an existing *building* or *facility* shall comply with the requirements for new construction. Each *addition* that affects or could affect the usability of or access to an area containing a primary function shall comply with 202.4.

202.3 Alterations. Where existing *elements* or *spaces* are *altered*, each *altered element* or *space* shall comply with the applicable requirements of Chapter 2.

EXCEPTIONS: 1. Unless required by 202.4, where *elements* or *spaces* are *altered* and the *circulation path* to the *altered element* or *space* is not *altered*, an *accessible* route shall not be required.

2. In *alterations*, where compliance with applicable requirements is *technically infeasible*, the *alteration* shall comply with the requirements to the maximum extent feasible.

3. *Residential dwelling units* not required to be *accessible* in compliance with a standard issued pursuant to the Americans with Disabilities Act or Section 504 of the Rehabilitation Act of 1973, as amended, shall not be required to comply with 202.3.

Advisory 202.3 Alterations. Although covered entities are permitted to limit the scope of an alteration to individual elements, the alteration of multiple elements within a room or space may provide a cost-effective opportunity to make the entire room or space accessible. Any elements or spaces of the building or facility that are required to comply with these requirements must be made accessible within the scope of the alteration, to the maximum extent feasible. If providing accessibility in compliance with these requirements for people with one type of disability (e.g., people who use wheelchairs) is not feasible, accessibility must still be provided in compliance with the requirements for people with other types of disabilities (e.g., people who have hearing impairments or who have vision impairments) to the extent that such accessibility is feasible.

202.3.1 Prohibited Reduction in Access. An *alteration* that decreases or has the effect of decreasing the *accessibility* of a *building* or *facility* below the requirements for new construction at the time of the *alteration* is prohibited.

202.3.2 Extent of Application. An *alteration* of an existing *element*, *space*, or area of a *building* or *facility* shall not impose a requirement for *accessibility* greater than required for new construction.

202.4 Alterations Affecting Primary Function Areas. In addition to the requirements of 202.3, an *alteration* that affects or could affect the usability of or access to an area containing a primary function shall be made so as to ensure that, to the maximum extent feasible, the path of travel to the *altered* area, including the rest rooms, telephones, and drinking fountains serving the *altered* area, are readily *accessible* to and usable by individuals with disabilities, unless such *alterations* are disproportionate to the overall *alterations* in terms of cost and scope as determined under criteria established by the Attorney General. In existing transportation *facilities*, an area of primary function shall be as defined under regulations published by the Secretary of the Department of Transportation or the Attorney General.

EXCEPTION: *Residential dwelling units* shall not be required to comply with 202.4.

Advisory 202.4 Alterations Affecting Primary Function Areas. An area of a building or facility containing a major activity for which the building or facility is intended is a primary function area. Department of Justice ADA regulations state, "Alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20% of the cost of the alteration to the primary function area." (28 CFR 36.403 (f)(1)). See also Department of Transportation ADA regulations, which use similar concepts in the context of public sector transportation facilities (49 CFR 37.43 (e)(1)).

There can be multiple areas containing a primary function in a single building. Primary function areas are not limited to public use areas. For example, both a bank lobby and the bank's employee areas such as the teller areas and walk-in safe are primary function areas.

Advisory 202.4 Alterations Affecting Primary Function Areas (Continued). Also, mixed use facilities may include numerous primary function areas for each use. Areas containing a primary function do not include: mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors, or restrooms.

202.5 Alterations to Qualified Historic Buildings and Facilities. *Alterations* to a *qualified historic building* or *facility* shall comply with 202.3 and 202.4.

EXCEPTION: Where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the requirements for *accessible* routes, *entrances*, or toilet *facilities* would threaten or destroy the historic significance of the *building* or *facility*, the exceptions for *alterations* to *qualified historic buildings or facilities* for that *element* shall be permitted to apply.

Advisory 202.5 Alterations to Qualified Historic Buildings and Facilities Exception. State Historic Preservation Officers are State appointed officials who carry out certain responsibilities under the National Historic Preservation Act. State Historic Preservation Officers consult with Federal and State agencies, local governments, and private entities on providing access and protecting significant elements of qualified historic buildings and facilities. There are exceptions for alterations to qualified historic buildings and facilities for accessible routes (206.2.1 Exception 1 and 206.2.3 Exception 7); entrances (206.4 Exception 2); and toilet facilities (213.2 Exception 2). When an entity believes that compliance with the requirements for any of these elements would threaten or destroy the historic significance of the building or facility, the entity should consult with the State Historic Preservation Officer. If the State Historic Preservation Officer agrees that compliance with the requirements for a specific element would threaten or destroy the historic significance of the building or facility, use of the exception is permitted. Public entities have an additional obligation to achieve program accessibility under the Department of Justice ADA regulations. See 28 CFR 35.150. These regulations require public entities that operate historic preservation programs to give priority to methods that provide physical access to individuals with disabilities. If alterations to a qualified historic building or facility to achieve program accessibility would threaten or destroy the historic significance of the building or facility, fundamentally alter the program, or result in undue financial or administrative burdens, the Department of Justice ADA regulations allow alternative methods to be used to achieve program accessibility. In the case of historic preservation programs, such as an historic house museum, alternative methods include using audio-visual materials to depict portions of the house that cannot otherwise be made accessible. In the case of other qualified historic properties, such as an historic government office building, alternative methods include relocating programs and services to accessible locations. The Department of Justice ADA regulations also allow public entities to use alternative methods when altering qualified historic buildings or facilities in the rare situations where the State Historic Preservation Officer determines that it is not feasible to provide physical access using the exceptions permitted in Section 202.5 without threatening or destroying the historic significance of the building or facility. See 28 CFR 35.151(d).

Advisory 202.5 Alterations to Qualified Historic Buildings and Facilities Exception (Continued). The AccessAbility Office at the National Endowment for the Arts (NEA) provides a variety of resources for museum operators and historic properties including: the Design for Accessibility Guide and the Disability Symbols. Contact NEA about these and other resources at (202) 682-5532 or www.arts.gov.

203 General Exceptions

203.1 General. *Sites, buildings, facilities,* and *elements* are exempt from these requirements to the extent specified by 203.

203.2 Construction Sites. Structures and *sites* directly associated with the actual processes of construction, including but not limited to, scaffolding, bridging, materials hoists, materials storage, and construction trailers shall not be required to comply with these requirements or to be on an *accessible* route. Portable toilet units provided for use exclusively by construction personnel on a construction *site* shall not be required to comply with 213 or to be on an *accessible* route.

203.3 Raised Areas. Areas raised primarily for purposes of security, life safety, or fire safety, including but not limited to, observation or lookout galleries, prison guard towers, fire towers, or life guard stands shall not be required to comply with these requirements or to be on an *accessible* route.

203.4 Limited Access Spaces. *Spaces* accessed only by ladders, catwalks, crawl *spaces*, or very narrow passageways shall not be required to comply with these requirements or to be on an *accessible* route.

203.5 Machinery Spaces. *Spaces* frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment shall not be required to comply with these requirements or to be on an *accessible* route. Machinery *spaces* include, but are not limited to, elevator pits or elevator penthouses; mechanical, electrical or communications equipment rooms; piping or equipment catwalks; water or sewage treatment pump rooms and stations; electric substations and transformer vaults; and highway and tunnel utility *facilities*.

203.6 Single Occupant Structures. Single occupant structures accessed only by passageways below grade or elevated above standard curb height, including but not limited to, toll booths that are accessed only by underground tunnels, shall not be required to comply with these requirements or to be on an *accessible* route.

203.7 Detention and Correctional Facilities. In detention and correctional *facilities*, *common use* areas that are used only by inmates or detainees and security personnel and that do not serve holding cells or housing cells required to comply with 232, shall not be required to comply with these requirements or to be on an *accessible* route.

203.8 Residential Facilities. In residential *facilities*, *common use* areas that do not serve *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 shall not be required to comply with these requirements or to be on an *accessible* route.

203.9 Employee Work Areas. *Spaces* and *elements* within *employee work areas* shall only be required to comply with 206.2.8, 207.1, and 215.3 and shall be designed and constructed so that individuals with disabilities can approach, enter, and exit the *employee work area*. *Employee work areas*, or portions of *employee work areas*, that are less than 300 square feet (28 m^2) and elevated 7 inches (180 mm) or more above the finish floor or ground where the elevation is essential to the function of the *space* shall not be required to comply with these requirements or to be on an *accessible* route.

Advisory 203.9 Employee Work Areas. Although areas used exclusively by employees for work are not required to be fully accessible, consider designing such areas to include non-required turning spaces, and provide accessible elements whenever possible. Under the ADA, employees with disabilities are entitled to reasonable accommodations in the workplace; accommodations can include alterations to spaces within the facility. Designing employee work areas to be more accessible at the outset will avoid more costly retrofits when current employees become temporarily or permanently disabled, or when new employees with disabilities are hired. Contact the Equal Employment Opportunity Commission (EEOC) at www.eeoc.gov for information about title I of the ADA prohibiting discrimination against people with disabilities in the workplace.

203.10 Raised Refereeing, Judging, and Scoring Areas. Raised structures used solely for refereeing, judging, or scoring a sport shall not be required to comply with these requirements or to be on an *accessible* route.

203.11 Water Slides. Water slides shall not be required to comply with these requirements or to be on an *accessible* route.

203.12 Animal Containment Areas. Animal containment areas that are not for *public use* shall not be required to comply with these requirements or to be on an *accessible* route.

Advisory 203.12 Animal Containment Areas. Public circulation routes where animals may travel, such as in petting zoos and passageways alongside animal pens in State fairs, are not eligible for the exception.

203.13 Raised Boxing or Wrestling Rings. Raised boxing or wrestling rings shall not be required to comply with these requirements or to be on an *accessible* route.

203.14 Raised Diving Boards and Diving Platforms. Raised diving boards and diving platforms shall not be required to comply with these requirements or to be on an *accessible* route.

204 Protruding Objects

204.1 General. Protruding objects on *circulation paths* shall comply with 307.

EXCEPTIONS: 1. Within *areas of sport activity*, protruding objects on *circulation paths* shall not be required to comply with 307.

2. Within *play areas*, protruding objects on *circulation paths* shall not be required to comply with 307 provided that ground level *accessible* routes provide vertical clearance in compliance with 1008.2.

205 Operable Parts

205.1 General. *Operable parts* on *accessible elements, accessible* routes, and in *accessible* rooms and *spaces* shall comply with 309.

EXCEPTIONS: 1. *Operable parts* that are intended for use only by service or maintenance personnel shall not be required to comply with 309.

2. Electrical or communication receptacles serving a dedicated use shall not be required to comply with 309.

3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to comply with 309.

4. Floor electrical receptacles shall not be required to comply with 309.

5. HVAC diffusers shall not be required to comply with 309.

6. Except for light switches, where redundant controls are provided for a single *element*, one control in each *space* shall not be required to comply with 309.

7. Cleats and other boat securement devices shall not be required to comply with 309.3.

8. Exercise machines and exercise equipment shall not be required to comply with 309.

Advisory 205.1 General. Controls covered by 205.1 include, but are not limited to, light switches, circuit breakers, duplexes and other convenience receptacles, environmental and appliance controls, plumbing fixture controls, and security and intercom systems.

206 Accessible Routes

206.1 General. *Accessible* routes shall be provided in accordance with 206 and shall comply with Chapter 4.

206.2 Where Required. *Accessible* routes shall be provided where required by 206.2.

206.2.1 Site Arrival Points. At least one *accessible* route shall be provided within the *site* from *accessible* parking *spaces* and *accessible* passenger loading zones; public streets and sidewalks; and public transportation stops to the *accessible building* or *facility entrance* they serve.

EXCEPTIONS: 1. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by 202.5, no more than one *accessible* route from a *site* arrival point to an *accessible entrance* shall be required.

2. An *accessible* route shall not be required between *site* arrival points and the *building* or *facility entrance* if the only means of access between them is a *vehicular way* not providing pedestrian access.

Advisory 206.2.1 Site Arrival Points. Each site arrival point must be connected by an accessible route to the accessible building entrance or entrances served. Where two or more similar site arrival points, such as bus stops, serve the same accessible entrance or entrances, both bus stops must be on accessible routes. In addition, the accessible routes must serve all of the accessible entrances on the site.

Advisory 206.2.1 Site Arrival Points Exception 2. Access from site arrival points may include vehicular ways. Where a vehicular way, or a portion of a vehicular way, is provided for pedestrian travel, such as within a shopping center or shopping mall parking lot, this exception does not apply.

206.2.2 Within a Site. At least one *accessible* route shall connect *accessible buildings*, *accessible facilities*, *accessible elements*, and *accessible spaces* that are on the same *site*.

EXCEPTION: An *accessible* route shall not be required between *accessible buildings*, *accessible facilities, accessible elements,* and *accessible spaces* if the only means of access between them is a *vehicular way* not providing pedestrian access.

Advisory 206.2.2 Within a Site. An accessible route is required to connect to the boundary of each area of sport activity. Examples of areas of sport activity include: soccer fields, basketball courts, baseball fields, running tracks, skating rinks, and the area surrounding a piece of gymnastic equipment. While the size of an area of sport activity may vary from sport to sport, each includes only the space needed to play. Where multiple sports fields or courts are provided, an accessible route is required to each field or area of sport activity.

206.2.3 Multi-Story Buildings and Facilities. At least one *accessible* route shall connect each *story* and *mezzanine* in multi-*story buildings* and *facilities*.

EXCEPTIONS: 1. In *private buildings or facilities* that are less than three *stories* or that have less than 3000 square feet (279 m^2) per *story*, an *accessible* route shall not be required to connect *stories* provided that the *building* or *facility* is not a shopping center, a shopping mall, the professional office of a health care provider, a terminal, depot or other station used for specified public transportation, an airport passenger terminal, or another type of *facility* as determined by the Attorney General.

2. Where a two *story public building or facility* has one *story* with an *occupant load* of five or fewer persons that does not contain *public use space*, that *story* shall not be required to be connected to the *story* above or below.

3. In detention and correctional *facilities*, an *accessible* route shall not be required to connect *stories* where cells with mobility features required to comply with 807.2, all *common use* areas serving cells with mobility features required to comply with 807.2, and all *public use* areas are on an *accessible* route.

4. In residential *facilities,* an *accessible* route shall not be required to connect *stories* where *residential dwelling units* with mobility features required to comply with 809.2 through 809.4, all *common use* areas serving *residential dwelling units* with mobility features required to comply with 809.2 through 809.4, and *public use* areas serving *residential dwelling units* are on an *accessible* route.

5. Within multi-*story transient lodging* guest rooms with mobility features required to comply with 806.2, an *accessible* route shall not be required to connect *stories* provided that *spaces* complying with 806.2 are on an *accessible* route and sleeping accommodations for two persons minimum are provided on a *story* served by an accessible route.

6. In air traffic control towers, an *accessible* route shall not be required to serve the cab and the floor immediately below the cab.

7. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by 202.5, an *accessible* route shall not be required to *stories* located above or below the *accessible story*.

Advisory 206.2.3 Multi-Story Buildings and Facilities. Spaces and elements located on a level not required to be served by an accessible route must fully comply with this document. While a mezzanine may be a change in level, it is not a story. If an accessible route is required to connect stories within a building or facility, the accessible route must serve all mezzanines.

Advisory 206.2.3 Multi-Story Buildings and Facilities Exception 4. Where common use areas are provided for the use of residents, it is presumed that all such common use areas "serve" accessible dwelling units unless use is restricted to residents occupying certain dwelling units. For example, if all residents are permitted to use all laundry rooms, then all laundry rooms "serve" accessible dwelling units. However, if the laundry room on the first floor is restricted to use by residents on the first floor, and the second floor laundry room is for use by occupants of the second floor, then first floor accessible units are "served" only by laundry rooms on the first floor. In this example, an accessible route is not required to the second floor provided that all accessible units and all common use areas serving them are on the first floor.

206.2.3.1 Stairs and Escalators in Existing Buildings. In *alterations* and *additions*, where an escalator or stair is provided where none existed previously and major structural modifications are necessary for the installation, an *accessible* route shall be provided between the levels served by the escalator or stair unless exempted by 206.2.3 Exceptions 1 through 7.

206.2.4 Spaces and Elements. At least one *accessible* route shall connect *accessible building* or *facility entrances* with all *accessible spaces* and *elements* within the *building* or *facility* which are otherwise connected by a *circulation path* unless exempted by 206.2.3 Exceptions 1 through 7.

EXCEPTIONS: 1. Raised courtroom stations, including judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, and court reporters' stations shall not be required to provide vertical access provided that the required clear floor *space*, maneuvering *space*, and, if appropriate, electrical service are installed at the time of initial construction to allow future installation of a means of vertical access complying with 405, 407, 408, or 410 without requiring substantial reconstruction of the *space*.

2. In *assembly areas* with fixed seating required to comply with 221, an *accessible* route shall not be required to serve fixed seating where *wheelchair spaces* required to be on an *accessible* route are not provided.

3. *Accessible* routes shall not be required to connect *mezzanines* where *buildings* or *facilities* have no more than one story. In addition, *accessible* routes shall not be required to connect stories or *mezzanines* where multi-story *buildings* or *facilities* are exempted by 206.2.3 Exceptions 1 through 7.

Advisory 206.2.4 Spaces and Elements. Accessible routes must connect all spaces and elements required to be accessible including, but not limited to, raised areas and speaker platforms.

Advisory 206.2.4 Spaces and Elements Exception 1. The exception does not apply to areas that are likely to be used by members of the public who are not employees of the court such as jury areas, attorney areas, or witness stands.

206.2.5 Restaurants and Cafeterias. In restaurants and cafeterias, an *accessible* route shall be provided to all dining areas, including raised or sunken dining areas, and outdoor dining areas.

EXCEPTIONS: 1. In *buildings or facilities* not required to provide an *accessible* route between *stories*, an *accessible* route shall not be required to a *mezzanine* dining area where the *mezzanine* contains less than 25 percent of the total combined area for seating and dining and where the same decor and services are provided in the *accessible* area.

2. In *alterations*, an *accessible* route shall not be required to existing raised or sunken dining areas, or to all parts of existing outdoor dining areas where the same services and decor are provided in an *accessible space* usable by the public and not restricted to use by people with disabilities.

3. In sports *facilities,* tiered dining areas providing seating required to comply with 221 shall be required to have *accessible* routes serving at least 25 percent of the dining area provided that *accessible* routes serve seating complying with 221 and each tier is provided with the same services.

Advisory 206.2.5 Restaurants and Cafeterias Exception 2. Examples of "same services" include, but are not limited to, bar service, rooms having smoking and non-smoking sections, lotto and other table games, carry-out, and buffet service. Examples of "same decor" include, but are not limited to, seating at or near windows and railings with views, areas designed with a certain theme, party and banquet rooms, and rooms where entertainment is provided.

206.2.6 Performance Areas. Where a *circulation path* directly connects a performance area to an assembly seating area, an *accessible* route shall directly connect the assembly seating area with the performance area. An *accessible* route shall be provided from performance areas to ancillary areas or *facilities* used by performers unless exempted by 206.2.3 Exceptions 1 through 7.

206.2.7 Press Boxes. Press boxes in *assembly areas* shall be on an *accessible* route.

EXCEPTIONS: 1. An *accessible* route shall not be required to press boxes in bleachers that have points of entry at only one level provided that the aggregate area of all press boxes is 500 square feet (46 m^2) maximum.

2. An *accessible* route shall not be required to free-standing press boxes that are elevated above grade 12 feet (3660 mm) minimum provided that the aggregate area of all press boxes is 500 square feet (46 m^2) maximum.

Advisory 206.2.7 Press Boxes Exception 2. Where a facility contains multiple assembly areas, the aggregate area of the press boxes in each assembly area is to be calculated separately. For example, if a university has a soccer stadium with three press boxes elevated 12 feet (3660 mm) or more above grade and each press box is 150 square feet (14 m^2), then the aggregate area of the soccer stadium press boxes is less than 500 square feet (46 m^2) and Exception 2 applies to the soccer stadium. If that same university also has a football stadium with two press boxes elevated 12 feet (3660 mm) or more above grade and one press box is 250 square feet (23 m^2), and the second is 275 square feet (26 m^2), then the aggregate area of the football stadium press boxes is more than 500 square feet (46 m^2) and Exception 2 does not apply to the football stadium.

206.2.8 Employee Work Areas. *Common use circulation paths* within *employee work areas* shall comply with 402.

EXCEPTIONS: 1. *Common use circulation paths* located within *employee work areas* that are less than 1000 square feet (93 m^2) and defined by permanently installed partitions, counters, casework, or furnishings shall not be required to comply with 402.

2. *Common use circulation paths* located within *employee work areas* that are an integral component of *work area equipment* shall not be required to comply with 402.

3. *Common use circulation paths* located within exterior *employee work areas* that are fully exposed to the weather shall not be required to comply with 402.

Advisory 206.2.8 Employee Work Areas Exception 1. Modular furniture that is not permanently installed is not directly subject to these requirements. The Department of Justice ADA regulations provide additional guidance regarding the relationship between these requirements and elements that are not part of the built environment. Additionally, the Equal Employment Opportunity Commission (EEOC) implements title I of the ADA which requires non-discrimination in the workplace. EEOC can provide guidance regarding employers' obligations to provide reasonable accommodations for employees with disabilities.

Advisory 206.2.8 Employee Work Areas Exception 2. Large pieces of equipment, such as electric turbines or water pumping apparatus, may have stairs and elevated walkways used for overseeing or monitoring purposes which are physically part of the turbine or pump. However, passenger elevators used for vertical transportation between stories are not considered "work area equipment" as defined in Section 106.5.

206.2.9 Amusement Rides. *Amusement rides* required to comply with 234 shall provide *accessible* routes in accordance with 206.2.9. *Accessible* routes serving *amusement rides* shall comply with Chapter 4 except as modified by 1002.2.

206.2.9.1 Load and Unload Areas. Load and unload areas shall be on an *accessible* route. Where load and unload areas have more than one loading or unloading position, at least one loading and unloading position shall be on an *accessible* route.

206.2.9.2 Wheelchair Spaces, Ride Seats Designed for Transfer, and Transfer Devices. When *amusement rides* are in the load and unload position, *wheelchair spaces* complying with 1002.4, *amusement ride seats* designed for transfer complying with 1002.5, and *transfer devices* complying with 1002.6 shall be on an *accessible* route.

206.2.10 Recreational Boating Facilities. *Boat slips* required to comply with 235.2 and *boarding piers* at *boat launch ramps* required to comply with 235.3 shall be on an *accessible* route. *Accessible* routes serving recreational boating *facilities* shall comply with Chapter 4, except as modified by 1003.2.

206.2.11 Bowling Lanes. Where bowling lanes are provided, at least 5 percent, but no fewer than one of each type of bowling lane, shall be on an *accessible* route.

206.2.12 Court Sports. In court sports, at least one *accessible* route shall directly connect both sides of the court.

206.2.13 Exercise Machines and Equipment. Exercise machines and equipment required to comply with 236 shall be on an *accessible* route.

206.2.14 Fishing Piers and Platforms. Fishing piers and platforms shall be on an *accessible* route. *Accessible* routes serving fishing piers and platforms shall comply with Chapter 4 except as modified by 1005.1.

206.2.15 Golf Facilities. At least one *accessible* route shall connect *accessible elements* and *spaces* within the boundary of the golf course. In addition, *accessible* routes serving golf car rental areas; bag drop areas; course weather shelters complying with 238.2.3; course toilet rooms; and practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges complying with 238.3 shall comply with Chapter 4 except as modified by 1006.2.

EXCEPTION: *Golf car passages* complying with 1006.3 shall be permitted to be used for all or part of *accessible* routes required by 206.2.15.

206.2.16 Miniature Golf Facilities. Holes required to comply with 239.2, including the start of play, shall be on an *accessible* route. *Accessible* routes serving miniature golf *facilities* shall comply with Chapter 4 except as modified by 1007.2.

206.2.17 Play Areas. *Play areas* shall provide *accessible* routes in accordance with 206.2.17. *Accessible* routes serving *play areas* shall comply with Chapter 4 except as modified by 1008.2.

206.2.17.1 Ground Level and Elevated Play Components. At least one *accessible* route shall be provided within the *play area*. The *accessible* route shall connect *ground level play components* required to comply with 240.2.1 and *elevated play components* required to comply with 240.2.2, including entry and exit points of the *play components*.

206.2.17.2 Soft Contained Play Structures. Where three or fewer entry points are provided for *soft contained play structures*, at least one entry point shall be on an *accessible* route. Where

four or more entry points are provided for *soft contained play structures*, at least two entry points shall be on an *accessible* route.

206.3 Location. *Accessible* routes shall coincide with or be located in the same area as general *circulation paths*. Where *circulation paths* are interior, required *accessible* routes shall also be interior.

> **Advisory 206.3 Location.** The accessible route must be in the same area as the general circulation path. This means that circulation paths, such as vehicular ways designed for pedestrian traffic, walks, and unpaved paths that are designed to be routinely used by pedestrians must be accessible or have an accessible route nearby. Additionally, accessible vertical interior circulation must be in the same area as stairs and escalators, not isolated in the back of the facility.

206.4 Entrances. *Entrances* shall be provided in accordance with 206.4. *Entrance* doors, doorways, and gates shall comply with 404 and shall be on an *accessible* route complying with 402.

EXCEPTIONS: 1. Where an *alteration* includes *alterations* to an *entrance*, and the *building* or *facility* has another *entrance* complying with 404 that is on an *accessible* route, the *altered entrance* shall not be required to comply with 206.4 unless required by 202.4.

2. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by 202.5, no more than one *public entrance* shall be required to comply with 206.4. Where no *public entrance* can comply with 206.4 under criteria established in 202.5 Exception, then either an unlocked *entrance* not used by the public shall comply with 206.4; or a locked *entrance* complying with 206.4 with a notification system or remote monitoring shall be provided.

206.4.1 Public Entrances. In addition to *entrances* required by 206.4.2 through 206.4.9, at least 60 percent of all *public entrances* shall comply with 404.

206.4.2 Parking Structure Entrances. Where direct access is provided for pedestrians from a parking structure to a *building* or *facility entrance*, each direct access to the *building* or *facility entrance* shall comply with 404.

206.4.3 Entrances from Tunnels or Elevated Walkways. Where direct access is provided for pedestrians from a pedestrian tunnel or elevated walkway to a *building* or *facility*, at least one direct *entrance* to the *building* or *facility* from each tunnel or walkway shall comply with 404.

206.4.4 Transportation Facilities. In addition to the requirements of 206.4.2, 206.4.3, and 206.4.5 through 206.4.9, transportation *facilities* shall provide *entrances* in accordance with 206.4.4.

206.4.4.1 Location. In transportation *facilities*, where different *entrances* serve different transportation fixed routes or groups of fixed routes, at least one *public entrance* shall comply with 404.

EXCEPTION: *Entrances* to *key stations* and existing intercity rail stations retrofitted in accordance with 49 CFR 37.49 or 49 CFR 37.51 shall not be required to comply with 206.4.4.1.

206.4.4.2 Direct Connections. Direct connections to other *facilities* shall provide an *accessible* route complying with 404 from the point of connection to boarding platforms and all transportation system *elements* required to be *accessible*. Any *elements* provided to facilitate future direct connections shall be on an *accessible* route connecting boarding platforms and all transportation system *elements* required to be *accessible*.

EXCEPTION: In *key stations* and existing intercity rail stations, existing direct connections shall not be required to comply with 404.

206.4.4.3 Key Stations and Intercity Rail Stations. *Key stations* and existing intercity rail stations required by Subpart C of 49 CFR part 37 to be *altered*, shall have at least one *entrance* complying with 404.

206.4.5 Tenant Spaces. At least one *accessible entrance* to each tenancy in a *facility* shall comply with 404.

EXCEPTION: *Self-service storage facilities* not required to comply with 225.3 shall not be required to be on an accessible route.

206.4.6 Residential Dwelling Unit Primary Entrance. In *residential dwelling units*, at least one primary *entrance* shall comply with 404. The primary *entrance* to a *residential dwelling unit* shall not be to a bedroom.

206.4.7 Restricted Entrances. Where *restricted entrances* are provided to a *building* or *facility*, at least one *restricted entrance* to the *building* or *facility* shall comply with 404.

206.4.8 Service Entrances. If a *service entrance* is the only *entrance* to a *building* or to a tenancy in a *facility*, that *entrance* shall comply with 404.

206.4.9 Entrances for Inmates or Detainees. Where *entrances* used only by inmates or detainees and security personnel are provided at judicial *facilities,* detention *facilities,* or correctional *facilities*, at least one such *entrance* shall comply with 404.

206.5 Doors, Doorways, and Gates. Doors, doorways, and gates providing user passage shall be provided in accordance with 206.5.

206.5.1 Entrances. Each *entrance* to a *building* or *facility* required to comply with 206.4 shall have at least one door, doorway, or gate complying with 404.

206.5.2 Rooms and Spaces. Within a *building* or *facility*, at least one door, doorway, or gate serving each room or *space* complying with these requirements shall comply with 404.

206.5.3 Transient Lodging Facilities. In *transient lodging facilities*, *entrances,* doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with 806.2 shall comply with 404.2.3.

EXCEPTION: Shower and sauna doors in guest rooms that are not required to provide mobility features complying with 806.2 shall not be required to comply with 404.2.3.

206.5.4 Residential Dwelling Units. In *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4, all doors and doorways providing user passage shall comply with 404.

206.6 Elevators. Elevators provided for passengers shall comply with 407. Where multiple elevators are provided, each elevator shall comply with 407.

EXCEPTIONS: 1. In a *building* or *facility* permitted to use the exceptions to 206.2.3 or permitted by 206.7 to use a platform lift, elevators complying with 408 shall be permitted.

2. Elevators complying with 408 or 409 shall be permitted in multi-*story residential dwelling units*.

206.6.1 Existing Elevators. Where *elements* of existing elevators are *altered*, the same *element* shall also be *altered* in all elevators that are programmed to respond to the same hall call control as the *altered* elevator and shall comply with the requirements of 407 for the *altered element*.

206.7 Platform Lifts. Platform lifts shall comply with 410. Platform lifts shall be permitted as a component of an *accessible* route in new construction in accordance with 206.7. Platform lifts shall be permitted as a component of an *accessible* route in an existing *building* or *facility*.

206.7.1 Performance Areas and Speakers' Platforms. Platform lifts shall be permitted to provide *accessible* routes to performance areas and speakers' platforms.

206.7.2 Wheelchair Spaces. Platform lifts shall be permitted to provide an *accessible* route to comply with the *wheelchair space* dispersion and line-of-sight requirements of 221 and 802.

206.7.3 Incidental Spaces. Platform lifts shall be permitted to provide an *accessible* route to incidental *spaces* which are not *public use spaces* and which are occupied by five persons maximum.

206.7.4 Judicial Spaces. Platform lifts shall be permitted to provide an *accessible* route to: jury boxes and witness stands; raised courtroom stations including, judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, and court reporters' stations; and to depressed areas such as the well of a court.

206.7.5 Existing Site Constraints. Platform lifts shall be permitted where existing exterior *site* constraints make use of a *ramp* or elevator infeasible.

Advisory 206.7.5 Existing Site Constraints. This exception applies where topography or other similar existing site constraints necessitate the use of a platform lift as the only feasible alternative. While the site constraint must reflect exterior conditions, the lift can be installed in the interior of a building. For example, a new building constructed between and connected to two existing buildings may have insufficient space to coordinate floor levels and also to provide ramped entry from the public way. In this example, an exterior or interior platform lift could be used to provide an accessible entrance or to coordinate one or more interior floor levels.

206.7.6 Guest Rooms and Residential Dwelling Units. Platform lifts shall be permitted to connect levels within *transient lodging* guest rooms required to provide mobility features complying with 806.2 or *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4.

206.7.7 Amusement Rides. Platform lifts shall be permitted to provide *accessible* routes to load and unload areas serving *amusement rides*.

206.7.8 Play Areas. Platform lifts shall be permitted to provide *accessible* routes to *play components* or *soft contained play structures*.

206.7.9 Team or Player Seating. Platform lifts shall be permitted to provide *accessible* routes to team or player seating areas serving *areas of sport activity*.

Advisory 206.7.9 Team or Player Seating. While the use of platform lifts is allowed, ramps are recommended to provide access to player seating areas serving an area of sport activity.

206.7.10 Recreational Boating Facilities and Fishing Piers and Platforms. Platform lifts shall be permitted to be used instead of *gangways* that are part of *accessible* routes serving recreational boating *facilities* and fishing piers and platforms.

206.8 Security Barriers. Security barriers, including but not limited to, security bollards and security check points, shall not obstruct a required *accessible* route or *accessible means of egress*.

EXCEPTION: Where security barriers incorporate *elements* that cannot comply with these requirements such as certain metal detectors, fluoroscopes, or other similar devices, the *accessible* route shall be permitted to be located adjacent to security screening devices. The *accessible* route shall permit persons with disabilities passing around security barriers to maintain visual contact with their personal items to the same extent provided others passing through the security barrier.

207 Accessible Means of Egress

207.1 General. Means of egress shall comply with section 1003.2.13 of the International Building Code (2000 edition and 2001 Supplement) or section 1007 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

EXCEPTIONS: 1. Where means of egress are permitted by local *building* or life safety codes to share a common path of egress travel, *accessible means of egress* shall be permitted to share a common path of egress travel.

2. Areas of refuge shall not be required in detention and correctional *facilities*.

207.2 Platform Lifts. Standby power shall be provided for platform lifts permitted by section 1003.2.13.4 of the International Building Code (2000 edition and 2001 Supplement) or section 1007.5 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to serve as a part of an *accessible means of egress*.

208 Parking Spaces

208.1 General. Where parking *spaces* are provided, parking *spaces* shall be provided in accordance with 208.

EXCEPTION: Parking *spaces* used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles, or vehicular impound shall not be required to comply with 208 provided that lots accessed by the public are provided with a passenger loading zone complying with 503.

208.2 Minimum Number. Parking *spaces* complying with 502 shall be provided in accordance with Table 208.2 except as required by 208.2.1, 208.2.2, and 208.2.3. Where more than one parking *facility* is provided on a *site*, the number of *accessible spaces* provided on the *site* shall be calculated according to the number of *spaces* required for each parking *facility*.

Table 208.2 Parking Spaces

Total Number of Parking Spaces Provided in Parking Facility	Minimum Number of Required Accessible Parking Spaces
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 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

Advisory 208.2 Minimum Number. The term "parking facility" is used Section 208.2 instead of the term "parking lot" so that it is clear that both parking lots and parking structures are required to comply with this section. The number of parking spaces required to be accessible is to be calculated separately for each parking facility; the required number is not to be based on the total number of parking spaces provided in all of the parking facilities provided on the site.

208.2.1 Hospital Outpatient Facilities. Ten percent of patient and visitor parking *spaces* provided to serve hospital outpatient *facilities* shall comply with 502.

> **Advisory 208.2.1 Hospital Outpatient Facilities.** The term "outpatient facility" is not defined in this document but is intended to cover facilities or units that are located in hospitals and that provide regular and continuing medical treatment without an overnight stay. Doctors' offices, independent clinics, or other facilities not located in hospitals are not considered hospital outpatient facilities for purposes of this document.

208.2.2 Rehabilitation Facilities and Outpatient Physical Therapy Facilities. Twenty percent of patient and visitor parking *spaces* provided to serve rehabilitation *facilities* specializing in treating conditions that affect mobility and outpatient physical therapy *facilities* shall comply with 502.

> **Advisory 208.2.2 Rehabilitation Facilities and Outpatient Physical Therapy Facilities.** Conditions that affect mobility include conditions requiring the use or assistance of a brace, cane, crutch, prosthetic device, wheelchair, or powered mobility aid; arthritic, neurological, or orthopedic conditions that severely limit one's ability to walk; respiratory diseases and other conditions which may require the use of portable oxygen; and cardiac conditions that impose significant functional limitations.

208.2.3 Residential Facilities. Parking *spaces* provided to serve residential facilities shall comply with 208.2.3.

208.2.3.1 Parking for Residents. Where at least one parking *space* is provided for each *residential dwelling unit*, at least one parking *space* complying with 502 shall be provided for each *residential dwelling unit* required to provide mobility features complying with 809.2 through 809.4.

208.2.3.2 Additional Parking Spaces for Residents. Where the total number of parking *spaces* provided for each *residential dwelling unit* exceeds one parking *space* per *residential dwelling unit*, 2 percent, but no fewer than one *space,* of all the parking *spaces* not covered by 208.2.3.1 shall comply with 502.

208.2.3.3 Parking for Guests, Employees, and Other Non-Residents. Where parking spaces are provided for persons other than residents, parking shall be provided in accordance with Table 208.2.

208.2.4 Van Parking Spaces. For every six or fraction of six parking *spaces* required by 208.2 to comply with 502, at least one shall be a van parking *space* complying with 502.

208.3 Location. Parking *facilities* shall comply with 208.3

208.3.1 General. Parking *spaces* complying with 502 that serve a particular *building* or *facility* shall be located on the shortest *accessible* route from parking to an *entrance* complying with 206.4. Where parking serves more than one *accessible entrance*, parking *spaces* complying with 502 shall be dispersed and located on the shortest *accessible* route to the *accessible entrances.* In parking

facilities that do not serve a particular *building* or *facility*, parking *spaces* complying with 502 shall be located on the shortest *accessible* route to an *accessible* pedestrian *entrance* of the parking *facility*.

EXCEPTIONS: 1. All van parking *spaces* shall be permitted to be grouped on one level within a multi-*story* parking *facility*.

2. Parking *spaces* shall be permitted to be located in different parking *facilities* if substantially equivalent or greater *accessibility* is provided in terms of distance from an *accessible entrance* or *entrances*, parking fee, and user convenience.

Advisory 208.3.1 General Exception 2. Factors that could affect "user convenience" include, but are not limited to, protection from the weather, security, lighting, and comparative maintenance of the alternative parking site.

208.3.2 Residential Facilities. In residential *facilities* containing *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4, parking *spaces* provided in accordance with 208.2.3.1 shall be located on the shortest *accessible* route to the *residential dwelling unit entrance* they serve. *Spaces* provided in accordance with 208.2.3.2 shall be dispersed throughout all types of parking provided for the *residential dwelling units*.

EXCEPTION: Parking *spaces* provided in accordance with 208.2.3.2 shall not be required to be dispersed throughout all types of parking if substantially equivalent or greater *accessibility* is provided in terms of distance from an *accessible entrance*, parking fee, and user convenience.

Advisory 208.3.2 Residential Facilities Exception. Factors that could affect "user convenience" include, but are not limited to, protection from the weather, security, lighting, and comparative maintenance of the alternative parking site.

209 Passenger Loading Zones and Bus Stops

209.1 General. Passenger loading zones shall be provided in accordance with 209.

209.2 Type. Where provided, passenger loading zones shall comply with 209.2.

209.2.1 Passenger Loading Zones. Passenger loading zones, except those required to comply with 209.2.2 and 209.2.3, shall provide at least one passenger loading zone complying with 503 in every continuous 100 linear feet (30 m) of loading zone *space*, or fraction thereof.

209.2.2 Bus Loading Zones. In bus loading zones restricted to use by designated or specified public transportation vehicles, each bus bay, bus stop, or other area designated for lift or *ramp* deployment shall comply with 810.2.

Advisory 209.2.2 Bus Loading Zones. The terms "designated public transportation" and "specified public transportation" are defined by the Department of Transportation at 49 CFR 37.3 in regulations implementing the Americans with Disabilities Act. These terms refer to public transportation services provided by public or private entities, respectively. For example, designated public transportation vehicles include buses and vans operated by public transit agencies, while specified public transportation vehicles include tour and charter buses, taxis and limousines, and hotel shuttles operated by private entities.

209.2.3 On-Street Bus Stops. On-street bus stops shall comply with 810.2 to the maximum extent practicable.

209.3 Medical Care and Long-Term Care Facilities. At least one passenger loading zone complying with 503 shall be provided at an *accessible entrance* to licensed medical care and licensed long-term care *facilities* where the period of stay exceeds twenty-four hours.

209.4 Valet Parking. Parking *facilities* that provide valet parking services shall provide at least one passenger loading zone complying with 503.

209.5 Mechanical Access Parking Garages. Mechanical access parking garages shall provide at least one passenger loading zone complying with 503 at vehicle drop-off and vehicle pick-up areas.

210 Stairways

210.1 General. Interior and exterior stairs that are part of a means of egress shall comply with 504.

EXCEPTIONS: 1. In detention and correctional *facilities*, stairs that are not located in *public use* areas shall not be required to comply with 504.

2. In *alterations*, stairs between levels that are connected by an *accessible* route shall not be required to comply with 504, except that handrails complying with 505 shall be provided when the stairs are *altered*.

3. In *assembly areas*, aisle stairs shall not be required to comply with 504.

4. Stairs that connect *play components* shall not be required to comply with 504.

> **Advisory 210.1 General.** Although these requirements do not mandate handrails on stairs that are not part of a means of egress, State or local building codes may require handrails or guards.

211 Drinking Fountains

211.1 General. Where drinking fountains are provided on an exterior *site*, on a floor, or within a secured area they shall be provided in accordance with 211.

EXCEPTION: In detention or correctional *facilities*, drinking fountains only serving holding or housing cells not required to comply with 232 shall not be required to comply with 211.

211.2 Minimum Number. No fewer than two drinking fountains shall be provided. One drinking fountain shall comply with 602.1 through 602.6 and one drinking fountain shall comply with 602.7.

EXCEPTION: Where a single drinking fountain complies with 602.1 through 602.6 and 602.7, it shall be permitted to be substituted for two separate drinking fountains.

211.3 More Than Minimum Number. Where more than the minimum number of drinking fountains specified in 211.2 are provided, 50 percent of the total number of drinking fountains provided shall comply with 602.1 through 602.6, and 50 percent of the total number of drinking fountains provided shall comply with 602.7.

EXCEPTION: Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down provided that the total number of drinking fountains complying with 211 equals 100 percent of drinking fountains.

212 Kitchens, Kitchenettes, and Sinks

212.1 General. Where provided, kitchens, kitchenettes, and sinks shall comply with 212.

212.2 Kitchens and Kitchenettes. Kitchens and kitchenettes shall comply with 804.

212.3 Sinks. Where sinks are provided, at least 5 percent, but no fewer than one, of each type provided in each *accessible* room or *space* shall comply with 606.

EXCEPTION: Mop or service sinks shall not be required to comply with 212.3.

213 Toilet Facilities and Bathing Facilities

213.1 General. Where toilet *facilities* and bathing *facilities* are provided, they shall comply with 213. Where toilet *facilities* and bathing *facilities* are provided in *facilities* permitted by 206.2.3 Exceptions 1 and 2 not to connect *stories* by an *accessible* route, toilet *facilities* and bathing *facilities* shall be provided on a *story* connected by an *accessible* route to an *accessible entrance*.

213.2 Toilet Rooms and Bathing Rooms. Where toilet rooms are provided, each toilet room shall comply with 603. Where bathing rooms are provided, each bathing room shall comply with 603.

EXCEPTIONS: 1. In *alterations* where it is *technically infeasible* to comply with 603, *altering* existing toilet or bathing rooms shall not be required where a single unisex toilet room or bathing room complying with 213.2.1 is provided and located in the same area and on the same floor as existing inaccessible toilet or bathing rooms.

2. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by 202.5, no fewer than one toilet room for each sex complying with 603 or one unisex toilet room complying with 213.2.1 shall be provided.

3. Where multiple single user portable toilet or bathing units are clustered at a single location, no more than 5 percent of the toilet units and bathing units at each cluster shall be required to comply with 603. Portable toilet units and bathing units complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1.

4. Where multiple single user toilet rooms are clustered at a single location, no more than 50 percent of the single user toilet rooms for each use at each cluster shall be required to comply with 603.

Advisory 213.2 Toilet Rooms and Bathing Rooms. These requirements allow the use of unisex (or single-user) toilet rooms in alterations when technical infeasibility can be demonstrated. Unisex toilet rooms benefit people who use opposite sex personal care assistants. For this reason, it is advantageous to install unisex toilet rooms in addition to accessible single-sex toilet rooms in new facilities.

Advisory 213.2 Toilet Rooms and Bathing Rooms Exceptions 3 and 4. A "cluster" is a group of toilet rooms proximate to one another. Generally, toilet rooms in a cluster are within sight of, or adjacent to, one another.

213.2.1 Unisex (Single-Use or Family) Toilet and Unisex Bathing Rooms. Unisex toilet rooms shall contain not more than one lavatory, and two water closets without urinals or one water closet and one urinal. Unisex bathing rooms shall contain one shower or one shower and one bathtub, one lavatory, and one water closet. Doors to unisex toilet rooms and unisex bathing rooms shall have privacy latches.

213.3 Plumbing Fixtures and Accessories. Plumbing fixtures and accessories provided in a toilet room or bathing room required to comply with 213.2 shall comply with 213.3.

213.3.1 Toilet Compartments. Where toilet compartments are provided, at least one toilet compartment shall comply with 604.8.1. In addition to the compartment required to comply with 604.8.1, at least one compartment shall comply with 604.8.2 where six or more toilet compartments are provided, or where the combination of urinals and water closets totals six or more fixtures.

Advisory 213.3.1 Toilet Compartments. A toilet compartment is a partitioned space that is located within a toilet room, and that normally contains no more than one water closet. A toilet compartment may also contain a lavatory. A lavatory is a sink provided for hand washing. Full-height partitions and door assemblies can comprise toilet compartments where the minimum required spaces are provided within the compartment.

213.3.2 Water Closets. Where water closets are provided, at least one shall comply with 604.

213.3.3 Urinals. Where more than one urinal is provided, at least one shall comply with 605.

213.3.4 Lavatories. Where lavatories are provided, at least one shall comply with 606 and shall not be located in a toilet compartment.

213.3.5 Mirrors. Where mirrors are provided, at least one shall comply with 603.3.

213.3.6 Bathing Facilities. Where bathtubs or showers are provided, at least one bathtub complying with 607 or at least one shower complying with 608 shall be provided.

213.3.7 Coat Hooks and Shelves. Where coat hooks or shelves are provided in toilet rooms without toilet compartments, at least one of each type shall comply with 603.4. Where coat hooks or shelves are provided in toilet compartments, at least one of each type complying with 604.8.3 shall be provided in toilet compartments required to comply with 213.3.1. Where coat hooks or shelves are provided in bathing *facilities*, at least one of each type complying with 603.4 shall serve fixtures required to comply with 213.3.6.

214 Washing Machines and Clothes Dryers

214.1 General. Where provided, washing machines and clothes dryers shall comply with 214.

214.2 Washing Machines. Where three or fewer washing machines are provided, at least one shall comply with 611. Where more than three washing machines are provided, at least two shall comply with 611.

214.3 Clothes Dryers. Where three or fewer clothes dryers are provided, at least one shall comply with 611. Where more than three clothes dryers are provided, at least two shall comply with 611.

215 Fire Alarm Systems

215.1 General. Where fire alarm systems provide audible alarm coverage, alarms shall comply with 215.

EXCEPTION: In existing *facilities*, visible alarms shall not be required except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.

> **Advisory 215.1 General.** Unlike audible alarms, visible alarms must be located within the space they serve so that the signal is visible. Facility alarm systems (other than fire alarm systems) such as those used for tornado warnings and other emergencies are not required to comply with the technical criteria for alarms in Section 702. Every effort should be made to ensure that such alarms can be differentiated in their signal from fire alarms systems and that people who need to be notified of emergencies are adequately safeguarded. Consult local fire departments and prepare evacuation plans taking into consideration the needs of every building occupant, including people with disabilities.

215.2 Public and Common Use Areas. Alarms in *public use* areas and *common use* areas shall comply with 702.

215.3 Employee Work Areas. Where *employee work areas* have audible alarm coverage, the wiring system shall be designed so that visible alarms complying with 702 can be integrated into the alarm system.

215.4 Transient Lodging. Guest rooms required to comply with 224.4 shall provide alarms complying with 702.

215.5 Residential Facilities. Where provided in *residential dwelling units* required to comply with 809.5, alarms shall comply with 702.

216 Signs

216.1 General. Signs shall be provided in accordance with 216 and shall comply with 703.

EXCEPTIONS: 1. *Building* directories, menus, seat and row designations in *assembly areas*, occupant names, *building* addresses, and company names and logos shall not be required to comply with 216.

2. In parking *facilities*, signs shall not be required to comply with 216.2, 216.3, and 216.6 through 216.12.

3. Temporary, 7 days or less, signs shall not be required to comply with 216.

4. In detention and correctional *facilities*, signs not located in *public use* areas shall not be required to comply with 216.

216.2 Designations. Interior and exterior signs identifying permanent rooms and *spaces* shall comply with 703.1, 703.2, and 703.5. Where *pictograms* are provided as designations of permanent interior

rooms and *spaces*, the *pictograms* shall comply with 703.6 and shall have text descriptors complying with 703.2 and 703.5.

EXCEPTION: Exterior signs that are not located at the door to the *space* they serve shall not be required to comply with 703.2.

Advisory 216.2 Designations. Section 216.2 applies to signs that provide designations, labels, or names for interior rooms or spaces where the sign is not likely to change over time. Examples include interior signs labeling restrooms, room and floor numbers or letters, and room names. Tactile text descriptors are required for pictograms that are provided to label or identify a permanent room or space. Pictograms that provide information about a room or space, such as "no smoking," occupant logos, and the International Symbol of Accessibility, are not required to have text descriptors.

216.3 Directional and Informational Signs. Signs that provide direction to or information about interior *spaces* and *facilities* of the *site* shall comply with 703.5.

Advisory 216.3 Directional and Informational Signs. Information about interior spaces and facilities includes rules of conduct, occupant load, and similar signs. Signs providing direction to rooms or spaces include those that identify egress routes.

216.4 Means of Egress. Signs for means of egress shall comply with 216.4.

216.4.1 Exit Doors. Doors at exit passageways, exit discharge, and exit stairways shall be identified by *tactile* signs complying with 703.1, 703.2, and 703.5.

Advisory 216.4.1 Exit Doors. An exit passageway is a horizontal exit component that is separated from the interior spaces of the building by fire-resistance-rated construction and that leads to the exit discharge or public way. The exit discharge is that portion of an egress system between the termination of an exit and a public way.

216.4.2 Areas of Refuge. Signs required by section 1003.2.13.5.4 of the International Building Code (2000 edition) or section 1007.6.4 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to provide instructions in areas of refuge shall comply with 703.5.

216.4.3 Directional Signs. Signs required by section 1003.2.13.6 of the International Building Code (2000 edition) or section 1007.7 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to provide directions to *accessible means of egress* shall comply with 703.5.

216.5 Parking. Parking *spaces* complying with 502 shall be identified by signs complying with 502.6.

EXCEPTIONS: 1. Where a total of four or fewer parking *spaces*, including *accessible* parking *spaces*, are provided on a *site*, identification of *accessible* parking *spaces* shall not be required.

2. In residential *facilities*, where parking *spaces* are assigned to specific *residential dwelling units*, identification of *accessible* parking *spaces* shall not be required.

216.6 Entrances. Where not all *entrances* comply with 404, *entrances* complying with 404 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Directional signs complying with 703.5 that indicate the location of the nearest *entrance* complying with 404 shall be provided at *entrances* that do not comply with 404.

> **Advisory 216.6 Entrances.** Where a directional sign is required, it should be located to minimize backtracking. In some cases, this could mean locating a sign at the beginning of a route, not just at the inaccessible entrances to a building.

216.7 Elevators. Where existing elevators do not comply with 407, elevators complying with 407 shall be clearly identified with the International Symbol of *Accessibility* complying with 703.7.2.1.

216.8 Toilet Rooms and Bathing Rooms. Where existing toilet rooms or bathing rooms do not comply with 603, directional signs indicating the location of the nearest toilet room or bathing room complying with 603 within the *facility* shall be provided. Signs shall comply with 703.5 and shall include the International Symbol of *Accessibility* complying with 703.7.2.1. Where existing toilet rooms or bathing rooms do not comply with 603, the toilet rooms or bathing rooms complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Where clustered single user toilet rooms or bathing *facilities* are permitted to use exceptions to 213.2, toilet rooms or bathing *facilities* complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1 unless all toilet rooms and bathing *facilities* comply with 603.

216.9 TTYs. Identification and directional signs for public *TTYs* shall be provided in accordance with 216.9.

216.9.1 Identification Signs. Public *TTYs* shall be identified by the International Symbol of *TTY* complying with 703.7.2.2.

216.9.2 Directional Signs. Directional signs indicating the location of the nearest public *TTY* shall be provided at all banks of public pay telephones not containing a public *TTY.* In addition, where signs provide direction to public pay telephones, they shall also provide direction to public *TTYs.* Directional signs shall comply with 703.5 and shall include the International Symbol of *TTY* complying with 703.7.2.2.

216.10 Assistive Listening Systems. Each *assembly area* required by 219 to provide *assistive listening systems* shall provide signs informing patrons of the availability of the *assistive listening system.* Assistive listening signs shall comply with 703.5 and shall include the International Symbol of Access for Hearing Loss complying with 703.7.2.4.

EXCEPTION: Where ticket offices or windows are provided, signs shall not be required at each *assembly area* provided that signs are displayed at each ticket office or window informing patrons of the availability of *assistive listening systems.*

216.11 Check-Out Aisles. Where more than one check-out aisle is provided, check-out aisles complying with 904.3 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Where check-out aisles are identified by numbers, letters, or functions, signs identifying

check-out aisles complying with 904.3 shall be located in the same location as the check-out aisle identification.

EXCEPTION: Where all check-out aisles serving a single function comply with 904.3, signs complying with 703.7.2.1 shall not be required.

216.12 Amusement Rides. Signs identifying the type of access provided on *amusement rides* shall be provided at entries to queues and waiting lines. In addition, where *accessible* unload areas also serve as *accessible* load areas, signs indicating the location of the *accessible* load and unload areas shall be provided at entries to queues and waiting lines.

> **Advisory 216.12 Amusement Rides.** Amusement rides designed primarily for children, amusement rides that are controlled or operated by the rider, and amusement rides without seats, are not required to provide wheelchair spaces, transfer seats, or transfer systems, and need not meet the sign requirements in 216.12. The load and unload areas of these rides must, however, be on an accessible route and must provide turning space.

217 Telephones

217.1 General. Where coin-operated public pay telephones, coinless public pay telephones, public *closed-circuit telephones*, public courtesy phones, or other types of public telephones are provided, public telephones shall be provided in accordance with 217 for each type of public telephone provided. For purposes of this section, a bank of telephones shall be considered to be two or more adjacent telephones.

> **Advisory 217.1 General.** These requirements apply to all types of public telephones including courtesy phones at airports and rail stations that provide a free direct connection to hotels, transportation services, and tourist attractions.

217.2 Wheelchair Accessible Telephones. Where public telephones are provided, wheelchair *accessible* telephones complying with 704.2 shall be provided in accordance with Table 217.2.

EXCEPTION: Drive-up only public telephones shall not be required to comply with 217.2.

Table 217.2 Wheelchair Accessible Telephones

Number of Telephones Provided on a Floor, Level, or Exterior Site	Minimum Number of Required Wheelchair Accessible Telephones
1 or more single units	1 per floor, level, and exterior *site*
1 bank	1 per floor, level, and exterior *site*
2 or more banks	1 per bank

217.3 Volume Controls. All public telephones shall have volume controls complying with 704.3.

217.4 TTYs. *TTYs* complying with 704.4 shall be provided in accordance with 217.4.

Advisory 217.4 TTYs. Separate requirements are provided based on the number of public pay telephones provided at a bank of telephones, within a floor, a building, or on a site. In some instances one TTY can be used to satisfy more than one of these requirements. For example, a TTY required for a bank can satisfy the requirements for a building. However, the requirement for at least one TTY on an exterior site cannot be met by installing a TTY in a bank inside a building. Consideration should be given to phone systems that can accommodate both digital and analog transmissions for compatibility with digital and analog TTYs.

217.4.1 Bank Requirement. Where four or more public pay telephones are provided at a bank of telephones, at least one public *TTY* complying with 704.4 shall be provided at that bank.

EXCEPTION: *TTYs* shall not be required at banks of telephones located within 200 feet (61 m) of, and on the same floor as, a bank containing a public *TTY.*

217.4.2 Floor Requirement. *TTYs* in *public buildings* shall be provided in accordance with 217.4.2.1. *TTYs* in *private buildings* shall be provided in accordance with 217.4.2.2.

217.4.2.1 Public Buildings. Where at least one public pay telephone is provided on a floor of a *public building*, at least one public *TTY* shall be provided on that floor.

217.4.2.2 Private Buildings. Where four or more public pay telephones are provided on a floor of a *private building*, at least one public *TTY* shall be provided on that floor.

217.4.3 Building Requirement. *TTYs* in *public buildings* shall be provided in accordance with 217.4.3.1. *TTYs* in *private buildings* shall be provided in accordance with 217.4.3.2.

217.4.3.1 Public Buildings. Where at least one public pay telephone is provided in a *public building*, at least one public *TTY* shall be provided in the *building*. Where at least one public pay telephone is provided in a *public use* area of a *public building*, at least one public *TTY* shall be provided in the *public building* in a *public use* area.

217.4.3.2 Private Buildings. Where four or more public pay telephones are provided in a *private building*, at least one public *TTY* shall be provided in the *building*.

217.4.4 Exterior Site Requirement. Where four or more public pay telephones are provided on an exterior *site*, at least one public *TTY* shall be provided on the *site*.

217.4.5 Rest Stops, Emergency Roadside Stops, and Service Plazas. Where at least one public pay telephone is provided at a public rest stop, emergency roadside stop, or service plaza, at least one public *TTY* shall be provided.

217.4.6 Hospitals. Where at least one public pay telephone is provided serving a hospital emergency room, hospital recovery room, or hospital waiting room, at least one public *TTY* shall be provided at each location.

217.4.7 Transportation Facilities. In transportation *facilities*, in addition to the requirements of 217.4.1 through 217.4.4, where at least one public pay telephone serves a particular *entrance* to a bus or rail *facility*, at least one public *TTY* shall be provided to serve that *entrance*. In airports, in addition to the requirements of 217.4.1 through 217.4.4, where four or more public pay telephones are located in a terminal outside the security areas, a concourse within the security areas, or a baggage claim area in a terminal, at least one public *TTY* shall be provided in each location.

217.4.8 Detention and Correctional Facilities. In detention and correctional *facilities*, where at least one pay telephone is provided in a secured area used only by detainees or inmates and security personnel, at least one *TTY* shall be provided in at least one secured area.

217.5 Shelves for Portable TTYs. Where a bank of telephones in the interior of a *building* consists of three or more public pay telephones, at least one public pay telephone at the bank shall be provided with a shelf and an electrical outlet in accordance with 704.5.

EXCEPTIONS: 1. Secured areas of detention and correctional *facilities* where shelves and outlets are prohibited for purposes of security or safety shall not be required to comply with 217.5.

2. The shelf and electrical outlet shall not be required at a bank of telephones with a *TTY*.

218 Transportation Facilities

218.1 General. Transportation *facilities* shall comply with 218.

218.2 New and Altered Fixed Guideway Stations. New and *altered* stations in rapid rail, light rail, commuter rail, intercity rail, high speed rail, and other fixed guideway systems shall comply with 810.5 through 810.10.

218.3 Key Stations and Existing Intercity Rail Stations. *Key stations* and existing intercity rail stations shall comply with 810.5 through 810.10.

218.4 Bus Shelters. Where provided, bus shelters shall comply with 810.3.

218.5 Other Transportation Facilities. In other transportation *facilities*, public address systems shall comply with 810.7 and clocks shall comply with 810.8.

219 Assistive Listening Systems

219.1 General. *Assistive listening systems* shall be provided in accordance with 219 and shall comply with 706.

219.2 Required Systems. In each *assembly area* where audible communication is integral to the use of the *space*, an *assistive listening system* shall be provided.

EXCEPTION: Other than in courtrooms, *assistive listening systems* shall not be required where audio amplification is not provided.

219.3 Receivers. Receivers complying with 706.2 shall be provided for *assistive listening systems* in each *assembly area* in accordance with Table 219.3. Twenty-five percent minimum of receivers provided, but no fewer than two, shall be hearing-aid compatible in accordance with 706.3.

EXCEPTIONS: 1. Where a *building* contains more than one *assembly area* and the *assembly areas* required to provide *assistive listening systems* are under one management, the total number of required receivers shall be permitted to be calculated according to the total number of seats in the *assembly areas* in the *building* provided that all receivers are usable with all systems.
2. Where all seats in an *assembly area* are served by an induction loop *assistive listening system*, the minimum number of receivers required by Table 219.3 to be hearing-aid compatible shall not be required to be provided.

Table 219.3 Receivers for Assistive Listening Systems

Capacity of Seating in Assembly Area	Minimum Number of Required Receivers	Minimum Number of Required Receivers Required to be Hearing-aid Compatible
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats[1]	2
201 to 500	2, plus 1 per 25 seats over 50 seats[1]	1 per 4 receivers[1]
501 to 1000	20, plus 1 per 33 seats over 500 seats[1]	1 per 4 receivers[1]
1001 to 2000	35, plus 1 per 50 seats over 1000 seats[1]	1 per 4 receivers[1]
2001 and over	55 plus 1 per 100 seats over 2000 seats[1]	1 per 4 receivers[1]

1. Or fraction thereof.

220 Automatic Teller Machines and Fare Machines

220.1 General. Where automatic teller machines or self-service fare vending, collection, or adjustment machines are provided, at least one of each type provided at each location shall comply with 707. Where bins are provided for envelopes, waste paper, or other purposes, at least one of each type shall comply with 811.

> **Advisory 220.1 General.** If a bank provides both interior and exterior ATMs, each such installation is considered a separate location. Accessible ATMs, including those with speech and those that are within reach of people who use wheelchairs, must provide all the functions provided to customers at that location at all times. For example, it is unacceptable for the accessible ATM only to provide cash withdrawals while inaccessible ATMs also sell theater tickets.

221 Assembly Areas

221.1 General. *Assembly areas* shall provide *wheelchair spaces*, companion seats, and designated aisle seats complying with 221 and 802. In addition, lawn seating shall comply with 221.5.

221.2 Wheelchair Spaces. *Wheelchair spaces* complying with 221.2 shall be provided in *assembly areas* with fixed seating.

221.2.1 Number and Location. *Wheelchair spaces* shall be provided complying with 221.2.1.

221.2.1.1 General Seating. *Wheelchair spaces* complying with 802.1 shall be provided in accordance with Table 221.2.1.1.

Table 221.2.1.1 Number of Wheelchair Spaces in Assembly Areas

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

221.2.1.2 Luxury Boxes, Club Boxes, and Suites in Arenas, Stadiums, and Grandstands. In each luxury box, club box, and suite within arenas, stadiums, and grandstands, *wheelchair spaces* complying with 802.1 shall be provided in accordance with Table 221.2.1.1.

Advisory 221.2.1.2 Luxury Boxes, Club Boxes, and Suites in Arenas, Stadiums, and Grandstands. The number of wheelchair spaces required in luxury boxes, club boxes, and suites within an arena, stadium, or grandstand is to be calculated box by box and suite by suite.

221.2.1.3 Other Boxes. In boxes other than those required to comply with 221.2.1.2, the total number of *wheelchair spaces* required shall be determined in accordance with Table 221.2.1.1. *Wheelchair spaces* shall be located in not less than 20 percent of all boxes provided. *Wheelchair spaces* shall comply with 802.1.

Advisory 221.2.1.3 Other Boxes. The provision for seating in "other boxes" includes box seating provided in facilities such as performing arts auditoria where tiered boxes are designed for spatial and acoustical purposes. The number of wheelchair spaces required in boxes covered by 221.2.1.3 is calculated based on the total number of seats provided in these other boxes. The resulting number of wheelchair spaces must be located in no fewer than 20% of the boxes covered by this section. For example, a concert hall has 20 boxes, each of which contains 10 seats, totaling 200 seats. In this example, 5 wheelchair spaces would be required, and they must be placed in at least 4 of the boxes. Additionally, because the wheelchair spaces must also meet the dispersion requirements of 221.2.3, the boxes containing these wheelchair spaces cannot all be located in one area unless an exception to the dispersion requirements applies.

221.2.1.4 Team or Player Seating. At least one *wheelchair space* complying with 802.1 shall be provided in team or player seating areas serving *areas of sport activity.*

EXCEPTION: *Wheelchair spaces* shall not be required in team or player seating areas serving bowling lanes not required to comply with 206.2.11.

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

Advisory 221.2.2 Integration. The requirement that wheelchair spaces be an "integral part of the seating plan" means that wheelchair spaces must be placed within the footprint of the seating area. Wheelchair spaces cannot be segregated from seating areas. For example, it would be unacceptable to place only the wheelchair spaces, or only the wheelchair spaces and their associated companion seats, outside the seating areas defined by risers in an assembly area.

221.2.3 Lines of Sight and Dispersion. *Wheelchair spaces* shall provide lines of sight complying with 802.2 and shall comply with 221.2.3. In providing lines of sight, *wheelchair spaces* shall be dispersed. *Wheelchair spaces* shall provide spectators with choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators. When the number of *wheelchair spaces* required by 221.2.1 has been met, further dispersion shall not be required.

EXCEPTION: *Wheelchair spaces* in team or player seating areas serving *areas of sport activity* shall not be required to comply with 221.2.3.

Advisory 221.2.3 Lines of Sight and Dispersion. Consistent with the overall intent of the ADA, individuals who use wheelchairs must be provided equal access so that their experience is substantially equivalent to that of other members of the audience. Thus, while individuals who use wheelchairs need not be provided with the best seats in the house, neither may they be relegated to the worst.

221.2.3.1 Horizontal Dispersion. *Wheelchair spaces* shall be dispersed horizontally.

EXCEPTIONS: 1. Horizontal dispersion shall not be required in *assembly areas* with 300 or fewer seats if the companion seats required by 221.3 and *wheelchair spaces* are located within the 2nd or 3rd quartile of the total row length. Intermediate aisles shall be included in

determining the total row length. If the row length in the 2nd and 3rd quartile of a row is insufficient to accommodate the required number of companion seats and *wheelchair spaces*, the additional companion seats and *wheelchair spaces* shall be permitted to be located in the 1st and 4th quartile of the row.

2. In row seating, two *wheelchair spaces* shall be permitted to be located side-by-side.

Advisory 221.2.3.1 Horizontal Dispersion. Horizontal dispersion of wheelchair spaces is the placement of spaces in an assembly facility seating area from side-to-side or, in the case of an arena or stadium, around the field of play or performance area.

221.2.3.2 Vertical Dispersion. *Wheelchair spaces* shall be dispersed vertically at varying distances from the screen, performance area, or playing field. In addition, *wheelchair spaces* shall be located in each balcony or *mezzanine* that is located on an *accessible* route.

EXCEPTIONS: 1. Vertical dispersion shall not be required in *assembly areas* with 300 or fewer seats if the *wheelchair spaces* provide viewing angles that are equivalent to, or better than, the average viewing angle provided in the *facility.*

2. In bleachers, *wheelchair spaces* shall not be required to be provided in rows other than rows at points of entry to bleacher seating.

Advisory 221.2.3.2 Vertical Dispersion. When wheelchair spaces are dispersed vertically in an assembly facility they are placed at different locations within the seating area from front-to-back so that the distance from the screen, stage, playing field, area of sports activity, or other focal point is varied among wheelchair spaces.

Advisory 221.2.3.2 Vertical Dispersion Exception 2. Points of entry to bleacher seating may include, but are not limited to, cross aisles, concourses, vomitories, and entrance ramps and stairs. Vertical, center, or side aisles adjoining bleacher seating that are stepped or tiered are not considered entry points.

221.3 Companion Seats. At least one companion seat complying with 802.3 shall be provided for each *wheelchair space* required by 221.2.1.

221.4 Designated Aisle Seats. At least 5 percent of the total number of aisle seats provided shall comply with 802.4 and shall be the aisle seats located closest to *accessible* routes.

EXCEPTION: Team or player seating areas serving *areas of sport activity* shall not be required to comply with 221.4.

Advisory 221.4 Designated Aisle Seats. When selecting which aisle seats will meet the requirements of 802.4, those aisle seats which are closest to, not necessarily on, accessible routes must be selected first. For example, an assembly area has two aisles (A and B) serving seating areas with an accessible route connecting to the top and bottom of Aisle A only. The aisle seats chosen to meet 802.4 must be those at the top and bottom of Aisle A, working toward the middle. Only when all seats on Aisle A would not meet the five percent minimum would seats on Aisle B be designated.

221.5 Lawn Seating. Lawn seating areas and exterior overflow seating areas, where fixed seats are not provided, shall connect to an *accessible* route.

222 Dressing, Fitting, and Locker Rooms

222.1 General. Where dressing rooms, fitting rooms, or locker rooms are provided, at least 5 percent, but no fewer than one, of each type of use in each cluster provided shall comply with 803.

EXCEPTION: In *alterations*, where it is *technically infeasible* to provide rooms in accordance with 222.1, one room for each sex on each level shall comply with 803. Where only unisex rooms are provided, unisex rooms shall be permitted.

Advisory 222.1 General. A "cluster" is a group of rooms proximate to one another. Generally, rooms in a cluster are within sight of, or adjacent to, one another. Different styles of design provide users varying levels of privacy and convenience. Some designs include private changing facilities that are close to core areas of the facility, while other designs use space more economically and provide only group dressing facilities. Regardless of the type of facility, dressing, fitting, and locker rooms should provide people with disabilities rooms that are equally private and convenient to those provided others. For example, in a physician's office, if people without disabilities must traverse the full length of the office suite in clothing other than their street clothes, it is acceptable for people with disabilities to be asked to do the same.

