CHAPTER 16
STATE OF IOWA BUILDING CODE

[Transferred from O.P.P., ch 5, See IAB 7/6/83]
[Prior to 4/20/88, see Public Safety Department[680] Ch 16]

661—16.1(103A) Purpose. The state building code shall as far as practical provide uniform standards and requirements for construction, construction materials, and equipment through the adoption by reference of applicable national codes where appropriate and providing exceptions when necessary.

661—16.2(103A) When applicable. The state building code shall for the buildings and structures to which it is applicable, constitute a lawful building code.

16.2(1) The state building code shall be applicable:

a. To all buildings and structures owned by the state or an agency of the state.

b. In each governmental subdivision where the governing body has adopted the code as prescribed by Iowa Code section 103A.12.

16.2(2) Provisions of the state building code relating to the manufacture and installation of factory built structures shall apply throughout the state. (Factory built structures approved by the commissioner shall be deemed to comply with all building regulations applicable to the manufacture and installation and shall be exempt from any local building regulations.)

661—16.3(103A) Building code commissioner. The commissioner of public safety shall, in addition to other duties, serve as the state building code commissioner, or may designate the building code commissioner.

16.3(1) *Alternate materials and methods of construction*. Application for approval of alternate materials and methods of construction shall be submitted to the commissioner in writing and shall contain any data necessary to show evidence that the alternate is satisfactory and that the material, method, or work offered is for the purpose intended, at least the equivalent of that prescribed in the state building code in quality, strength, effectiveness, fire resistance, durability, and safety.

16.3(2) *Additional data*. The commissioner may request additional data, tests, and reports in order to make a determination of compliance with building code requirements.

16.3(3) *Approval*. Alternate materials and methods of construction approved by the commissioner shall be submitted to the next regular advisory council meeting for approval or disapproval by the council.

16.3(4) *Disapproval*. Appeals of disapproval by the commissioner can be made to the state building code board of review and the advisory council pursuant to provisions of Iowa Code sections 103A.16 and 103A.17.

16.3(5) *Review of local board of appeal decisions*. For purposes of assuring compliance with approval of alternate materials and methods of construction, Iowa Code section 103A.13, local board of appeal decisions which are based upon the acceptance of an alternate material or method of construction shall be filed with the commissioner.

16.3(6) *Commissioner's action*. Upon receipt of a local board of appeal ruling which is based upon the acceptance of an alternative material or method of construction the commissioner shall review the decision for compliance with section 103A.13 and notify the local board of one of the following:

a. That the decision of the local board is based upon an alternate material or method of construction meeting the requirements of section 103A.13. The commissioner shall submit the findings to the building code advisory council for approval as required by Iowa Code section 103A.14(3). The local board shall be notified of the council's action.

b. That the decision of the local board is not, in the opinion of the commissioner, an alternate material or method of construction meeting the requirements of section 103A.13. Unless additional proof or evidence can be submitted to substantiate the alternate use, the proposed material or method of construction cannot be used as proposed.

16.3(7) *Appeals by the commissioner.* The commissioner shall use all administrative and informal settlement procedures available before taking any other appeal action and shall notify the affected parties of an intended appeal.

661—16.4(103A) Building code advisory council. The state building code commissioner is advised and conferred with on matters relating to the state building code by the state of Iowa building code advisory council, a seven member council established by Iowa Code section 103A.4.

16.4(1) *Meetings*. The building code council shall meet on the third Thursday of each month at a time and place determined by the commissioner. The regular meeting may be canceled if the commissioner has no matters to consult with the council.

16.4(2) *Special meetings*.

a. The commissioner shall call for special meetings when required for public hearings, appeals, and other necessary business.

b. Meetings may be called by the council chairman or by the request of three members.

661—16.5(103A) Adoption of rules. The state building code commissioner in conjunction with the building code advisory council shall adopt rules and shall hold public hearings on its proposed rules within the state at reasonable hours.

16.5(1) Rules and modifications to existing rules which have been formulated in accordance with Iowa Code sections 103A.7, 103A.11 and 103A.14(3) shall be submitted for approval as required by Iowa Code chapter 17A.

16.5(2) The Iowa state building code administration section, which begins at 661—16.100(103A) of the Iowa Administrative Code constitutes the rules formulated under Iowa Code section 103A.7 and shall be known as the Iowa State Building Code.

661—16.6(103A) Board of review. The three-member board of review as required by Iowa Code section 103A.15 is hereby established. A list of the current advisory council members assigned to the board may be obtained from the commissioner.

16.6(1) *Appeals*. Grounds for an appeal to the board of review are found in section 103A.16.

16.6(2) *Procedures*. In addition to the requirements of section 103A.17, the following procedure shall be followed:

a. Upon receipt of a request for an appeal, the commissioner shall establish a hearing date and time.

b. The commissioner may request or obtain any additional information or data which may be necessary to make a determination.

c. Hearings shall be conducted in the following manner:

(1) Call to order.

(2) Presentation by applicants.

(3) Presentation by objectors.

(4) Comments by commissioner, the staff or consultants.
(5) Questions and comments by the board.
(6) Discussion between board members only.
(7) Board action shall be one of the following:
1. Decision as per subsection 103A.17(6).
2. Request for additional data and continuance.
3. Continuance of hearing.
(8) Adjournment.

16.6(3) *Appeal of board of review decision.* The decision of the board of review may be appealed to the advisory council as per subsection 103A.17(7) and the same hearing procedure will follow as in 16.6(2).

661—16.7(103A) Forms and publications. A description of the necessary information and data to complete forms for filing with the commissioner or for approvals appears in the administration section.

16.7(1) Forms which are required to be used to file information with or obtain approval from the commissioner shall be furnished at no cost upon request.

16.7(2) Copies of the State Building Code Administration Section may be obtained from the commissioner upon payment of the appropriate fee.

16.7(3) Copies of the codes and standards which have been adopted by reference shall be obtained from authors as spelled out in the adopting sections.

16.7(4) Those parties wishing to be placed on the building code mailing list shall complete the mailing form obtained from the commissioner.

661—16.8 to **16.109** Reserved.

DIVISION I
PART 1

661—16.110(103A) Legislative.

16.110(1) *Legislative history.* The 1972 General Assembly of the state of Iowa passed House File 6, an Act to institute an Iowa state building code for the purpose of ensuring the health, safety and welfare of its citizens. House File 6 later became known as Iowa Code chapter 103A.

Iowa Code chapter 103A became effective on July 1, 1972, and established a seven-member advisory council, and a building code commissioner with the authority to promulgate rules and to hire qualified staff to administer the provisions of the state building code.

The Iowa state building code, ISBC 100.0, was adopted by the advisory council and became effective on February 1, 1973. ISBC 100.0 contained the 1970 editions of the national model codes. Upon adoption of the 1973 editions of the model codes, the number was changed to ISBC 200.0, which became effective March 1, 1975. ISBC 300.0 designates the adoption of the 1976 editions of the model codes and became effective on September 1, 1977. ISBC 400.0 is the adoption of the 1979 editions of the model codes and became effective on March 1, 1981. ISBC 500.0 is the adoption of the 1982 editions of the model codes and became effective on August 12, 1983. ISBC 600.0 is the adoption of the 1985 editions of the model codes and became effective on January 1, 1987. ISBC 700.0 is the adoption of the 1988 editions of the model codes which became effective on January 1, 1989.

These revisions will adopt the 1991 editions of the model codes and will be designated as ISBC 800.0. Future minor revisions or additions will be indicated by changes in the designation as ISBC 800.1, 800.2, etc.

16.110(2) *Legislative authority.* Statutory provisions governing the administration, enforcement, and the promulgation of rules and regulations set forth in Iowa Code chapter 103A, "State Building Code," defines the authority, powers and duties of the advisory council and the building code commissioner. Other statutes concerning enforcement of this code, and promulgating of rules are included in Iowa Code chapter 104A, "Accessibility for Persons with Disabilities."

16.110(3) *Title.* These administrative and construction rules and regulations (ISBC 800.0) promulgated by the commissioner and approved by the building code advisory council shall be known as the state building code, may be cited as such and will be referred to herein as this code.

16.110(4) *Applicability.* These rules and regulations for those buildings and structures to which they are applicable shall constitute a lawful local building code, and shall take precedence over any other local ordinance or resolution.

16.110(5) *Enforcement*. This code shall be enforced by the commissioner in accordance with Iowa Code chapter 103A. The guidance of legal counsel and the cooperation of the advisory council and local building departments are herewith recommended to assist in furthering the purposes and objectives of this code, as mandated by the Sixty-fourth General Assembly.

16.110(6) *Interpretations*. Except as otherwise provided in this code, the commissioner shall have arbitrary authority with regard to provisions of this code. Written interpretations of any requirements or provisions of these rules will be issued upon request. A request shall be accompanied by sufficient substantiating data as may apply to the conditions for which an interpretation is requested.

16.110(7) *Appeals*. The commissioner shall establish a state building code board of review—appeals, as empowered by Iowa Code section 103A.15. The board shall function to hear petitions, and to revoke, modify or affirm determinations by the commissioner. Written request for a hearing on appeals must be received by the commissioner, two weeks before the meeting of the advisory council. Regularly scheduled meetings of advisory council are held on the third Thursday of each month. Special hearings may be called by the commissioner by urgent written request or at the discretion of the commissioner. Further appeal may be petitioned to the full membership of the advisory council. (See IAC 661—16.6(103A) for other appeal procedures.)

16.110(8) *Judicial appeal*. Judicial review of actions by the commissioner, board of review, or advisory council may be sought in accordance with the Iowa administrative procedure Act and Iowa Code section 103A.18.

16.110(9) *Alternate materials and method of constructions*. The commissioner is authorized to approve any alternate if satisfactory and performs as required by this code.

a. Requests for consideration of alternate provisions or their application shall be submitted to the commissioner by the building owner or the owner's agent in writing with substantiating data. See subrule 16.3(1).

b. The granting of such alternates or applications will be stated in writing, along with limitations or conditions thereof.

c. Research committee reports published by the nationally recognized code groups whose specific code has been adopted may be approved by the administrative authority or agency as an alternate material or method of construction without requiring authorization by the commissioner. Details of the approval shall be recorded and entered in the files of the administrative authority or enforcement agency.

16.110(10) *Violation and penalties.* Any person, firm or corporation determined to be in violation of the applicable provisions of state building code shall be subject to the actions and penalties prescribed in Iowa Code chapter 103A.

16.110(11) *Validity.* If any section, subsection, sentence, clause, or phrase of this code is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

661—16.111 to **16.119** Reserved.

PART 2

661—16.120(103A) General administration.

16.120(1) Adoption by reference. The specifications and regulations which are mentioned by title and date below are hereby adopted and declared to be a part of this code when not in conflict with a specific statement contained herein.

16.120(2) The Uniform Building Code (UBC) and appendices, 1994 edition, the Uniform Building Code standards, 1994 edition, as published by the International Conference of Building Officials.

16.120(3) The National Electrical Code, 1996 edition, NFPA No. 70-1996, as published by the National Fire Protection Association.

16.120(4) The Uniform Mechanical Code, 1994 edition, as published by the International Conference of Building Officials.

16.120(5) The Uniform Plumbing Code, 1994 edition, as published by the International Association of Plumbing and Mechanical Officials.

16.120(6) The Model Energy Code, 1992 edition, as published by the Council of American Building Officials.

16.120(7) The 1993 codified version of "ASHRAE/IES 90.1 - 1989, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings," including appendices A, B, C, and D published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1971 Tullie Circle NE, Atlanta, Georgia 30329-2398.

661—16.121(103A) Optional alternate to adopted codes. Specifications and regulations which are enumerated by title and date below (16.121(1)) may be used as an optional alternate to the "Uniform Building Code," "Uniform Mechanical Code," "Uniform Plumbing Code," and "The National Electrical Code," only in those buildings classified as one- and two-family dwellings.

16.121(1) The CABO One and Two Family Dwelling Code, 1992 edition, as published by the Council of American Building Officials.

16.121(2) Any governmental subdivision which has by ordinance or resolution adopted the state building code as its building code, may include the one- and two-family dwelling code as included herein as Division V rule number 661—16.500(103A). The acceptance of Division V voids all provisions of the codes adopted in 16.120(2) to 16.120(5) which apply to one- and two-family dwellings.

16.121(3) Any governmental subdivision which has by ordinance or resolution adopted the state building code as its building code may delete Chapter 32 or Chapter 33 of the Uniform Building Code, 1994 edition, and substitute its own specific requirements as deemed necessary by those in authority.

661—16.122(103A) Definitions.

"Board of appeals" means the local board of appeals as created by local ordinance.

"Board of review" or *"Board"* means the state building code board of review created by the state building code Act.

"Building" means a combination of materials, whether portable or fixed, to form a structure affording facilities or shelter for persons, animals or property. The word "building" includes any part of a building unless the context clearly requires a different meaning.

"Building component" is any part, subsystem, subassembly, or other system designed for use in, or as a part of, a structure, including but not limited to: structural, electrical, mechanical, fire protection, or plumbing systems, and including such variations thereof as are specifically permitted by regulation, and which variations are submitted as part of the building system or amendment thereof.

"Building department" means an agency of any governmental subdivision charged with the administration, supervision, or enforcement of building regulations, prescribed or required by state or local building regulations.

"Building system" means plans, specifications and documentation for a system of manufactured factory-built structures or buildings or for a type or a system of building components, including but not limited to: structural, electrical, mechanical, fire protection, or plumbing systems, and including such variations thereof as are specifically permitted by regulation, and which variations are submitted as part of the building system or amendment thereof.

"Commissioner" means the state building code commissioner created by the state building code Act.

"Construction" means the construction, erection, reconstruction, alteration, conversion, repair, equipping of buildings, structures or facilities, and requirements or standards relating to or affecting materials used in connection therewith, including provisions for safety and sanitary conditions.

"Equipment" means plumbing, heating, electrical, ventilating, conditioning, refrigeration equipment, and other mechanical facilities or installations.

"Governmental subdivision" means any state, city, town, county or combination thereof.

"Label" is an approved device affixed to a factory-built structure or building, or building component, by an approved agency, evidencing code compliance.

"Listing agency." An agency approved by the commissioner which is in the business of listing or labeling and which maintains a periodic inspection program on current production of listed models, and which makes available timely reports of such listing including specific information verifying that the product has been tested to approved standards and found acceptable for use in a specified manner.

"Public building." Any building or structure used by the public which is constructed in whole or in part by the use of state funds, or the funds of any political division of the state.

"Structure" means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner except transmission and distribution equipment of public utilities. The word "structure" includes any part of a structure unless the context clearly requires a different meaning.

661—16.123(103A) Other rules. Adherence to the requirements of this code is not intended to supersede any specific authority of other state agencies, federal agencies, or governmental subdivisions within the state of Iowa, except as prescribed by statute. Special attention is herewith directed to the following state agencies, which may have additional requirements for specific conditions or occupancies.

1. Department of public safety—state fire marshal
2. Department of agriculture and land stewardship
3. Labor services division of the department of workforce development
4. Department of human services
5. Department of public health
6. Department of natural resources
7. Department of education
8. Department of inspections and appeals

16.123(1) *Creation of department.* There may be established within the governmental subdivision a "building department" which shall be under the jurisdiction of the building official designated by the appointing authority. Within the publications of this code such terms as "administrative authority," "authority having jurisdiction," or "authorized representative" shall mean the building official.

16.123(2) *Powers and duties of building official.* The building official in those governmental subdivisions establishing a building department shall enforce all the provisions of this code as prescribed by local law or ordinance and as outlined by Iowa Code section 103A.19.

16.123(3) *Permits only.* Any governmental subdivision that has not established a building department as per 16.123(1) but requires a permit to construct or occupancy permit or both, such person or agency shall be known as the "issuing authority."

661—16.124 to **16.129** Reserved.

PART 3

661—16.130(103A) Scope.

16.130(1) *Application.* The provisions of this code shall apply to construction, alteration, moving, renovation, repair and use of any building or structure in those political subdivisions of the state of Iowa, which have accepted this code as authorized by the state building code Act.

16.130(2) *Applicability.* Provisions of this code shall be mandatory for the following:

a. Manufacture and installation of factory-built structures. Factory-built structures approved by the commissioner shall be deemed to comply with all building regulations applicable to its manufacture and installation and shall be exempt from local building regulations except as herein provided. (See Division VI for requirements for factory-built structures.)

b. All buildings owned by the state or any agency of the state.

c. In those governmental subdivisions which by ordinance or resolution have adopted the state building code as their local building code.

d. All buildings and structures intended for use by the general public shall meet the requirements for the physically handicapped. (See Division VII, Handicapped Rules and Regulations, of this code.)

e. All buildings, structures and additions required to be energy efficient as per Division VIII, Thermal and Lighting Efficiency Standards.

16.130(3) *Application to existing buildings.* Buildings or structures to which additions, alterations, or repairs are made shall comply with all of the requirements for new buildings or structures except as specifically provided herein. See Section 310.9.1.1, Uniform Building Code, for provisions requiring installation of smoke detectors in existing Group R, Division 3, Occupancies.

a. Additions, alterations and repairs. Additions, alterations or repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of this code provided the additions, alterations or repairs conform to that required for a new building or structure. Additions, alterations or repairs shall not cause an existing building or structure to become unsafe or overloaded. Any building or structure so altered, which involves a change in use or occupancy, shall not exceed the height, number of stories or area permitted for new buildings or structures. Any building plus new additions shall not exceed the height, number of stories and area specified for new buildings.

Alterations or repairs to an existing building or structure which are nonstructural and do not adversely affect any structural member or any part of the building or structure having required fire resistance may be made with the same materials of which the building or structure is constructed.

EXCEPTION: The installation or replacement of glass shall be as required for new installations.

b. Whenever there are practical difficulties involved in carrying out the provisions of this code, the authority having jurisdiction may grant modifications for individual cases, provided such modifications are in conformity with the spirit and purpose of this code and do not in any way lessen the fire protection requirements or impair in any degree the structural integrity or life safety performance as required by this code. The details of any action granting modifications shall be recorded and entered in the files of the enforcement agency.

16.130(4) *Existing occupancy.* Buildings in existence at the time of adoption of this code may have their existing use or occupancy continued, if this occupancy was legal at the time of the adoption of this code, and provided such continued use is not dangerous to life. Any change in the use or occupancy of any existing buildings or structures shall comply with the provisions of 16.130(3) of this code and Section 3405 of the UBC.

16.130(5) *Systems and equipment.* In existing occupancies which remain in the same classifications, mechanical, plumbing and electrical systems shall comply as follows:

a. Mechanical. Heating, ventilating, comfort cooling, or refrigeration systems, incinerators or other miscellaneous heat-producing appliances lawfully installed prior to the effective date of this code may have their existing use, maintenance or repair continued if the use, maintenance or repair is in accordance with the original design and location and is not a hazard to life, health, or property.

All heating, ventilating, comfort cooling, or refrigeration systems, incinerators or other miscellaneous heat-producing appliances, both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition. All devices or safeguards which are required by this code in heating, ventilating, comfort cooling, or refrigeration systems, incinerators or other miscellaneous heat-producing appliances when installed, altered, or repaired shall be maintained in good working order. The owner or a designated agent shall be responsible for the maintenance of heating, ventilating, comfort cooling, refrigeration systems, incinerators or other miscellaneous heat-producing appliances.

b. Plumbing. Plumbing in existing buildings or on existing premises shall be in accordance with the uniform plumbing code sections 201, 320, and 1320.

c. Electrical. Any electrical installation existing at the time of adoption of this code may continue if such an installation was legal at the time of adoption of this code, provided such continued use is not dangerous to life. Any change or revision in existing wiring must comply with this code and additional revisions necessary must be made to comply with this code.

d. Energy conservation standards. Electrical, mechanical, plumbing systems or components must meet energy conservation standards required by Division VIII, of this code.