222.2 Coat Hooks and Shelves. Where coat hooks or shelves are provided in dressing, fitting or locker rooms without individual compartments, at least one of each type shall comply with 803.5. Where coat hooks or shelves are provided in individual compartments at least one of each type complying with 803.5 shall be provided in individual compartments in dressing, fitting, or locker rooms required to comply with 222.1.

223 Medical Care and Long-Term Care Facilities

223.1 General. In licensed medical care *facilities* and licensed long-term care *facilities* where the period of stay exceeds twenty-four hours, patient or resident sleeping rooms shall be provided in accordance with 223.

EXCEPTION: Toilet rooms that are part of critical or intensive care patient sleeping rooms shall not be required to comply with 603.

Advisory 223.1 General. Because medical facilities frequently reconfigure spaces to reflect changes in medical specialties, Section 223.1 does not include a provision for dispersion of accessible patient or resident sleeping rooms. The lack of a design requirement does not mean that covered entities are not required to provide services to people with disabilities where accessible rooms are not dispersed in specialty areas. Locate accessible rooms near core areas that are less likely to change over time. While dispersion is not required, the flexibility it provides can be a critical factor in ensuring cost effective compliance with applicable civil rights laws, including titles II and III of the ADA and Section 504 of the Rehabilitation Act of 1973, as amended.

Advisory 223.1 General (Continued). Additionally, all types of features and amenities should be dispersed among accessible sleeping rooms to ensure equal access to and a variety of choices for all patients and residents.

223.1.1 Alterations. Where sleeping rooms are *altered* or *added*, the requirements of 223 shall apply only to the sleeping rooms being *altered* or *added* until the number of sleeping rooms complies with the minimum number required for new construction.

Advisory 223.1.1 Alterations. In alterations and additions, the minimum required number is based on the total number of sleeping rooms altered or added instead of on the total number of sleeping rooms provided in a facility. As a facility is altered over time, every effort should be made to disperse accessible sleeping rooms among patient care areas such as pediatrics, cardiac care, maternity, and other units. In this way, people with disabilities can have access to the full-range of services provided by a medical care facility.

223.2 Hospitals, Rehabilitation Facilities, Psychiatric Facilities and Detoxification Facilities. Hospitals, rehabilitation *facilities*, psychiatric *facilities* and detoxification *facilities* shall comply with 223.2.

223.2.1 Facilities Not Specializing in Treating Conditions That Affect Mobility. In *facilities* not specializing in treating conditions that affect mobility, at least 10 percent, but no fewer than one, of the patient sleeping rooms shall provide mobility features complying with 805.

223.2.2 Facilities Specializing in Treating Conditions That Affect Mobility. In *facilities* specializing in treating conditions that affect mobility, 100 percent of the patient sleeping rooms shall provide mobility features complying with 805.

Advisory 223.2.2 Facilities Specializing in Treating Conditions That Affect Mobility. Conditions that affect mobility include conditions requiring the use or assistance of a brace, cane, crutch, prosthetic device, wheelchair, or powered mobility aid; arthritic, neurological, or orthopedic conditions that severely limit one's ability to walk; respiratory diseases and other conditions which may require the use of portable oxygen; and cardiac conditions that impose significant functional limitations. Facilities that may provide treatment for, but that do not specialize in treatment of such conditions, such as general rehabilitation hospitals, are not subject to this requirement but are subject to Section 223.2.1.

223.3 Long-Term Care Facilities. In licensed long-term care *facilities*, at least 50 percent, but no fewer than one, of each type of resident sleeping room shall provide mobility features complying with 805.

224 Transient Lodging Guest Rooms

224.1 General. *Transient lodging facilities* shall provide guest rooms in accordance with 224.

Advisory 224.1 General. Certain facilities used for transient lodging, including time shares, dormitories, and town homes may be covered by both these requirements and the Fair Housing Amendments Act. The Fair Housing Amendments Act requires that certain residential structures having four or more multi-family dwelling units, regardless of whether they are privately owned or federally assisted, include certain features of accessible and adaptable design according to guidelines established by the U.S. Department of Housing and Urban Development (HUD). This law and the appropriate regulations should be consulted before proceeding with the design and construction of residential housing.

224.1.1 Alterations. Where guest rooms are *altered* or *added*, the requirements of 224 shall apply only to the guest rooms being *altered* or *added* until the number of guest rooms complies with the minimum number required for new construction.

Advisory 224.1.1 Alterations. In alterations and additions, the minimum required number of accessible guest rooms is based on the total number of guest rooms altered or added instead of the total number of guest rooms provided in a facility. Typically, each alteration of a facility is limited to a particular portion of the facility. When accessible guest rooms are added as a result of subsequent alterations, compliance with 224.5 (Dispersion) is more likely to be achieved if all of the accessible guest rooms are not provided in the same area of the facility.

224.1.2 Guest Room Doors and Doorways. *Entrances,* doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with 806.2 shall comply with 404.2.3.

EXCEPTION: Shower and sauna doors in guest rooms that are not required to provide mobility features complying with 806.2 shall not be required to comply with 404.2.3.

Advisory 224.1.2 Guest Room Doors and Doorways. Because of the social interaction that often occurs in lodging facilities, an accessible clear opening width is required for doors and doorways to and within all guest rooms, including those not required to be accessible. This applies to all doors, including bathroom doors, that allow full user passage. Other requirements for doors and doorways in Section 404 do not apply to guest rooms not required to provide mobility features.

224.2 Guest Rooms with Mobility Features. In *transient lodging facilities*, guest rooms with mobility features complying with 806.2 shall be provided in accordance with Table 224.2.

Table 224.2 Guest Rooms with Mobility Features

Total Number of Guest Rooms Provided	Minimum Number of Required Rooms Without Roll-in Showers	Minimum Number of Required Rooms With Roll-in Showers	Total Number of Required Rooms
1 to 25	1	0	1
26 to 50	2	0	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1000	2 percent of total	1 percent of total	3 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100, or fraction thereof, over 1000

224.3 Beds. In guest rooms having more than 25 beds, 5 percent minimum of the beds shall have clear floor *space* complying with 806.2.3.

224.4 Guest Rooms with Communication Features. In *transient lodging facilities*, guest rooms with communication features complying with 806.3 shall be provided in accordance with Table 224.4.

Table 224.4 Guest Rooms with Communication Features

Total Number of Guest Rooms Provided	Minimum Number of Required Guest Rooms With Communication Features
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12

Table 224.4 Guest Rooms with Communication Features

Total Number of Guest Rooms Provided	Minimum Number of Required Guest Rooms With Communication Features
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 3 for each 100 over 1000

224.5 Dispersion. Guest rooms required to provide mobility features complying with 806.2 and guest rooms required to provide communication features complying with 806.3 shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with 806 is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with 806.2 shall also provide communication features complying with 806.3. Not more than 10 percent of guest rooms required to provide mobility features complying with 806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with 806.3.

Advisory 224.5 Dispersion. Factors to be considered in providing an equivalent range of options may include, but are not limited to, room size, bed size, cost, view, bathroom fixtures such as hot tubs and spas, smoking and nonsmoking, and the number of rooms provided.

225 Storage

225.1 General. Storage *facilities* shall comply with 225.

225.2 Storage. Where storage is provided in accessible *spaces*, at least one of each type shall comply with 811.

Advisory 225.2 Storage. Types of storage include, but are not limited to, closets, cabinets, shelves, clothes rods, hooks, and drawers. Where provided, at least one of each type of storage must be within the reach ranges specified in 308; however, it is permissible to install additional storage outside the reach ranges.

225.2.1 Lockers. Where lockers are provided, at least 5 percent, but no fewer than one of each type, shall comply with 811.

Advisory 225.2.1 Lockers. Different types of lockers may include full-size and half-size lockers, as well as those specifically designed for storage of various sports equipment.

225.2.2 Self-Service Shelving. Self-service shelves shall be located on an *accessible* route complying with 402. Self-service shelving shall not be required to comply with 308.

Advisory 225.2.2 Self-Service Shelving. Self-service shelves include, but are not limited to, library, store, or post office shelves.

225.3 Self-Service Storage Facilities. *Self-service storage facilities* shall provide individual *self-service storage spaces* complying with these requirements in accordance with Table 225.3.

Table 225.3 Self-Service Storage Facilities

Total Spaces in Facility	Minimum Number of Spaces Required to be Accessible
1 to 200	5 percent, but no fewer than 1
201 and over	10, plus 2 percent of total number of units over 200

Advisory 225.3 Self-Service Storage Facilities. Although there are no technical requirements that are unique to self-service storage facilities, elements and spaces provided in facilities containing self-service storage spaces required to comply with these requirements must comply with this document where applicable. For example: the number of storage spaces required to comply with these requirements must provide Accessible Routes complying with Section 206; Accessible Means of Egress complying with Section 207; Parking Spaces complying with Section 208; and, where provided, other pubic use or common use elements and facilities such as toilet rooms, drinking fountains, and telephones must comply with the applicable requirements of this document.

225.3.1 Dispersion. Individual *self-service storage spaces* shall be dispersed throughout the various classes of *spaces* provided. Where more classes of *spaces* are provided than the number required to be *accessible*, the number of *spaces* shall not be required to exceed that required by Table 225.3. *Self-service storage spaces* complying with Table 225.3 shall not be required to be dispersed among *buildings* in a multi-*building facility*.

226 Dining Surfaces and Work Surfaces

226.1 General. Where dining surfaces are provided for the consumption of food or drink, at least 5 percent of the seating *spaces* and standing *spaces* at the dining surfaces shall comply with 902. In addition, where work surfaces are provided for use by other than employees, at least 5 percent shall comply with 902.

EXCEPTIONS: 1. Sales counters and service counters shall not be required to comply with 902.

2. Check writing surfaces provided at check-out aisles not required to comply with 904.3 shall not be required to comply with 902.

> **Advisory 226.1 General.** In facilities covered by the ADA, this requirement does not apply to work surfaces used only by employees. However, the ADA and, where applicable, Section 504 of the Rehabilitation Act of 1973, as amended, provide that employees are entitled to "reasonable accommodations." With respect to work surfaces, this means that employers may need to procure or adjust work stations such as desks, laboratory and work benches, fume hoods, reception counters, teller windows, study carrels, commercial kitchen counters, and conference tables to accommodate the individual needs of employees with disabilities on an "as needed" basis. Consider work surfaces that are flexible and permit installation at variable heights and clearances.

226.2 Dispersion. Dining surfaces and work surfaces required to comply with 902 shall be dispersed throughout the *space* or *facility* containing dining surfaces and work surfaces.

227 Sales and Service

227.1 General. Where provided, check-out aisles, sales counters, service counters, food service lines, queues, and waiting lines shall comply with 227 and 904.

227.2 Check-Out Aisles. Where check-out aisles are provided, check-out aisles complying with 904.3 shall be provided in accordance with Table 227.2. Where check-out aisles serve different functions, check-out aisles complying with 904.3 shall be provided in accordance with Table 227.2 for each function. Where check-out aisles are dispersed throughout the *building* or *facility*, check-out aisles complying with 904.3 shall be dispersed.

EXCEPTION: Where the selling *space* is under 5000 square feet (465 m^2) no more than one check-out aisle complying with 904.3 shall be required.

Table 227.2 Check-Out Aisles

Number of Check-Out Aisles of Each Function	Minimum Number of Check-Out Aisles of Each Function Required to Comply with 904.3
1 to 4	1
5 to 8	2
9 to 15	3
16 and over	3, plus 20 percent of additional aisles

227.2.1 Altered Check-Out Aisles. Where check-out aisles are *altered*, at least one of each check-out aisle serving each function shall comply with 904.3 until the number of check-out aisles complies with 227.2.

227.3 Counters. Where provided, at least one of each type of sales counter and service counter shall comply with 904.4. Where counters are dispersed throughout the *building* or *facility*, counters complying with 904.4 also shall be dispersed.

> **Advisory 227.3 Counters.** Types of counters that provide different services in the same facility include, but are not limited to, order, pick-up, express, and returns. One continuous counter can be used to provide different types of service. For example, order and pick-up are different services. It would not be acceptable to provide access only to the part of the counter where orders are taken when orders are picked-up at a different location on the same counter. Both the order and pick-up section of the counter must be accessible.

227.4 Food Service Lines. Food service lines shall comply with 904.5. Where self-service shelves are provided, at least 50 percent, but no fewer than one, of each type provided shall comply with 308.

227.5 Queues and Waiting Lines. Queues and waiting lines servicing counters or check-out aisles required to comply with 904.3 or 904.4 shall comply with 403.

228 Depositories, Vending Machines, Change Machines, Mail Boxes, and Fuel Dispensers

228.1 General. Where provided, at least one of each type of depository, vending machine, change machine, and fuel dispenser shall comply with 309.

EXCEPTION: Drive-up only depositories shall not be required to comply with 309.

> **Advisory 228.1 General.** Depositories include, but are not limited to, night receptacles in banks, post offices, video stores, and libraries.

228.2 Mail Boxes. Where *mail boxes* are provided in an interior location, at least 5 percent, but no fewer than one, of each type shall comply with 309. In residential *facilities*, where *mail boxes* are provided for each *residential dwelling unit*, *mail boxes* complying with 309 shall be provided for each *residential dwelling unit* required to provide mobility features complying with 809.2 through 809.4.

229 Windows

229.1 General. Where glazed openings are provided in *accessible* rooms or *spaces* for operation by occupants, at least one opening shall comply with 309. Each glazed opening required by an *administrative authority* to be operable shall comply with 309.

EXCEPTION: 1. Glazed openings in *residential dwelling units* required to comply with 809 shall not be required to comply with 229.

2. Glazed openings in guest rooms required to provide communication features and in guest rooms required to comply with 206.5.3 shall not be required to comply with 229.

230 Two-Way Communication Systems

230.1 General. Where a two-way communication system is provided to gain admittance to a *building* or *facility* or to restricted areas within a *building* or *facility*, the system shall comply with 708.

Advisory 230.1 General. This requirement applies to facilities such as office buildings, courthouses, and other facilities where admittance to the building or restricted spaces is dependent on two-way communication systems.

231 Judicial Facilities

231.1 General. Judicial *facilities* shall comply with 231.

231.2 Courtrooms. Each courtroom shall comply with 808.

231.3 Holding Cells. Where provided, central holding cells and court-floor holding cells shall comply with 231.3.

231.3.1 Central Holding Cells. Where separate central holding cells are provided for adult male, juvenile male, adult female, or juvenile female, one of each type shall comply with 807.2. Where central holding cells are provided and are not separated by age or sex, at least one cell complying with 807.2 shall be provided.

231.3.2 Court-Floor Holding Cells. Where separate court-floor holding cells are provided for adult male, juvenile male, adult female, or juvenile female, each courtroom shall be served by one cell of each type complying with 807.2. Where court-floor holding cells are provided and are not separated by age or sex, courtrooms shall be served by at least one cell complying with 807.2. Cells may serve more than one courtroom.

231.4 Visiting Areas. Visiting areas shall comply with 231.4.

231.4.1 Cubicles and Counters. At least 5 percent, but no fewer than one, of cubicles shall comply with 902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with 904.4.2 on both the visitor and detainee sides.

EXCEPTION: The detainee side of cubicles or counters at non-contact visiting areas not serving holding cells required to comply with 231 shall not be required to comply with 902 or 904.4.2.

231.4.2 Partitions. Where solid partitions or security glazing separate visitors from detainees at least one of each type of cubicle or counter partition shall comply with 904.6.

232 Detention Facilities and Correctional Facilities

232.1 General. *Buildings*, *facilities*, or portions thereof, in which people are detained for penal or correction purposes, or in which the liberty of the inmates is restricted for security reasons shall comply with 232.

Advisory 232.1 General. Detention facilities include, but are not limited to, jails, detention centers, and holding cells in police stations. Correctional facilities include, but are not limited to, prisons, reformatories, and correctional centers.

232.2 General Holding Cells and General Housing Cells. General holding cells and general housing cells shall be provided in accordance with 232.2.

EXCEPTION: *Alterations* to cells shall not be required to comply except to the extent determined by the Attorney General.

Advisory 232.2 General Holding Cells and General Housing Cells. Accessible cells or rooms should be dispersed among different levels of security, housing categories, and holding classifications (e.g., male/female and adult/juvenile) to facilitate access. Many detention and correctional facilities are designed so that certain areas (e.g., "shift" areas) can be adapted to serve as different types of housing according to need. For example, a shift area serving as a medium-security housing unit might be redesignated for a period of time as a high-security housing unit to meet capacity needs. Placement of accessible cells or rooms in shift areas may allow additional flexibility in meeting requirements for dispersion of accessible cells or rooms.

Advisory 232.2 General Holding Cells and General Housing Cells Exception. Although these requirements do not specify that cells be accessible as a consequence of an alteration, title II of the ADA requires that each service, program, or activity conducted by a public entity, when viewed in its entirety, be readily accessible to and usable by individuals with disabilities. This requirement must be met unless doing so would fundamentally alter the nature of a service, program, or activity or would result in undue financial and administrative burdens.

232.2.1 Cells with Mobility Features. At least 2 percent, but no fewer than one, of the total number of cells in a *facility* shall provide mobility features complying with 807.2.

232.2.1.1 Beds. In cells having more than 25 beds, at least 5 percent of the beds shall have clear floor *space* complying with 807.2.3.

232.2.2 Cells with Communication Features. At least 2 percent, but no fewer than one, of the total number of general holding cells and general housing cells equipped with audible emergency alarm systems and permanently installed telephones within the cell shall provide communication features complying with 807.3.

232.3 Special Holding Cells and Special Housing Cells. Where special holding cells or special housing cells are provided, at least one cell serving each purpose shall provide mobility features complying with 807.2. Cells subject to this requirement include, but are not limited to, those used for purposes of orientation, protective custody, administrative or disciplinary detention or segregation, detoxification, and medical isolation.

EXCEPTION: *Alterations* to cells shall not be required to comply except to the extent determined by the Attorney General.

232.4 Medical Care Facilities. Patient bedrooms or cells required to comply with 223 shall be provided in addition to any medical isolation cells required to comply with 232.3.

232.5 Visiting Areas. Visiting areas shall comply with 232.5.

232.5.1 Cubicles and Counters. At least 5 percent, but no fewer than one, of cubicles shall comply with 902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with 904.4.2 on both the visitor and detainee or inmate sides.

EXCEPTION: The inmate or detainee side of cubicles or counters at non-contact visiting areas not serving holding cells or housing cells required to comply with 232 shall not be required to comply with 902 or 904.4.2.

232.5.2 Partitions. Where solid partitions or security glazing separate visitors from detainees or inmates at least one of each type of cubicle or counter partition shall comply with 904.6.

233 Residential Facilities

233.1 General. *Facilities* with *residential dwelling units* shall comply with 233.

Advisory 233.1 General. Section 233 outlines the requirements for residential facilities subject to the Americans with Disabilities Act of 1990. The facilities covered by Section 233, as well as other facilities not covered by this section, may still be subject to other Federal laws such as the Fair Housing Act and Section 504 of the Rehabilitation Act of 1973, as amended. For example, the Fair Housing Act requires that certain residential structures having four or more multi-family dwelling units, regardless of whether they are privately owned or federally assisted, include certain features of accessible and adaptable design according to guidelines established by the U.S. Department of Housing and Urban Development (HUD). These laws and the appropriate regulations should be consulted before proceeding with the design and construction of residential facilities.

Residential facilities containing residential dwelling units provided by entities subject to HUD's Section 504 regulations and residential dwelling units covered by Section 233.3 must comply with the technical and scoping requirements in Chapters 1 through 10 included this document. Section 233 is not a stand-alone section; this section only addresses the minimum number of residential dwelling units within a facility required to comply with Chapter 8. However, residential facilities must also comply with the requirements of this document. For example: Section 206.5.4 requires all doors and doorways providing user passage in residential dwelling units providing mobility features to comply with Section 404; Section 206.7.6 permits platform lifts to be used to connect levels within residential dwelling units providing mobility features; Section 208 provides general scoping for accessible parking and Section 208.2.3.1 specifies the required number of accessible parking spaces for each residential dwelling unit providing mobility features; Section 228.2 requires mail boxes to be within reach ranges when they serve residential dwelling units providing mobility features; play areas are addressed in Section 240; and swimming pools are addressed in Section 242. There are special provisions applicable to facilities containing residential dwelling units at: Exception 3 to 202.3; Exception to 202.4; 203.8; and Exception 4 to 206.2.3.

233.2 Residential Dwelling Units Provided by Entities Subject to HUD Section 504 Regulations. Where *facilities* with *residential dwelling units* are provided by entities subject to regulations issued by the Department of Housing and Urban Development (HUD) under Section 504 of the Rehabilitation Act

of 1973, as amended, such entities shall provide *residential dwelling units* with mobility features complying with 809.2 through 809.4 in a number required by the applicable HUD regulations. *Residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 shall be on an *accessible* route as required by 206. In addition, such entities shall provide *residential dwelling units* with communication features complying with 809.5 in a number required by the applicable HUD regulations. Entities subject to 233.2 shall not be required to comply with 233.3.

Advisory 233.2 Residential Dwelling Units Provided by Entities Subject to HUD Section 504 Regulations. Section 233.2 requires that entities subject to HUD's regulations implementing Section 504 of the Rehabilitation Act of 1973, as amended, provide residential dwelling units containing mobility features and residential dwelling units containing communication features complying with these regulations in a number specified in HUD's Section 504 regulations. Further, the residential dwelling units provided must be dispersed according to HUD's Section 504 criteria. In addition, Section 233.2 defers to HUD the specification of criteria by which the technical requirements of this document will apply to alterations of existing facilities subject to HUD's Section 504 regulations.

233.3 Residential Dwelling Units Provided by Entities Not Subject to HUD Section 504 Regulations. *Facilities* with *residential dwelling units* provided by entities not subject to regulations issued by the Department of Housing and Urban Development (HUD) under Section 504 of the Rehabilitation Act of 1973, as amended, shall comply with 233.3.

233.3.1 Minimum Number: New Construction. Newly constructed *facilities* with *residential dwelling units* shall comply with 233.3.1.

EXCEPTION: Where *facilities* contain 15 or fewer *residential dwelling units*, the requirements of 233.3.1.1 and 233.3.1.2 shall apply to the total number of *residential dwelling units* that are constructed under a single contract, or are developed as a whole, whether or not located on a common *site*.

233.3.1.1 Residential Dwelling Units with Mobility Features. In *facilities* with *residential dwelling units*, at least 5 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide mobility features complying with 809.2 through 809.4 and shall be on an *accessible* route as required by 206.

233.3.1.2 Residential Dwelling Units with Communication Features. In *facilities* with *residential dwelling units*, at least 2 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide communication features complying with 809.5.

233.3.2 Residential Dwelling Units for Sale. *Residential dwelling units* offered for sale shall provide *accessible* features to the extent required by regulations issued by Federal agencies under the Americans with Disabilities Act or Section 504 of the Rehabilitation Act of 1973, as amended.

Advisory 233.3.2 Residential Dwelling Units for Sale. A public entity that conducts a program to build housing for purchase by individual home buyers must provide access according to the requirements of the ADA regulations and a program receiving Federal financial assistance must comply with the applicable Section 504 regulation.

233.3.3 Additions. Where an *addition* to an existing *building* results in an increase in the number of *residential dwelling units,* the requirements of 233.3.1 shall apply only to the *residential dwelling units* that are *added* until the total number of *residential dwelling units* complies with the minimum number required by 233.3.1. *Residential dwelling units* required to comply with 233.3.1.1 shall be on an *accessible* route as required by 206.

233.3.4 Alterations. *Alterations* shall comply with 233.3.4.

EXCEPTION: Where compliance with 809.2, 809.3, or 809.4 is *technically infeasible*, or where it is *technically infeasible* to provide an *accessible* route to a *residential dwelling unit*, the entity shall be permitted to *alter* or construct a comparable *residential dwelling unit* to comply with 809.2 through 809.4 provided that the minimum number of *residential dwelling units* required by 233.3.1.1 and 233.3.1.2, as applicable, is satisfied.

Advisory 233.3.4 Alterations Exception. A substituted dwelling unit must be comparable to the dwelling unit that is not made accessible. Factors to be considered in comparing one dwelling unit to another should include the number of bedrooms; amenities provided within the dwelling unit; types of common spaces provided within the facility; and location with respect to community resources and services, such as public transportation and civic, recreational, and mercantile facilities.

233.3.4.1 Alterations to Vacated Buildings. Where a *building* is vacated for the purposes of *alteration*, and the *altered building* contains more than 15 *residential dwelling units*, at least 5 percent of the *residential dwelling units* shall comply with 809.2 through 809.4 and shall be on an *accessible* route as required by 206. In addition, at least 2 percent of the *residential dwelling units* shall comply with 809.5.

Advisory 233.3.4.1 Alterations to Vacated Buildings. This provision is intended to apply where a building is vacated with the intent to alter the building. Buildings that are vacated solely for pest control or asbestos removal are not subject to the requirements to provide residential dwelling units with mobility features or communication features.

233.3.4.2 Alterations to Individual Residential Dwelling Units. In individual *residential dwelling units*, where a bathroom or a kitchen is substantially *altered*, and at least one other room is *altered*, the requirements of 233.3.1 shall apply to the *altered residential dwelling units* until the total number of *residential dwelling units* complies with the minimum number required by 233.3.1.1 and 233.3.1.2. *Residential dwelling units* required to comply with 233.3.1.1 shall be on an *accessible* route as required by 206.

EXCEPTION: Where *facilities* contain 15 or fewer r*esidential dwelling units*, the requirements of 233.3.1.1 and 233.3.1.2 shall apply to the total number of *residential dwelling units* that are *altered* under a single contract, or are developed as a whole, whether or not located on a common *site.*

Advisory 233.3.4.2 Alterations to Individual Residential Dwelling Units. Section 233.3.4.2 uses the terms "substantially altered" and "altered." A substantial alteration to a kitchen or bathroom includes, but is not limited to, alterations that are changes to or rearrangements in the plan configuration, or replacement of cabinetry. Substantial alterations do not include normal maintenance or appliance and fixture replacement, unless such maintenance or replacement requires changes to or rearrangements in the plan configuration, or replacement of cabinetry. The term "alteration" is defined both in Section 106 of these requirements and in the Department of Justice ADA regulations.

233.3.5 Dispersion. *Residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 and *residential dwelling units* required to provide communication features complying with 809.5 shall be dispersed among the various types of *residential dwelling units* in the *facility* and shall provide choices of *residential dwelling units* comparable to, and integrated with, those available to other residents.

EXCEPTION: Where multi-*story residential dwelling units* are one of the types of *residential dwelling units* provided, one-*story residential dwelling units* shall be permitted as a substitute for multi-*story residential dwelling units* where equivalent *spaces* and amenities are provided in the one-*story residential dwelling unit.*

234 Amusement Rides

234.1 General. A*musement rides* shall comply with 234.

EXCEPTION: Mobile or portable *amusement rides* shall not be required to comply with 234.

Advisory 234.1 General. These requirements apply generally to newly designed and constructed amusement rides and attractions. A custom designed and constructed ride is new upon its first use, which is the first time amusement park patrons take the ride. With respect to amusement rides purchased from other entities, new refers to the first permanent installation of the ride, whether it is used off the shelf or modified before it is installed. Where amusement rides are moved after several seasons to another area of the park or to another park, the ride would not be considered newly designed or newly constructed.

Some amusement rides and attractions that have unique designs and features are not addressed by these requirements. In those situations, these requirements are to be applied to the extent possible. An example of an amusement ride not specifically addressed by these requirements includes "virtual reality" rides where the device does not move through a fixed course within a defined area. An accessible route must be provided to these rides. Where an attraction or ride has unique features for which there are no applicable scoping provisions, then a reasonable number, but at least one, of the features must be located on an accessible route. Where there are appropriate technical provisions, they must be applied to the elements that are covered by the scoping provisions.

Advisory 234.1 General Exception. Mobile or temporary rides are those set up for short periods of time such as traveling carnivals, State and county fairs, and festivals. The amusement rides that are covered by 234.1 are ones that are not regularly assembled and disassembled.

234.2 Load and Unload Areas. Load and unload areas serving *amusement rides* shall comply with 1002.3.

234.3 Minimum Number. *Amusement rides* shall provide at least one *wheelchair space* complying with 1002.4, or at least one *amusement ride seat* designed for transfer complying with 1002.5, or at least one *transfer device* complying with 1002.6.

EXCEPTIONS: 1. *Amusement rides* that are controlled or operated by the rider shall not be required to comply with 234.3.

2. *Amusement rides* designed primarily for children, where children are assisted on and off the ride by an adult, shall not be required to comply with 234.3.

3. *Amusement rides* that do not provide *amusement ride seats* shall not be required to comply with 234.3.

Advisory 234.3 Minimum Number Exceptions 1 through 3. Amusement rides controlled or operated by the rider, designed for children, or rides without ride seats are not required to comply with 234.3. These rides are not exempt from the other provisions in 234 requiring an accessible route to the load and unload areas and to the ride. The exception does not apply to those rides where patrons may cause the ride to make incidental movements, but where the patron otherwise has no control over the ride.

Advisory 234.3 Minimum Number Exception 2. The exception is limited to those rides designed "primarily" for children, where children are assisted on and off the ride by an adult. This exception is limited to those rides designed for children and not for the occasional adult user. An accessible route to and turning space in the load and unload area will provide access for adults and family members assisting children on and off these rides.

234.4 Existing Amusement Rides. Where existing *amusement rides* are *altered*, the *alteration* shall comply with 234.4.

Advisory 234.4 Existing Amusement Rides. Routine maintenance, painting, and changing of theme boards are examples of activities that do not constitute an alteration subject to this section.

234.4.1 Load and Unload Areas. Where load and unload areas serving existing *amusement rides* are newly designed and constructed, the load and unload areas shall comply with 1002.3.

234.4.2 Minimum Number. Where the structural or operational characteristics of an *amusement ride* are *altered* to the extent that the *amusement ride*'s performance differs from that specified by the manufacturer or the original design, the *amusement ride* shall comply with 234.3.

235 Recreational Boating Facilities

235.1 General. Recreational boating *facilities* shall comply with 235.

235.2 Boat Slips. *Boat slips* complying with 1003.3.1 shall be provided in accordance with Table 235.2. Where the number of *boat slips* is not identified, each 40 feet (12 m) of *boat slip* edge provided along the perimeter of the pier shall be counted as one *boat slip* for the purpose of this section.

Table 235.2 Boat Slips

Total Number of Boat Slips Provided in Facility	Minimum Number of Required Accessible Boat Slips
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for every 100, or fraction thereof, over 1000

Advisory 235.2 Boat Slips. The requirement for boat slips also applies to piers where boat slips are not demarcated. For example, a single pier 25 feet (7620 mm) long and 5 feet (1525 mm) wide (the minimum width specified by Section 1003.3) allows boats to moor on three sides. Because the number of boat slips is not demarcated, the total length of boat slip edge (55 feet, 17 m) must be used to determine the number of boat slips provided (two). This number is based on the specification in Section 235.2 that each 40 feet (12 m) of boat slip edge, or fraction thereof, counts as one boat slip. In this example, Table 235.2 would require one boat slip to be accessible.

235.2.1 Dispersion. *Boat slips* complying with 1003.3.1 shall be dispersed throughout the various types of *boat slips* provided. Where the minimum number of *boat slips* required to comply with 1003.3.1 has been met, no further dispersion shall be required.

Advisory 235.2.1 Dispersion. Types of boat slips are based on the size of the boat slips; whether single berths or double berths, shallow water or deep water, transient or longer-term lease, covered or uncovered; and whether slips are equipped with features such as telephone, water, electricity or cable connections. The term "boat slip" is intended to cover any pier area other than launch ramp boarding piers where recreational boats are moored for purposes of berthing, embarking, or disembarking. For example, a fuel pier may contain boat slips, and this type of short term slip would be included in determining compliance with 235.2.

235.3 Boarding Piers at Boat Launch Ramps. Where *boarding piers* are provided at *boat launch ramps*, at least 5 percent, but no fewer than one, of the *boarding piers* shall comply with 1003.3.2.

236 Exercise Machines and Equipment

236.1 General. At least one of each type of exercise machine and equipment shall comply with 1004.

Advisory 236.1 General. Most strength training equipment and machines are considered different types. Where operators provide a biceps curl machine and cable-cross-over machine, both machines are required to meet the provisions in this section, even though an individual may be able to work on their biceps through both types of equipment.

Similarly, there are many types of cardiovascular exercise machines, such as stationary bicycles, rowing machines, stair climbers, and treadmills. Each machine provides a cardiovascular exercise and is considered a different type for purposes of these requirements.

237 Fishing Piers and Platforms

237.1 General. Fishing piers and platforms shall comply with 1005.

238 Golf Facilities

238.1 General. Golf *facilities* shall comply with 238.

238.2 Golf Courses. Golf courses shall comply with 238.2.

238.2.1 Teeing Grounds. Where one *teeing ground* is provided for a hole, the *teeing ground* shall be designed and constructed so that a golf car can enter and exit the *teeing ground*. Where two *teeing grounds* are provided for a hole, the forward *teeing ground* shall be designed and constructed so that a golf car can enter and exit the *teeing ground*. Where three or more *teeing grounds* are provided for a hole, at least two *teeing grounds*, including the forward *teeing ground*, shall be designed and constructed so that a golf car can enter and exit each *teeing ground*.

EXCEPTION: In existing golf courses, the forward *teeing ground* shall not be required to be one of the *teeing grounds* on a hole designed and constructed so that a golf car can enter and exit the *teeing ground* where compliance is not feasible due to terrain.

238.2.2 Putting Greens. Putting greens shall be designed and constructed so that a golf car can enter and exit the putting green.

238.2.3 Weather Shelters. Where provided, weather shelters shall be designed and constructed so that a golf car can enter and exit the weather shelter and shall comply with 1006.4.

238.3 Practice Putting Greens, Practice Teeing Grounds, and Teeing Stations at Driving Ranges. At least 5 percent, but no fewer than one, of practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges shall be designed and constructed so that a golf car can enter and exit the practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges.

239 Miniature Golf Facilities

239.1 General. Miniature golf *facilities* shall comply with 239.

239.2 Minimum Number. At least 50 percent of holes on miniature golf courses shall comply with 1007.3.

> **Advisory 239.2 Minimum Number.** Where possible, providing access to all holes on a miniature golf course is recommended. If a course is designed with the minimum 50 percent accessible holes, designers or operators are encouraged to select holes which provide for an equivalent experience to the maximum extent possible.

239.3 Miniature Golf Course Configuration. Miniature golf courses shall be configured so that the holes complying with 1007.3 are consecutive. Miniature golf courses shall provide an *accessible* route from the last hole complying with 1007.3 to the course *entrance* or exit without requiring travel through any other holes on the course.

EXCEPTION: One break in the sequence of consecutive holes shall be permitted provided that the last hole on the miniature golf course is the last hole in the sequence.

> **Advisory 239.3 Miniature Golf Course Configuration.** Where only the minimum 50 percent of the holes are accessible, an accessible route from the last accessible hole to the course exit or entrance must not require travel back through other holes. In some cases, this may require an additional accessible route. Other options include increasing the number of accessible holes in a way that limits the distance needed to connect the last accessible hole with the course exit or entrance.

240 Play Areas

240.1 General. *Play areas* for children ages 2 and over shall comply with 240. Where separate *play areas* are provided within a *site* for specific age groups, each *play area* shall comply with 240.

EXCEPTIONS: 1. *Play areas* located in family child care *facilities* where the proprietor actually resides shall not be required to comply with 240.

2. In existing *play areas*, where *play components* are relocated for the purposes of creating safe *use zones* and the ground surface is not *altered* or extended for more than one *use zone*, the *play area* shall not be required to comply with 240.

3. *Amusement attractions* shall not be required to comply with 240.

4. Where *play components* are *altered* and the ground surface is not *altered*, the ground surface shall not be required to comply with 1008.2.6 unless required by 202.4.

Advisory 240.1 General. Play areas may be located on exterior sites or within a building. Where separate play areas are provided within a site for children in specified age groups (e.g., preschool (ages 2 to 5) and school age (ages 5 to 12)), each play area must comply with this section. Where play areas are provided for the same age group on a site but are geographically separated (e.g., one is located next to a picnic area and another is located next to a softball field), they are considered separate play areas and each play area must comply with this section.

240.1.1 Additions. Where *play areas* are designed and constructed in phases, the requirements of 240 shall apply to each successive *addition* so that when the *addition* is completed, the entire *play area* complies with all the applicable requirements of 240.

Advisory 240.1.1 Additions. These requirements are to be applied so that when each successive addition is completed, the entire play area complies with all applicable provisions. For example, a play area is built in two phases. In the first phase, there are 10 elevated play components and 10 elevated play components are added in the second phase for a total of 20 elevated play components in the play area. When the first phase was completed, at least 5 elevated play components, including at least 3 different types, were to be provided on an accessible route. When the second phase is completed, at least 10 elevated play components must be located on an accessible route, and at least 7 ground level play components, including 4 different types, must be provided on an accessible route. At the time the second phase is complete, ramps must be used to connect at least 5 of the elevated play components and transfer systems are permitted to be used to connect the rest of the elevated play components required to be located on an accessible route.

240.2 Play Components. Where provided, *play components* shall comply with 240.2.

240.2.1 Ground Level Play Components. *Ground level play components* shall be provided in the number and types required by 240.2.1. *Ground level play components* that are provided to comply with 240.2.1.1 shall be permitted to satisfy the additional number required by 240.2.1.2 if the minimum required types of *play components* are satisfied. Where two or more required *ground level play components* are provided, they shall be dispersed throughout the *play area* and integrated with other *play components*.

Advisory 240.2.1 Ground Level Play Components. Examples of ground level play components may include spring rockers, swings, diggers, and stand-alone slides. When distinguishing between the different types of ground level play components, consider the general experience provided by the play component. Examples of different types of experiences include, but are not limited to, rocking, swinging, climbing, spinning, and sliding.

Advisory 240.2.1 Ground Level Play Components (Continued). A spiral slide may provide a slightly different experience from a straight slide, but sliding is the general experience and therefore a spiral slide is not considered a different type of play component from a straight slide.

Ground level play components accessed by children with disabilities must be integrated into the play area. Designers should consider the optimal layout of ground level play components accessed by children with disabilities to foster interaction and socialization among all children. Grouping all ground level play components accessed by children with disabilities in one location is not considered integrated.

Where a stand-alone slide is provided, an accessible route must connect the base of the stairs at the entry point to the exit point of the slide. A ramp or transfer system to the top of the slide is not required. Where a sand box is provided, an accessible route must connect to the border of the sand box. Accessibility to the sand box would be enhanced by providing a transfer system into the sand or by providing a raised sand table with knee clearance complying with 1008.4.3.

Ramps are preferred over transfer systems since not all children who use wheelchairs or other mobility devices may be able to use, or may choose not to use, transfer systems. Where ramps connect elevated play components, the maximum rise of any ramp run is limited to 12 inches (305 mm). Where possible, designers and operators are encouraged to provide ramps with a slope less than the 1:12 maximum. Berms or sculpted dirt may be used to provide elevation and may be part of an accessible route to composite play structures.

Platform lifts are permitted as a part of an accessible route. Because lifts must be independently operable, operators should carefully consider the appropriateness of their use in unsupervised settings.

240.2.1.1 Minimum Number and Types. Where *ground level play components* are provided, at least one of each type shall be on an *accessible* route and shall comply with 1008.4.

240.2.1.2 Additional Number and Types. Where *elevated play components* are provided, *ground level play components* shall be provided in accordance with Table 240.2.1.2 and shall comply with 1008.4.

EXCEPTION: If at least 50 percent of the *elevated play components* are connected by a *ramp* and at least 3 of the *elevated play components* connected by the *ramp* are different types of *play components*, the *play area* shall not be required to comply with 240.2.1.2.

Table 240.2.1.2 Number and Types of Ground Level Play Components Required to be on Accessible Routes

Number of Elevated Play Components Provided	Minimum Number of Ground Level Play Components Required to be on an Accessible Route	Minimum Number of Different Types of Ground Level Play Components Required to be on an Accessible Route
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
26 and over	8, plus 1 for each additional 3, or fraction thereof, over 25	5

Advisory 240.2.1.2 Additional Number and Types. Where a large play area includes two or more composite play structures designed for the same age group, the total number of elevated play components on all the composite play structures must be added to determine the additional number and types of ground level play components that must be provided on an accessible route.

240.2.2 Elevated Play Components. Where *elevated play components* are provided, at least 50 percent shall be on an *accessible* route and shall comply with 1008.4.

Advisory 240.2.2 Elevated Play Components. A double or triple slide that is part of a composite play structure is one elevated play component. For purposes of this section, ramps, transfer systems, steps, decks, and roofs are not considered elevated play components. Although socialization and pretend play can occur on these elements, they are not primarily intended for play.

Some play components that are attached to a composite play structure can be approached or exited at the ground level or above grade from a platform or deck. For example, a climber attached to a composite play structure can be approached or exited at the ground level or above grade from a platform or deck on a composite play structure.

Advisory 240.2.2 Elevated Play Components (Continued). Play components that are attached to a composite play structure and can be approached from a platform or deck (e.g., climbers and overhead play components) are considered elevated play components. These play components are not considered ground level play components and do not count toward the requirements in 240.2.1.2 regarding the number of ground level play components that must be located on an accessible route.

241 Saunas and Steam Rooms

241 General. Where provided, saunas and steam rooms shall comply with 612.

EXCEPTION: Where saunas or steam rooms are clustered at a single location, no more than 5 percent of the saunas and steam rooms, but no fewer than one, of each type in each cluster shall be required to comply with 612.

242 Swimming Pools, Wading Pools, and Spas

242.1 General. Swimming pools, wading pools, and spas shall comply with 242.

242.2 Swimming Pools. At least two *accessible* means of entry shall be provided for swimming pools. *Accessible* means of entry shall be swimming pool lifts complying with 1009.2; sloped entries complying with 1009.3; transfer walls complying with 1009.4; transfer systems complying with 1009.5; and pool stairs complying with 1009.6. At least one *accessible* means of entry provided shall comply with 1009.2 or 1009.3.

EXCEPTIONS: 1. Where a swimming pool has less than 300 linear feet (91 m) of swimming pool wall, no more than one *accessible* means of entry shall be required provided that the *accessible* means of entry is a swimming pool lift complying with 1009.2 or sloped entry complying with 1009.3.

2. Wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area shall not be required to provide more than one *accessible* means of entry provided that the *accessible* means of entry is a swimming pool lift complying with 1009.2, a sloped entry complying with 1009.3, or a transfer system complying with 1009.5.

3. *Catch pools* shall not be required to provide an *accessible* means of entry provided that the *catch pool* edge is on an *accessible* route.

Advisory 242.2 Swimming Pools. Where more than one means of access is provided into the water, it is recommended that the means be different. Providing different means of access will better serve the varying needs of people with disabilities in getting into and out of a swimming pool. It is also recommended that where two or more means of access are provided, they not be provided in the same location in the pool. Different locations will provide increased options for entry and exit, especially in larger pools.

Advisory 242.2 Swimming Pools Exception 1. Pool walls at diving areas and areas along pool walls where there is no pool entry because of landscaping or adjacent structures are to be counted when determining the number of accessible means of entry required.

242.3 Wading Pools. At least one *accessible* means of entry shall be provided for wading pools. Accessible means of entry shall comply with sloped entries complying with 1009.3.

242.4 Spas. At least one *accessible* means of entry shall be provided for spas. *Accessible* means of entry shall comply with swimming pool lifts complying with1009.2; transfer walls complying with 1009.4; or transfer systems complying with 1009.5.

EXCEPTION: Where spas are provided in a cluster, no more than 5 percent, but no fewer than one, spa in each cluster shall be required to comply with 242.4.

243 Shooting Facilities with Firing Positions

243.1 General. Where shooting *facilities* with firing positions are designed and constructed at a *site*, at least 5 percent, but no fewer than one, of each type of firing position shall comply with 1010.

Appendix C to Part 1191—
Architectural Barriers Act: Scoping

ABA CHAPTER 1: APPLICATION AND ADMINISTRATION

F101 Purpose

This document contains scoping and technical requirements for *accessibility* to *sites*, *facilities*, *buildings*, and *elements* by individuals with disabilities. The requirements are to be applied during the design, construction, *addition* to, *alteration,* and *lease* of *sites*, *facilities*, *buildings*, and *elements* to the extent required by regulations issued by Federal agencies under the Architectural Barriers Act of 1968 (ABA).

F102 Dimensions for Adults and Children

The technical requirements are based on adult dimensions and anthropometrics. In addition, this document includes technical requirements based on children's dimensions and anthropometrics for drinking fountains, water closets, toilet compartments, lavatories and sinks, dining surfaces, and work surfaces.

F103 Modifications and Waivers

The Architectural Barriers Act authorizes the Administrator of the General Services Administration, the Secretary of the Department of Housing and Urban Development, the Secretary of the Department of Defense, and the United States Postal Service to modify or waive the *accessibility* standards for *buildings* and *facilities* covered by the Architectural Barriers Act on a case-by-case basis, upon application made by the head of the department, agency, or instrumentality of the United States concerned. The General Services Administration, the Department of Housing and Urban Development, the Department of Defense, and the United States Postal Service may grant a modification or waiver only upon a determination that it is clearly necessary. Section 502(b)(1) of the Rehabilitation Act of 1973 authorizes the Access Board to ensure that modifications and waivers are based on findings of fact and are not inconsistent with the Architectural Barriers Act.

> **Advisory F103 Modifications and Waivers.** The provisions for modifications and waivers differ from the requirement issued under the Americans with Disabilities Act in that "equivalent facilitation" does not apply. There is a formal procedure for Federal agencies to request a waiver or modification of applicable standards under the Architectural Barriers Act.

F104 Conventions

F104.1 Dimensions. Dimensions that are not stated as "maximum" or "minimum" are absolute.

F104.1.1 Construction and Manufacturing Tolerances. All dimensions are subject to conventional industry tolerances except where the requirement is stated as a range with specific minimum and maximum end points.

Advisory F104.1.1 Construction and Manufacturing Tolerances. Conventional industry tolerances recognized by this provision include those for field conditions and those that may be a necessary consequence of a particular manufacturing process. Recognized tolerances are not intended to apply to design work.

It is good practice when specifying dimensions to avoid specifying a tolerance where dimensions are absolute. For example, if this document requires "1½ inches," avoid specifying "1½ inches plus or minus X inches."

Where the requirement states a specified range, such as in Section 609.4 where grab bars must be installed between 33 inches and 36 inches above the floor, the range provides an adequate tolerance and therefore no tolerance outside of the range at either end point is permitted.

Where a requirement is a minimum or a maximum dimension that does not have two specific minimum and maximum end points, tolerances may apply. Where an element is to be installed at the minimum or maximum permitted dimension, such as "15 inches minimum" or "5 pounds maximum", it would not be good practice to specify "5 pounds (plus X pounds) or 15 inches (minus X inches)." Rather, it would be good practice to specify a dimension less than the required maximum (or more than the required minimum) by the amount of the expected field or manufacturing tolerance and not to state any tolerance in conjunction with the specified dimension.

Specifying dimensions in design in the manner described above will better ensure that facilities and elements accomplish the level of accessibility intended by these requirements. It will also more often produce an end result of strict and literal compliance with the stated requirements and eliminate enforcement difficulties and issues that might otherwise arise. Information on specific tolerances may be available from industry or trade organizations, code groups and building officials, and published references.

F104.2 Calculation of Percentages. Where the required number of *elements* or *facilities* to be provided is determined by calculations of ratios or percentages and remainders or fractions result, the next greater whole number of such *elements* or *facilities* shall be provided. Where the determination of the required size or dimension of an *element* or *facility* involves ratios or percentages, rounding down for values less than one half shall be permitted.

F104.3 Figures. Unless specifically stated otherwise, figures are provided for informational purposes only.

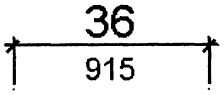
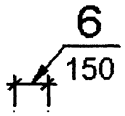
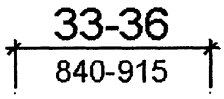
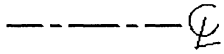
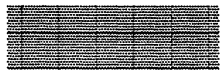
Convention	Description
	dimension showing English units (in inches unless otherwise specified) above the line and SI units (in millimeters unless otherwise specified) below the line
	dimension for small measurements
	dimension showing a range with minimum - maximum
min	minimum
max	maximum
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
	boundary of clear floor space or maneuvering clearance
	centerline
	a permitted element or its extension
	direction of travel or approach
	a wall, floor, ceiling or other element cut in section or plan
	a highlighted element in elevation or plan
	location zone of element, control or feature

Figure F104
Graphic Convention for Figures

F105 Referenced Standards

F105.1 General. The standards listed in F105.2 are incorporated by reference in this document and are part of the requirements to the prescribed extent of each such reference. The Director of the Federal Register has approved these standards for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the referenced standards may be inspected at the Architectural and Transportation Barriers Compliance Board, 1331 F Street, NW, Suite 1000, Washington, DC 20004; at the Department of Justice, Civil Rights Division, Disability Rights Section, 1425 New York Avenue, NW, Washington, DC; at the Department of Transportation, 400 Seventh Street, SW, Room 10424, Washington DC; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

F105.2 Referenced Standards. The specific edition of the standards listed below are referenced in this document. Where differences occur between this document and the referenced standards, this document applies.

F105.2.1 ANSI/BHMA. Copies of the referenced standards may be obtained from the Builders Hardware Manufacturers Association, 355 Lexington Avenue, 17th floor, New York, NY 10017 (http://www.buildershardware.com).

ANSI/BHMA A156.10-1999 American National Standard for Power Operated Pedestrian Doors (see 404.3).

ANSI/BHMA A156.19-1997 American National Standard for Power Assist and Low Energy Power Operated Doors (see 404.3, 408.3.2.1, and 409.3.1).

ANSI/BHMA A156.19-2002 American National Standard for Power Assist and Low Energy Power Operated Doors (see 404.3, 408.3.2.1, and 409.3.1).

Advisory F105.2.1 ANSI/BHMA. ANSI/BHMA A156.10-1999 applies to power operated doors for pedestrian use which open automatically when approached by pedestrians. Included are provisions intended to reduce the chance of user injury or entrapment.

ANSI/BHMA A156.19-1997 and A156.19-2002 applies to power assist doors, low energy power operated doors or low energy power open doors for pedestrian use not provided for in ANSI/BHMA A156.10 for Power Operated Pedestrian Doors. Included are provisions intended to reduce the chance of user injury or entrapment.

F105.2.2 ASME. Copies of the referenced standards may be obtained from the American Society of Mechanical Engineers, Three Park Avenue, New York, New York 10016 (http://www.asme.org).

ASME A17.1- 2000 Safety Code for Elevators and Escalators, including ASME A17.1a-2002 Addenda and ASME A17.1b-2003 Addenda (see 407.1, 408.1, 409.1, and 810.9).

ASME A18.1-1999 Safety Standard for Platform Lifts and Stairway Chairlifts, including ASME A18.1a-2001 Addenda and ASME A18.1b-2001 Addenda (see 410.1).

ASME A18.1-2003 Safety Standard for Platform Lifts and Stairway Chairlifts, (see 410.1).

Advisory F105.2.2 ASME. ASME A17.1-2000 is used by local jurisdictions throughout the United States for the design, construction, installation, operation, inspection, testing, maintenance, alteration, and repair of elevators and escalators. The majority of the requirements apply to the operational machinery not seen or used by elevator passengers. ASME A17.1 requires a two-way means of emergency communications in passenger elevators. This means of communication must connect with emergency or authorized personnel and not an automated answering system. The communication system must be push button activated. The activation button must be permanently identified with the word "HELP." A visual indication acknowledging the establishment of a communications link to authorized personnel must be provided. The visual indication must remain on until the call is terminated by authorized personnel. The building location, the elevator car number, and the need for assistance must be provided to authorized personnel answering the emergency call. The use of a handset by the communications system is prohibited. Only the authorized personnel answering the call can terminate the call. Operating instructions for the communications system must be provided in the elevator car.

The provisions for escalators require that at least two flat steps be provided at the entrance and exit of every escalator and that steps on escalators be demarcated by yellow lines 2 inches wide maximum along the back and sides of steps.

ASME A18.1-1999 and ASME A18.1-2003 address the design, construction, installation, operation, inspection, testing, maintenance and repair of lifts that are intended for transportation of persons with disabilities. Lifts are classified as: vertical platform lifts, inclined platform lifts, inclined stairway chairlifts, private residence vertical platform lifts, private residence inclined platform lifts, and private residence inclined stairway chairlifts.

This document does not permit the use of inclined stairway chairlifts which do not provide platforms because such lifts require the user to transfer to a seat.

ASME A18.1 contains requirements for runways, which are the spaces in which platforms or seats move. The standard includes additional provisions for runway enclosures, electrical equipment and wiring, structural support, headroom clearance (which is 80 inches minimum), lower level access ramps and pits. The enclosure walls not used for entry or exit are required to have a grab bar the full length of the wall on platform lifts. Access ramps are required to meet requirements similar to those for ramps in Chapter 4 of this document.

Each of the lift types addressed in ASME A18.1 must meet requirements for capacity, load, speed, travel, operating devices, and control equipment. The maximum permitted height for operable parts is consistent with Section 308 of this document. The standard also addresses attendant operation. However, Section 410.1 of this document does not permit attendant operation.

F105.2.3 ASTM. Copies of the referenced standards may be obtained from the American Society for Testing and Materials, 100 Bar Harbor Drive, West Conshohocken, Pennsylvania 19428 (http://www.astm.org).

ASTM F 1292-99 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment (see 1008.2.6.2).

ASTM F 1292-04 Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment (see 1008.2.6.2).

ASTM F 1487-01 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use (see F106.5).

ASTM F 1951-99 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment (see 1008.2.6.1).

Advisory F105.2.3 ASTM. ASTM F 1292-99 and ASTM F 1292-04 establish a uniform means to measure and compare characteristics of surfacing materials to determine whether materials provide a safe surface under and around playground equipment. These standards are referenced in the play areas requirements of this document when an accessible surface is required inside a play area use zone where a fall attenuating surface is also required. The standards cover the minimum impact attenuation requirements, when tested in accordance with Test Method F 355, for surface systems to be used under and around any piece of playground equipment from which a person may fall.

ASTM F 1487-01 establishes a nationally recognized safety standard for public playground equipment to address injuries identified by the U.S. Consumer Product Safety Commission. It defines the use zone, which is the ground area beneath and immediately adjacent to a play structure or play equipment designed for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting a play structure or equipment. The play areas requirements in this document reference the ASTM F 1487 standard when defining accessible routes that overlap use zones requiring fall attenuating surfaces. If the use zone of a playground is not entirely surfaced with an accessible material, at least one accessible route within the use zone must be provided from the perimeter to all accessible play structures or components within the playground.

ASTM F 1951-99 establishes a uniform means to measure the characteristics of surface systems in order to provide performance specifications to select materials for use as an accessible surface under and around playground equipment. Surface materials that comply with this standard and are located in the use zone must also comply with ASTM F 1292. The test methods in this standard address access for children and adults who may traverse the surfacing to aid children who are playing. When a surface is tested it must have an average work per foot value for straight propulsion and for turning less than the average work per foot values for straight propulsion and for turning, respectively, on a hard, smooth surface with a grade of 7% (1:14).

F105.2.4 ICC/IBC. Copies of the referenced standard may be obtained from the International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, Virginia 22041 (www.iccsafe.org).

International Building Code, 2000 Edition (see F207.1, F207.2, F216.4.2, F216.4.3, and 1005.2.1).

International Building Code, 2001 Supplement (see F207.1 and F207.2).

International Building Code, 2003 Edition (see F207.1, F207.2, F216.4.2, F216.4.3, and 1005.2.1).

Advisory F105.2.4 ICC/IBC. International Building Code (IBC)-2000 (including 2001 Supplement to the International Codes) and IBC-2003 are referenced for means of egress, areas of refuge, and railings provided on fishing piers and platforms. At least one accessible means of egress is required for every accessible space and at least two accessible means of egress are required where more than one means of egress is required. The technical criteria for accessible means of egress allow the use of exit stairways and evacuation elevators when provided in conjunction with horizontal exits or areas of refuge. While typical elevators are not designed to be used during an emergency evacuation, evacuation elevators are designed with standby power and other features according to the elevator safety standard and can be used for the evacuation of individuals with disabilities. The IBC also provides requirements for areas of refuge, which are fire-rated spaces on levels above or below the exit discharge levels where people unable to use stairs can go to register a call for assistance and wait for evacuation.

The recreation facilities requirements of this document references two sections in the IBC for fishing piers and platforms. An exception addresses the height of the railings, guards, or handrails where a fishing pier or platform is required to include a guard, railing, or handrail higher than 34 inches (865 mm) above the ground or deck surface.

F105.2.5 NFPA. Copies of the referenced standards may be obtained from the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02169-7471, (http://www.nfpa.org).

NFPA 72 National Fire Alarm Code, 1999 Edition (see 702.1 and 809.5.2).

NFPA 72 National Fire Alarm Code, 2002 Edition (see 702.1 and 809.5.2).

Advisory F105.2.5 NFPA. NFPA 72-1999 and NFPA 72-2002 address the application, installation, performance, and maintenance of protective signaling systems and their components. The NFPA 72 incorporates Underwriters Laboratory (UL) 1971 by reference. The standard specifies the characteristics of audible alarms, such as placement and sound levels. However, Section 702 of these requirements limits the volume of an audible alarm to 110 dBA, rather than the maximum 120 dBA permitted by NFPA 72-1999.

NFPA 72 specifies characteristics for visible alarms, such as flash frequency, color, intensity, placement, and synchronization. However, Section 702 of this document requires that visual alarm appliances be permanently installed. UL 1971 specifies intensity dispersion requirements for visible alarms. In particular, NFPA 72 requires visible alarms to have a light source that is clear or white and has polar dispersion complying with UL 1971.

F106 Definitions

F106.1 General. For the purpose of this document, the terms defined in F106.5 have the indicated meaning.

> **Advisory F106.1 General.** Terms defined in Section 106.5 are italicized in the text of this document.

F106.2 Terms Defined in Referenced Standard. Terms not defined in F106.5 or in regulations issued by the Administrator of the General Services Administration, the Secretary of Defense, the Secretary of Housing and Urban Development, or the United States Postal Service to implement the Architectural Barriers Act but specifically defined in a referenced standard, shall have the specified meaning from the referenced standard unless otherwise stated

F106.3 Undefined Terms. The meaning of terms not specifically defined in F106.5 or in regulations issued by the Administrator of the General Services Administration, the Secretary of Defense, the Secretary of Housing and Urban Development, or the United States Postal Service

to implement the Architectural Barriers Act or in referenced standards shall be as defined by collegiate dictionaries in the sense that the context implies.

F106.4 Interchangeability. Words, terms and phrases used in the singular include the plural and those used in the plural include the singular.

F106.5 Defined Terms.

Accessible. A *site*, *building*, *facility*, or portion thereof that complies with this part.

Accessible Means of Egress. A continuous and unobstructed way of egress travel from any point in a *building* or *facility* that provides an *accessible* route to an area of refuge, a horizontal exit, or a *public way*.

Addition. An expansion, extension, or increase in the gross floor area or height of a *building* or *facility*.

Administrative Authority. A governmental agency that adopts or enforces regulations and guidelines for the design, construction, or *alteration* of *buildings* and *facilities*.

Alteration. A change to a *building* or *facility* that affects or could affect the usability of the *building* or *facility* or portion thereof. *Alterations* include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, resurfacing of *circulation paths* or *vehicular ways*, changes or rearrangement of the structural parts or *elements*, and changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, reroofing, painting or wallpapering, or changes to mechanical and electrical systems are not *alterations* unless they affect the usability of the *building* or *facility*.

Amusement Attraction. Any *facility*, or portion of a *facility*, located within an amusement park or theme park which provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats.

Amusement Ride. A system that moves persons through a fixed course within a defined area for the purpose of amusement.

Amusement Ride Seat. A seat that is built-in or mechanically fastened to an *amusement ride* intended to be occupied by one or more passengers.

Area of Sport Activity. That portion of a room or *space* where the play or practice of a sport occurs.

Assembly Area. A *building* or *facility*, or portion thereof, used for the purpose of entertainment, worship, educational or civic gatherings, or similar purposes. For the purposes of these requirements, *assembly areas* include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers.

Assistive Listening System (ALS). An amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical *space* between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment.

Boarding Pier. A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking.

Boat Launch Ramp. A sloped surface designed for launching and retrieving trailered boats and other water craft to and from a body of water.

Boat Slip. That portion of a pier, main pier, finger pier, or float where a boat is moored for the purpose of berthing, embarking, or disembarking.

Building. Any structure used or intended for supporting or sheltering any use or occupancy.

Catch Pool. A pool or designated section of a pool used as a terminus for water slide flumes.

Characters. Letters, numbers, punctuation marks and typographic symbols.

Children's Use. Describes *spaces* and *elements* specifically designed for use primarily by people 12 years old and younger.

Circulation Path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, *walks*, hallways, courtyards, elevators, platform lifts, *ramps*, stairways, and landings.

Closed-Circuit Telephone. A telephone with a dedicated line such as a house phone, courtesy phone or phone that must be used to gain entry to a *facility*.

Common Use. Interior or exterior *circulation paths*, rooms, *spaces*, or *elements* that are not for *public use* and are made available for the shared use of two or more people.

Cross Slope. The slope that is perpendicular to the direction of travel (see *running slope*).

Curb Ramp. A short *ramp* cutting through a curb or built up to it.

Detectable Warning. A standardized surface feature built in or applied to walking surfaces or other *elements* to warn of hazards on a *circulation path*.

Element. An architectural or mechanical component of a *building*, *facility*, *space*, or *site*.

Elevated Play Component. A *play component* that is approached above or below grade and that is part of a composite play structure consisting of two or more *play components* attached or functionally linked to create an integrated unit providing more than one play activity.

Employee Work Area. All or any portion of a *space* used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not *employee work areas*.

Entrance. Any access point to a *building* or portion of a *building* or *facility* used for the purpose of entering. An *entrance* includes the approach *walk*, the vertical access leading to the *entrance* platform, the *entrance* platform itself, vestibule if provided, the entry door or gate, and the hardware of the entry door or gate.

Facility. All or any portion of *buildings*, structures, *site* improvements, *elements*, and pedestrian routes or *vehicular ways* located on a *site*.

Gangway. A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. *Gangways* that connect to vessels are not addressed by this document.

Golf Car Passage. A continuous passage on which a motorized golf car can operate.

Ground Level Play Component. A *play component* that is approached and exited at the ground level.

Joint Use. Interior or exterior rooms, *spaces*, or *elements* that are common *space* available for use by all occupants of the *building*. *Joint use* does not include mechanical or custodial rooms, or areas occupied by other tenants.

Lease. Any agreement which establishes the relationship of landlord and tenant.

Mail Boxes. Receptacles for the receipt of documents, packages, or other deliverable matter. *Mail boxes* include, but are not limited to, post office boxes and receptacles provided by commercial mail-receiving agencies, apartment *facilities*, or schools.

Marked Crossing. A crosswalk or other identified path intended for pedestrian use in crossing a *vehicular way*.

Mezzanine. An intermediate level or levels between the floor and ceiling of any *story* with an aggregate floor area of not more than one-third of the area of the room or *space* in which the level or levels are located. *Mezzanines* have sufficient elevation that *space* for human occupancy can be provided on the floor below.

Military Installation. A base, camp, post, station, yard, center, homeport *facility* for any ship, or other activity or operation under the jurisdiction of the Department of Defense, including any *leased facility. Military installation* does not include any *facility* used primarily for civil works, rivers and harbors projects, or flood control projects. Multiple, contiguous, or collocated bases, camps, posts, stations, yards, centers, or home ports shall not be considered as constituting a single *military installation.*

Occupant Load. The number of persons for which the means of egress of a *building* or portion of a *building* is designed.

Operable Part. A component of an *element* used to insert or withdraw objects, or to activate, deactivate, or adjust the *element.*

Pictogram. A pictorial symbol that represents activities, *facilities*, or concepts.

Play Area. A portion of a *site* containing *play components* designed and constructed for children.

Play Component. An *element* intended to generate specific opportunities for play, socialization, or learning. *Play components* are manufactured or natural; and are stand-alone or part of a composite play structure.

Public Entrance. An *entrance* that is not a *service entrance* or a *restricted entrance.*

Public Use. Interior or exterior rooms, *spaces*, or *elements* that are made available to the public. *Public use* may be provided at a *building* or *facility* that is privately or publicly owned.

Public Way. Any street, alley or other parcel of land open to the outside air leading to a public street, which has been deeded, dedicated or otherwise permanently appropriated to the public for *public use,* and which has a clear width and height of not less than 10 feet (3050 mm).

Qualified Historic Building or Facility. A *building* or *facility* that is listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate State or local law.

Ramp. A walking surface that has a *running slope* steeper than 1:20.

Residential Dwelling Unit. A unit intended to be used as a residence, that is primarily long-term in nature. *Residential dwelling units* do not include *transient lodging*, inpatient medical care, licensed long-term care, and detention or correctional *facilities.*

Restricted Entrance. An *entrance* that is made available for *common use* on a controlled basis but not *public use* and that is not a *service entrance.*

Running Slope. The slope that is parallel to the direction of travel (see *cross slope*).

Self-Service Storage. *Building* or *facility* designed and used for the purpose of renting or *leasing* individual storage *spaces* to customers for the purpose of storing and removing personal property on a self-service basis.

Service Entrance. An *entrance* intended primarily for delivery of goods or services.

Site. A parcel of land bounded by a property line or a designated portion of a public right-of-way.

Soft Contained Play Structure. A play structure made up of one or more *play components* where the user enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting, or fabric.

Space. A definable area, such as a room, toilet room, hall, *assembly area*, *entrance*, storage room, alcove, courtyard, or lobby.

Story. That portion of a *building* or *facility* designed for human occupancy included between the upper surface of a floor and upper surface of the floor or roof next above. A *story* containing one or more *mezzanines* has more than one floor level.

Structural Frame. The columns and the girders, beams, and trusses having direct connections to the columns and all other members that are essential to the stability of the *building* or *facility* as a whole.

Tactile. An object that can be perceived using the sense of touch.

Technically Infeasible. With respect to an *alteration* of a *building* or a *facility*, something that has little likelihood of being accomplished because existing structural conditions would require removing or *altering* a load-bearing member that is an essential part of the *structural frame*; or because other existing physical or *site* constraints prohibit modification or *addition* of *elements*, *spaces*, or features that are in full and strict compliance with the minimum requirements.

Teeing Ground. In golf, the starting place for the hole to be played.

Transfer Device. Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an *amusement ride seat*.

Transient Lodging. A *building* or *facility* containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature. *Transient lodging* does not include *residential dwelling units* intended to be used as a residence, inpatient medical care *facilities*, licensed long-term care *facilities*, detention or correctional *facilities*, or *private buildings or facilities* that contain not more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.

Transition Plate. A sloping pedestrian walking surface located at the end(s) of a *gangway*.

TTY. An abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across the telephone network. *TTYs* may include, for example, devices known as TDDs (telecommunication display devices or

telecommunication devices for deaf persons) or computers with special modems. *TTYs* are also called text telephones.

Use Zone. The ground level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F 1487 (incorporated by reference, see "Referenced Standards" in Chapter 1) for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment.

Vehicular Way. A route provided for vehicular traffic, such as in a street, driveway, or parking *facility.*

Walk. An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts.

Wheelchair Space. *Space* for a single wheelchair and its occupant.

Work Area Equipment. Any machine, instrument, engine, motor, pump, conveyor, or other apparatus used to perform work. As used in this document, this term shall apply only to equipment that is permanently installed or built-in in *employee work areas* subject to the Americans with Disabilities Act of 1990 (ADA). *Work area equipment* does not include passenger elevators and other accessible means of vertical transportation.

ABA CHAPTER 2: SCOPING REQUIREMENTS

F201 Application

F201.1 Scope. All areas of newly designed and newly constructed *buildings* and *facilities* and *altered* or *leased* portions of existing *buildings* and *facilities* shall comply with these requirements.

> **Advisory F201.1 Scope.** The requirements are to be applied to all areas of a facility unless exempted, or where scoping limits the number of multiple elements required to be accessible. For example, not all medical care patient rooms are required to be accessible; those that are not required to be accessible are not required to comply with these requirements. However, common use and public use spaces such as recovery rooms, examination rooms, and cafeterias are not exempt from these requirements and must be accessible.

F201.2 Application Based on Building or Facility Use. Where a *site*, *building*, *facility*, room, or *space* contains more than one use, each portion shall comply with the applicable requirements for that use.

F201.3 Temporary and Permanent Structures. These requirements shall apply to temporary and permanent *buildings* and *facilities*.

> **Advisory F201.3 Temporary and Permanent Structures.** Temporary buildings or facilities covered by these requirements include, but are not limited to, reviewing stands, temporary classrooms, bleacher areas, stages, platforms and daises, fixed furniture systems, wall systems, and exhibit areas, temporary banking facilities, and temporary health screening facilities. Structures and equipment directly associated with the actual processes of construction are not required to be accessible as permitted in F203.3.

F202 Existing Buildings and Facilities

F202.1 General. *Additions* and *alterations* to existing *buildings* or *facilities*, including *leased buildings* or *facilities*, shall comply with F202.

F202.2 Additions. Each *addition* to an existing *building* or *facility* shall comply with the requirements for new construction.

F202.2.1 Accessible Route. At least one *accessible* route shall be provided within the *site* from *accessible* parking *spaces* and *accessible* passenger loading zones; public streets and sidewalks; and public transportation stops to an *accessible entrance* serving the *addition*. If the only *accessible entrances* serving the *addition* are provided in the existing *building* or *facility*, the *accessible* route shall connect at least one existing *entrance* to all *accessible spaces* and *elements* within the *addition*. In addition, *elements* and *spaces* specified in F202.2.2 through F202.2.5 shall be on an *accessible* route.

F202.2.2 Entrance. Where an *entrance* is not provided in an *addition*, at least one *entrance* in the existing *building* or *facility* shall comply with F206.4 and shall serve the *addition*.

F202.2.3 Toilet and Bathing Facilities. Where toilet *facilities* and bathing *facilities* are not provided in an *addition* but are provided in the existing *building* or *facility* to serve the *addition*, the toilet *facilities* and bathing *facilities* shall comply with F202.2.3.

EXCEPTION: In *alterations* to areas serving *additions* where it is *technically infeasible* to comply with 603, *altering* existing toilet or bathing rooms is not required where a single unisex toilet room or bathing room complying with F213.2.1 is provided to serve the *addition*.

F202.2.3.1 Existing Toilet Facility. Where existing toilet *facilities* are provided in the existing *building* or *facility*, at least one toilet *facility* for men and at least one toilet *facility* for women shall comply with F213.2 and F213.3 and shall serve the *addition*.

EXCEPTION: Where only one toilet *facility* is provided in the existing *building* or *facility*, one toilet *facility* shall comply with F213.2 and F213.3 and shall serve the *addition*.

F202.2.3.2 Existing Bathing Facility. Where existing bathing *facilities* are provided in the existing *building* or *facility*, at least one bathing *facility* for men and at least one bathing *facility* for women shall comply with F213.2 and F213.3 and shall serve the *addition*.

EXCEPTION: Where only one bathing *facility* is provided in the existing *building* or *facility*, one bathing *facility* shall comply with F213.2 and F213.3 and shall serve the *addition*.

F202.2.4 Public Telephone. Where a public telephone is not provided in an *addition* but is provided in the existing *building* or *facility* to serve the *addition*, at least one public telephone in the existing *building* or *facility* shall comply with F217.

F202.2.5 Drinking Fountain. Where a drinking fountain is not provided in an *addition* but is provided in the existing *building* or *facility* to serve the *addition*, at least one drinking fountain in the existing *building* or *facility* shall comply with 602.1 through 602.6.

F202.3 Alterations. Where existing *elements* or *spaces* are *altered*, each *altered element* or *space* shall comply with the applicable requirements of Chapter 2.

EXCEPTIONS: 1. Unless required by F202.4, where *elements* or *spaces* are *altered* and the *circulation path* to the *altered element* or *space* is not *altered*, an *accessible* route shall not be required.

2. In *alterations*, where compliance with applicable requirements is *technically infeasible*, the *alteration* shall comply with the requirements to the maximum extent feasible.

3. *Residential dwelling units* not required to be *accessible* in compliance with a standard issued pursuant to the Architectural Barriers Act or Section 504 of the Rehabilitation Act of 1973, as amended, shall not be required to comply with F202.3.

Advisory F202.3 Alterations. Although covered entities are permitted to limit the scope of an alteration to individual elements, the alteration of multiple elements within a room or space may provide a cost-effective opportunity to make the entire room or space accessible. Any elements or spaces of the building or facility that are required to comply with these requirements must be made accessible within the scope of the alteration, to the maximum extent feasible. If providing accessibility in compliance with these requirements for people with one type of disability (e.g., people who use wheelchairs) is not feasible, accessibility must still be provided in compliance with the requirements for people with other types of disabilities (e.g., people who have hearing impairments or who have vision impairments) to the extent that such accessibility is feasible.

F202.3.1 Prohibited Reduction in Access. An *alteration* that decreases or has the effect of decreasing the *accessibility* of a *building* or *facility* below the requirements for new construction at the time of the *alteration* is prohibited.

F202.3.2 Extent of Application. An *alteration* of an existing *element*, *space*, or area of a *building* or *facility* shall not impose a requirement for *accessibility* greater than required for new construction.

F202.4 Alterations Affecting Primary Function Areas. In addition to the requirements of F202.3, an *alteration* that affects or could affect the usability of or access to an area containing a primary function shall be made so as to ensure that, to the maximum extent feasible, the path of travel to the *altered* area, including the rest rooms, telephones, and drinking fountains serving the *altered* area, are readily *accessible* to and usable by individuals with disabilities, unless such *alterations* are disproportionate to the overall *alterations* in terms of cost and scope as determined under criteria established by the Administrator of the General Services Administration, the Secretary of Defense, the Secretary of Housing and Urban Development, or the United States Postal Service.

EXCEPTION: *Residential dwelling units* shall not be required to comply with F202.4.

Advisory F202.4 Alterations Affecting Primary Function Areas. An area of a building or facility containing a major activity for which the building or facility is intended is a primary function area. There can be multiple areas containing a primary function in a single building. Primary function areas are not limited to public use areas. For example, both a bank lobby and the bank's employee areas such as the teller areas and walk-in safe are primary function areas. Also, mixed use facilities may include numerous primary function areas for each use. Areas containing a primary function do not include: mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors, or restrooms.

F202.5 Alterations to Qualified Historic Buildings and Facilities. *Alterations* to a *qualified historic building* or *facility* shall comply with F202.3 and F202.4.

EXCEPTION: Where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the requirements for *accessible* routes, *entrances*, or toilet *facilities* would threaten or destroy the historic significance of the *building* or *facility*, the exceptions for *alterations* to *qualified historic buildings or facilities* for that *element* shall be permitted to apply.

Advisory F202.5 Alterations to Qualified Historic Buildings and Facilities Exception. Section 106 of the National Historic Preservation Act requires that a Federal agency with jurisdiction over a proposed Federal or federally assisted undertaking consider the effect of the action on buildings and facilities listed in or eligible for listing in the National Register of Historic Places prior to approving the expenditure of any Federal funds. The Advisory Council on Historic Preservation has established procedures for Federal agencies to meet this statutory responsibility. See 36 CFR Part 800. The procedures require Federal agencies to consult with the State Historic Preservation Officer, and provide for involvement by the Advisory Council on Historic Preservation in certain cases. There are exceptions for alterations to qualified historic buildings and facilities for accessible routes (F206.2.1 Exception 1 and F206.2.3 Exception 6); entrances (F206.4 Exception 2); and toilet facilities (F213.2 Exception 2). These exceptions apply only when the State Historic Preservation Officer or the Advisory Council on Historic Preservation agrees that compliance with requirements for the specific element would threaten or destroy the historic significance of the building or facility.

The AccessAbility Office at the National Endowment for the Arts (NEA) provides a variety of resources for museum operators and historic properties including: the Design for Accessibility Guide and the Disability Symbols. Contact NEA about these and other resources at (202) 682-5532 or www.arts.gov.

F202.6 Leases. *Buildings* or *facilities* for which new *leases* are negotiated by the Federal government after the effective date of the revised standards issued pursuant to the Architectural Barriers Act, including new *leases* for *buildings* or *facilities* previously occupied by the Federal government, shall comply with F202.6.

EXCEPTIONS: 1. *Buildings* or *facilities leased* for use by officials servicing disasters on a temporary, emergency basis shall not be required to comply with F202.6.

2. *Buildings* or *facilities leased* for 12 months or less shall not be required to comply with F202.6 provided that the *lease* may not be extended or renewed.

F202.6.1 Joint Use Areas. *Joint use* areas serving the *leased space* shall comply with F202.6.

EXCEPTION: *Alterations* and *additions* to *joint use* areas serving the *leased space* shall not be required to comply with F202.2, F202.3, and F202.5 provided that the *alterations* are not undertaken by or on behalf of the Federal government.

Advisory F202.6.1 Joint Use Areas Exception. When negotiating a lease, ensure that joint use areas are accessible. Inaccessible joint use areas may prevent access to and from leased space.

F202.6.2 Accessible Route. Primary function areas, as defined by Administrator of the General Services Administration, the Secretary of Defense, the Secretary of Housing and Urban Development, and the United States Postal Service, shall be served by at least one *accessible* route complying with F206. *Elements* and *spaces* required to be *accessible* by F202.6 shall be on an *accessible* route complying with F206.

EXCEPTION: Fire alarms required by F202.6.5.2 and *assistive listening systems* required by F202.6.5.5 shall not be required to be on an *accessible* route.

F202.6.3 Toilet and Bathing Facilities. Where provided, toilet *facilities* and bathing *facilities* shall comply with F202.6.3.

F202.6.3.1 Multiple Facilities. At least one toilet *facility* or bathing *facility* for each sex on each floor that has toilet *facilities* or bathing *facilities* shall comply with F213.2 and F213.3.

F202.6.3.2 Single Facilities. Where only one toilet or bathing *facility* is provided in a *building* or *facility* for each sex, either one unisex toilet or bathing *facility*, or one toilet or bathing *facility* for each sex, shall comply with F213.2 and F213.3.

F202.6.4 Parking. Parking shall comply with F208.

F202.6.5 Other Elements and Spaces. Where provided, the following *elements* and *spaces* shall comply with F202.6.5.

F202.6.5.1 Drinking Fountains. Drinking fountains shall comply with F211.

F202.6.5.2 Fire Alarms. Fire alarms shall comply with F215.
EXCEPTION: Fire alarms shall not be required to comply with 702 where existing power sources must be upgraded to meet the requirement.

F202.6.5.3 Public Telephones. Public telephones shall comply with F217.

F202.6.5.4 Dining Surfaces and Work Surfaces. Dining surfaces and work surfaces shall comply with F226.

F202.6.5.5 Assembly Areas. *Assistive listening systems* shall comply with F219 and assembly seating shall comply with F221.

F202.6.5.6 Sales and Service Counters. Sales and service counters shall comply with F227.

F202.6.5.7 Depositories, Vending Machines, Change Machines, and Mail Boxes. Depositories, vending machines, change machines, and *mail boxes* shall comply with F228.

F202.6.5.8 Residential Facilities. *Residential dwelling units* shall comply with F233.

F203 General Exceptions

F203.1 General. *Sites, buildings, facilities,* and *elements* are exempt from these requirements to the extent specified by F203.

F203.2 Existing Elements. *Elements* in compliance with an earlier standard issued pursuant to the Architectural Barriers Act or Section 504 of the Rehabilitation Act of 1973, as amended shall not be required to comply with these requirements unless *altered.*

Advisory F203.2 Existing Elements. The exception at F203.2 does not obviate or limit in any way a federal agency's obligation to provide reasonable accommodations pursuant to the Rehabilitation Act of 1973. Federal employees with disabilities are entitled to reasonable accommodations in the workplace. Such accommodations may include modifications to workstations or to other areas of the workplace, including the common areas such as toilet rooms, meeting rooms, or break rooms. Reasonable accommodations are always provided on a case-by-case basis and are specific to the unique needs of a person. As such, an accommodation may be consistent with, or depart from, the specific technical requirements of this, or any other, document.

In addition, the exception at F203.2 provides that compliance with an earlier standard issued under Section 504 of the Rehabilitation Act satisfies the requirements of the Architectural Barriers Act; the exception does not obviate or limit a Federal agency's authority to enforce requirements issued pursuant to Section 504 of the Rehabilitation Act, including requirements for making reasonable modifications to policies, practices, and procedures, or making structural changes to facilities in order to make a program or activity accessible to and usable by persons with disabilities.

F203.3 Construction Sites. Structures and *sites* directly associated with the actual processes of construction, including but not limited to, scaffolding, bridging, materials hoists, materials storage, and construction trailers shall not be required to comply with these requirements or to be on an *accessible* route. Portable toilet units provided for use exclusively by construction personnel on a construction *site* shall not be required to comply with F213 or to be on an *accessible* route.

F203.4 Raised Areas. Areas raised primarily for purposes of security, life safety, or fire safety, including but not limited to, observation or lookout galleries, prison guard towers, fire towers, or life guard stands shall not be required to comply with these requirements or to be on an *accessible* route.

F203.5 Limited Access Spaces. *Spaces* accessed only by ladders, catwalks, crawl *spaces*, or very narrow passageways shall not be required to comply with these requirements or to be on an *accessible* route.

F203.6 Machinery Spaces. *Spaces* frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment shall not be required to comply with these requirements or to be on an *accessible* route. Machinery *spaces* include, but are not limited to, elevator pits or elevator penthouses; mechanical, electrical or communications equipment rooms; piping or equipment catwalks; water or sewage treatment pump rooms and stations; electric substations and transformer vaults; and highway and tunnel utility *facilities*.

F203.7 Single Occupant Structures. Single occupant structures accessed only by passageways below grade or elevated above standard curb height, including but not limited to, toll booths that are accessed only by underground tunnels, shall not be required to comply with these requirements or to be on an *accessible* route.

F203.8 Detention and Correctional Facilities. In detention and correctional *facilities*, *common use* areas that are used only by inmates or detainees and security personnel and that do not serve holding

cells or housing cells required to comply with F232, shall not be required to comply with these requirements or to be on an *accessible* route.

F203.9 Residential Facilities. In residential *facilities*, *common use* areas that do not serve *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 shall not be required to comply with these requirements or to be on an *accessible* route.

F203.10 Raised Refereeing, Judging, and Scoring Areas. Raised structures used solely for refereeing, judging, or scoring a sport shall not be required to comply with these requirements or to be on an *accessible* route.

F203.11 Water Slides. Water slides shall not be required to comply with these requirements or to be on an *accessible* route.

F203.12 Animal Containment Areas. Animal containment areas that are not for *public use* shall not be required to comply with these requirements or to be on an *accessible* route.

> **Advisory F203.12 Animal Containment Areas.** Public circulation routes where animals may travel, such as in petting zoos and passageways alongside animal pens in State fairs, are not eligible for the exception.

F203.13 Raised Boxing or Wrestling Rings. Raised boxing or wrestling rings shall not be required to comply with these requirements or to be on an *accessible* route.

F203.14 Raised Diving Boards and Diving Platforms. Raised diving boards and diving platforms shall not be required to comply with these requirements or to be on an *accessible* route.

F204 Protruding Objects

F204.1 General. Protruding objects on *circulation paths* shall comply with 307.

EXCEPTIONS: 1. Within *areas of sport activity*, protruding objects on *circulation paths* shall not be required to comply with 307.

2. Within *play areas*, protruding objects on *circulation paths* shall not be required to comply with 307 provided that ground level *accessible* routes provide vertical clearance in compliance with 1008.2.

F205 Operable Parts

F205.1 General. *Operable parts* on *accessible elements, accessible* routes, and in *accessible* rooms and *spaces* shall comply with 309.

EXCEPTIONS: 1. *Operable parts* that are intended for use only by service or maintenance personnel shall not be required to comply with 309.

2. Electrical or communication receptacles serving a dedicated use shall not be required to comply with 309.

3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to comply with 309.

4. Floor electrical receptacles shall not be required to comply with 309.

5. HVAC diffusers shall not be required to comply with 309.
6. Except for light switches, where redundant controls are provided for a single *element*, one control in each *space* shall not be required to comply with 309.
7. Cleats and other boat securement devices shall not be required to comply with 309.3.
8. Exercise machines and exercise equipment shall not be required to comply with 309.

Advisory F205.1 General. Controls covered by F205.1 include, but are not limited to, light switches, circuit breakers, duplexes and other convenience receptacles, environmental and appliance controls, plumbing fixture controls, and security and intercom systems.

F206 Accessible Routes

F206.1 General. *Accessible* routes shall be provided in accordance with F206 and shall comply with Chapter 4 except that the exemptions at 403.5, 405.5, and 405.8 shall not apply.

F206.2 Where Required. *Accessible* routes shall be provided where required by F206.2.

F206.2.1 Site Arrival Points. At least one *accessible* route shall be provided within the *site* from *accessible* parking *spaces* and *accessible* passenger loading zones; public streets and sidewalks; and public transportation stops to the *accessible building* or *facility entrance* they serve.

EXCEPTIONS: 1. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by F202.5, no more than one *accessible* route from a *site* arrival point to an *accessible entrance* shall be required.

2. An *accessible* route shall not be required between *site* arrival points and the *building* or *facility entrance* if the only means of access between them is a *vehicular way* not providing pedestrian access.

Advisory F206.2.1 Site Arrival Points. Each site arrival point must be connected by an accessible route to the accessible building entrance or entrances served. Where two or more similar site arrival points, such as bus stops, serve the same accessible entrance or entrances, both bus stops must be on accessible routes. In addition, the accessible routes must serve all of the accessible entrances on the site.

Advisory F206.2.1 Site Arrival Points Exception 2. Access from site arrival points may include vehicular ways. Where a vehicular way, or a portion of a vehicular way, is provided for pedestrian travel, such as within a shopping center or shopping mall parking lot, this exception does not apply.

F206.2.2 Within a Site. At least one *accessible* route shall connect *accessible buildings*, *accessible facilities*, *accessible elements*, and *accessible spaces* that are on the same *site*.

EXCEPTION: An *accessible* route shall not be required between *accessible buildings*, *accessible facilities, accessible elements* and *accessible spaces* if the only means of access between them is a *vehicular way* not providing pedestrian access.

Advisory F206.2.2 Within a Site. An accessible route is required to connect to the boundary of each area of sport activity. Examples of areas of sport activity include: soccer fields, basketball courts, baseball fields, running tracks, skating rinks, and the area surrounding a piece of gymnastic equipment. While the size of an area of sport activity may vary from sport to sport, each includes only the space needed to play. Where multiple sports fields or courts are provided, an accessible route is required to each field or area of sport activity.

F206.2.3 Multi-Story Buildings and Facilities. At least one *accessible* route shall connect each *story* and *mezzanine* in multi-*story buildings* and *facilities*.

EXCEPTIONS: 1. Where a two *story building or facility* has one *story* with an *occupant load* of five or fewer persons that does not contain *public use space*, that *story* shall not be required to be connected to the *story* above or below.

2. In detention and correctional *facilities*, an *accessible* route shall not be required to connect *stories* where cells with mobility features required to comply with 807.2, all *common use* areas serving cells with mobility features required to comply with 807.2, and all *public use* areas are on an *accessible* route.

3. In residential *facilities,* an *accessible* route shall not be required to connect *stories* where *residential dwelling units* with mobility features required to comply with 809.2 through 809.4, all *common use* areas serving *residential dwelling units* with mobility features required to comply with 809.2 through 809.4, and *public use* areas serving *residential dwelling units* are on an *accessible* route.

4. Within multi-*story transient lodging* guest rooms with mobility features required to comply with 806.2, an *accessible* route shall not be required to connect *stories* provided that *spaces* complying with 806.2 are on an *accessible* route and sleeping accommodations for two persons minimum are provided on a *story* served by an accessible route.

5. In air traffic control towers, an *accessible* route shall not be required to serve the cab and the floor immediately below the cab.

6. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by F202.5, an *accessible* route shall not be required to *stories* located above or below the *accessible story*.

Advisory F206.2.3 Multi-Story Buildings and Facilities. Spaces and elements located on a level not required to be served by an accessible route must fully comply with this document. While a mezzanine may be a change in level, it is not a story. If an accessible route is required to connect stories within a building or facility, the accessible route must serve all mezzanines.

Advisory F206.2.3 Multi-Story Buildings and Facilities Exception 3. Where common use areas are provided for the use of residents, it is presumed that all such common use areas "serve" accessible dwelling units unless use is restricted to residents occupying certain dwelling units. For example, if all residents are permitted to use all laundry rooms, then all laundry rooms "serve" accessible dwelling units.

Advisory F206.2.3 Multi-Story Buildings and Facilities Exception 3 (Continued). However, if the laundry room on the first floor is restricted to use by residents on the first floor, and the second floor laundry room is for use by occupants of the second floor, then first floor accessible units are "served" only by laundry rooms on the first floor. In this example, an accessible route is not required to the second floor provided that all accessible units and all common use areas serving them are on the first floor.

F206.2.3.1 Stairs and Escalators in Existing Buildings. In *alterations* and *additions*, where an escalator or stair is provided where none existed previously and major structural modifications are necessary for the installation, an *accessible* route shall be provided between the levels served by the escalator or stair unless exempted by F206.2.3 Exceptions 1 through 6.

F206.2.4 Spaces and Elements. At least one *accessible* route shall connect *accessible building* or *facility entrances* with all *accessible spaces* and *elements* within the *building* or *facility* which are otherwise connected by a *circulation path* unless exempted by F206.2.3 Exceptions 1 through 6.

EXCEPTIONS: 1. Raised courtroom stations, including judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, and court reporters' stations shall not be required to provide vertical access provided that the required clear floor *space*, maneuvering *space*, and, if appropriate, electrical service are installed at the time of initial construction to allow future installation of a means of vertical access complying with 405, 407, 408, or 410 without requiring substantial reconstruction of the *space*.

2. In *assembly areas* with fixed seating required to comply with F221, an *accessible* route shall not be required to serve fixed seating where *wheelchair spaces* required to be on an *accessible* route are not provided.

3. *Accessible* routes shall not be required to connect *mezzanines* where *buildings* or *facilities* have no more than one story. In addition, *accessible* routes shall not be required to connect stories or *mezzanines* where multi-story *buildings* or *facilities* are exempted by F206.2.3 Exceptions 1 through 6.

Advisory F206.2.4 Spaces and Elements. Accessible routes must connect all spaces and elements required to be accessible including, but not limited to, raised areas and speaker platforms.

Advisory F206.2.4 Spaces and Elements Exception 1. The exception does not apply to areas that are likely to be used by members of the public who are not employees of the court such as jury areas, attorney areas, or witness stands.

F206.2.5 Restaurants and Cafeterias. In restaurants and cafeterias, an *accessible* route shall be provided to all dining areas, including raised or sunken dining areas, and outdoor dining areas.

EXCEPTIONS: 1. In *alterations*, an *accessible* route shall not be required to existing raised or sunken dining areas, or to all parts of existing outdoor dining areas where the same services and decor are provided in an *accessible space* usable by the public and not restricted to use by people with disabilities.

2. In sports *facilities,* tiered dining areas providing seating required to comply with F221 shall be required to have *accessible* routes serving at least 25 percent of the dining area provided that

accessible routes serve seating complying with F221 and each tier is provided with the same services.

Advisory F206.2.5 Restaurants and Cafeterias Exception 1. Examples of "same services" include, but are not limited to, bar service, rooms having smoking and non-smoking sections, lotto and other table games, carry-out, and buffet service. Examples of "same decor" include, but are not limited to, seating at or near windows and railings with views, areas designed with a certain theme, party and banquet rooms, and rooms where entertainment is provided.

F206.2.6 Performance Areas. Where a *circulation path* directly connects a performance area to an assembly seating area, an *accessible* route shall directly connect the assembly seating area with the performance area. An *accessible* route shall be provided from performance areas to ancillary areas or *facilities* used by performers unless exempted by F206.2.3 Exceptions 1 through 6.

F206.2.7 Press Boxes. Press boxes in *assembly areas* shall be on an *accessible* route.

EXCEPTIONS: 1. An *accessible* route shall not be required to press boxes in bleachers that have points of entry at only one level provided that the aggregate area of all press boxes is 500 square feet (46 m^2) maximum.

2. An *accessible* route shall not be required to free-standing press boxes that are elevated above grade 12 feet (3660 mm) minimum provided that the aggregate area of all press boxes is 500 square feet (46 m^2) maximum.

Advisory F206.2.7 Press Boxes Exception 2. Where a facility contains multiple assembly areas, the aggregate area of the press boxes in each assembly area is to be calculated separately. For example, if a university has a soccer stadium with three press boxes elevated 12 feet (3660 mm) or more above grade and each press box is 150 square feet (14 m^2), then the aggregate area of the soccer stadium press boxes is less than 500 square feet (465 m^2) and Exception 2 applies to the soccer stadium. If that same university also has a football stadium with two press boxes elevated 12 feet (3660 mm) or more above grade and one press box is 250 square feet (23 m^2), and the second is 275 square feet (26 m^2), then the aggregate area of the football stadium press boxes is more than 500 square feet (465 m^2) and Exception 2 does not apply to the football stadium.

F206.2.8 Amusement Rides. *Amusement rides* required to comply with F234 shall provide *accessible* routes in accordance with F206.2.8. *Accessible* routes serving *amusement rides* shall comply with Chapter 4 except as modified by 1002.2.

F206.2.8.1 Load and Unload Areas. Load and unload areas shall be on an *accessible* route. Where load and unload areas have more than one loading or unloading position, at least one loading and unloading position shall be on an *accessible* route.

F206.2.8.2 Wheelchair Spaces, Ride Seats Designed for Transfer, and Transfer Devices. When *amusement rides* are in the load and unload position, *wheelchair spaces* complying with

1002.4, *amusement ride seats* designed for transfer complying with 1002.5, and *transfer devices* complying with 1002.6 shall be on an *accessible* route.

F206.2.9 Recreational Boating Facilities. *Boat slips* required to comply with F235.2 and *boarding piers* at *boat launch ramps* required to comply with F235.3 shall be on an *accessible* route. *Accessible* routes serving recreational boating *facilities* shall comply with Chapter 4 except as modified by 1003.2.

F206.2.10 Bowling Lanes. Where bowling lanes are provided, at least 5 percent, but no fewer than one of each type of bowling lane, shall be on an *accessible* route.

F206.2.11 Court Sports. In court sports, at least one *accessible* route shall directly connect both sides of the court.

F206.2.12 Exercise Machines and Equipment. Exercise machines and equipment required to comply with F236 shall be on an *accessible* route.

F206.2.13 Fishing Piers and Platforms. Fishing piers and platforms shall be on an *accessible* route. *Accessible* routes serving fishing piers and platforms shall comply with Chapter 4 except as modified by 1005.1.

F206.2.14 Golf Facilities. At least one *accessible* route shall connect *accessible elements* and *spaces* within the boundary of the golf course. In addition, *accessible* routes serving golf car rental areas; bag drop areas; course weather shelters complying with F238.2.3; course toilet rooms; and practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges complying with F238.3 shall comply with Chapter 4 except as modified by 1006.2.

EXCEPTION: *Golf car passages* complying with 1006.3 shall be permitted to be used for all or part of *accessible* routes required by F206.2.14.

F206.2.15 Miniature Golf Facilities. Holes required to comply with F239.2, including the start of play, shall be on an *accessible* route. *Accessible* routes serving miniature golf *facilities* shall comply with Chapter 4 except as modified by 1007.2.

F206.2.16 Play Areas. *Play areas* shall provide *accessible* routes in accordance with F206.2.16. *Accessible* routes serving *play areas* shall comply with Chapter 4 except as modified by 1008.2.

F206.2.16.1 Ground Level and Elevated Play Components. At least one *accessible* route shall be provided within the *play area*. The *accessible* route shall connect *ground level play components* required to comply with F240.2.1 and *elevated play components* required to comply with F240.2.2, including entry and exit points of the *play components*.

F206.2.16.2 Soft Contained Play Structures. Where three or fewer entry points are provided for *soft contained play structures*, at least one entry point shall be on an *accessible* route. Where four or more entry points are provided for *soft contained play structures*, at least two entry points shall be on an *accessible* route.

F206.3 Location. *Accessible* routes shall coincide with or be located in the same area as general *circulation paths*. Where *circulation paths* are interior, required *accessible* routes shall also be interior.

> **Advisory F206.3 Location.** The accessible route must be in the same area as the general circulation path. This means that circulation paths, such as vehicular ways designed for pedestrian traffic, walks, and unpaved paths that are designed to be routinely used by pedestrians must be accessible or have an accessible route nearby. Additionally, accessible vertical interior circulation must be in the same area as stairs and escalators, not isolated in the back of the facility.

F206.4 Entrances. *Entrances* shall be provided in accordance with F206.4. *Entrance* doors, doorways, and gates shall comply with 404 and shall be on an *accessible* route complying with 402.

EXCEPTIONS: 1. Where an *alteration* includes *alterations* to an *entrance*, and the *building* or *facility* has another *entrance* complying with 404 that is on an *accessible* route, the *altered entrance* shall not be required to comply with F206.4 unless required by F202.4.

2. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by F202.5, no more than one *public entrance* shall be required to comply with F206.4. Where no *public entrance* can comply with F206.4 under criteria established in F202.5 Exception, then either an unlocked *entrance* not used by the public shall comply with F206.4; or a locked *entrance* complying with F206.4 with a notification system or remote monitoring shall be provided.

F206.4.1 Public Entrances. In addition to *entrances* required by F206.4.2 through F206.4.9, at least 60 percent of all *public entrances* shall comply with 404.

F206.4.2 Parking Structure Entrances. Where direct access is provided for pedestrians from a parking structure to a *building* or *facility entrance*, each direct access to the *building* or *facility entrance* shall comply with 404.

F206.4.3 Entrances from Tunnels or Elevated Walkways. Where direct access is provided for pedestrians from a pedestrian tunnel or elevated walkway to a *building* or *facility*, at least one direct *entrance* to the *building* or *facility* from each tunnel or walkway shall comply with 404.

F206.4.4 Transportation Facilities. In addition to the requirements of F206.4.2, F206.4.3, and F206.4.5 through F206.4.9, transportation *facilities* shall provide *entrances* in accordance with F206.4.4.

F206.4.4.1 Location. In transportation *facilities*, where different *entrances* serve different transportation fixed routes or groups of fixed routes, at least one *public entrance* shall comply with 404.

F206.4.4.2 Direct Connections. Direct connections to other *facilities* shall provide an *accessible* route complying with 404 from the point of connection to boarding platforms and all transportation system *elements* required to be *accessible*. Any *elements* provided to facilitate future direct connections shall be on an *accessible* route connecting boarding platforms and all transportation system *elements* required to be *accessible*.

F206.4.5 Tenant Spaces. At least one *accessible entrance* to each tenancy in a *facility* shall comply with 404.

EXCEPTION: *Self-service storage* facilities not required to comply with F225.3 shall not be required to be on an *accessible* route.

F206.4.6 Residential Dwelling Unit Primary Entrance. In *residential dwelling units*, at least one primary *entrance* shall comply with 404. The primary *entrance* to a *residential dwelling unit* shall not be to a bedroom.

F206.4.7 Restricted Entrances. Where *restricted entrances* are provided to a *building* or *facility*, at least one *restricted entrance* to the *building* or *facility* shall comply with 404.

F206.4.8 Service Entrances. If a *service entrance* is the only *entrance* to a *building* or to a tenancy in a *facility*, that *entrance* shall comply with 404.

F206.4.9 Entrances for Inmates or Detainees. Where *entrances* used only by inmates or detainees and security personnel are provided at judicial *facilities,* detention *facilities,* or correctional *facilities*, at least one such *entrance* shall comply with 404.

F206.5 Doors, Doorways, and Gates. Doors, doorways, and gates providing user passage shall be provided in accordance with F206.5.

F206.5.1 Entrances. Each *entrance* to a *building* or *facility* required to comply with F206.4 shall have at least one door, doorway, or gate complying with 404.

F206.5.2 Rooms and Spaces. Within a *building* or *facility*, at least one door, doorway, or gate serving each room or *space* complying with these requirements shall comply with 404.

F206.5.3 Transient Lodging Facilities. In *transient lodging facilities*, *entrances,* doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with 806.2 shall comply with 404.2.3.

EXCEPTION: Shower and sauna doors in guest rooms that are not required to provide mobility features complying with 806.2 shall not be required to comply with 404.2.3.

F206.5.4 Residential Dwelling Units. In *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4, all doors and doorways providing user passage shall comply with 404.

F206.6 Elevators. Elevators provided for passengers shall comply with 407. Where multiple elevators are provided, each elevator shall comply with 407.

EXCEPTIONS: 1. In a *building* or *facility* permitted to use the exceptions to F206.2.3 or permitted by F206.7 to use a platform lift, elevators complying with 408 shall be permitted.

2. Elevators complying with 408 or 409 shall be permitted in multi-*story residential dwelling units.*

F206.6.1 Existing Elevators. Where *elements* of existing elevators are *altered*, the same *element* shall also be *altered* in all elevators that are programmed to respond to the same hall call control as the *altered* elevator and shall comply with the requirements of 407 for the *altered element.*

F206.7 Platform Lifts. Platform lifts shall comply with 410. Platform lifts shall be permitted as a component of an *accessible* route in new construction in accordance with F206.7. Platform lifts shall be permitted as a component of an *accessible* route in an existing *building* or *facility*.

F206.7.1 Performance Areas and Speakers' Platforms. Platform lifts shall be permitted to provide *accessible* routes to performance areas and speakers' platforms.

F206.7.2 Wheelchair Spaces. Platform lifts shall be permitted to provide an *accessible* route to comply with the *wheelchair space* dispersion and line-of-sight requirements of F221 and 802.

F206.7.3 Incidental Spaces. Platform lifts shall be permitted to provide an *accessible* route to incidental *spaces* which are not *public use spaces* and which are occupied by five persons maximum.

F206.7.4 Judicial Spaces. Platform lifts shall be permitted to provide an *accessible* route to: jury boxes and witness stands; raised courtroom stations including, judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, and court reporters' stations; and to depressed areas such as the well of a court.

F206.7.5 Existing Site Constraints. Platform lifts shall be permitted where existing exterior *site* constraints make use of a *ramp* or elevator infeasible.

> **Advisory F206.7.5 Existing Site Constraints.** This exception applies where topography or other similar existing site constraints necessitate the use of a platform lift as the only feasible alternative. While the site constraint must reflect exterior conditions, the lift can be installed in the interior of a building. For example, a new building constructed between and connected to two existing buildings may have insufficient space to coordinate floor levels and also to provide ramped entry from the public way. In this example, an exterior or interior platform lift could be used to provide an accessible entrance or to coordinate one or more interior floor levels.

F206.7.6 Guest Rooms and Residential Dwelling Units. Platform lifts shall be permitted to connect levels within *transient lodging* guest rooms required to provide mobility features complying with 806.2 or *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4.

F206.7.7 Amusement Rides. Platform lifts shall be permitted to provide *accessible* routes to load and unload areas serving *amusement rides*.

F206.7.8 Play Areas. Platform lifts shall be permitted to provide *accessible* routes to *play components* or *soft contained play structures*.

F206.7.9 Team or Player Seating. Platform lifts shall be permitted to provide *accessible* routes to team or player seating areas serving *areas of sport activity*.

Advisory F206.7.9 Team or Player Seating. While the use of platform lifts is allowed, ramps are recommended to provide access to player seating areas serving an area of sport activity.

F206.7.10 Recreational Boating Facilities and Fishing Piers and Platforms. Platform lifts shall be permitted to be used instead of *gangways* that are part of *accessible* routes serving recreational boating *facilities* and fishing piers and platforms.

F206.8 Security Barriers. Security barriers, including but not limited to, security bollards and security check points, shall not obstruct a required *accessible* route or *accessible means of egress.*

EXCEPTION: Where security barriers incorporate *elements* that cannot comply with these requirements such as certain metal detectors, fluoroscopes, or other similar devices, the *accessible* route shall be permitted to be located adjacent to security screening devices. The *accessible* route shall permit persons with disabilities passing around security barriers to maintain visual contact with their personal items to the same extent provided others passing through the security barrier.

F207 Accessible Means of Egress

F207.1 General. Means of egress shall comply with section 1003.2.13 of the International Building Code (2000 edition and 2001 Supplement) or section 1007 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

EXCEPTIONS: 1. Where means of egress are permitted by local *building* or life safety codes to share a common path of egress travel, *accessible means of egress* shall be permitted to share a common path of egress travel.

2. Areas of refuge shall not be required in detention and correctional *facilities.*

F207.2 Platform Lifts. Standby power shall be provided for platform lifts permitted by section 1003.2.13.4 of the International Building Code (2000 edition and 2001 Supplement) or section 1007.5 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to serve as a part of an *accessible means of egress.*

F208 Parking Spaces

F208.1 General. Where parking *spaces* are provided, parking *spaces* shall be provided in accordance with F208.

EXCEPTION: Parking *spaces* used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles, or vehicular impound shall not be required to comply with F208 provided that lots accessed by the public are provided with a passenger loading zone complying with 503.

F208.2 Minimum Number. Parking *spaces* complying with 502 shall be provided in accordance with Table F208.2 except as required by F208.2.1, F208.2.2, and F208.2.3. Where more than one parking *facility* is provided on a *site*, the number of *accessible spaces* provided on the *site* shall be calculated according to the number of *spaces* required for each parking *facility.*

Table F208.2 Parking Spaces

Total Number of Parking Spaces Provided in Parking Facility	Minimum Number of Required Accessible Parking Spaces
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 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

Advisory F208.2 Minimum Number. The term "parking facility" is used Section F208.2 instead of the term "parking lot" so that it is clear that both parking lots and parking structures are required to comply with this section. The number of parking spaces required to be accessible is to be calculated separately for each parking facility; the required number is not to be based on the total number of parking spaces provided in all of the parking facilities provided on the site.

F208.2.1 Hospital Outpatient Facilities. Ten percent of patient and visitor parking *spaces* provided to serve hospital outpatient *facilities* shall comply with 502.

Advisory F208.2.1 Hospital Outpatient Facilities. The term "outpatient facility" is not defined in this document but is intended to cover facilities or units that are located in hospitals and that provide regular and continuing medical treatment without an overnight stay. Doctors' offices, independent clinics, or other facilities not located in hospitals are not considered hospital outpatient facilities for purposes of this document.

F208.2.2 Rehabilitation Facilities and Outpatient Physical Therapy Facilities. Twenty percent of patient and visitor parking *spaces* provided to serve rehabilitation *facilities* specializing in treating conditions that affect mobility and outpatient physical therapy *facilities* shall comply with 502.

Advisory F208.2.2 Rehabilitation Facilities and Outpatient Physical Therapy Facilities. Conditions that affect mobility include conditions requiring the use or assistance of a brace, cane, crutch, prosthetic device, wheelchair, or powered mobility aid; arthritic, neurological, or orthopedic conditions that severely limit one's ability to walk; respiratory diseases and other conditions which may require the use of portable oxygen; and cardiac conditions that impose significant functional limitations.

F208.2.3 Residential Facilities. Parking *spaces* provided to serve residential facilities shall comply with F208.2.3.

F208.2.3.1 Parking for Residents. Where at least one parking *space* is provided for each *residential dwelling unit*, at least one parking *space* complying with 502 shall be provided for each *residential dwelling unit* required to provide mobility features complying with 809.2 through 809.4.

F208.2.3.2 Additional Parking Spaces for Residents. Where the total number of parking *spaces* provided for each *residential dwelling unit* exceeds one parking *space* per *residential dwelling unit*, 2 percent, but no fewer than one *space*, of all the parking *spaces* not covered by F208.2.3.1 shall comply with 502.

F208.2.3.3 Parking for Guests, Employees, and Other Non-Residents. Where parking spaces are provided for persons other than residents, parking shall be provided in accordance with Table F208.2.

F208.2.4 Van Parking Spaces. For every six or fraction of six parking *spaces* required by F208.2 to comply with 502, at least one shall be a van parking *space* complying with 502.

F208.3 Location. Parking *facilities* shall comply with F208.3

F208.3.1 General. Parking *spaces* complying with 502 that serve a particular *building* or *facility* shall be located on the shortest *accessible* route from parking to an *entrance* complying with F206.4. Where parking serves more than one *accessible entrance*, parking *spaces* complying with 502 shall be dispersed and located on the shortest *accessible* route to the *accessible entrances*. In parking *facilities* that do not serve a particular *building* or *facility*, parking *spaces* complying with 502 shall be located on the shortest *accessible* route to an *accessible* pedestrian *entrance* of the parking *facility*.

EXCEPTIONS: 1. All van parking *spaces* shall be permitted to be grouped on one level within a multi-*story* parking *facility*.

2. Parking *spaces* shall be permitted to be located in different parking *facilities* if substantially equivalent or greater *accessibility* is provided in terms of distance from an *accessible entrance* or *entrances*, parking fee, and user convenience.

Advisory F208.3.1 General Exception 2. Factors that could affect "user convenience" include, but are not limited to, protection from the weather, security, lighting, and comparative maintenance of the alternative parking site.

F208.3.2 Residential Facilities. In residential *facilities* containing *residential dwelling units* required to provide mobility features complying with 809.2 through 809.4, parking *spaces* provided in accordance with F208.2.3.1 shall be located on the shortest *accessible* route to the *residential dwelling unit entrance* they serve. *Spaces* provided in accordance with F208.2.3.2 shall be dispersed throughout all types of parking provided for the *residential dwelling units.*

EXCEPTION: Parking *spaces* provided in accordance with F208.2.3.2 shall not be required to be dispersed throughout all types of parking if substantially equivalent or greater *accessibility* is provided in terms of distance from an *accessible entrance*, parking fee, and user convenience.

Advisory F208.3.2 Residential Facilities Exception. Factors that could affect "user convenience" include, but are not limited to, protection from the weather, security, lighting, and comparative maintenance of the alternative parking site.

F209 Passenger Loading Zones and Bus Stops

F209.1 General. Passenger loading zones shall be provided in accordance with F209.

F209.2 Type. Where provided, passenger loading zones shall comply with F209.2.

F209.2.1 Passenger Loading Zones. Passenger loading zones, except those required to comply with F209.2.2 and F209.2.3, shall provide at least one passenger loading zone complying with 503 in every continuous 100 linear feet (30 m) of loading zone *space*, or fraction thereof.

F209.2.2 Bus Loading Zones. In bus loading zones restricted to use by designated or specified public transportation vehicles, each bus bay, bus stop, or other area designated for lift or *ramp* deployment shall comply with 810.2.

Advisory F209.2.2 Bus Loading Zones. The terms "designated public transportation" and "specified public transportation" are defined by the Department of Transportation at 49 CFR 37.3 in regulations implementing the Americans with Disabilities Act. These terms refer to public transportation services provided by public or private entities, respectively. For example, designated public transportation vehicles include buses and vans operated by public transit agencies, while specified public transportation vehicles include tour and charter buses, taxis and limousines, and hotel shuttles operated by private entities.

F209.2.3 On-Street Bus Stops. On-street bus stops shall comply with 810.2 to the maximum extent practicable.

F209.3 Medical Care and Long-Term Care Facilities. At least one passenger loading zone complying with 503 shall be provided at an *accessible entrance* to licensed medical care and licensed long-term care *facilities* where the period of stay exceeds twenty-four hours.

F209.4 Valet Parking. Parking *facilities* that provide valet parking services shall provide at least one passenger loading zone complying with 503.

F209.5 Mechanical Access Parking Garages. Mechanical access parking garages shall provide at least one passenger loading zone complying with 503 at vehicle drop-off and vehicle pick-up areas.

F210 Stairways

F210.1 General. Interior and exterior stairs that are part of a means of egress shall comply with 504.

EXCEPTIONS: 1. In detention and correctional *facilities*, stairs that are not located in *public use* areas shall not be required to comply with 504.

2. In *alterations*, stairs between levels that are connected by an *accessible* route shall not be required to comply with 504, except that handrails complying with 505 shall be provided when the stairs are *altered*.

3. In *assembly areas*, aisle stairs shall not be required to comply with 504.

4. Stairs that connect *play components* shall not be required to comply with 504.

Advisory F210.1 General. Although these requirements do not mandate handrails on stairs that are not part of a means of egress, State or local building codes may require handrails or guards.

F211 Drinking Fountains

F211.1 General. Where drinking fountains are provided on an exterior *site*, on a floor, and within a secured area they shall be provided in accordance with F211.

EXCEPTION: In detention or correctional *facilities*, drinking fountains only serving holding or housing cells not required to comply with F232 shall not be required to comply with F211.

F211.2 Minimum Number. No fewer than two drinking fountains shall be provided. One drinking fountain shall comply with 602.1 through 602.6 and one drinking fountain shall comply with 602.7.

EXCEPTION: Where a single drinking fountain complies with 602.1 through 602.6 and 602.7, it shall be permitted to be substituted for two separate drinking fountains.

F211.3 More Than Minimum Number. Where more than the minimum number of drinking fountains specified in F211.2 are provided, 50 percent of the total number of drinking fountains provided shall comply with 602.1 through 602.6, and 50 percent of the total number of drinking fountains provided shall comply with 602.7.

EXCEPTION: Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down provided that the total number of drinking fountains complying with F211 equals 100 percent of drinking fountains.

F212 Kitchens, Kitchenettes, and Sinks

F212.1 General. Where provided, kitchens, kitchenettes, and sinks shall comply with F212.

F212.2 Kitchens and Kitchenettes. Kitchens and kitchenettes shall comply with 804.

F212.3 Sinks. Where sinks are provided, at least 5 percent, but no fewer than one, of each type provided in each *accessible* room or *space* shall comply with 606.

EXCEPTION: Mop or service sinks shall not be required to comply with F212.3.

F213 Toilet Facilities and Bathing Facilities

F213.1 General. Where toilet *facilities* and bathing *facilities* are provided, they shall comply with F213. Where toilet *facilities* and bathing *facilities* are provided in *facilities* permitted by F206.2.3 Exceptions 1 and 2 not to connect *stories* by an *accessible* route, toilet *facilities* and bathing *facilities* shall be provided on a *story* connected by an *accessible* route to an *accessible entrance*.

F213.2 Toilet Rooms and Bathing Rooms. Where toilet rooms are provided, each toilet room shall comply with 603. Where bathing rooms are provided, each bathing room shall comply with 603.

EXCEPTIONS: 1. In *alterations* where it is *technically infeasible* to comply with 603, *altering* existing toilet or bathing rooms shall not be required where a single unisex toilet room or bathing room complying with F213.2.1 is provided and located in the same area and on the same floor as existing inaccessible toilet or bathing rooms.

2. Where exceptions for *alterations* to *qualified historic buildings or facilities* are permitted by F202.5 and toilet rooms are provided, no fewer than one toilet room for each sex complying with 603 or one unisex toilet room complying with F213.2.1 shall be provided.

3. Where multiple single user portable toilet or bathing units are clustered at a single location, no more than 5 percent of the toilet units and bathing units at each cluster shall be required to comply with 603. Portable toilet units and bathing units complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1.

4. Where multiple single user toilet rooms are clustered at a single location, no more than 50 percent of the single user toilet rooms for each use at each cluster shall be required to comply with 603.

Advisory F213.2 Toilet Rooms and Bathing Rooms. These requirements allow the use of unisex (or single-user) toilet rooms in alterations when technical infeasibility can be demonstrated. Unisex toilet rooms benefit people who use opposite sex personal care assistants. For this reason, it is advantageous to install unisex toilet rooms in addition to accessible single-sex toilet rooms in new facilities.

Advisory F213.2 Toilet Rooms and Bathing Rooms Exceptions 3 and 4. A "cluster" is a group of toilet rooms proximate to one another. Generally, toilet rooms in a cluster are within sight of, or adjacent to, one another.

F213.2.1 Unisex (Single-Use or Family) Toilet and Bathing Rooms. Unisex toilet rooms shall contain not more than one lavatory, and two water closets without urinals or one water closet and one urinal. Unisex bathing rooms shall contain one shower or one shower and one bathtub, one lavatory, and one water closet. Doors to unisex toilet rooms and unisex bathing rooms shall have privacy latches.

F213.3 Plumbing Fixtures and Accessories. Plumbing fixtures and accessories provided in a toilet room or bathing room required to comply with F213.2 shall comply with F213.3.

F213.3.1 Toilet Compartments. Where toilet compartments are provided, at least one toilet compartment shall comply with 604.8.1. In addition to the compartment required to comply with

604.8.1, at least one compartment shall comply with 604.8.2 where six or more toilet compartments are provided, or where the combination of urinals and water closets totals six or more fixtures.

> **Advisory F213.3.1 Toilet Compartments.** A toilet compartment is a partitioned space that is located within a toilet room, and that normally contains no more than one water closet. A toilet compartment may also contain a lavatory. A lavatory is a sink provided for hand washing. Full-height partitions and door assemblies can comprise toilet compartments where the minimum required spaces are provided within the compartment.

F213.3.2 Water Closets. Where water closets are provided at least one shall comply with 604.

F213.3.3 Urinals. Where more than one urinal is provided, at least one shall comply with 605.

F213.3.4 Lavatories. Where lavatories are provided, at least one shall comply with 606 and shall not be located in a toilet compartment.

F213.3.5 Mirrors. Where mirrors are provided, at least one shall comply with 603.3.

F213.3.6 Bathing Facilities. Where bathtubs or showers are provided, at least one bathtub complying with 607 or at least one shower complying with 608 shall be provided.

F213.3.7 Coat Hooks and Shelves. Where coat hooks or shelves are provided in toilet rooms without toilet compartments, at least one of each type shall comply with 603.4. Where coat hooks or shelves are provided in toilet compartments, at least one of each type complying with 604.8.3 shall be provided in toilet compartments required to comply with F213.3.1. Where coat hooks or shelves are provided in bathing *facilities*, at least one of each type complying with 603.4 shall serve fixtures required to comply with F213.3.6.

F214 Washing Machines and Clothes Dryers

F214.1 General. Where provided, washing machines and clothes dryers shall comply with F214.
EXCEPTION: Washing machines and clothes dryers provided in *employee work areas* shall not be required to comply with F214.

> **Advisory F214.1 General Exception.** Washers and dryers provided for use by employees during non-work hours are not considered to be provided in employee work areas. For example, if trainees are housed in a dormitory and provided access to washers and dryers, those facilities are not considered part of the employee work area. Examples of washing machines and clothes dryers provided in employee work areas include, but are not limited to, employee only laundries in hospitals, hotels, and prisons.

F214.2 Washing Machines. Where three or fewer washing machines are provided, at least one shall comply with 611. Where more than three washing machines are provided, at least two shall comply with 611.

F214.3 Clothes Dryers. Where three or fewer clothes dryers are provided, at least one shall comply with 611. Where more than three clothes dryers are provided, at least two shall comply with 611.

F215 Fire Alarm Systems

F215.1 General. Where fire alarm systems provide audible alarm coverage, alarms shall comply with F215.

EXCEPTION: In existing *facilities*, visible alarms shall not be required except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.

> **Advisory F215.1 General.** Unlike audible alarms, visible alarms must be located within the space they serve so that the signal is visible. Facility alarm systems (other than fire alarm systems) such as those used for tornado warnings and other emergencies are not required to comply with the technical criteria for alarms in Section 702. Every effort should be made to ensure that such alarms can be differentiated in their signal from fire alarms systems and that people who need to be notified of emergencies are adequately safeguarded. Consult local fire departments and prepare evacuation plans taking into consideration the needs of every building occupant, including people with disabilities.

F215.2 Public and Common Use Areas. Alarms in *public use* areas and *common use* areas shall comply with 702.

F215.3 Employee Work Areas. Where *employee work areas* have audible alarm coverage, the wiring system shall be designed so that visible alarms complying with 702 can be integrated into the alarm system.

F215.4 Transient Lodging. Guest rooms required to comply with F224.4 shall provide alarms complying with 702.

F215.5 Residential Facilities. Where provided in *residential dwelling units* required to comply with 809.5, alarms shall comply with 702.

F216 Signs

F216.1 General. Signs shall be provided in accordance with F216 and shall comply with 703.

EXCEPTIONS: 1. *Building* directories, menus, seat and row designations in *assembly areas*, occupant names, *building* addresses, and company names and logos shall not be required to comply with F216.

2. In parking *facilities,* signs shall not be required to comply with F216.2, F216.3, and F216.6 through F216.12.

3. Temporary, 7 days or less, signs shall not be required to comply with F216.

4. In detention and correctional *facilities*, signs not located in *public use* areas shall not be required to comply with F216.

F216.2 Designations. Interior and exterior signs identifying permanent rooms and *spaces* shall comply with 703.1, 703.2, and 703.5. Where *pictograms* are provided as designations of permanent interior

rooms and *spaces*, the *pictograms* shall comply with 703.6 and shall have text descriptors complying with 703.2 and 703.5.

EXCEPTION: Exterior signs that are not located at the door to the *space* they serve shall not be required to comply with 703.2.

Advisory F216.2 Designations. Section F216.2 applies to signs that provide designations, labels, or names for interior rooms or spaces where the sign is not likely to change over time. Examples include interior signs labeling restrooms, room and floor numbers or letters, and room names. Tactile text descriptors are required for pictograms that are provided to label or identify a permanent room or space. Pictograms that provide information about a room or space, such as "no smoking," occupant logos, and the International Symbol of Accessibility, are not required to have text descriptors.

F216.3 Directional and Informational Signs. Signs that provide direction to or information about interior *spaces* and *facilities* of the *site* shall comply with 703.5.

Advisory F216.3 Directional and Informational Signs. Information about interior spaces and facilities includes rules of conduct, occupant load, and similar signs. Signs providing direction to rooms or spaces include those that identify egress routes.

F216.4 Means of Egress. Signs for means of egress shall comply with F216.4.

F216.4.1 Exit Doors. Doors at exit passageways, exit discharge, and exit stairways shall be identified by *tactile* signs complying with 703.1, 703.2, and 703.5.

Advisory F216.4.1 Exit Doors. An exit passageway is a horizontal exit component that is separated from the interior spaces of the building by fire-resistance-rated construction and that leads to the exit discharge or public way. The exit discharge is that portion of an egress system between the termination of an exit and a public way.

F216.4.2 Areas of Refuge. Signs required by section 1003.2.13.5.4 of the International Building Code (2000 edition) or section 1007.6.4 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to provide instructions in areas of refuge shall comply with 703.5.

F216.4.3 Directional Signs. Signs required by section 1003.2.13.6 of the International Building Code (2000 edition) or section 1007.7 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) to provide directions to *accessible means of egress* shall comply with 703.5.

F216.5 Parking. Parking *spaces* complying with 502 shall be identified by signs complying with 502.6.

EXCEPTIONS: 1. Where a total of four or fewer parking *spaces*, including *accessible* parking *spaces*, are provided on a *site*, identification of *accessible* parking *spaces* shall not be required.

2. In residential *facilities*, where parking *spaces* are assigned to specific *residential dwelling units*, identification of *accessible* parking *spaces* shall not be required.

F216.6 Entrances. Where not all *entrances* comply with 404, *entrances* complying with 404 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Directional signs complying with 703.5 that indicate the location of the nearest *entrance* complying with 404 shall be provided at *entrances* that do not comply with 404.

> **Advisory F216.6 Entrances.** Where a directional sign is required, it should be located to minimize backtracking. In some cases, this could mean locating a sign at the beginning of a route, not just at the inaccessible entrances to a building.

F216.7 Elevators. Where existing elevators do not comply with 407, elevators complying with 407 shall be clearly identified with the International Symbol of *Accessibility* complying with 703.7.2.1.

F216.8 Toilet Rooms and Bathing Rooms. Where existing toilet rooms or bathing rooms do not comply with 603, directional signs indicating the location of the nearest toilet room or bathing room complying with 603 within the *facility* shall be provided. Signs shall comply with 703.5 and shall include the International Symbol of *Accessibility* complying with 703.7.2.1. Where existing toilet rooms or bathing rooms do not comply with 603, the toilet rooms or bathing rooms complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Where clustered single user toilet rooms or bathing *facilities* are permitted to use exception to F213.2, toilet rooms or bathing *facilities* complying with 603 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1 unless all toilet rooms and bathing *facilities* comply with 603.

F216.9 TTYs. Identification and directional signs for public *TTYs* shall be provided in accordance with F216.9.

F216.9.1 Identification Signs. Public *TTYs* shall be identified by the International Symbol of *TTY* complying with 703.7.2.2.

F216.9.2 Directional Signs. Directional signs indicating the location of the nearest public *TTY* shall be provided at all banks of public pay telephones not containing a public *TTY*. In addition, where signs provide direction to public pay telephones, they shall also provide direction to public *TTYs*. Directional signs shall comply with 703.5 and shall include the International Symbol of *TTY* complying with 703.7.2.2.

F216.10 Assistive Listening Systems. Each *assembly area* required by F219 to provide *assistive listening systems* shall provide signs informing patrons of the availability of the *assistive listening system*. Assistive listening signs shall comply with 703.5 and shall include the International Symbol of Access for Hearing Loss complying with 703.7.2.4.

EXCEPTION: Where ticket offices or windows are provided, signs shall not be required at each *assembly area* provided that signs are displayed at each ticket office or window informing patrons of the availability of *assistive listening systems*.

F216.11 Check-Out Aisles. Where more than one check-out aisle is provided, check-out aisles complying with 904.3 shall be identified by the International Symbol of *Accessibility* complying with 703.7.2.1. Where check-out aisles are identified by numbers, letters, or functions, signs identifying

check-out aisles complying with 904.3 shall be located in the same location as the check-out aisle identification.

EXCEPTION: Where all check-out aisles serving a single function comply with 904.3, signs complying with 703.7.2.1 shall not be required.

F216.12 Amusement Rides. Signs identifying the type of access provided on *amusement rides* shall be provided at entries to queues and waiting lines. In addition, where *accessible* unload areas also serve as *accessible* load areas, signs indicating the location of the *accessible* load and unload areas shall be provided at entries to queues and waiting lines.

> **Advisory F216.12 Amusement Rides.** Amusement rides designed primarily for children, amusement rides that are controlled or operated by the rider, and amusement rides without seats, are not required to provide wheelchair spaces, transfer seats, or transfer systems, and need not meet the sign requirements in 216.12. The load and unload areas of these rides must, however, be on an accessible route and must provide turning space.

F217 Telephones

F217.1 General. Where coin-operated public pay telephones, coinless public pay telephones, public *closed-circuit telephones*, public courtesy phones, or other types of public telephones are provided, public telephones shall be provided in accordance with F217 for each type of public telephone provided. For purposes of this section, a bank of telephones shall be considered to be two or more adjacent telephones.

> **Advisory F217.1 General.** These requirements apply to all types of public telephones including courtesy phones at airports and rail stations that provide a free direct connection to hotels, transportation services, and tourist attractions.

F217.2 Wheelchair Accessible Telephones. Where public telephones are provided, wheelchair *accessible* telephones complying with 704.2 shall be provided in accordance with Table F217.2.

EXCEPTION: Drive-up only public telephones shall not be required to comply with F217.2.

Table F217.2 Wheelchair Accessible Telephones

Number of Telephones Provided on a Floor, Level, or Exterior Site	Minimum Number of Required Wheelchair Accessible Telephones
1 or more single units	1 per floor, level, and exterior *site*
1 bank	1 per floor, level, and exterior *site*
2 or more banks	1 per bank

F217.3 Volume Controls. All public telephones shall have volume controls complying with 704.3.

F217.4 TTYs. *TTYs* complying with 704.4 shall be provided in accordance with F217.4.

Advisory F217.4 TTYs. Separate requirements are provided based on the number of public pay telephones provided at a bank of telephones, within a floor, a building, or on a site. In some instances one TTY can be used to satisfy more than one of these requirements. For example, a TTY required for a bank can satisfy the requirements for a building. However, the requirement for at least one TTY on an exterior site cannot be met by installing a TTY in a bank inside a building. Consideration should be given to phone systems that can accommodate both digital and analog transmissions for compatibility with digital and analog TTYs.

F217.4.1 Bank Requirement. Where four or more public pay telephones are provided at a bank of telephones, at least one public *TTY* complying with 704.4 shall be provided at that bank.

EXCEPTION: *TTYs* shall not be required at banks of telephones located within 200 feet (61 m) of, and on the same floor as, a bank containing a public *TTY.*

F217.4.2 Floor Requirement. Where at least one public pay telephone is provided on a floor of a *building*, at least one public *TTY* shall be provided on that floor.

F217.4.3 Building Requirement. Where at least one public pay telephone is provided in a *public use* area of a *building*, at least one public *TTY* shall be provided in the *building* in a *public use* area.

F217.4.4 Exterior Site Requirement. Where four or more public pay telephones are provided on an exterior *site*, at least one public *TTY* shall be provided on the *site.*

F217.4.5 Rest Stops, Emergency Roadside Stops, and Service Plazas. Where at least one public pay telephone is provided at a public rest stop, emergency roadside stop, or service plaza, at least one public *TTY* shall be provided.

F217.4.6 Hospitals. Where at least one public pay telephone is provided serving a hospital emergency room, hospital recovery room, or hospital waiting room, at least one public *TTY* shall be provided at each location.

F217.4.7 Transportation Facilities. In transportation *facilities*, in addition to the requirements of F217.4.1 through F217.4.4, where at least one public pay telephone serves a particular *entrance* to a bus or rail *facility*, at least one public *TTY* shall be provided to serve that *entrance.* In airports, in addition to the requirements of F217.4.1 through F217.4.4, where four or more public pay telephones are located in a terminal outside the security areas, a concourse within the security areas, or a baggage claim area in a terminal, at least one public *TTY* shall be provided in each location.

F217.4.8 Detention and Correctional Facilities. In detention and correctional *facilities*, where at least one pay telephone is provided in a secured area used only by detainees or inmates and security personnel, at least one *TTY* shall be provided in at least one secured area.

F217.5 Shelves for Portable TTYs. Where a bank of telephones in the interior of a *building* consists of three or more public pay telephones, at least one public pay telephone at the bank shall be provided with a shelf and an electrical outlet in accordance with 704.5.

EXCEPTIONS: 1. Secured areas of detention and correctional *facilities* where shelves and outlets are prohibited for purposes of security or safety shall not be required to comply with F217.5.

2. The shelf and electrical outlet shall not be required at a bank of telephones with a *TTY.*

F218 Transportation Facilities

F218.1 General. Transportation *facilities* shall comply with F218.

F218.2 New and Altered Fixed Guideway Stations. New and altered stations in rapid rail, light rail, commuter rail, intercity rail, high speed rail, and other fixed guideway systems shall comply with 810.5 through 810.10.

F218.3 Bus Shelters. Where provided, bus shelters shall comply with 810.3 and 810.4.

F218.4 Other Transportation Facilities. In other transportation *facilities*, public address systems shall comply with 810.7 and clocks shall comply with 810.8.

F219 Assistive Listening Systems

F219.1 General. *Assistive listening systems* shall be provided in accordance with F219 and shall comply with 706.

F219.2 Required Systems. In each *assembly area* where audible communication is integral to the use of the *space*, an *assistive listening system* shall be provided.

EXCEPTION: Other than in courtrooms, *assistive listening systems* shall not be required where audio amplification is not provided.

F219.3 Receivers. Receivers complying with 706.2 shall be provided for *assistive listening systems* in each *assembly area* in accordance with Table F219.3. Twenty-five percent minimum of receivers provided, but no fewer than two, shall be hearing-aid compatible in accordance with 706.3.

EXCEPTIONS: 1. Where a *building* contains more than one *assembly area* and the *assembly areas* required to provide *assistive listening systems* are under one management, the total number of required receivers shall be permitted to be calculated according to the total number of seats in the *assembly areas* in the *building* provided that all receivers are usable with all systems.

2. Where all seats in an *assembly area* are served by an induction loop *assistive listening system*, the minimum number of receivers required by Table F219.3 to be hearing-aid compatible shall not be required to be provided.

Table F219.3 Receivers for Assistive Listening Systems

Capacity of Seating in Assembly Area	Minimum Number of Required Receivers	Minimum Number of Required Receivers Required to be Hearing-aid Compatible
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats[1]	2
201 to 500	2, plus 1 per 25 seats over 50 seats[1]	1 per 4 receivers[1]
501 to 1000	20, plus 1 per 33 seats over 500 seats[1]	1 per 4 receivers[1]
1001 to 2000	35, plus 1 per 50 seats over 1000 seats[1]	1 per 4 receivers[1]
2001 and over	55, plus 1 per 100 seats over 2000 seats[1]	1 per 4 receivers[1]

1. Or fraction thereof.

F220 Automatic Teller Machines and Fare Machines

F220.1 General. Where automatic teller machines or self-service fare vending, collection, or adjustment machines are provided, at least one of each type provided at each location shall comply with 707. Where bins are provided for envelopes, waste paper, or other purposes, at least one of each type shall comply with 811.

> **Advisory F220.1 General.** If a bank provides both interior and exterior ATMs, each such installation is considered a separate location. Accessible ATMs, including those with speech and those that are within reach of people who use wheelchairs, must provide all the functions provided to customers at that location at all times. For example, it is unacceptable for the accessible ATM only to provide cash withdrawals while inaccessible ATMs also sell theater tickets.

F221 Assembly Areas

F221.1 General. *Assembly areas* shall provide *wheelchair spaces*, companion seats, and designated aisle seats complying with F221 and 802. In addition, lawn seating shall comply with F221.5.

F221.2 Wheelchair Spaces. *Wheelchair spaces* complying with F221.2 shall be provided in *assembly areas* with fixed seating.

F221.2.1 Number and Location. *Wheelchair spaces* shall be provided complying with F221.2.1.

F221.2.1.1 General Seating. *Wheelchair spaces* complying with 802.1 shall be provided in accordance with Table F221.2.1.1.

Table F221.2.1.1 Number of Wheelchair Spaces in Assembly Areas

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

F221.2.1.2 Luxury Boxes, Club Boxes, and Suites in Arenas, Stadiums, and Grandstands. In each luxury box, club box, and suite within arenas, stadiums, and grandstands, *wheelchair spaces* complying with 802.1 shall be provided in accordance with Table F221.2.1.1.

Advisory F221.2.1.2 Luxury Boxes, Club Boxes, and Suites in Arenas, Stadiums, and Grandstands. The number of wheelchair spaces required in luxury boxes, club boxes, and suites within an arena, stadium, or grandstand is to be calculated box by box and suite by suite.

F221.2.1.3 Other Boxes. In boxes other than those required to comply with F221.2.1.2, the total number of *wheelchair spaces* required shall be determined in accordance with Table F221.2.1.1. *Wheelchair spaces* shall be located in not less than 20 percent of all boxes provided. *Wheelchair spaces* shall comply with 802.1.

Advisory F221.2.1.3 Other Boxes. The provision for seating in "other boxes" includes box seating provided in facilities such as performing arts auditoria where tiered boxes are designed for spatial and acoustical purposes. The number of wheelchair spaces required in boxes covered by 221.2.1.3 is calculated based on the total number of seats provided in these other boxes. The resulting number of wheelchair spaces must be located in no fewer than 20% of the boxes covered by this section. For example, a concert hall has 20 boxes, each of which contains 10 seats, totaling 200 seats. In this example, 5 wheelchair spaces would be required, and they must be placed in at least 4 of the boxes. Additionally, because the wheelchair spaces must also meet the dispersion requirements of 221.2.3, the boxes containing these wheelchair spaces cannot all be located in one area unless an exception to the dispersion requirements applies.

F221.2.1.4 Team or Player Seating. At least one *wheelchair space* complying with 802.1 shall be provided in team or player seating areas serving *areas of sport activity.*

EXCEPTION: *Wheelchair spaces* shall not be required in team or player seating areas serving bowling lanes not required to comply with F206.2.10.

F221.2.2 Integration. *Wheelchair spaces* shall be an integral part of the seating plan.

Advisory F221.2.2 Integration. The requirement that wheelchair spaces be an "integral part of the seating plan" means that wheelchair spaces must be placed within the footprint of the seating area. Wheelchair spaces cannot be segregated from seating areas. For example, it would be unacceptable to place only the wheelchair spaces, or only the wheelchair spaces and their associated companion seats, outside the seating areas defined by risers in an assembly area.

F221.2.3 Lines of Sight and Dispersion. *Wheelchair spaces* shall provide lines of sight complying with 802.2 and shall comply with F221.2.3. In providing lines of sight, *wheelchair spaces* shall be dispersed. *Wheelchair spaces* shall provide spectators with choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators. When the number of *wheelchair spaces* required by F221.2.1 has been met, further dispersion shall not be required.

EXCEPTION: *Wheelchair spaces* in team or player seating areas serving *areas of sport activity* shall not be required to comply with F221.2.3.

Advisory F221.2.3 Lines of Sight and Dispersion. Consistent with the overall intent of the ADA, individuals who use wheelchairs must be provided equal access so that their experience is substantially equivalent to that of other members of the audience. Thus, while individuals who use wheelchairs need not be provided with the best seats in the house, neither may they be relegated to the worst.

F221.2.3.1 Horizontal Dispersion. *Wheelchair spaces* shall be dispersed horizontally.

EXCEPTIONS: 1. Horizontal dispersion shall not be required in *assembly areas* with 300 or fewer seats if the companion seats required by F221.3 and *wheelchair spaces* are located within the 2nd or 3rd quartile of the total row length. Intermediate aisles shall be included in

determining the total row length. If the row length in the 2nd and 3rd quartile of a row is insufficient to accommodate the required number of companion seats and *wheelchair spaces*, the additional companion seats and *wheelchair spaces* shall be permitted to be located in the 1st and 4th quartile of the row.

2. In row seating, two *wheelchair spaces* shall be permitted to be located side-by-side.

Advisory F221.2.3.1 Horizontal Dispersion. Horizontal dispersion of wheelchair spaces is the placement of spaces in an assembly facility seating area from side-to-side or, in the case of an arena or stadium, around the field of play or performance area.

F221.2.3.2 Vertical Dispersion. *Wheelchair spaces* shall be dispersed vertically at varying distances from the screen, performance area, or playing field. In addition, *wheelchair spaces* shall be located in each balcony or *mezzanine* that is located on an *accessible* route.

EXCEPTIONS: 1. Vertical dispersion shall not be required in *assembly areas* with 300 or fewer seats if the *wheelchair spaces* provide viewing angles that are equivalent to, or better than, the average viewing angle provided in the *facility.*

2. In bleachers, *wheelchair spaces* shall not be required to be provided in rows other than rows at points of entry to bleacher seating.

Advisory F221.2.3.2 Vertical Dispersion. When wheelchair spaces are dispersed vertically in an assembly facility they are placed at different locations within the seating area from front-to-back so that the distance from the screen, stage, playing field, area of sports activity, or other focal point is varied among wheelchair spaces.

Advisory F221.2.3.2 Vertical Dispersion Exception 2. Points of entry to bleacher seating may include, but are not limited to, cross aisles, concourses, vomitories, and entrance ramps and stairs. Vertical, center, or side aisles adjoining bleacher seating that are stepped or tiered are not considered entry points.