NOTE: **All buildings or structures, both existing and new and all parts thereof, shall be maintained in a safe and sanitary condition. All devices or safeguards which are required by this code in a building or structure when erected, altered or repaired shall be maintained in good working order. The owner or a designated agent shall be responsible for the maintenance of buildings and structures.**

16.130(6) *Handicapped*. The provisions of Iowa Code chapter 104A are part of this code and shall be so enforced. (See also Division VII of this code for further requirements.)

16.130(7) *Historic buildings*. Repairs, alterations and additions necessary for the preservation, restoration, rehabilitation or continued use of a building or structure may be made without conformance to all of the requirements of this code, when authorized by those having jurisdiction provided:

a. The building or structure has been designated by official action of the state historic preservation officer, Iowa state department of cultural affairs, or by an official legislative body as having special historical or architectural significance.

NOTE: Additional instructions may be obtained from the state department of cultural affairs or the U.S. Department of Interior.

b. Any unsafe conditions as described in 16.130(9) will be corrected in accordance with approved plans.

c. Any substandard conditions will be corrected in accordance with approved plans.

d. The restored building or structure will be no more hazardous based on life safety, fire safety, and sanitation than the existing building.

16.130(8) *Moved buildings and temporary buildings.* Buildings or structures moved into or within the jurisdiction shall comply with the provisions of this code for new buildings or structures. Temporary structures such as reviewing stands and other miscellaneous structures, sheds, canopies or fences used for the protection of the public around and in conjunction with construction work may be erected by special permit from the building official or issuing authority for a limited period of time. Such buildings or structures need not comply with the type of construction or fire-resistive time periods required by this code. Temporary buildings or structures shall be completely removed upon the expiration of the time limit stated in the permit.

16.130(9) *Unsafe buildings*. All buildings or structures which are structurally unsafe or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety, health or public welfare, by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster damage, or abandonment, as specified in this code or any other effective ordinance, are, for the purpose of this section, unsafe buildings. All such unsafe buildings are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition, or removal in accordance with procedures provided by local or state law.

16.130(10) *Unsafe appendages.* Parapet walls, cornices, spires, towers, tanks, statuary and other appendages or structural members which are supported by, attached to, or a part of a building and which are in a deteriorated condition or otherwise unable to sustain the design loads which are specified in this code, are hereby designated unsafe and as such are public nuisances and shall be abated in accordance with the local or state laws governing.

16.130(11) *Tests.* Whenever there is insufficient evidence of compliance with the provisions of this code or that any material or any construction does not conform to the requirements of this code, the commissioner or building official may require tests as proof of compliance to be made at the expense of the owner or a designated agent by an approved testing agency.

Test methods shall be as specified by this code for the material in question. If there are no appropriate test methods specified in this code, the commissioner or building official shall determine the test procedure. Copies of the results of all such tests shall be retained for a period of not less than two years after the acceptance of the structure.

16.130(12) *Permits and inspections.* In those governmental subdivisions that have by ordinance or resolution adopted procedures for issuance of permits and specific or special inspections as per Iowa Code sections 103A.19 and 103A.20. No person, firm, or corporation shall erect, construct, enlarge, alter, repair, move, improve, remove, convert, or demolish any building or structure in the governmental subdivision, or cause the same to be done, without first obtaining a permit for each building or structure, from the building official. (See Division VI for additional permit requirements for factory-built structures, Division VII for Handicapped Accessibility and Division VIII for Energy Conservation.)

16.130(13) *Certificate of occupancy.* The requirements for and the issuance of certificates of occupancy shall be included in the local laws and ordinances and may provide the requirements as outlined in Iowa Code section 103A.19.

16.130(14) *Use or occupancy.* No building or structure of any occupancy classifications as defined by the Uniform Building Code, 1994 edition, shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the building official has issued a certificate of occupancy, if so required by local laws or ordinances.

661—16.131(103A) Plans and specifications review. Architectural technical submissions, engineering documents or plans and specifications for all state-owned buildings and other buildings covered by Iowa Code chapters 103A and 104A shall be submitted to and approved by the commissioner before construction is begun. Such submittals shall be filed by the owner or an authorized agent, agency or the responsible design architect or engineer. Submittals to the commissioner shall be certified or stamped and signed as required by Iowa Code chapters 542B and 544A unless the applicant has certified on the submittal to the applicability of a specific exception under Iowa Code section 544A.18 and the submittal does not constitute the practice of professional engineering as defined by Iowa Code section 542B.2.

EXCEPTIONS:

1. Plans and specifications reviewed by a local building official or other duly authorized person or agency as provided in Iowa Code chapters 103A and 104A shall be exempt from being submitted to the commissioner.

2. Preliminary or intermediate documents may be submitted for informal review or general discussion concerning compliance with the appropriate regulations if the documents are labeled "preliminary," "not for construction" or similar wording indicating that the documents are not being submitted for final approval. Such preliminary documents are not required to exhibit the seal and signature.

16.131(1) *Minimum review requirements.* Plans, specifications and other supporting information shall be sufficiently clear and complete to show in detail that the proposed work will comply with the requirements of this code and shall include the following:

a. Plot plan. Include site size, streets, footages, yards and boundaries, drainage, contours. All proposed and existing buildings.

b. Construction. Foundation, floor, roof and structural drawings. Door, window and finish schedules. Sections, details, connections and material designations. Loads and engineering data calculations signed by a registered engineer or architect may be required.

c. Electrical. Floor and ceiling plans, lighting, receptacles, motors and other equipment. Service entry location, line diagram, and wire, conduit and breaker sizes.

d. Plumbing. Floor plan, fixtures, pipe sizes and other equipment and materials. Isometric with pipe sizes, fixture schedule and sewage disposal.

e. Mechanical. Floor or ceiling plans, equipment, distribution location, size and flow. Locate dampers and safeguards. Indicate all materials.

f. Handicapped accessibility. Details and information showing compliance with Division VII of this code.

g. Energy conservation. Details and information showing compliance with Division VIII of this code and a copy of the statement of review filed with the building code commissioner when required.

h. Fire stopping. Plans for buildings more than two stories in height of other than Group R, Division III and M Occupancies shall indicate how a penetration will be made for electrical, mechanical, plumbing and communication conduits, pipes and similar systems.

i. Soils data. A soils report by a recognized authority shall be filed with plans and specifications.

j. Other. Any additional information may be requested to substantiate that the project is in compliance with this code.

k. Responsibility. Approval by the commissioner or the commissioner's designee of any plan review does not alter the responsibility of the professional certifying such design.

16.131(2) *Fees.* See Division VI, Division VII and Division VIII for fees pertaining to factory-built structures and installation, handicapped accessibility reviews and energy conservation standards.

a. Copies of the state building code administration section will be supplied to any governmental subdivision or state agency free of charge, upon request.

b. Copies of the state building code administration section are available to any person upon request and payment of a $10 printing and handling charge.

c. Charges for other documents or services from the building code bureau will be actual cost including postage and handling, if any.

661—16.132(470) Life cycle cost analysis. Any public agency, as defined by Iowa Code section 470.1(1), shall prepare a life cycle cost analysis for any new construction having 20,000 square feet of usable floor space which is heated or cooled by a mechanical or electrical system or for any renovation where additions or alterations exceed 50 percent of the value of the facility and will affect an energy system.

The life cycle cost analysis shall be prepared in compliance with Iowa Code chapter 470 and be submitted to the state building code commissioner before construction commences.

Those public agencies which are a state agency under Iowa Code section 7D.34 shall, within 60 days of final selection of a design architect or engineer, notify the commissioner and the department of natural resources of the methodology to be used to perform the life cycle cost analysis on the forms provided by the department of natural resources. A life cycle cost analysis prepared by a state agency shall be submitted in sufficient time ahead of releasing of plans for bids to allow for revisions or additions which may be made to the plans.

661—16.133 to **16.139** Reserved.

PART 4

661—16.140(103A) General construction rules and regulations.

16.140(1) *Adoption*. Chapters 2 to 10 and 12 to 35 on standards with all appendices of the Uniform Building Code, 1994 edition, and all standards of the Uniform Building Code standards, 1994 edition, as published by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601-2298, are hereby adopted by reference as the construction rules and regulations Division I, Part 4 of the Iowa state building code, administration section, with the following deletions, revisions and amendments:

a. Chapter 1 of the Uniform Building Code, 1994 edition, is replaced by the administration rules and regulations, Division I, Parts 1, 2 and 3 of this code.

b. Delete the following appendix Chapters: A10, A11, A13, A15, A19, A23, A29, A30, A33, and A34 entirely, and Divisions I and II of appendix Chapter 4 and Division III of appendix Chapter 3 and Divisions II and III of appendix Chapter 16.

c. The last paragraph in Section 3405 shall read as follows:

Amend Chapter 34 by deleting the four paragraphs following the title Section 3401 and deleting Sections 3402, 3403 and 3404 in their entirety and adding the following new subsection to Section 3401:

3401.1 Additions, Alterations, Repairs and Moved Buildings. Application of this code to additions, alterations, repairs, or to the moving of existing buildings shall be as stated in IAC 661—Chapter 16, Division I, Parts 1, 2 and 3 and Section 3405.

3401.2 Glass Replacement. The installation of replacement glass shall be as required for new installations.

3401.3 Smoke Detectors. Refer to IAC 661—Chapter 5, rules 661—5.806(100) to 661—5.809(100) for provisions regulating the installation of smoke detectors in existing one- and two-family dwellings.

d. Delete Section 2904 and insert in lieu thereof the following:

Section 2904. Access to Water Closets. Each water closet shall be located in a clear space not less than 30 inches in width and have a clear space in front of the water closet stool of not less than 24 inches.

Section 2905. Access to Toilet Facilities for the Physically Handicapped.

2905.1 Toilet facilities which are required to be accessible to the physically handicapped shall meet the requirements of subrule 16.705(8).

2905.2 Access to lavatories, mirrors, towel fixtures, water fountains, and telephones. See subrules 16.705(8), 16.705(9), and 16.705(10) for requirements for lavatories, mirrors, towel fixtures, water fountains, and telephones required to be handicapped accessible.

e. Delete the second and third paragraphs of Section 310.4, retaining the exception, and insert in lieu thereof the following:

Access to, and egress from, buildings required to be accessible shall be provided as specified in Division VII of this chapter.

Every sleeping room below the fourth story, and dwelling unit basements which have habitable rooms, shall have at least one operable window or door approved for emergency escape or rescue which shall open directly into a public street, public alley, yard or exit court. The units shall be operable from the inside to provide a full, clear opening without the use of separate tools.

f. Delete the last paragraph in 310.1 and replace with the following:

Buildings containing four or more individual dwelling units and all hotels and motels shall comply with the applicable provisions of Division VII of this chapter.

g. Delete subparagraph (a) of Section 403.1 and insert in lieu thereof the following:

403.1 Scope. This section shall apply to all Group B office buildings and Group R, Division 1 occupancies, located in buildings which are more than four stories or 65 feet in height above the lowest level of fire department vehicle access, or of greater height than the ladder capability of the local fire department from the lowest level of fire department vehicle access. Such buildings shall be provided with an approved automatic sprinkler system in accordance with Section 403.2.1.

h. Amend the first paragraph of Section 403.7 to read as follows:

Section 403.7 Elevators. Elevators and elevator lobbies shall comply with the provisions of Iowa Administrative Code 347—Chapters 71, 72, and 73.

i. Rescinded, effective December 21, 1988.

j. Delete the second paragraph of Section 1605.4 and insert in lieu thereof the following:

Potential accumulation of snow at valleys, parapets, roof structures and offsets in roofs of uneven configuration shall be considered. The minimum value of ground snow load to be used in the determination of design snow loads of buildings and other structures shall be as shown in A-16-2 of Division I of appendix Chapter 16, Volume 2. The ground snow load may be adjusted by the building official when a registered engineer or architect submits data substantiating the adjustments.

k. Add a new Subsection 1609.6 to read as follows:

1609.6 Special construction requirements:

A. Foundation walls. Notwithstanding other design requirements of Chapters 18, 19 and 21, foundation walls for Group R, Division 3, occupancies of Type V construction may be constructed in accordance with the following provisions, provided the application, or building site conditions affecting the walls, are within the limitation specified herein.

1. The maximum height of the foundation wall shall be no more than 7 feet 8 inches measured between the foundation plate and a concrete floor slab having a minimum thickness of 3½ inches. If a floor slab having a thickness of 3½ inches is not provided, a specially designed means of providing lateral support at the bottom of the wall shall be required.

2. The foundation plate shall be attached to the wall as prescribed in Section 1806.6.

3. Material used for backfilling shall be carefully placed granular soil of average or high permeability except the top 2 feet may be an impervious type material and shall be drained with an approved drainage system. The wood and earth separation requirements of Section 2317.8 shall be observed at all times.

4. Where soils containing a high percentage of clay, fine silt or similar material of low permeability or expansive soils are encountered or where backfill materials are not drained or an unusually high surcharge is to be placed adjacent to the wall, a specially designed wall shall be required.

B. Hollow Concrete Masonry Foundation Walls.

1. Hollow concrete masonry units shall be set in Type M or Type S mortar.

2. All footings shall be of cast-in-place concrete having a minimum compressive strength of 2,500 pounds per square inch at 28 days, and shall be reinforced longitudinally with not less than a half-inch steel bar for one-story construction, or two half-inch steel bars for two-story construction. Footing reinforcement shall be symmetrically placed and located so as to ensure no less than 3 inches of concrete cover on all sides.

3. Masonry foundation walls having a nominal thickness of not less than 12 inches may be unreinforced. Other masonry foundation walls shall comply with the following requirements:

(i) The nominal thickness of concrete masonry units shall not be less then 8 inches.

(ii) When a foundation wall has a horizontal clear span of more than 12 feet between supporting cross walls or corners, fully grouted vertical reinforcing shall be provided in the center of the wall in the amount of 0.075 square inches of ASTM A615 grade 40 or better steel, per lineal foot of wall. All reinforcing steel shall be deformed bars spaced no more than 8 feet on center. All grout shall comply with Section 2103.4.1.

C. Cast-in-place plain concrete foundation walls. Cast-in-place walls constructed under the provisions of this subsection shall be concrete having a minimum compressive strength of 28 days of not less than 3,000 pounds per square inch. All materials proportioning and placing shall conform to the requirements of Chapter 19. In addition, the following shall apply:

(i) The minimum thickness of a wall shall be 7½ inches.

(ii) Walls shall be reinforced with no less than three half-inch diameter deformed ASTM A615 grade 40 steel bars placed horizontally at the center of the wall, with one bar located near the top, one bar located near the bottom, and one bar located near mid-height of the wall. Reinforcing bars and methods of placement shall be in accordance with Chapter 19.

l. Rescinded, effective December 21, 1988.

m. Revise Exception 1 of Section 1806.2 to read as follows:

EXCEPTION: 1. A one-story wood or metal frame building not used for human occupancy and not over 720 square feet in floor area may be constructed with walls supported on a wood foundation plate when approved by the building official authority having jurisdiction.

n. Delete Table No. 18-I-D and insert in lieu thereof the following:

Number of Floors Supported By the Foundation[1]	Thickness of Foundation Walls (Inches)		Minimum Width Footing (Inches)	Thickness of Footing (Inches)	Minimum Depth of Foundation Below Natural Surface of Ground or Finish Grade (Whichever is Lower) (Inches)
	Concrete	Unit Masonry			
1	8	8	16	8	42
2	8	8	16	8	42
3	10	12	18	12	42

[1]Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor.

o. Add an unnumbered paragraph to Subsection 904.2.1 to read as follows:

Rules promulgated by the state fire marshal to implement Iowa Code section 100.39 which are in the Iowa Administrative Code 661—5.230(100) which apply to new buildings and to additions to buildings which exceed four stories in height or 65 feet above grade shall apply in addition to the requirements of this chapter.

p. Add a new Section 907 to Chapter 9 of the UBC to read as follows:

Section 907 FIRE EXTINGUISHERS

Section 907.1 The rules of the state fire marshal which have been promulgated under the authority of Iowa Code section 100.35 which require the installation of approved-type fire extinguishers shall apply to buildings which are covered by Iowa Code section 100.35.

NOTE: See Iowa Administrative Code 661—Chapter 5 for the specific occupancies and requirements.

q. Delete Subsection 710.5 and insert in lieu thereof the following:

710.5 Wiring in Plenums—wiring in plenums shall comply with the Uniform Mechanical Code, Section 601.3.

r. Add two unnumbered paragraphs to UBC Section 3001 to read as follows:

Notwithstanding the requirements of this chapter, the rules promulgated by the Iowa division of labor services to implement Iowa Code chapter 104 which are in the Iowa Administrative Code as Chapters 71 through 76 of Labor Services[347] shall also apply.

In addition to these provisions, see Section 403.7 of the UBC for elevator requirements in high rise buildings, and Division VII of this code for elevator requirements for handicapped persons.

s. Add an additional Exception 4 to Section 904.1.2 of Chapter 9 of the UBC to read as follows:

4. Automatic sprinkler systems required by Section 904.2.8 may comply with the requirements of NFPA 13R, 1996 edition, as published by National Fire Protection Association, Batterymarch Park, Quincy, MA 02169.

t. Amend the last sentence of appendix Chapter 12, Section 1207.1, to read as follows:

The mechanically operated ventilating system shall be capable of supplying ventilation air in accordance with Table A-12-A or for determination of ventilation rates based on occupancy and cfm/person, ASHRAE 62-1989, Table 2, Outdoor Air Requirements for Ventilation, may be used with prior approval of the state building code commissioner.

16.140(2) Reserved.

661—16.141 to **16.199** Reserved.

DIVISION II

661—16.200(103A) Electrical rules and regulations—adoption. The National Electrical Code, 1996 edition, NFPA 70-1996, as published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, is hereby adopted by reference as the electrical rules and regulations, Division II.

661—16.201 to **16.299** Reserved.

DIVISION III

661—16.300(103A) Mechanical rules and regulations.

16.300(1) *Adoption*. Chapters 2 to 16 and appendices A, B, C, and D of the Uniform Mechanical Code, 1994 edition, and published by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601-2298, are hereby adopted as the Mechanical Rules and Regulations, Division III of the state building code with amendments as follows:

a. Delete the definition, "Building Code," from Section 204 and replace with the following:

Building Code is the current edition of the Construction Rules and Regulations, Division I, Part 4 of this chapter.

b. Add a new unnumbered paragraph to Subsection 327.6 to read as follows:

Except for being prohibited in Group I occupancies, portable heating appliances as defined in Section 218-P are not regulated by this code. Unregulated appliances with self-contained fuel tanks shall have a capacity of no more than two gallons.

c. Delete 601.1 and replace with the following language:

601.1 Materials. Supply air, return air and outside air for heating, cooling or evaporative cooling systems shall be conducted through duct systems constructed of materials set forth in Tables 6-A, 6-B and 6-C: metal ducts complying with U.M.C. Standard 6-2, or factory made air ducts complying with U.M.C. Standard 6-1. Ducts, plenums and fittings may be constructed of asbestos-cement, concrete, clay or ceramics when installed in the ground or in a concrete slab, provided the joints are tightly sealed.

d. Add an unnumbered paragraph to Section 1002 in appendix B to read as follows:

Notwithstanding the requirements of this code, boilers and pressure vessels covered by Iowa Code chapter 89 shall comply with requirements established by the labor services division of the Iowa department of workforce development (Iowa Administrative Code 347—Chapters 41 to 49).

16.300(2) Reserved.

661—16.301 to **16.399** Reserved.

DIVISION IV
See also Public Health Department[641]—Chapter 25

661—16.400(103A) Plumbing rules and regulations.

16.400(1) *Adoption*. Chapters 2 to 12, Chapter 14, and appendix D of the Uniform Plumbing Code, 1994 edition, as published by the International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, California 91789-2825, are hereby adopted by reference of the Plumbing Rules and Regulations, Division IV, of the Iowa state building code, with the following amendments:

a. Section 202. Delete the definition for "administrative authority" and insert in lieu thereof the following definitions:

"Building storm drain" is a building drain used for conveying rainwater, surface water, groundwater, or other similar discharge exclusive of sewage and industrial waste to a building storm sewer or a combined building sewer.

"Building storm sewer" is a building sewer which conveys the discharge of a building storm drain to a public storm sewer, combined sewer or other point of discharge.

"Storm sewer" is a sewer for conveying rainwater, surface water, condensate, cooling water, or similar liquid wastes, exclusive of sewage and industrial waste.

"Subsoil drain" is a drain which receives only subsurface or seepage water and conveys it to a place of disposal.

b. Sections 701 and 604. Delete Subsections 701.1.4, 701.1.5 and 604.2 and replace as follows:

Section 701.1.4. Copper tubing for underground drainage and vent piping shall have a weight of not less than that of copper drainage tube type L.

Section 701.1.5. Copper tubing for aboveground drainage and vent piping shall have a weight of not less than that of copper drainage tubing type M. EXCEPTION: Type DWV weight may be used in one- and two-family dwellings.

Section 604.2. Copper tube for water piping shall have a weight of not less than type M. EXCEPTION: Underground water piping shall be a weight of not less than type K copper tubing.

c. Section 710.6. Add the following:

When backwater valves are required by Section 710.1, they shall consist of manually operated valves. Approved valves which are automatic in operation as described in this section may also be used but are not required.

d. Add Section 717.0. Add this sentence to the end of the section:

The minimum diameter for a building sewer shall be four inches.

e. Amend Section 701.1 by adding the following sentence after the first sentence in 701.1.2:

No horizontal branch shall exceed 25 feet in developed length.

f. Rescinded IAB 6/4/97, effective 7/15/97.

g. Section 710.1. Add the following exception after 710.1:

EXCEPTION: The requirements of 710.1 shall apply only when it is determined necessary by the administrative authority based on local conditions.

h. Add a new Section 719.7:

Section 719.7. A cleanout shall be provided in each stack.

i. and *j.* Rescinded IAB 6/4/97, effective 7/15/97.

k. Amend Section 903 by adding the following sentence after the first sentence in 903.1.2:

No horizontal branch shall exceed 25 feet in developed length.

l. Section 904.1. Delete the second sentence of the section and the exception and insert in lieu thereof the following:

Each building shall have a vent stack or main vent equal in size or larger than the building sewer. The vent stack or main vent shall extend through the roof undiminished in size and increased in size as required.

EXCEPTION: In single-family dwellings, a three-inch vent stack or main vent is permitted.

m. Section 804.0. Add a new Subsection 804.3 to read as follows:

804.3. In basements of residential construction a standpipe receptor for any clothes washer may discharge directly over a floor drain. A proper air gap shall be provided.

n. Section 807. Delete Subsection 807.4 and insert in lieu thereof the following:

Section 807.4 No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine, or by looping the discharge line of the dishwasher as high as possible near the flood level of the kitchen sink where the waste disposer is connected. Listed air gap fitting shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

o. Section 907.3. A vent stack or a main vent shall be installed with a soil or waste stack whenever back vents, relief vents or other branch vents are required in two or more branch intervals or stories.

p. Table 10-1. Section 1002.2.

Delete Table 10-1 and insert in lieu thereof the following Table 10-1:

TABLE 10-1
Horizontal Distance of Trap Arms
(except for water closets and similar fixtures)*

Trap Arm Size		Distance Trap to Vent	
Inches	Millimeters	Feet	Meters
1¼	31.8	5	1.52
1½	38.1	6	1.83
2	50.8	8	2.44
3	76.2	12	3.66
4 and larger	102 and larger	12	3.66

Slope one-fourth (¼) inch per foot (20.9 mm/m)

* The developed length between the trap of a water closet or similar fixture (measured from the top of the closet ring [closet flange] to the inner edge of the vent) and its vent shall not exceed six (6) feet (1.8m)

q. Section 410.5. Delete the paragraph beginning "Non-metallic shower subpans" and insert in lieu thereof the following:

Shower subpans or linings constructed of asphalt impregnated roofing felt shall not be permitted.

r. Section 603.3. Replace "listed reduced pressure principle backflow preventer" with "stainless steel dual check valve with an atmospheric opening" in Subsection 603.3.12.

s. Section 604.1. Delete the second and third sentences of the section and insert in lieu thereof the following: Asbestos-Cement, CPVC, PB, PE or PVC water pipe manufactured to recognized standards may be used for cold water distribution systems outside a building. CPVC and PB water pipe and tubing manufactured to recognized standards may be used for hot and cold water distribution systems within a building.

Add new sections 604.11 and 604.12:

604.11. Insert fittings and crimp rings for PB pipe and tubing shall comply with the requirements of ASTM F1380-92.

604.12. PB pipe and tubing for underground installations shall comply with the requirements of AWWA C902-88.

Add a note to end of Section 604.1:

NOTE: The use of plastic water supply pipe above grade inside certain licensed care facilities is prohibited by the rules of the Iowa department of inspections and appeals (481—subrules 60.11(4) and 61.11(4), Iowa Administrative Code).

t. Section 908.1. Delete "vertical" in the first sentence of the section.

u. to *x.* Rescinded IAB 6/4/97, effective 7/15/97.

y. Appendices. The appendices in this code are not approved as rules except as provided in subrule 16.400(1), introductory paragraph, although those other than E (mobile home parks) and I (private sewage disposal systems) may be used as a point of reference when circumstances warrant. The Iowa Administrative Code (IAC) 641—Chapter 15 provides the requirements for swimming pools and spas, and IAC 567—Chapters 49 and 69 provide the requirements for private water well and sewage disposal systems.

z. Amend Section 906.7 as follows:

Sec. 906.7. Change "two (2) inches (50.8 mm)" to "three (3) inches (76.2 mm)."

16.400(2) *Backflow prevention.* The Iowa department of public health has authority for this section of the code under IAC 641—25.6(135), Backflow prevention with containment. Cities of 15,000 population or greater as determined by the 1990 census or any subsequent special census shall enact a backflow prevention program with containment by January 1, 1996. The minimum requirements for a program are given in 641—subrules 25.6(1) to 25.6(5). These requirements are in addition to the applicable requirements of Subsection 603 of the Uniform Plumbing Code, 1994 edition.

a. Definitions. The following definitions are added to those in Section 2020 and Section 603.1.6 of the Uniform Plumbing Code, 1994 edition, or are modified from those definitions for the purpose of rule 641—25.6(135) only.

(1) Administrative authority. The administrative authority for this rule is the city council and its designees.

(2) Approved backflow prevention assembly for containment. A backflow prevention assembly which is listed by the University of Southern California-Foundation for Cross Connection Control and Hydraulic Research as having met the requirements of ANSI-AWWA Standard C510-92, "Double Check Valve Backflow-Prevention Assemblies," or ANSI-AWWA Standard C511-92, "Reduced-Pressure Principle Backflow-Prevention Assemblies," for containment. The listing includes the limitations of use based on the degree of hazard. The backflow prevention assembly must also be listed by the International Association of Plumbing and Mechanical Officials.

(3) Approved backflow prevention assembly for containment in a fire protection system. A backflow prevention assembly to be used in a fire protection system which meets the requirements of Factory Mutual Research Corporation (FM) and Underwriters Laboratory (UL) in addition to the requirements of 641—subrule 25.6(1), paragraph *"a."*

(4) Containment. Containment is a method of backflow prevention which requires a backflow prevention assembly on certain water services. Containment requires that the backflow prevention assembly be installed on the water service as close to the public water supply main as is practical.

(5) Customer. The owner, operator or occupant of a building or property which has a water service from a public water system, or the owner or operator of a private water system which has a water service from a public water system.

(6) Degree of hazard. The rating of a cross connection or a water service which indicates if it has the potential to cause contamination (high hazard) or pollution (low hazard).

(7) Water service. Depending on the context, water service is the physical connection between a public water system and customer's building, property or private water system, or the act of providing potable water to a customer.

b. Proposed water service.

(1) No person shall install, or cause to have installed, a water service to a building, property or private water system if it is found that contamination or pollution of the public water supply could occur unless the water service is protected by an approved backflow prevention assembly for containment.

(2) The administrative authority shall require the submission of plans, specifications and other information deemed necessary for a building, property or private water system to which a water service is proposed. The administrative authority shall review the information submitted to determine if cross connections will exist and the degree of hazard.

(3) The owner of a building, property or private water system shall install, or cause to have installed, an approved backflow prevention assembly for containment as directed by the administrative authority before water service is initiated.

(4) Reconstruction of an existing water service shall be treated as a proposed water service for purposes of rule 641—25.6(135).

c. Existing water service.

(1) The administrative authority shall publish the standards which it uses to determine the degree of hazard for a water service. These shall be consistent with standards published by the Iowa department of public health.

(2) Each customer shall survey the activities and process which receive water from the water service and shall report to the administrative authority if cross connections exist and the degree of hazard.

(3) The administrative authority may inspect the plumbing of any building, property and private water system which has a water service to determine if cross connections exist and the degree of hazard.

(4) If, based on information provided through 641—subrule 25.6(3), paragraphs *"b"* and *"c,"* the administrative authority determines that a water service may contaminate the public water supply, the administrative authority shall require that the customer install the appropriate backflow prevention assembly for containment.

(5) If a customer refuses to install a backflow prevention assembly for containment when it is required by the administrative authority, the administrative authority may order that water service to the customer be discontinued until an appropriate backflow prevention assembly is installed.

d. Backflow prevention assemblies for containment.

(1) Backflow prevention assemblies for containment shall be installed immediately following the water meter or as close to that location as deemed practical by the administrative authority.

(2) A water service determined to present a high hazard shall be protected by an air gap or an approved reduced pressure principle backflow prevention assembly.

(3) A water service determined to present a low hazard shall be protected by an approved double check valve assembly or as in 641—subrule 25.6(5), paragraph *"b."*

(4) A water service to a fire protection system shall be protected from backflow in accordance with the recommendations of American Water Works Association Manual M14. Where backflow prevention is required for a fire protection system, an approved backflow prevention assembly for containment in a fire protection system shall be used.

e. Backflow incidents.

(1) The customer shall immediately notify the agency providing water service when the customer becomes aware that backflow has occurred in the building, property or private water system receiving water service.

(2) The administrative authority may order that a water service be temporarily shut off when a backflow occurs in a customer's building, property or water system.

661—16.401(104B) Minimum toilet facility standard. The following table shall be used to determine the minimum number of plumbing fixtures which shall be installed for public use in places of assembly, restaurants, pubs and lounges constructed after March 1, 1997. Additions to or adding seating capacity in these types of occupancies shall require the installation of additional fixtures based upon the added number of occupants unless it can be shown that the present facilities comply for the total number of occupants including the additional occupants.

All water closets installed pursuant to this rule shall be water-efficient water closets complying with requirements of the U.S. Department of Energy.

MINIMUM PLUMBING FIXTURES

Type of Building or Occupancy	Water Closets (Fixtures per occupants)		Urinals** (Fixtures per occupants)	Lavatories (Fixtures per occupants)	
Places of Assembly for Public Use, including but not limited to Theaters, Auditoriums, and Convention Halls	Male 1:1-100 2:101-200 3:201-400 Over 400, add one fixture for each additional 500 males and one for each additional 125 females	Female 3:1-50 4:51-100 8:101-200 11:201-400	1:1-100 2:101-200 3:201-400 4:401-600 Over 600, add one fixture for each additional 300 males	Male 1:1-200 2:201-400 3:401-750 Over 750, add one fixture for each additional 500 persons	Female 1:1-200 2:201-400 3:401-750
Restaurants, Pubs and Lounges*	Male 1:1-50 2:51-150 3:151-300 Over 300, add one fixture for each additional 200 persons	Female 1:1-50 2:51-150 4:151-300	1:1-150 Over 150, add one fixture for each additional 150 males	Male 1:1-150 2:151-200 3:201-400 Over 400, add one fixture each additional 400 persons	Female 1:1-150 2:151-200 3:201-400
Worship Places Principal Assembly Area	Male 1 per 150	Female 1 per 75	1 per 150	1 per 2 water closets	

*Restrooms in restaurants which have occupancies of 50 or less comply with these requirements if they have one water closet and one lavatory.

**Urinal requirements apply only to male-only restrooms.

1. The division of occupancy is to be based upon one half being male and one half being female. The number of occupants shall be determined by use and the occupancy class of the state building code or the local building code which is in effect.
2. The number of fixtures may be graduated within the group. Example: 8:101-200
   4 fixtures are required for 100 persons.
   5 fixtures are required for 101-125 persons.
   6 fixtures are required for 126-150 persons.
   7 fixtures are required for 151-175 persons.
   8 fixtures are required for 176-200 persons.
3. Accessibility for the physically disabled shall be provided as required by Division VII of the state building code.
4. Building categories not shown on this table shall be considered separately by the state building code commissioner.

This rule is intended to implement Iowa Code section 104B.1.

661—16.402(103A) Fuel gas piping.

16.402(1) Fuel gas piping shall comply with 661—Chapter 5, Iowa Administrative Code.

16.402(2) Reserved.

661—16.403 to **16.499** Reserved.

DIVISION V

661—16.500(103A) One- and two-family dwelling rules and regulations.

16.500(1) *Adoption*. The One and Two Family Dwelling Code, Parts II to VIII, Appendices A and B, 1992 edition, published by the Council of American Building Officials, 5203 Leesburg Pike, Falls Church, Virginia 22041, is adopted as an optional alternate for one- and two-family dwellings, with the following deletions and amendments:

a. Delete Sections R-102 to R-117 of Chapter 1 and refer to Parts 1, 2 and 3 of Division I of this code for Legislative, Administrative and Scope provisions.

b. Delete Table No. R-201.2, including the footnotes and insert in lieu thereof the following:

TABLE NO. R-201.2

Roof Snow[1] Load lbs. per sq. ft.	Wind[3] Pressure in lbs. per sq. ft.	Seismic Conditions by Zone	Frost[2] Line Depth ft.	Subject to Damage from		
				Weathering	Termite	Decay
30	25 less than 30 ft. high 30 to 49 ft. high 40-50 to 99 ft. high	0	3.5	Based on local conditions	Based on local conditions	Based on local conditions

1. This is a minimum load and shall be increased where drifting may occur. Snow loads in excess of 20 pounds per square foot may be reduced as in UBC 1605.4.

2. Increase if local conditions have indicated deeper frost penetration in the past.

3. The wind pressure shall be considered as acting upon the gross area of the vertical projection of that portion of the building or structure measured above the average level of the adjoining ground. The wind design procedures as outlined in Section 1613, Volume 2, Division II of the UBC may be used in lieu of these loads.

c. Revise the first sentence of Section R-210.2 to read as follows:

Basements which have habitable rooms and every sleeping room below the fourth story shall have at least one operable window or exterior door approved for emergency egress or rescue.

d. Add a note to Table No. R-304.3b on page 32 to read as follows:

NOTE: The provisions of amendment "*k*" of subrule 16.140(1) of Part 4 of Division I of this code may be used as an acceptable method of reinforcement for masonry and concrete foundations.

e. Add an unnumbered paragraph to Section P-2203.3.4 to read as follows:

Lead solders and flux containing more than 0.2 percent lead shall not be used for any water piping connections.

f. Add an unnumbered paragraph to Section P-2202.1 to read as follows:

The requirements for backwater valves shall be as determined by the local officials. However, when backwater valves are required they shall consist of manually operated valves. In addition, approved automatic operating valves may be added but are not required.

g. Section P-2206.11 Use of Copper Tubing. Notwithstanding the requirements for the use of copper tubing in this chapter the following applies:

(i) Copper tubing for underground drainage and vent piping shall have a weight of not less than that of copper drainage tube type L.

(ii) Copper tubing for water piping shall have a weight of not less than type M, except underground water piping shall be a weight of not less than type K.

h. Add an unnumbered paragraph to Section P-2403.1 to read as follows:

Plastic pipe and fittings used for hot water distribution shall be manufactured and tested to recognized standards specifying a tolerance to temperatures of 210° F at a pressure of 150 pounds per square inch, and so marked by an approved testing agency. Plastic pipe and fittings meeting lower temperature and pressure rating used for cold water distribution piping shall be separated from any source of hot water by an approved thermal break.

i. Delete Part VI (page 270) and insert in lieu thereof the following:

PART VI — Electrical

The electrical requirements shall conform to the provisions of the National Electrical Code 1996 edition (National Fire Protection Association 70-1996) adopted by rule 661—16.200(103A) which apply to one- and two-family dwellings.

j. Delete the requirements of Part VII (page 270) and insert in lieu thereof the following:

The energy conservation requirements shall conform to the provisions of Division VIII rule 661—16.800(103A) of this code which apply to one- and two-family dwellings.

ENERGY CONSERVATION

The energy conservation requirements shall conform to 661—16.800(103A) of the Iowa state building code, Division VIII, thermal and lighting efficiency standards.

16.500(2) *Application.* The use of the one- and two-family dwelling code as an alternate method of construction for one- and two-family dwellings by a governmental subdivision (See 661—16.120(103A)) or a manufacturer for use in the construction of factory-built structures under the requirements of Division VI of this code (See 661—16.600(103A)) voids all provisions of Division I, Part 4, Division III and Division IV which apply to one- and two-family dwellings.

661—16.501 to **16.599** Reserved.

DIVISION VI
PART 1

661—16.600(103A) Factory-built structures rules and regulations.

661—16.601 to **16.609** Reserved.

661—16.610(103A) "Modular factory-built structures." Division VI, Part 1, contains the rules and regulations which are to apply to all factory-built structures which are not specifically included in Part 2 of this division.

16.610(1) *Authority to promulgate rules.* Provisions contained within all sections of Part 1 are authorized under Iowa Code section 103A.9.