F221.3 Companion Seats. At least one companion seat complying with 802.3 shall be provided for each *wheelchair space* required by F221.2.1.

F221.4 Designated Aisle Seats. At least 5 percent of the total number of aisle seats provided shall comply with 802.4 and shall be the aisle seats located closest to *accessible* routes.

EXCEPTION: Team or player seating areas serving *areas of sport activity* shall not be required to comply with F221.4.

Advisory F221.4 Designated Aisle Seats. When selecting which aisle seats will meet the requirements of 802.4, those aisle seats which are closest to, not necessarily on, accessible routes must be selected first. For example, an assembly area has two aisles (A and B) serving seating areas with an accessible route connecting to the top and bottom of Aisle A only. The aisle seats chosen to meet 802.4 must be those at the top and bottom of Aisle A, working toward the middle. Only when all seats on Aisle A would not meet the five percent minimum would seats on Aisle B be designated.

F221.5 Lawn Seating. Lawn seating areas and exterior overflow seating areas, where fixed seats are not provided, shall connect to an *accessible* route.

F222 Dressing, Fitting, and Locker Rooms

F222.1 General. Where dressing rooms, fitting rooms, or locker rooms are provided, at least 5 percent, but no fewer than one, of each type of use in each cluster provided shall comply with 803.

EXCEPTION: In *alterations*, where it is *technically infeasible* to provide rooms in accordance with F222.1, one room for each sex on each level shall comply with 803. Where only unisex rooms are provided, unisex rooms shall be permitted.

> **Advisory F222.1 General.** A "cluster" is a group of rooms proximate to one another. Generally, rooms in a cluster are within sight of, or adjacent to, one another. Different styles of design provide users varying levels of privacy and convenience. Some designs include private changing facilities that are close to core areas of the facility, while other designs use space more economically and provide only group dressing facilities. Regardless of the type of facility, dressing, fitting, and locker rooms should provide people with disabilities rooms that are equally private and convenient to those provided others. For example, in a physician's office, if people without disabilities must traverse the full length of the office suite in clothing other than their street clothes, it is acceptable for people with disabilities to be asked to do the same.

F222.2 Coat Hooks and Shelves. Where coat hooks or shelves are provided in dressing, fitting or locker rooms without individual compartments, at least one of each type shall comply with 803.5. Where coat hooks or shelves are provided in individual compartments at least one of each type complying with 803.5 shall be provided in individual compartments in dressing, fitting, or locker rooms required to comply with F222.1.

F223 Medical Care and Long-Term Care Facilities

F223.1 General. In licensed medical care *facilities* and licensed long-term care *facilities* where the period of stay exceeds twenty-four hours, patient or resident sleeping rooms shall be provided in accordance with F223.

EXCEPTION: Toilet rooms that are part of critical or intensive care patient sleeping rooms shall not be required to comply with 603.

> **Advisory F223.1 General.** Because medical facilities frequently reconfigure spaces to reflect changes in medical specialties, Section F223.1 does not include a provision for dispersion of accessible patient or resident sleeping rooms. The lack of a design requirement does not mean that covered entities are not required to provide services to people with disabilities where accessible rooms are not dispersed in specialty areas. Locate accessible rooms near core areas that are less likely to change over time. While dispersion is not required, the flexibility it provides can be a critical factor in ensuring cost effective compliance with applicable civil rights laws, including Sections 501 and 504 of the Rehabilitation Act of 1973, as amended.

Advisory F223.1 General (Continued). Additionally, all types of features and amenities should be dispersed among accessible sleeping rooms to ensure equal access to and a variety of choices for all patients and residents.

F223.1.1 Alterations. Where sleeping rooms are *altered* or *added*, the requirements of F223 shall apply only to the sleeping rooms being *altered* or *added* until the number of sleeping rooms complies with the minimum number required for new construction.

Advisory F223.1.1 Alterations. In alterations and additions, the minimum required number is based on the total number of sleeping rooms altered or added instead of on the total number of sleeping rooms provided in a facility. As a facility is altered over time, every effort should be made to disperse accessible sleeping rooms among patient care areas such as pediatrics, cardiac care, maternity, and other units. In this way, people with disabilities can have access to the full-range of services provided by a medical care facility.

F223.2 Hospitals, Rehabilitation Facilities, Psychiatric Facilities and Detoxification Facilities. Hospitals, rehabilitation *facilities*, psychiatric *facilities* and detoxification *facilities* shall comply with F223.2.

F223.2.1 Facilities Not Specializing in Treating Conditions That Affect Mobility. In *facilities* not specializing in treating conditions that affect mobility, at least 10 percent, but no fewer than one, of the patient sleeping rooms shall provide mobility features complying with 805.

F223.2.2 Facilities Specializing in Treating Conditions That Affect Mobility. In *facilities* specializing in treating conditions that affect mobility, 100 percent of the patient sleeping rooms shall provide mobility features complying with 805.

Advisory F223.2.2 Facilities Specializing in Treating Conditions That Affect Mobility. Conditions that affect mobility include conditions requiring the use or assistance of a brace, cane, crutch, prosthetic device, wheelchair, or powered mobility aid; arthritic, neurological, or orthopedic conditions that severely limit one's ability to walk; respiratory diseases and other conditions which may require the use of portable oxygen; and cardiac conditions that impose significant functional limitations. Facilities that may provide treatment for, but that do not specialize in treatment of such conditions, such as general rehabilitation hospitals, are not subject to this requirement but are subject to Section F223.2.1.

F223.3 Long-Term Care Facilities. In licensed long-term care *facilities*, at least 50 percent, but no fewer than one, of each type of resident sleeping room shall provide mobility features complying with 805.

F224 Transient Lodging Guest Rooms

F224.1 General. *Transient lodging facilities* shall provide guest rooms in accordance with F224.

Advisory F224.1 General. Certain facilities used for transient lodging including time shares, dormitories, and town homes may be covered by both these requirements and the Fair Housing Amendments Act. The Fair Housing Amendments Act requires that certain residential structures having four or more multi-family dwelling units, regardless of whether they are privately owned or federally assisted, include certain features of accessible and adaptable design according to guidelines established by the U.S. Department of Housing and Urban Development (HUD). This law and the appropriate regulations should be consulted before proceeding with the design and construction of residential housing.

F224.1.1 Alterations. Where guest rooms are *altered* or *added*, the requirements of F224 shall apply only to the guest rooms being *altered* or *added* until the number of guest rooms complies with the minimum number required for new construction.

Advisory F224.1.1 Alterations. In alterations and additions, the minimum required number of accessible guest rooms is based on the total number of guest rooms altered or added instead of the total number of guest rooms provided in a facility. Typically, each alteration of a facility is limited to a particular portion of the facility. When accessible guest rooms are added as a result of subsequent alterations, compliance with 224.5 (Dispersion) is more likely to be achieved if all of the accessible guest rooms are not provided in the same area of the facility.

F224.1.2 Guest Room Doors and Doorways. *Entrances,* doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with 806.2 shall comply with 404.2.3.

EXCEPTION: Shower and sauna doors in guest rooms that are not required to provide mobility features complying with 806.2 shall not be required to comply with 404.2.3.

Advisory F224.1.2 Guest Room Doors and Doorways. Because of the social interaction that often occurs in lodging facilities, an accessible clear opening width is required for doors and doorways to and within all guest rooms, including those not required to be accessible. This applies to all doors, including bathroom doors, that allow full user passage. Other requirements for doors and doorways in Section 404 do not apply to guest rooms not required to provide mobility features.

F224.2 Guest Rooms with Mobility Features. In *transient lodging facilities*, guest rooms with mobility features complying with 806.2 shall be provided in accordance with Table F224.2.

Table F224.2 Guest Rooms with Mobility Features

Total Number of Guest Rooms Provided	Minimum Number of Required Rooms Without Roll-in Showers	Minimum Number of Required Rooms With Roll-in Showers	Total Number of Required Rooms
1 to 25	1	0	1
26 to 50	2	0	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1000	2 percent of total	1 percent of total	3 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100, or fraction thereof, over 1000

F224.3 Beds. In guest rooms having more than 25 beds, 5 percent minimum of the beds shall have clear floor *space* complying with 806.2.3.

F224.4 Guest Rooms with Communication Features. In *transient lodging facilities*, guest rooms with communication features complying with 806.3 shall be provided in accordance with Table F224.4.

Table F224.4 Guest Rooms with Communication Features

Total Number of Guest Rooms Provided	Minimum Number of Required Guest Rooms With Communication Features
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12

Table F224.4 Guest Rooms with Communication Features

Total Number of Guest Rooms Provided	Minimum Number of Required Guest Rooms With Communication Features
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 3 for each 100 over 1000

F224.5 Dispersion. Guest rooms required to provide mobility features complying with 806.2 and guest rooms required to provide communication features complying with 806.3 shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with 806 is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with 806.2 shall also provide communication features complying with 806.3. Not more than 10 percent of guest rooms required to provide mobility features complying with 806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with 806.3.

> **Advisory F224.5 Dispersion.** Factors to be considered in providing an equivalent range of options may include, but are not limited to, room size, bed size, cost, view, bathroom fixtures such as hot tubs and spas, smoking and nonsmoking, and the number of rooms provided.

F225 Storage

F225.1 General. Storage *facilities* shall comply with F225.

F225.2 Storage. Where storage is provided in *accessible spaces*, at least one of each type shall comply with 811.

> **Advisory F225.2 Storage.** Types of storage include, but are not limited to, closets, cabinets, shelves, clothes rods, hooks, and drawers. Where provided, at least one of each type of storage must be within the reach ranges specified in 308; however, it is permissible to install additional storage outside the reach ranges.

F225.2.1 Lockers. Where lockers are provided, at least 5 percent, but no fewer than one of each type, shall comply with 811.

Advisory F225.2.1 Lockers. Different types of lockers may include full-size and half-size lockers, as well as those specifically designed for storage of various sports equipment.

F225.2.2 Self-Service Shelving. Self-service shelves shall be located on an *accessible* route complying with 402. Self-service shelving shall not be required to comply with 308.

Advisory F225.2.2 Self-Service Shelving. Self-service shelves include, but are not limited to, library, store, or post office shelves.

F225.3 Self-Service Storage Facilities. *Self-service storage facilities* shall provide individual *self-service storage spaces* complying with these requirements in accordance with Table F225.3.

Table F225.3 Self-Service Storage Facilities

Total Spaces in Facility	Minimum Number of Spaces Required to be Accessible
1 to 200	5 percent, but no fewer than 1
201 and over	10, plus 2 percent of total number of units over 200

Advisory F225.3 Self-Service Storage Facilities. Although there are no technical requirements that are unique to self-service storage facilities, elements and spaces provided in facilities containing self-service storage spaces required to comply with these requirements must comply with this document where applicable. For example: the number of storage spaces required to comply with these requirements must provide Accessible Routes complying with Section F206; Accessible Means of Egress complying with Section F207; Parking Spaces complying with Section F208; and, where provided, other pubic use or common use elements and facilities such as toilet rooms, drinking fountains, and telephones must comply with the applicable requirements of this document.

F225.3.1 Dispersion. Individual *self-service storage spaces* shall be dispersed throughout the various classes of *spaces* provided. Where more classes of *spaces* are provided than the number required to be *accessible*, the number of *spaces* shall not be required to exceed that required by Table F225.3. *Self-service storage spaces* complying with Table F225.3 shall not be required to be dispersed among *buildings* in a multi-*building facility.*

F226 Dining Surfaces and Work Surfaces

F226.1 General. Where dining surfaces are provided for the consumption of food or drink, at least 5 percent of the seating *spaces* and standing *spaces* at the dining surfaces shall comply with 902. In addition, where work surfaces are provided, at least 5 percent shall comply with 902.

EXCEPTIONS: 1. Sales counters and service counters shall not be required to comply with 902.

2. Check writing surfaces provided at check-out aisles not required to comply with 904.3 shall not be required to comply with 902.

> **Advisory F226.1 General.** In facilities covered by the ABA, this requirement applies to work surfaces used by employees. Five percent, but not less than one, of permanently installed work surfaces in each work area must be accessible. Permanently installed work surfaces include, but are not limited to, laboratory and work benches, fume hoods, reception counters, teller windows, study carrels, commercial kitchen counters, writing surfaces, and fixed conference tables. Where furnishings are not fixed, Sections 501, 503, and 504 of the Rehabilitation Act of 1973, as amended provides that Federal employees, employees of Federal contractors, and certain other employees, are entitled to "reasonable accommodations." This means that employers may need to procure or adjust furnishings to accommodate the individual needs of employees with disabilities on an "as needed" basis. Consider work surfaces that are flexible and permit installation at variable heights and clearances.

F226.2 Dispersion. Dining surfaces and work surfaces required to comply with 902 shall be dispersed throughout the *space* or *facility* containing dining surfaces and work surfaces.

F227 Sales and Service

F227.1 General. Where provided, check-out aisles, sales counters, service counters, food service lines, queues, and waiting lines shall comply with F227 and 904.

F227.2 Check-Out Aisles. Where check-out aisles are provided, check-out aisles complying with 904.3 shall be provided in accordance with Table F227.2. Where check-out aisles serve different functions, check-out aisles complying with 904.3 shall be provided in accordance with Table F227.2 for each function. Where check-out aisles are dispersed throughout the *building* or *facility*, check-out aisles complying with 904.3 shall be dispersed.

EXCEPTION: Where the selling *space* is under 5000 square feet (465 m^2) no more than one check-out aisle complying with 904.3 shall be required.

Table F227.2 Check-Out Aisles

Number of Check-Out Aisles of Each Function	Minimum Number of Check-Out Aisles of Each Function Required to Comply with 904.3
1 to 4	1
5 to 8	2
9 to 15	3
16 and over	3, plus 20 percent of additional aisles

F227.2.1 Altered Check-Out Aisles. Where check-out aisles are *altered*, at least one of each check-out aisle serving each function shall comply with 904.3 until the number of check-out aisles complies with F227.2.

F227.3 Counters. Where provided, at least one of each type of sales counter and service counter shall comply with 904.4. Where counters are dispersed throughout the *building* or *facility*, counters complying with 904.4 also shall be dispersed.

Advisory F227.3 Counters. Types of counters that provide different services in the same facility include, but are not limited to, order, pick-up, express, and returns. One continuous counter can be used to provide different types of service. For example, order and pick-up are different services. It would not be acceptable to provide access only to the part of the counter where orders are taken when orders are picked-up at a different location on the same counter. Both the order and pick-up section of the counter must be accessible.

F227.4 Food Service Lines. Food service lines shall comply with 904.5. Where self-service shelves are provided, at least 50 percent, but no fewer than one, of each type provided shall comply with 308.

F227.5 Queues and Waiting Lines. Queues and waiting lines servicing counters or check-out aisles required to comply with 904.3 or 904.4 shall comply with 403.

F228 Depositories, Vending Machines, Change Machines, Mail Boxes, and Fuel Dispensers

F228.1 General. Where provided, at least one of each type of depository, vending machine, change machine, and fuel dispenser shall comply with 309.

EXCEPTIONS: 1. Drive-up only depositories shall not be required to comply with 309.

2. Fuel dispensers provided for fueling official government vehicles shall not be required to comply with 309.

Advisory F228.1 General. Depositories include, but are not limited to, night receptacles in banks, post offices, video stores, and libraries.

F228.2 Mail Boxes. Where *mail boxes* are provided in an interior location, at least 5 percent, but no fewer than one, of each type shall comply with 309. In residential *facilities*, where *mail boxes* are provided for each *residential dwelling unit*, *mail boxes* complying with 309 shall be provided for each *residential dwelling unit* required to provide mobility features complying with 809.2 through 809.4.

F229 Windows

F229.1 General. Where glazed openings are provided in *accessible* rooms or *spaces* for operation by occupants, excluding employees, at least one opening shall comply with 309. In *accessible* rooms or *spaces,* each glazed opening required by an *administrative authority* to be operable shall comply with 309.

EXCEPTION: 1. Glazed openings in *residential dwelling units* required to comply with 809 shall not be required to comply with F229.

2. Glazed openings in guest rooms required to provide communication features and in guest rooms required to comply with F206.5.3 shall not be required to comply with F229.

F230 Two-Way Communication Systems

F230.1 General. Where a two-way communication system is provided to gain admittance to a *building* or *facility* or to restricted areas within a *building* or *facility*, the system shall comply with 708.

> **Advisory F230.1 General.** This requirement applies to facilities such as office buildings, courthouses, and other facilities where admittance to the building or restricted spaces is dependent on two-way communication systems.

F231 Judicial Facilities

F231.1 General. Judicial *facilities* shall comply with F231.

F231.2 Courtrooms. Each courtroom shall comply with 808.

F231.3 Holding Cells. Where provided, central holding cells and court-floor holding cells shall comply with F231.3.

F231.3.1 Central Holding Cells. Where separate central holding cells are provided for adult male, juvenile male, adult female, or juvenile female, one of each type shall comply with 807.2. Where central holding cells are provided and are not separated by age or sex, at least one cell complying with 807.2 shall be provided.

F231.3.2 Court-Floor Holding Cells. Where separate court-floor holding cells are provided for adult male, juvenile male, adult female, or juvenile female, each courtroom shall be served by one cell of each type complying with 807.2. Where court-floor holding cells are provided and are not separated by age or sex, courtrooms shall be served by at least one cell complying with 807.2. Cells may serve more than one courtroom.

F231.4 Visiting Areas. Visiting areas shall comply with F231.4.

F231.4.1 Cubicles and Counters. At least 5 percent, but no fewer than one, of cubicles shall comply with 902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with 904.4.2 on both the visitor and detainee sides.

EXCEPTION: The detainee side of cubicles or counters at non-contact visiting areas not serving holding cells required to comply with F231 shall not be required to comply with 902 or 904.4.2.

F231.4.2 Partitions. Where solid partitions or security glazing separate visitors from detainees at least one of each type of cubicle or counter partition shall comply with 904.6.

F232 Detention Facilities and Correctional Facilities

F232.1 General. *Buildings*, *facilities*, or portions thereof, in which people are detained for penal or correction purposes, or in which the liberty of the inmates is restricted for security reasons shall comply with F232.

> **Advisory F232.1 General.** Detention facilities include, but are not limited to, jails, detention centers, and holding cells in police stations. Correctional facilities include, but are not limited to, prisons, reformatories, and correctional centers.

F232.2 General Holding Cells and General Housing Cells. General holding cells and general housing cells shall be provided in accordance with F232.2.

EXCEPTION: *Alterations* to cells shall not be required to comply except to the extent determined by regulations issued by the appropriate Federal agency having authority under section 504 of the Rehabilitation Act of 1973.

> **Advisory F232.2 General Holding Cells and General Housing Cells.** Accessible cells or rooms should be dispersed among different levels of security, housing categories, and holding classifications (e.g., male/female and adult/juvenile) to facilitate access. Many detention and correctional facilities are designed so that certain areas (e.g., "shift" areas) can be adapted to serve as different types of housing according to need. For example, a shift area serving as a medium-security housing unit might be redesignated for a period of time as a high-security housing unit to meet capacity needs. Placement of accessible cells or rooms in shift areas may allow additional flexibility in meeting requirements for dispersion of accessible cells or rooms.
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> **Advisory F232.2 General Holding Cells and General Housing Cells Exception.** Although these requirements do not specify that cells be accessible as a consequence of an alteration, Section 504 of the Rehabilitation Act of 1973, as amended requires that each service, program, or activity conducted by a Federal agency, when viewed in its entirety, be readily accessible to and usable by individuals with disabilities. This requirement must be met unless doing so would fundamentally alter the nature of a service, program, or activity or would result in undue financial and administrative burdens.

F232.2.1 Cells with Mobility Features. At least 2 percent, but no fewer than one, of the total number of cells in a *facility* shall provide mobility features complying with 807.2.

F232.2.1.1 Beds. In cells having more than 25 beds, at least 5 percent of the beds shall have clear floor *space* complying with 807.2.3.

F232.2.2 Cells with Communication Features. At least 2 percent, but no fewer than one, of the total number of general holding cells and general housing cells equipped with audible emergency alarm systems and permanently installed telephones within the cell shall provide communication features complying with 807.3.

F232.3 Special Holding Cells and Special Housing Cells. Where special holding cells or special housing cells are provided, at least one cell serving each purpose shall provide mobility features complying with 807.2. Cells subject to this requirement include, but are not limited to, those used for purposes of orientation, protective custody, administrative or disciplinary detention or segregation, detoxification, and medical isolation.

EXCEPTION: *Alterations* to cells shall not be required to comply except to the extent determined by regulations issued by the appropriate Federal agency having authority under section 504 of the Rehabilitation Act of 1973.

F232.4 Medical Care Facilities. Patient bedrooms or cells required to comply with F223 shall be provided in addition to any medical isolation cells required to comply with F232.3.

F232.5 Visiting Areas. Visiting areas shall comply with F232.5.

F232.5.1 Cubicles and Counters. At least 5 percent, but no fewer than one, of cubicles shall comply with 902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with 904.4.2 on both the visitor and detainee or inmate sides.

EXCEPTION: The inmate or detainee side of cubicles or counters at non-contact visiting areas not serving holding cells or housing cells required to comply with F232 shall not be required to comply with 902 or 904.4.2.

F232.5.2 Partitions. Where solid partitions or security glazing separate visitors from detainees or inmates at least one of each type of cubicle or counter partition shall comply with 904.6.

F233 Residential Facilities

F233.1 General. *Facilities* with *residential dwelling units* shall comply with F233.

Advisory F233.1 General. Section F233 outlines the requirements for residential facilities subject to the Architectural Barriers Act. The facilities covered by Section F233, as well as other facilities not covered by this section, may still be subject to other Federal laws such as the Fair Housing Act and Section 504 of the Rehabilitation Act of 1973, as amended. For example, the Fair Housing Act requires that certain residential structures having four or more multi-family dwelling units, regardless of whether they are privately owned or federally assisted, include certain features of accessible and adaptable design according to guidelines established by the U.S. Department of Housing and Urban Development (HUD). These laws and the appropriate regulations should be consulted before proceeding with the design and construction of residential facilities.

Residential facilities containing residential dwelling units provided by entities subject to HUD's Section 504 regulations and residential dwelling units covered by Section F233.3 must comply with the technical and scoping requirements in Chapters 1 through 10 included this document. Section F233 is not a stand-alone section; this section only addresses the minimum number of residential dwelling units within a facility required to comply with Chapter 8. However, residential facilities must also comply with the requirements of this document. For example: Section F206.5.4 requires all doors and doorways providing user

Advisory F233.1 General (Continued). passage in residential dwelling units providing mobility features to comply with Section 404; Section F206.7.6 permits platform lifts to be used to connect levels within residential dwelling units providing mobility features; Section F208 provides general scoping for accessible parking and Section F208.2.3.1 specifies the required number of accessible parking spaces for each residential dwelling unit providing mobility features; Section F228.2 requires mail boxes to be within reach ranges when they serve residential dwelling units providing mobility features; play areas are addressed in Section F240; and swimming pools are addressed in Section F242. There are special provisions applicable to facilities containing residential dwelling units at: Exception 3 to F202.3; Exception to F202.4; F203.9; and Exception 3 to F206.2.3.

F233.2 Residential Dwelling Units Provided by HUD or Through Grant or Loan Programs Administered by HUD. Where *facilities* with *residential dwelling units* are provided by the Department of Housing and Urban Development (HUD), or through a grant or loan program administered by HUD, *residential dwelling units* with mobility features complying with 809.2 through 809.4 shall be provided in a number required by the regulations issued by HUD under Section 504 of the Rehabilitation Act of 1973, as amended. *Residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 shall be on an *accessible* route as required by F206. In addition, *residential dwelling units* with communication features complying with 809.5 shall be provided in a number required by the applicable HUD regulations. *Residential dwelling units* subject to F233.2 shall not be required to comply with F233.3 or F233.4.

Advisory F233.2 Residential Dwelling Units Provided by HUD or Through Grant or Loan Programs Administered by HUD. Section F233.2 requires that entities subject to HUD's regulations implementing Section 504 of the Rehabilitation Act of 1973, as amended, provide residential dwelling units containing mobility features and residential dwelling units containing communication features complying with these regulations in a number specified in HUD's Section 504 regulations. Further, the residential dwelling units provided must be dispersed according to HUD's Section 504 criteria. In addition, Section F233.2 defers to HUD the specification of criteria by which the technical requirements of this document will apply to alterations of existing facilities subject to HUD's Section 504 regulations.

F233.3 Residential Dwelling Units Provided on Military Installations. *Military installations* with *residential dwelling units* shall comply with F233.3. *Residential dwelling units* on *military installations* subject to F233.3 shall not be required to comply with F233.2 or F233.4.

F233.3.1 Minimum Number: New Construction. Newly constructed *facilities* with *residential dwelling units* shall comply with F233.3.1.

F233.3.1.1 Residential Dwelling Units with Mobility Features. On *military installations* with *residential dwelling units*, at least 5 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide mobility features complying with 809.2 through 809.4 and shall be on an *accessible* route as required by F206.

F233.3.1.2 Residential Dwelling Units with Communication Features. On *military installations* with *residential dwelling units*, at least 2 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide communication features complying with 809.5.

F233.3.2 Additions. Where an *addition* to an existing *building* results in an increase in the number of *residential dwelling units,* the requirements of F233.3.1 shall apply only to the *residential dwelling units* that are *added* until the total number of *residential dwelling units* complies with the minimum number required by F233.3.1. *Residential dwelling units* required to comply with F233.3.1.1 shall be on an *accessible* route as required by F206.

F233.3.3 Alterations. *Alterations* shall comply with F233.3.3.

EXCEPTION: Where compliance with 809.2, 809.3, or 809.4 is *technically infeasible*, or where it is *technically infeasible* to provide an *accessible* route to a *residential dwelling unit*, the Department of Defense shall be permitted to *alter* or construct a comparable *residential dwelling unit* to comply with 809.2 through 809.4 provided that the minimum number of *residential dwelling units* required by F233.3.1.1 and F233.3.1.2, as applicable, is satisfied.

F233.3.3.1 Alterations to Vacated Buildings. Where a *building* is vacated for the purposes of *alteration*, at least 5 percent of the *residential dwelling units* shall comply with 809.2 through 809.4 and shall be on an *accessible* route as required by F206. In addition, at least 2 percent of the *residential dwelling units* shall comply with 809.5.

F233.3.3.2 Alterations to Individual Residential Dwelling Units. In individual *residential dwelling units*, where a bathroom or a kitchen is substantially *altered*, and at least one other room is *altered*, the requirements of F233.3.1 shall apply to the *altered residential dwelling units* until the total number of *residential dwelling units* complies with the minimum number required by F233.3.1.1 and F233.3.1.2. *Residential dwelling units* required to comply with F233.3.1.1 shall be on an *accessible* route as required by F206.

F233.3.4 Dispersion. *Residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 and *residential dwelling units* required provide communication features complying with 809.5 shall be dispersed among the various types of *residential dwelling units* on the *military installation*, and shall provide choices of *residential dwelling units* comparable to, and integrated with, those available to other residents.

EXCEPTION: Where multi-*story residential dwelling units* are one of the types of *residential dwelling units* provided, one-*story residential dwelling units* shall be permitted as a substitute for multi-*story residential dwelling units* where equivalent *spaces* and amenities are provided in the one-*story residential dwelling unit.*

F233.4 Residential Dwelling Units Provided by Other Federal Agencies or Through Grant or Loan Programs Administered by Other Federal Agencies. *Facilities* with *residential dwelling units* provided by other federal agencies or through grant or loan programs administered by other federal agencies shall comply with F233.4. *Residential dwelling units* subject to F233.4 shall not be required to comply with F233.2 or F233.3.

F233.4.1 Minimum Number: New Construction. Newly constructed *facilities* with *residential dwelling units* shall comply with F233.4.1.

EXCEPTION: Where *facilities* contain 15 or fewer r*esidential dwelling units*, the requirements of F233.4.1.1 and F233.4.1.2 shall apply to the total number of *residential dwelling units* that are constructed under a single contract, or are developed as a whole, whether or not located on a common *site*.

F233.4.1.1 Residential Dwelling Units with Mobility Features. In *facilities* with *residential dwelling units*, at least 5 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide mobility features complying with 809.2 through 809.4 and shall be on an *accessible* route as required by F206.

F233.4.1.2 Residential Dwelling Units with Communication Features. In *facilities* with *residential dwelling units*, at least 2 percent, but no fewer than one unit, of the total number of *residential dwelling units* shall provide communication features complying with 809.5.

F233.4.2 Residential Dwelling Units for Sale. *Residential dwelling units* offered for sale shall provide *accessible* features to the extent required by regulations issued by Federal agencies under Section 504 of the Rehabilitation Act of 1973, as amended.

Advisory F233.4.2 Residential Dwelling Units for Sale. An agency that uses federal funds or an entity that receives federal financial assistance to build housing for purchase by individual home buyers must provide access according to the requirements of the applicable Section 504 regulations.

F233.4.3 Additions. Where an *addition* to an existing *building* results in an increase in the number of *residential dwelling units,* the requirements of F233.4.1 shall apply only to the *residential dwelling units* that are *added* until the total number of *residential dwelling units* complies with the minimum number required by F233.4.1. *Residential dwelling units* required to comply with F233.4.1.1 shall be on an *accessible* route as required by F206.

F233.4.4 Alterations. *Alterations* shall comply with F233.4.4.

EXCEPTION: Where compliance with 809.2, 809.3, or 809.4 is *technically infeasible*, or where it is *technically infeasible* to provide an *accessible* route to a *residential dwelling unit*, the entity shall be permitted to *alter* or construct a comparable *residential dwelling unit* to comply with 809.2 through 809.4 provided that the minimum number of *residential dwelling units* required by F233.4.1.1 and F233.4.1.2, as applicable, is satisfied.

Advisory F233.4.4 Alterations Exception. A substituted dwelling unit must be comparable to the dwelling unit that is not made accessible. Factors to be considered in comparing one dwelling unit to another should include the number of bedrooms; amenities provided within the dwelling unit; types of common spaces provided within the facility; and location with respect to community resources and services, such as public transportation and civic, recreational, and mercantile facilities.

F233.4.4.1 Alterations to Vacated Buildings. Where a *building* is vacated for the purposes of *alteration* and the *altered building* contains more than 15 *residential dwelling units*, at least 5 percent of the *residential dwelling units* shall comply with 809.2 through 809.4 and shall be on an *accessible* route as required by F206. In addition, at least 2 percent of the *residential dwelling units* shall comply with 809.5.

Advisory F233.4.4.1 Alterations to Vacated Buildings. This provision is intended to apply where a building is vacated with the intent to alter the building. Buildings that are vacated solely for pest control or asbestos removal are not subject to the requirements to provide residential dwelling units with mobility features or communication features.

F233.4.4.2 Alterations to Individual Residential Dwelling Units. In individual *residential dwelling units*, where a bathroom or a kitchen is substantially *altered*, and at least one other room is *altered* the requirements of F233.4.1 shall apply to the *altered residential dwelling units* until the total number of *residential dwelling units* complies with the minimum number required by F233.4.1.1 and F233.4.1.2. *Residential dwelling units* required to comply with F233.4.1.1 shall be on an *accessible* route as required by F206.

EXCEPTION: Where *facilities* contain 15 or fewer r*esidential dwelling units*, the requirements of F233.4.1.1 and F233.4.1.2 shall apply to the total number of *residential dwelling units* that are *altered* under a single contract, or are developed as a whole, whether or not located on a common *site*.

Advisory F233.4.4.2 Alterations to Individual Residential Dwelling Units. Section F233.4.4.2 uses the terms "substantially altered" and "altered." A substantial alteration to a kitchen or bathroom includes, but is not limited to, alterations that are changes to or rearrangements in the plan configuration, or replacement of cabinetry. Substantial alterations do not include normal maintenance or appliance and fixture replacement, unless such maintenance or replacement requires changes to or rearrangements in the plan configuration, or replacement of cabinetry. The term "alteration" is defined in Section F106 of these requirements.

F233.4.5 Dispersion. *Residential dwelling units* required to provide mobility features complying with 809.2 through 809.4 and *residential dwelling units* required to provide communication features complying with 809.5 shall be dispersed among the various types of *residential dwelling units* in the *facility* and shall provide choices of *residential dwelling units* comparable to, and integrated with, those available to other residents.

EXCEPTION: Where multi-*story residential dwelling units* are one of the types of *residential dwelling units* provided, one-*story residential dwelling units* shall be permitted as a substitute for multi-*story residential dwelling units* where equivalent *spaces* and amenities are provided in the one-*story residential dwelling unit*.

F234 Amusement Rides

F234.1 General. *Amusement rides* shall comply with F234.

EXCEPTION: Mobile or portable *amusement rides* shall not be required to comply with F234.

Advisory F234.1 General. These requirements apply generally to newly designed and constructed amusement rides and attractions. A custom designed and constructed ride is new upon its first use, which is the first time amusement park patrons take the ride. With respect to amusement rides purchased from other entities, new refers to the first permanent installation of the ride, whether it is used off the shelf or modified before it is installed. Where amusement rides are moved after several seasons to another area of the park or to another park, the ride would not be considered newly designed or newly constructed.

Some amusement rides and attractions that have unique designs and features are not addressed by these requirements. In those situations, these requirements are to be applied to the extent possible. An example of an amusement ride not specifically addressed by these requirements includes "virtual reality" rides where the device does not move through a fixed course within a defined area. An accessible route must be provided to these rides. Where an attraction or ride has unique features for which there are no applicable scoping provisions, then a reasonable number, but at least one, of the features must be located on an accessible route. Where there are appropriate technical provisions, they must be applied to the elements that are covered by the scoping provisions.

Advisory F234.1 General Exception. Mobile or temporary rides are those set up for short periods of time such as traveling carnivals, State and county fairs, and festivals. The amusement rides that are covered by F234.1 are ones that are not regularly assembled and disassembled.

F234.2 Load and Unload Areas. Load and unload areas serving *amusement rides* shall comply with 1002.3.

F234.3 Minimum Number. *Amusement rides* shall provide at least one *wheelchair space* complying with 1002.4, or at least one *amusement ride seat* designed for transfer complying with 1002.5, or at least one *transfer device* complying with 1002.6.

EXCEPTIONS: 1. *Amusement rides* that are controlled or operated by the rider shall not be required to comply with F234.3.

2. *Amusement rides* designed primarily for children, where children are assisted on and off the ride by an adult, shall not be required to comply with F234.3.

3. *Amusement rides* that do not provide *amusement ride seats* shall not be required to comply with F234.3.

Advisory F234.3 Minimum Number Exceptions 1 through 3. Amusement rides controlled or operated by the rider, designed for children, or rides without ride seats are not required to comply with F234.3. These rides are not exempt from the other provisions in F234 requiring an accessible route to the load and unload areas and to the ride. The exception does not apply to those rides where patrons may cause the ride to make incidental movements, but where the patron otherwise has no control over the ride.

Advisory F234.3 Minimum Number Exception 2. The exception is limited to those rides designed "primarily" for children, where children are assisted on and off the ride by an adult. This exception is limited to those rides designed for children and not for the occasional adult user. An accessible route to and turning space in the load and unload area will provide access for adults and family members assisting children on and off these rides.

F234.4 Existing Amusement Rides. Where existing *amusement rides* are *altered*, the *alteration* shall comply with F234.4.

Advisory F234.4 Existing Amusement Rides. Routine maintenance, painting, and changing of theme boards are examples of activities that do not constitute an alteration subject to this section.

F234.4.1 Load and Unload Areas. Where load and unload areas serving existing *amusement rides* are newly designed and constructed, the load and unload areas shall comply with 1002.3.

F234.4.2 Minimum Number. Where the structural or operational characteristics of an *amusement ride* are *altered* to the extent that the *amusement ride*'s performance differs from that specified by the manufacturer or the original design, the *amusement ride* shall comply with F234.3.

F235 Recreational Boating Facilities

F235.1 General. Recreational boating *facilities* shall comply with F235.

F235.2 Boat Slips. *Boat slips* complying with 1003.3.1 shall be provided in accordance with Table F235.2. Where the number of *boat slips* is not identified, each 40 feet (12 m) of *boat slip* edge provided along the perimeter of the pier shall be counted as one *boat slip* for the purpose of this section.

Table F235.2 Boat Slips

Total Number of Boat Slips Provided in Facility	Minimum Number of Required Accessible Boat Slips
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8

Table F235.2 Boat Slips

Total Number of Boat Slips Provided in Facility	Minimum Number of Required Accessible Boat Slips
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for every 100, or fraction thereof, over 1000

Advisory F235.2 Boat Slips. The requirement for boat slips also applies to piers where boat slips are not demarcated. For example, a single pier 25 feet (7620 mm) long and 5 feet (1525 mm) wide (the minimum width specified by Section 1003.3) allows boats to moor on three sides. Because the number of boat slips is not demarcated, the total length of boat slip edge (55 feet, 17 m) must be used to determine the number of boat slips provided (two). This number is based on the specification in Section F235.2 that each 40 feet (12 m) of boat slip edge, or fraction thereof, counts as one boat slip. In this example, Table F235.2 would require one boat slip to be accessible.

F235.2.1 Dispersion. *Boat slips* complying with 1003.3.1 shall be dispersed throughout the various types of *boat slips* provided. Where the minimum number of *boat slips* required to comply with 1003.3.1 has been met, no further dispersion shall be required.

Advisory F235.2.1 Dispersion. Types of boat slips are based on the size of the boat slips; whether single berths or double berths, shallow water or deep water, transient or longer-term lease, covered or uncovered; and whether slips are equipped with features such as telephone, water, electricity or cable connections. The term "boat slip" is intended to cover any pier area other than launch ramp boarding piers where recreational boats are moored for purposes of berthing, embarking, or disembarking. For example, a fuel pier may contain boat slips, and this type of short term slip would be included in determining compliance with F235.2.

F235.3 Boarding Piers at Boat Launch Ramps. Where *boarding piers* are provided at *boat launch ramps*, at least 5 percent, but no fewer than one, of the *boarding piers* shall comply with 1003.3.2.

F236 Exercise Machines and Equipment

F236.1 General. At least one of each type of exercise machine and equipment shall comply with 1004.

Advisory F236.1 General. Most strength training equipment and machines are considered different types. Where operators provide a biceps curl machine and cable cross-over machine, both machines are required to meet the provisions in this section, even though an individual may be able to work on their biceps through both types of equipment.

Similarly, there are many types of cardiovascular exercise machines, such as stationary bicycles, rowing machines, stair climbers, and treadmills. Each machine provides a cardiovascular exercise and is considered a different type for purposes of these requirements.

F237 Fishing Piers and Platforms

F237.1 General. Fishing piers and platforms shall comply with 1005.

F238 Golf Facilities

F238.1 General. Golf *facilities* shall comply with F238.

F238.2 Golf Courses. Golf courses shall comply with F238.2.

F238.2.1 Teeing Grounds. Where one *teeing ground* is provided for a hole, the *teeing ground* shall be designed and constructed so that a golf car can enter and exit the *teeing ground.* Where two *teeing grounds* are provided for a hole, the forward *teeing ground* shall be designed and constructed so that a golf car can enter and exit the *teeing ground.* Where three or more *teeing grounds* are provided for a hole, at least two *teeing grounds*, including the forward *teeing ground*, shall be designed and constructed so that a golf car can enter and exit each *teeing ground.*

EXCEPTION: In existing golf courses, the forward *teeing ground* shall not be required to be one of the *teeing grounds* on a hole designed and constructed so that a golf car can enter and exit the *teeing ground* where compliance is not feasible due to terrain.

F238.2.2 Putting Greens. Putting greens shall be designed and constructed so that a golf car can enter and exit the putting green.

F238.2.3 Weather Shelters. Where provided, weather shelters shall be designed and constructed so that a golf car can enter and exit the weather shelter and shall comply with 1006.4.

F238.3 Practice Putting Greens, Practice Teeing Grounds, and Teeing Stations at Driving Ranges. At least 5 percent, but no fewer than one, of practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges shall be designed and constructed so that a golf car can enter and exit the practice putting greens, practice *teeing grounds*, and teeing stations at driving ranges.

F239 Miniature Golf Facilities

F239.1 General. Miniature golf *facilities* shall comply with F239.

F239.2 Minimum Number. At least 50 percent of holes on miniature golf courses shall comply with 1007.3.

Advisory F239.2 Minimum Number. Where possible, providing access to all holes on a miniature golf course is recommended. If a course is designed with the minimum 50 percent accessible holes, designers or operators are encouraged to select holes which provide for an equivalent experience to the maximum extent possible.

F239.3 Miniature Golf Course Configuration. Miniature golf courses shall be configured so that the holes complying with 1007.3 are consecutive. Miniature golf courses shall provide an *accessible* route from the last hole complying with 1007.3 to the course *entrance* or exit without requiring travel through any other holes on the course.

EXCEPTION: One break in the sequence of consecutive holes shall be permitted provided that the last hole on the miniature golf course is the last hole in the sequence.

Advisory F239.3 Miniature Golf Course Configuration. Where only the minimum 50 percent of the holes are accessible, an accessible route from the last accessible hole to the course exit or entrance must not require travel back through other holes. In some cases, this may require an additional accessible route. Other options include increasing the number of accessible holes in a way that limits the distance needed to connect the last accessible hole with the course exit or entrance.

F240 Play Areas

F240.1 General. *Play areas* for children ages 2 and over shall comply with F240. Where separate *play areas* are provided within a *site* for specific age groups, each *play area* shall comply with F240.

EXCEPTIONS: 1. *Play areas* located in family child care *facilities* where the proprietor actually resides shall not be required to comply with F240.

2. In existing *play areas*, where *play components* are relocated for the purposes of creating safe *use zones* and the ground surface is not *altered* or extended for more than one *use zone*, the *play area* shall not be required to comply with F240.

3. *Amusement attractions* shall not be required to comply with F240.

4. Where *play components* are *altered* and the ground surface is not *altered*, the ground surface shall not be required to comply with 1008.2.6 unless required by F202.4.

Advisory F240.1 General. Play areas may be located on exterior sites or within a building. Where separate play areas are provided within a site for children in specified age groups (e.g., preschool (ages 2 to 5) and school age (ages 5 to 12)), each play area must comply with this section. Where play areas are provided for the same age group on a site but are geographically separated (e.g., one is located next to a picnic area and another is located next to a softball field), they are considered separate play areas and each play area must comply with this section.

F240.1.1 Additions. Where *play areas* are designed and constructed in phases, the requirements of F240 shall apply to each successive *addition* so that when the *addition* is completed, the entire *play area* complies with all the applicable requirements of F240.

Advisory F240.1.1 Additions. These requirements are to be applied so that when each successive addition is completed, the entire play area complies with all applicable provisions. For example, a play area is built in two phases. In the first phase, there are 10 elevated play components and 10 elevated play components are added in the second phase for a total of 20 elevated play components in the play area. When the first phase was completed, at least 5 elevated play components, including at least 3 different types, were to be provided on an accessible route. When the second phase is completed, at least 10 elevated play components must be located on an accessible route, and at least 7 ground level play components, including 4 different types, must be provided on an accessible route. At the time the second phase is complete, ramps must be used to connect at least 5 of the elevated play components and transfer systems are permitted to be used to connect the rest of the elevated play components required to be located on an accessible route.

F240.2 Play Components. Where provided, *play components* shall comply with F240.2.

F240.2.1 Ground Level Play Components. *Ground level play components* shall be provided in the number and types required by F240.2.1. *Ground level play components* that are provided to comply with F240.2.1.1 shall be permitted to satisfy the additional number required by F240.2.1.2 if the minimum required types of *play components* are satisfied. Where two or more required *ground level play components* are provided, they shall be dispersed throughout the *play area* and integrated with other *play components*.

Advisory F240.2.1 Ground Level Play Components. Examples of ground level play components may include spring rockers, swings, diggers, and stand-alone slides. When distinguishing between the different types of ground level play components, consider the general experience provided by the play component. Examples of different types of experiences include, but are not limited to, rocking, swinging, climbing, spinning, and sliding. A spiral slide may provide a slightly different experience from a straight slide, but sliding is the general experience and therefore a spiral slide is not considered a different type of play component from a straight slide.

Ground level play components accessed by children with disabilities must be integrated into the play area. Designers should consider the optimal layout of ground level play components accessed by children with disabilities to foster interaction and socialization among all children. Grouping all ground level play components accessed by children with disabilities in one location is not considered integrated.

Where a stand-alone slide is provided, an accessible route must connect the base of the stairs at the entry point to the exit point of the slide. A ramp or transfer system to the top of the slide is not required. Where a sand box is provided, an accessible route must connect to the border of the sand box. Accessibility to the sand box would be enhanced by providing a transfer system into the sand or by providing a raised sand table with knee clearance complying with 1008.4.3.

Ramps are preferred over transfer systems since not all children who use wheelchairs or other mobility devices may be able to use, or may choose not to use, transfer systems.

Advisory F240.2.1 Ground Level Play Components (Continued). Where ramps connect elevated play components, the maximum rise of any ramp run is limited to 12 inches (305 mm). Where possible, designers and operators are encouraged to provide ramps with a slope less than the 1:12 maximum. Berms or sculpted dirt may be used to provide elevation and may be part of an accessible route to composite play structures.

Platform lifts are permitted as a part of an accessible route. Because lifts must be independently operable, operators should carefully consider the appropriateness of their use in unsupervised settings.

F240.2.1.1 Minimum Number and Types. Where *ground level play components* are provided, at least one of each type shall be on an *accessible* route and shall comply with 1008.4.

F240.2.1.2 Additional Number and Types. Where *elevated play components* are provided, *ground level play components* shall be provided in accordance with Table F240.2.1.2 and shall comply with 1008.4.

EXCEPTION: If at least 50 percent of the *elevated play components* are connected by a *ramp* and at least 3 of the *elevated play components* connected by the *ramp* are different types of *play components*, the *play area* shall not be required to comply with F240.2.1.2.

Table F240.2.1.2 Number and Types of Ground Level Play Components Required to be on Accessible Routes

Number of Elevated Play Components Provided	Minimum Number of Ground Level Play Components Required to be on an Accessible Route	Minimum Number of Different Types of Ground Level Play Components Required to be on an Accessible Route
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
26 and over	8, plus 1 for each additional 3, or fraction thereof, over 25	5

Advisory F240.2.1.2 Additional Number and Types. Where a large play area includes two or more composite play structures designed for the same age group, the total number of elevated play components on all the composite play structures must be added to determine the additional number and types of ground level play components that must be provided on an accessible route.

F240.2.2 Elevated Play Components. Where *elevated play components* are provided, at least 50 percent shall be on an *accessible* route and shall comply with 1008.4.

Advisory F240.2.2 Elevated Play Components. A double or triple slide that is part of a composite play structure is one elevated play component. For purposes of this section, ramps, transfer systems, steps, decks, and roofs are not considered elevated play components. Although socialization and pretend play can occur on these elements, they are not primarily intended for play.

Some play components that are attached to a composite play structure can be approached or exited at the ground level or above grade from a platform or deck. For example, a climber attached to a composite play structure can be approached or exited at the ground level or above grade from a platform or deck on a composite play structure. Play components that are attached to a composite play structure and can be approached from a platform or deck (e.g., climbers and overhead play components) are considered elevated play components. These play components are not considered ground level play components and do not count toward the requirements in F240.2.1.2 regarding the number of ground level play components that must be located on an accessible route.

F241 Saunas and Steam Rooms

F241.1 General. Where provided, saunas and steam rooms shall comply with 612.

EXCEPTION: Where saunas or steam rooms are clustered at a single location, no more than 5 percent of the saunas and steam rooms, but no fewer than one, of each type in each cluster shall be required to comply with 612.

F242 Swimming Pools, Wading Pools, and Spas

F242.1 General. Swimming pools, wading pools, and spas shall comply with F242.

F242.2 Swimming Pools. At least two *accessible* means of entry shall be provided for swimming pools. *Accessible* means of entry shall be swimming pool lifts complying with 1009.2; sloped entries complying with 1009.3; transfer walls complying with 1009.4; transfer systems complying with 1009.5; and pool stairs complying with 1009.6. At least one *accessible* means of entry provided shall comply with 1009.2 or 1009.3.

EXCEPTIONS: 1. Where a swimming pool has less than 300 linear feet (91 m) of swimming pool wall, no more than one *accessible* means of entry shall be required provided that the *accessible* means of entry is a swimming pool lift complying with 1009.2 or sloped entry complying with 1009.3.

2. Wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area shall not be required to provide more than one *accessible* means of entry provided that

the *accessible* means of entry is a swimming pool lift complying with 1009.2, a sloped entry complying with 1009.3, or a transfer system complying with 1009.5.

3. *Catch pools* shall not be required to provide an *accessible* means of entry provided that the *catch pool* edge is on an *accessible* route.

Advisory F242.2 Swimming Pools. Where more than one means of access is provided into the water, it is recommended that the means be different. Providing different means of access will better serve the varying needs of people with disabilities in getting into and out of a swimming pool. It is also recommended that where two or more means of access are provided, they not be provided in the same location in the pool. Different locations will provide increased options for entry and exit, especially in larger pools.

Advisory F242.2 Swimming Pools Exception 1. Pool walls at diving areas and areas along pool walls where there is no pool entry because of landscaping or adjacent structures are to be counted when determining the number of accessible means of entry required.

F242.3 Wading Pools. At least one *accessible* means of entry shall be provided for wading pools. *Accessible* means of entry shall comply with sloped entries complying with 1009.3.

F242.4 Spas. At least one *accessible* means of entry shall be provided for spas. *Accessible* means of entry shall comply with swimming pool lifts complying with1009.2; transfer walls complying with 1009.4; or transfer systems complying with 1009.5.

EXCEPTION: Where spas are provided in a cluster, no more than 5 percent, but no fewer than one, spa in each cluster shall be required to comply with F242.4.

F243 Shooting Facilities with Firing Positions

F243.1 General. Where shooting *facilities* with firing positions are designed and constructed at a *site*, at least 5 percent, but no fewer than one, of each type of firing position shall comply with 1010.

Appendix D to Part 1191—Technical

CHAPTER 3: BUILDING BLOCKS

301 General

301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

302 Floor or Ground Surfaces

302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.

EXCEPTIONS: 1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.

2. *Areas of sport activity* shall not be required to comply with 302.

> **Advisory 302.1 General.** A stable surface is one that remains unchanged by contaminants or applied force, so that when the contaminant or force is removed, the surface returns to its original condition. A firm surface resists deformation by either indentations or particles moving on its surface. A slip-resistant surface provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be ½ inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.

> **Advisory 302.2 Carpet.** Carpets and permanently affixed mats can significantly increase the amount of force (roll resistance) needed to propel a wheelchair over a surface. The firmer the carpeting and backing, the lower the roll resistance. A pile thickness up to ½ inch (13 mm) (measured to the backing, cushion, or pad) is allowed, although a lower pile provides easier wheelchair maneuvering. If a backing, cushion or pad is used, it must be firm. Preferably, carpet pad should not be used because the soft padding increases roll resistance.

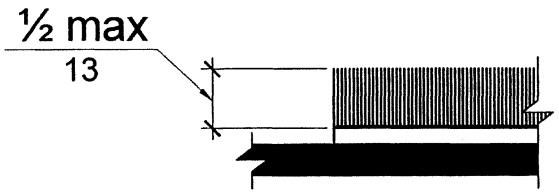


Figure 302.2
Carpet Pile Height

302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than ½ inch (13 mm) diameter except as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

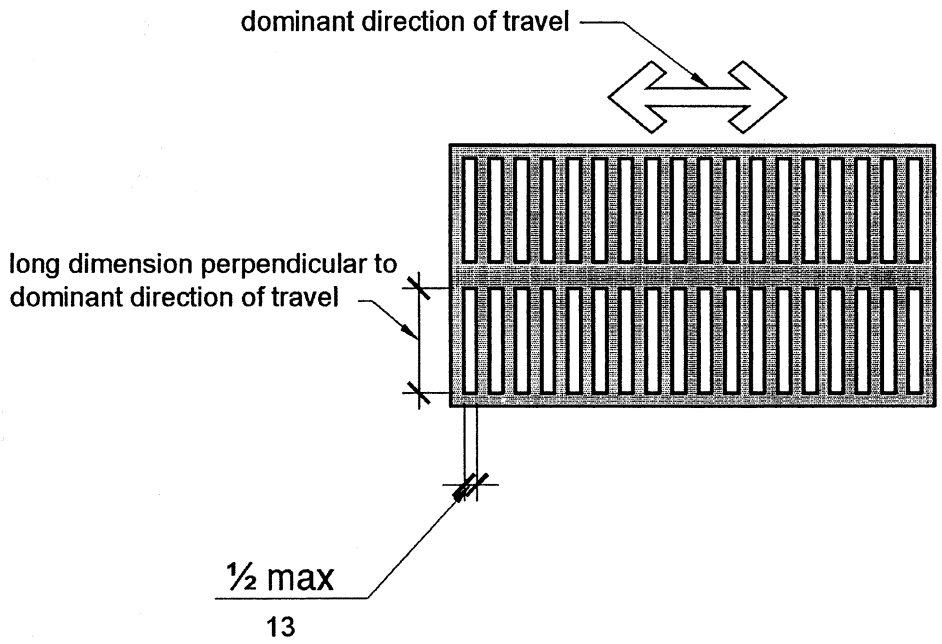


Figure 302.3
Elongated Openings in Floor or Ground Surfaces

303 Changes in Level

303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.

EXCEPTIONS: 1. Animal containment areas shall not be required to comply with 303.

2. *Areas of sport activity* shall not be required to comply with 303.

303.2 Vertical. Changes in level of ¼ inch (6.4 mm) high maximum shall be permitted to be vertical.

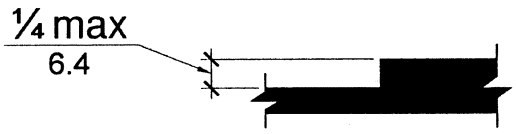


Figure 303.2
Vertical Change in Level

303.3 Beveled. Changes in level between ¼ inch (6.4 mm) high minimum and ½ inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

> **Advisory 303.3 Beveled.** A change in level of ½ inch (13 mm) is permitted to be ¼ inch (6.4 mm) vertical plus ¼ inch (6.4 mm) beveled. However, in no case may the combined change in level exceed ½ inch (13 mm). Changes in level exceeding ½ inch (13 mm) must comply with 405 (Ramps) or 406 (Curb Ramps).

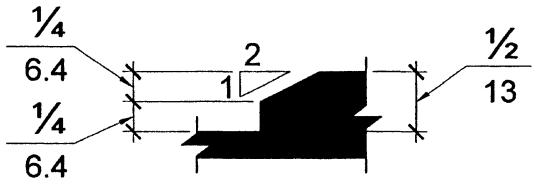


Figure 303.3
Beveled Change in Level

303.4 Ramps. Changes in level greater than ½ inch (13 mm) high shall be *ramped*, and shall comply with 405 or 406.

304 Turning Space

304.1 General. Turning *space* shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning *space* shall comply with 302. Changes in level are not permitted.

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

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

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

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

304.3.2 T-Shaped Space. The turning *space* shall be a T-shaped *space* within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of

obstructions 24 inches (610 mm) minimum. The *space* shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

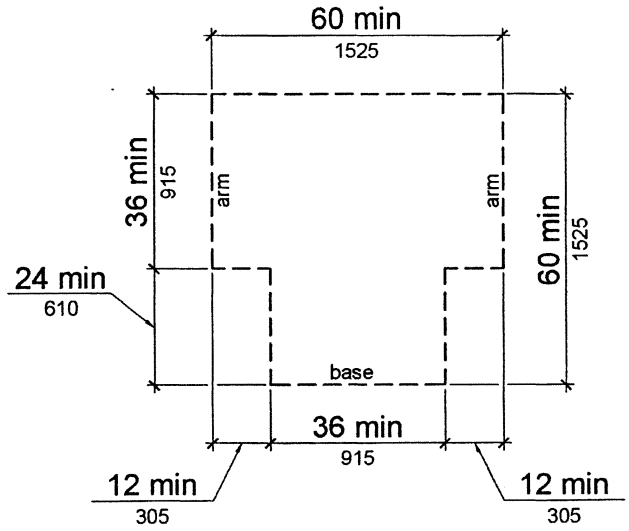


Figure 304.3.2
T-Shaped Turning Space

304.4 Door Swing. Doors shall be permitted to swing into turning *spaces*.

305 Clear Floor or Ground Space

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

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

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

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

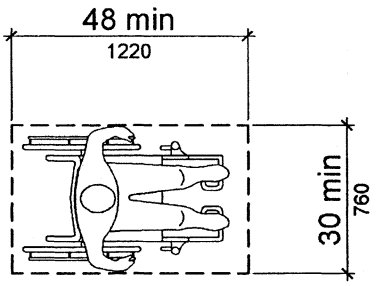


Figure 305.3
Clear Floor or Ground Space

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

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

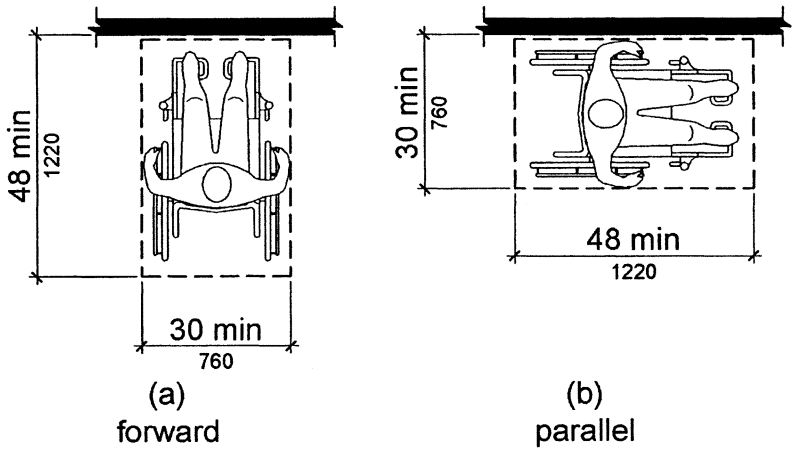


Figure 305.5
Position of Clear Floor or Ground Space

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

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

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

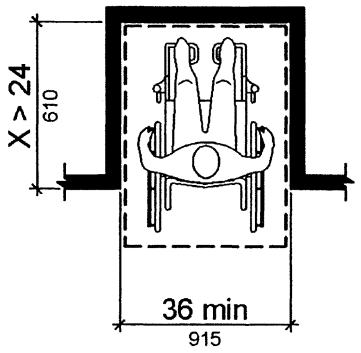


Figure 305.7.1
Maneuvering Clearance in an Alcove, Forward Approach

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

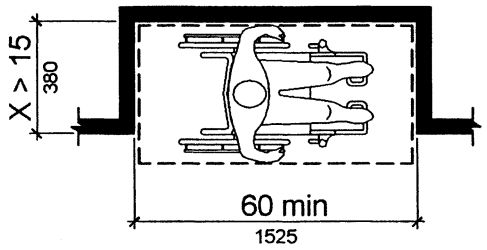


Figure 305.7.2
Maneuvering Clearance in an Alcove, Parallel Approach

306 Knee and Toe Clearance

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

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

306.2 Toe Clearance.

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

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

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

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

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

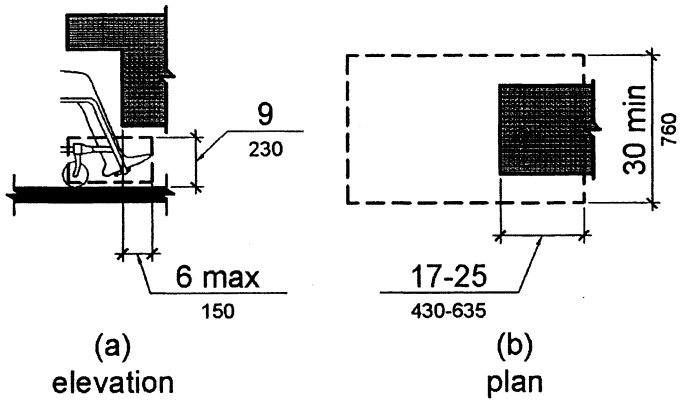


Figure 306.2
Toe Clearance

306.3 Knee Clearance.

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

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

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

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

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

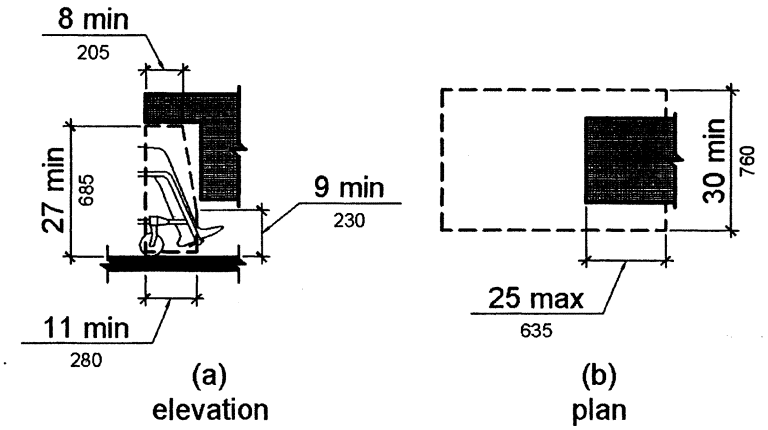


Figure 306.3
Knee Clearance

307 Protruding Objects

307.1 General. Protruding objects shall comply with 307.

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the *circulation path*.

EXCEPTION: Handrails shall be permitted to protrude 4½ inches (115 mm) maximum.

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

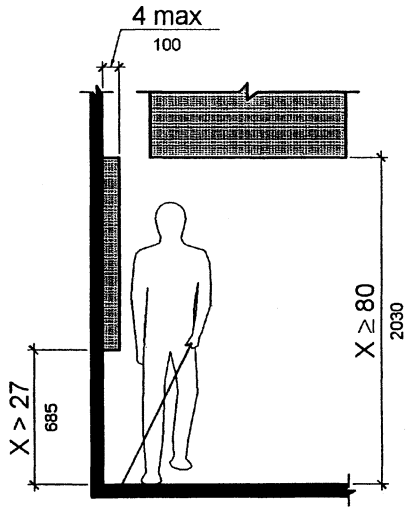


Figure 307.2
Limits of Protruding Objects

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang *circulation paths* 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.

EXCEPTION: The sloping portions of handrails serving stairs and *ramps* shall not be required to comply with 307.3.

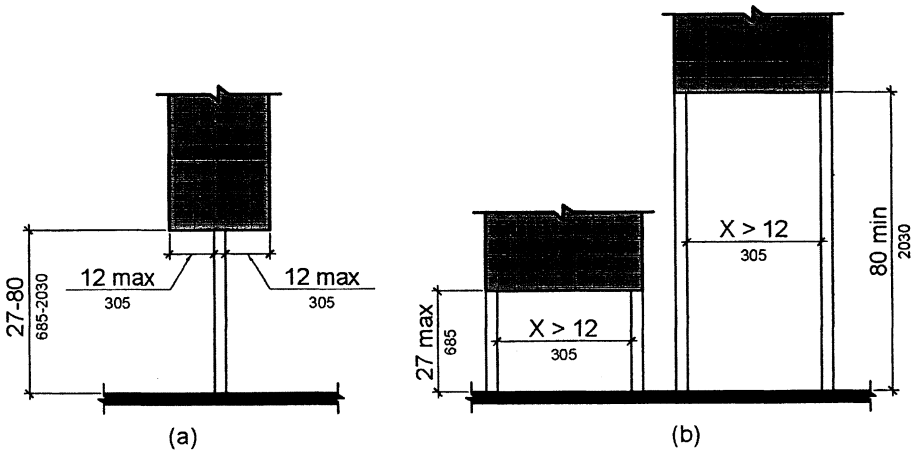


Figure 307.3
Post-Mounted Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.

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

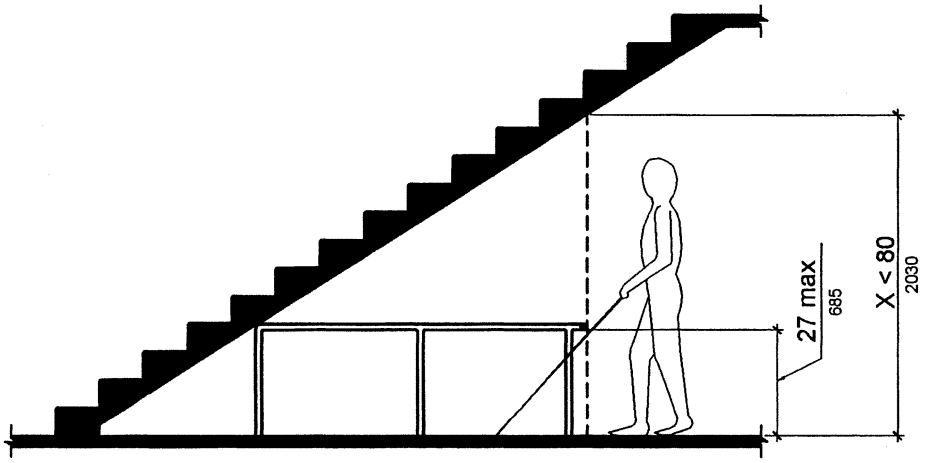


Figure 307.4
Vertical Clearance

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for *accessible* routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with 308.

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

Children's Reach Ranges

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

308.2 Forward Reach.

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

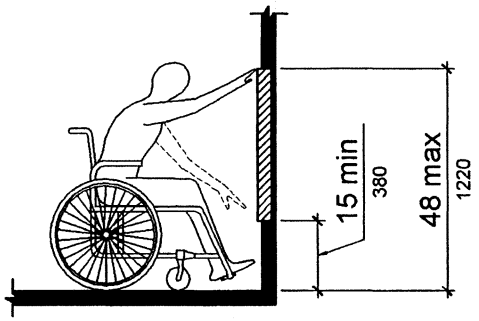


Figure 308.2.1
Unobstructed Forward Reach

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

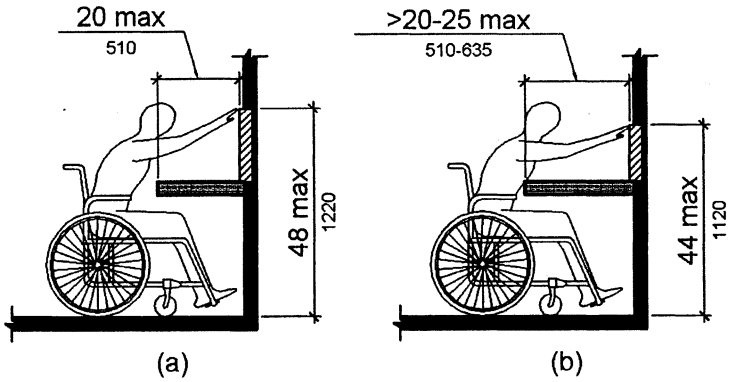


Figure 308.2.2
Obstructed High Forward Reach

308.3 Side Reach.

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

maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

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

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

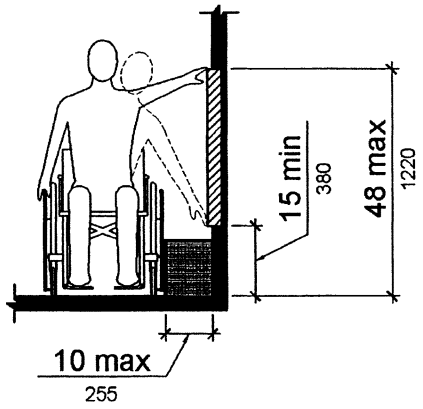


Figure 308.3.1
Unobstructed Side Reach

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

EXCEPTIONS: 1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.

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

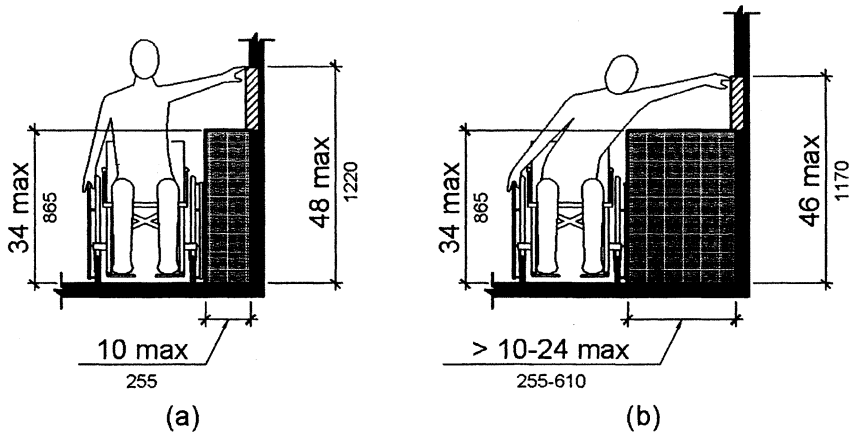


Figure 308.3.2
Obstructed High Side Reach

309 Operable Parts

309.1 General. *Operable parts* shall comply with 309.

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

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

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

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

CHAPTER 4: ACCESSIBLE ROUTES

401 General

401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

402 Accessible Routes

402.1 General. *Accessible* routes shall comply with 402.

402.2 Components. *Accessible* routes shall consist of one or more of the following components: walking surfaces with a *running slope* not steeper than 1:20, doorways, *ramps*, *curb ramps* excluding the flared sides, elevators, and platform lifts. All components of an *accessible* route shall comply with the applicable requirements of Chapter 4.

> **Advisory 402.2 Components.** Walking surfaces must have running slopes not steeper than 1:20, see 403.3. Other components of accessible routes, such as ramps (405) and curb ramps (406), are permitted to be more steeply sloped.

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an *accessible* route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.