16.610(2) *Scope and applicability.* The provisions contained within Part 1 shall apply to the following:

a. Plan evaluation, manufacture, inspection, and installation of "modular factory-built structures," of closed-type construction and of open-type construction for those manufacturers who have by option chosen to have their building component, assembly or system considered to be closed construction.

b. Approval by the commissioner or the commissioner's designated representative of an organization or person referred to as a third-party agent, or independent inspection agency.

c. All "modular factory-built structures" manufactured for installation in Iowa after February 1, 1973.

d. Every modular factory-built structure, building, building system, component, assembly or system manufactured for installation in Iowa on or after February 1, 1973, shall bear a seal issued by the commissioner which certifies that the unit complies with the code and that the certificates and approvals required by these rules have been submitted or obtained.

e. Every modular factory-built structure, building, building system, component, assembly, or system which was manufactured before February 1, 1973, and which is being installed in Iowa for the first time shall have a seal attached attesting that it complies with the code and that the certificates and approvals have been submitted to the commissioner.

f. Modular factory-built structures moved or relocated after the first installation in Iowa shall comply with the applicable codes and zoning restrictions of the jurisdiction into which it is being moved or relocated.

16.610(3) *Definitions*. Definitions in Division I of this code also apply to Division VI. These definitions also apply to all parts of Division 6. This subrule covers terms and definitions that are defined for purposes of clarification when used in Division VI.

"Building." A combination of materials, whether portable or fixed, to form a structure affording facilities or shelter for persons, animals or property. The word "building" includes any part of a building unless the context clearly requires a different meaning.

"Building component." Any part, subsystem, subassembly, or other system designed for use in, or as part of, a structure, including but not limited to: structural, electrical, mechanical, fire protection, or plumbing systems, and including such variations thereof as are specifically permitted by regulation, and which variations are submitted as part of the building system or amendment thereof.

"Certificate of compliance." A certification which is filed with the commissioner which indicates that the third-party agency has approved specific models or model groups of factory-built structures as meeting the state building code. (See 16.610(14)*"d"* and 16.610(17).)

"Closed construction." Is any structure, building, component, assembly or system manufactured in such a manner that all portions cannot be readily inspected at the installation site without disassembly, damage to, or destruction thereof.

"Code compliance certificate." Is the certificate prepared by an approved manufacturer and submitted by the manufacturer for each unit which is to be installed in Iowa and includes an Installation Certificate. (See subrules 16.610(19) and 16.610(20).)

"Component." Any part, material or appliance which is built in as an integral part of the factory-built structure during the manufacturing process, or any factory-built system, subsystem or assembly not approved as part of a unit, section, or module.

"Evaluation or inspection agency." Is an approved person or organization, private or public, determined by the commissioner to be qualified by reason of facilities, personnel, experience and demonstrated reliability and independence of judgment, to investigate, evaluate and approve factory-built structures or buildings, building components, building systems, and compliance assurance programs.

"Factory-built structure." Is any structure, building, component, assembly or system which is of closed construction and which is made or assembled in manufacturing facilities, on or off the building site, for installation or assembly and installation, on the building site. Factory-built structures may also mean, at the option of the manufacturer, any structure or building of open construction, made or assembled in manufacturing facilities away from the building site, for installation, or assembly and installation, on the building site. Factory-built structure also means "factory-built unit."

"Independence of judgment." Means not being affiliated with or influenced by or controlled by building manufacturers or producers, suppliers, or vendors of products or equipment used in factory-built structures or buildings and building components in any manner which is likely to affect their capacity to tender reports and findings objectively and without bias.

"Manufacturer's bill of sale" means any document, certificate, sales receipt, etc., signed by the manufacturer or importer that the modular factory-built structure described has been transferred to the person or dealer named. The document shall have attached a copy of the 3A section of the Code Compliance Certificate or shall contain at least the make, model year, manufacturer's serial number, Iowa model approval number and the code compliance seal number of the unit.

"Model or model groups." One or more manufacturer-designed modular homes which can constitute one model group.

"Modular." A general term to describe all factory-built structures which are not manufactured homes, manufactured home add-on units, or temporary field construction offices, as defined in Part 2, at 661—16.620(103A). Modular includes, but is not limited to, panelized units, components, sections and modules.

"Module." A unit or a section which is assembled in its final form and transported in such a manner.

"Open construction." Is any structure, building, component, assembly or system manufactured in such a manner that all portions can be readily inspected at the installation site without disassembly, damage to, or destruction thereof.

"Seal" or *"insignia."* A device or insignia issued to the manufacturer by the commissioner for affixing to a factory-built structure or system evidencing compliance with the code.

"Section." A division of a factory-built structure that must be combined with other sections to form a complete structure.

"Structure." That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner except transmission or distribution equipment of public utilities. The word "structure" includes any part of a structure unless the context clearly requires a different meaning.

"Testing agency." An organization approved by the commissioner which:

1. Is qualified and equipped for the testing, observation, evaluation, or approval of building components, construction, materials, equipment, or systems as regulated by approved standards;
2. Is not under the jurisdiction, affiliation, influence, or control of any manufacturer or supplier of any industry;
3. Makes available a published report in which specific information is included certifying that the equipment and installations listed or labeled have been tested and found acceptable according to approved standards.

"Third-party agency." Is an approved person or organization, private or public, determined by the state building code commissioner to be qualified to act as an evaluation, inspection, testing, or listing agency, as defined in this section.

"Unit." A single factory-built structure approved by the state building code commissioner. Units may be combined to form a larger complex structure or may be a combination of sections.

16.610(4) *Administration.* This section covers the basic requirements for constructing modular structures and all of the administrative procedures under which the modular program functions including methods of certification approval and manufacturing requirements, inspection and installation.

16.610(5) *Modular construction requirements.* All factory-built structures not designated as a manufactured home, manufactured home add-on or a temporary field construction office shall be constructed to the requirements in Division I, Part 4, Division II, Division III, Division IV, or the alternate method of construction as provided for in Division V, Division VII whenever applicable and Division VIII of the state building code.

16.610(6) *Modular installation requirements.* All factory-built structures designated as modular units shall be installed according to the manufacturer's approved installation drawings and any additional state-approved requirements. All approvals shall be part of the third-party certification agency approval for their respective manufacturer. In addition, all installations shall comply with local building codes for items not included as part of the state approval and local zoning requirements whenever applicable.

Modular installers shall obtain approval as required by rule 661—16.622(103A).

Modular installation seals shall be obtained and attached upon completion and the installation certificate shall be completed and filed as per subrule 16.610(20).

16.610(7) *Procedures for approval.* The method of third-party certification and approval shall be used. The manufacturer shall contract with third-party agencies for third-party approvals and notify the building code commissioner of the intent to manufacture units to be installed in Iowa and the name of the third party or parties to be used.

The third-party agency (or agencies) shall also notify the commissioner that they have entered into a contract to perform services with the manufacturer.

Third-party approvals are required for plan and design approval, plant facilities approval and a continuing inspection of units during manufacture.

The manufacturers shall submit plans to the third-party agency or agencies for review and approval. After the plans, the plant facilities, and an inspection procedure have been approved by the third-party agency or agencies the manufacturer shall submit a compliance certificate on the form supplied by the commissioner for each model or model group. The commissioner will assign an Iowa approval number for those models included in the approval.

At the time of production of units for installation in Iowa the manufacturer shall obtain from the commissioner Iowa insignia seals for manufacture and installation, to be attached to the units at the time of manufacture and installation, as well as code compliance and installation certificates.

16.610(8) *Requirements and procedures for obtaining third-party agency approval.*

a. The commissioner or the commissioner's designated representative shall be responsible for approving any person, state or organization who submits an application to the commissioner for approval and whose application is accompanied by written material evidencing that said agency is:

1. Capable of discharging without bias the responsibilities assigned by these regulations.
2. Not under the jurisdiction or control of any manufacturer or supplier of any industry.
3. Professionally competent with independence of judgment to perform the function for which commissioned.
4. Qualified to submit all findings regarding code compliance in a detailed report to the commissioner.
5. Willing to be inspected and reviewed by the commissioner for all phases of work.

b. The commissioner, in considering the information supplied with the application for approval, may limit the agencies' approval to particular types of factory-built structures, buildings, building systems, components, assemblies or systems.

c. Other states wishing to exercise application with this state in order to act in the capacity of an approved third-party agency, may do so provided that:

1. The state laws for issuing seals or insignia for code compliance are equally effective as those specified in this code.
2. The conditions in "1" are enforced in their state.
3. Other states agree to monitoring of this reciprocal agreement by representatives of this state assigned by the commissioner.
4. Violations of any condition as part of the reciprocal agreement may be deemed just cause for revocation or suspension of this agreement by the commissioner.

16.610(9) *Third-party agency responsibilities.*

a. Evidence of approval by the state must be on file at each manufacturing facility.

b. Notify the commissioner when they have contracted with a manufacturer to serve as their third-party agency.

c. Manufacturer plans and specifications must be approved by the third-party agency.

d. File of all plans and documents must be maintained at each manufacturing facility and in the third-party agency office.

e. Send a report to the commissioner stating that the plans and specifications are in compliance with the Iowa state building code.

1. Plans and specifications are not necessary for submittal with this report.
2. A list of approved models for each manufacturing facility.
3. Verify that all engineering documents have been signed by a registered engineer or architect.
4. Update the report as necessary.
5. Indicate approval of installation procedures for all of these structures as well as the personnel who will be doing the installation. However, installation of factory-built structures shall be, in addition to provisions of this code, in accordance with any local ordinances which apply. (That is, those construction processes which are not included as part of the state approval.)

f. Notify the manufacturer of plans and specifications approval including model numbers for use in preparing certificates of compliance.

g. Inspect manufacturing facilities and review or establish a quality control program and test procedure.

h. Notify the manufacturer of facilities approval for use in preparing certificates of compliance.

i. Prepare an inspection manual to be used by the third-party inspectors and the commissioner. This manual shall be on file at each manufacturing facility.

j. Report to the state outlining in-plant procedures and include a typical inspection checkoff sheet.

k. Notify the manufacturer when in-plant inspection program is in force for use in preparing certificates of compliance.

l. Report each quarter to the state for each manufacturer and submit information as follows:

1. Account for all Iowa seals used by each manufacturer during the quarter.
2. Manufacturer's serial number and model number.
3. Third-party seal number.
4. Iowa seal number.
5. The portion of the unit which was actually inspected during an in-plant inspection.

16.610(10) *Third-party agency documentation and plan verification.* The third-party agency will be responsible for the investigation, evaluation, review of test results, of plans and documents, and each revision thereto submitted to the agency by the manufacturer with which it has a contract for compliance with applicable requirements set forth in this code. Such a review shall include but not be limited to:

a. All documentations and plans shall indicate the manufacturer's name, office address, and manufacturing facility address.

b. Manufacturer's plans shall show all elements relating to specific systems on drawings properly identifiable.

c. Each plan which contains material requiring engineering evaluation shall bear the signature and seal of a registered architect or engineer.

d. The plans shall also indicate the method of evaluation and inspection for all required on-site testing of each system.

e. Plans shall designate all work to be performed on site, including all system connections, equipment and appliances and all work performed within the plant.

f. Space shall be provided on all sheets of plans near the title box for the approved stamp.

g. Individual system design or any structural design or method of construction and data shall be in accordance with the Iowa state building code. Plumbing, electrical, heating and mechanical systems constitute individual system designs.

h. Grade, quality, and identification of all materials shall be specified.

i. Design calculations and test reports shall be submitted when specified or required.

j. Plans shall be drawn to scale.

k. Plans shall indicate the location of the approved seal and data plate locations.

l. Copies of approved plans showing third-party agency approval shall be on file at each manufacturing facility or made readily available.

m. Review and approval of all installation procedures must conform to the following:

1. Crews performing installation which are under the jurisdiction of the unit manufacturer or the manufacturer's designee, are approved as competent by the authorized third-party agency.

2. Copies of the installation manual must be available during installation for use by the commissioner or the commissioner's representative or by the local building official.

16.610(11) *Third-party agency plant investigation for quality control*. All manufacturing facilities shall be inspected to the performance objectives as stated in the Iowa state building code. These include as follows:

a. Review of the manufacturer's quality control manuals or establishing a quality control procedure to ensure code compliance.

b. Implementation of inspection and test procedures which will control the quality of fabrication and workmanship.

c. Making a complete report to the commissioner that includes certification of all manufacturing procedures.

16.610(12) *Third-party agency in-plant inspections*. To ensure compliance with the approved specifications and plans and the Iowa state building code and in conjunction with monitoring each manufacturer's quality control program, every approved third-party agency shall:

a. Maintain a record of inspections and such records shall be reported to the commissioner every quarter and include the seal report.

b. Witness and verify all required testing in accordance with the quality control manual.

c. Certify that all seals are being attached as required and only after each unit meets the code requirements.

d. Prepare a detailed inspection manual that specifies the third-party agency procedures in making the required inspections and have this manual available for use by the commissioner or the commissioner's representative when periodic monitoring is performed.

e. One hundred percent inspection is not required, however some part of every unit is required to be inspected. A complete inspection of a typical structural, plumbing, heating and electrical system shall be made each visit to the manufacturing facility.

16.610(13) *Reapproval of third-party agencies*. Any agency approved by the commissioner or the commissioner's designated representative must file for reapproval annually. Such application for reapproval may be filed at any time from the forty-fifth day prior to the scheduled annual expiration date of the current approval. The applying third-party agency seeking reapproval shall completely and accurately furnish all pertinent information as is necessary to make current the information previously submitted to the commissioner or the commissioner's representative as part of its original application for approval and all subsequent applications for reapproval. The application for reapproval shall then become a permanent record of the department administering the provisions of the code. Should there be no change in the status of the applying agency from its original application for approval, an affidavit to that effect shall suffice for consideration of approval.

16.610(14) *Requirements and procedures for modular manufacturers*.

a. Every manufacturer shall be responsible for all corrective actions required and the contractual agreement that each has with the approved third-party agency shall not diminish this responsibility.

b. Every manufacturer shall notify the building code commissioner that the manufacturer's facility desires to construct units which are to be installed in the state of Iowa.

c. Every manufacturer shall contract with an approved third-party agency to perform all duties listed in 5.610(9), 5.610(10), 5.610(11), and 5.610(12). The commissioner will furnish a list of approved third-party agencies upon request.

d. Every manufacturer shall file certificates of compliance with the commissioner for each model or model group, after all third-party reviews are completed. Whenever additional models or changes are proposed, the manufacturer shall file additional certificates of compliance or request that additions be made to existing model lists.

e. Every manufacturer shall notify the commissioner in writing within 60 days after the effective date of this code, the current Iowa approval(s) number that the manufacturer has been assigned and the models which will be manufactured to these standards. Approvals which have not been reaffirmed within this 60-day period shall be considered to be canceled.

f. Every manufacturer shall purchase Iowa seals from the office of the commissioner in accordance with requirements of 5.610(22).

g. All units or sections shall have seals if manufactured after February 1, 1973, and if they are to be installed in Iowa. Regardless of manufactured date, all units being installed in Iowa for the first time shall have a seal attached.

h. Every manufacturer shall complete and furnish compliance certificates and installation certificates in accordance with the requirements of 16.610(19) and 16.610(20).

16.610(15) *Manufacturer's data plate for modular units*. The following information shall be placed directly or by reference on one or more permanent manufacturer's data plates in the vicinity of the electrical distribution panel box or in some other designated location that is readily accessible for inspection.

a. Manufacturer's name and address.

b. Serial number of the structure or unit.

c. Model designation and name of each of the manufacturers of major factory-installed appliances.

d. Wherever applicable, identification of permissible type of gas for appliance and direction for water and drain connections.

e. Name and date of the standards complied with in construction of this structure or unit.

f. The seal serial number.

g. Design loads and special conditions or limitations.

h. Date of manufacture.

i. Electrical ratings. Instructions and warnings on voltage, phase size and connections of units and grounding requirements.

16.610(16) *Changes and alterations to factory-built structures.*

a. Changes to approved plans, drawings or installation instructions proposed by the manufacturer or third-party agency are to be requested in writing and submitted to the building code commissioner. All work being performed in the manufacturing plant that is affected by these changes will not proceed until written approval is received from the commissioner. Where these changes do not affect code compliance, then approval is permitted when changes are authorized through the third-party agency and said changes are then incorporated into the design documents.

b. The commissioner shall notify the manufacturer and the third-party agency of all amendments, deletions or additions to the code provisions and the commissioner shall allow the manufacturer a reasonable time frame in which to submit a request for a change in plan approval, if required, in order to conform to the code change.

c. Basic changes in manufacturing facility locations, company name or address changes, and changes resulting in companies changing ownership or dissolving their business are all to be reported promptly to the commissioner, in writing, generally within a two-week period after said change was made. The manufacturer shall also notify the third-party agency of said changes.

d. Alterations to factory-built structures pursuant to the construction, plumbing, heat producing, electrical equipment or installation or fire safety in a unit after an Iowa seal has been affixed are all considered to be subject to the same requirements that exist for any structure within the local jurisdiction.

e. The following shall not constitute an alteration to a factory-built structure.

(1) Any repairs to approved component parts.

(2) Conversion of listed fuel-burning appliances in accordance with the terms of their listing.

(3) Adjustment and maintenance of equipment installed in the factory-built structure.

(4) Replacement of equipment in kind.

16.610(17) *Certificate of compliance.* The manufacturer shall provide the building code commissioner with a certificate of compliance for each model or model group of the approved modular design. This certification shall be on a copy of Form ISBC-3 and shall include the following:

a. Model or model group number which will appear on the data plate and compliance certificate.

b. The signature of an authorized representative of the manufacturer.

c. The name of the third-party agency certifying compliance with the code, for each of the three certifications.

d. Evidence of code compliance certified by the third-party agencies, for the specific model or model group being submitted.

e. The type of Iowa seal and prefix letters which will be attached to the modular structure.

16.610(18) *Limitations.* For all types of structures other than one- and two-family dwellings, there shall be, with the certificate of compliance, an attached statement which sets out the limitations of the structure based on site conditions, type of construction, area, and height limitations. A statement to the effect that the structure should not be used except where it meets these conditions will not be acceptable.

16.610(19) *Code compliance certificates.* Each manufacturer will be provided with a combination code compliance and installation certificate by the building code commissioner when seals are purchased as per subrule 16.610(22). The manufacturer shall complete this form and distribute it as follows:

a. Copy 1A is returned to:

State Building Code Bureau
Department of Public Safety
Wallace State Office Building
Des Moines, Iowa 50319

b. Copy 2A is retained for plant records and to be used to make additional copies if necessary. An additional copy shall accompany other shipping documents carried by the transporter and be available for inspection by any authorized official or department.

c. The remainder of the compliance certificate is forwarded to the dealer, distributor, or any other person who is to obtain a local building permit, or oversee installation.

16.610(20) *Installation certificates*. The installation certificate portion of the supplied combination certificate (see 16.610(19)) shall be partially completed by the manufacturer at the same time the code compliance certificate is prepared and made part of the documents shipped with the unit and completed by the local building official or the installer.

a. When a building permit is required, Forms 1B, 3A, and 3B are presented to the local building official at the time application is made for a permit. The building official shall sign Forms 1B and 3B and forward Form 1B to the commissioner at the address designated in this section.

b. When a building permit is not required, Forms 1B and 3B are signed by the installer and forwarded to the commissioner at the address designated in this section.

16.610(21) *Certification seals*. There shall be two seals attached to every factory-built structure which is installed in Iowa.

a. Every module, unit, section, or component shall have a state seal securely affixed at the manufacturing facility to show that the manufactured unit is in compliance with the code. When components and systems are included within a module, section or unit and have been approved by the third-party agency to be part of that module, section or unit, only one seal is required for the module, section, or unit. A series of panels which make up the final unit when assembled at the site, and where approved in that manner, require only one seal.

b. Every completed unit when installed at the final site shall have an installation seal attached to show that the installation is in compliance with the requirements of this code.

16.610(22) *Seal issuance.* The state seal shall be issued by the state building code commissioner upon application and after approval of the plans and manufacturing procedures have been certified by the third-party agency evidencing compliance with this code. Applications for seals shall be made to the commissioner on the supplied form and include the following:

a. Number of seals requested for each type of seal and the letter prefix when required.

b. Iowa model or system approval numbers and third-party agency or agencies included.

c. Reference to manufacturing procedures approval and third-party agency or agencies involved.

d. A statement by the applicant that consent is given for inspection and investigation by the state at all reasonable hours.

e. The seal fees.

16.610(23) *Seal types and prefixes.* When ordering seals the manufacturer shall indicate the number of each type of seal requested and the letter prefixes required. MOD type seals shall be attached to all modular units which are as constructed to provisions of Division VI, subrule 16.610(5). Prefix letters (A, B, C, D, etc.) shall be required on seals for all multiple-sectioned structures and the seal numbers shall be identical except for the prefix letters. Prefix letters are not required for single-unit structures.

16.610(24) *Seal placement on modular units.* Every seal shall be assigned and securely affixed to a specific section or unit. Assigned seals are not transferable and are void when not affixed as assigned and all such seals shall be returned to or may be confiscated by the commissioner. The seal shall remain the property of the commissioner in the event of violation of the conditions of approval. Every seal shall be placed and affixed to each section or unit in a readily visible location.

16.610(25) *Denial and repossession of seals.* Should investigation or inspection reveal that a manufacturer is not constructing modular units in accordance with the plans approved by the third-party agency, and such manufacturer, after having been served with a notice setting forth in what respect the provisions of these rules and the code have been violated, continues to manufacture units in violation of these rules and the code, applications for new seals shall be denied and the seals previously issued shall be confiscated. Upon satisfactory proof of compliance such manufacturer may resubmit an application for seals.

16.610(26) *Seal removal.* In the event that any unit bearing the seal is found to be in violation of the code, the commissioner may remove the seal (after furnishing the owner or the owner's agent with a written statement of such violations). No new seals shall be issued until proof of corrections has been submitted to the commissioner.

16.610(27) *Lost or damaged seals.* When or if a seal has been lost or damaged, the commissioner shall be notified immediately in writing by the manufacturer. The manufacturer shall identify the unit serial number, and when possible, the seal number.

a. All seals that are damaged shall be promptly returned to the commissioner.

b. Lost and damaged seals shall be replaced by the commissioner with a new seal upon payment of the seal fee as provided in this section.

16.610(28) *Return of seals.* When a manufacturer discontinues production of a unit carrying plan approval, the manufacturer shall within ten days advise the commissioner of the date of such discontinuance and either return all seals allocated for such discontinued unit or assign said seals to other approved units.

16.610(29) *Fees.*

a. *Form of remittance.* All remittances shall be:

1. In the form of checks or money orders.
2. Payable to: Treasurer, State of Iowa.
3. Addressed to:

State Building Code Bureau
Department of Public Safety
Wallace State Office Building
Des Moines, Iowa 50319

b. *Seal fees.*

1. Modular code compliance seals	
No prefix or "A" prefix	$30.00 per seal
B,C,D,E, etc. prefixes	$10.00 per seal
Replacements	$10.00 per seal
2. Modular installation seals	$15.00 per seal
Replacement seals	$ 7.50 per seal

c. *Other fees.* For all other services furnished by the commissioner which are not direct administrative duties of the commissioner's office, such as, but not limited to: obtaining consultants for review and evaluation of approval applications, or obtaining reviews from the national code writing organizations, a fee equal to the direct expense shall be charged.

16.610(30) *Local issuance of building permits.*

a. The issuance of building permits and occupancy permits shall be in accordance with local ordinances and Iowa Code sections 103A.19 and 103A.20.

b. Local building codes and regulations shall apply to all parts of any project which are not included in the state approval of either the manufactured structure or the installation procedure.

c. Nothing in these rules or the state building code exempts any factory-built structure from the requirements of local zoning or site condition requirements.

16.610(31) *Noncompliance to code provisions*. Any noncompliance or unauthorized deviation with the provisions of this code from the approved plans or production procedures shall be just cause for the revocation of the plan approval and the return of the seals.

661—16.611 to **16.619** Reserved.

DIVISION VI
PART 2

661—16.620(103A) Manufactured home construction. (Previously called mobile home.)

16.620(1) *Authority to promulgate rules*. Pursuant to Public Law 93-383, Section 604, of the National Manufactured Home Construction and Safety Act of 1974, specified in 42 U.S.C. 5403 and signed into law on August 22, 1974, the authority to promulgate rules and regulations in order to establish federal manufactured home construction standards and procedures of enforcement were established by Congress and subsequent provisions for their implementation were so granted to the United States Department of Housing and Urban Development (HUD). Title VI of this Act authorizes the secretary of HUD to promulgate the federal standards and to issue the rules and regulations to ensure adequate administration and enforcement of such standards.

16.620(2) *Scope and applicability.*

a. Provisions contained within Part 2 shall apply to all factory-built structures defined as a "manufactured home" in subrule 16.620(4) of Part 2. These regulations shall govern manufactured homes that enter the first stage of production on or after June 15, 1976, and manufactured homes that entered the first stage of production prior to June 15, 1976, to which HUD (Department of Housing and Urban Development) labels were affixed. These provisions supersede all local, state, or other governmental regulations for manufactured home standards and are applicable for every manufactured home unit newly manufactured and offered for sale in the United States and its governing territories. These provisions do not apply to the following:

(1) Factory-built structures which comply with the requirements of Division VI, Part 1 of the state building code.

(2) Manufactured homes manufactured for installation in the state of Iowa on or after February 1, 1973, and prior to June 15, 1976.

b. Construction of multifamily manufactured homes, manufactured home add-on units, and temporary field construction offices will be covered by the provisions of Division VI, Part 2, however, the administration and the enforcement of the rules and regulations will apply as specified in Division VI, Part 1 for modular structures. These units will not bear a seal issued by the Department of Housing and Urban Development, but will bear an Iowa seal and be governed by all seal provisions outlined accordingly in Division VI, Part 1.

16.620(3) *Manufacture of units prior to June 15, 1976.* Manufactured home units, add-on units, multifamily manufactured homes and temporary field construction offices that were manufactured for installation in Iowa prior to June 15, 1976, which established the effective date of the HUD standard, shall have been constructed to the standards of manufactured homes of the Iowa state building code which was in effect at the time of manufacture.

16.620(4) *Definitions and terms.* Terms and definitions for purposes of clarification when used in Part 2. (See also subrule 16.610(3).)

"Anchoring equipment." Straps, cables, turnbuckles, clamps, clips, and other fasteners including tensioning devices, which are used with ties to secure a manufactured home to ground anchors.

"Anchoring system." A combination of ties, anchoring equipment, and ground anchors that will, when properly designed and installed, resist overturning and lateral movement of the manufactured home from wind forces.

"Approved installer." Approval by the commissioner or the commissioner's designated representative of a person, dealer, agency or organization, qualified to inspect, or install ground anchoring and support systems for manufactured homes or other manufactured structures, who installs units, for others, at a site of occupancy by attaching support and anchoring systems, and is familiar with and has agreed to comply with these installation procedures.

"Certificate, installation." The certificate provided by the installer to both the commissioner and the owner which warrants that the installation system complies with these rules. When an installer installs only the support system or anchorage system, an installation certificate shall also be completed and copies distributed accordingly for each installation and with the applicable information completed on the certificate pertinent to that type of installation (see subrule 16.623(5)).

"DAPIA." A design inspection agency approved by HUD to perform in-plant design reviews on all drawings and specifications in order to provide compliance to the HUD standard for manufactured home construction.

"Diagonal tie (frame tie)." A tie intended primarily to resist horizontal or shear forces and which may secondarily resist vertical, uplift, and overturning forces.

"Ground anchor." Any device at the manufactured home site designed to transfer manufactured home anchoring loads to the ground.

"IPIA." A production inspection agency approved by HUD to perform the in-plant quality assurance inspection programs within manufactured home manufacturing facilities.

"Label or certification label." The approved form of certification by the manufacturer that is affixed to each transportable section of each manufactured home manufactured for sale to a purchaser in the United States or its governing territories.

"Main frame" (Chassis). The structural component on which is mounted the body of the manufactured home.

"Manufactured home." (Previously called mobile home.) A structure transportable in one or more sections which when erected on site measures 8 body feet or more in width and 40 body feet or more in length or when erected on site is 320 or more square feet in area, and which is built on a permanent chassis and designed to be used as a dwelling unit with or without a permanent foundation when connected to the required utilities and includes the plumbing, heating, air conditioning and electrical systems contained therein.

"Manufactured home add-on." A structure which is designed and produced and to be made an integral part of a manufactured home and will be considered part of the manufactured home, when attached thereto.

"Manufacturer's statement of origin" means a certification signed by the manufacturer or importer that the manufactured home described has been transferred to the person or dealer named and that the transfer is the first transfer of the manufactured home in ordinary trade and commerce. In addition to the information required by the Iowa Department of Transportation definition 761—subrule 421.1(2), the label number required by the federal regulations Section 3282.362(c)(2) 24 CFR Chapter XX shall be included. (This number is commonly known as the HUD number.) The terms "manufacturer's certificate," "importer's certificate," "MSO" and "MCO" shall be synonymous with the term "manufacturer's statement of origin."

"Multifamily manufactured home." Manufactured homes designed and manufactured with more than one living unit.

"Pier." That portion of the support system between the pier foundation and the manufactured home exclusive of caps and shims.

"Pier foundation (footing)." That portion of the support system that transmits loads directly to the soil, and shall be sized to support the loads shown herein.

"SAA." A state administrative agency approved by the Department of Housing and Urban Development to participate in the enforcement of all provisions to which a manufactured home is regulated under the HUD standard.

"Seal, installation." Is an insignia issued by the commissioner which is attached to a manufactured home by the installer to certify that the installation is in compliance with the requirements of the state building code.

"Stabilizing system (tie-down system)." A combination of the anchoring system and the support system when properly installed. Therefore, components of the anchoring and support systems such as piers, pier foundations, ties, anchoring equipment, anchors, or any other equipment which supports or secures the manufactured home to the ground, shall be defined as stabilizing devices. For the purposes of this code the definition of a stabilizing system and the definition of a tie-down system shall be one and the same.

"Support system." A combination of pier foundations, piers, caps, and shims that will, when properly installed, support the manufactured home.

"Temporary field construction office." A factory-built structure used at a construction site as an office facility by the personnel engaged in the construction of another structure or project. The intent of this structure is to remain on the job site only as long as necessary during the construction and then be removed before construction is completed.

"Tie." Strap, cable or securing device used to connect the manufactured home to ground anchors.

"Tie-down system (stabilizing system)." Means a ground support system and a ground anchoring system used in concert to provide anchoring and support for a manufactured home.

"Vertical tie (over-the-top)." A tie intended to resist the uplifting and overturning forces. This tie may continue over-the-top but if properly attached may only extend partway up each side.

16.620(5) *Administration.* This section covers the basic requirements for constructing manufactured homes and all of the administrative procedures under which the manufactured home program functions including information pursuant to certification, approval and manufacturing requirements. This section also applies to those structures defined in subrule 16.620(4) of Part 2 as manufactured home add-on units, temporary field construction offices and multifamily homes. There are also included within Part 2, (661—16.621(103A)) sections dealing with installation procedures and information pursuant to the handling of consumer complaints (16.620(15)) consistent with the duties of the state of Iowa to be performed as a State Administrative Agency (SAA) in conjunction with the manufactured home program.

16.620(6) *Manufactured home construction requirements*. All factory-built structures that are defined as a manufactured home under subrule 16.620(4) of Part 2, shall be constructed to the standards as promulgated by the United States Department of Housing and Urban Development hereafter referred to as HUD. These standards were published as final rules in the December 18, 1975, issue of the Federal Register, Volume 40, No. 244, and will be amended from time to time. These standards are herein adopted and apply to all manufactured homes manufactured after June 15, 1976. All provisions for manufactured home procedural and enforcement regulations are covered within the May 13, 1976, Federal Register, Volume 41, No. 94. All factory-built structures defined as a manufactured home by the federal standard shall be manufactured and so regulated by these documents.

16.620(7) *Procedures of approval for manufactured homes*. Every manufactured home unit or structure approval will follow the method of third-party certification approval with all approvals obtained through the HUD secretary. All manufactured home plans, specifications, documentation, plant facilities and in-plant inspections must be submitted to and approved by a third-party certification agency so designated by the HUD secretary. Rules and regulations pursuant to these procedures are outlined in the manufactured home procedural and enforcement regulations, Parts 3282.201 through 3282.204 which set out requirements to be met by states or private organizations which wish to qualify as primary inspection agencies (see subrule 16.620(4) of Part 2 definitions for IPIA and DAPIA).

16.620(8) *Compliance certification*. Every manufactured home unit or structure must conform to the certification requirements within section 3282.205 of the manufactured home procedural enforcement regulatory document.

16.620(9) *Certification seals (labels) and other seal requirements*. Every manufactured home unit or structure must conform to the requirements within the manufactured home procedural and enforcement regulatory document section 3282.362(c)(2) in lieu of Iowa insignias. Other types of units manufactured under the requirements of Division VI, Part 2, will be labeled as prescribed in subrules 16.620(10), 16.620(11) and 16.620(12).

16.620(10) *Manufactured home add-on units*. Every factory-built structure manufactured as a manufactured home add-on unit as defined in subrule 16.620(4) of Part 2 shall be constructed to the standards set forth in subrule 16.620(6) of Part 2 except that these units will bear an Iowa seal in accordance with the provisions of the Iowa state building code, Division VI, Part 1. Manufacturers of manufactured home add-on units with the exception of constructing to the HUD standard, which has been herein adopted for these units, must comply with all other provisions of the Iowa state building code as described within Division VI, Part 1, for the factory-built structures.

16.620(11) *Multifamily homes*. Every factory-built structure manufactured as a multifamily home within the definition contained in subrule 16.620(4) of Part 2 shall be constructed to the standards set forth in subrule 16.620(6) of Part 2 except that these units will bear an Iowa seal in accordance with the provisions of the Iowa state building code, Division VI, Part 1. Manufacturers of multifamily homes, with the exception of constructing units to the HUD standard which has herein been adopted for these units, must comply with all other provisions of the Iowa state building code as described within Division VI, Part 1, factory-built structures.

16.620(12) *Temporary field construction offices*. Every factory-built structure manufactured as a temporary field construction office within the definition as contained in subrule 16.620(4) of Part 2 shall be constructed to the standards set forth in subrule 16.620(6) of Part 2 except that these units will bear an Iowa seal in accordance with the provisions of the Iowa state building code, Division VI, Part 1. Manufacturers of temporary field construction offices, with the exception of constructing units to the HUD standard which has herein been adopted for these units, must comply with all other provisions of the Iowa state building code as described within Division VI, Part 1, factory-built structures.

16.620(13) *Seal types for manufactured home add-on units, temporary field construction offices and multifamily homes.* When ordering seals for manufactured home add-on units, temporary field construction offices or multifamily manufactured homes, each manufacturer will indicate the number of each type of seal requested and the letter prefix required. Examples of seals issued are as follows: (A00-0000MH), (B00-0000MH), C, D, and E, etc. Single units are without prefix letters (00-0000MH). For more details, see Division VI, Part 1, subrule 16.610(21).

It is noted that manufactured home type seals shall be attached to all of these type units. All other procedures for seal issuance, removal, damage, repossession and return are to conform with provisions of this code as outlined in Division VI, Part 1.

16.620(14) *Noncompliance*. Failure to conform to the provisions of Part 2 as they apply to the federal standard for the construction of manufactured homes is subject to the penalties where applicable as set forth within Division VI, Part 1. The state of Iowa having adopted the federal standard and the enforcement regulations shall participate in the federal program as an agent of HUD thereby providing assurances to ensure code compliance when these units are offered for sale for subsequent installation within the state of Iowa.

16.620(15) *Consumer complaints*. The state building code bureau serving as an approved State Administrative Agency (SAA) for the Federal Department of Housing and Urban Development shall receive complaints and process them in accordance with the requirements of the federal regulations as outlined in subpart I, paragraph 3282.401, entitled, "Consumer Complaint Handling and Remedial Actions of the Manufactured Home Procedural and Enforcement Document." These specific complaints are categorized as possible imminent safety hazards or possible failures to conform to the federal standard. Imminent safety hazards shall be those items that could result in an unreasonable risk of injury or death to the occupants of the manufactured homes. Failures to conform to the federal standard are those items that do not result in an unreasonable risk of injury or death to the occupants of manufactured homes, but nevertheless do not meet the provisions of the federal standard in some specific manner.

661—16.621(103A) Installation of manufactured homes.

16.621(1) *Authority.* These rules and regulations are to establish minimum requirements for the installation of manufactured homes as authorized by Iowa Code section 103A.7, subsection 3, section 103A.9, and sections 103A.30 to 103A.33.

16.621(2) *Application.*

a. These rules apply to the initial installation of manufactured homes manufactured on or after February 1, 1973, and to factory-built structures manufactured homes before February 1, 1973, which have never been installed in Iowa, and are approved by the commissioner.

b. These rules apply to all manufactured homes, new or used, which are sold in Iowa or sold to be installed in Iowa after September 1, 1977, for new manufactured homes and January 1, 1978, for used manufactured homes. The seller shall provide an approved tie-down system and the purchaser shall install or have the system installed within 150 days (see subrule 16.620(4) for the definition of a tie-down system). The 150-day period is designated for time to complete the installation when climatic conditions may restrict the completion of the tie-down system.

c. These rules apply to the installation of manufactured home add-on units, temporary field construction offices and manufactured multifamily homes.

d. These rules shall apply to any person doing any work on any part of the tie-down system (both support or anchorage systems) whether the unit is being sold or not.

16.621(3) *Enforcement*. The commissioner shall administer and enforce these provisions. Any person, agent, or organization approved and authorized by the commissioner may inspect any installation system and equipment to ensure compliance with these regulations. Evidence of compliance shall be supported by the submission to the commissioner of a certificate of installation. One copy of such certificate will remain in possession of the owner of the installed structure.

16.621(4) *Manufactured home installation instructions*. Every manufactured home manufacturer which manufactures manufactured homes for installation in Iowa shall provide the commissioner with a reproducible copy of printed instructions of installation for each specific make and model of manufactured home which is to be installed in Iowa. These instructions shall include copies of the materials which have been certified by a registered professional engineer for compliance with the federal manufactured home construction standards and 3280.306(a)(2), 3280.306(b), and 3280.303(c) of the regulatory standards. The manufacturer's installation instructions shall also be available at the installation site.

16.621(5) *Approvals and procedures*. Requirements for approval of installers, support and anchorage systems, seals and certificates are described in the remaining sections of this part.

661—16.622(103A) Installer compliance. Any person, agent or organization who installs factory-built structures including manufactured homes shall comply with the requirements of this code and shall provide the owner and the commissioner with a certification of approved installation. Any person, agent or organization who performs any work on the support system of a manufactured home shall be responsible for completion of the anchorage system and the filing of the installation certificate with the commissioner. Any person, agent or organization who performs any work on the anchorage system of a manufactured home shall also attest to the support system and file an installation certificate with the commissioner.