403.3 Slope. The *running slope* of walking surfaces shall not be steeper than 1:20. The *cross slope* of walking surfaces shall not be steeper than 1:48.

403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clearances. Walking surfaces shall provide clearances complying with 403.5.

EXCEPTION: Within *employee work areas*, clearances on *common use circulation paths* shall be permitted to be decreased by *work area equipment* provided that the decrease is essential to the function of the work being performed.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

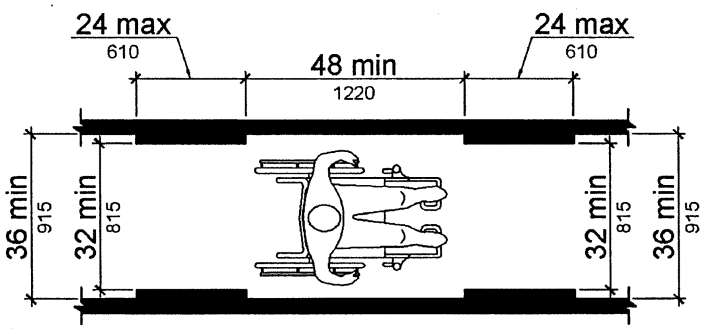


Figure 403.5.1
Clear Width of an Accessible Route

403.5.2 Clear Width at Turn. Where the *accessible* route makes a 180 degree turn around an *element* which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

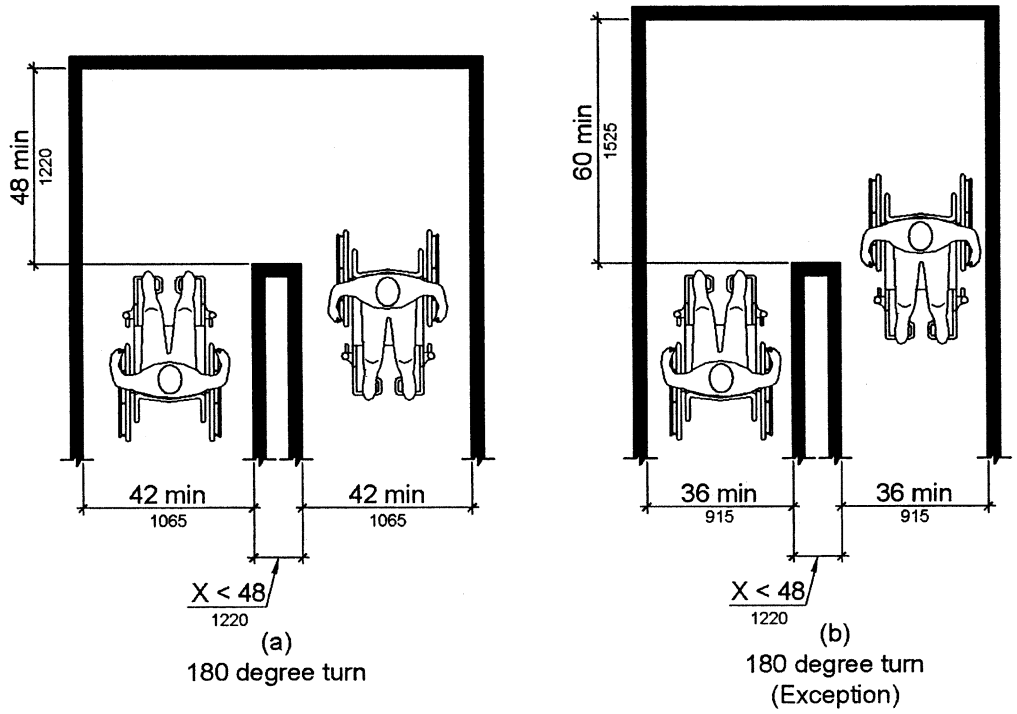


Figure 403.5.2
Clear Width at Turn

403.5.3 Passing Spaces. An *accessible* route with a clear width less than 60 inches (1525 mm) shall provide passing *spaces* at intervals of 200 feet (61 m) maximum. Passing *spaces* shall be either: a *space* 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped *space* complying with 304.3.2 where the base and arms of the T-shaped *space* extend 48 inches (1220 mm) minimum beyond the intersection.

403.6 Handrails. Where handrails are provided along walking surfaces with *running slopes* not steeper than 1:20 they shall comply with 505.

Advisory 403.6 Handrails. Handrails provided in elevator cabs and platform lifts are not required to comply with the requirements for handrails on walking surfaces.

404 Doors, Doorways, and Gates

404.1 General. Doors, doorways, and gates that are part of an *accessible* route shall comply with 404.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.7, 404.2.8, 404.2.9, 404.3.2 and 404.3.4 through 404.3.7.

Advisory 404.1 General Exception. Security personnel must have sole control of doors that are eligible for the Exception at 404.1. It would not be acceptable for security personnel to operate the doors for people with disabilities while allowing others to have independent access.

404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual gates intended for user passage shall comply with 404.2.

404.2.1 Revolving Doors, Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an *accessible* route.

404.2.2 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with 404.2.3 and 404.2.4.

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

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

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

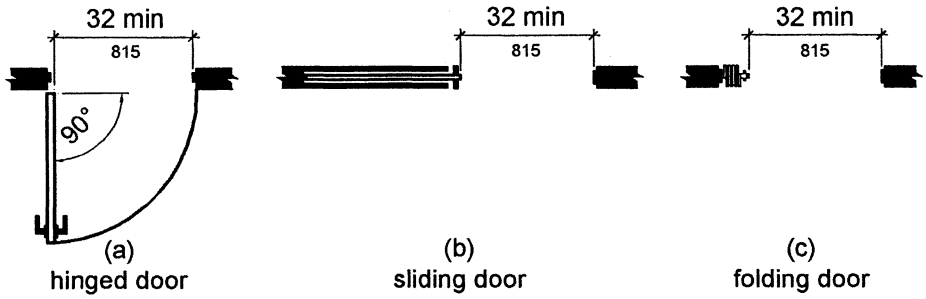


Figure 404.2.3
Clear Width of Doorways

404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

EXCEPTION: Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.

404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.4.1.

Table 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

Type of Use		Minimum Maneuvering Clearance	
Approach Direction	**Door or Gate Side**	**Perpendicular to Doorway**	**Parallel to Doorway (beyond latch side unless noted)**
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm)[1]
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)[2]	22 inches (560 mm)[3]
From latch side	Pull	48 inches (1220 mm)[4]	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)[4]	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 6 inches (150 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 6 inches (150 mm) if closer is provided.

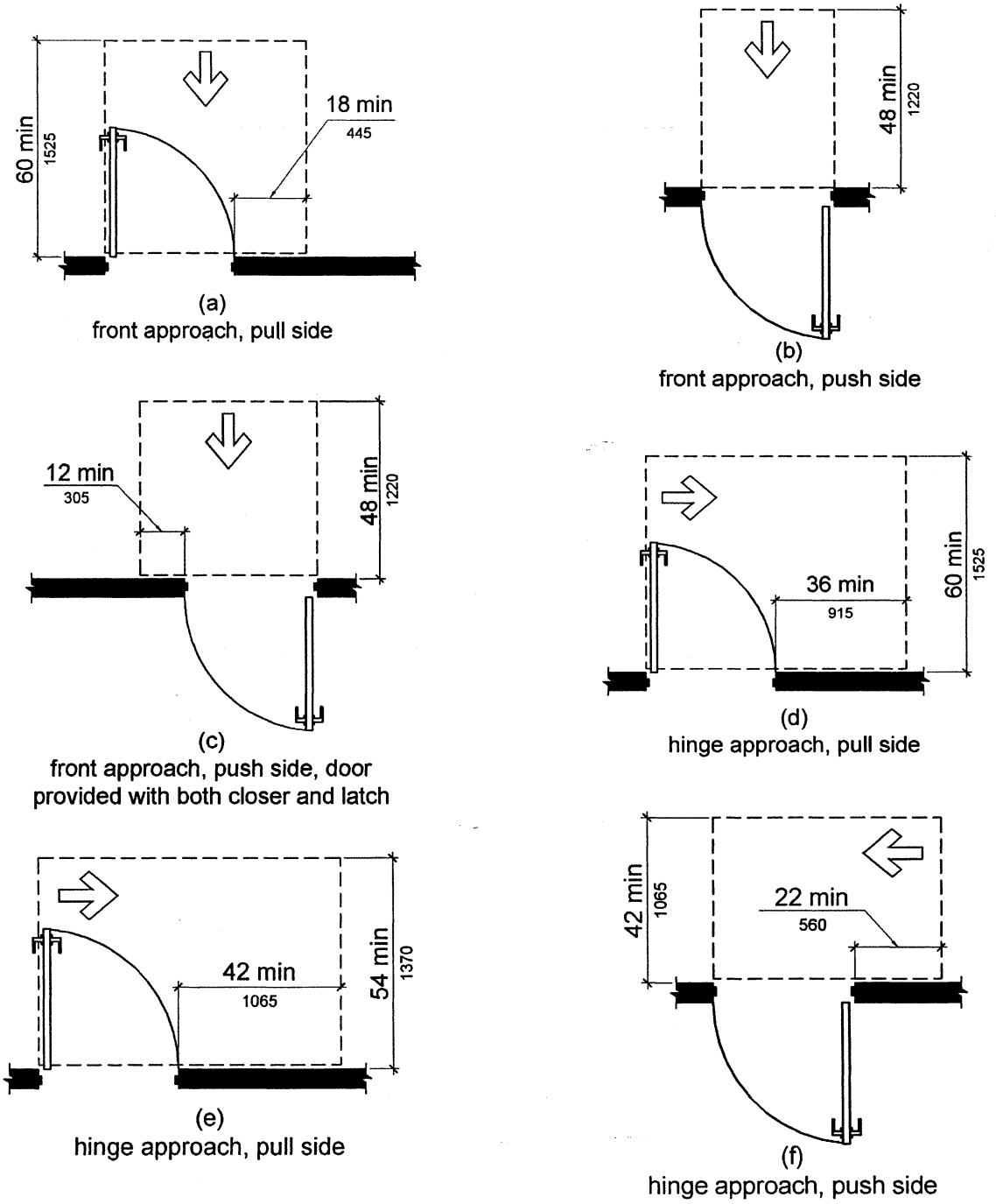


Figure 404.2.4.1
Maneuvering Clearances at Manual Swinging Doors and Gates

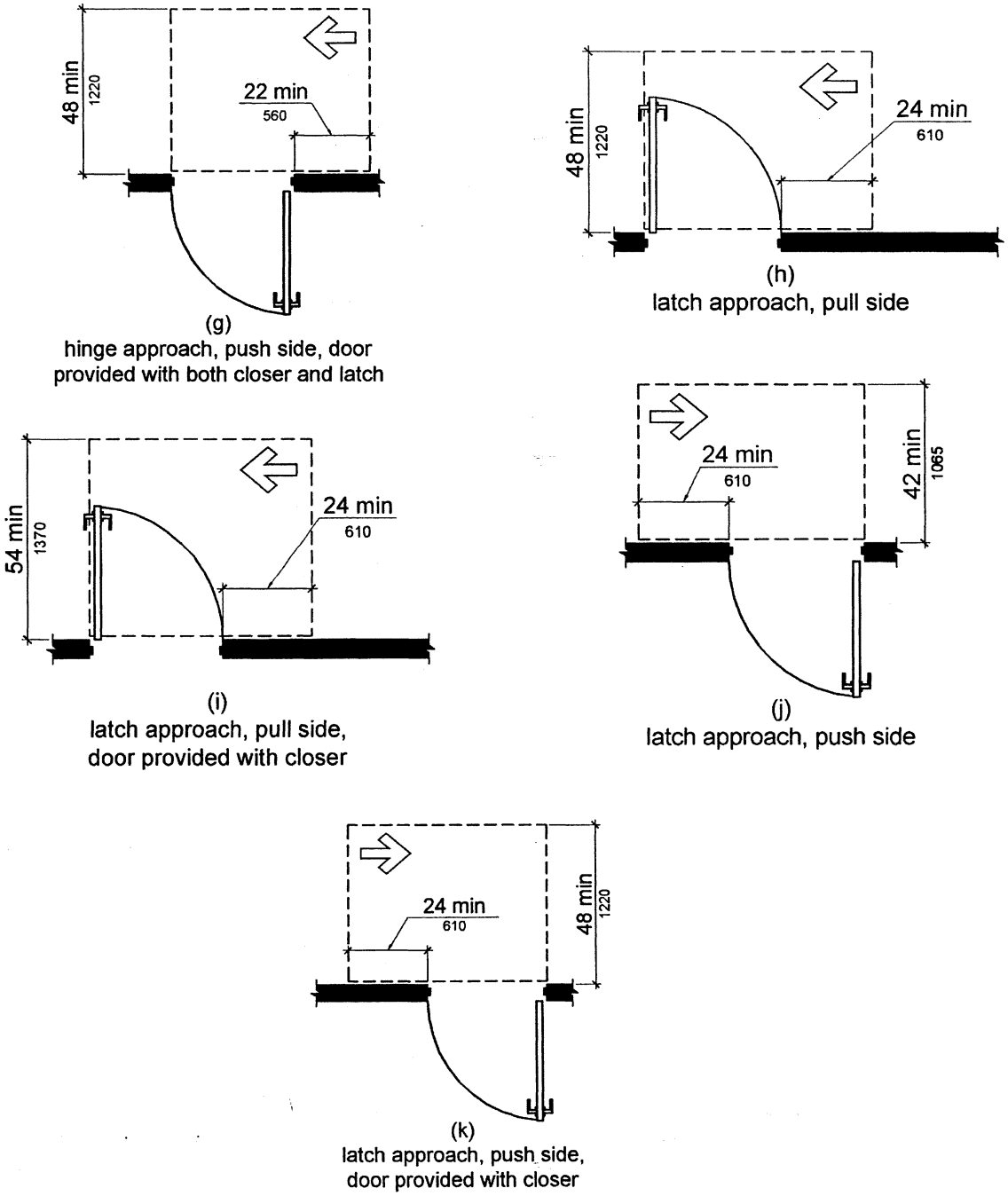


Figure 404.2.4.1
Maneuvering Clearances at Manual Swinging Doors and Gates

404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors. Doorways less than 36 inches (915 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 404.2.4.2.

Table 404.2.4.2 Maneuvering Clearances at Doorways without Doors or Gates, Manual Sliding Doors, and Manual Folding Doors

	Minimum Maneuvering Clearance	
Approach Direction	**Perpendicular to Doorway**	**Parallel to Doorway (beyond stop/latch side unless noted)**
From Front	48 inches (1220 mm)	0 inches (0 mm)
From side[1]	42 inches (1065 mm)	0 inches (0 mm)
From pocket/hinge side	42 inches (1065 mm)	22 inches (560 mm)[2]
From stop/latch side	42 inches (1065 mm)	24 inches (610 mm)

1. Doorway with no door only.
2. Beyond pocket/hinge side.

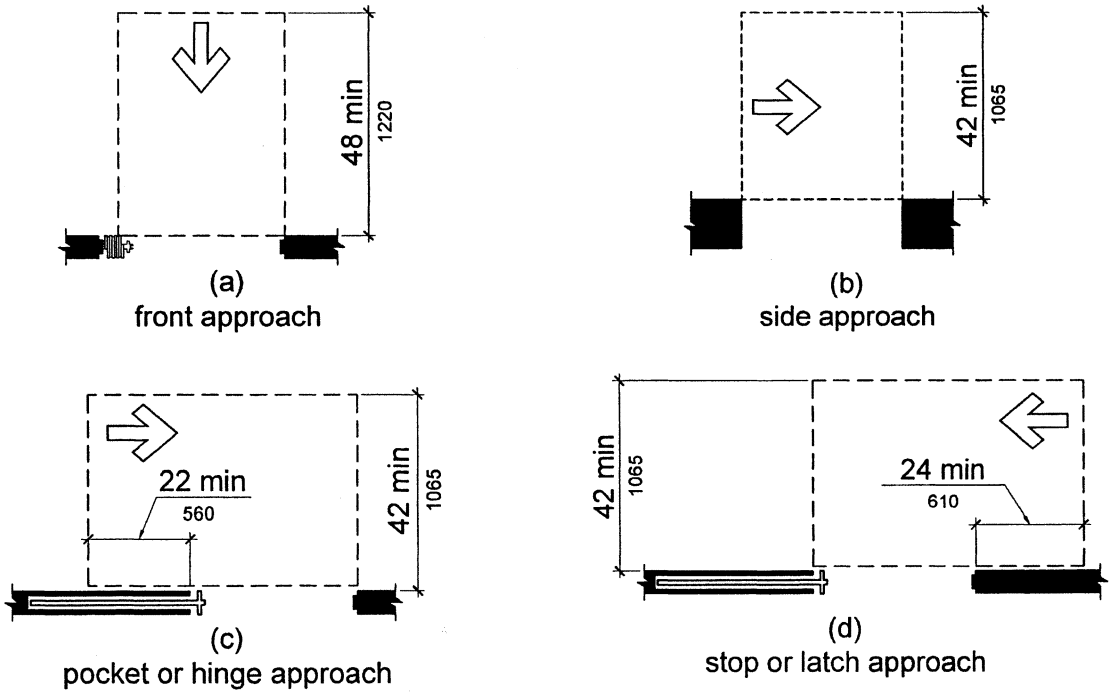


Figure 404.2.4.2
Maneuvering Clearances at Doorways without Doors, Sliding Doors, Gates, and Folding Doors

404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

Advisory 404.2.4.3 Recessed Doors and Gates. A door can be recessed due to wall thickness or because of the placement of casework and other fixed elements adjacent to the doorway. This provision must be applied wherever doors are recessed.

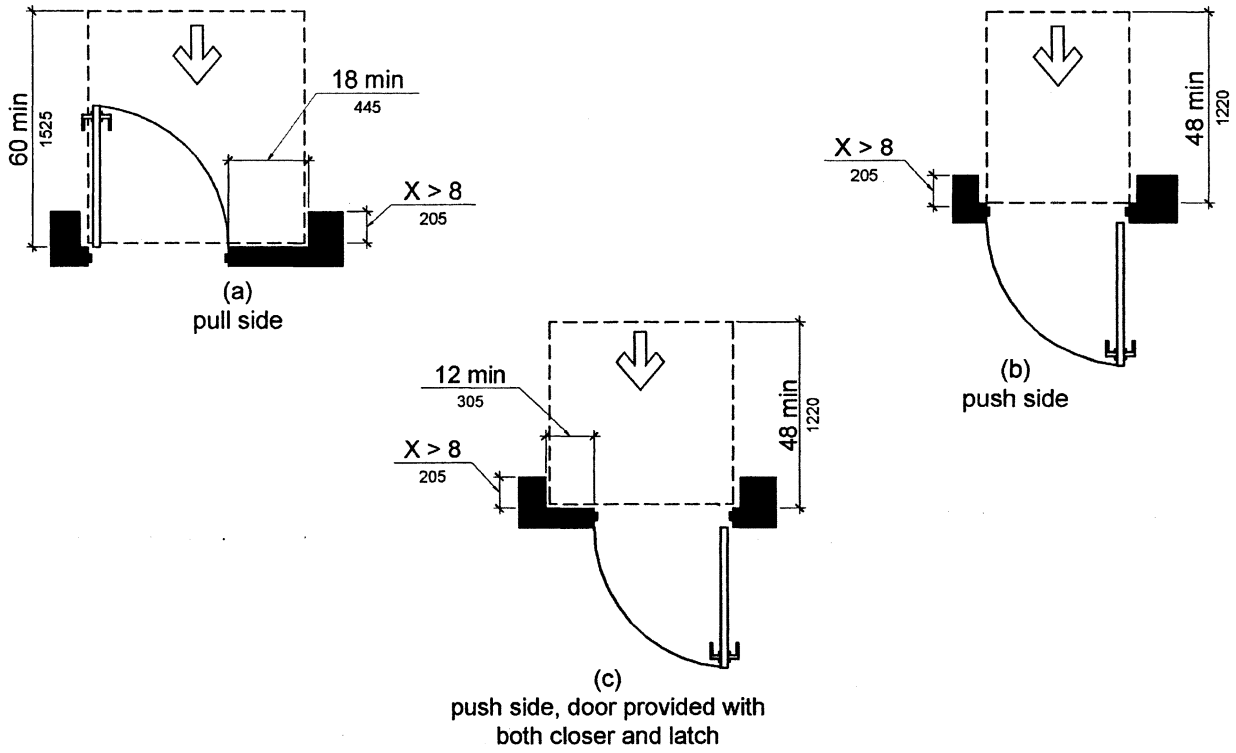


Figure 404.2.4.3
Maneuvering Clearances at Recessed Doors and Gates

404.2.4.4 Floor or Ground Surface. Floor or ground surface within required maneuvering clearances shall comply with 302. Changes in level are not permitted.

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

2. Changes in level at thresholds complying with 404.2.5 shall be permitted.

404.2.5 Thresholds. Thresholds, if provided at doorways, shall be ½ inch (13 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with 302 and 303.

EXCEPTION: Existing or *altered* thresholds ¾ inch (19 mm) high maximum that have a beveled edge on each side with a slope not steeper than 1:2 shall not be required to comply with 404.2.5.

404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the *space*.

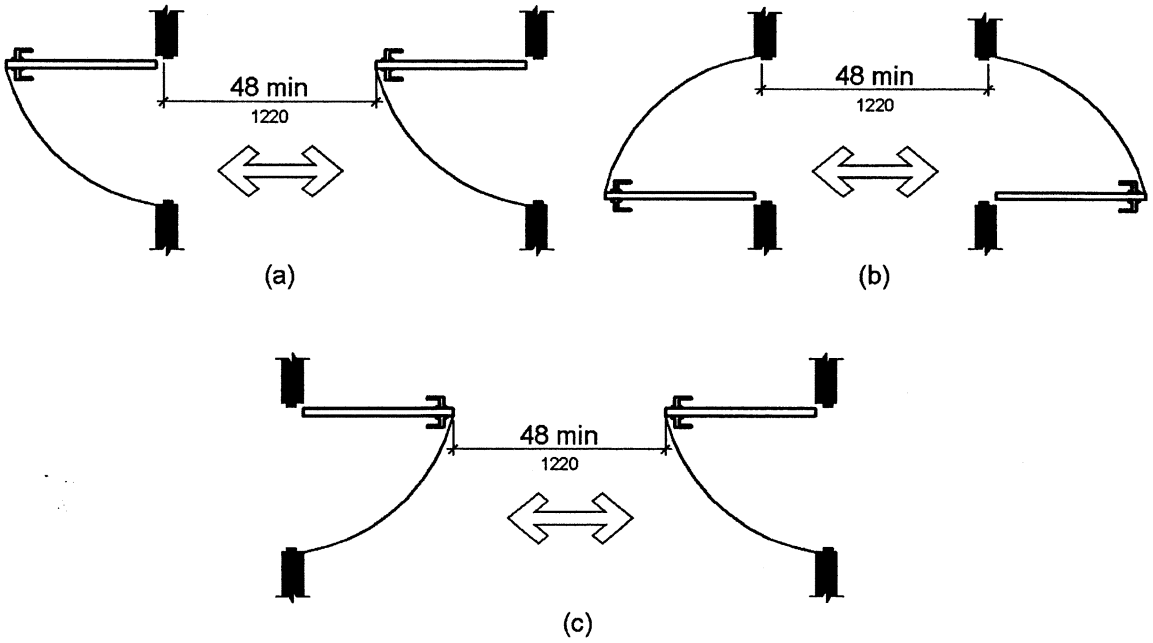


Figure 404.2.6
Doors in Series and Gates in Series

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

EXCEPTIONS: 1. Existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.

2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have *operable parts* of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finish floor or ground provided the self-latching devices are not also self-locking devices and operated by means of a key, electronic opener, or integral combination lock.

Advisory 404.2.7 Door and Gate Hardware. Door hardware that can be operated with a closed fist or a loose grip accommodates the greatest range of users. Hardware that requires simultaneous hand and finger movements require greater dexterity and coordination, and is not recommended.

404.2.8 Closing Speed. Door and gate closing speed shall comply with 404.2.8.

404.2.8.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

404.2.8.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

404.2.9 Door and Gate Opening Force. Fire doors shall have a minimum opening force allowable by the appropriate *administrative authority.* The force for pushing or pulling open a door or gate other than fire doors shall be as follows:

1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.
2. Sliding or folding doors: 5 pounds (22.2 N) maximum.

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

> **Advisory 404.2.9 Door and Gate Opening Force.** The maximum force pertains to the continuous application of force necessary to fully open a door, not the initial force needed to overcome the inertia of the door. It does not apply to the force required to retract bolts or to disengage other devices used to keep the door in a closed position.

404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS: 1. Sliding doors shall not be required to comply with 404.2.10.

2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch (255 mm) bottom smooth surface height requirement.

3. Doors and gates that do not extend to within 10 inches (255 mm) of the finish floor or ground shall not be required to comply with 404.2.10.

4. Existing doors and gates without smooth surfaces within 10 inches (255 mm) of the finish floor or ground shall not be required to provide smooth surfaces complying with 404.2.10 provided that if added kick plates are installed, cavities created by such kick plates are capped.

404.2.11 Vision Lights. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1090 mm) maximum above the finish floor.

EXCEPTION: Vision lights with the lowest part more than 66 inches (1675 mm) from the finish floor or ground shall not be required to comply with 404.2.11.

404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 (incorporated

by reference, see "Referenced Standards" in Chapter 1). Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position.

404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with 404.2.4. Clearances at automatic doors and gates without standby power and serving an *accessible means of egress* shall comply with 404.2.4.

EXCEPTION: Where automatic doors and gates remain open in the power-off condition, compliance with 404.2.4 shall not be required.

404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with 404.2.5.

404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with 404.2.6.

404.3.5 Controls. Manually operated controls shall comply with 309. The clear floor *space* adjacent to the control shall be located beyond the arc of the door swing.

404.3.6 Break Out Opening. Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (815 mm) minimum when operated in emergency mode.

EXCEPTION: Where manual swinging doors and gates comply with 404.2 and serve the same means of egress compliance with 404.3.6 shall not be required.

404.3.7 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an *accessible* route.

405 Ramps

405.1 General. *Ramps* on *accessible* routes shall comply with 405.

EXCEPTION: In *assembly areas*, aisle *ramps* adjacent to seating and not serving *elements* required to be on an *accessible* route shall not be required to comply with 405.

405.2 Slope. *Ramp* runs shall have a *running slope* not steeper than 1:12.

EXCEPTION: In existing *sites*, *buildings*, and *facilities*, *ramps* shall be permitted to have *running slopes* steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to *space* limitations.

Table 405.2 Maximum Ramp Slope and Rise for Existing Sites, Buildings, and Facilities

Slope[1]	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches (75 mm)
Steeper than 1:12 but not steeper than 1:10	6 inches (150 mm)

1. A slope steeper than 1:8 is prohibited.

Advisory 405.2 Slope. To accommodate the widest range of users, provide ramps with the least possible running slope and, wherever possible, accompany ramps with stairs for use by those individuals for whom distance presents a greater barrier than steps, e.g., people with heart disease or limited stamina.

405.3 Cross Slope. *Cross slope* of *ramp* runs shall not be steeper than 1:48.

Advisory 405.3 Cross Slope. Cross slope is the slope of the surface perpendicular to the direction of travel. Cross slope is measured the same way as slope is measured (i.e., the rise over the run).

405.4 Floor or Ground Surfaces. Floor or ground surfaces of *ramp* runs shall comply with 302. Changes in level other than the *running slope* and *cross slope* are not permitted on *ramp* runs.

405.5 Clear Width. The clear width of a *ramp* run and, where handrails are provided, the clear width between handrails shall be 36 inches (915 mm) minimum.

EXCEPTION: Within *employee work areas*, the required clear width of *ramps* that are a part of *common use circulation paths* shall be permitted to be decreased by *work area equipment* provided that the decrease is essential to the function of the work being performed.

405.6 Rise. The rise for any *ramp* run shall be 30 inches (760 mm) maximum.

405.7 Landings. *Ramps* shall have landings at the top and the bottom of each *ramp* run. Landings shall comply with 405.7.

Advisory 405.7 Landings. Ramps that do not have level landings at changes in direction can create a compound slope that will not meet the requirements of this document. Circular or curved ramps continually change direction. Curvilinear ramps with small radii also can create compound cross slopes and cannot, by their nature, meet the requirements for accessible routes. A level landing is needed at the accessible door to permit maneuvering and simultaneously door operation.

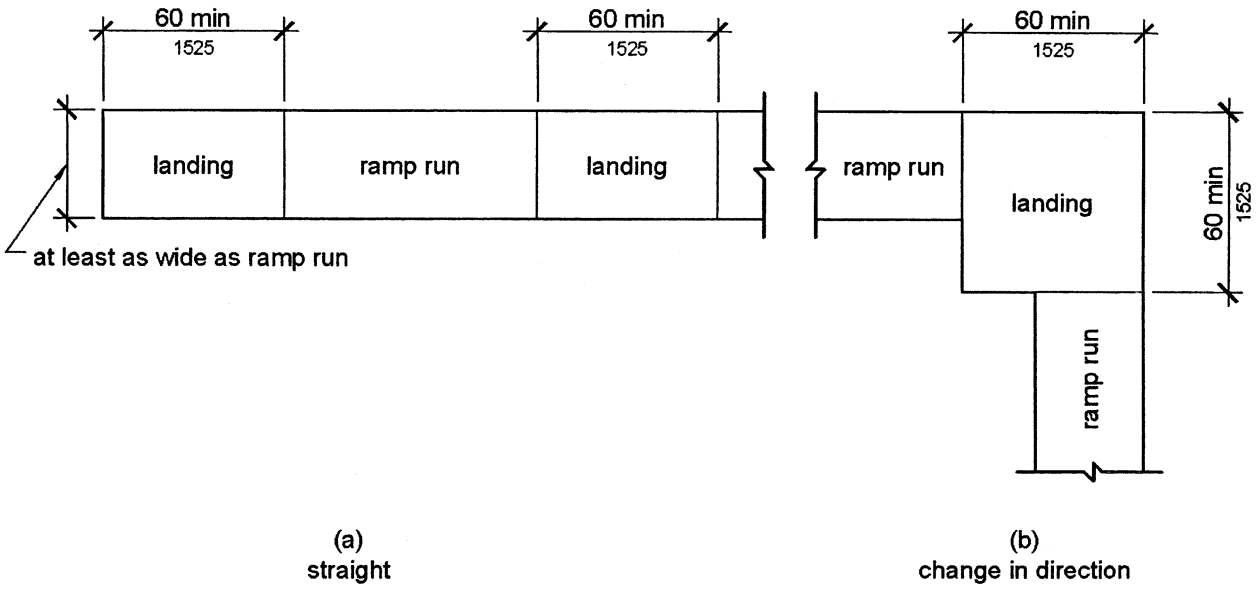


Figure 405.7
Ramp Landings

405.7.1 Slope. Landings shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

405.7.2 Width. The landing clear width shall be at least as wide as the widest *ramp* run leading to the landing.

405.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

405.7.4 Change in Direction. *Ramps* that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

405.7.5 Doorways. Where doorways are located adjacent to a *ramp* landing, maneuvering clearances required by 404.2.4 and 404.3.2 shall be permitted to overlap the required landing area.

405.8 Handrails. *Ramp* runs with a rise greater than 6 inches (150 mm) shall have handrails complying with 505.
EXCEPTION: Within *employee work areas*, handrails shall not be required where *ramps* that are part of *common use circulation paths* are designed to permit the installation of handrails complying with 505. *Ramps* not subject to the exception to 405.5 shall be designed to maintain a 36 inch (915 mm) minimum clear width when handrails are installed.

405.9 Edge Protection. Edge protection complying with 405.9.1 or 405.9.2 shall be provided on each side of *ramp* runs and at each side of *ramp* landings.

EXCEPTIONS: 1. Edge protection shall not be required on *ramps* that are not required to have handrails and have sides complying with 406.3.
2. Edge protection shall not be required on the sides of *ramp* landings serving an adjoining *ramp* run or stairway.
3. Edge protection shall not be required on the sides of *ramp* landings having a vertical drop-off of ½ inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in 405.7.

405.9.1 Extended Floor or Ground Surface. The floor or ground surface of the *ramp* run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with 505.

Advisory 405.9.1 Extended Floor or Ground Surface. The extended surface prevents wheelchair casters and crutch tips from slipping off the ramp surface.

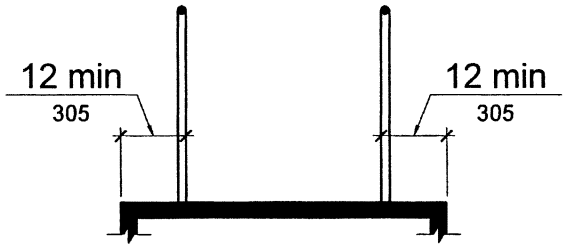


Figure 405.9.1
Extended Floor or Ground Surface Edge Protection

405.9.2 Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4 inch (100 mm) diameter sphere, where any portion of the sphere is within 4 inches (100 mm) of the finish floor or ground surface.

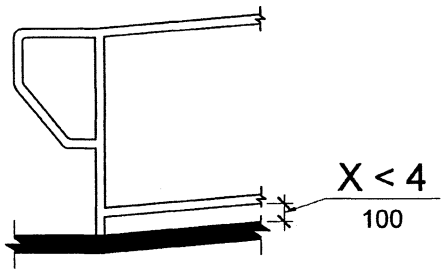


Figure 405.9.2
Curb or Barrier Edge Protection

405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

406 Curb Ramps

406.1 General. *Curb ramps* on *accessible* routes shall comply with 406, 405.2 through 405.5, and 405.10.

406.2 Counter Slope. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the *curb ramp* shall not be steeper than 1:20. The adjacent surfaces at transitions at *curb ramps* to *walks*, gutters, and streets shall be at the same level.

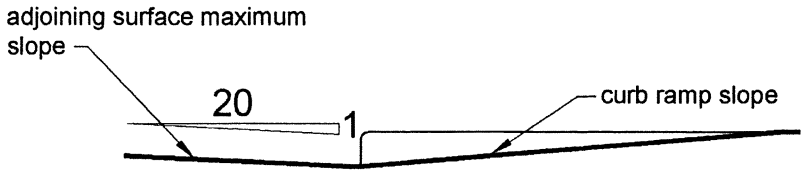


Figure 406.2
Counter Slope of Surfaces Adjacent to Curb Ramps

406.3 Sides of Curb Ramps. Where provided, *curb ramp* flares shall not be steeper than 1:10.

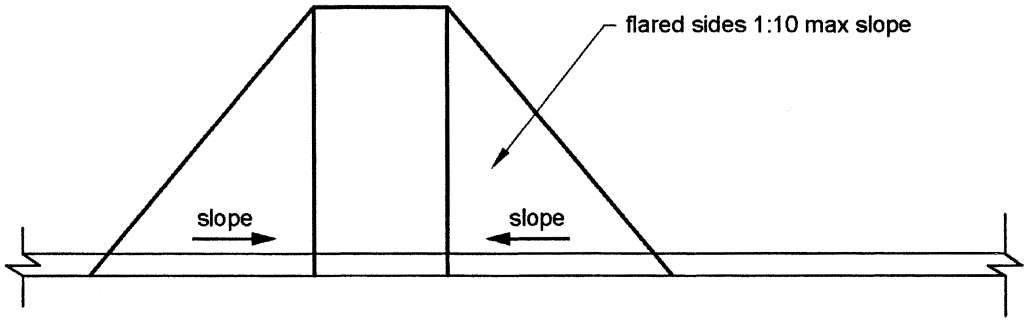


Figure 406.3
Sides of Curb Ramps

406.4 Landings. Landings shall be provided at the tops of *curb ramps*. The landing clear length shall be 36 inches (915 mm) minimum. The landing clear width shall be at least as wide as the *curb ramp*, excluding flared sides, leading to the landing.

EXCEPTION: In *alterations*, where there is no landing at the top of *curb ramps*, *curb ramp* flares shall be provided and shall not be steeper than 1:12.

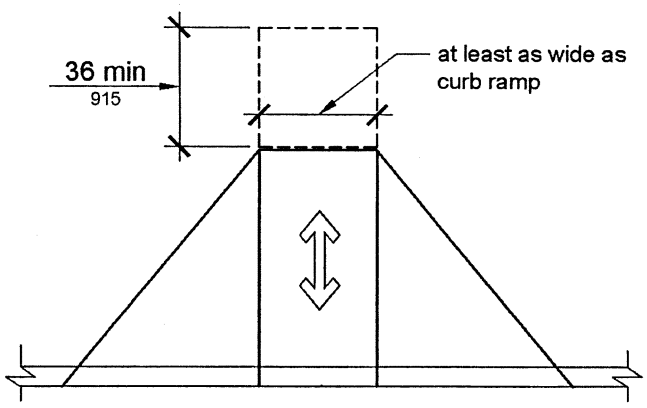


Figure 406.4
Landings at the Top of Curb Ramps

406.5 Location. *Curb ramps* and the flared sides of *curb ramps* shall be located so that they do not project into vehicular traffic lanes, parking *spaces*, or parking access aisles. *Curb ramps* at *marked crossings* shall be wholly contained within the markings, excluding any flared sides.

406.6 Diagonal Curb Ramps. Diagonal or corner type *curb ramps* with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal *curb ramps* shall have a clear *space* 48 inches (1220 mm) minimum outside active traffic lanes of the roadway. Diagonal *curb ramps* provided at *marked crossings* shall provide the 48 inches (1220 mm) minimum clear *space* within the markings. Diagonal *curb ramps* with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the *curb ramp* and within the *marked crossing*.

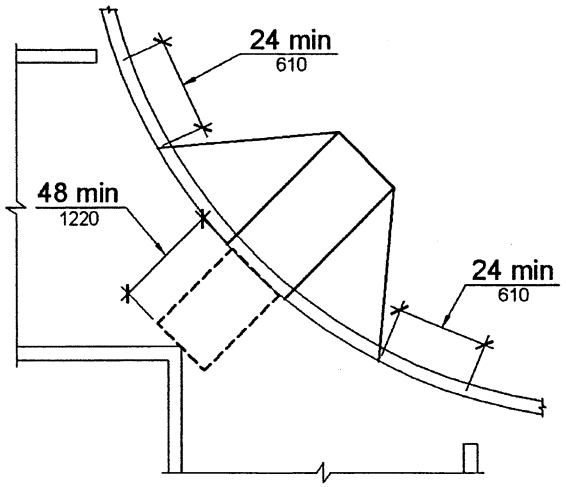


Figure 406.6
Diagonal or Corner Type Curb Ramps

406.7 Islands. Raised islands in crossings shall be cut through level with the street or have *curb ramps* at both sides. Each *curb ramp* shall have a level area 48 inches (1220 mm) long minimum by 36 inches (915 mm) wide minimum at the top of the *curb ramp* in the part of the island intersected by the crossings. Each 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum area shall be oriented so that the 48 inch (1220 mm) minimum length is in the direction of the *running slope* of the *curb ramp* it serves. The 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum areas and the *accessible* route shall be permitted to overlap.

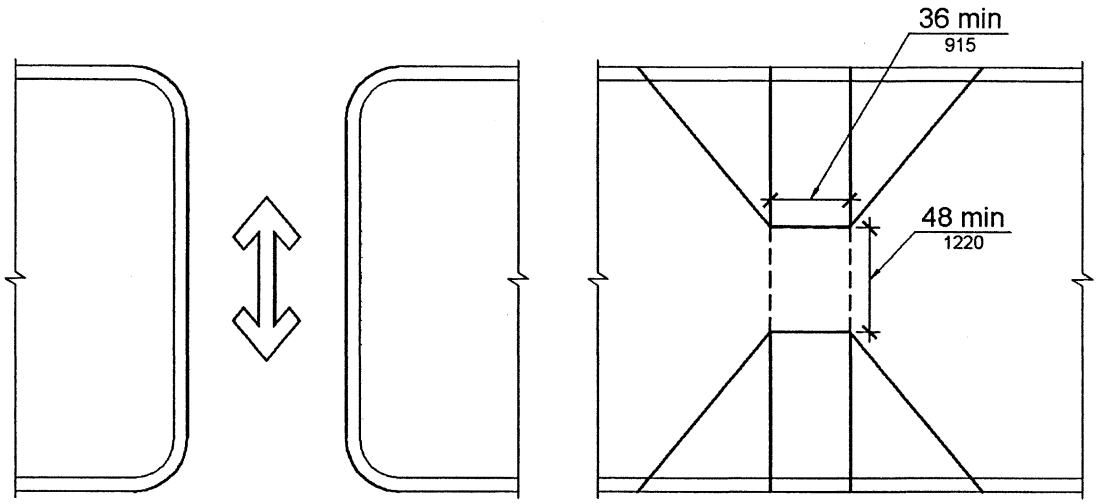


Figure 406.7
Islands in Crossings

407 Elevators

407.1 General. Elevators shall comply with 407 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

> **Advisory 407.1 General.** The ADA and other Federal civil rights laws require that accessible features be maintained in working order so that they are accessible to and usable by those people they are intended to benefit. Building owners should note that the ASME Safety Code for Elevators and Escalators requires routine maintenance and inspections. Isolated or temporary interruptions in service due to maintenance or repairs may be unavoidable; however, failure to take prompt action to effect repairs could constitute a violation of Federal laws and these requirements.

407.2 Elevator Landing Requirements. Elevator landings shall comply with 407.2.

407.2.1 Call Controls. Where elevator call buttons or keypads are provided, they shall comply with 407.2.1 and 309.4. Call buttons shall be raised or flush.

EXCEPTION: Existing elevators shall be permitted to have recessed call buttons.

407.2.1.1 Height. Call buttons and keypads shall be located within one of the reach ranges specified in 308, measured to the centerline of the highest *operable part.*

EXCEPTION: Existing call buttons and existing keypads shall be permitted to be located at 54 inches (1370 mm) maximum above the finish floor, measured to the centerline of the highest *operable part.*

407.2.1.2 Size. Call buttons shall be ¾ inch (19 mm) minimum in the smallest dimension.

EXCEPTION: Existing elevator call buttons shall not be required to comply with 407.2.1.2.

407.2.1.3 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided at call controls.

Advisory 407.2.1.3 Clear Floor or Ground Space. The clear floor or ground space required at elevator call buttons must remain free of obstructions including ashtrays, plants, and other decorative elements that prevent wheelchair users and others from reaching the call buttons. The height of the clear floor or ground space is considered to be a volume from the floor to 80 inches (2030 mm) above the floor. Recessed ashtrays should not be placed near elevator call buttons so that persons who are blind or visually impaired do not inadvertently contact them or their contents as they reach for the call buttons.

407.2.1.4 Location. The call button that designates the up direction shall be located above the call button that designates the down direction.

EXCEPTION: Destination-oriented elevators shall not be required to comply with 407.2.1.4.

Advisory 407.2.1.4 Location Exception. A destination-oriented elevator system provides lobby controls enabling passengers to select floor stops, lobby indicators designating which elevator to use, and a car indicator designating the floors at which the car will stop. Responding cars are programmed for maximum efficiency by reducing the number of stops any passenger experiences.

407.2.1.5 Signals. Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with 407.2.1.5 provided that visible and audible signals complying with 407.2.2 indicating which elevator car to enter are provided.

2. Existing elevators shall not be required to comply with 407.2.1.5.

407.2.1.6 Keypads. Where keypads are provided, keypads shall be in a standard telephone keypad arrangement and shall comply with 407.4.7.2.

407.2.2 Hall Signals. Hall signals, including in-car signals, shall comply with 407.2.2.

407.2.2.1 Visible and Audible Signals. A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

EXCEPTIONS: 1. Visible and audible signals shall not be required at each destination-oriented elevator where a visible and audible signal complying with 407.2.2 is provided indicating the elevator car designation information.

2. In existing elevators, a signal indicating the direction of car travel shall not be required.

407.2.2.2 Visible Signals. Visible signal fixtures shall be centered at 72 inches (1830 mm) minimum above the finish floor or ground. The visible signal *elements* shall be 2-½ inches (64 mm) minimum measured along the vertical centerline of the *element.* Signals shall be visible from the floor area adjacent to the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall be permitted to have signals visible from the floor area adjacent to the hoistway entrance.

2. Existing elevators shall not be required to comply with 407.2.2.2.

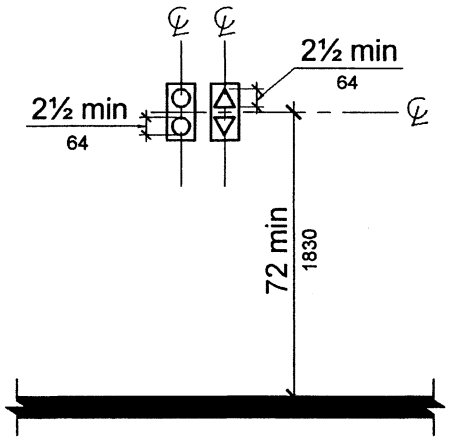


Figure 407.2.2.2
Visible Hall Signals

407.2.2.3 Audible Signals. Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with 407.2.2.3 provided that the audible tone and verbal announcement is the same as those given at the call button or call button keypad.

2. Existing elevators shall not be required to comply with the requirements for frequency and dB range of audible signals.

407.2.2.4 Differentiation. Each destination-oriented elevator in a bank of elevators shall have audible and visible means for differentiation.

407.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.

407.2.3.1 Floor Designation. Floor designations complying with 703.2 and 703.4.1 and shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both *tactile characters* and braille. *Tactile characters* shall be 2 inches (51 mm) high minimum. A *tactile* star shall be provided on both jambs at the main entry level.

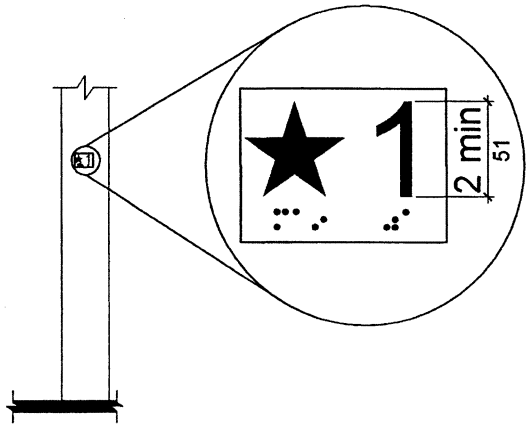


Figure 407.2.3.1
Floor Designations on Jambs of Elevator Hoistway Entrances

407.2.3.2 Car Designations. Destination-oriented elevators shall provide *tactile* car identification complying with 703.2 on both jambs of the hoistway immediately below the floor designation. Car designations shall be provided in both *tactile characters* and braille. *Tactile characters* shall be 2 inches (51 mm) high minimum.

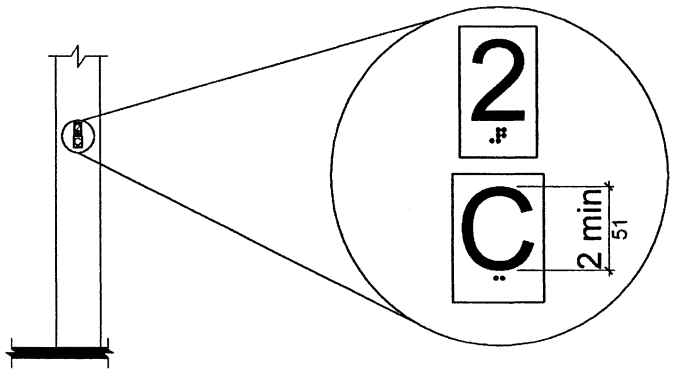


Figure 407.2.3.2
Car Designations on Jambs of Destination-Oriented Elevator Hoistway Entrances

407.3 Elevator Door Requirements. Hoistway and car doors shall comply with 407.3.

407.3.1 Type. Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

407.3.2 Operation. Elevator hoistway and car doors shall open and close automatically.
EXCEPTION: Existing manually operated hoistway swing doors shall be permitted provided that they comply with 404.2.3 and 404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

407.3.3 Reopening Device. Elevator doors shall be provided with a reopening device complying with 407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.
EXCEPTION: Existing elevators with manually operated doors shall not be required to comply with 407.3.3.

407.3.3.1 Height. The device shall be activated by sensing an obstruction passing through the opening at 5 inches (125 mm) nominal and 29 inches (735 mm) nominal above the finish floor.

407.3.3.2 Contact. The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

407.3.3.3 Duration. Door reopening devices shall remain effective for 20 seconds minimum.

407.3.4 Door and Signal Timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

$T = D/(1.5 \text{ ft/s})$ or $T = D/(455 \text{ mm/s}) = 5$ seconds minimum where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.
EXCEPTIONS: 1. For cars with in-car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (1525 mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. Destination-oriented elevators shall not be required to comply with 407.3.4.

407.3.5 Door Delay. Elevator doors shall remain fully open in response to a car call for 3 seconds minimum.

407.3.6 Width. The width of elevator doors shall comply with Table 407.4.1.
EXCEPTION: In existing elevators, a power-operated car door complying with 404.2.3 shall be permitted.

407.4 Elevator Car Requirements. Elevator cars shall comply with 407.4.

407.4.1 Car Dimensions. Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table 407.4.1.

EXCEPTION: Existing elevator car configurations that provide a clear floor area of 16 square feet (1.5 m^2) minimum and also provide an inside clear depth 54 inches (1370 mm) minimum and a clear width 36 inches (915 mm) minimum shall be permitted.

Table 407.4.1 Elevator Car Dimensions

	Minimum Dimensions			
Door Location	**Door Clear Width**	**Inside Car, Side to Side**	**Inside Car, Back Wall to Front Return**	**Inside Car, Back Wall to Inside Face of Door**
Centered	42 inches (1065 mm)	80 inches (2030 mm)	51 inches (1295 mm)	54 inches (1370 mm)
Side (off-centered)	36 inches (915 mm)[1]	68 inches (1725 mm)	51 inches (1295 mm)	54 inches (1370 mm)
Any	36 inches (915 mm)[1]	54 inches (1370 mm)	80 inches (2030 mm)	80 inches (2030 mm)
Any	36 inches (915 mm)[1]	60 inches (1525 mm)[2]	60 inches (1525 mm)[2]	60 inches (1525 mm)[2]

1. A tolerance of minus 5/8 inch (16 mm) is permitted.
2. Other car configurations that provide a turning *space* complying with 304 with the door closed shall be permited.

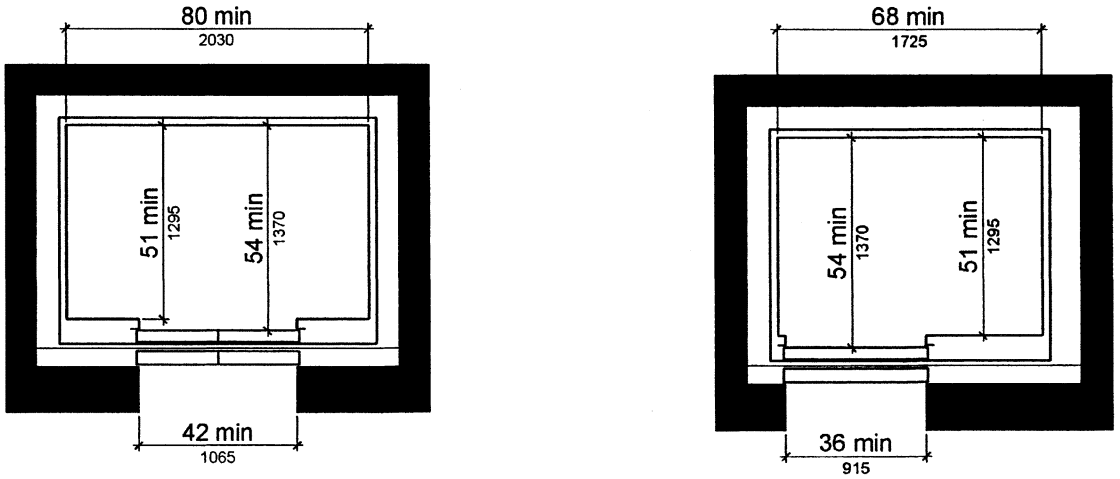
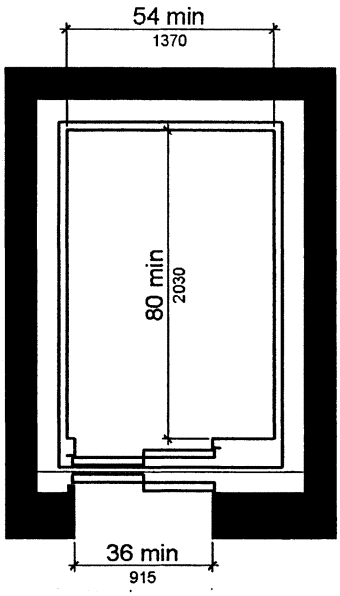
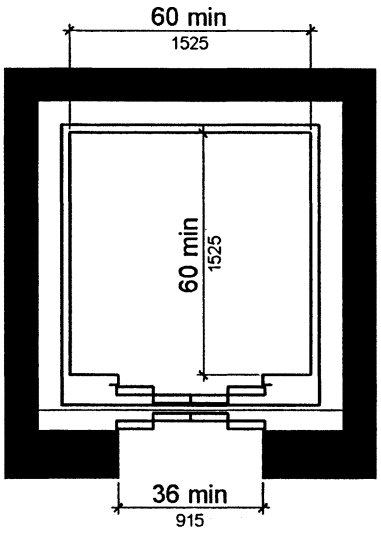


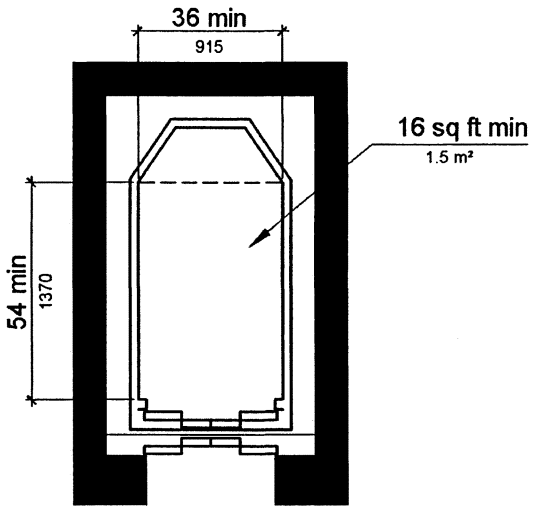
Figure 407.4.1
Elevator Car Dimensions



(c)
any door location



(d)
any door location



(e)
Exception
existing elevator car configuration

Figure 407.4.1
Elevator Car Dimensions

407.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

407.4.3 Platform to Hoistway Clearance. The clearance between the car platform sill and the edge of any hoistway landing shall be 1¼ inch (32 mm) maximum.

407.4.4 Leveling. Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of ½ inch (13 mm) under rated loading to zero loading conditions.

407.4.5 Illumination. The level of illumination at the car controls, platform, car threshold and car landing sill shall be 5 foot candles (54 lux) minimum.

407.4.6 Elevator Car Controls. Where provided, elevator car controls shall comply with 407.4.6 and 309.4.

EXCEPTION: In existing elevators, where a new car operating panel complying with 407.4.6 is provided, existing car operating panels shall not be required to comply with 407.4.6.

407.4.6.1 Location. Controls shall be located within one of the reach ranges specified in 308.

EXCEPTIONS: 1. Where the elevator panel serves more than 16 openings and a parallel approach is provided, buttons with floor designations shall be permitted to be 54 inches (1370 mm) maximum above the finish floor.

2. In existing elevators, car control buttons with floor designations shall be permitted to be located 54 inches (1370 mm) maximum above the finish floor where a parallel approach is provided.

407.4.6.2 Buttons. Car control buttons with floor designations shall comply with 407.4.6.2 and shall be raised or flush.

EXCEPTION: In existing elevators, buttons shall be permitted to be recessed.

407.4.6.2.1 Size. Buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

407.4.6.2.2 Arrangement. Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

407.4.6.3 Keypads. Car control keypads shall be in a standard telephone keypad arrangement and shall comply with 407.4.7.2.

407.4.6.4 Emergency Controls. Emergency controls shall comply with 407.4.6.4.

407.4.6.4.1 Height. Emergency control buttons shall have their centerlines 35 inches (890 mm) minimum above the finish floor.

407.4.6.4.2 Location. Emergency controls, including the emergency alarm, shall be grouped at the bottom of the panel.

407.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with 407.4.7.

EXCEPTION: In existing elevators, where a new car operating panel complying with 407.4.7 is provided, existing car operating panels shall not be required to comply with 407.4.7.

407.4.7.1 Buttons. Car control buttons shall comply with 407.4.7.1.

407.4.7.1.1 Type. Control buttons shall be identified by *tactile characters* complying with 703.2.

407.4.7.1.2 Location. Raised *character* and braille designations shall be placed immediately to the left of the control button to which the designations apply.

EXCEPTION: Where *space* on an existing car operating panel precludes *tactile* markings to the left of the controls, markings shall be placed as near to the control as possible.

407.4.7.1.3 Symbols. The control button for the emergency stop, alarm, door open, door close, main entry floor, and phone, shall be identified with *tactile* symbols as shown in Table 407.4.7.1.3.

Table 407.4.7.1.3 Elevator Control Button Identification

Control Button	Tactile Symbol	Braille Message
Emergency Stop		"ST"OP" Three cells
Alarm		AL"AR"M Four cells
Door Open		OP"EN" Three cells
Door Close		CLOSE Five cells
Main Entry Floor		MA"IN" Three cells
Phone		PH"ONE" Four cells

407.4.7.1.4 Visible Indicators. Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indication shall extinguish when the car arrives at the designated floor.

407.4.7.2 Keypads. Keypads shall be identified by *characters* complying with 703.5 and shall be centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall be 0.118 inch (3 mm) to 0.120 inch (3.05 mm) base diameter and in other aspects comply with Table 703.3.1.

407.4.8 Car Position Indicators. Audible and visible car position indicators shall be provided in elevator cars.

407.4.8.1 Visible Indicators. Visible indicators shall comply with 407.4.8.1.

407.4.8.1.1 Size. *Characters* shall be ½ inch (13 mm) high minimum.

407.4.8.1.2 Location. Indicators shall be located above the car control panel or above the door.

407.4.8.1.3 Floor Arrival. As the car passes a floor and when a car stops at a floor served by the elevator, the corresponding *character* shall illuminate.

EXCEPTION: Destination-oriented elevators shall not be required to comply with 407.4.8.1.3 provided that the visible indicators extinguish when the call has been answered.

407.4.8.1.4 Destination Indicator. In destination-oriented elevators, a display shall be provided in the car with visible indicators to show car destinations.

407.4.8.2 Audible Indicators. Audible indicators shall comply with 407.4.8.2.

407.4.8.2.1 Signal Type. The signal shall be an automatic verbal annunciator which announces the floor at which the car is about to stop.

EXCEPTION: For elevators other than destination-oriented elevators that have a rated speed of 200 feet per minute (1 m/s) or less, a non-verbal audible signal with a frequency of 1500 Hz maximum which sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.

407.4.8.2.2 Signal Level. The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

407.4.8.2.3 Frequency. The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

407.4.9 Emergency Communication. Emergency two-way communication systems shall comply with 308. *Tactile* symbols and *characters* shall be provided adjacent to the device and shall comply with 703.2.

408 Limited-Use/Limited-Application Elevators

408.1 General. Limited-use/limited-application elevators shall comply with 408 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

408.2 Elevator Landings. Landings serving limited-use/limited-application elevators shall comply with 408.2.

408.2.1 Call Buttons. Elevator call buttons and keypads shall comply with 407.2.1.

408.2.2 Hall Signals. Hall signals shall comply with 407.2.2.

408.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.1.

408.3 Elevator Doors. Elevator hoistway doors shall comply with 408.3.

408.3.1 Sliding Doors. Sliding hoistway and car doors shall comply with 407.3.1 through 407.3.3 and 408.4.1.

408.3.2 Swinging Doors. Swinging hoistway doors shall open and close automatically and shall comply with 404, 407.3.2 and 408.3.2.

408.3.2.1 Power Operation. Swinging doors shall be power-operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

408.3.2.2 Duration. Power-operated swinging doors shall remain open for 20 seconds minimum when activated.

408.4 Elevator Cars. Elevator cars shall comply with 408.4.

408.4.1 Car Dimensions and Doors. Elevator cars shall provide a clear width 42 inches (1065 mm) minimum and a clear depth 54 inches (1370 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (815 mm) minimum clear width.

EXCEPTIONS: 1. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (915 mm) wide minimum.

2. Existing elevator cars shall be permitted to provide a clear width 36 inches (915 mm) minimum, clear depth 54 inches (1370 mm) minimum, and a net clear platform area 15 square feet (1.4 m^2) minimum.

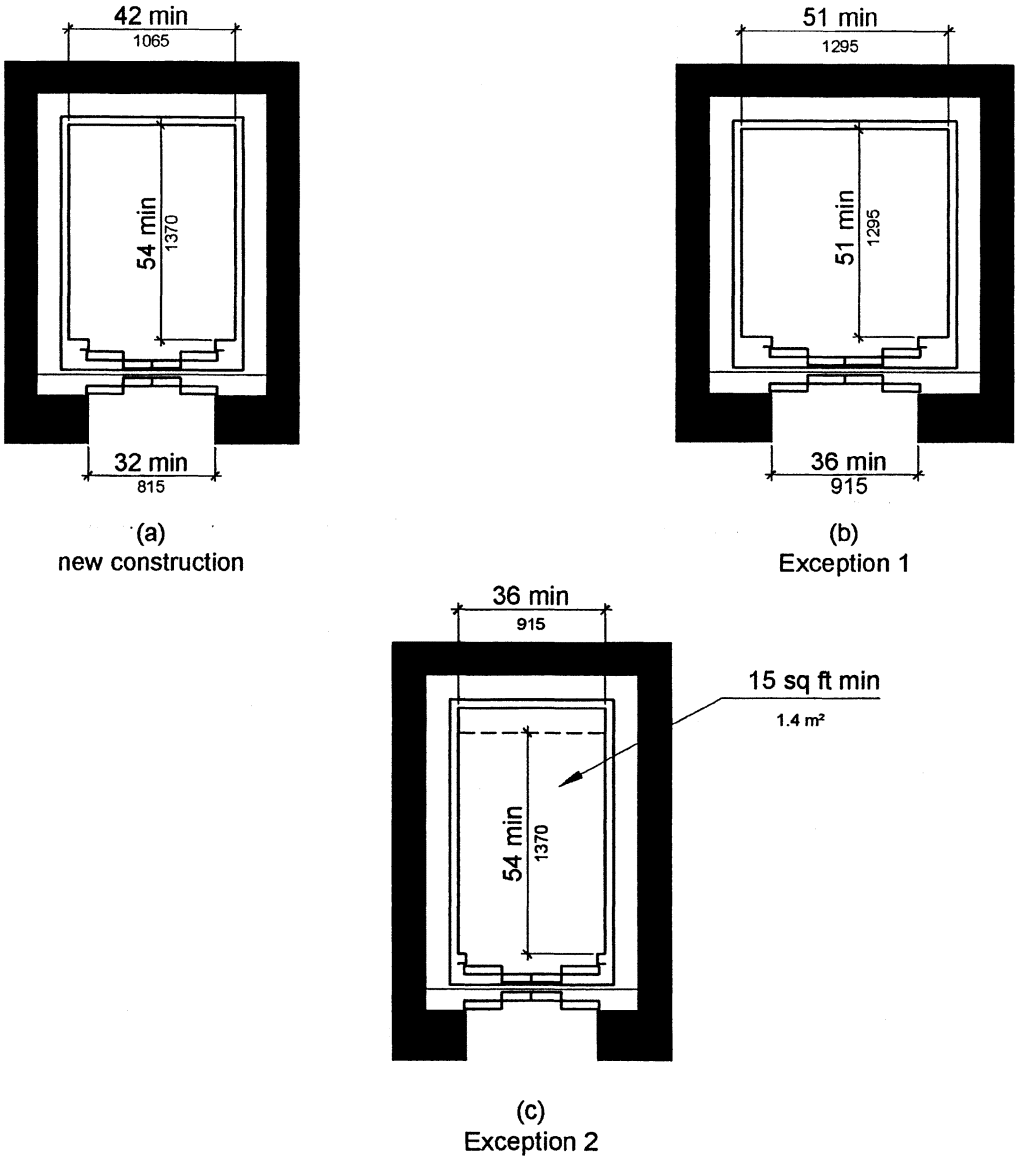


Figure 408.4.1
Limited-Use/Limited-Application (LULA) Elevator Car Dimensions

408.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

408.4.3 Platform to Hoistway Clearance. The platform to hoistway clearance shall comply with 407.4.3.

408.4.4 Leveling. Elevator car leveling shall comply with 407.4.4.

408.4.5 Illumination. Elevator car illumination shall comply with 407.4.5.

408.4.6 Car Controls. Elevator car controls shall comply with 407.4.6. Control panels shall be centered on a side wall.

408.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with 407.4.7.

408.4.8 Emergency Communications. Car emergency signaling devices complying with 407.4.9 shall be provided.

409 Private Residence Elevators

409.1 General. Private residence elevators that are provided within a *residential dwelling unit* required to provide mobility features complying with 809.2 through 809.4 shall comply with 409 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

409.2 Call Buttons. Call buttons shall be ¾ inch (19 mm) minimum in the smallest dimension and shall comply with 309.

409.3 Elevator Doors. Hoistway doors, car doors, and car gates shall comply with 409.3 and 404.

EXCEPTION: Doors shall not be required to comply with the maneuvering clearance requirements in 404.2.4.1 for approaches to the push side of swinging doors.

409.3.1 Power Operation. Elevator car and hoistway doors and gates shall be power operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1). Power operated doors and gates shall remain open for 20 seconds minimum when activated.

EXCEPTION: In elevator cars with more than one opening, hoistway doors and gates shall be permitted to be of the manual-open, self-close type.

409.3.2 Location. Elevator car doors or gates shall be positioned at the narrow end of the clear floor *spaces* required by 409.4.1.

409.4 Elevator Cars. Private residence elevator cars shall comply with 409.4.

409.4.1 Inside Dimensions of Elevator Cars. Elevator cars shall provide a clear floor *space* of 36 inches (915 mm) minimum by 48 inches (1220 mm) minimum and shall comply with 305.

409.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

409.4.3 Platform to Hoistway Clearance. The clearance between the car platform and the edge of any landing sill shall be 1½ inch (38 mm) maximum.

409.4.4 Leveling. Each car shall automatically stop at a floor landing within a tolerance of ½ inch (13 mm) under rated loading to zero loading conditions.

409.4.5 Illumination Levels. Elevator car illumination shall comply with 407.4.5.

409.4.6 Car Controls. Elevator car control buttons shall comply with 409.4.6, 309.3, 309.4, and shall be raised or flush.

409.4.6.1 Size. Control buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

409.4.6.2 Location. Control panels shall be on a side wall, 12 inches (305 mm) minimum from any adjacent wall.

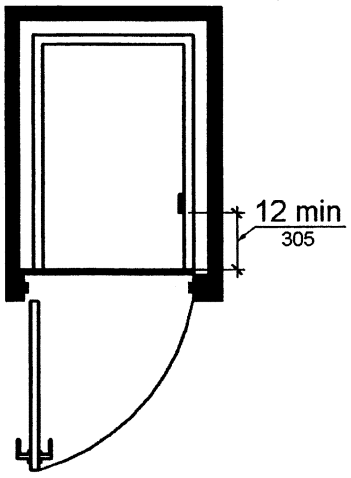


Figure 409.4.6.2
Location of Private Residence Elevator Control Panel

409.4.7 Emergency Communications. Emergency two-way communication systems shall comply with 409.4.7.

409.4.7.1 Type. A telephone and emergency signal device shall be provided in the car.

409.4.7.2 Operable Parts. The telephone and emergency signaling device shall comply with 309.3 and 309.4.

409.4.7.3 Compartment. If the telephone or device is in a closed compartment, the compartment door hardware shall comply with 309.

409.4.7.4 Cord. The telephone cord shall be 29 inches (735 mm) long minimum.

410 Platform Lifts

410.1 General. Platform lifts shall comply with ASME A18.1 (1999 edition or 2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1). Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from the lift.

> **Advisory 410.1 General.** Inclined stairway chairlifts and inclined and vertical platform lifts are available for short-distance vertical transportation. Because an accessible route requires an 80 inch (2030 mm) vertical clearance, care should be taken in selecting lifts as they may not be equally suitable for use by people using wheelchairs and people standing. If a lift does not provide 80 inch (2030 mm) vertical clearance, it cannot be considered part of an accessible route in new construction.
>
> The ADA and other Federal civil rights laws require that accessible features be maintained in working order so that they are accessible to and usable by those people they are intended to benefit. Building owners are reminded that the ASME A18 Safety Standard for Platform Lifts and Stairway Chairlifts requires routine maintenance and inspections. Isolated or temporary interruptions in service due to maintenance or repairs may be unavoidable; however, failure to take prompt action to effect repairs could constitute a violation of Federal laws and these requirements.

410.2 Floor Surfaces. Floor surfaces in platform lifts shall comply with 302 and 303.

410.3 Clear Floor Space. Clear floor *space* in platform lifts shall comply with 305.

410.4 Platform to Runway Clearance. The clearance between the platform sill and the edge of any runway landing shall be 1¼ inch (32 mm) maximum.

410.5 Operable Parts. Controls for platform lifts shall comply with 309.

410.6 Doors and Gates. Platform lifts shall have low-energy power-operated doors or gates complying with 404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (815 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1065 mm) minimum.

EXCEPTION: Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self-closing manual doors or gates.