16.622(1) *Listed installers.* Any person, agent or organization who installs factory-built structures for others within Iowa may be included on a list of installers maintained by the commissioner. The commissioner will supply names of listed installers to persons requesting approved installation information.

A request to be included on the installer's list shall be submitted to the commissioner with the installer's listing fee accompanied by written material that the applicant meets the following:

a. Has the training and capability to perform installations which are in compliance with this code.

b. Is not under the control of any manufacturer or supplier, so as to impair the applicant's judgment with regard to performing installation procedures.

c. Has the proper equipment, personnel and ability to size the piers, foundation, (footings) and to select and install the proper anchorage system for various soil conditions.

d. Is familiar with at least one manufacturer's anchorage system and has the equipment needed to install such system.

e. Agrees to certify compliance with the applicable provisions of this code when submitting installation certificates without submitting data on each individual installation.

EXCEPTION: Persons or organizations which have been designated as installers as part of the third-party approval for a manufacturer of modular factory-built structures under Division VI, Part 1. The manufacturer shall be responsible for obtaining certificates and insignias as required by Division VI, Part 1.

16.622(2) *Continued listing.* A listed installer shall renew the listing annually. The commissioner may require such written material deemed necessary to verify the installer's performance during the previous 12 months. Any changes which may have taken place during the previous 12 months such as changes in personnel, address, etc. shall be submitted with the renewal request and the necessary fee.

16.622(3) *Nonlisted installer.* Any person, agent, or organization who installs manufactured homes or factory-built structures and is not on the list of installers shall, in addition to providing a copy of the installation certificate to the commissioner, submit additional information on the form supplied by the commissioner which will verify compliance with the applicable provisions of this code.

661—16.623(103A) Installation seal and certificate procedures for manufactured homes.

16.623(1) *Application for seals.* Any installer who has met the applicable requirements of 16.622(1) or 16.622(3) may apply for installation seals as needed. Such seals may be obtained from the commissioner or local building officials or building department who is a participant in the state's installation program.

16.623(2) *Manufactured home installation certificates.* The installer of manufactured homes shall supply the building code commissioner and the owner of the unit with the signed and completed installation certificate which has been issued by the Iowa building code commissioner, within 30 days of affixing the Iowa installation seal.

16.623(3) *Obtaining installation certificates.* Any person who installs a tie-down system or any portion thereof shall be supplied with the installation certificate forms when ordering installation seals and the payment of the appropriate fee.

a. Installers who are not listed as an installer shall be supplied the proper form to be attached to the copy of the installation certificate to be filed with the commissioner, which will record compliance with the approved system.

b. Reserved.

16.623(4) *Placement of installation seal*. The installation seal shall be placed in a readily visible location on the rear of the unit. Those units manufactured after June 15, 1976, shall have the installation seal placed adjacent to the federal (HUD) label. Those units manufactured before June 15, 1976, shall have the installation seal placed at the left rear corner above any skirting.

Multiple width units require only one seal for the completed installation. Additions which are added after the initial installation shall have an installation seal on that portion.

16.623(5) *Denial and repossession of installation seals.* Should investigation or inspection reveal that an approved installer has not installed an anchoring system, support system, or the complete tie-down system according to these rules and the code, the commissioner may deny such installer's application for new installation seals and any installation seals previously issued shall be confiscated. Upon satisfactory proof of modification of such installation bringing them into compliance, such dealer or installer may resubmit an application for installation seals.

16.623(6) *Seal removal, installation.* Should a violation of the rules regarding installation be found, the commissioner may remove the installation seal after furnishing the owner or a designated agent with a written statement of such violation. The commissioner shall not issue a new installation seal until corrections have been made and the owner or a designated agent has requested an inspection pursuant to 16.625(1).

16.623(7) *Lost or damaged seals, installation.* When an installation seal is lost or damaged, the commissioner shall be notified in writing. Damaged or lost installation seals shall be replaced by the commissioner upon payment of the replacement installation seal fee as provided in 16.625(5).

16.623(8) *Return of seals, installation.* When a dealer or installer discontinues the installation of manufactured homes, the dealer or installer shall notify the commissioner within ten days of the date of such discontinuance and return all unused installation seals which have been issued to the dealer or installer. Installation seals may not be transferred by any dealer or installer after being issued to that dealer or installer.

16.623(9) *Seals for existing manufactured homes.* Seals may be obtained for existing manufactured homes that are tied down in accordance with the requirements of rule 661—16.627(103A).

661—16.624 Reserved.

661—16.625(103A) Inspections and fee structure.

16.625(1) *Inspections*. An owner of a manufactured home may request an inspection of the support and anchoring system, such request should be made by letter to the building code commissioner. These individual inspections may require a fee to be paid as provided in 16.625(5)*"f."*

16.625(2) *Action after inspection.* If the requested inspection was to determine compliance with respect to support and anchoring requirements and both systems meet the provisions of the code, the installation seal may then be affixed to that specific unit, after payment of fees as required.

16.625(3) *Verification inspections.* A verification inspection of a tie-down system may be made to ensure compliance to this code where individuals have installed their own tie-down systems. These inspections may require a fee as provided in 16.625(5)*"f."*

16.625(4) *Other inspections.* The commissioner or the commissioner's designee shall make periodic inspections of the facilities of persons who are subject to these rules and regulations when it appears that a person is not in compliance with this code.

16.625(5) *Fees.* All remittances shall be in the form of checks or money orders, payable to: Treasurer, State of Iowa and delivered to:

Building Code Commissioner
State Building Code
Department of Public Safety
Wallace State Office Building
Des Moines, Iowa 50319

a. Installation seal $12.50
b. Installation replacement seal ..... $ 7.50
c. Installer certification initial fee $30.00
d. Annual installer renewal certification fee $15.00
e. Ground support and anchoring system approval fee $65.00
f. Verification inspections made by the state building code staff will be charged at a rate based on time spent at the site plus travel expenses. The hourly rate shall be $30.00 per hour and direct cost for travel.

661—16.626(103A) Support and anchorage of manufactured homes. Manufactured homes shall be installed with support and anchorage as recommended by the manufacturer and required by federal manufactured home construction and safety standards section 3280.306(b). As an alternate to the manufacturer's recommended instructions, a support and anchorage system designed by a registered engineer may be used. Subrules 16.626(1) and 16.626(2) are the minimum requirements for support and anchorage systems which shall apply if a manufacturer's instructions are not available or for units which were manufactured before June 15, 1976, and no installation instructions are available.

EXCEPTION: Minor adjustments in pier locations may be necessary to avoid utility and service lines. Additional supports may be needed to ensure that the maximum distance between supports and anchors is maintained.

16.626(1) *Requirements for support system installations.*

a. Piers placed on foundations shall be installed and centered directly under the main frame longitudinal beams. The piers should not be further apart than 10 feet on centers for manufactured homes 12 feet wide or less and not more than 8 feet on centers for manufactured homes over 12 feet wide to less than 16 feet wide and no more than 6 feet on centers for manufactured homes 16 feet wide or more. The main frame, front or back, should not extend further than 2 feet beyond the center line of the end piers.

NOTE: Precaution shall be taken to ensure that no telephone, electrical, plumbing or water lines are contacted when making excavations for footings and piers on private property. Utility line locations shall be verified with the property owner or owner's representative.

b. Pier foundations shall be placed below the frost line on level and undisturbed soil, or on controlled fill, which is free of grass and organic materials. (A small amount of sand may be of use to provide a level surface.) All pier foundations shall be set level and piers must be installed plumb. The pier foundation shall be at least a $16'' \times 16'' \times 4''$ solid concrete pad, precast or poured in place, or other approved material. Two nominal $4'' \times 8'' \times 16''$ solid concrete blocks may be used provided the joint between the blocks is parallel to the main frame longitudinal beam. Concrete used in foundations shall have a 28-day compressive strength of not less than 3,000 pounds per square inch (3000 P.S.I.).

EXCEPTION: Pier foundations may be exempt from extending below the frost line on manufactured home installations, only if the owner agrees to be responsible for the loosening of the anchor system on or about November 1 to prevent frost heave damage to the unit, and to retighten the anchors each spring. A statement to this effect is on the installation certificates and a space is provided for the owner's signature.

c. Unless otherwise directed by the owner of the site the soil bearing capacity of the site may be assumed to be 2,000 pounds per square toot. The acceptable construction under this subrule is based upon a soil bearing capacity of 2,000 pounds per square foot. Soils with less capacity will require increased size footings.

EXPLANATION: The permissible footing sizes and pier spacing given in this code are based upon a combined live and dead load of 65 pounds per square foot of unit. This assumes that the full snow and internal live load will not be present at the same time.

d. Piers may be constructed of concrete or undamaged nominal $8'' \times 8'' \times 16''$ concrete blocks, open celled or solid placed on the pier foundation. All open celled concrete block shall be installed with the cells of the block in a vertical position. Nominal $2'' \times 8'' \times 16''$ or nominal $4'' \times 8'' \times 16''$ solid concrete blocks may be utilized as needed, to achieve the necessary heights of the piers for a particular installation. A nominal $2'' \times 8'' \times 16''$ wood plate, or equivalent, shall be placed on top of each pier, unless there is at least 4″ of solid block, with shims fitted and driven between the wood plate or solid block and the main frame longitudinal beam. The wood blocking shall not occupy more than a nominal 2 inches of vertical space and shims shall not occupy more than 1 inch of vertical space. Shims which have a thickness of more than 3/8″ shall be hardwood.

1. Piers up to 40 inches in height, except corner piers over three blocks high (a nominal 24″), may be single block construction and shall be installed transverse (right angle) to the mainframe longitudinal beam. (see Figure 1)

2. Piers over 40 inches in height but not exceeding 80 inches in height and corner piers over three blocks high shall be double block construction with every other course either parallel or transverse (right angle) to the main frame longitudinal beam. These piers shall be capped with a nominal $16'' \times 16'' \times 4''$ solid concrete block or equivalent. (see Figure 2) Wood blocking and hardwood shims shall be installed accordingly.

3. Piers over 80 inches in height shall be reinforced concrete or double block construction following exactly the procedure given in paragraph number two above. Celled concrete blocks only shall be used (with open cells vertical) with 3/8″ diameter or larger steel reinforcing rods placed in the pier corners and all cells filled with 3,000 pounds per square inch concrete. (see Figure 3) Wood blocking and shims shall be installed accordingly.

16.626(2) *Requirements for anchorage systems*. When instructions are not provided by manufacturer, ties shall be attached vertically and diagonally to a system of ground anchors in a manner as illustrated in Figures 4 and 5. The minimum number of ties required are listed in Table 6-A. There shall be a diagonal tie between the ground anchors and the unit at each vertical tie. Additional diagonal ties may be required between vertical ties. The ties shall be as evenly spaced as practicable along the length of the unit with not over 8 feet open on each end.

a. Ties may be either steel cable, steel strapping, or other materials which meet the requirements of 16.626(2)"*f.*" Ties are to be fastened to ground anchors and drawn tight with galvanized turnbuckles or yoke-type fasteners and tensioning devices. Turnbuckles shall be ended with jaws of forged or welded eyes (hook ends are not approved).

b. When continuous straps (over-the-top tie-downs) are provided as vertical ties, they should be positioned at rafters and studs to prevent structural damage. Where a vertical tie and diagonal tie are located at the same place, both ties may be connected to a single doublehead ground anchor, provided that the anchor used is capable of carrying the combined loads and the anchor is included on a list of approved products maintained by the commissioner.

c. Cable used for ties may be either galvanized steel or stainless steel having a breaking strength of at least 4,725 pounds. Cable should be either 7/32″ diameter or greater (7 × 7) steel cable or ¼″ diameter or greater (7 × 19) aircraft cable. All cable ends should be secured with at least two I-bolt type cable clamps or other nationally approved fastening devices.

d. When flat steel straps are used as ties they shall be type 1, class B, grade 1, 1¼ inches wide and 0.035 inch thick, conforming with federal standard QQ-S-781-F, with a breaking strength of at least 4,725 pounds. Zinc coating (weather protection) shall be a minimum of 0.30 ounces per square foot of surface. Steel strap ties shall terminate with D-rings, bolts, or other nationally approved fastening devices which will not cause distortion or reduce breaking strength of ties.

e. The direction of pull of the diagonal ties should be at a right angle to the main frame longitudinal beam. Connection of the diagonal tie to the main frame longitudinal beam should be in accordance with anchor system instructions for those fastening devices. When steel strap ties are used, care should be exercised that the minimum bending radius is adhered to so the breaking strength is not reduced.

f. The anchorage materials shall be capable of resisting an allowable minimum working load of 3,150 pounds (pullout in a vertical direction) with no more than 2 percent elongation and shall withstand a 50 percent overload. All anchorage materials shall be resistant to weathering deterioration at least equivalent to that provided by a coating of zinc on steel strapping of not less than 0.30 ounces per square foot surface coated. Anchors to reinforced concrete slab or to rock shall be of comparable strength as provided within this paragraph.

Each ground anchor, when installed, shall be capable of resisting an allowable working load at least equal to 3,150 pounds in the direction of the ties plus a 50 percent overload (4,750 pounds total) without failure. Failure shall be considered to have occurred when the point of connection between the tie and anchor moves more than 2 inches at 4,750 pounds in the direction of the vertical tie when anchoring equipment is installed in accordance with the anchorage manufacturer's instructions. Those ground anchors which are designed to be installed so that the loads on the anchor are other than direct withdrawal shall be designed and installed to resist an applied design load of 3,150 pounds at 45° from horizontal without displacing the anchor more than 4 inches horizontally at the point when the tie attaches to the anchor.

Anchors designed for connection of multiple ties shall be capable of resisting the combined working load and overload consistent with the intent expressed in this section.

g. Ground anchors shall be installed so the load-carrying portion of the anchor in its final working position is below the frost depth 42 inches and the anchor head shall be at ground level. Total anchor length shall be more than 42 inches as necessary.

NOTE: Precaution shall be taken to ensure that no telephone, electrical, plumbing or water lines are contacted when installing ground anchors on private property. Utility line locations shall be verified with the property owner or owner's representative.

661—16.627(103A) Approval of existing manufactured home tie-down systems. This rule is to provide a method by which manufactured homes which have been installed prior to the effective date of these rules can be sold without requiring a new tie-down system to be installed and to allow existing manufactured homes which are properly supported and anchored to be sold without installing new support and anchorage systems.

16.627(1) *Sale of a certified unit.*

a. The commissioner shall be notified in writing by the seller of the change of ownership when any manufactured home sold after the effective date of these rules remains in the same location. The installation seal shall remain in place and a copy of the installation certificate shall be supplied to the new owner. Replacement seals and certificates may be obtained if necessary (see subrule 16.623(9)).

b. A certified manufactured home sold after the effective date of these rules which is moved to a new location must obtain a new certificate and seal. However, the existing support and anchorage system may be used if the installer verifies the conditions of use and the installation procedures of the existing systems are met at the new location.

16.627(2) *Sale or acceptance of installed existing units as an owner's option.* Application may be made to the commissioner for approval of an existing manufactured home support and anchor system on one of the following conditions:

a. If the support and anchorage systems were installed by an approved installer and are approved systems.

b. If the existing support and anchorage system has been inspected by an approved installer and the installer attests by signing the installation certificate that to the best of the installer's knowledge, the existing systems are equal to or better than the minimum requirements of this code.

c. If the existing support and anchorage systems are inspected and approved by a registered engineer or architect, and attested to in writing.

d. If the existing support and anchorage systems are inspected by a field inspector with the Iowa state building code (see subrule 16.625(1)) and the existing systems are found to be equal to or better than the minimum requirements of this code.

If compliance is met by one of the above procedures and payment of the required fee has been paid, an Iowa installation seal and certificate may then be issued.

661—16.628(103A) Procedure for governmental subdivisions for installation of factory-built structures. Any governmental subdivision which has adopted the state building code or any other building code is required to enforce the state building code requirements for the installation of factory-built structures (see Iowa Code section 103A.9(7)).

Governmental subdivisions who are issuing building permits and are inspecting construction for compliance with the local building regulations shall verify the installation of factory-built structures within their jurisdiction and shall sign the installation certificate and forward the appropriate copy to the commissioner.

1. The local official shall obtain the installation certificate and the installation seal from the person making application for a building permit which includes a factory-built structure.
2. Upon completion and review of the installation the local official shall attach the installation seal to the unit.
3. Governmental subdivisions are permitted to assess fees as may be required by local ordinances.
4. Nothing in this rule is intended to reduce the authority of the governmental subdivision from establishing zoning regulations as outlined in Iowa Code sections 414.28 and 335.30.

661—16.629(103A) Support and anchoring systems approval procedures.

16.629(1) *Approval of support and anchoring systems.* All support and anchoring systems shall be approved by the commissioner. Manufacturers shall obtain approval of such systems by submitting to the building code commissioner, all system drawings and all other related data, e.g., material specifications or standards, calculations of loads and stresses, soils and test data which will show compliance with the requirements of rule 16.626(103A). Support and anchoring systems designed and signed by a registered engineer competent in this field shall submit complete systems drawings only unless other technical data is requested by the commissioner.

EXCEPTION: Support or foundation systems for manufactured homes constructed to the requirements of Division VI, Part 1 of this code, or designed to meet local building regulations are exempt from approval by the commissioner. The installation certificate, 16.610(19), shall show that the support system has been approved by the local authority.

16.629(2) *Application for support and anchoring system approval.* Submissions for approval by the commissioner shall include drawings, data, and test results which show compliance with at least the minimum requirements of rule 16.626 (103A).

a. Support systems shall be one or more of the following:

(1) Engineered on grade support systems.

(2) Foundations installed in conformance with the state building code, e.g., piers, continuous footings, posts or isolated footings extending below the frost line. (see 16.626(1)*"b"* for exception)

(3) Use of concrete slabs or continuous footings. If such slabs or footings are used to transfer the anchoring loads to the ground, they shall be so constructed to provide the holding strength as required by 16.626(2)*"f."*

b. Materials specified shall meet the minimum requirements of the state building code including, but not limited to:

(1) Wood supports in contact with the ground shall be pressure-impregnated in accordance with uniform building code standard 25-12.

(2) Concrete, where used, shall have a minimum compressive strength of 2000 P.S.I. and be in conformance with uniform building code standard 26-11.

(3) Masonry units, where used, will be in accordance with uniform building code standards 24-4 and 24-5.

(4) Soils information shall reference the classifications of Table 29-B of the UBC and standard No. 29-1 of the UBC. Other classifications may be used to describe soil, however, it shall indicate the standard classification as well.

c. Ground anchoring systems shall include, but not be limited to:

(1) Submission for approval and registration for components which constitute portions or parts of support and anchoring systems by the manufacturer shall clearly indicate compliance with the requirements of the Iowa state building code "structural design." The requirements of 16.626 (103A) shall be considered minimum.

(2) Detailed procedures for field soil identification and anchor selection and test procedure for assuring proper installation.

(3) Restrictions on the use of each anchor and the specific soil types which apply.

(4) Each part identification mark and where it is located on the part.

The commissioner may require additional data or test results to determine compliance with the minimum requirements.

TABLE 6A
MINIMUM NUMBER OF TIEDOWNS
REQUIRED FOR SINGLEWIDE MOBILE HOMES

MOBILE HOME BOX LENGTH NOT EXCEEDING	MINIMUM NUMBER OF TIEDOWNS PER SIDE	
	DIAGONAL TIES	VERTICAL TIES*
40′-0″	3	2
54′-0″	3	2
73′-0″	4	2
84′-0″	5	2

*If more than minimum number of vertical or diagonal ties have been supplied, they shall all be used.

NOTES:

1. Doublewide mobile homes shall comply with Table 6A except that no vertical ties are required.

2. Wherever a vertical tie and a diagonal tie lie in a plane which is vertical and transverse to the main longitudinal beam, both ties may be connected to the same ground anchor, providing that particular anchor withstands both loadings.

3. This table shall be used only if there are no manufacturers approved installation requirements.

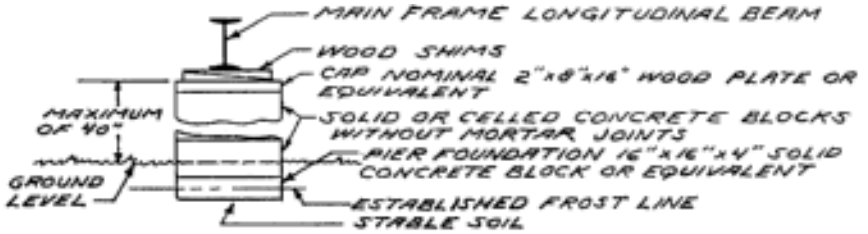


FIGURE 1. PIERS UP TO 40" IN HEIGHT
(SINGLE BLOCK CONSTRUCTION)

NOTE: CORNER PIERS MORE THAN THREE (3) BLOCKS HIGH SHALL BE DOUBLE BLOCK CONSTRUCTION AS SHOWN IN FIGURES 2 & 3

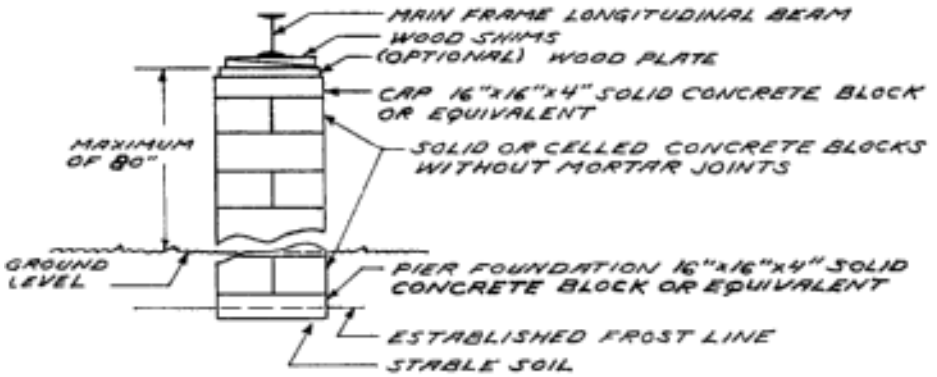


FIGURE 2 - PIERS OVER 40" IN HEIGHT AND NOT EXCEEDING 80" IN HEIGHT (DOUBLE BLOCK CONSTRUCTION)

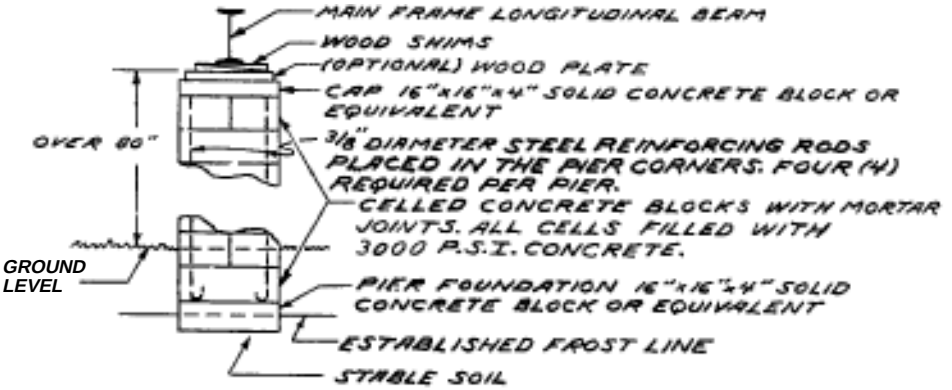
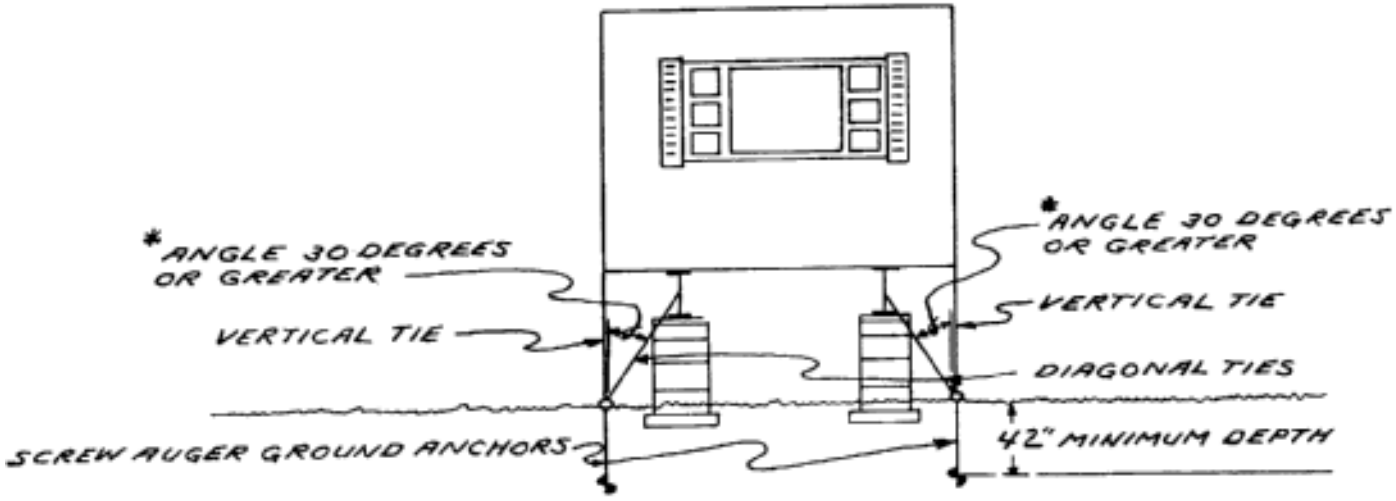


FIGURE 3 - PIERS OVER 80" IN HEIGHT (DOUBLE BLOCK CONSTRUCTION, STEEL REINFORCED)

FIGURE 4

MOBILE HOME TIEDOWN

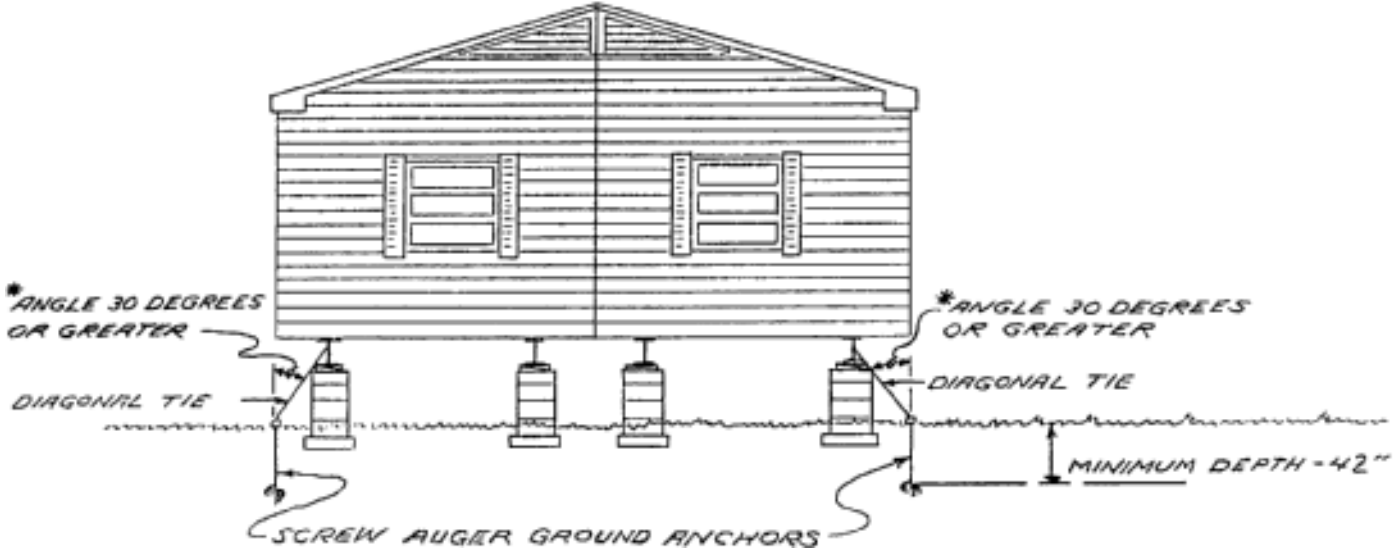


*DIAGONAL TIE SHALL DEVIATE FROM A VERTICAL DIRECTION 30 DEGREES OR MORE.

FIGURE 5

DOUBLE WIDE MOBILE HOME TIEDOWN

*DIAGONAL TIE SHALL DEVIATE FROM A VERTICAL DIRECTION 30 DEGREES OR MORE.



661—16.630 to **16.699** Reserved.

DIVISION VII

661—16.700(103A) Accessibility rules and regulations for the physically handicapped.

16.700(1) *Purpose*. These rules and regulations are intended to make all buildings and facilities used by the public accessible to, and functional for, the physically handicapped, to, through, and within their doors, without loss of function, space, or facility where the general public is concerned. These rules and regulations shall constitute obligatory provisions within any governmental subdivision in Iowa, as mandated by Iowa Code chapter 104A, and specifically section 103A.19 which prescribes the responsibility of governmental subdivisions for the enforcement of these accessibility standards.

16.700(2) *Scope.* These rules and regulations are applicable to all buildings and facilities, temporary or permanent, and their site facilities, including streets used by the general public. These provisions shall apply to multiple-dwelling unit buildings containing four or more individual dwelling units. Rehabilitation and renovation projects shall be made to comply with these rules whenever the projects are required by local building code or the state building code to meet requirements of new construction. All public and private buildings and facilities, temporary and permanent, used by the general public, whether new or existing, shall provide parking spaces for the handicapped as provided in subrule 16.704(5).

NOTE: See 661—16.706(103A) for specific requirements within the individual dwelling units and public and common use spaces of multiple-dwelling unit buildings.

661—16.701(103A) Definitions.

"Accessible route" means a continuous unobstructed path connecting all accessible elements and spaces in a building or facility that can be negotiated by a severely disabled person using a wheelchair and that is also safe for and usable by people with other disabilities. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, walks, ramps, and lifts.

"Adaptability" means the ability of certain building elements, such as kitchen counters, sinks, and grab bars, to be added to, raised, lowered, or otherwise altered so as to accommodate the needs of either the disabled or able-bodied, or to accommodate the needs of persons with different types or degrees of disability.

"Appropriate number" means the number that would be necessary in a building, structure or facility to accommodate physically handicapped persons in proportion to the anticipated number of persons who would be using the building, structure or facility. In all cases the statement "appropriate number" shall be followed by the term "with a minimum of one."

"Children" means persons below the age of 12 (i.e., elementary school age and younger).

"Common grounds and elements" unless determined by contractual or tenants agreement shall be as follows:

1. The land and facilities on which the building has been constructed.
2. Common structural elements such as floors, exterior walls, roofs and ceiling.
3. Halls, corridors, lobbies, stairways, entrances/exits, elevators and other similar spaces or devices for general use.

4. Heating and cooling units, utilities and other similar equipment servicing more than one dwelling unit.

5. Swimming pools, hot tubs, saunas, laundry and recreation rooms and similar rooms and spaces.

"Condominiums residential" is a multiple-dwelling unit building or portion thereof, in which tenants hold full title to their dwelling units and joint ownership in the common grounds and elements.

"Curb ramp" is a short ramp cutting through a curb or built up to it from a lower level.

"Entrances" are openings giving access and egress to a building, structure or facility.

1. *"Primary entrance"* is any access to and from a building, structure or facility from a public way to the principal areas or spaces utilized by the general public.

2. *"Entrances at grade level"* means any access to a building, structure or facility at grade as defined in the state building code, used for entering or exiting those areas concerned with the use and life safety aspect of the building, structure or facility.

"Facility" means all or any portion of a building, structure, or area, including the site on which the building, structure, or area is located, wherein specific services are provided or activities are performed.

"Functional and usable spaces" means the rooms and spaces in a building or facility that house the major activities for which the building or facility is intended.

"Governmental facility" means a building or facility constructed by, on behalf of, or for the use of, a county, city, school district, school corporation or combination thereof or an executive board, commission, bureau, division, office or department of the state.

"Handicapped insignia" means an emblem displaying the international symbol of accessibility, indicating compliance with the requirements for accessibility functionality for the physically handicapped.

"Handicapped review certificate" means a form indicating, by authorized signature, that a building or facility is in compliance with these rules and regulations.

"Loft" means an intermediate level between the floor and ceiling of any story, located within a room of a dwelling.

"Physically handicapped person" means an individual who has a physical impairment, including impaired sensory, manual, or speaking abilities, that results in a functional limitation in gaining access to and using a building, facility or structure.

"Participating local authority" means the local building official or for factory-built structures the approved third-party agency for the proposed building or structure, provided the official or agency has applied for and been granted permission by the building code commissioner to complete handicapped review certificates.

"Public or general public" means, for the purposes of enforcing the handicapped rules and regulations in this code, the accommodation of a person or persons other than owners and employees given access to buildings, structures and facilities which by their nature, use or classification caters to or offers with or without fee or charge, services, facilities, goods or the conduct of business in the establishment.

"Tactile" means that which can be perceived by the sense of touch; used as a warning device for individuals with sight disabilities.

"Walking aid" means a device used by a person who has difficulty walking (for example, a cane, crutch, walker, or brace).

661—16.702(103A) Administration and enforcement.

16.702(1) *Application.* These standards and specifications shall apply to all new construction of buildings and facilities, and additions thereto, intended for use by the general public as required by Iowa Code chapter 104A, and to existing construction as such construction is required to meet new construction requirements.

NOTE: Illustrations which are herein included are pictorial examples of acceptable means of providing accessibility for the handicapped, and some dimensions shown exceed the code requirements. Other acceptable illustrations may be found in the "American National Standards Institute Standard Specifications" ANSI 117.1-1986 and in federal regulations 36 CFR Part 1190 "Minimum Guidelines and Regulations for Accessible Design" of the federal Architectural Transportation Barriers Compliance Board Uniform Federal Accessibility Standards as published in the Federal Register August 7, 1984 (49 FR 31528).

16.702(2) *Other standards or laws.* Other state and federal laws and regulations also address handicapped accessibility and may also apply to the construction stated above.

Iowa Code section 601D.9 requires curb cutouts and ramps in all new curbs constructed at any point along a public street which gives access to a crosswalk.

Iowa Code chapter 321L has requirements for handicapped identification devices which must be displayed by vehicles using handicapped parking spaces and provisions for on- and off-street parking in cities.

The Iowa labor services division has authority for enforcement of occupational safety and health standards which may include requirements for handicapped employees.

The Architectural Barriers Act of 1968 (Public Law 90-480), the Rehabilitation Act of 1973 (Public Law 93-112) and amendments to these Acts require all buildings used by federal agencies to provide accessibility for the handicapped. The Architectural and Transportation Barriers Compliance Board's minimum guidelines 36 CFR Part 1190 have been established as the minimum requirements for these buildings.

The requirements of the federal Fair Housing Act 1988 which apply to the construction of multifamily dwellings and are part of 24 CFR Part 100 Subpart D.

16.702(3) *Administration.* The building code commissioner is authorized by Iowa Code section 103A.5(5) to administer and enforce Iowa Code chapter 104A. The conforming standards of Iowa Code section 104A.6 also include the provisions of the Iowa state building code which apply to making facilities accessible to and functional for the physically handicapped.

16.702(4) *Certifying procedures.* It will be the duty of the commissioner's office, or a participating local authority, to certify that each building or facility within their jurisdiction meets the handicapped provisions in the following manner:

a. Before issuance of a permit to construct, or prior to the commencement of construction when no such permit is required, the handicapped review certificate must be completed by the participating local authority or the commissioner's office. Such certificates can be obtained from the commissioner on application by letter or other forms of communication.

b. The owner or the owner's agent shall apply directly to the commissioner, if there is no participating local authority, requesting a review of documents (plans, specifications, etc.) for compliance with these standards. The application shall include: a written request for review, payment of the fees required by Table 705B (end of 16.706(103A)) and one set of documents containing a minimum of the following: a dimensioned plot plan showing all pertinent site features; a floor plan showing each floor of the building; an indication of the size and direction of swing of the doors; sections for stairs and ramps with handrails indicated; the type, location and mounting heights for all water fountains, toilet fixtures and accessories. The location, type and mounting heights of public telephones, information showing the location dimensions of any elevators or passenger lifts including interior cab dimensions, height of controls and the type of tactile information provided; the location and height of all controls of frequent or essential use; the method used to identify rooms or offices including the height and location. The type, height and location of all general alarm stations and warning signals; a seating plan for all areas having fixed seating; and any other information necessary to ensure compliance. On satisfactory review of the documents the handicapped review certificate will then be completed by the commissioner or a member of the commissioner's staff, and copies B and C of the review certificate and the application for the handicapped insignia will be forwarded to the owner or the owner's agent.

c. On satisfactory review of the documents and completion of the handicapped review certificate by a participating local authority, copy A of the handicapped review certificate, the application for handicapped insignia, and payment of the handicapped insignia fee required by 16.702(4)*"e"* shall be forwarded to the commissioner.

d. On receipt of the application for handicapped insignia, the commissioner shall issue one or more insignias, as required, which shall be placed on all primary entrances to the building or facility when construction has been completed. The insignias will be issued to the local permit issuing authority or other responsible person to be held until completion of the building or facility.

e. There will be a schedule of fees (see Table 705B) for plan review and issuance of insignia of approval.

f. Local jurisdictions may set their own fees for plan review. These fees should include cost of insignias and placing of insignias.

16.702(5) *Handicapped review certificate.* This certificate shall be in triplicate; copies A, B, and C. Each copy shall have a legible signature as required by the procedures in 16.702(4). Copy A shall be retained by or forwarded to the commissioner; copy B shall be forwarded to or shall remain with the local authority, and copy C will be given to the owner or the owner's agent.

16.702(6) *Handicapped insignia*. This insignia can only be obtained from the commissioner's office. It will be the easily recognized blue international insignia of accessibility. However, there will be a statement attesting to the fact that the building or facility meets the state building code requirements for the handicapped. Also, there will be a specific number on the insignia, correlating with the certificate. Replacement insignias can be obtained from the commissioner's office for which there will be an additional fee (see Table 705B).

661—16.703(103A) General principles and considerations.

16.703(1) *Dimensions of adult size wheelchair.*

a. Length: 42 inches plus 6 inches toe extension.

b. Width to outside of wheels: 26 inches.

c. Height of seat from floor: 19 inches.

d. Height of armrest from floor: 30 inches.

e. Height of pusher handles: 36 inches.

f. Width to outside of footrest: 18 inches.