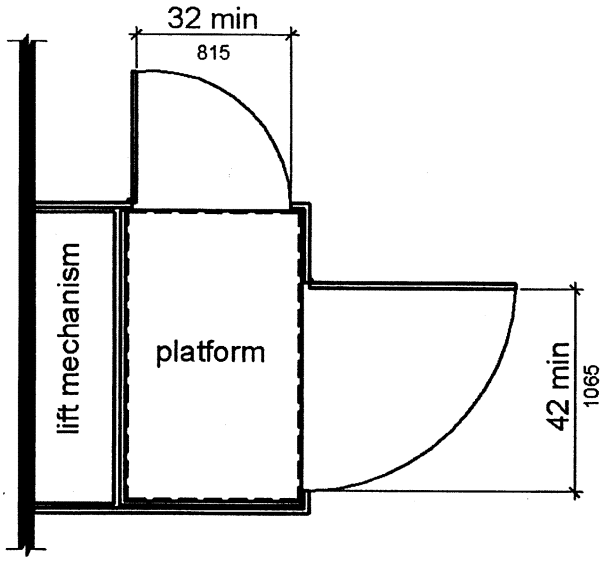


Figure 410.6
Platform Lift Doors and Gates

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

501 General

501.1 Scope. The provisions of Chapter 5 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

502 Parking Spaces

502.1 General. Car and van parking *spaces* shall comply with 502. Where parking *spaces* are marked with lines, width measurements of parking *spaces* and access aisles shall be made from the centerline of the markings.

EXCEPTION: Where parking *spaces* or access aisles are not adjacent to another parking *space* or access aisle, measurements shall be permitted to include the full width of the line defining the parking *space* or access aisle.

502.2 Vehicle Spaces. Car parking *spaces* shall be 96 inches (2440 mm) wide minimum and van parking *spaces* shall be 132 inches (3350 mm) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with 502.3.

EXCEPTION: Van parking *spaces* shall be permitted to be 96 inches (2440 mm) wide minimum where the access aisle is 96 inches (2440 mm) wide minimum.

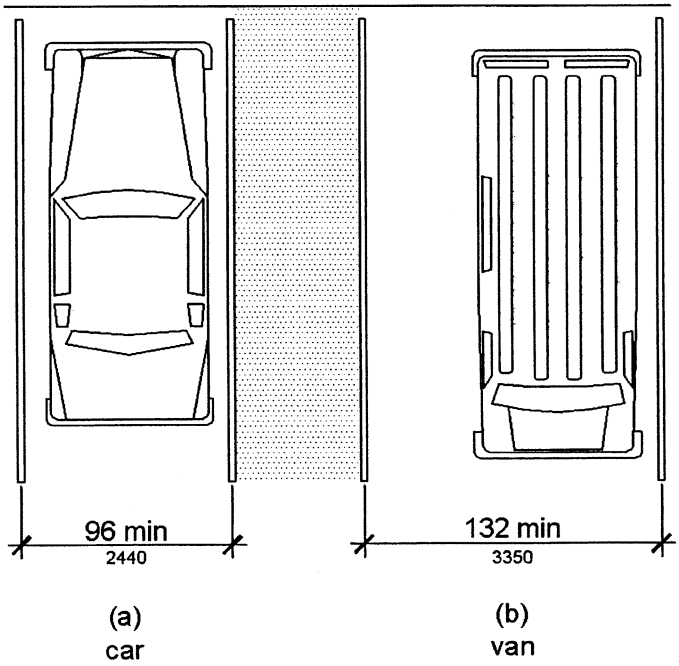


Figure 502.2
Vehicle Parking Spaces

502.3 Access Aisle. Access aisles serving parking *spaces* shall comply with 502.3. Access aisles shall adjoin an *accessible* route. Two parking *spaces* shall be permitted to share a common access aisle.

Advisory 502.3 Access Aisle. Accessible routes must connect parking spaces to accessible entrances. In parking facilities where the accessible route must cross vehicular traffic lanes, marked crossings enhance pedestrian safety, particularly for people using wheelchairs and other mobility aids. Where possible, it is preferable that the accessible route not pass behind parked vehicles.

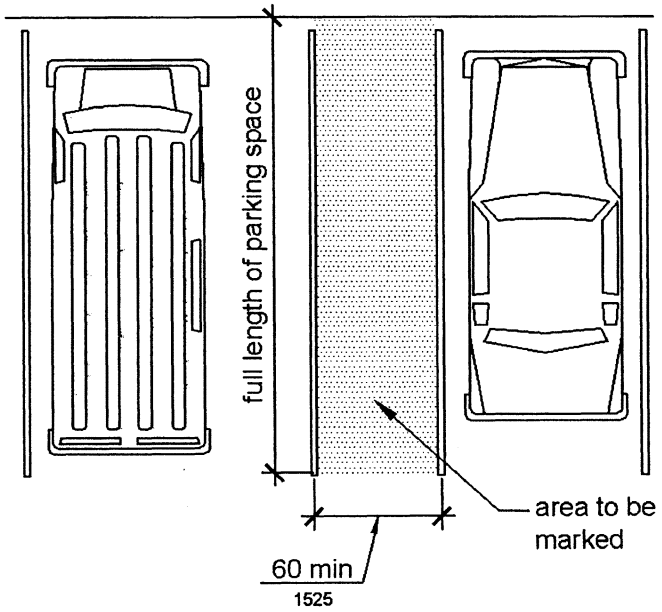


Figure 502.3
Parking Space Access Aisle

502.3.1 Width. Access aisles serving car and van parking *spaces* shall be 60 inches (1525 mm) wide minimum.

502.3.2 Length. Access aisles shall extend the full length of the parking *spaces* they serve.

502.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

Advisory 502.3.3 Marking. The method and color of marking are not specified by these requirements but may be addressed by State or local laws or regulations. Because these requirements permit the van access aisle to be as wide as a parking space, it is important that the aisle be clearly marked.

502.3.4 Location. Access aisles shall not overlap the *vehicular way.* Access aisles shall be permitted to be placed on either side of the parking *space* except for angled van parking *spaces* which shall have access aisles located on the passenger side of the parking *spaces.*

Advisory 502.3.4 Location. Wheelchair lifts typically are installed on the passenger side of vans. Many drivers, especially those who operate vans, find it more difficult to back into parking spaces than to back out into comparatively unrestricted vehicular lanes. For this reason, where a van and car share an access aisle, consider locating the van space so that the access aisle is on the passenger side of the van space.

502.4 Floor or Ground Surfaces. Parking *spaces* and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the parking *spaces* they serve. Changes in level are not permitted.

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

Advisory 502.4 Floor or Ground Surfaces. Access aisles are required to be nearly level in all directions to provide a surface for wheelchair transfer to and from vehicles. The exception allows sufficient slope for drainage. Built-up curb ramps are not permitted to project into access aisles and parking spaces because they would create slopes greater than 1:48.

502.5 Vertical Clearance. Parking *spaces* for vans and access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2490 mm) minimum.

Advisory 502.5 Vertical Clearance. Signs provided at entrances to parking facilities informing drivers of clearances and the location of van accessible parking spaces can provide useful customer assistance.

502.6 Identification. Parking *space* identification signs shall include the International Symbol of *Accessibility* complying with 703.7.2.1. Signs identifying van parking *spaces* shall contain the designation "van accessible." Signs shall be 60 inches (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign.

Advisory 502.6 Identification. The required "van accessible" designation is intended to be informative, not restrictive, in identifying those spaces that are better suited for van use. Enforcement of motor vehicle laws, including parking privileges, is a local matter.

502.7 Relationship to Accessible Routes. Parking *spaces* and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent *accessible* routes.

Advisory 502.7 Relationship to Accessible Routes. Wheel stops are an effective way to prevent vehicle overhangs from reducing the clear width of accessible routes.

503 Passenger Loading Zones

503.1 General. Passenger loading zones shall comply with 503.

503.2 Vehicle Pull-Up Space. Passenger loading zones shall provide a vehicular pull-up *space* 96 inches (2440 mm) wide minimum and 20 feet (6100 mm) long minimum.

503.3 Access Aisle. Passenger loading zones shall provide access aisles complying with 503 adjacent to the vehicle pull-up space. Access aisles shall adjoin an *accessible* route and shall not overlap the *vehicular way*.

503.3.1 Width. Access aisles serving vehicle pull-up *spaces* shall be 60 inches (1525 mm) wide minimum.

503.3.2 Length. Access aisles shall extend the full length of the vehicle pull-up *spaces* they serve.

503.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

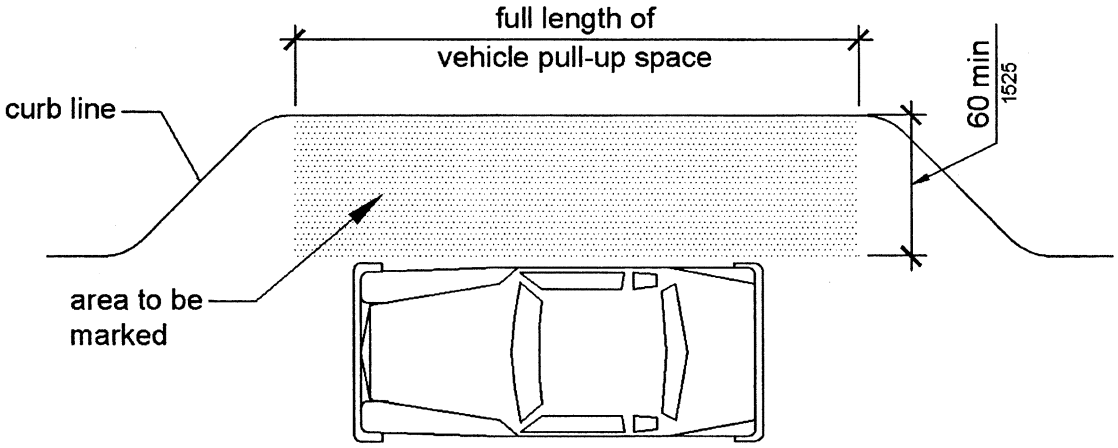


Figure 503.3
Passenger Loading Zone Access Aisle

503.4 Floor and Ground Surfaces. Vehicle pull-up *spaces* and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the vehicle pull-up *space* they serve. Changes in level are not permitted.

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

503.5 Vertical Clearance. Vehicle pull-up *spaces*, access aisles serving them, and a vehicular route from an *entrance* to the passenger loading zone, and from the passenger loading zone to a vehicular exit shall provide a vertical clearance of 114 inches (2895 mm) minimum.

504 Stairways

504.1 General. Stairs shall comply with 504.

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

504.3 Open Risers. Open risers are not permitted.

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

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

504.5 Nosings. The radius of curvature at the leading edge of the tread shall be ½ inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1½ inches (38 mm) maximum over the tread below.

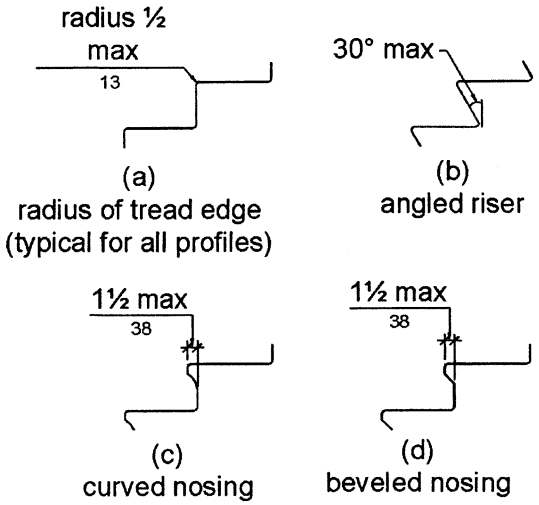


Figure 504.5
Stair Nosings

504.6 Handrails. Stairs shall have handrails complying with 505.

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

505 Handrails

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

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

505.2 Where Required. Handrails shall be provided on both sides of stairs and *ramps*.

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

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or *ramp* run. Inside handrails on switchback or dogleg stairs and *ramps* shall be continuous between flights or runs.

EXCEPTION: In *assembly areas*, handrails on *ramps* shall not be required to be continuous in aisles serving seating.

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

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

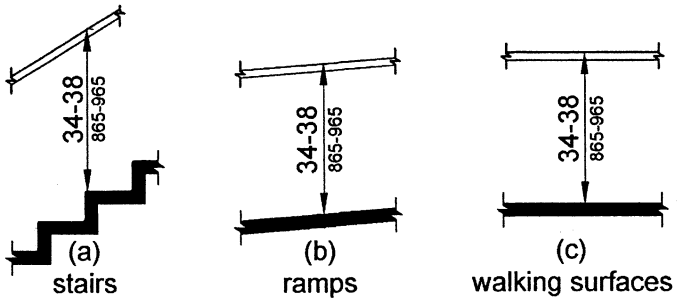


Figure 505.4
Handrail Height

505.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1½ inches (38 mm) minimum.

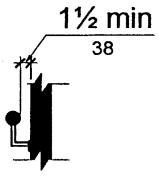


Figure 505.5
Handrail Clearance

505.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1½ inches (38 mm) minimum below the bottom of the handrail gripping surface.

EXCEPTIONS: 1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch (3.2 mm) for each ½ inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

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

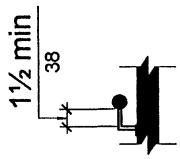


Figure 505.6
Horizontal Projections Below Gripping Surface

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

505.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.

505.7.2 Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6¼ inches (160 mm) maximum, and a cross-section dimension of 2¼ inches (57 mm) maximum.

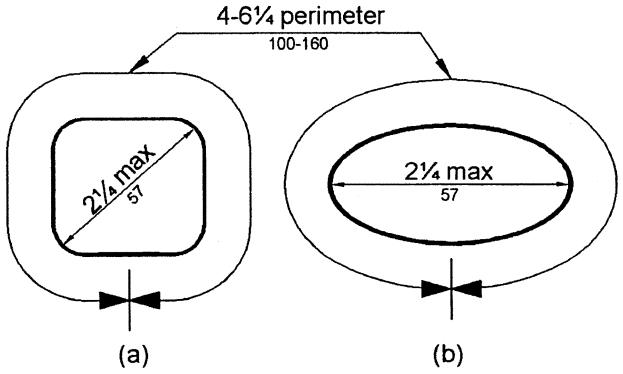


Figure 505.7.2
Handrail Non-Circular Cross Section

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

505.9 Fittings. Handrails shall not rotate within their fittings.

505.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and *ramp* runs in accordance with 505.10.

EXCEPTIONS: 1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and *ramps*.

2. In *assembly areas*, extensions shall not be required for *ramp* handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.

3. In *alterations*, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

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

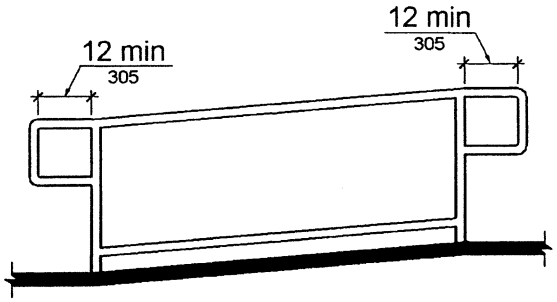


Figure 505.10.1
Top and Bottom Handrail Extension at Ramps

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

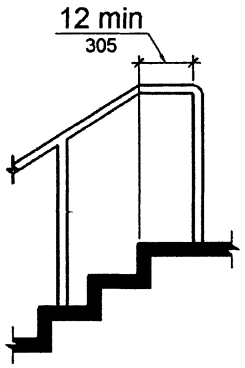
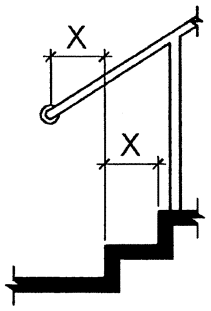


Figure 505.10.2
Top Handrail Extension at Stairs

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



Note: X = tread depth

Figure 505.10.3
Bottom Handrail Extension at Stairs

CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

601 General

601.1 Scope. The provisions of Chapter 6 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

602 Drinking Fountains

602.1 General. Drinking fountains shall comply with 307 and 602.

602.2 Clear Floor Space. Units shall have a clear floor or ground *space* complying with 305 positioned for a forward approach and centered on the unit. Knee and toe clearance complying with 306 shall be provided.

EXCEPTION: A parallel approach complying with 305 shall be permitted at units for *children's use* where the spout is 30 inches (760 mm) maximum above the finish floor or ground and is 3½ inches (90 mm) maximum from the front edge of the unit, including bumpers.

602.3 Operable Parts. *Operable parts* shall comply with 309.

602.4 Spout Height. Spout outlets shall be 36 inches (915 mm) maximum above the finish floor or ground.

602.5 Spout Location. The spout shall be located 15 inches (380 mm) minimum from the vertical support and 5 inches (125 mm) maximum from the front edge of the unit, including bumpers.

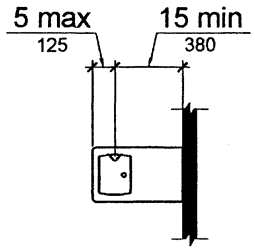


Figure 602.5
Drinking Fountain Spout Location

602.6 Water Flow. The spout shall provide a flow of water 4 inches (100 mm) high minimum and shall be located 5 inches (125 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (75 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (75 mm) and 5 inches (125 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

Advisory 602.6 Water Flow. The purpose of requiring the drinking fountain spout to produce a flow of water 4 inches (100 mm) high minimum is so that a cup can be inserted under the flow of water to provide a drink of water for an individual who, because of a disability, would otherwise be incapable of using the drinking fountain.

602.7 Drinking Fountains for Standing Persons. Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1090 mm) maximum above the finish floor or ground.

603 Toilet and Bathing Rooms

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

603.2 Clearances. Clearances shall comply with 603.2.

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

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

603.2.3 Door Swing. Doors shall not swing into the clear floor *space* or clearance required for any fixture. Doors shall be permitted to swing into the required turning *space*.

EXCEPTIONS: 1. Doors to a toilet room or bathing room for a single occupant accessed only through a private office and not for *common use* or *public use* shall be permitted to swing into the clear floor *space* or clearance provided the swing of the door can be reversed to comply with 603.2.3.

2. Where the toilet room or bathing room is for individual use and a clear floor *space* complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor *space* or clearance required for any fixture.

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

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

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

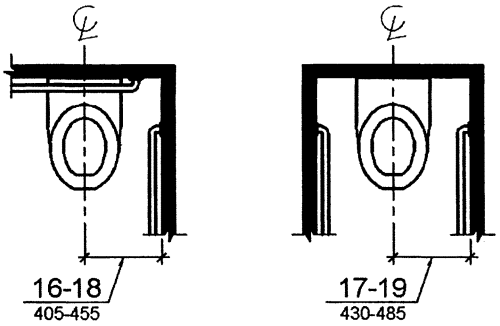
603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

604 Water Closets and Toilet Compartments

604.1 General. Water closets and toilet compartments shall comply with 604.2 through 604.8.

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

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



(a) wheelchair accessible water closets

(b) ambulatory accessible water closets

Figure 604.2
Water Closet Location

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

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

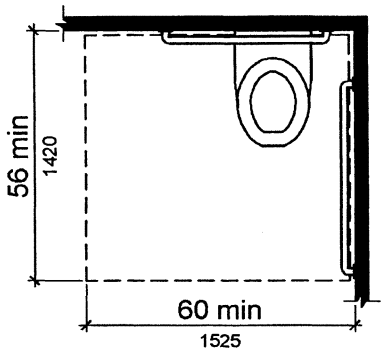


Figure 604.3.1
Size of Clearance at Water Closets

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

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

Advisory 604.3.2 Overlap. When the door to the toilet room is placed directly in front of the water closet, the water closet cannot overlap the required maneuvering clearance for the door inside the room.

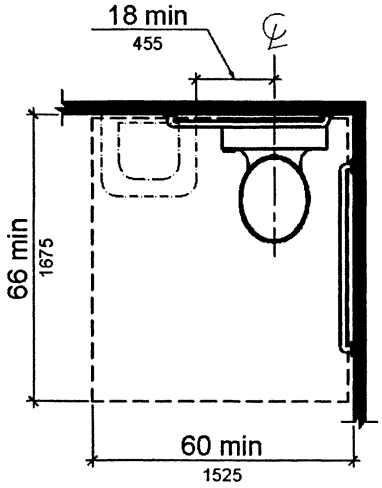


Figure 604.3.2 (Exception)
Overlap of Water Closet Clearance in Residential Dwelling Units

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

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

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

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

EXCEPTIONS: 1. Grab bars shall not be required to be installed in a toilet room for a single occupant accessed only through a private office and not for *common use* or *public use* provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.

2. In *residential dwelling units*, grab bars shall not be required to be installed in toilet or bathrooms provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.

3. In detention or correction *facilities*, grab bars shall not be required to be installed in housing or holding cells that are specially designed without protrusions for purposes of suicide prevention.

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

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

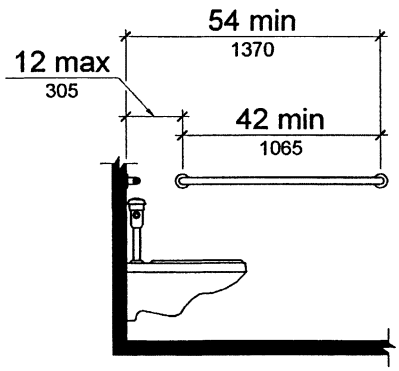


Figure 604.5.1
Side Wall Grab Bar at Water Closets

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

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

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

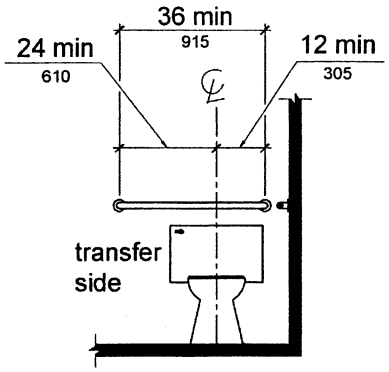


Figure 604.5.2
Rear Wall Grab Bar at Water Closets

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

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

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

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

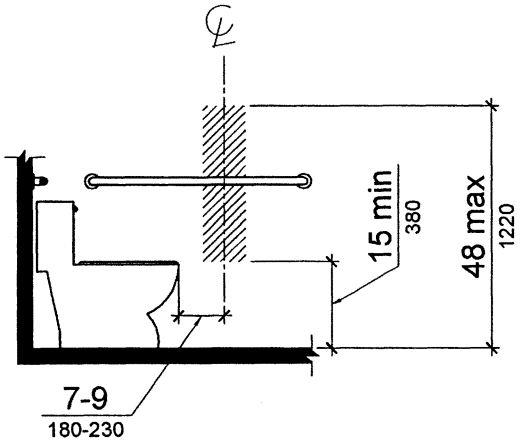


Figure 604.7
Dispenser Outlet Location

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

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

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

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

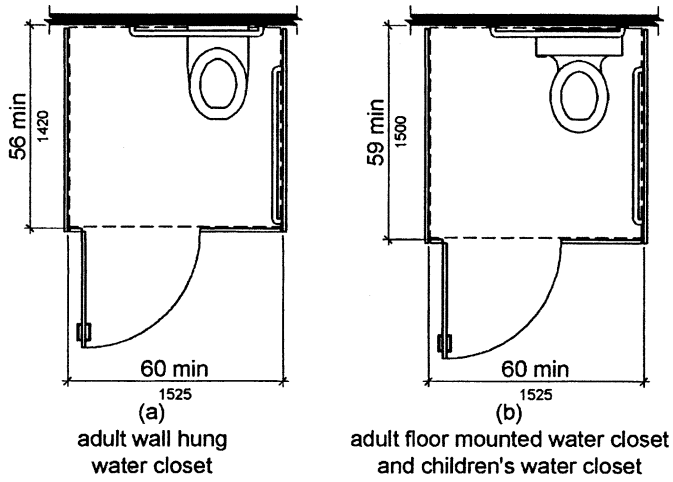


Figure 604.8.1.1
Size of Wheelchair Accessible Toilet Compartment

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

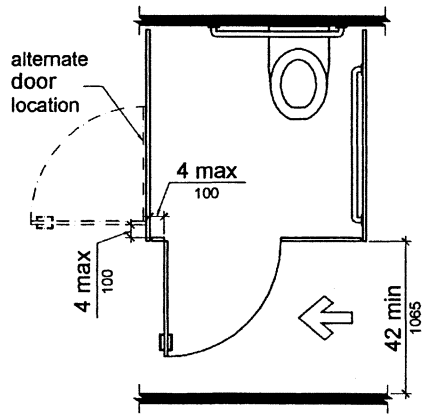


Figure 604.8.1.2
Wheelchair Accessible Toilet Compartment Doors

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

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

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

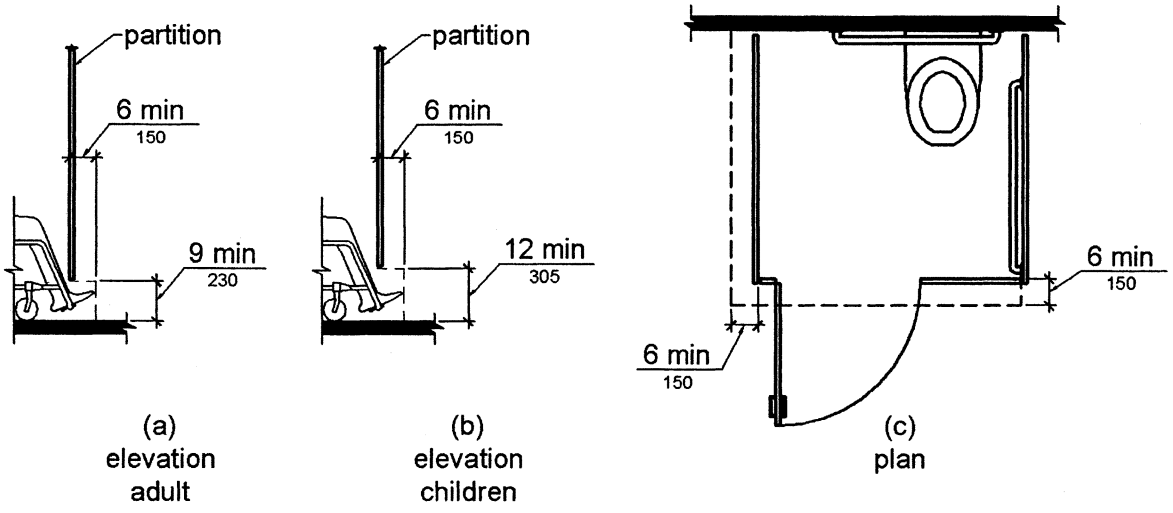


Figure 604.8.1.4
Wheelchair Accessible Toilet Compartment Toe Clearance

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

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

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

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

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

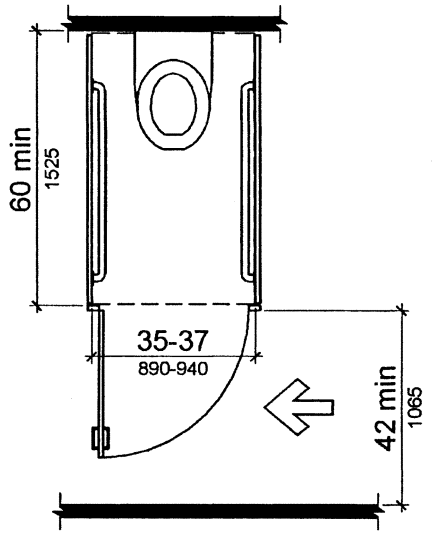


Figure 604.8.2
Ambulatory Accessible Toilet Compartment

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

604.9 Water Closets and Toilet Compartments for Children's Use. Water closets and toilet compartments for *children's use* shall comply with 604.9.

Advisory 604.9 Water Closets and Toilet Compartments for Children's Use. The requirements in 604.9 are to be followed where the exception for children's water closets in 604.1 is used. The following table provides additional guidance in applying the specifications for water closets for children according to the age group served and reflects the differences in the size, stature, and reach ranges of children ages 3 through 12. The specifications chosen should correspond to the age of the primary user group. The specifications of one age group should be applied consistently in the installation of a water closet and related elements.

Advisory Specifications for Water Closets Serving Children Ages 3 through 12			
	Ages 3 and 4	**Ages 5 through 8**	**Ages 9 through 12**
Water Closet Centerline	12 inches (305 mm)	12 to 15 inches (305 to 380 mm)	15 to 18 inches (380 to 455 mm)
Toilet Seat Height	11 to 12 inches (280 to 305 mm)	12 to 15 inches (305 to 380 mm)	15 to 17 inches (380 to 430 mm)
Grab Bar Height	18 to 20 inches (455 to 510 mm)	20 to 25 inches (510 to 635 mm)	25 to 27 inches (635 to 685 mm)
Dispenser Height	14 inches (355 mm)	14 to 17 inches (355 to 430 mm)	17 to 19 inches (430 to 485 mm)

604.9.1 Location. The water closet shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory *accessible* toilet compartment specified in 604.8.2. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

604.9.2 Clearance. Clearance around a water closet shall comply with 604.3.

604.9.3 Height. The height of water closets shall be 11 inches (280 mm) minimum and 17 inches (430 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.9.4 Grab Bars. Grab bars for water closets shall comply with 604.5.

604.9.5 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.2 and 309.4 and shall be installed 36 inches (915 mm) maximum above the finish floor. Flush controls shall be located on the open side of the water closet except in ambulatory *accessible* compartments complying with 604.8.2.

604.9.6 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 14 inches (355 mm) minimum and 19 inches (485 mm) maximum above the finish floor. There shall be a clearance of 1½ inches (38 mm) minimum below the grab bar. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

604.9.7 Toilet Compartments. Toilet compartments shall comply with 604.8.

605 Urinals

605.1 General. Urinals shall comply with 605.

> **Advisory 605.1 General.** Stall-type urinals provide greater accessibility for a broader range of persons, including people of short stature.

605.2 Height and Depth. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches (430 mm) maximum above the finish floor or ground. Urinals shall be 13½ inches (345 mm) deep minimum measured from the outer face of the urinal rim to the back of the fixture.

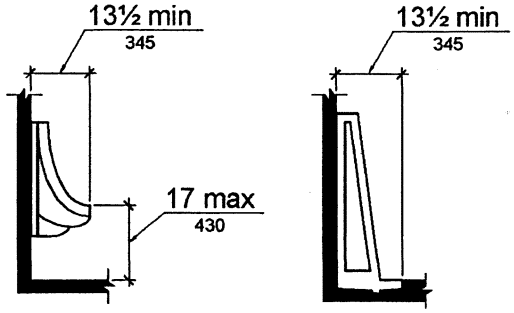


Figure 605.2
Height and Depth of Urinals

605.3 Clear Floor Space. A clear floor or ground *space* complying with 305 positioned for forward approach shall be provided.

605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.

606 Lavatories and Sinks

606.1 General. Lavatories and sinks shall comply with 606.

> **Advisory 606.1 General.** If soap and towel dispensers are provided, they must be located within the reach ranges specified in 308. Locate soap and towel dispensers so that they are conveniently usable by a person at the accessible lavatory.

606.2 Clear Floor Space. A clear floor *space* complying with 305, positioned for a forward approach, and knee and toe clearance complying with 306 shall be provided.

EXCEPTIONS: 1. A parallel approach complying with 305 shall be permitted to a kitchen sink in a *space* where a cook top or conventional range is not provided and to wet bars.

2. A lavatory in a toilet room or bathing *facility* for a single occupant accessed only through a private office and not for *common use* or *public use* shall not be required to provide knee and toe clearance complying with 306.

3. In *residential dwelling units*, cabinetry shall be permitted under lavatories and kitchen sinks provided that all of the following conditions are met:

(a) the cabinetry can be removed without removal or replacement of the fixture;

(b) the finish floor extends under the cabinetry; and

(c) the walls behind and surrounding the cabinetry are finished.

4. A knee clearance of 24 inches (610 mm) minimum above the finish floor or ground shall be permitted at lavatories and sinks used primarily by children 6 through 12 years where the rim or counter surface is 31 inches (785 mm) maximum above the finish floor or ground.

5. A parallel approach complying with 305 shall be permitted to lavatories and sinks used primarily by children 5 years and younger.

6. The dip of the overflow shall not be considered in determining knee and toe clearances.

7. No more than one bowl of a multi-bowl sink shall be required to provide knee and toe clearance complying with 306.

606.3 Height. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches (865 mm) maximum above the finish floor or ground.

EXCEPTIONS: 1. A lavatory in a toilet or bathing *facility* for a single occupant accessed only through a private office and not for *common use* or *public use* shall not be required to comply with 606.3.

2. In *residential dwelling unit* kitchens, sinks that are adjustable to variable heights, 29 inches (735 mm) minimum and 36 inches (915 mm) maximum, shall be permitted where rough-in plumbing permits connections of supply and drain pipes for sinks mounted at the height of 29 inches (735 mm).

606.4 Faucets. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

606.5 Exposed Pipes and Surfaces. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

607 Bathtubs

607.1 General. Bathtubs shall comply with 607.

607.2 Clearance. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches (760 mm) wide minimum. A lavatory complying with 606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches (305 mm) minimum beyond the wall at the head end of the bathtub.

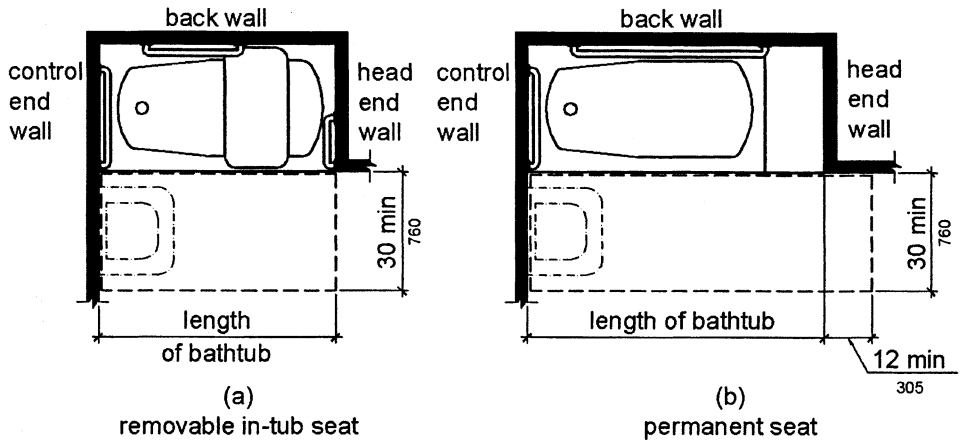


Figure 607.2
Clearance for Bathtubs

607.3 Seat. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with 610.

607.4 Grab Bars. Grab bars for bathtubs shall comply with 609 and shall be provided in accordance with 607.4.1 or 607.4.2.

EXCEPTIONS: 1. Grab bars shall not be required to be installed in a bathtub located in a bathing *facility* for a single occupant accessed only through a private office and not for *common use* or *public use* provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 607.4.

2. In *residential dwelling units*, grab bars shall not be required to be installed in bathtubs located in bathing *facilities* provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 607.4.

607.4.1 Bathtubs With Permanent Seats. For bathtubs with permanent seats, grab bars shall be provided in accordance with 607.4.1.

607.4.1.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be installed 15 inches (380 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.1.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

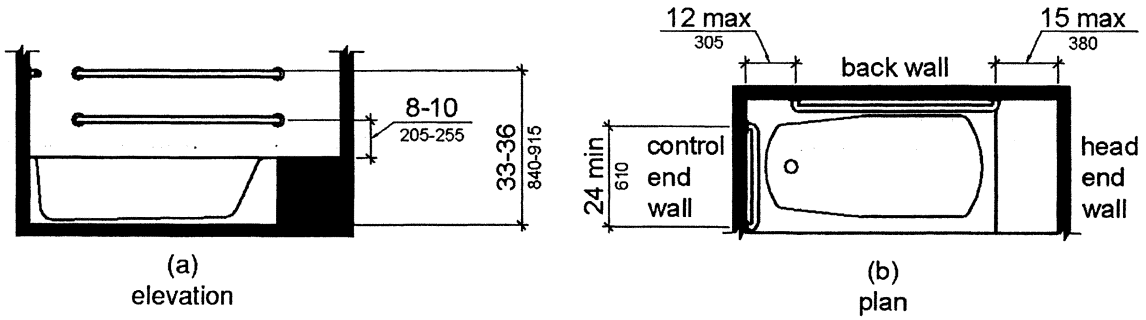


Figure 607.4.1
Grab Bars for Bathtubs with Permanent Seats

607.4.2 Bathtubs Without Permanent Seats. For bathtubs without permanent seats, grab bars shall comply with 607.4.2.

607.4.2.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be 24 inches (610 mm) long minimum and shall be installed 24 inches (610 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.2.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

607.4.2.3 Head End Wall. A grab bar 12 inches (305 mm) long minimum shall be installed on the head end wall at the front edge of the bathtub.

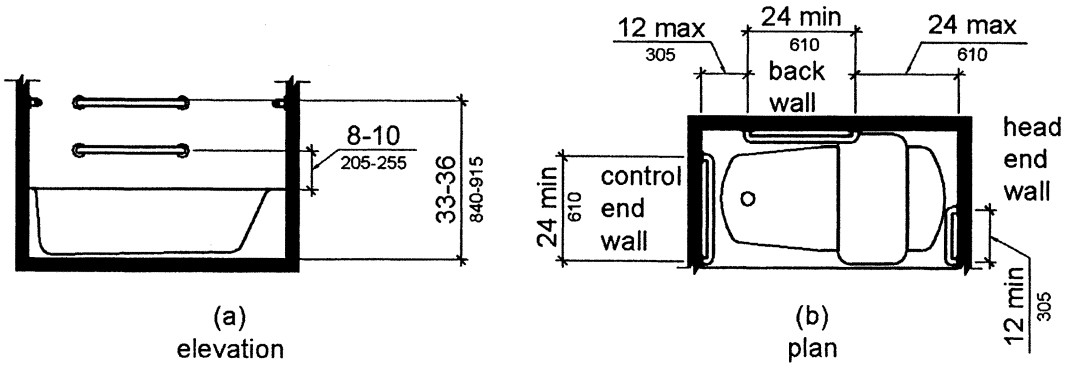


Figure 607.4.2
Grab Bars for Bathtubs with Removable In-Tub Seats

607.5 Controls. Controls, other than drain stoppers, shall be located on an end wall. Controls shall be between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with 309.4.

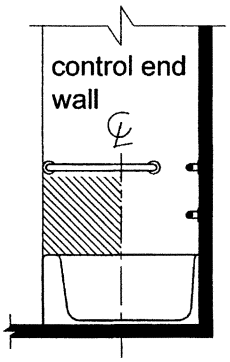


Figure 607.5
Bathtub Control Location

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

> **Advisory 607.6 Shower Spray Unit and Water.** Ensure that hand-held shower spray units are capable of delivering water pressure substantially equivalent to fixed shower heads.

607.7 Bathtub Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the open face of the bathtub.

608 Shower Compartments

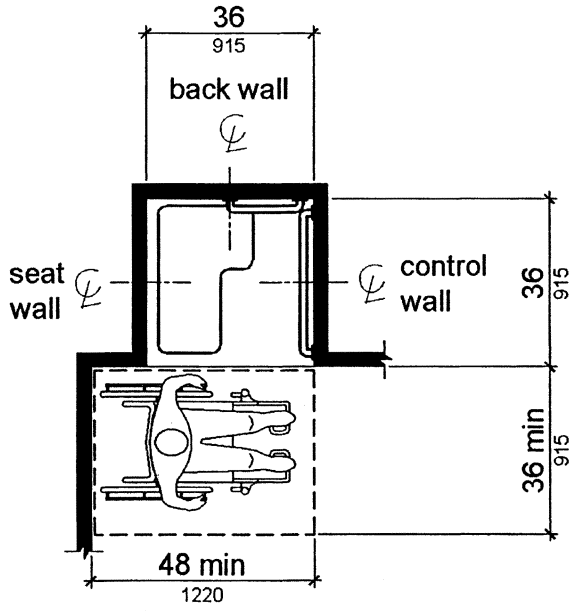
608.1 General. Shower compartments shall comply with 608.

> **Advisory 608.1 General.** Shower stalls that are 60 inches (1525 mm) wide and have no curb may increase the usability of a bathroom because the shower area provides additional maneuvering space.

608.2 Size and Clearances for Shower Compartments. Shower compartments shall have sizes and clearances complying with 608.2.

608.2.1 Transfer Type Shower Compartments. Transfer type shower compartments shall be 36 inches (915 mm) by 36 inches (915 mm) clear inside dimensions measured at the center points of opposing sides and shall have a 36 inch (915 mm) wide minimum entry on the face of the shower

compartment. Clearance of 36 inches (915 mm) wide minimum by 48 inches (1220 mm) long minimum measured from the control wall shall be provided.



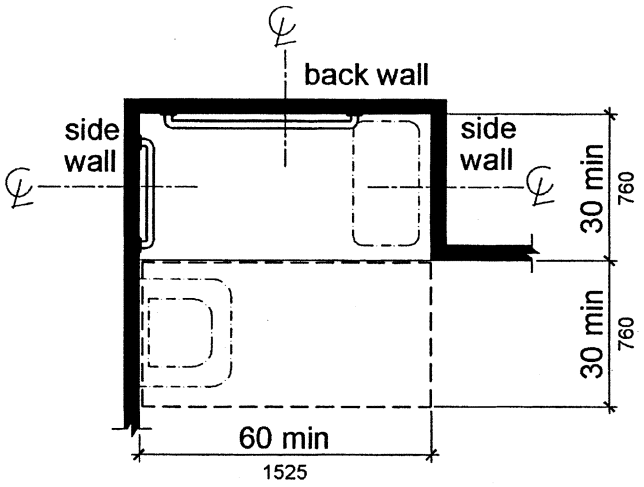
Note: inside finished dimensions measured at the center points of opposing sides

Figure 608.2.1
Transfer Type Shower Compartment Size and Clearance

608.2.2 Standard Roll-In Type Shower Compartments. Standard roll-in type shower compartments shall be 30 inches (760 mm) wide minimum by 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60 inches (1525 mm) wide minimum entry on the face of the shower compartment.

608.2.2.1 Clearance. A 30 inch (760 mm) wide minimum by 60 inch (1525 mm) long minimum clearance shall be provided adjacent to the open face of the shower compartment.

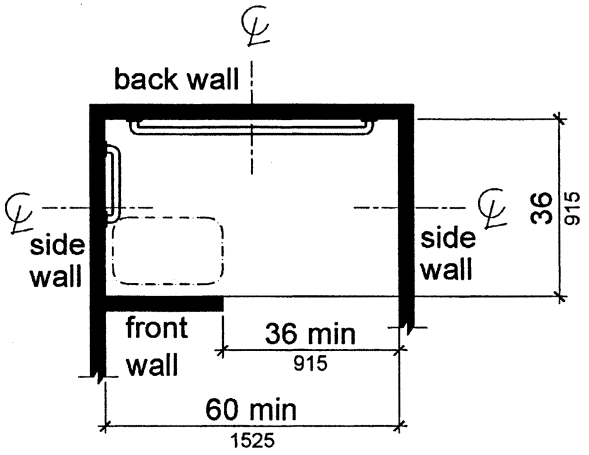
EXCEPTION: A lavatory complying with 606 shall be permitted on one 30 inch (760 mm) wide minimum side of the clearance provided that it is not on the side of the clearance adjacent to the controls or, where provided, not on the side of the clearance adjacent to the shower seat.



Note: inside finished dimensions measured at the center points of opposing sides

Figure 608.2.2
Standard Roll-In Type Shower Compartment Size and Clearance

608.2.3 Alternate Roll-In Type Shower Compartments. Alternate roll-in type shower compartments shall be 36 inches (915 mm) wide and 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides. A 36 inch (915 mm) wide minimum entry shall be provided at one end of the long side of the compartment.



Note: inside finished dimensions measured at the center points of opposing sides

Figure 608.2.3
Alternate Roll-In Type Shower Compartment Size and Clearance

608.3 Grab Bars. Grab bars shall comply with 609 and shall be provided in accordance with 608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the finish floor.

EXCEPTIONS: 1. Grab bars shall not be required to be installed in a shower located in a bathing *facility* for a single occupant accessed only through a private office, and not for *common use* or *public use* provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 608.3.

2. In *residential dwelling units*, grab bars shall not be required to be installed in showers located in bathing *facilities* provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 608.3.

608.3.1 Transfer Type Shower Compartments. In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18 inches (455 mm) from the control wall.

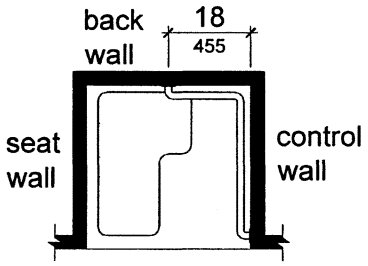


Figure 608.3.1
Grab Bars for Transfer Type Showers

608.3.2 Standard Roll-In Type Shower Compartments. Where a seat is provided in standard roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall opposite the seat. Grab bars shall not be provided above the seat. Where a seat is not provided in standard roll-in type shower compartments, grab bars shall be provided on three walls. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

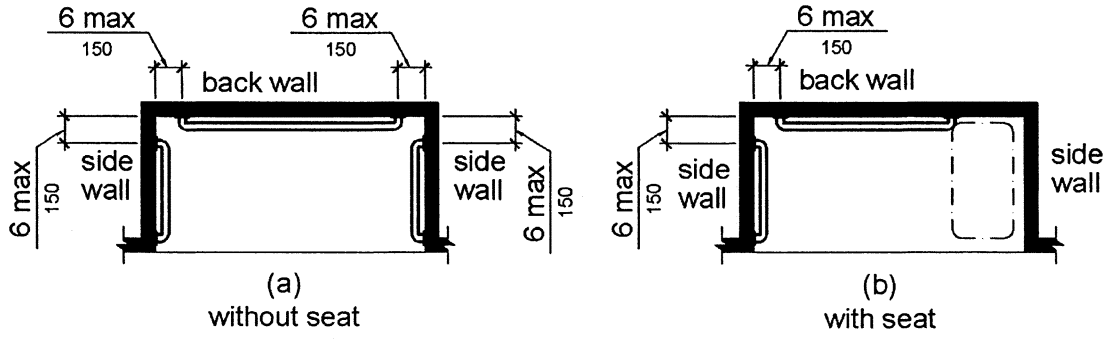


Figure 608.3.2
Grab Bars for Standard Roll-In Type Showers

608.3.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall farthest from the compartment entry. Grab bars shall not be provided above the seat. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

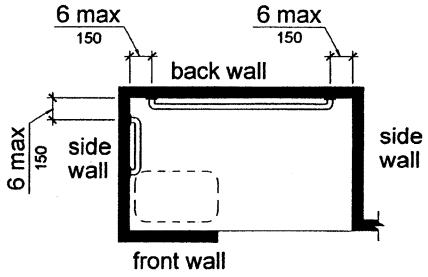


Figure 608.3.3
Grab Bars for Alternate Roll-In Type Showers

608.4 Seats. A folding or non-folding seat shall be provided in transfer type shower compartments. A folding seat shall be provided in roll-in type showers required in *transient lodging* guest rooms with mobility features complying with 806.2. Seats shall comply with 610.

EXCEPTION: In *residential dwelling units*, seats shall not be required in transfer type shower compartments provided that reinforcement has been installed in walls so as to permit the installation of seats complying with 608.4.

608.5 Controls. Controls, faucets, and shower spray units shall comply with 309.4.

608.5.1 Transfer Type Shower Compartments. In transfer type shower compartments, the controls, faucets, and shower spray unit shall be installed on the side wall opposite the seat 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor and shall be located on the control wall 15 inches (380 mm) maximum from the centerline of the seat toward the shower opening.

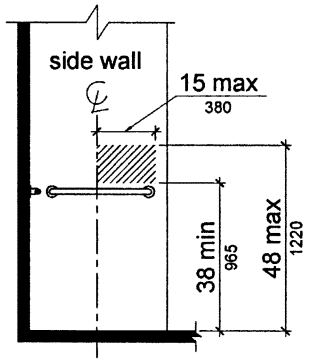


Figure 608.5.1
Transfer Type Shower Compartment Control Location

608.5.2 Standard Roll-In Type Shower Compartments. In standard roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be installed on the back wall adjacent to the seat wall and shall be located 27 inches (685 mm) maximum from the seat wall.

Advisory 608.5.2 Standard Roll-in Type Shower Compartments. In standard roll-in type showers without seats, the shower head and operable parts can be located on any of the three walls of the shower without adversely affecting accessibility.

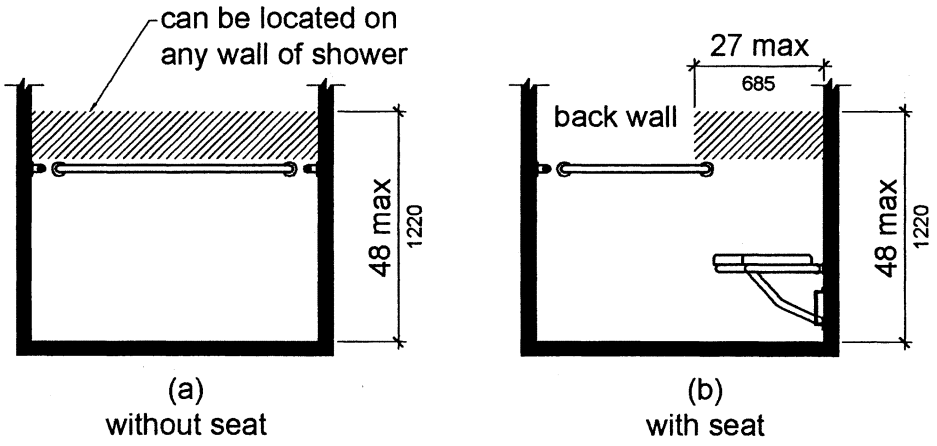


Figure 608.5.2
Standard Roll-In Type Shower Compartment Control Location

608.5.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be located on the side wall adjacent to the seat 27 inches (685 mm) maximum from the side wall behind the seat or shall be located on the back wall opposite the seat 15 inches (380 mm) maximum, left or right, of the centerline of the seat. Where a seat is not provided, the controls, faucets, and shower spray unit shall be installed on the side wall farthest from the compartment entry.

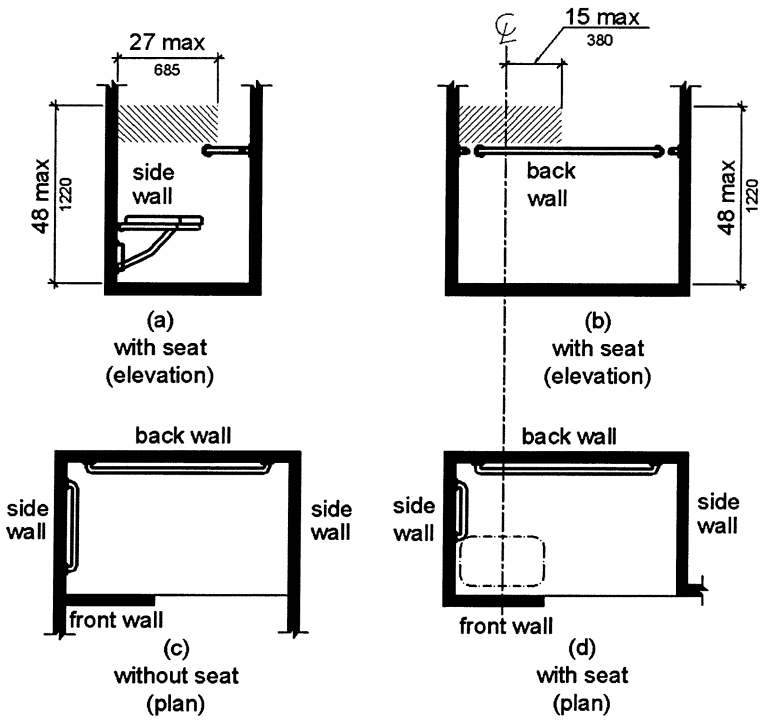


Figure 608.5.3
Alternate Roll-In Type Shower Compartment Control Location

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

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

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

608.7 Thresholds. Thresholds in roll-in type shower compartments shall be ½ inch (13 mm) high maximum in accordance with 303. In transfer type shower compartments, thresholds ½ inch (13 mm) high maximum shall be beveled, rounded, or vertical.

EXCEPTION: A threshold 2 inches (51 mm) high maximum shall be permitted in transfer type shower compartments in existing *facilities* where provision of a ½ inch (13 mm) high threshold would disturb the structural reinforcement of the floor slab.

608.8 Shower Enclosures. Enclosures for shower compartments shall not obstruct controls, faucets, and shower spray units or obstruct transfer from wheelchairs onto shower seats.

609 Grab Bars

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

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

609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.

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

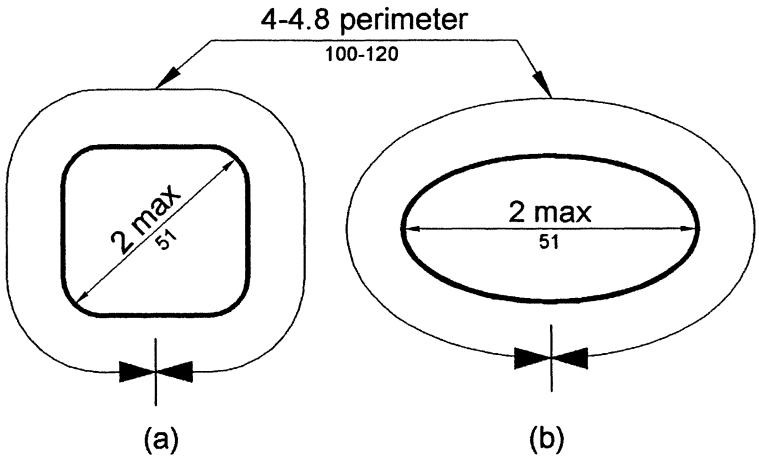


Figure 609.2.2
Grab Bar Non-Circular Cross Section

609.3 Spacing. The *space* between the wall and the grab bar shall be 1½ inches (38 mm). The *space* between the grab bar and projecting objects below and at the ends shall be 1½ inches (38 mm) minimum. The *space* between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.

EXCEPTION: The *space* between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1½ inches (38 mm) minimum.

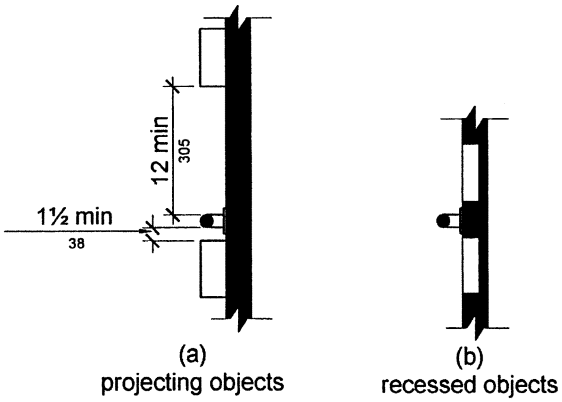


Figure 609.3
Spacing of Grab Bars

609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for *children's use* complying with 604.9, grab bars shall be installed in a horizontal position 18 inches (455 mm) minimum and 27 inches (685 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with 607.4.1.1 or 607.4.2.1.

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

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

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

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

610 Seats

610.1 General. Seats in bathtubs and shower compartments shall comply with 610.

610.2 Bathtub Seats. The top of bathtub seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. The depth of a removable in-tub seat shall be 15 inches (380 mm) minimum and 16 inches (405 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the bathtub shall be 15 inches (380 mm) deep minimum and shall extend from the back wall to or beyond the outer edge of the bathtub.

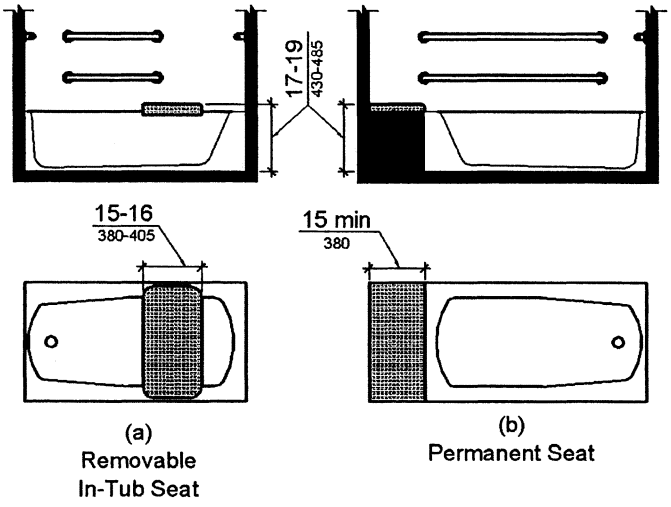


Figure 610.2
Bathtub Seats

610.3 Shower Compartment Seats. Where a seat is provided in a standard roll-in shower compartment, it shall be a folding type, shall be installed on the side wall adjacent to the controls, and shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. Where a seat is provided in an alternate roll-in type shower compartment, it shall be a folding type, shall be installed on the front wall opposite the back wall, and shall extend from the adjacent side wall to a point within 3 inches (75 mm) of the compartment entry. In transfer-type showers, the seat shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. The top of the seat shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. Seats shall comply with 610.3.1 or 610.3.2.

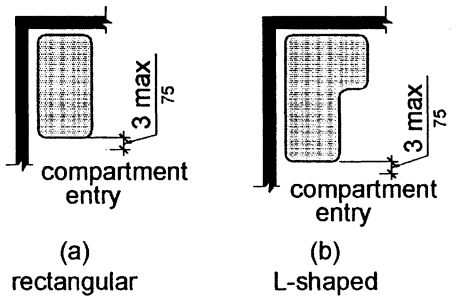


Figure 610.3
Extent of Seat

610.3.1 Rectangular Seats. The rear edge of a rectangular seat shall be 2½ inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from

the seat wall. The side edge of the seat shall be 1½ inches (38 mm) maximum from the adjacent wall.

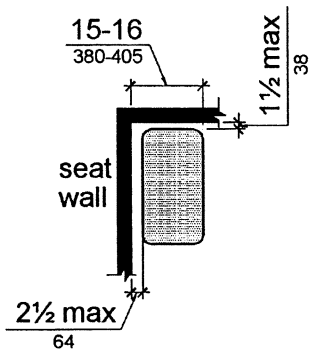


Figure 610.3.1
Rectangular Shower Seat

610.3.2 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2½ inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1½ inches (38 mm) maximum from the wall and the front edge shall be 14 inches (355 mm) minimum and 15 inches (380 mm) maximum from the wall. The end of the "L" shall be 22 inches (560 mm) minimum and 23 inches maximum (585 mm) from the main seat wall.

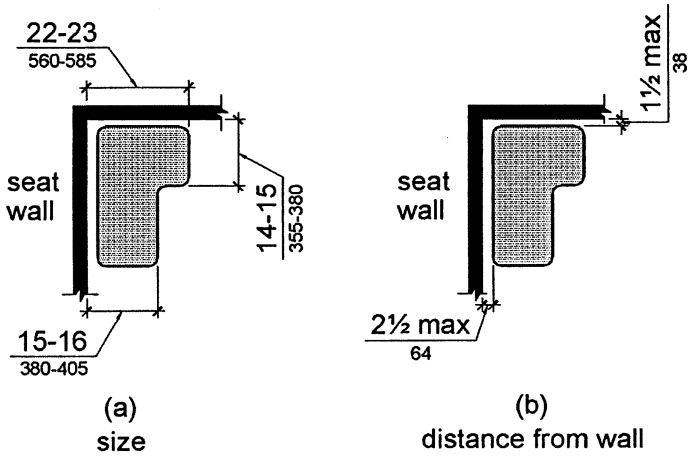


Figure 610.3.2
L-Shaped Shower Seat

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

611 Washing Machines and Clothes Dryers

611.1 General. Washing machines and clothes dryers shall comply with 611.

611.2 Clear Floor Space. A clear floor or ground *space* complying with 305 positioned for parallel approach shall be provided. The clear floor or ground *space* shall be centered on the appliance.

611.3 Operable Parts. *Operable parts*, including doors, lint screens, and detergent and bleach compartments shall comply with 309.

611.4 Height. Top loading machines shall have the door to the laundry compartment located 36 inches (915 mm) maximum above the finish floor. Front loading machines shall have the bottom of the opening to the laundry compartment located 15 inches (380 mm) minimum and 36 inches (915 mm) maximum above the finish floor.

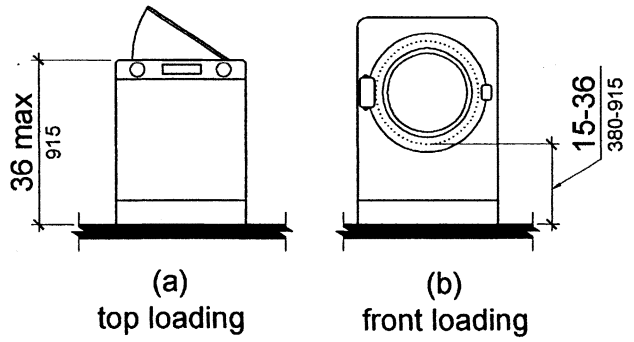


Figure 611.4
Height of Laundry Compartment Opening

612 Saunas and Steam Rooms

612.1 General. Saunas and steam rooms shall comply with 612.

612.2 Bench. Where seating is provided in saunas and steam rooms, at least one bench shall comply with 903. Doors shall not swing into the clear floor *space* required by 903.2.

EXCEPTION: A readily removable bench shall be permitted to obstruct the turning *space* required by 612.3 and the clear floor or ground *space* required by 903.2.

612.3 Turning Space. A turning *space* complying with 304 shall be provided within saunas and steam rooms.

CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES

701 General

701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

702 Fire Alarm Systems

702.1 General. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1), except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition).

EXCEPTION: Fire alarm systems in medical care *facilities* shall be permitted to be provided in accordance with industry practice.

703 Signs

703.1 General. Signs shall comply with 703. Where both visual and *tactile characters* are required, either one sign with both visual and *tactile characters*, or two separate signs, one with visual, and one with *tactile characters*, shall be provided.

703.2 Raised Characters. Raised *characters* shall comply with 703.2 and shall be duplicated in braille complying with 703.3. Raised *characters* shall be installed in accordance with 703.4.

Advisory 703.2 Raised Characters. Signs that are designed to be read by touch should not have sharp or abrasive edges.

703.2.1 Depth. Raised *characters* shall be 1/32 inch (0.8 mm) minimum above their background.

703.2.2 Case. *Characters* shall be uppercase.

703.2.3 Style. *Characters* shall be sans serif. *Characters* shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Proportions. *Characters* shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.2.5 Character Height. *Character* height measured vertically from the baseline of the *character* shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".

EXCEPTION: Where separate raised and visual *characters* with the same information are provided, raised *character* height shall be permitted to be ½ inch (13 mm) minimum.

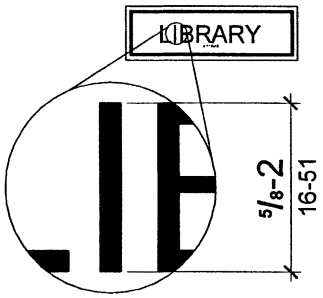


Figure 703.2.5
Height of Raised Characters

703.2.6 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the *character.*

703.2.7 Character Spacing. *Character* spacing shall be measured between the two closest points of adjacent raised *characters* within a message, excluding word *spaces.* Where *characters* have rectangular cross sections, spacing between individual raised *characters* shall be 1/8 inch (3.2 mm) minimum and 4 times the raised *character* stroke width maximum. Where *characters* have other cross sections, spacing between individual raised *characters* shall be 1/16 inch (1.6 mm) minimum and 4 times the raised *character* stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised *character* stroke width maximum at the top of the cross sections. *Characters* shall be separated from raised borders and decorative *elements* 3/8 inch (9.5 mm) minimum.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of raised *characters* within a message shall be 135 percent minimum and 170 percent maximum of the raised *character* height.

703.3 Braille. Braille shall be contracted (Grade 2) and shall comply with 703.3 and 703.4.

703.3.1 Dimensions and Capitalization. Braille dots shall have a domed or rounded shape and shall comply with Table 703.3.1. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.

Table 703.3.1 Braille Dimensions

Measurement Range	Minimum in Inches Maximum in Inches
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell[1]	0.090 (2.3 mm) to 0.100 (2.5 mm)
Distance between corresponding dots in adjacent cells[1]	0.241 (6.1 mm) to 0.300 (7.6 mm)
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below[1]	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.

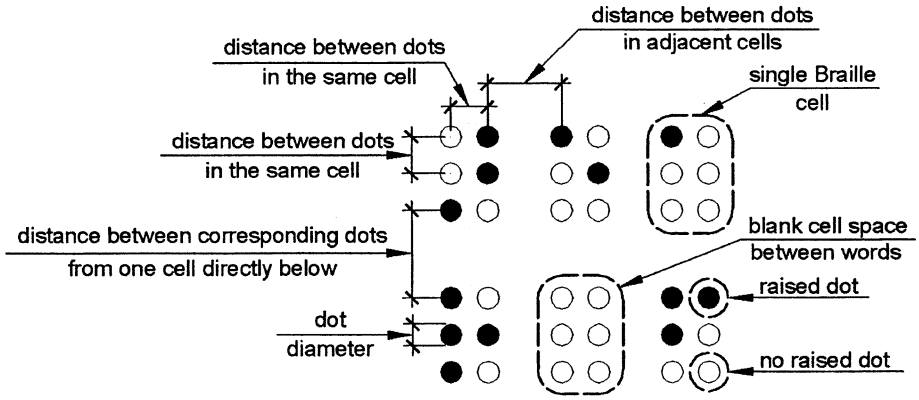


Figure 703.3.1
Braille Measurement

703.3.2 Position. Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other *tactile characters* and 3/8 inch (9.5 mm) minimum from raised borders and decorative *elements*.

EXCEPTION: Braille provided on elevator car controls shall be separated 3/16 inch (4.8 mm) minimum and shall be located either directly below or adjacent to the corresponding raised *characters* or symbols.

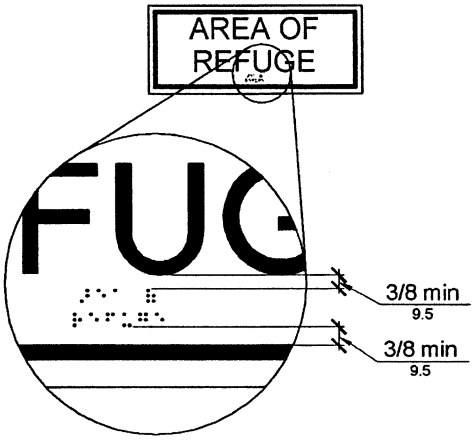


Figure 703.3.2
Position of Braille

703.4 Installation Height and Location. Signs with *tactile characters* shall comply with 703.4.

703.4.1 Height Above Finish Floor or Ground. *Tactile characters* on signs shall be located 48 inches (1220 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest *tactile character* and 60 inches (1525 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest *tactile character.*

EXCEPTION: *Tactile characters* for elevator car controls shall not be required to comply with 703.4.1.

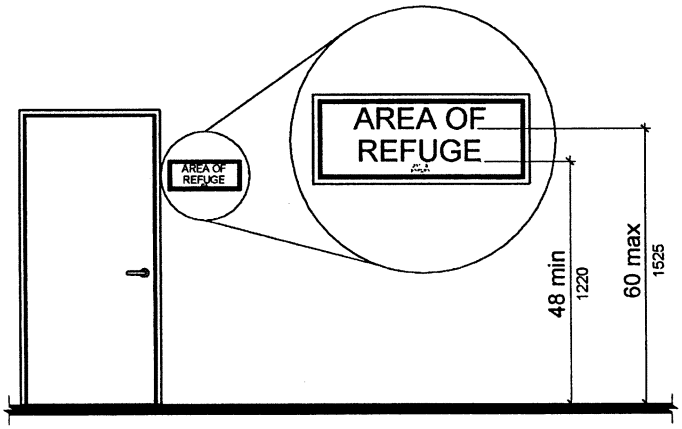


Figure 703.4.1
Height of Tactile Characters Above Finish Floor or Ground

703.4.2 Location. Where a *tactile* sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a *tactile* sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a *tactile* sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall *space* at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing *tactile characters* shall be located so that a clear floor *space* of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the *tactile characters*, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

EXCEPTION: Signs with *tactile characters* shall be permitted on the push side of doors with closers and without hold-open devices.

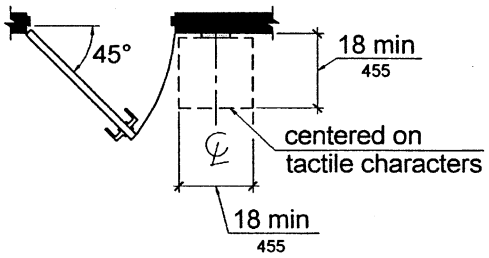


Figure 703.4.2
Location of Tactile Signs at Doors

703.5 Visual Characters. Visual *characters* shall comply with 703.5.

EXCEPTION: Where visual *characters* comply with 703.2 and are accompanied by braille complying with 703.3, they shall not be required to comply with 703.5.2 through 703.5.9.

703.5.1 Finish and Contrast. *Characters* and their background shall have a non-glare finish. *Characters* shall contrast with their background with either light *characters* on a dark background or dark *characters* on a light background.

Advisory 703.5.1 Finish and Contrast. Signs are more legible for persons with low vision when characters contrast as much as possible with their background. Additional factors affecting the ease with which the text can be distinguished from its background include shadows cast by lighting sources, surface glare, and the uniformity of the text and its background colors and textures.

703.5.2 Case. *Characters* shall be uppercase or lowercase or a combination of both.

703.5.3 Style. *Characters* shall be conventional in form. *Characters* shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.5.4 Character Proportions. *Characters* shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.5.5 Character Height. Minimum *character* height shall comply with Table 703.5.5. Viewing distance shall be measured as the horizontal distance between the *character* and an obstruction preventing further approach towards the sign. *Character* height shall be based on the uppercase letter "I".

Table 703.5.5 Visual Character Height

Height to Finish Floor or Ground From Baseline of Character	Horizontal Viewing Distance	Minimum Character Height
40 inches (1015 mm) to less than or equal to 70 inches (1780 mm)	less than 72 inches (1830 mm)	5/8 inch (16 mm)
	72 inches (1830 mm) and greater	5/8 inch (16 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1830 mm)
Greater than 70 inches (1780 mm) to less than or equal to 120 inches (3050 mm)	less than 180 inches (4570 mm)	2 inches (51 mm)
	180 inches (4570 mm) and greater	2 inches (51 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4570 mm)
greater than 120 inches (3050 mm)	less than 21 feet (6400 mm)	3 inches (75 mm)
	21 feet (6400 mm) and greater	3 inches (75 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6400 mm)

703.5.6 Height From Finish Floor or Ground. Visual *characters* shall be 40 inches (1015 mm) minimum above the finish floor or ground.

EXCEPTION: Visual *characters* indicating elevator car controls shall not be required to comply with 703.5.6.

703.5.7 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 10 percent minimum and 30 percent maximum of the height of the *character*.

703.5.8 Character Spacing. *Character* spacing shall be measured between the two closest points of adjacent *characters*, excluding word *spaces*. Spacing between individual *characters* shall be 10 percent minimum and 35 percent maximum of *character* height.

703.5.9 Line Spacing. Spacing between the baselines of separate lines of *characters* within a message shall be 135 percent minimum and 170 percent maximum of the *character* height.

703.6 Pictograms. *Pictograms* shall comply with 703.6.

703.6.1 Pictogram Field. *Pictograms* shall have a field height of 6 inches (150 mm) minimum. *Characters* and braille shall not be located in the *pictogram* field.

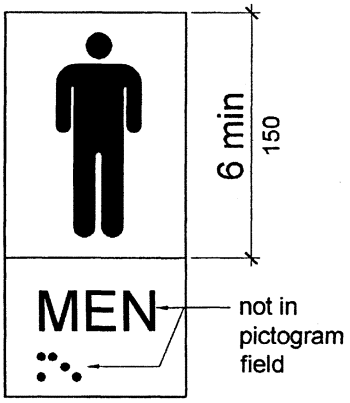


Figure 703.6.1
Pictogram Field

703.6.2 Finish and Contrast. *Pictograms* and their field shall have a non-glare finish. *Pictograms* shall contrast with their field with either a light *pictogram* on a dark field or a dark *pictogram* on a light field.

A703.6.2 Finish and Contrast. Signs are more legible for persons with low vision when characters contrast as much as possible with their background. Additional factors affecting the ease with which the text can be distinguished from its background include shadows cast by lighting sources, surface glare, and the uniformity of the text and background colors and textures.

703.6.3 Text Descriptors. *Pictograms* shall have text descriptors located directly below the *pictogram* field. Text descriptors shall comply with 703.2, 703.3 and 703.4.

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

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

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

703.7.2 Symbols.

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

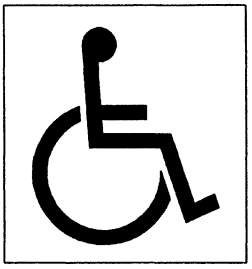


Figure 703.7.2.1
International Symbol of Accessibility

703.7.2.2 International Symbol of TTY. The International Symbol of *TTY* shall comply with Figure 703.7.2.2.

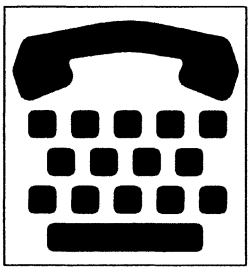


Figure 703.7.2.2
International Symbol of TTY

703.7.2.3 Volume Control Telephones. Telephones with a volume control shall be identified by a *pictogram* of a telephone handset with radiating sound waves on a square field such as shown in Figure 703.7.2.3.

Figure 703.7.2.3
Volume Control Telephone

703.7.2.4 Assistive Listening Systems. *Assistive listening systems* shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 703.7.2.4.

Figure 703.7.2.4
International Symbol of Access for Hearing Loss

704 Telephones

704.1 General. Public telephones shall comply with 704.

704.2 Wheelchair Accessible Telephones. Wheelchair *accessible* telephones shall comply with 704.2.

704.2.1 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided. The clear floor or ground *space* shall not be obstructed by bases, enclosures, or seats.

> **Advisory 704.2.1 Clear Floor or Ground Space.** Because clear floor and ground space is required to be unobstructed, telephones, enclosures and related telephone book storage cannot encroach on the required clear floor or ground space and must comply with the provisions for protruding objects. (See Section 307).

704.2.1.1 Parallel Approach. Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10 inches (255 mm) maximum.

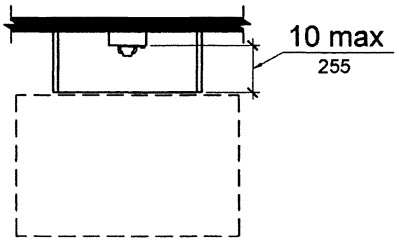


Figure 704.2.1.1
Parallel Approach to Telephone

704.2.1.2 Forward Approach. Where a forward approach is provided, the distance from the front edge of a counter within the telephone enclosure to the face of the telephone unit shall be 20 inches (510 mm) maximum.

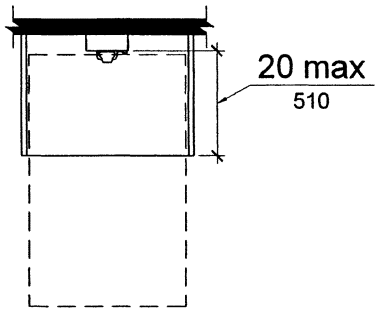


Figure 704.2.1.2
Forward Approach to Telephone

704.2.2 Operable Parts. *Operable parts* shall comply with 309. Telephones shall have push-button controls where such service is available.

704.2.3 Telephone Directories. Telephone directories, where provided, shall be located in accordance with 309.

704.2.4 Cord Length. The cord from the telephone to the handset shall be 29 inches (735 mm) long minimum.

704.3 Volume Control Telephones. Public telephones required to have volume controls shall be equipped with a receive volume control that provides a gain adjustable up to 20 dB minimum. For incremental volume control, provide at least one intermediate step of 12 dB of gain minimum. An automatic reset shall be provided.

Advisory 704.3 Volume Control Telephones. Amplifiers on pay phones are located in the base or the handset or are built into the telephone. Most are operated by pressing a button or key. If the microphone in the handset is not being used, a mute button that temporarily turns off the microphone can also reduce the amount of background noise which the person hears in the earpiece. If a volume adjustment is provided that allows the user to set the level anywhere from the base volume to the upper requirement of 20 dB, there is no need to specify a lower limit. If a stepped volume control is provided, one of the intermediate levels must provide 12 dB of gain. Consider compatibility issues when matching an amplified handset with a phone or phone system. Amplified handsets that can be switched with pay telephone handsets are available. Portable and in-line amplifiers can be used with some phones but are not practical at most public phones covered by these requirements.

704.4 TTYs. *TTYs* required at a public pay telephone shall be permanently affixed within, or adjacent to, the telephone enclosure. Where an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the *TTY* and the telephone receiver.

> **Advisory 704.4 TTYs.** Ensure that sufficient electrical service is available where TTYs are to be installed.

704.4.1 Height. When in use, the touch surface of *TTY* keypads shall be 34 inches (865 mm) minimum above the finish floor.

EXCEPTION: Where seats are provided, *TTYs* shall not be required to comply with 704.4.1.

> **Advisory 704.4.1 Height.** A telephone with a TTY installed underneath cannot also be a wheelchair accessible telephone because the required 34 inches (865 mm) minimum keypad height can causes the highest operable part of the telephone, usually the coin slot, to exceed the maximum permitted side and forward reach ranges. (See Section 308).
>
> **Advisory 704.4.1 Height Exception.** While seats are not required at TTYs, reading and typing at a TTY is more suited to sitting than standing. Facilities that often provide seats at TTY's include, but are not limited to, airports and other passenger terminals or stations, courts, art galleries, and convention centers.

704.5 TTY Shelf. Public pay telephones required to accommodate portable *TTYs* shall be equipped with a shelf and an electrical outlet within or adjacent to the telephone enclosure. The telephone handset shall be capable of being placed flush on the surface of the shelf. The shelf shall be capable of accommodating a *TTY* and shall have 6 inches (150 mm) minimum vertical clearance above the area where the *TTY* is to be placed.

705 Detectable Warnings

705.1 General. *Detectable warnings* shall consist of a surface of truncated domes and shall comply with 705.

705.1.1 Dome Size. Truncated domes in a *detectable warning* surface shall have a base diameter of 0.9 inch (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 inch (5.1 mm).

705.1.2 Dome Spacing. Truncated domes in a *detectable warning* surface shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inch (17 mm) minimum, measured between the most adjacent domes on a square grid.

705.1.3 Contrast. *Detectable warning* surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.

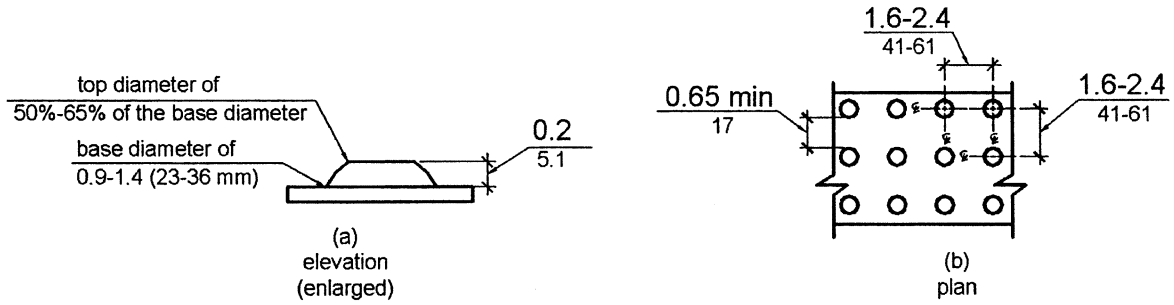


Figure 705.1
Size and Spacing of Truncated Domes

705.2 Platform Edges. *Detectable warning* surfaces at platform boarding edges shall be 24 inches (610 mm) wide and shall extend the full length of the *public use* areas of the platform.

706 Assistive Listening Systems

706.1 General. *Assistive listening systems* required in *assembly areas* shall comply with 706.

Advisory 706.1 General. Assistive listening systems are generally categorized by their mode of transmission. There are hard-wired systems and three types of wireless systems: induction loop, infrared, and FM radio transmission. Each has different advantages and disadvantages that can help determine which system is best for a given application. For example, an FM system may be better than an infrared system in some open-air assemblies since infrared signals are less effective in sunlight. On the other hand, an infrared system is typically a better choice than an FM system where confidential transmission is important because it will be contained within a given space.

The technical standards for assistive listening systems describe minimum performance levels for volume, interference, and distortion. Sound pressure levels (SPL), expressed in decibels, measure output sound volume. Signal-to-noise ratio (SNR or S/N), also expressed in decibels, represents the relationship between the loudness of a desired sound (the signal) and the background noise in a space or piece of equipment. The higher the SNR, the more intelligible the signal. The peak clipping level limits the distortion in signal output produced when high-volume sound waves are manipulated to serve assistive listening devices.

Selecting or specifying an effective assistive listening system for a large or complex venue requires assistance from a professional sound engineer. The Access Board has published technical assistance on assistive listening devices and systems.

706.2 Receiver Jacks. Receivers required for use with an *assistive listening system* shall include a 1/8 inch (3.2 mm) standard mono jack.

706.3 Receiver Hearing-Aid Compatibility. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neckloops.

> **Advisory 706.3 Receiver Hearing-Aid Compatibility.** Neckloops and headsets that can be worn as neckloops are compatible with hearing aids. Receivers that are not compatible include earbuds, which may require removal of hearing aids, earphones, and headsets that must be worn over the ear, which can create disruptive interference in the transmission and can be uncomfortable for people wearing hearing aids.

706.4 Sound Pressure Level. *Assistive listening systems* shall be capable of providing a sound pressure level of 110 dB minimum and 118 dB maximum with a dynamic range on the volume control of 50 dB.

706.5 Signal-to-Noise Ratio. The signal-to-noise ratio for internally generated noise in *assistive listening systems* shall be 18 dB minimum.

706.6 Peak Clipping Level. Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

707 Automatic Teller Machines and Fare Machines

> **Advisory 707 Automatic Teller Machines and Fare Machines.** Interactive transaction machines (ITMs), other than ATMs, are not covered by Section 707. However, for entities covered by the ADA, the Department of Justice regulations that implement the ADA provide additional guidance regarding the relationship between these requirements and elements that are not directly addressed by these requirements. Federal procurement law requires that ITMs purchased by the Federal government comply with standards issued by the Access Board under Section 508 of the Rehabilitation Act of 1973, as amended. This law covers a variety of products, including computer hardware and software, websites, phone systems, fax machines, copiers, and similar technologies. For more information on Section 508 consult the Access Board's website at www.access-board.gov.

707.1 General. Automatic teller machines and fare machines shall comply with 707.

> **Advisory 707.1 General.** If farecards have one tactually distinctive corner they can be inserted with greater accuracy. Token collection devices that are designed to accommodate tokens which are perforated can allow a person to distinguish more readily between tokens and common coins. Place accessible gates and fare vending machines in close proximity to other accessible elements when feasible so the facility is easier to use.

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

EXCEPTION: Clear floor or ground *space* shall not be required at drive-up only automatic teller machines and fare machines.

707.3 Operable Parts. *Operable parts* shall comply with 309. Unless a clear or correct key is provided, each *operable part* shall be able to be differentiated by sound or touch, without activation.

EXCEPTION: Drive-up only automatic teller machines and fare machines shall not be required to comply with 309.2 and 309.3.

707.4 Privacy. Automatic teller machines shall provide the opportunity for the same degree of privacy of input and output available to all individuals.

Advisory 707.4 Privacy. In addition to people who are blind or visually impaired, people with limited reach who use wheelchairs or have short stature, who cannot effectively block the ATM screen with their bodies, may prefer to use speech output. Speech output users can benefit from an option to render the visible screen blank, thereby affording them greater personal security and privacy.

707.5 Speech Output. Machines shall be speech enabled. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use shall be *accessible* to and independently usable by individuals with vision impairments. Speech shall be delivered through a mechanism that is readily available to all users, including but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized.

EXCEPTIONS: 1. Audible tones shall be permitted instead of speech for visible output that is not displayed for security purposes, including but not limited to, asterisks representing personal identification numbers.

2. Advertisements and other similar information shall not be required to be audible unless they convey information that can be used in the transaction being conducted.

3. Where speech synthesis cannot be supported, dynamic alphabetic output shall not be required to be audible.

Advisory 707.5 Speech Output. If an ATM provides additional functions such as dispensing coupons, selling theater tickets, or providing copies of monthly statements, all such functions must be available to customers using speech output. To avoid confusion at the ATM, the method of initiating the speech mode should be easily discoverable and should not require specialized training. For example, if a telephone handset is provided, lifting the handset can initiate the speech mode.

707.5.1 User Control. Speech shall be capable of being repeated or interrupted. Volume control shall be provided for the speech function.

EXCEPTION: Speech output for any single function shall be permitted to be automatically interrupted when a transaction is selected.

707.5.2 Receipts. Where receipts are provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on the printed receipt necessary to complete or verify the transaction.

EXCEPTIONS: 1. Machine location, date and time of transaction, customer account number, and the machine identifier shall not be required to be audible.

2. Information on printed receipts that duplicates information available on-screen shall not be required to be presented in the form of an audible receipt.

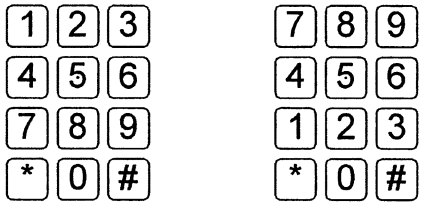
3. Printed copies of bank statements and checks shall not be required to be audible.

707.6 Input. Input devices shall comply with 707.6.

707.6.1 Input Controls. At least one *tactilely* discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be *tactilely* discernable from surrounding surfaces and adjacent keys.

707.6.2 Numeric Keys. Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout. The number five key shall be *tactilely* distinct from the other keys.

Advisory 707.6.2 Numeric Keys. Telephone keypads and computer keyboards differ in one significant feature, ascending versus descending numerical order. Both types of keypads are acceptable, provided the computer-style keypad is organized similarly to the number pad located at the right on most computer keyboards, and does not resemble the line of numbers located above the computer keys.



(a) 12-key ascending (b) 12-key descending

Figure 707.6.2
Numeric Key Layout

707.6.3 Function Keys. Function keys shall comply with 707.6.3.

707.6.3.1 Contrast. Function keys shall contrast visually from background surfaces. *Characters* and symbols on key surfaces shall contrast visually from key surfaces. Visual contrast shall be either light-on-dark or dark-on-light.

EXCEPTION: *Tactile* symbols required by 707.6.3.2 shall not be required to comply with 707.6.3.1.

707.6.3.2 Tactile Symbols. Function key surfaces shall have *tactile* symbols as follows: Enter or Proceed key: raised circle; Clear or Correct key: raised left arrow; Cancel key: raised letter ex; Add Value key: raised plus sign; Decrease Value key: raised minus sign.

707.7 Display Screen. The display screen shall comply with 707.7.

EXCEPTION: Drive-up only automatic teller machines and fare machines shall not be required to comply with 707.7.1.

707.7.1 Visibility. The display screen shall be visible from a point located 40 inches (1015 mm) above the center of the clear floor *space* in front of the machine.

707.7.2 Characters. *Characters* displayed on the screen shall be in a sans serif font. *Characters* shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter "I". *Characters* shall contrast with their background with either light *characters* on a dark background or dark *characters* on a light background.

707.8 Braille Instructions. Braille instructions for initiating the speech mode shall be provided. Braille shall comply with 703.3.

708 Two-Way Communication Systems

708.1 General. Two-way communication systems shall comply with 708.

Advisory 708.1 General. Devices that do not require handsets are easier to use by people who have a limited reach.

708.2 Audible and Visual Indicators. The system shall provide both audible and visual signals.

Advisory 708.2 Audible and Visual Indicators. A light can be used to indicate visually that assistance is on the way. Signs indicating the meaning of visual signals should be provided.

708.3 Handsets. Handset cords, if provided, shall be 29 inches (735 mm) long minimum.

708.4 Residential Dwelling Unit Communication Systems. Communications systems between a *residential dwelling unit* and a *site*, *building*, or floor *entrance* shall comply with 708.4.

708.4.1 Common Use or Public Use System Interface. The *common use* or *public use* system interface shall include the capability of supporting voice and *TTY* communication with the *residential dwelling unit* interface.

708.4.2 Residential Dwelling Unit Interface. The *residential dwelling unit* system interface shall include a telephone jack capable of supporting voice and *TTY* communication with the *common use* or *public use* system interface.

CHAPTER 8: SPECIAL ROOMS, SPACES, AND ELEMENTS

801 General

801.1 Scope. The provisions of Chapter 8 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

> **Advisory 801.1 Scope.** Facilities covered by these requirements are also subject to the requirements of the other chapters. For example, 806 addresses guest rooms in transient lodging facilities while 902 contains the technical specifications for dining surfaces. If a transient lodging facility contains a restaurant, the restaurant must comply with requirements in other chapters such as those applicable to certain dining surfaces.

802 Wheelchair Spaces, Companion Seats, and Designated Aisle Seats

802.1 Wheelchair Spaces. *Wheelchair spaces* shall comply with 802.1.

802.1.1 Floor or Ground Surface. The floor or ground surface of *wheelchair spaces* shall comply with 302. Changes in level are not permitted.

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

802.1.2 Width. A single *wheelchair space* shall be 36 inches (915 mm) wide minimum Where two adjacent *wheelchair spaces* are provided, each *wheelchair space* shall be 33 inches (840 mm) wide minimum.

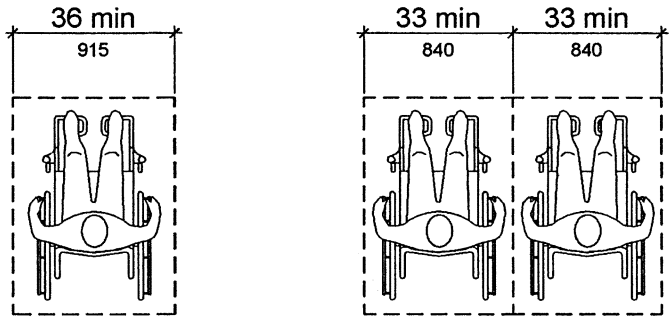


Figure 802.1.2
Width of Wheelchair Spaces

802.1.3 Depth. Where a *wheelchair space* can be entered from the front or rear, the *wheelchair space* shall be 48 inches (1220 mm) deep minimum. Where a *wheelchair space* can be entered only from the side, the *wheelchair space* shall be 60 inches (1525 mm) deep minimum.

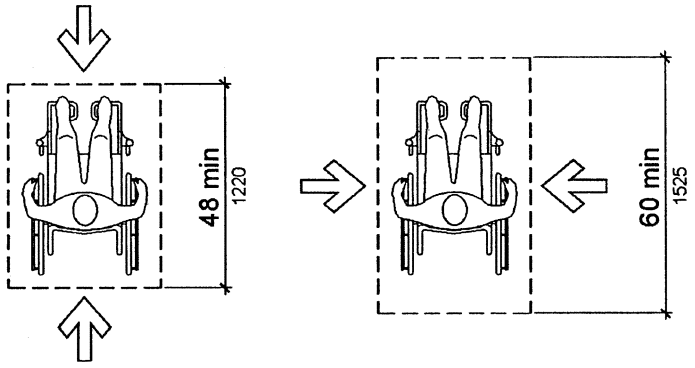


Figure 802.1.3
Depth of Wheelchair Spaces

802.1.4 Approach. *Wheelchair spaces* shall adjoin *accessible* routes. *Accessible* routes shall not overlap *wheelchair spaces.*

Advisory 802.1.4 Approach. Because accessible routes serving wheelchair spaces are not permitted to overlap the clear floor space at wheelchair spaces, access to any wheelchair space cannot be through another wheelchair space.

802.1.5 Overlap. *Wheelchair spaces* shall not overlap *circulation paths.*

Advisory 802.1.5 Overlap. The term "circulation paths" used in Section 802.1.5 means aisle width required by applicable building or life safety codes for the specific assembly occupancy. Where the circulation path provided is wider than the required aisle width, the wheelchair space may intrude into that portion of the circulation path that is provided in excess of the required aisle width.

802.2 Lines of Sight. Lines of sight to the screen, performance area, or playing field for spectators in *wheelchair spaces* shall comply with 802.2.

802.2.1 Lines of Sight Over Seated Spectators. Where spectators are expected to remain seated during events, spectators in *wheelchair spaces* shall be afforded lines of sight complying with 802.2.1.

802.2.1.1 Lines of Sight Over Heads. Where spectators are provided lines of sight over the heads of spectators seated in the first row in front of their seats, spectators seated in *wheelchair spaces* shall be afforded lines of sight over the heads of seated spectators in the first row in front of *wheelchair spaces.*

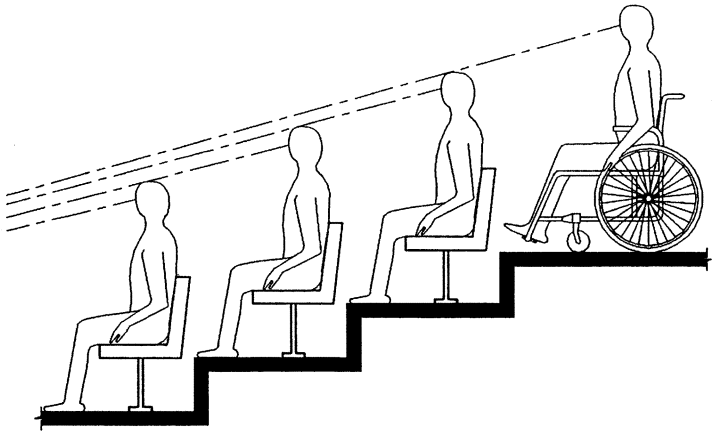


Figure 802.2.1.1
Lines of Sight Over the Heads of Seated Spectators

802.2.1.2 Lines of Sight Between Heads. Where spectators are provided lines of sight over the shoulders and between the heads of spectators seated in the first row in front of their seats, spectators seated in *wheelchair spaces* shall be afforded lines of sight over the shoulders and between the heads of seated spectators in the first row in front of *wheelchair spaces*.

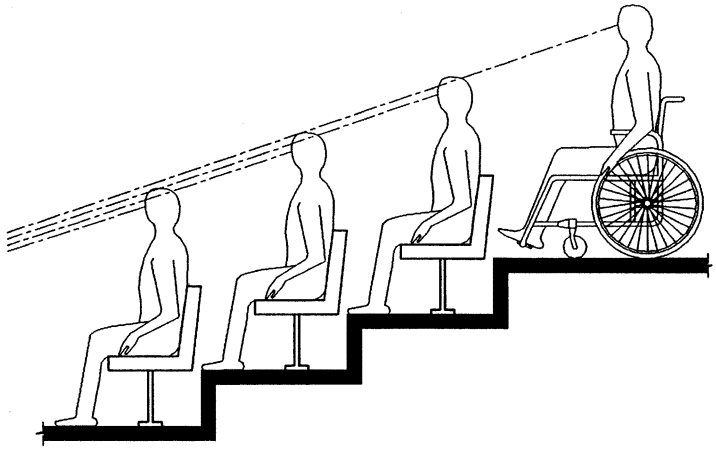


Figure 802.2.1.2
Lines of Sight Between the Heads of Seated Spectators

802.2.2 Lines of Sight Over Standing Spectators. Where spectators are expected to stand during events, spectators in *wheelchair spaces* shall be afforded lines of sight complying with 802.2.2.

802.2.2.1 Lines of Sight Over Heads. Where standing spectators are provided lines of sight over the heads of spectators standing in the first row in front of their seats, spectators seated in

wheelchair spaces shall be afforded lines of sight over the heads of standing spectators in the first row in front of *wheelchair spaces*.

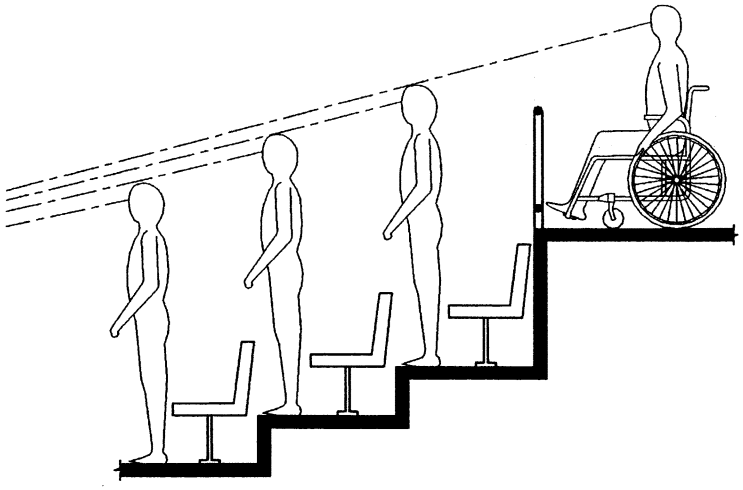


Figure 802.2.2.1
Lines of Sight Over the Heads of Standing Spectators

802.2.2.2 Lines of Sight Between Heads. Where standing spectators are provided lines of sight over the shoulders and between the heads of spectators standing in the first row in front of their seats, spectators seated in *wheelchair spaces* shall be afforded lines of sight over the shoulders and between the heads of standing spectators in the first row in front of *wheelchair spaces*.

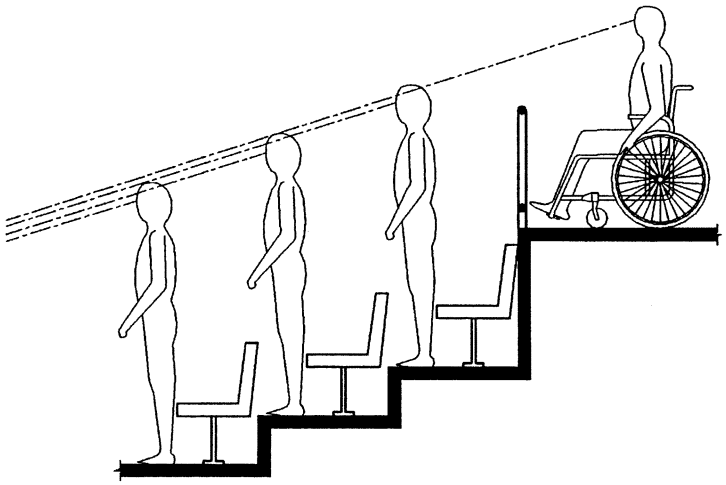


Figure 802.2.2.2
Lines of Sight Between the Heads of Standing Spectators

802.3 Companion Seats. Companion seats shall comply with 802.3.

802.3.1 Alignment. In row seating, companion seats shall be located to provide shoulder alignment with adjacent *wheelchair spaces*. The shoulder alignment point of the *wheelchair space* shall be measured 36 inches (915 mm) from the front of the *wheelchair space*. The floor surface of the companion seat shall be at the same elevation as the floor surface of the *wheelchair space*.

802.3.2 Type. Companion seats shall be equivalent in size, quality, comfort, and amenities to the seating in the immediate area. Companion seats shall be permitted to be movable.

802.4 Designated Aisle Seats. Designated aisle seats shall comply with 802.4.

802.4.1 Armrests. Where armrests are provided on the seating in the immediate area, folding or retractable armrests shall be provided on the aisle side of the seat.

802.4.2 Identification. Each designated aisle seat shall be identified by a sign or marker.

Advisory 802.4.2 Identification. Seats with folding or retractable armrests are intended for use by individuals who have difficulty walking. Consider identifying such seats with signs that contrast (light-on-dark or dark-on-light) and that are also photo luminescent.

803 Dressing, Fitting, and Locker Rooms

803.1 General. Dressing, fitting, and locker rooms shall comply with 803.

Advisory 803.1 General. Partitions and doors should be designed to ensure people using accessible dressing and fitting rooms privacy equivalent to that afforded other users of the facility. Section 903.5 requires dressing room bench seats to be installed so that they are at the same height as a typical wheelchair seat, 17 inches (430 mm) to 19 inches (485 mm). However, wheelchair seats can be lower than dressing room benches for people of short stature or children using wheelchairs.

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

803.3 Door Swing. Doors shall not swing into the room unless a clear floor or ground *space* complying with 305.3 is provided beyond the arc of the door swing.

803.4 Benches. A bench complying with 903 shall be provided within the room.

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

804 Kitchens and Kitchenettes

804.1 General. Kitchens and kitchenettes shall comply with 804.

804.2 Clearance. Where a pass through kitchen is provided, clearances shall comply with 804.2.1. Where a U-shaped kitchen is provided, clearances shall comply with 804.2.2.

EXCEPTION: *Spaces* that do not provide a cooktop or conventional range shall not be required to comply with 804.2.

Advisory 804.2 Clearance. Clearances are measured from the furthest projecting face of all opposing base cabinets, counter tops, appliances, or walls, excluding hardware.

804.2.1 Pass Through Kitchen. In pass through kitchens where counters, appliances or cabinets are on two opposing sides, or where counters, appliances or cabinets are opposite a parallel wall, clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 40 inches (1015 mm) minimum. Pass through kitchens shall have two entries.

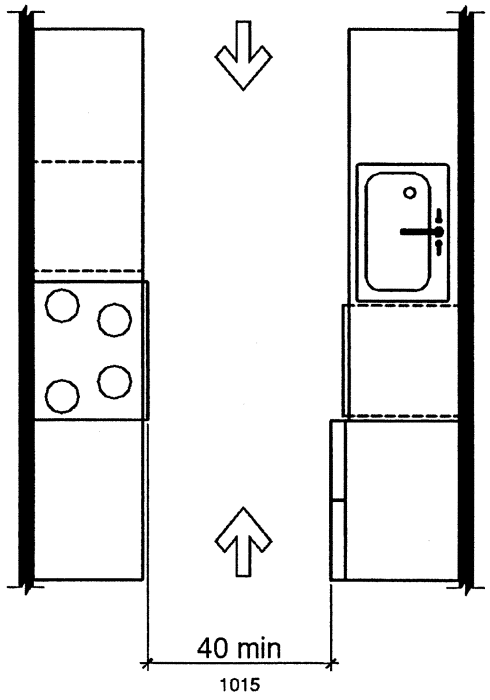


Figure 804.2.1
Pass Through Kitchens

804.2.2 U-Shaped. In U-shaped kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 60 inches (1525 mm) minimum.

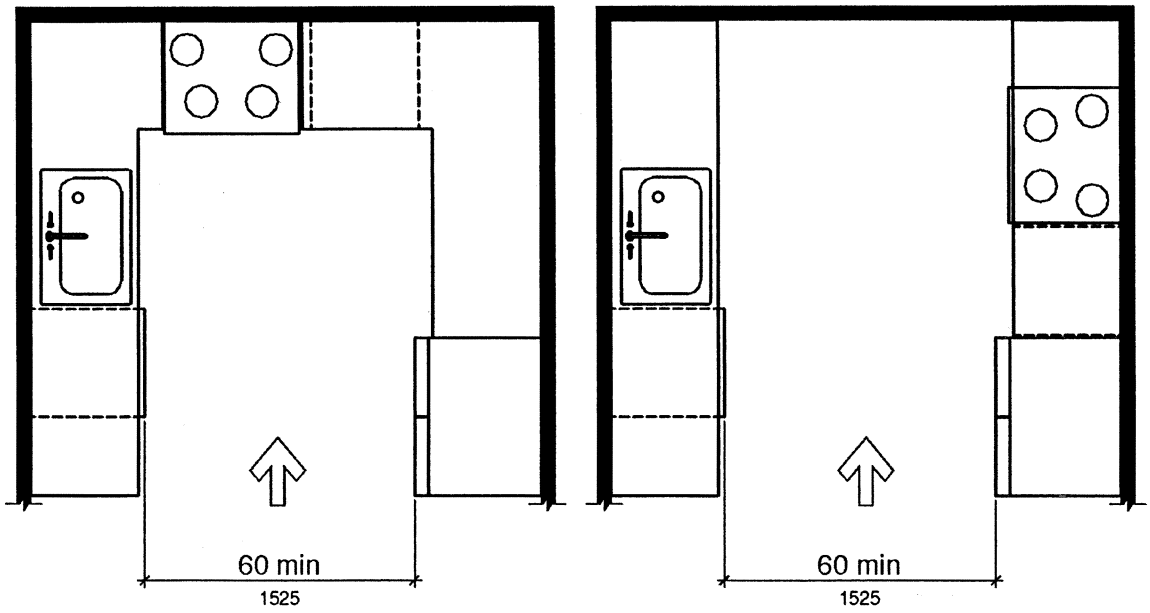


Figure 804.2.2
U-Shaped Kitchens

804.3 Kitchen Work Surface. In *residential dwelling units* required to comply with 809, at least one 30 inches (760 mm) wide minimum section of counter shall provide a kitchen work surface that complies with 804.3.

804.3.1 Clear Floor or Ground Space. A clear floor *space* complying with 305 positioned for a forward approach shall be provided. The clear floor or ground *space* shall be centered on the kitchen work surface and shall provide knee and toe clearance complying with 306.

EXCEPTION: Cabinetry shall be permitted under the kitchen work surface provided that all of the following conditions are met:
(a) the cabinetry can be removed without removal or replacement of the kitchen work surface;
(b) the finish floor extends under the cabinetry; and
(c) the walls behind and surrounding the cabinetry are finished.

804.3.2 Height. The kitchen work surface shall be 34 inches (865 mm) maximum above the finish floor or ground.

EXCEPTION: A counter that is adjustable to provide a kitchen work surface at variable heights, 29 inches (735 mm) minimum and 36 inches (915 mm) maximum, shall be permitted.

804.3.3 Exposed Surfaces. There shall be no sharp or abrasive surfaces under the work surface counters.

804.4 Sinks. Sinks shall comply with 606.

804.5 Storage. At least 50 percent of shelf *space* in storage *facilities* shall comply with 811.

804.6 Appliances. Where provided, kitchen appliances shall comply with 804.6.

804.6.1 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided at each kitchen appliance. Clear floor or ground *spaces* shall be permitted to overlap.

804.6.2 Operable Parts. All appliance controls shall comply with 309.

EXCEPTIONS: 1. Appliance doors and door latching devices shall not be required to comply with 309.4.

2. Bottom-hinged appliance doors, when in the open position, shall not be required to comply with 309.3.

804.6.3 Dishwasher. Clear floor or ground *space* shall be positioned adjacent to the dishwasher door. The dishwasher door, in the open position, shall not obstruct the clear floor or ground *space* for the dishwasher or the sink.

804.6.4 Range or Cooktop. Where a forward approach is provided, the clear floor or ground *space* shall provide knee and toe clearance complying with 306. Where knee and toe *space* is provided, the underside of the range or cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock. The location of controls shall not require reaching across burners.

804.6.5 Oven. Ovens shall comply with 804.6.5.

804.6.5.1 Side-Hinged Door Ovens. Side-hinged door ovens shall have the work surface required by 804.3 positioned adjacent to the latch side of the oven door.

804.6.5.2 Bottom-Hinged Door Ovens. Bottom-hinged door ovens shall have the work surface required by 804.3 positioned adjacent to one side of the door.

804.6.5.3 Controls. Ovens shall have controls on front panels.

804.6.6 Refrigerator/Freezer. Combination refrigerators and freezers shall have at least 50 percent of the freezer *space* 54 inches (1370 mm) maximum above the finish floor or ground. The clear floor or ground *space* shall be positioned for a parallel approach to the *space* dedicated to a refrigerator/freezer with the centerline of the clear floor or ground *space* offset 24 inches (610 mm) maximum from the centerline of the dedicated *space*.

805 Medical Care and Long-Term Care Facilities

805.1 General. Medical care *facility* and long-term care *facility* patient or resident sleeping rooms required to provide mobility features shall comply with 805.

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

805.3 Clear Floor or Ground Space. A clear floor *space* complying with 305 shall be provided on each side of the bed. The clear floor *space* shall be positioned for parallel approach to the side of the bed.

805.4 Toilet and Bathing Rooms. Toilet and bathing rooms that are provided as part of a patient or resident sleeping room shall comply with 603. Where provided, no fewer than one water closet, one lavatory, and one bathtub or shower shall comply with the applicable requirements of 603 through 610.

806 Transient Lodging Guest Rooms

806.1 General. *Transient lodging* guest rooms shall comply with 806. Guest rooms required to provide mobility features shall comply with 806.2. Guest rooms required to provide communication features shall comply with 806.3.

806.2 Guest Rooms with Mobility Features. Guest rooms required to provide mobility features shall comply with 806.2.

> **Advisory 806.2 Guest Rooms.** The requirements in Section 806.2 do not include requirements that are common to all accessible spaces. For example, closets in guest rooms must comply with the applicable provisions for storage specified in scoping.

806.2.1 Living and Dining Areas. Living and dining areas shall be *accessible*.

806.2.2 Exterior Spaces. Exterior *spaces*, including patios, terraces and balconies, that serve the guest room shall be *accessible*.

806.2.3 Sleeping Areas. At least one sleeping area shall provide a clear floor *space* complying with 305 on both sides of a bed. The clear floor *space* shall be positioned for parallel approach to the side of the bed.

EXCEPTION: Where a single clear floor *space* complying with 305 positioned for parallel approach is provided between two beds, a clear floor or ground space shall not be required on both sides of a bed.

806.2.4 Toilet and Bathing Facilities. No fewer than one water closet, one lavatory, and one bathtub or shower shall comply with 603. In addition, required roll-in shower compartments shall comply with 608.2.2 or 608.2.3.

806.2.4.1 Vanity Counter Top Space. If vanity counter top *space* is provided in non-*accessible* guest toilet or bathing rooms, comparable vanity counter top *space*, in terms of size and proximity to the lavatory, shall also be provided in *accessible* guest toilet or bathing rooms.

> **Advisory 806.2.4.1 Vanity Counter Top Space**. This provision is intended to ensure that accessible guest rooms are provided with comparable vanity counter top space.

806.2.5 Kitchens and Kitchenettes. Kitchens and kitchenettes shall comply with 804.

806.2.6 Turning Space. Turning *space* complying with 304 shall be provided within the guest room.

806.3 Guest Rooms with Communication Features. Guest rooms required to provide communication features shall comply with 806.3.

Advisory 806.3 Guest Rooms with Communication Features. In guest rooms required to have accessible communication features, consider ensuring compatibility with adaptive equipment used by people with hearing impairments. To ensure communication within the facility, as well as on commercial lines, provide telephone interface jacks that are compatible with both digital and analog signal use. If an audio headphone jack is provided on a speaker phone, a cutoff switch can be included in the jack so that insertion of the jack cuts off the speaker. If a telephone-like handset is used, the external speakers can be turned off when the handset is removed from the cradle. For headset or external amplification system compatibility, a standard subminiature jack installed in the telephone will provide the most flexibility.

806.3.1 Alarms. Where emergency warning systems are provided, alarms complying with 702 shall be provided.

806.3.2 Notification Devices. Visible notification devices shall be provided to alert room occupants of incoming telephone calls and a door knock or bell. Notification devices shall not be connected to visible alarm signal appliances. Telephones shall have volume controls compatible with the telephone system and shall comply with 704.3. Telephones shall be served by an electrical outlet complying with 309 located within 48 inches (1220 mm) of the telephone to facilitate the use of a *TTY.*

807 Holding Cells and Housing Cells

807.1 General. Holding cells and housing cells shall comply with 807.

807.2 Cells with Mobility Features. Cells required to provide mobility features shall comply with 807.2.

807.2.1 Turning Space. Turning *space* complying with 304 shall be provided within the cell.

807.2.2 Benches. Where benches are provided, at least one bench shall comply with 903.

807.2.3 Beds. Where beds are provided, clear floor *space* complying with 305 shall be provided on at least one side of the bed. The clear floor *space* shall be positioned for parallel approach to the side of the bed.

807.2.4 Toilet and Bathing Facilities. Toilet *facilities* or bathing *facilities* that are provided as part of a cell shall comply with 603. Where provided, no fewer than one water closet, one lavatory, and one bathtub or shower shall comply with the applicable requirements of 603 through 610.

Advisory 807.2.4 Toilet and Bathing Facilities. In holding cells, housing cells, or rooms required to be accessible, these requirements do not require a separate toilet room.

807.3 Cells with Communication Features. Cells required to provide communication features shall comply with 807.3.

807.3.1 Alarms. Where audible emergency alarm systems are provided to serve the occupants of cells, visible alarms complying with 702 shall be provided.

EXCEPTION: Visible alarms shall not be required where inmates or detainees are not allowed independent means of egress.

807.3.2 Telephones. Telephones, where provided within cells, shall have volume controls complying with 704.3.

808 Courtrooms

808.1 General. Courtrooms shall comply with 808.

808.2 Turning Space. Where provided, areas that are raised or depressed and accessed by *ramps* or platform lifts with entry *ramps* shall provide unobstructed turning *space* complying with 304.

808.3 Clear Floor Space. Each jury box and witness stand shall have, within its defined area, clear floor *space* complying with 305.

EXCEPTION: In *alterations*, *wheelchair spaces* are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these *spaces* where *ramp* or platform lift access poses a hazard by restricting or projecting into a means of egress required by the appropriate *administrative authority*.

808.4 Judges' Benches and Courtroom Stations. Judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, court reporters' stations and litigants' and counsel stations shall comply with 902.

809 Residential Dwelling Units

809.1 General. *Residential dwelling units* shall comply with 809. *Residential dwelling units* required to provide mobility features shall comply with 809.2 through 809.4. *Residential dwelling units* required to provide communication features shall comply with 809.5.

809.2 Accessible Routes. *Accessible* routes complying with Chapter 4 shall be provided within *residential dwelling units* in accordance with 809.2.

EXCEPTION: *Accessible* routes shall not be required to or within unfinished attics or unfinished basements.

809.2.1 Location. At least one *accessible* route shall connect all *spaces* and *elements* which are a part of the *residential dwelling unit*. Where only one *accessible* route is provided, it shall not pass through bathrooms, closets, or similar *spaces*.

809.2.2 Turning Space. All rooms served by an *accessible* route shall provide a turning *space* complying with 304.

EXCEPTION: Turning *space* shall not be required in exterior *spaces* 30 inches (760 mm) maximum in depth or width.

Advisory 809.2.2 Turning Space. It is generally acceptable to use required clearances to provide wheelchair turning space. For example, in kitchens, 804.3.1 requires at least one work surface with clear floor space complying with 306 to be centered beneath. If designers elect to provide clear floor space that is at least 36 inches (915 mm) wide, as opposed to the required 30 inches (760 mm) wide, that clearance can be part of a T-turn, thereby maximizing efficient use of the kitchen area. However, the overlap of turning space must be limited to one segment of the T-turn so that back-up maneuvering is not restricted. It would, therefore, be unacceptable to use both the clearances under the work surface and the sink as part of a T-turn. See Section 304.3.2 regarding T-turns.

809.3 Kitchen. Where a kitchen is provided, it shall comply with 804.

809.4 Toilet Facilities and Bathing Facilities. At least one toilet *facility* and bathing *facility* shall comply with 603 through 610. At least one of each type of fixture provided shall comply with applicable requirements of 603 through 610. Toilet and bathing fixtures required to comply with 603 through 610 shall be located in the same toilet and bathing area, such that travel between fixtures does not require travel between other parts of the *residential dwelling unit*.

Advisory 809.4 Toilet Facilities and Bathing Facilities. All toilet rooms and bathing rooms in accessible residential dwelling units must be accessible. In addition, at least one of each type of fixture in accessible toilet rooms and bathing rooms must be accessible.

In an effort to promote space efficiency, vanity counter top space in accessible residential dwelling units is often omitted. This omission does not promote equal access or equal enjoyment of the unit. Where comparable units have vanity counter tops, accessible units should also have vanity counter tops located as close as possible to the lavatory for convenient access to toiletries.

809.5 Residential Dwelling Units with Communication Features. *Residential dwelling units* required to provide communication features shall comply with 809.5.

809.5.1 Building Fire Alarm System. Where a *building* fire alarm system is provided, the system wiring shall be extended to a point within the *residential dwelling unit* in the vicinity of the *residential dwelling unit* smoke detection system.

809.5.1.1 Alarm Appliances. Where alarm appliances are provided within a *residential dwelling unit* as part of the *building* fire alarm system, they shall comply with 702.

809.5.1.2 Activation. All visible alarm appliances provided within the *residential dwelling unit* for *building* fire alarm notification shall be activated upon activation of the *building* fire alarm in the portion of the *building* containing the *residential dwelling unit*.

809.5.2 Residential Dwelling Unit Smoke Detection System. *Residential dwelling unit* smoke detection systems shall comply with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

809.5.2.2 Activation. All visible alarm appliances provided within the *residential dwelling unit* for smoke detection notification shall be activated upon smoke detection.

809.5.3 Interconnection. The same visible alarm appliances shall be permitted to provide notification of *residential dwelling unit* smoke detection and *building* fire alarm activation.

809.5.4 Prohibited Use. Visible alarm appliances used to indicate *residential dwelling unit* smoke detection or *building* fire alarm activation shall not be used for any other purpose within the *residential dwelling unit.*

809.5.5 Residential Dwelling Unit Primary Entrance. Communication features shall be provided at the *residential dwelling unit* primary *entrance* complying with 809.5.5.

809.5.5.1 Notification. A hard-wired electric doorbell shall be provided. A button or switch shall be provided outside the *residential dwelling unit* primary *entrance.* Activation of the button or switch shall initiate an audible tone and visible signal within the *residential dwelling unit.* Where visible doorbell signals are located in sleeping areas, they shall have controls to deactivate the signal.

809.5.5.2 Identification. A means for visually identifying a visitor without opening the *residential dwelling unit* entry door shall be provided and shall allow for a minimum 180 degree range of view.

Advisory 809.5.5.2 Identification. In doors, peepholes that include prisms clarify the image and should offer a wide-angle view of the hallway or exterior for both standing persons and wheelchair users. Such peepholes can be placed at a standard height and permit a view from several feet from the door.

809.5.6 Site, Building, or Floor Entrance. Where a system, including a closed-circuit system, permitting voice communication between a visitor and the occupant of the *residential dwelling unit* is provided, the system shall comply with 708.4.

810 Transportation Facilities

810.1 General. Transportation *facilities* shall comply with 810.

810.2 Bus Boarding and Alighting Areas. Bus boarding and alighting areas shall comply with 810.2.

Advisory 810.2 Bus Boarding and Alighting Areas. At bus stops where a shelter is provided, the bus stop pad can be located either within or outside of the shelter.

810.2.1 Surface. Bus stop boarding and alighting areas shall have a firm, stable surface.

810.2.2 Dimensions. Bus stop boarding and alighting areas shall provide a clear length of 96 inches (2440 mm) minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the vehicle roadway.

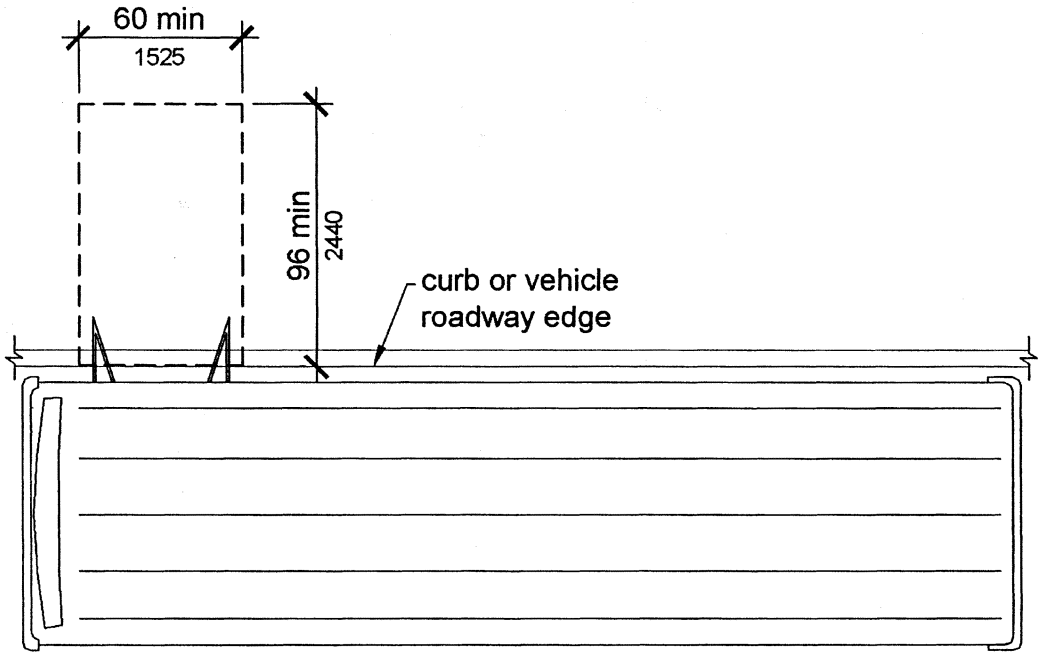


Figure 810.2.2
Dimensions of Bus Boarding and Alighting Areas

810.2.3 Connection. Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an *accessible* route complying with 402.

810.2.4 Slope. Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than1:48.

810.3 Bus Shelters. Bus shelters shall provide a minimum clear floor or ground *space* complying with 305 entirely within the shelter. Bus shelters shall be connected by an *accessible* route complying with 402 to a boarding and alighting area complying with 810.2.

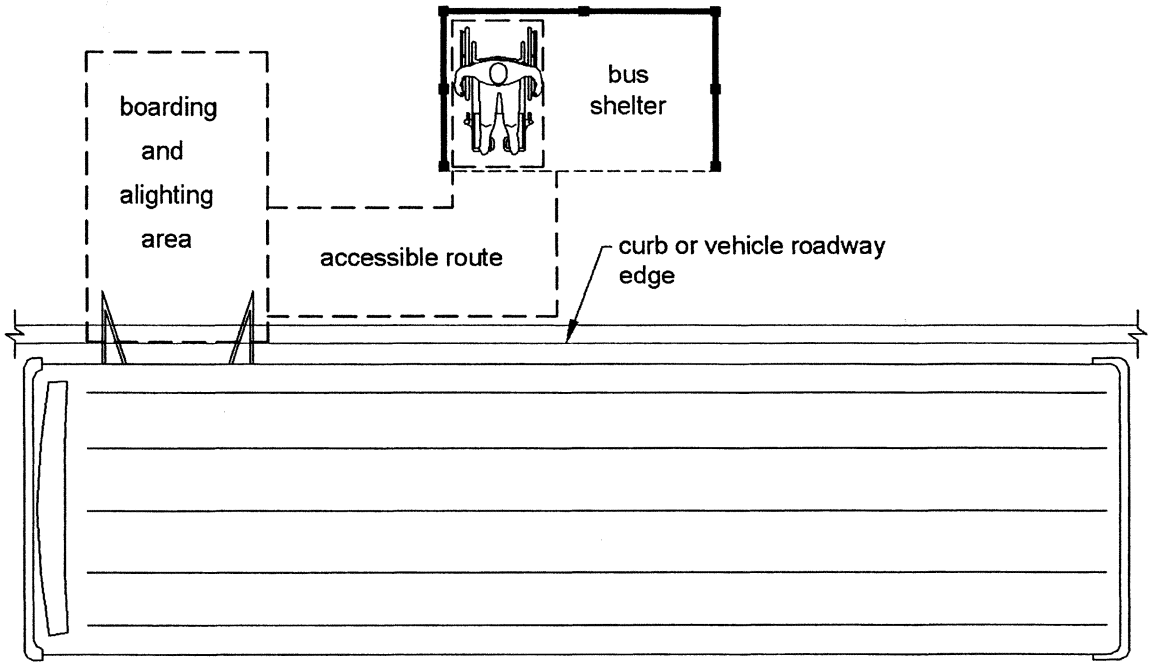


Figure 810.3
Bus Shelters

810.4 Bus Signs. Bus route identification signs shall comply with 703.5.1 through 703.5.4, and 703.5.7 and 703.5.8. In addition, to the maximum extent practicable, bus route identification signs shall comply with 703.5.5.

EXCEPTION: Bus schedules, timetables and maps that are posted at the bus stop or bus bay shall not be required to comply.

810.5 Rail Platforms. Rail platforms shall comply with 810.5.

810.5.1 Slope. Rail platforms shall not exceed a slope of 1:48 in all directions.

EXCEPTION: Where platforms serve vehicles operating on existing track or track laid in existing roadway, the slope of the platform parallel to the track shall be permitted to be equal to the slope (grade) of the roadway or existing track.

810.5.2 Detectable Warnings. Platform boarding edges not protected by platform screens or guards shall have *detectable warnings* complying with 705 along the full length of the *public use* area of the platform.

810.5.3 Platform and Vehicle Floor Coordination. Station platforms shall be positioned to coordinate with vehicles in accordance with the applicable requirements of 36 CFR Part 1192. Low-level platforms shall be 8 inches (205 mm) minimum above top of rail.

EXCEPTION: Where vehicles are boarded from sidewalks or street-level, low-level platforms shall be permitted to be less than 8 inches (205 mm).

Advisory 810.5.3 Platform and Vehicle Floor Coordination. The height and position of a platform must be coordinated with the floor of the vehicles it serves to minimize the vertical and horizontal gaps, in accordance with the ADA Accessibility Guidelines for Transportation Vehicles (36 CFR Part 1192). The vehicle guidelines, divided by bus, van, light rail, rapid rail, commuter rail, intercity rail, are available at www.access-board.gov. The preferred alignment is a high platform, level with the vehicle floor. In some cases, the vehicle guidelines permit use of a low platform in conjunction with a lift or ramp. Most such low platforms must have a minimum height of eight inches above the top of the rail. Some vehicles are designed to be boarded from a street or the sidewalk along the street and the exception permits such boarding areas to be less than eight inches high.

810.6 Rail Station Signs. Rail station signs shall comply with 810.6.

EXCEPTION. Signs shall not be required to comply with 810.6.1 and 810.6.2 where audible signs are remotely transmitted to hand-held receivers, or are user- or proximity-actuated.

Advisory 810.6 Rail Station Signs Exception. Emerging technologies such as an audible sign systems using infrared transmitters and receivers may provide greater accessibility in the transit environment than traditional Braille and raised letter signs. The transmitters are placed on or next to print signs and transmit their information to an infrared receiver that is held by a person. By scanning an area, the person will hear the sign. This means that signs can be placed well out of reach of Braille readers, even on parapet walls and on walls beyond barriers. Additionally, such signs can be used to provide wayfinding information that cannot be efficiently conveyed on Braille signs.

810.6.1 Entrances. Where signs identify a station or its *entrance*, at least one sign at each *entrance* shall comply with 703.2 and shall be placed in uniform locations to the maximum extent practicable. Where signs identify a station that has no defined *entrance*, at least one sign shall comply with 703.2 and shall be placed in a central location.

810.6.2 Routes and Destinations. Lists of stations, routes and destinations served by the station which are located on boarding areas, platforms, or *mezzanines* shall comply with 703.5. At least one *tactile* sign identifying the specific station and complying with 703.2 shall be provided on each platform or boarding area. Signs covered by this requirement shall, to the maximum extent practicable, be placed in uniform locations within the system.

EXCEPTION: Where sign *space* is limited, *characters* shall not be required to exceed 3 inches (75 mm).

Advisory 810.6.2 Routes and Destinations. Route maps are not required to comply with the informational sign requirements in this document.

810.6.3 Station Names. Stations covered by this section shall have identification signs complying with 703.5. Signs shall be clearly visible and within the sight lines of standing and sitting passengers from within the vehicle on both sides when not obstructed by another vehicle.

> **Advisory 810.6.3 Station Names.** It is also important to place signs at intervals in the station where passengers in the vehicle will be able to see a sign when the vehicle is either stopped at the station or about to come to a stop in the station. The number of signs necessary may be directly related to the size of the lettering displayed on the sign.

810.7 Public Address Systems. Where public address systems convey audible information to the public, the same or equivalent information shall be provided in a visual format.

810.8 Clocks. Where clocks are provided for use by the public, the clock face shall be uncluttered so that its *elements* are clearly visible. Hands, numerals and digits shall contrast with the background either light-on-dark or dark-on-light. Where clocks are installed overhead, numerals and digits shall comply with 703.5.

810.9 Escalators. Where provided, escalators shall comply with the sections 6.1.3.5.6 and 6.1.3.6.5 of ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1) and shall have a clear width of 32 inches (815 mm) minimum.

EXCEPTION: Existing escalators in *key stations* shall not be required to comply with 810.9.

810.10 Track Crossings. Where a *circulation path* serving boarding platforms crosses tracks, it shall comply with 402.

EXCEPTION: Openings for wheel flanges shall be permitted to be 2½ inches (64 mm) maximum.

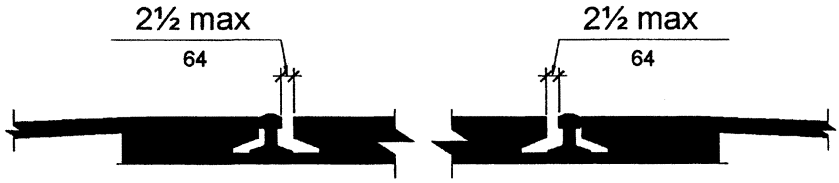


Figure 810.10 (Exception)
Track Crossings

811 Storage

811.1 General. Storage shall comply with 811.

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

811.3 Height. Storage *elements* shall comply with at least one of the reach ranges specified in 308.

811.4 Operable Parts. *Operable parts* shall comply with 309.

CHAPTER 9: BUILT-IN ELEMENTS

901 General

901.1 Scope. The provisions of Chapter 9 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

902 Dining Surfaces and Work Surfaces

902.1 General. Dining surfaces and work surfaces shall comply with 902.2 and 902.3.

EXCEPTION: Dining surfaces and work surfaces for *children's use* shall be permitted to comply with 902.4.

> **Advisory 902.1 General.** Dining surfaces include, but are not limited to, bars, tables, lunch counters, and booths. Examples of work surfaces include writing surfaces, study carrels, student laboratory stations, baby changing and other tables or fixtures for personal grooming, coupon counters, and where covered by the ABA scoping provisions, employee work stations.

902.2 Clear Floor or Ground Space. A clear floor *space* complying with 305 positioned for a forward approach shall be provided. Knee and toe clearance complying with 306 shall be provided.

902.3 Height. The tops of dining surfaces and work surfaces shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish floor or ground.

902.4 Dining Surfaces and Work Surfaces for Children's Use. *Accessible* dining surfaces and work surfaces for *children's use* shall comply with 902.4.

EXCEPTION: Dining surfaces and work surfaces that are used primarily by children 5 years and younger shall not be required to comply with 902.4 where a clear floor or ground *space* complying with 305 positioned for a parallel approach is provided.

902.4.1 Clear Floor or Ground Space. A clear floor *space* complying with 305 positioned for forward approach shall be provided. Knee and toe clearance complying with 306 shall be provided, except that knee clearance 24 inches (610 mm) minimum above the finish floor or ground shall be permitted.

902.4.2 Height. The tops of tables and counters shall be 26 inches (660 mm) minimum and 30 inches (760 mm) maximum above the finish floor or ground.

903 Benches

903.1 General. Benches shall comply with 903.

903.2 Clear Floor or Ground Space. Clear floor or ground *space* complying with 305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

903.3 Size. Benches shall have seats that are 42 inches (1065 mm) long minimum and 20 inches (510 mm) deep minimum and 24 inches (610 mm) deep maximum.

903.4 Back Support. The bench shall provide for back support or shall be affixed to a wall. Back support shall be 42 inches (1065 mm) long minimum and shall extend from a point 2 inches (51 mm) maximum above the seat surface to a point 18 inches (455 mm) minimum above the seat surface. Back support shall be 2½ inches (64 mm) maximum from the rear edge of the seat measured horizontally.

> **Advisory 903.4 Back Support.** To assist in transferring to the bench, consider providing grab bars on a wall adjacent to the bench, but not on the seat back. If provided, grab bars cannot obstruct transfer to the bench.

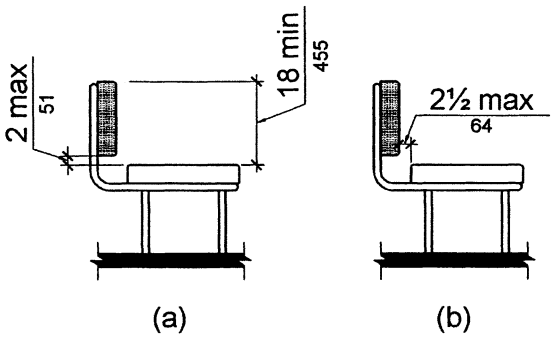


Figure 903.4
Bench Back Support

903.5 Height. The top of the bench seat surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the finish floor or ground.

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

903.7 Wet Locations. Where installed in wet locations, the surface of the seat shall be slip resistant and shall not accumulate water.

904 Check-Out Aisles and Sales and Service Counters

904.1 General. Check-out aisles and sales and service counters shall comply with the applicable requirements of 904.

904.2 Approach. All portions of counters required to comply with 904 shall be located adjacent to a walking surface complying with 403.

Advisory 904.2 Approach. If a cash register is provided at the sales or service counter, locate the accessible counter close to the cash register so that a person using a wheelchair is visible to sales or service personnel and to minimize the reach for a person with a disability.

904.3 Check-Out Aisles. Check-out aisles shall comply with 904.3.

904.3.1 Aisle. Aisles shall comply with 403.

904.3.2 Counter. The counter surface height shall be 38 inches (965 mm) maximum above the finish floor or ground. The top of the counter edge protection shall be 2 inches (51 mm) maximum above the top of the counter surface on the aisle side of the check-out counter.

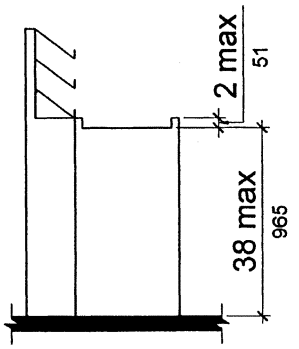


Figure 904.3.2
Check-Out Aisle Counters

904.3.3 Check Writing Surfaces. Where provided, check writing surfaces shall comply with 902.3.

904.4 Sales and Service Counters. Sales counters and service counters shall comply with 904.4.1 or 904.4.2. The *accessible* portion of the counter top shall extend the same depth as the sales or service counter top.

EXCEPTION: In *alterations*, when the provision of a counter complying with 904.4 would result in a reduction of the number of existing counters at work stations or a reduction of the number of existing *mail boxes*, the counter shall be permitted to have a portion which is 24 inches (610 mm) long minimum complying with 904.4.1 provided that the required clear floor or ground *space* is centered on the *accessible* length of the counter.

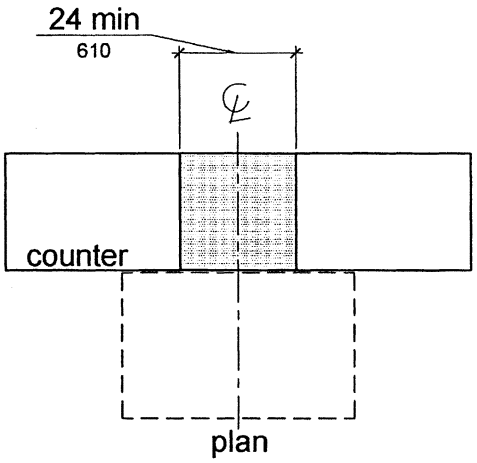


Figure 904.4 (Exception)
Alteration of Sales and Service Counters

904.4.1 Parallel Approach. A portion of the counter surface that is 36 inches (915 mm) long minimum and 36 inches (915 mm) high maximum above the finish floor shall be provided. A clear floor or ground *space* complying with 305 shall be positioned for a parallel approach adjacent to the 36 inch (915 mm) minimum length of counter.

EXCEPTION: Where the provided counter surface is less than 36 inches (915 mm) long, the entire counter surface shall be 36 inches (915 mm) high maximum above the finish floor.

904.4.2 Forward Approach. A portion of the counter surface that is 30 inches (760 mm) long minimum and 36 inches (915 mm) high maximum shall be provided. Knee and toe *space* complying with 306 shall be provided under the counter. A clear floor or ground *space* complying with 305 shall be positioned for a forward approach to the counter.

904.5 Food Service Lines. Counters in food service lines shall comply with 904.5.

904.5.1 Self-Service Shelves and Dispensing Devices. Self-service shelves and dispensing devices for tableware, dishware, condiments, food and beverages shall comply with 308.

904.5.2 Tray Slides. The tops of tray slides shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish floor or ground.

904.6 Security Glazing. Where counters or teller windows have security glazing to separate personnel from the public, a method to facilitate voice communication shall be provided. Telephone handset devices, if provided, shall comply with 704.3.

Advisory 904.6 Security Glazing. Assistive listening devices complying with 706 can facilitate voice communication at counters or teller windows where there is security glazing which promotes distortion in audible information. Where assistive listening devices are installed, place signs complying with 703.7.2.4 to identify those facilities which are so equipped. Other voice communication methods include, but are not limited to, grilles, slats, talk-through baffles, intercoms, or telephone handset devices.

CHAPTER 10: RECREATION FACILITIES

1001 General

1001.1 Scope. The provisions of Chapter 10 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

> **Advisory 1001.1 Scope.** Unless otherwise modified or specifically addressed in Chapter 10, all other ADAAG provisions apply to the design and construction of recreation facilities and elements. The provisions in Section 1001.1 apply wherever these elements are provided. For example, office buildings may contain a room with exercise equipment to which these sections would apply.

1002 Amusement Rides

1002.1 General. *Amusement rides* shall comply with 1002.

1002.2 Accessible Routes. *Accessible* routes serving *amusement rides* shall comply with Chapter 4.

EXCEPTIONS: 1. In load or unload areas and on *amusement rides*, where compliance with 405.2 is not structurally or operationally feasible, *ramp* slope shall be permitted to be 1:8 maximum.

2. In load or unload areas and on *amusement rides*, handrails provided along walking surfaces complying with 403 and required on *ramps* complying with 405 shall not be required to comply with 505 where compliance is not structurally or operationally feasible.

> **Advisory 1002.2 Accessible Routes Exception 1.** Steeper slopes are permitted on accessible routes connecting the amusement ride in the load and unload position where it is "structurally or operationally infeasible." In most cases, this will be limited to areas where the accessible route leads directly to the amusement ride and where there are space limitations on the ride, not the queue line. Where possible, the least possible slope should be used on the accessible route that serves the amusement ride.

1002.3 Load and Unload Areas. A turning *space* complying with 304.2 and 304.3 shall be provided in load and unload areas.

1002.4 Wheelchair Spaces in Amusement Rides. *Wheelchair spaces* in *amusement rides* shall comply with 1002.4.

1002.4.1 Floor or Ground Surface. The floor or ground surface of *wheelchair spaces* shall be stable and firm.

1002.4.2 Slope. The floor or ground surface of *wheelchair spaces* shall have a slope not steeper than 1:48 when in the load and unload position.

1002.4.3 Gaps. Floors of *amusement rides* with *wheelchair spaces* and floors of load and unload areas shall be coordinated so that, when *amusement rides* are at rest in the load and unload

position, the vertical difference between the floors shall be within plus or minus 5/8 inches (16 mm) and the horizontal gap shall be 3 inches (75 mm) maximum under normal passenger load conditions.

EXCEPTION: Where compliance is not operationally or structurally feasible, *ramps*, bridge plates, or similar devices complying with the applicable requirements of 36 CFR 1192.83(c) shall be provided.

Advisory 1002.4.3 Gaps Exception. 36 CFR 1192.83(c) ADA Accessibility Guidelines for Transportation Vehicles - Light Rail Vehicles and Systems - Mobility Aid Accessibility is available at www.access-board.gov. It includes provisions for bridge plates and ramps that can be used at gaps between wheelchair spaces and floors of load and unload areas.

1002.4.4 Clearances. Clearances for *wheelchair spaces* shall comply with 1002.4.4.

EXCEPTIONS: 1. Where provided, securement devices shall be permitted to overlap required clearances.

2. *Wheelchair spaces* shall be permitted to be mechanically or manually repositioned.

3. *Wheelchair spaces* shall not be required to comply with 307.4.

Advisory 1002.4.4 Clearances Exception 3. This exception for protruding objects applies to the ride devices, not to circulation areas or accessible routes in the queue lines or the load and unload areas.

1002.4.4.1 Width and Length. *Wheelchair spaces* shall provide a clear width of 30 inches (760 mm) minimum and a clear length of 48 inches (1220 mm) minimum measured to 9 inches (230 mm) minimum above the floor surface.

1002.4.4.2 Side Entry. Where *wheelchair spaces* are entered only from the side, *amusement rides* shall be designed to permit sufficient maneuvering clearance for individuals using a wheelchair or mobility aid to enter and exit the ride.

Advisory 1002.4.4.2 Side Entry. The amount of clear space needed within the ride, and the size and position of the opening are interrelated. A 32 inch (815 mm) clear opening will not provide sufficient width when entered through a turn into an amusement ride. Additional space for maneuvering and a wider door will be needed where a side opening is centered on the ride. For example, where a 42 inch (1065 mm) opening is provided, a minimum clear space of 60 inches (1525 mm) in length and 36 inches (915mm) in depth is needed to ensure adequate space for maneuvering.

1002.4.4.3 Permitted Protrusions in Wheelchair Spaces. Objects are permitted to protrude a distance of 6 inches (150 mm) maximum along the front of the *wheelchair space*, where located 9 inches (230 mm) minimum and 27 inches (685 mm) maximum above the floor or ground surface of the *wheelchair space*. Objects are permitted to protrude a distance of 25 inches (635 mm) maximum along the front of the *wheelchair space*, where located more than 27 inches (685 mm) above the floor or ground surface of the *wheelchair space*.

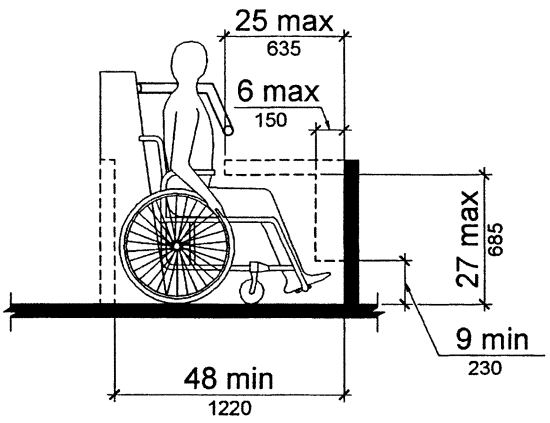


Figure 1002.4.4.3
Protrusions in Wheelchair Spaces in Amusement Rides

1002.4.5 Ride Entry. Openings providing entry to *wheelchair spaces* on *amusement rides* shall be 32 inches (815 mm) minimum clear.

1002.4.6 Approach. One side of the *wheelchair space* shall adjoin an *accessible* route when in the load and unload position.

1002.4.7 Companion Seats. Where the interior width of the *amusement ride* is greater than 53 inches (1345 mm), seating is provided for more than one rider, and the wheelchair is not required to be centered within the *amusement ride*, a companion seat shall be provided for each *wheelchair space*.

1002.4.7.1 Shoulder-to-Shoulder Seating. Where an *amusement ride* provides shoulder-to-shoulder seating, companion seats shall be shoulder-to-shoulder with the adjacent *wheelchair space*.

EXCEPTION: Where shoulder-to-shoulder companion seating is not operationally or structurally feasible, compliance with this requirement shall be required to the maximum extent practicable.

1002.5 Amusement Ride Seats Designed for Transfer. *Amusement ride seats* designed for transfer shall comply with 1002.5 when positioned for loading and unloading.

Advisory 1002.5 Amusement Ride Seats Designed for Transfer. The proximity of the clear floor or ground space next to an element and the height of the element one is transferring to are both critical for a safe and independent transfer. Providing additional clear floor or ground space both in front of and diagonal to the element will provide flexibility and will increase usability for a more diverse population of individuals with disabilities. Ride seats designed for transfer should involve only one transfer. Where possible, designers are encouraged to locate the ride seat no higher than 17 to 19 inches (430 to 485 mm) above the load and unload surface. Where greater distances are required for transfers, providing gripping surfaces, seat padding, and avoiding sharp objects in the path of transfer will facilitate the transfer.

1002.5.1 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided in the load and unload area adjacent to the *amusement ride seats* designed for transfer.

1002.5.2 Transfer Height. The height of *amusement ride seats* designed for transfer shall be 14 inches (355 mm) minimum and 24 inches (610 mm) maximum measured from the surface of the load and unload area.

1002.5.3 Transfer Entry. Where openings are provided for transfer to *amusement ride seats*, the openings shall provide clearance for transfer from a wheelchair or mobility aid to the *amusement ride seat*.

1002.5.4 Wheelchair Storage Space. Wheelchair storage *spaces* complying with 305 shall be provided in or adjacent to unload areas for each required *amusement ride seat* designed for transfer and shall not overlap any required means of egress or *accessible* route.

1002.6 Transfer Devices for Use with Amusement Rides. *Transfer devices* for use with *amusement rides* shall comply with 1002.6 when positioned for loading and unloading.

Advisory 1002.6 Transfer Devices for Use with Amusement Rides. Transfer devices for use with amusement rides should permit individuals to make independent transfers to and from their wheelchairs or mobility devices. There are a variety of transfer devices available that could be adapted to provide access onto an amusement ride. Examples of devices that may provide for transfers include, but are not limited to, transfer systems, lifts, mechanized seats, and custom designed systems. Operators and designers have flexibility in developing designs that will facilitate individuals to transfer onto amusement rides. These systems or devices should be designed to be reliable and sturdy.

Designs that limit the number of transfers required from a wheelchair or mobility device to the ride seat are encouraged. When using a transfer device to access an amusement ride, the least number of transfers and the shortest distance is most usable. Where possible, designers are encouraged to locate the transfer device seat no higher than 17 to 19 inches (430 to 485 mm) above the load and unload surface. Where greater distances are required for transfers, providing gripping surfaces, seat padding, and avoiding sharp objects in the path of transfer will facilitate the transfer. Where a series of transfers are required to reach the amusement ride seat, each vertical transfer should not exceed 8 inches (205 mm).

1002.6.1 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided in the load and unload area adjacent to the *transfer device*.

1002.6.2 Transfer Height. The height of *transfer device* seats shall be 14 inches (355 mm) minimum and 24 inches (610 mm) maximum measured from the load and unload surface.

1002.6.3 Wheelchair Storage Space. Wheelchair storage *spaces* complying with 305 shall be provided in or adjacent to unload areas for each required *transfer device* and shall not overlap any required means of egress or *accessible* route.

1003 Recreational Boating Facilities

1003.1 General. Recreational boating *facilities* shall comply with 1003.

1003.2 Accessible Routes. *Accessible* routes serving recreational boating *facilities*, including *gangways* and floating piers, shall comply with Chapter 4 except as modified by the exceptions in 1003.2.

1003.2.1 Boat Slips. *Accessible* routes serving *boat slips* shall be permitted to use the exceptions in 1003.2.1.

EXCEPTIONS: 1. Where an existing *gangway* or series of *gangways* is replaced or *altered*, an increase in the length of the *gangway* shall not be required to comply with 1003.2 unless required by 202.4.

2. *Gangways* shall not be required to comply with the maximum rise specified in 405.6.

3. Where the total length of a *gangway* or series of *gangways* serving as part of a required *accessible* route is 80 feet (24 m) minimum, *gangways* shall not be required to comply with 405.2.

4. Where *facilities* contain fewer than 25 *boat slips* and the total length of the *gangway* or series of *gangways* serving as part of a required *accessible* route is 30 feet (9145 mm) minimum, *gangways* shall not be required to comply with 405.2.

5. Where *gangways* connect to *transition plates*, landings specified by 405.7 shall not be required.

6. Where *gangways* and *transition plates* connect and are required to have handrails, handrail extensions shall not be required. Where handrail extensions are provided on *gangways* or *transition plates*, the handrail extensions shall not be required to be parallel with the ground or floor surface.

7. The *cross slope* specified in 403.3 and 405.3 for *gangways*, *transition plates*, and floating piers that are part of *accessible* routes shall be measured in the static position.

8. Changes in level complying with 303.3 and 303.4 shall be permitted on the surfaces of *gangways* and *boat launch ramps*.

Advisory 1003.2.1 Boat Slips Exception 3. The following example shows how exception 3 would be applied: A gangway is provided to a floating pier which is required to be on an accessible route. The vertical distance is 10 feet (3050 mm) between the elevation where the gangway departs the landside connection and the elevation of the pier surface at the lowest water level. Exception 3 permits the gangway to be 80 feet (24 m) long. Another design solution would be to have two 40 foot (12 m) plus continuous gangways joined together at a float, where the float (as the water level falls) will stop dropping at an elevation five feet below the landside connection. The length of transition plates would not be included in determining if the gangway(s) meet the requirements of the exception.

1003.2.2 Boarding Piers at Boat Launch Ramps. *Accessible* routes serving *boarding piers* at *boat launch ramps* shall be permitted to use the exceptions in 1003.2.2.

EXCEPTIONS: 1. *Accessible* routes serving floating *boarding piers* shall be permitted to use Exceptions 1, 2, 5, 6, 7 and 8 in 1003.2.1.

2. Where the total length of the *gangway* or series of *gangways* serving as part of a required *accessible* route is 30 feet (9145 mm) minimum, *gangways* shall not be required to comply with 405.2.

3. Where the *accessible* route serving a floating *boarding pier* or skid pier is located within a *boat launch ramp*, the portion of the *accessible* route located within the *boat launch ramp* shall not be required to comply with 405.

1003.3 Clearances. Clearances at *boat slips* and on *boarding piers* at *boat launch ramps* shall comply with 1003.3.

Advisory 1003.3 Clearances. Although the minimum width of the clear pier space is 60 inches (1525 mm), it is recommended that piers be wider than 60 inches (1525 mm) to improve the safety for persons with disabilities, particularly on floating piers.

1003.3.1 Boat Slip Clearance. *Boat slips* shall provide clear pier *space* 60 inches (1525 mm) wide minimum and at least as long as the *boat slips*. Each 10 feet (3050 mm) maximum of linear pier edge serving *boat slips* shall contain at least one continuous clear opening 60 inches (1525 mm) wide minimum.

EXCEPTIONS: 1. Clear pier *space* shall be permitted to be 36 inches (915 mm) wide minimum for a length of 24 inches (610 mm) maximum, provided that multiple 36 inch (915 mm) wide segments are separated by segments that are 60 inches (1525 mm) wide minimum and 60 inches (1525 mm) long minimum.

2. Edge protection shall be permitted at the continuous clear openings, provided that it is 4 inches (100 mm) high maximum and 2 inches (51 mm) wide maximum.

3. In existing piers, clear pier *space* shall be permitted to be located perpendicular to the *boat slip* and shall extend the width of the *boat slip*, where the *facility* has at least one *boat slip* complying with 1003.3, and further compliance with 1003.3 would result in a reduction in the number of *boat slips* available or result in a reduction of the widths of existing slips.

Advisory 1003.3.1 Boat Slip Clearance Exception 3. Where the conditions in exception 3 are satisfied, existing facilities are only required to have one accessible boat slip with a pier clearance which runs the length of the slip. All other accessible slips are allowed to have the required pier clearance at the head of the slip. Under this exception, at piers with perpendicular boat slips, the width of most "finger piers" will remain unchanged. However, where mooring systems for floating piers are replaced as part of pier alteration projects, an opportunity may exist for increasing accessibility. Piers may be reconfigured to allow an increase in the number of wider finger piers, and serve as accessible boat slips.

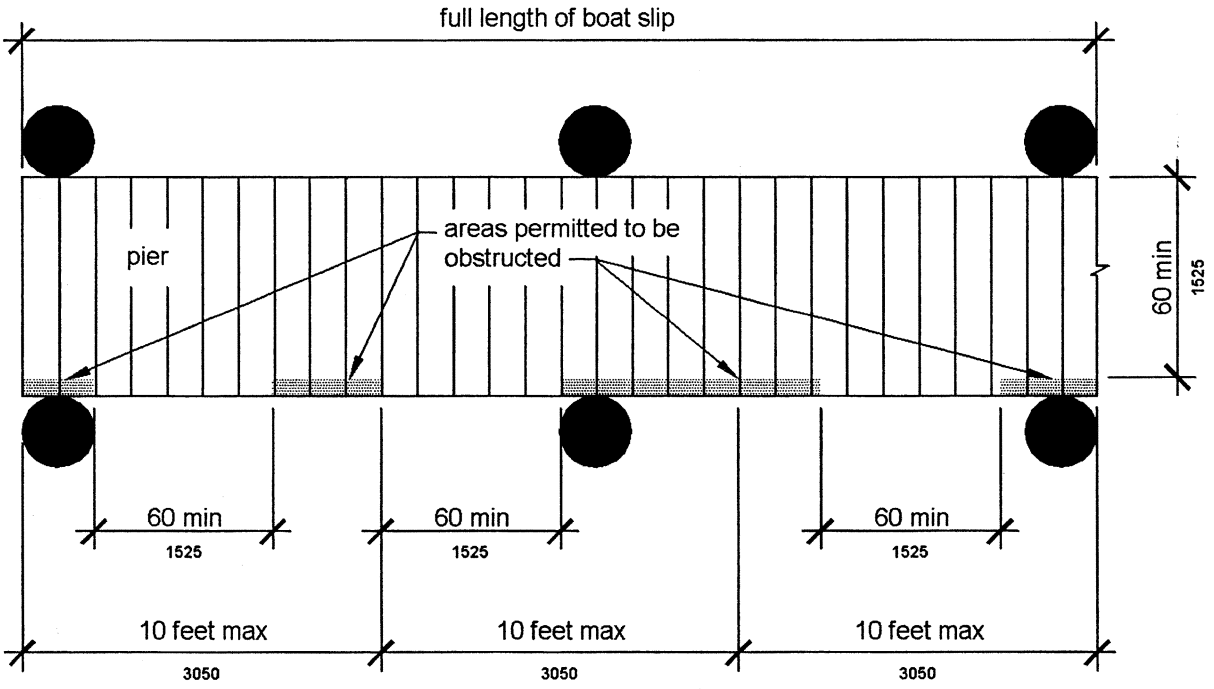


Figure 1003.3.1
Boat Slip Clearance

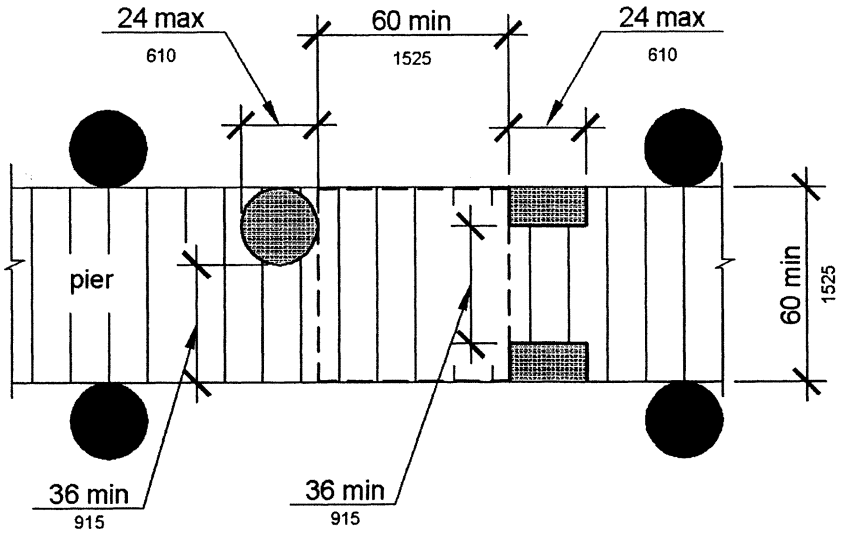


Figure 1003.3.1 (Exception 1)
Clear Pier Space Reduction at Boat Slips

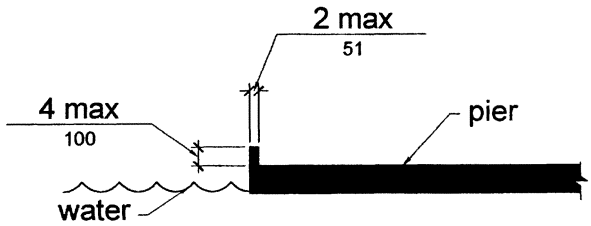


Figure 1003.3.1 (Exception 2)
Edge Protection at Boat Slips

1003.3.2 Boarding Pier Clearances. *Boarding piers* at *boat launch ramps* shall provide clear pier *space* 60 inches (1525 mm) wide minimum and shall extend the full length of the *boarding pier.* Every 10 feet (3050 mm) maximum of linear pier edge shall contain at least one continuous clear opening 60 inches (1525 mm) wide minimum.

EXCEPTIONS: 1. The clear pier *space* shall be permitted to be 36 inches (915 mm) wide minimum for a length of 24 inches (610 mm) maximum provided that multiple 36 inch (915 mm) wide segments are separated by segments that are 60 inches (1525 mm) wide minimum and 60 inches (1525 mm) long minimum.

2. Edge protection shall be permitted at the continuous clear openings provided that it is 4 inches (100 mm) high maximum and 2 inches (51 mm) wide maximum.

Advisory 1003.3.2 Boarding Pier Clearances. These requirements do not establish a minimum length for accessible boarding piers at boat launch ramps. The accessible boarding pier should have a length at least equal to that of other boarding piers provided at the facility. If no other boarding pier is provided, the pier would have a length equal to what would have been provided if no access requirements applied. The entire length of accessible boarding piers would be required to comply with the same technical provisions that apply to accessible boat slips. For example, at a launch ramp, if a 20 foot (6100 mm) long accessible boarding pier is provided, the entire 20 feet (6100 mm) must comply with the pier clearance requirements in 1003.3. Likewise, if a 60 foot (18 m) long accessible boarding pier is provided, the pier clearance requirements in 1003.3 would apply to the entire 60 feet (18 m).

The following example applies to a boat launch ramp boarding pier: A chain of floats is provided on a launch ramp to be used as a boarding pier which is required to be accessible by 1003.3.2. At high water, the entire chain is floating and a transition plate connects the first float to the surface of the launch ramp. As the water level decreases, segments of the chain end up resting on the launch ramp surface, matching the slope of the launch ramp.

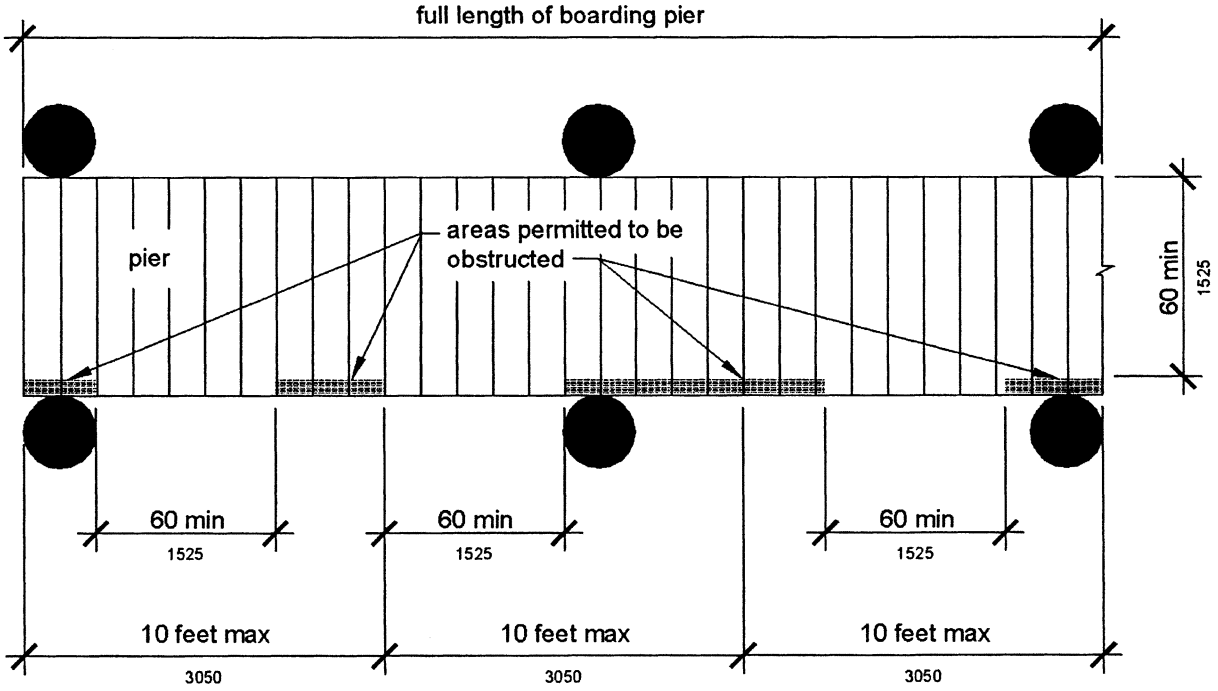


Figure 1003.3.2
Boarding Pier Clearance

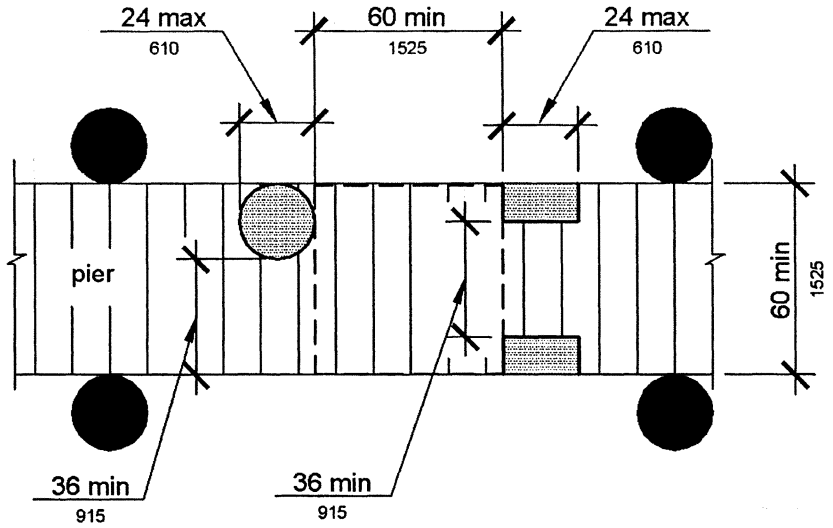


Figure 1003.3.2 (Exception 1)
Clear Pier Space Reduction at Boarding Piers

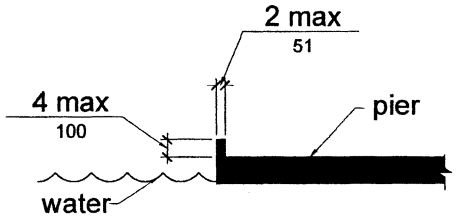


Figure 1003.3.2 (Exception 2)
Edge Protection at Boarding Piers

1004 Exercise Machines and Equipment

1004.1 Clear Floor Space. Exercise machines and equipment shall have a clear floor *space* complying with 305 positioned for transfer or for use by an individual seated in a wheelchair. Clear floor or ground *spaces* required at exercise machines and equipment shall be permitted to overlap.

Advisory 1004.1 Clear Floor Space. One clear floor or ground space is permitted to be shared between two pieces of exercise equipment. To optimize space use, designers should carefully consider layout options such as connecting ends of the row and center aisle spaces. The position of the clear floor space may vary greatly depending on the use of the equipment or machine. For example, to provide access to a shoulder press machine, clear floor space next to the seat would be appropriate to allow for transfer. Clear floor space for a bench press machine designed for use by an individual seated in a wheelchair, however, will most likely be centered on the operating mechanisms.

1005 Fishing Piers and Platforms

1005.1 Accessible Routes. *Accessible* routes serving fishing piers and platforms, including *gangways* and floating piers, shall comply with Chapter 4.

EXCEPTIONS: 1. *Accessible* routes serving floating fishing piers and platforms shall be permitted to use Exceptions 1, 2, 5, 6, 7 and 8 in 1003.2.1.

2. Where the total length of the *gangway* or series of *gangways* serving as part of a required *accessible* route is 30 feet (9145 mm) minimum, *gangways* shall not be required to comply with 405.2.

1005.2 Railings. Where provided, railings, guards, or handrails shall comply with 1005.2.

1005.2.1 Height. At least 25 percent of the railings, guards, or handrails shall be 34 inches (865 mm) maximum above the ground or deck surface.

EXCEPTION: Where a guard complying with sections 1003.2.12.1 and 1003.2.12.2 of the International Building Code (2000 edition) or sections 1012.2 and 1012.3 of the International Building Code (2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1) is provided, the guard shall not be required to comply with 1005.2.1.

1005.2.1.1 Dispersion. Railings, guards, or handrails required to comply with 1005.2.1 shall be dispersed throughout the fishing pier or platform.

Advisory 1005.2.1.1 Dispersion. Portions of the railings that are lowered to provide fishing opportunities for persons with disabilities must be located in a variety of locations on the fishing pier or platform to give people a variety of locations to fish. Different fishing locations may provide varying water depths, shade (at certain times of the day), vegetation, and proximity to the shoreline or bank.

1005.3 Edge Protection. Where railings, guards, or handrails complying with 1005.2 are provided, edge protection complying with 1005.3.1 or 1005.3.2 shall be provided.

Advisory 1005.3 Edge Protection. Edge protection is required only where railings, guards, or handrails are provided on a fishing pier or platform. Edge protection will prevent wheelchairs or other mobility devices from slipping off the fishing pier or platform. Extending the deck of the fishing pier or platform 12 inches (305 mm) where the 34 inch (865 mm) high railing is provided is an alternative design, permitting individuals using wheelchairs or other mobility devices to pull into a clear space and move beyond the face of the railing. In such a design, curbs or barriers are not required.

1005.3.1 Curb or Barrier. Curbs or barriers shall extend 2 inches (51 mm) minimum above the surface of the fishing pier or platform.

1005.3.2 Extended Ground or Deck Surface. The ground or deck surface shall extend 12 inches (305 mm) minimum beyond the inside face of the railing. Toe clearance shall be provided and shall

be 30 inches (760 mm) wide minimum and 9 inches (230 mm) minimum above the ground or deck surface beyond the railing.

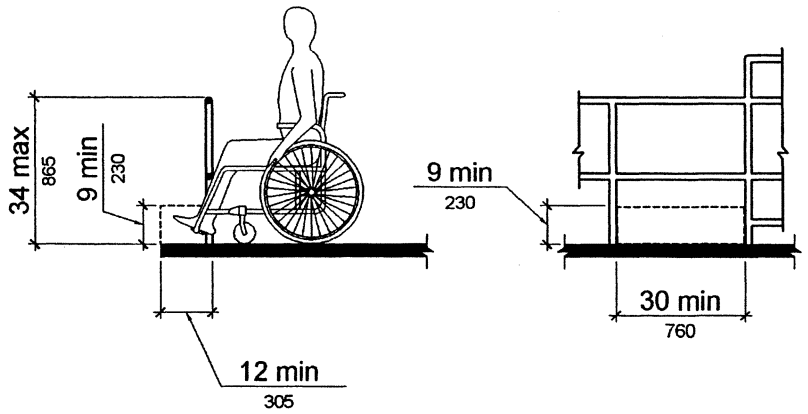


Figure 1005.3.2
Extended Ground or Deck Surface at Fishing Piers and Platforms

1005.4 Clear Floor or Ground Space. At each location where there are railings, guards, or handrails complying with 1005.2.1, a clear floor or ground *space* complying with 305 shall be provided. Where there are no railings, guards, or handrails, at least one clear floor or ground *space* complying with 305 shall be provided on the fishing pier or platform.

1005.5 Turning Space. At least one turning *space* complying with 304.3 shall be provided on fishing piers and platforms.

1006 Golf Facilities

1006.1 General. Golf *facilities* shall comply with 1006.

1006.2 Accessible Routes. *Accessible* routes serving *teeing grounds*, practice *teeing grounds*, putting greens, practice putting greens, teeing stations at driving ranges, course weather shelters, golf car rental areas, bag drop areas, and course toilet rooms shall comply with Chapter 4 and shall be 48 inches (1220 mm) wide minimum. Where handrails are provided, *accessible* routes shall be 60 inches (1525 mm) wide minimum.

EXCEPTION: Handrails shall not be required on golf courses. Where handrails are provided on golf courses, the handrails shall not be required to comply with 505.

Advisory 1006.2 Accessible Routes. The 48 inch (1220 mm) minimum width for the accessible route is necessary to ensure passage of a golf car on either the accessible route or the golf car passage. This is important where the accessible route is used to connect the golf car rental area, bag drop areas, practice putting greens, practice teeing grounds, course toilet rooms, and course weather shelters. These are areas outside the boundary of the golf course, but are areas where an individual using an adapted golf car may travel. A golf car passage may not be substituted for other accessible routes to be located outside the boundary of the course. For example, an accessible route connecting an accessible parking space to the entrance of a golf course clubhouse is not covered by this provision.

Providing a golf car passage will permit a person that uses a golf car to practice driving a golf ball from the same position and stance used when playing the game. Additionally, the space required for a person using a golf car to enter and maneuver within the teeing stations required to be accessible should be considered.

1006.3 Golf Car Passages. *Golf car passages* shall comply with 1006.3.

1006.3.1 Clear Width. The clear width of *golf car passages* shall be 48 inches (1220 mm) minimum.

1006.3.2 Barriers. Where curbs or other constructed barriers prevent golf cars from entering a fairway, openings 60 inches (1525 mm) wide minimum shall be provided at intervals not to exceed 75 yards (69 m).

1006.4 Weather Shelters. A clear floor or ground *space* 60 inches (1525 mm) minimum by 96 inches (2440 mm) minimum shall be provided within weather shelters.

1007 Miniature Golf Facilities

1007.1 General. Miniature golf *facilities* shall comply with 1007.

1007.2 Accessible Routes. *Accessible* routes serving holes on miniature golf courses shall comply with Chapter 4. *Accessible* routes located on playing surfaces of miniature golf holes shall be permitted to use the exceptions in 1007.2.

EXCEPTIONS: 1. Playing surfaces shall not be required to comply with 302.2.

2. Where *accessible* routes intersect playing surfaces of holes, a 1 inch (25 mm) maximum curb shall be permitted for a width of 32 inches (815 mm) minimum.

3. A slope not steeper than 1:4 for a 4 inch (100 mm) maximum rise shall be permitted.

4. *Ramp* landing slopes specified by 405.7.1 shall be permitted to be 1:20 maximum.

5. *Ramp* landing length specified by 405.7.3 shall be permitted to be 48 inches (1220 mm) long minimum.

6. *Ramp* landing size specified by 405.7.4 shall be permitted to be 48 inches (1220 mm) minimum by 60 inches (1525 mm) minimum.

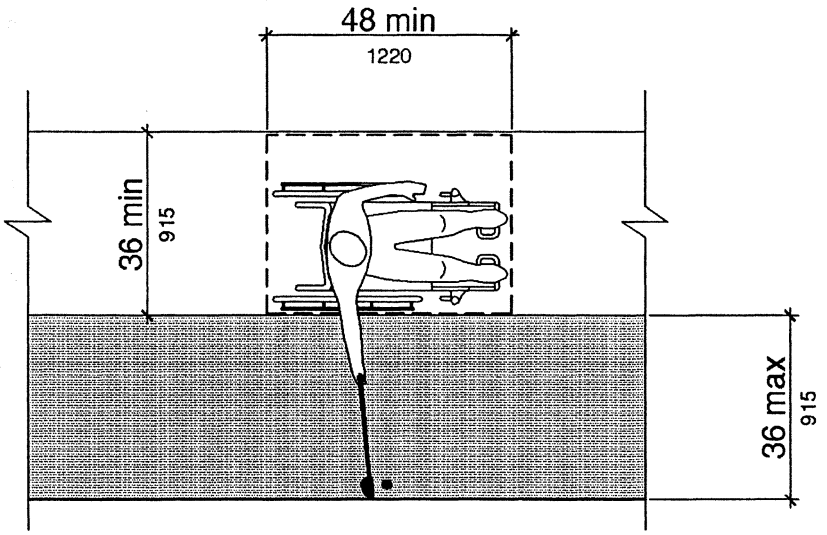
7. Handrails shall not be required on holes. Where handrails are provided on holes, the handrails shall not be required to comply with 505.

1007.3 Miniature Golf Holes. Miniature golf holes shall comply with 1007.3.

1007.3.1 Start of Play. A clear floor or ground *space* 48 inches (1220 mm) minimum by 60 inches (1525 mm) minimum with slopes not steeper than 1:48 shall be provided at the start of play.

1007.3.2 Golf Club Reach Range Area. All areas within holes where golf balls rest shall be within 36 inches (915 mm) maximum of a clear floor or ground *space* 36 inches (915 mm) wide minimum and 48 inches (1220 mm) long minimum having a *running slope* not steeper than 1:20. The clear floor or ground *space* shall be served by an *accessible* route.

Advisory 1007.3.2 Golf Club Reach Range Area. The golf club reach range applies to all holes required to be accessible. This includes accessible routes provided adjacent to or, where provided, on the playing surface of the hole.



Note: Running Slope of Clear Floor or Ground Space Not Steeper Than 1:20

Figure 1007.3.2
Golf Club Reach Range Area

1008 Play Areas

1008.1 General. *Play areas* shall comply with 1008.

1008.2 Accessible Routes. *Accessible* routes serving *play areas* shall comply with Chapter 4 and 1008.2 and shall be permitted to use the exceptions in 1008.2.1 through 1008.2.3. Where *accessible* routes serve *ground level play components*, the vertical clearance shall be 80 inches high (2030 mm) minimum.

1008.2.1 Ground Level and Elevated Play Components. *Accessible* routes serving *ground level play components* and *elevated play components* shall be permitted to use the exceptions in 1008.2.1.

EXCEPTIONS: 1. Transfer systems complying with 1008.3 shall be permitted to connect *elevated play components* except where 20 or more *elevated play components* are provided no more than 25 percent of the *elevated play components* shall be permitted to be connected by transfer systems.

2. Where transfer systems are provided, an *elevated play component* shall be permitted to connect to another *elevated play component* as part of an *accessible* route.

1008.2.2 Soft Contained Play Structures. *Accessible* routes serving *soft contained play structures* shall be permitted to use the exception in 1008.2.2.

EXCEPTION: Transfer systems complying with 1008.3 shall be permitted to be used as part of an *accessible* route.

1008.2.3 Water Play Components. *Accessible* routes serving water *play components* shall be permitted to use the exceptions in 1008.2.3.

EXCEPTIONS: 1. Where the surface of the *accessible* route, clear floor or ground *spaces*, or turning *spaces* serving water *play components* is submerged, compliance with 302, 403.3, 405.2, 405.3, and 1008.2.6 shall not be required.

2. Transfer systems complying with 1008.3 shall be permitted to connect *elevated play components* in water.

Advisory 1008.2.3 Water Play Components. Personal wheelchairs and mobility devices may not be appropriate for submerging in water when using play components in water. Some may have batteries, motors, and electrical systems that when submerged in water may cause damage to the personal mobility device or wheelchair or may contaminate the water. Providing an aquatic wheelchair made of non-corrosive materials and designed for access into the water will protect the water from contamination and avoid damage to personal wheelchairs.

1008.2.4 Clear Width. *Accessible* routes connecting *play components* shall provide a clear width complying with 1008.2.4.

1008.2.4.1 Ground Level. At ground level, the clear width of *accessible* routes shall be 60 inches (1525 mm) minimum.

EXCEPTIONS: 1. In *play areas* less than 1000 square feet (93 m^2), the clear width of *accessible* routes shall be permitted to be 44 inches (1120 mm) minimum, if at least one turning *space* complying with 304.3 is provided where the restricted *accessible* route exceeds 30 feet (9145 mm) in length.

2. The clear width of *accessible* routes shall be permitted to be 36 inches (915 mm) minimum for a distance of 60 inches (1525 mm) maximum provided that multiple reduced width segments are separated by segments that are 60 inches (1525 mm) wide minimum and 60 inches (1525 mm) long minimum.

1008.2.4.2 Elevated. The clear width of *accessible* routes connecting *elevated play components* shall be 36 inches (915 mm) minimum.

EXCEPTIONS: 1. The clear width of *accessible* routes connecting *elevated play components* shall be permitted to be reduced to 32 inches (815 mm) minimum for a distance of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

2. The clear width of transfer systems connecting *elevated play components* shall be permitted to be 24 inches (610 mm) minimum.

1008.2.5 Ramps. Within *play areas*, *ramps* connecting *ground level play components* and *ramps* connecting *elevated play components* shall comply with 1008.2.5.

1008.2.5.1 Ground Level. *Ramp* runs connecting *ground level play components* shall have a *running slope* not steeper than 1:16.

1008.2.5.2 Elevated. The rise for any *ramp* run connecting *elevated play components* shall be 12 inches (305 mm) maximum.

1008.2.5.3 Handrails. Where required on *ramps* serving *play components*, the handrails shall comply with 505 except as modified by 1008.2.5.3.

EXCEPTIONS: 1. Handrails shall not be required on *ramps* located within ground level *use zones*.

2. Handrail extensions shall not be required.

1008.2.5.3.1 Handrail Gripping Surfaces. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 0.95 inch (24 mm) minimum and 1.55 inches (39 mm) maximum. Where the shape of the gripping surface is non-circular, the handrail shall provide an equivalent gripping surface.

1008.2.5.3.2 Handrail Height. The top of handrail gripping surfaces shall be 20 inches (510 mm) minimum and 28 inches (710 mm) maximum above the *ramp* surface.

1008.2.6 Ground Surfaces. Ground surfaces on *accessible* routes, clear floor or ground *spaces*, and turning *spaces* shall comply with 1008.2.6.

Advisory 1008.2.6 Ground Surfaces. Ground surfaces must be inspected and maintained regularly to ensure continued compliance with the ASTM F 1951 standard. The type of surface material selected and play area use levels will determine the frequency of inspection and maintenance activities.

1008.2.6.1 Accessibility. Ground surfaces shall comply with ASTM F 1951 (incorporated by reference, see "Referenced Standards" in Chapter 1). Ground surfaces shall be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F 1951.

1008.2.6.2 Use Zones. Ground surfaces located within *use zones* shall comply with ASTM F 1292 (1999 edition or 2004 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

1008.3 Transfer Systems. Where transfer systems are provided to connect to *elevated play components*, transfer systems shall comply with 1008.3.

> **Advisory 1008.3 Transfer Systems.** Where transfer systems are provided, consideration should be given to the distance between the transfer system and the elevated play components. Moving between a transfer platform and a series of transfer steps requires extensive exertion for some children. Designers should minimize the distance between the points where a child transfers from a wheelchair or mobility device and where the elevated play components are located. Where elevated play components are used to connect to another elevated play component instead of an accessible route, careful consideration should be used in the selection of the play components used for this purpose.

1008.3.1 Transfer Platforms. Transfer platforms shall be provided where transfer is intended from wheelchairs or other mobility aids. Transfer platforms shall comply with 1008.3.1.

1008.3.1.1 Size. Transfer platforms shall have level surfaces 14 inches (355 mm) deep minimum and 24 inches (610 mm) wide minimum.

1008.3.1.2 Height. The height of transfer platforms shall be 11 inches (280 mm) minimum and 18 inches (455 mm) maximum measured to the top of the surface from the ground or floor surface.

1008.3.1.3 Transfer Space. A transfer *space* complying with 305.2 and 305.3 shall be provided adjacent to the transfer platform. The 48 inch (1220 mm) long minimum dimension of the transfer *space* shall be centered on and parallel to the 24 inch (610 mm) long minimum side of the transfer platform. The side of the transfer platform serving the transfer *space* shall be unobstructed.

1008.3.1.4 Transfer Supports. At least one means of support for transferring shall be provided.

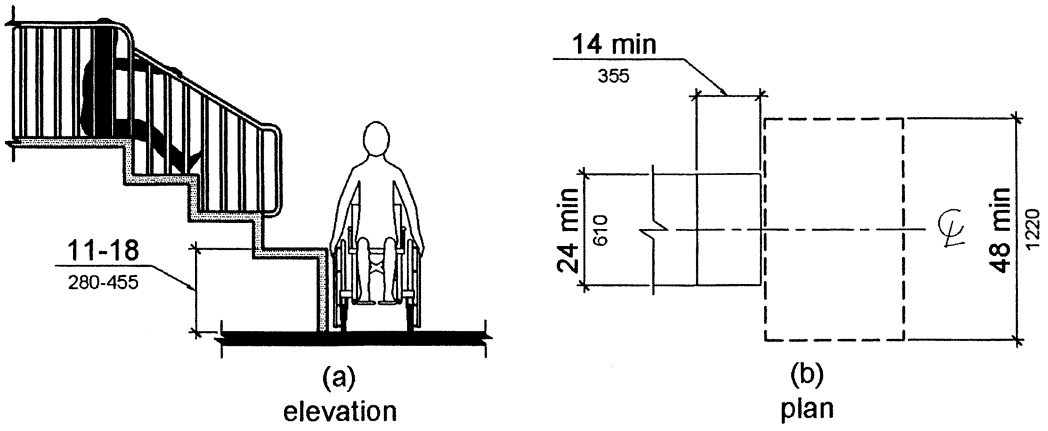


Figure 1008.3.1
Transfer Platforms

1008.3.2 Transfer Steps. Transfer steps shall be provided where movement is intended from transfer platforms to levels with *elevated play components* required to be on *accessible* routes. Transfer steps shall comply with 1008.3.2.

1008.3.2.1 Size. Transfer steps shall have level surfaces 14 inches (355 mm) deep minimum and 24 inches (610 mm) wide minimum.

1008.3.2.2 Height. Each transfer step shall be 8 inches (205 mm) high maximum.

1008.3.2.3 Transfer Supports. At least one means of support for transferring shall be provided.

Advisory 1008.3.2.3 Transfer Supports. Transfer supports are required on transfer platforms and transfer steps to assist children when transferring. Some examples of supports include a rope loop, a loop type handle, a slot in the edge of a flat horizontal or vertical member, poles or bars, or D rings on the corner posts.

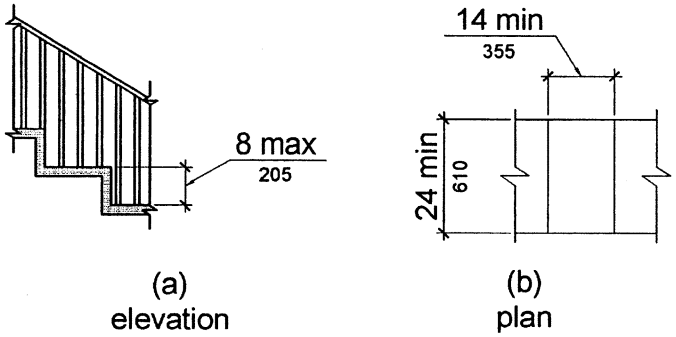


Figure 1008.3.2
Transfer Steps

1008.4 Play Components. *Ground level play components* on *accessible* routes and *elevated play components* connected by *ramps* shall comply with 1008.4.

1008.4.1 Turning Space. At least one turning *space* complying with 304 shall be provided on the same level as *play components*. Where swings are provided, the turning *space* shall be located immediately adjacent to the swing.

1008.4.2 Clear Floor or Ground Space. Clear floor or ground *space* complying with 305.2 and 305.3 shall be provided at *play components*.

Advisory 1008.4.2 Clear Floor or Ground Space. Clear floor or ground spaces, turning spaces, and accessible routes are permitted to overlap within play areas. A specific location has not been designated for the clear floor or ground spaces or turning spaces, except swings, because each play component may require that the spaces be placed in a unique location. Where play components include a seat or entry point, designs that provide for an unobstructed transfer from a wheelchair or other mobility device are recommended. This will enhance the ability of children with disabilities to independently use the play component.

When designing play components with manipulative or interactive features, consider appropriate reach ranges for children seated in wheelchairs. The following table provides guidance on reach ranges for children seated in wheelchairs. These dimensions apply to either forward or side reaches. The reach ranges are appropriate for use with those play components that children seated in wheelchairs may access and reach. Where transfer systems provide access to elevated play components, the reach ranges are not appropriate.

Children's Reach Ranges

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

1008.4.3 Play Tables. Where play tables are provided, knee clearance 24 inches (610 mm) high minimum, 17 inches deep (430 mm) minimum, and 30 inches (760 mm) wide minimum shall be provided. The tops of rims, curbs, or other obstructions shall be 31 inches (785 mm) high maximum.

EXCEPTION: Play tables designed and constructed primarily for children 5 years and younger shall not be required to provide knee clearance where the clear floor or ground *space* required by 1008.4.2 is arranged for a parallel approach.

1008.4.4 Entry Points and Seats. Where *play components* require transfer to entry points or seats, the entry points or seats shall be 11 inches (280 mm) minimum and 24 inches (610 mm) maximum from the clear floor or ground *space*.

EXCEPTION: Entry points of slides shall not be required to comply with 1008.4.4.

1008.4.5 Transfer Supports. Where *play components* require transfer to entry points or seats, at least one means of support for transferring shall be provided.

1009 Swimming Pools, Wading Pools, and Spas

1009.1 General. Where provided, pool lifts, sloped entries, transfer walls, transfer systems, and pool stairs shall comply with 1009.

1009.2 Pool Lifts. Pool lifts shall comply with 1009.2.

Advisory 1009.2 Pool Lifts. There are a variety of seats available on pool lifts ranging from sling seats to those that are preformed or molded. Pool lift seats with backs will enable a larger population of persons with disabilities to use the lift. Pool lift seats that consist of materials that resist corrosion and provide a firm base to transfer will be usable by a wider range of people with disabilities. Additional options such as armrests, head rests, seat belts, and leg support will enhance accessibility and better accommodate people with a wide range of disabilities.

1009.2.1 Pool Lift Location. Pool lifts shall be located where the water level does not exceed 48 inches (1220 mm).

EXCEPTIONS: 1. Where the entire pool depth is greater than 48 inches (1220 mm), compliance with 1009.2.1 shall not be required.

2. Where multiple pool lift locations are provided, no more than one pool lift shall be required to be located in an area where the water level is 48 inches (1220 mm) maximum.

1009.2.2 Seat Location. In the raised position, the centerline of the seat shall be located over the deck and 16 inches (405 mm) minimum from the edge of the pool. The deck surface between the centerline of the seat and the pool edge shall have a slope not steeper than 1:48.

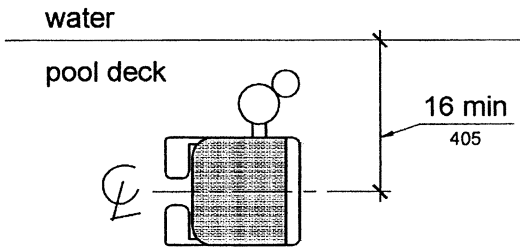


Figure 1009.2.2
Pool Lift Seat Location

1009.2.3 Clear Deck Space. On the side of the seat opposite the water, a clear deck *space* shall be provided parallel with the seat. The *space* shall be 36 inches (915 mm) wide minimum and shall extend forward 48 inches (1220 mm) minimum from a line located 12 inches (305 mm) behind the rear edge of the seat. The clear deck *space* shall have a slope not steeper than 1:48.

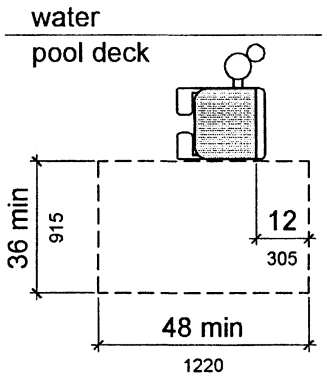


Figure 1009.2.3
Clear Deck Space at Pool Lifts

1009.2.4 Seat Height. The height of the lift seat shall be designed to allow a stop at 16 inches (405 mm) minimum to 19 inches (485 mm) maximum measured from the deck to the top of the seat surface when in the raised (load) position.

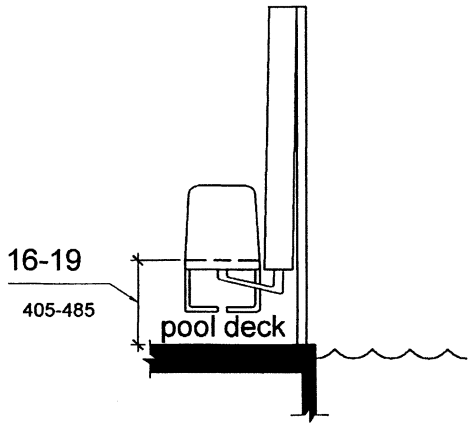


Figure 1009.2.4
Pool Lift Seat Height

1009.2.5 Seat Width. The seat shall be 16 inches (405 mm) wide minimum.

1009.2.6 Footrests and Armrests. Footrests shall be provided and shall move with the seat. If provided, the armrest positioned opposite the water shall be removable or shall fold clear of the seat when the seat is in the raised (load) position.

EXCEPTION: Footrests shall not be required on pool lifts provided in spas.

1009.2.7 Operation. The lift shall be capable of unassisted operation from both the deck and water levels. Controls and operating mechanisms shall be unobstructed when the lift is in use and shall comply with 309.4.

Advisory 1009.2.7 Operation. Pool lifts must be capable of unassisted operation from both the deck and water levels. This will permit a person to call the pool lift when the pool lift is in the opposite position. It is extremely important for a person who is swimming alone to be able to call the pool lift when it is in the up position so he or she will not be stranded in the water for extended periods of time awaiting assistance. The requirement for a pool lift to be independently operable does not preclude assistance from being provided.

1009.2.8 Submerged Depth. The lift shall be designed so that the seat will submerge to a water depth of 18 inches (455 mm) minimum below the stationary water level.

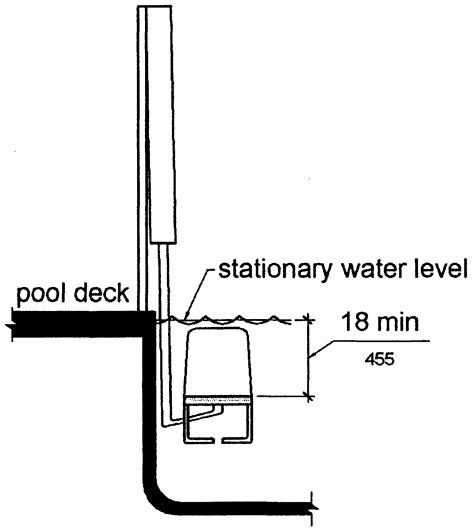


Figure 1009.2.8
Pool Lift Submerged Depth

1009.2.9 Lifting Capacity. Single person pool lifts shall have a weight capacity of 300 pounds. (136 kg) minimum and be capable of sustaining a static load of at least one and a half times the rated load.

Advisory 1009.2.9 Lifting Capacity. Single person pool lifts must be capable of supporting a minimum weight of 300 pounds (136 kg) and sustaining a static load of at least one and a half times the rated load. Pool lifts should be provided that meet the needs of the population they serve. Providing a pool lift with a weight capacity greater than 300 pounds (136 kg) may be advisable.

1009.3 Sloped Entries. Sloped entries shall comply with 1009.3.

> **Advisory 1009.3 Sloped Entries.** Personal wheelchairs and mobility devices may not be appropriate for submerging in water. Some may have batteries, motors, and electrical systems that when submerged in water may cause damage to the personal mobility device or wheelchair or may contaminate the pool water. Providing an aquatic wheelchair made of non-corrosive materials and designed for access into the water will protect the water from contamination and avoid damage to personal wheelchairs or other mobility aids.

1009.3.1 Sloped Entries. Sloped entries shall comply with Chapter 4 except as modified in 1109.3.1 through 1109.3.3.

EXCEPTION: Where sloped entries are provided, the surfaces shall not be required to be slip resistant.

1009.3.2 Submerged Depth. Sloped entries shall extend to a depth of 24 inches (610 mm) minimum and 30 inches (760 mm) maximum below the stationary water level. Where landings are required by 405.7, at least one landing shall be located 24 inches (610 mm) minimum and 30 inches (760 mm) maximum below the stationary water level.

EXCEPTION: In wading pools, the sloped entry and landings, if provided, shall extend to the deepest part of the wading pool.

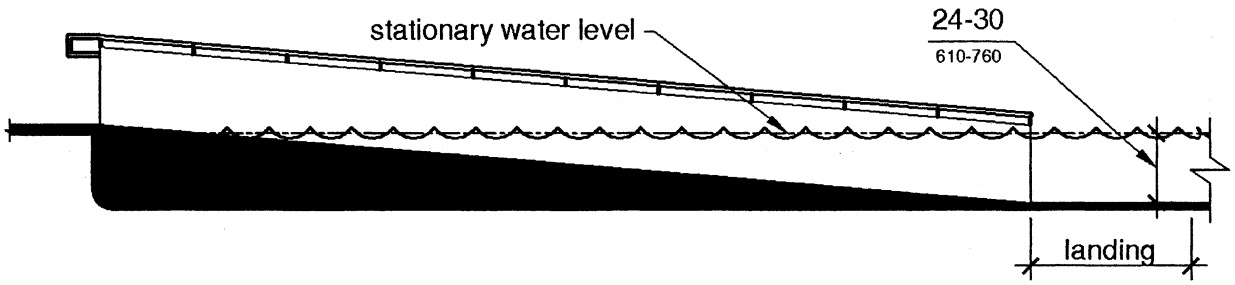


Figure 1009.3.2
Sloped Entry Submerged Depth

1009.3.3 Handrails. At least two handrails complying with 505 shall be provided on the sloped entry. The clear width between required handrails shall be 33 inches (840 mm) minimum and 38 inches (965 mm) maximum.

EXCEPTIONS: 1. Handrail extensions specified by 505.10.1 shall not be required at the bottom landing serving a sloped entry.

2. Where a sloped entry is provided for wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area, the handrails shall not be required to comply with the clear width requirements of 1009.3.3.

3. Sloped entries in wading pools shall not be required to provide handrails complying with 1009.3.3. If provided, handrails on sloped entries in wading pools shall not be required to comply with 505.

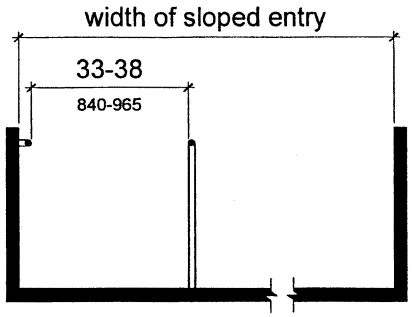


Figure 1009.3.3
Handrails for Sloped Entry

1009.4 Transfer Walls. Transfer walls shall comply with 1009.4.

1009.4.1 Clear Deck Space. A clear deck *space* of 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer wall. Where one grab bar is provided, the clear deck *space* shall be centered on the grab bar. Where two grab bars are provided, the clear deck *space* shall be centered on the clearance between the grab bars.

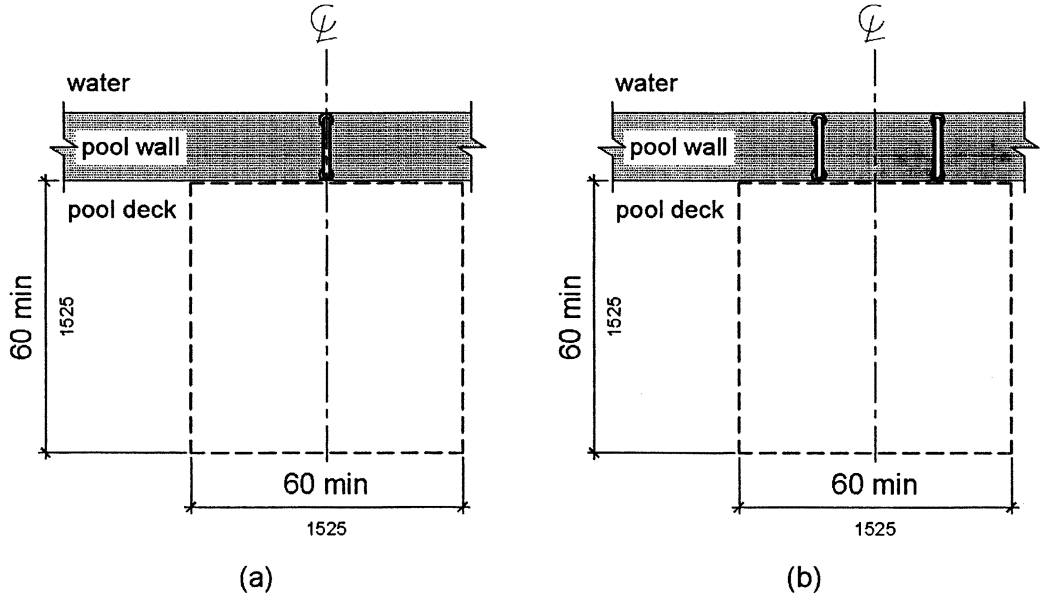


Figure 1009.4.1
Clear Deck Space at Transfer Walls

1009.4.2 Height. The height of the transfer wall shall be 16 inches (405 mm) minimum and 19 inches (485 mm) maximum measured from the deck.

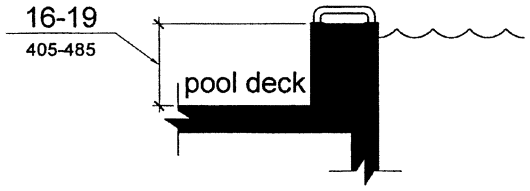


Figure 1009.4.2
Transfer Wall Height

1009.4.3 Wall Depth and Length. The depth of the transfer wall shall be 12 inches (305 mm) minimum and 16 inches (405 mm) maximum. The length of the transfer wall shall be 60 inches (1525 mm) minimum and shall be centered on the clear deck *space*.

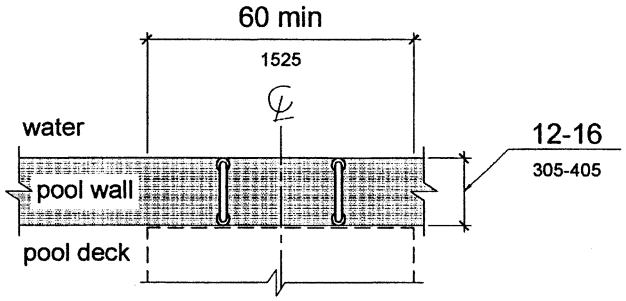


Figure 1009.4.3
Depth and Length of Transfer Walls

1009.4.4 Surface. Surfaces of transfer walls shall not be sharp and shall have rounded edges.

1009.4.5 Grab Bars. At least one grab bar complying with 609 shall be provided on the transfer wall. Grab bars shall be perpendicular to the pool wall and shall extend the full depth of the transfer wall. The top of the gripping surface shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above transfer walls. Where one grab bar is provided, clearance shall be 24 inches (610 mm) minimum on both sides of the grab bar. Where two grab bars are provided, clearance between grab bars shall be 24 inches (610 mm) minimum.

EXCEPTION: Grab bars on transfer walls shall not be required to comply with 609.4.

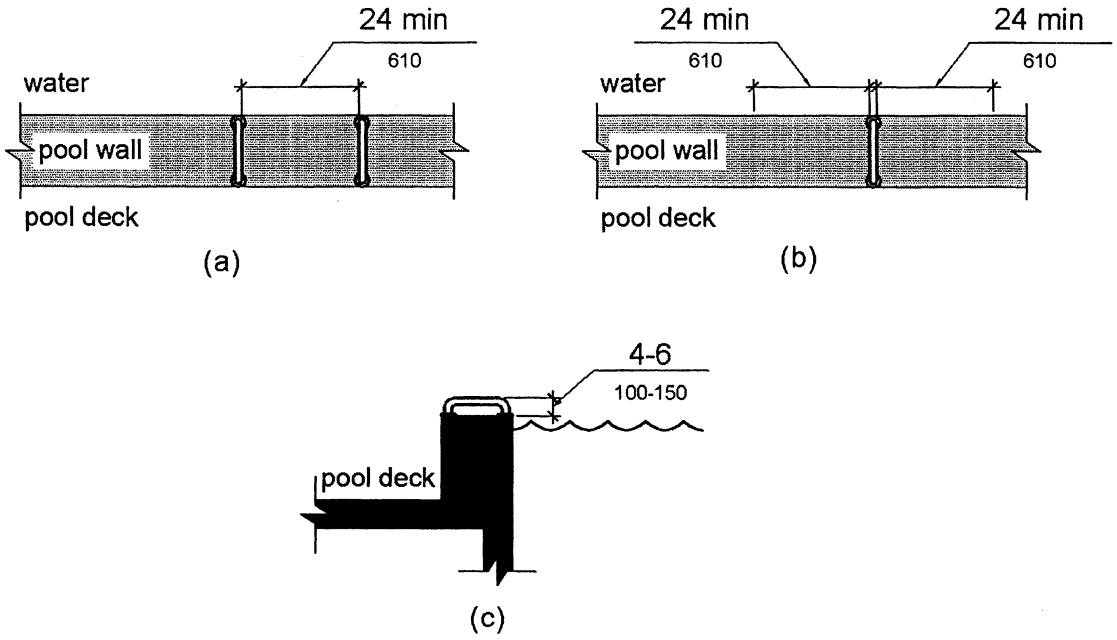


Figure 1009.4.5
Grab Bars for Transfer Walls

1009.5 Transfer Systems. Transfer systems shall comply with 1009.5.

1009.5.1 Transfer Platform. A transfer platform shall be provided at the head of each transfer system. Transfer platforms shall provide 19 inches (485 mm) minimum clear depth and 24 inches (610 mm) minimum clear width.

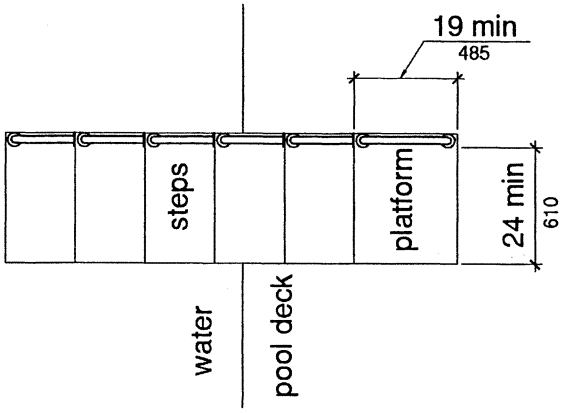


Figure 1009.5.1
Size of Transfer Platform

1009.5.2 Transfer Space. A transfer *space* of 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer platform surface and shall be centered along a 24 inch (610 mm) minimum side of the transfer platform. The side of the transfer platform serving the transfer *space* shall be unobstructed.

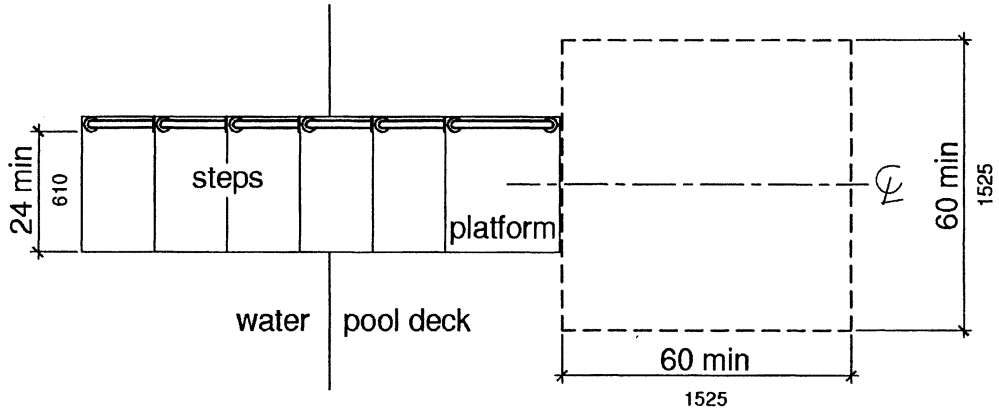


Figure 1009.5.2
Clear Deck Space at Transfer Platform

1009.5.3 Height. The height of the transfer platform shall comply with 1009.4.2.

1009.5.4 Transfer Steps. Transfer step height shall be 8 inches (205 mm) maximum. The surface of the bottom tread shall extend to a water depth of 18 inches (455 mm) minimum below the stationary water level.

Advisory 1009.5.4 Transfer Steps. Where possible, the height of the transfer step should be minimized to decrease the distance an individual is required to lift up or move down to reach the next step to gain access.

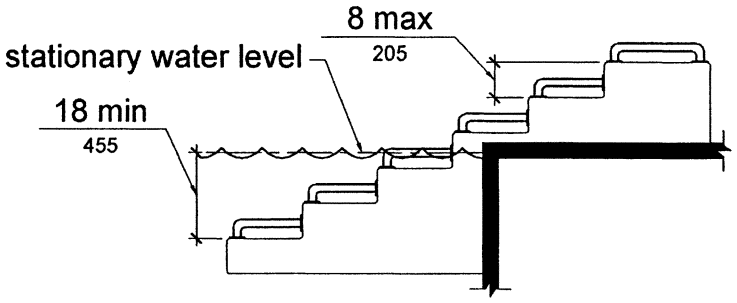


Figure 1009.5.4
Transfer Steps

1009.5.5 Surface. The surface of the transfer system shall not be sharp and shall have rounded edges.

1009.5.6 Size. Each transfer step shall have a tread clear depth of 14 inches (355 mm) minimum and 17 inches (430 mm) maximum and shall have a tread clear width of 24 inches (610 mm) minimum.

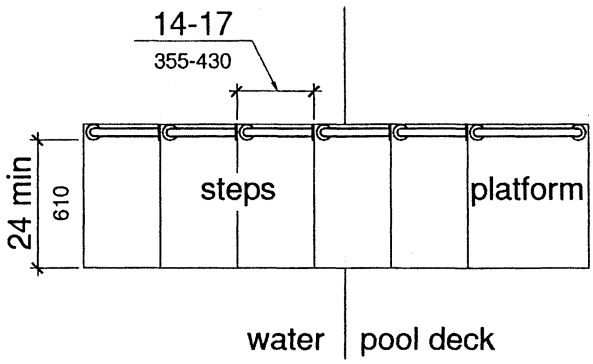
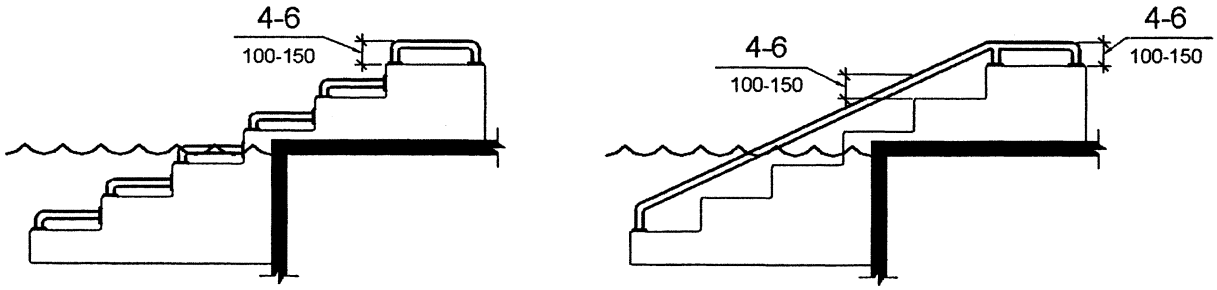


Figure 1009.5.6
Size of Transfer Steps

1009.5.7 Grab Bars. At least one grab bar on each transfer step and the transfer platform or a continuous grab bar serving each transfer step and the transfer platform shall be provided. Where a grab bar is provided on each step, the tops of gripping surfaces shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above each step and transfer platform. Where a continuous grab bar is provided, the top of the gripping surface shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above the step nosing and transfer platform. Grab bars shall comply with 609 and be located on at least one side of the transfer system. The grab bar located at the transfer platform shall not obstruct transfer.

EXCEPTION: Grab bars on transfer systems shall not be required to comply with 609.4.



(a)
individual grab bars

(b)
continuous grab bars

Figure 1009.5.7
Grab Bars

1009.6 Pool Stairs. Pool stairs shall comply with 1009.6.

1009.6.1 Pool Stairs. Pool stairs shall comply with 504.

EXCEPTION: Pool step riser heights shall not be required to be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum provided that riser heights are uniform.

1009.6.2 Handrails. The width between handrails shall be 20 inches (510 mm) minimum and 24 inches (610 mm) maximum. Handrail extensions required by 505.10.3 shall not be required on pool stairs.

1010 Shooting Facilities with Firing Positions

1010.1 Turning Space. A circular turning *space* 60 inches (1525 mm) diameter minimum with slopes not steeper than 1:48 shall be provided at shooting facilities with firing positions.

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