16.703(2) *The functioning of a wheelchair.* These standards are required for the minimum comfortable maneuverability of a wheelchair.

a. The fixed turning radius of a standard wheelchair, wheel to wheel, is 18 inches. The fixed turning radius, front structure to rear structure, is 31½ inches.

b. The average turning space required (180 and 360 degrees) is 60 by 60 inches. However, a turning space longer than it is wide, e.g., 63 by 56 inches is more workable and desirable.

c. A minimum width of 60 inches is required for two individuals in wheelchairs to pass each other. (See Figure 1 for illustrations on specific turns.)

16.703(3) *The adult individual functioning in a wheelchair.* Typical dimensions of a large adult seated in a wheelchair.

a. The average unilateral vertical reach is 60 inches and ranges from 54 to 72 inches.

b. The average horizontal working reach is 30 inches and ranges from 28 to 32 inches.

c. The bilateral horizontal reach, both arms extended to each side, shoulder high, ranges from 54 to 71 inches and averages 64½ inches.

d. An individual reaching diagonally, e.g., as would be required for a wall-mounted dial telephone or towel dispenser, the average reach would be 48 inches from the floor.

e. Eye level ranges between 43 and 51 inches.

f. Lap height from floor is 27 inches.

g. Toe clearance from floor is 8 inches.

16.703(4) *The individual functioning on crutches.* Most individuals ambulating on crutches or braces, or both, and other aids, are able to maneuver within the specifications prescribed for wheelchairs.

16.703(5) *Average gait.* A person 5 feet 6 inches tall would require an average of 31 inches between crutch tips. A person 6 feet 0 inches tall would require an average of 32½ inches between crutch tips.

16.703(6) *Mobility of people with sight impairment.* Generally, tactile warning signals on walking surfaces are the most effective means to warn a blind or partially sighted person of a hazard. Tactile signals for hand reception are useful only if it is made certain that the signals will be touched. Only extreme hazards, such as a stairway leading down to a walk or corridor need to be marked by a tactile warning signal. (See Figure 2.)

Where floor or room information needs to be communicated, raised characters of the standard alphabet and numerals should be used and should be the minimum of 5/8 inch high and raised or indented at least 1/32 inch. (See ANSI A117.1-1980 for more detailed provisions.) An audible signal can be used as a signal to signify the need for action by individuals with sight impairment, e.g., fire warning.

16.703(7) *Emergency signals.* If such signals are required by the authority having jurisdiction, they shall provide a visual as well as an audible signal for those people who have either sight or hearing impairments.

661—16.704(103A) Site development.

16.704(1) *Development*. Proper attention to site development in the early stages in design is the most practical and economical way of making a site accessible and providing accessible entrances to buildings. The siting of facilities, grading, parking, and the routes of walks shall provide convenience, safety and unrestricted circulation of handicapped people and their vehicles.

16.704(2) *Grading.* The site shall be graded, even contrary to existing topography, so that it attains a level with all primary entrance/entrances as defined in 16.701(15), making the building or facility accessible to persons with physical disabilities.

16.704(3) *Exterior circulation routes.* At least one path of travel from each site access point to the principal entrances of buildings shall have no steps. This route should be the most direct route. If it is not the most direct route, this path should be no more than 100 feet of horizontal distance longer than the most direct route. Level routes or those with lower than the maximum allowable slope are preferable to more direct routes at maximum allowable slope or with ramps.

The most direct exterior path of travel between parking spaces planned for disabled drivers and the nearest accessible entrances to a building served by those spaces should be no longer than 200 feet of horizontal distance when walks have a slope less than 1:30 along their entire distance and no greater than 100 feet of horizontal distance when any part of the route has a slope greater than 1:30 or includes a ramp. Where applicable, protection against collection of snow and ice should be provided along such routes. The only accessible path of travel shall not lead to a service entry of a building or facility.

NOTE: Moving walkways in the path of travel shall not be counted in calculating length of travel.

16.704(4) *Walks.* Walks shall be designed to allow free passage to site facilities and adjacent streets, to allow passing of individuals using the walk and to eliminate hazards.

The minimum clear width of a walk shall be 48 inches if a person in a wheelchair must make a turn around an obstruction, the minimum clear width of the accessible route shall be as shown in Figure 1. If a walk has two-way flow, there shall be places at least 60 inches by 60 inches to allow for two wheelchairs to pass at appropriate intervals. The interval used shall be based on the slope of the walk, overall length of the walk, visibility ahead, the nature of adjacent ground surfaces and the purpose for which the walk is used. All permanent street furniture serving walks shall be located along the sides of the walk, allowing a consistent edge and clear travel area for pedestrians.

Gratings should not be located in walks. If absolutely necessary, gratings in walks shall have spaces no greater than ½ inch wide. Surfaces shall be stable, firm and relatively slip resistant. The maximum height of surface changes shall be ¼ inch.

Walks shall have a maximum slope of 1:50 for at least 48 inches in front of accessible entrances. Walks outside of street rights-of-way which are part of an accessible route shall have a slope no greater than 1:20 along their entire distance. Any portion of a walk having a slope greater than 1:20 is a ramp and such portion shall be constructed as required by 661—subrule 5.705(1). Where they serve accessible building entrances, walks shall not be crowned. The cross slope of walks shall be no greater than 1:50.

Any sloped surface which is part of an accessible route shall have landings with no slope in the direction of travel at intervals no greater than 125 feet or when a rise of 30 inches has been attained whichever is first. (Surface may be crowned for water drainage.)

Wherever walks are intersected by other walks, driveways, parking lots or streets, at least some portion of the walk shall be at or blend to a common level. Methods used to accomplish this shall not restrict storm drainage along street edges nor interfere with snow removal.

16.704(5) *Parking and passenger loading zones.* Parking spaces, parking lots and passenger loading zones shall be in compliance with 661—Chapter 18.

661—16.705(103A) Building elements and spaces accessible to the physically handicapped.

16.705(1) *Ramps with gradients.* Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall conform to the following specifications:

a. Slope and rise. The least possible slope shall be used for any ramp. A ramp when necessary or required shall have a slope not greater than 1 foot rise in every 12 feet or 8.33 percent or 4 degrees 50 minutes. The maximum rise for any run shall be 30 inches. When space limitations prohibit the use of a 1:12 slope or less curb ramps, other than those located within street rights-of-way, having a slope greater than 1:10 but not greater than 1:8 shall have a maximum rise of 3 inches and a maximum run of 2 feet. Such curb ramps having a slope greater than 1:12 but not greater than 1:10 shall have a maximum rise of 6 inches and a maximum run of 5 feet. (See Fig. 2a for switchback and dogleg ramps.)

b. Handrails. A ramp shall have smooth handrails on both sides that are 32 inches in height measured from the surface of the ramp, and extend 1 foot beyond the top and bottom of the ramp. The inside handrail on switchback or dogleg ramps shall always be continuous. The diameter or width of the gripping surface of the handrail shall be 1¼ inches to 1½ inches. If the handrail is mounted adjacent to a wall, the space between the wall and the handrail shall be 1 ½ inches. Curb ramps having a rise greater than 6 inches shall have handrails which meet the requirements of this subrule.

c. Surface. Ramp and curb ramps shall have a nonslip surface.

d. Level platform.

(1) A ramp shall have a level platform at the top which is at least 5 feet deep by 5 feet wide if a door swings out onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

(2) A ramp shall have a level platform at least 5 feet deep and at least the width of the ramp if the door does not swing onto the platform or toward the ramp. The platform width shall be increased to provide operation clearance as required by 16.705(4).

e. Bottom clearance. Each ramp shall have at least 5 feet of straight clearance at the bottom.

f. Intermediate landings. Ramps shall have level intermediate landings for purposes of rest and safety wherever they turn, and at intervals not to exceed 30 inches of rise. The intermediate landing shall have a dimension of at least 5 feet measured in the direction of travel.

g. Ramp width. The minimum clear width of a ramp shall be 36 inches.

16.705(2) *Entrances.* The primary entrance as well as entrances at grade level as defined in rule 16.701(103A) shall be usable by physically handicapped persons. Such entrances shall be on a level that shall make the elevators, if any, accessible from that level. (See Figure 4 for door widths.)

Buildings or facilities which do not have an entrance at grade level (such as additions or additional floors) shall provide an entrance accessible to persons in wheelchairs at the level accessible to other persons which will provide accessibility to the building or facility.

16.705(3) *Accessibility within buildings and facilities.* Areas of buildings and facilities which are used by the general public shall be accessible to and functional for the physically handicapped throughout. For purposes of this rule, any skywalk or similar facility connecting two or more buildings or facilities and those routes used by the general public through the connected buildings and facilities shall be considered a single facility and shall be accessible throughout. However, building a skywalk connection to an existing building will not require modifications outside the skywalk corridor except to provide access to the skywalk system.

a. New construction. At least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements within the building or facility. One passenger elevator complying with subrule 16.705(7) shall serve each level, including mezzanines, in all multistory buildings and facilities unless exempted below. If more than one passenger elevator is provided, each elevator shall comply with subrule 16.705(7).

EXCEPTION 1: Elevators are not required in facilities that are less than three stories or that have less than 3,000 square feet per story unless the building is a governmental facility, a shopping center, a shopping mall or the professional office of a health care provider. The elevator exemption set forth in this paragraph does not obviate or limit in any way the obligation to comply with the other accessibility requirements. Floors above or below the accessible ground floor must meet the requirements of this subrule except for elevator service. If toilet or bathing facilities are provided on a level not served by an elevator, then toilet or bathing facilities must be provided on the accessible ground floor. If a building or facility is eligible for this exemption but a full passenger elevator is nonetheless planned, that elevator shall meet the requirements of subrule 16.705(7) and shall serve each level in the building. A full passenger elevator that provides service from a garage to only one level of a building or facility is not required to serve other levels.

EXCEPTION 2: Accessible ramps complying with subrule 16.705(1) may be used in lieu of an elevator.

EXCEPTION 3: Platform lifts (wheelchair lifts) complying with subrule 16.705(7) may be used in lieu of an elevator only under the following conditions:

1. To provide an accessible route to a performing area in an assembly occupancy.
2. To comply with the wheelchair viewing position line-of-sight and dispersion requirement of subrule 16.705(14).
3. To provide access where existing site constraints or other constraints make use of a ramp or an elevator infeasible.

b. Existing construction. For existing buildings or facilities or parts of existing buildings or facilities which are required to meet the accessibility provisions of this code and in which practical difficulties exist in carrying out all of the provisions of this code, the following minimum requirements shall apply:

(1) At least one accessible route complying with subrules 16.704(3) and 16.704(4) shall be provided to the building or facility.

(2) If it is established by a person having that authority that no entrance used by the general public can comply, then access at another entrance or entrances may be used provided directional signage is clearly located and displayed.

(3) When toilets are provided, at least one shall comply with subrule 16.705(8); the toilet facility may be unisex.

(4) Accessible routes shall be provided within a building or facility to those areas open to the general public on at least the level of access for the physically handicapped complying with this subrule. Whenever practical all levels of a building or facility shall be accessible.

NOTE: For the purposes of paragraph "*b,*" practical difficulties means: changes giving full access having little likelihood of being accomplished without incurring an increased cost of 50 percent of the replacement value of the building, structure or facility involved.

16.705(4) *Doors and doorways.* These requirements shall apply to interior and exterior doors which are located in areas which are accessible to the physically handicapped. (See Figure 4.)

a. Exterior doors. Doors at the primary entrance or entrances at grade level shall have a clear opening of no less than 32 inches when open and shall be operable by a single effort. The floor on the inside and outside of each doorway shall be level for a distance of 5 feet from the door in the direction the door swings and shall extend 1 foot beyond each side of the door. Sharp inclines and abrupt changes in level shall be avoided at door sills. Thresholds, as much as possible, should be flush with the floor.

b. Interior doors. Interior doors which are located in areas which are accessible to the physically handicapped shall meet the same requirements as for exterior doors in *"a"* except that the floor extension need be on the operating side only.

NOTE: Fig. 4 is included to indicate the current recommendations of ANSI A117.1-1986. Some dimensions shown exceed the requirements of this code.

c. General. All doors to accessible spaces or in accessible routes shall meet the following:

(1) Thresholds at doorways shall not exceed ¾ inch in height for exterior sliding doors or ½ inch for other types of doors.

(2) The maximum force for pushing or pulling open a door shall be 8.5 pounds for exterior hinged doors; 5.0 pounds for sliding, folding or interior hinged doors. Fire doors shall have the minimum force allowable by the local or state building code. These forces do not apply to the force required to retract latch sets.

(3) The minimum space between two hinged or pivoted doors in series shall be 48 inches plus the width of any door swinging into the space. Doors in series shall swing either in the same direction or away from the space between the doors.

(4) Handles, pulls, latches, locks and other operating devices on accessible doors should have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching or twisting of the wrist to operate.

(5) If a door has a closer, then the sweep period of the closer should be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

(6) Minimum maneuvering clearances for doors that are not automatic should be as shown in Fig. 4. The floor or ground area within the required clearances shall be level and clear. Entry doors to acute care hospital patient bedrooms shall be exempt from the requirement for space at the latch side of the door (see dimension "x" in Fig. 4) if the door is at least 44 inches wide.

(7) Doorways shall have a minimum clear opening of 32 inches with the door open 90 degrees and measured between the face of the door and the stop (Fig. 4). Openings more than 24 inches long shall comply with 16.705(4)*"a"* and 16.705(4)*"b"* (see Figure 4).

16.705(5) *Stairs.* Stairs that are required as a means of egress and stairs which are part of an accessible route shall conform to the construction for stairs in the Iowa state building code or other applicable codes with the following additional requirements:

a. Nosings. Steps in stairs that might require use by those with disabilities and by the aged shall not have abrupt lipped nosing.

b. Handrails. Stairs shall have handrails on both sides 34 to 38 inches high above the nosing of the treads. The inside handrail on switchback or dogleg stairs shall always be continuous. At least one handrail shall extend at least 12 inches beyond the top step and at least 12 inches plus the width of one tread beyond the bottom step and shall be returned or shall terminate in newel posts or safety terminals. (See Fig. 5.) At the bottom the handrail shall continue to slope for a distance of the width of one tread from the bottom riser; the remainder of the extension shall be horizontal. The diameter or width of the gripping surface of the handrail shall be 1¼ inches to 1½ inches. The clear space between wall and handrail shall be 1½ inches.

c. Treads and risers. On any given flight of stairs, all steps shall have uniform riser heights and tread depths. Risers shall be a maximum of 7 inches and treads shall be no less than 11 inches in depth measured from riser to riser.

EXCEPTION: Winding, circular and spiral stairways.

d. Open risers. Open risers are not permitted on any accessible route.

16.705(6) *Floors.* Floors shall conform to applicable codes with the following exceptions:

a. Surface. Floors shall wherever practicable have a nonslip surface.

b. Common level. Floors on the same story shall be of a common level throughout or be connected by a ramp in accordance with 16.705(1).

16.705(7) *Passenger elevators and platform lifts.* Accessible passenger elevators and platform lifts shall be on an accessible route and shall comply with the applicable requirements of 347—Chapter 72 or Chapter 73.

a. Passenger elevators. Elevator operation shall be automatic. Elevators shall have control buttons with identifying features for the benefit of the blind and shall allow for wheelchair traffic. (See Figure 6 for minimum dimensions.)

b. Platform lifts. Platform lifts may be used only when specifically allowed by subrule 16.705(3). Platform lifts shall facilitate unassisted entry, operation and exit from the lift.

16.705(8) *Toilet facilities.* At each floor level which is accessible to the physically handicapped and toilets or bathroom facilities are available, an appropriate number (at least one) of such facility shall be accessible to and usable by the physically handicapped. Where separate facilities are provided for each sex, accessibility to the physically handicapped shall likewise be provided for each sex. An appropriate number of water closets, urinals (when provided), showers or bathtubs (when provided), lavatories, mirrors, towel and disposal fixtures, and other dispensers, shall be provided in each facility, required by the remainder of this section. (See Figures 7 and 11.)

NOTE: Figs. 7 and 11 are included to indicate the current recommendations of ANSI A117.1-1986. Some dimensions shown exceed the requirements of this code.

a. Access. Toilet rooms, bathrooms, and water closets shall have a clear and unobstructed access of not less than 32 inches. The clear floor space for water closets not in stalls shall comply with Figure 7, and may be arranged to allow either left-handed or right-handed approach.

b. Grab bars. Grab bars shall be provided for water closets, bathtubs or showers, accessible to the physically handicapped and shall be capable of supporting a 250-pound load. Grab bars for water closets shall be within easy reach (within approximately 18 inches) of the water closet at the side and back, or on each side and shall be at a usable height (approximately 33 inches above the floor). (See Figures following Division VII.) Grab bars on the side of water closets shall be mounted so that there is a minimum of 54 inches from the front end of the grab bar and a maximum of 12 inches from the rear end of the grab bar and the wall behind the water closet. The grab bar for the back of the water closet shall have a minimum length of 24 inches. The diameter or width of the gripping surfaces of the grab bar shall be 1¼ inches to 1½ inches. If grab bars are mounted adjacent to a wall the space between the wall and the grab bar shall be 1½ inches.

c. Stalls. In toilet rooms, which have water closet stalls, those stalls which are required to be accessible to the physically handicapped shall:

(1) Have an unobstructed space of not less than 36 inches wide and 42 inches long in front of the water closet stool, entry to the stall shall have a clear width of 32 inches when located at the end and a clear width of 34 inches when located at the side. A door, if provided, shall not encroach into the required space in front of the water closet.

EXCEPTION: Grab bars may protrude into unobstructed space.

(2) Have grab bars or handrails as described in *"b"* above.

d. Water closets. Water closets which are accessible to the physically handicapped shall have the seat 17 to 19 inches above the floor.

e. Lavatories. Lavatories which are accessible to the physically handicapped shall, except for the projection of bowls and waste piping, have a clear unobstructed space at least 30 inches in width, 29 inches in height above the floor, and shall provide the toe clearance having a minimum height of 9 inches and a minimum depth of 17 inches. Hot water and drain pipes under lavatories shall be insulated or otherwise covered. There shall be no sharp or abrasive surfaces under lavatories. (See Fig. 7.)

f. Urinals. Urinals which are accessible to the physically handicapped shall be stall type or wall-hung with an elongated rim at a maximum of 17 inches above the floor.

g. Other fixtures. Where mirrors, towel and disposal fixtures and other dispensers are provided, at least one shall be installed so that the bottom of the mirror is within 40 inches of the floor, and the other fixtures are within 40 inches of the floor. Tilt mirrors may be used if the mirrors are installed so that the bottom of the mirror is within 44 inches of the floor and provides an equivalent field of view.

16.705(9) *Drinking fountain.* Where drinking fountains are provided, an appropriate number or at least one shall have a spout within 36 inches of the floor and shall have up-front hand-operated controls. When fountains are located in an alcove, the alcove shall be not less than 32 inches in width. (See Figure 8.)

16.705(10) *Public telephones.* Where public telephones are provided, an appropriate number shall be installed so that the headset dial and coin receiver are within 54 inches of the floor for side approach and within 48 inches of the floor for forward approach. Unobstructed access to the telephone within 12 inches of the telephone and not less than 32 inches in width and depth shall be provided. (See Fig. 9.)

a. Hearing disabilities. An appropriate number of the public telephones shall be equipped for those with hearing disabilities and so identified with instructions for use. These telephones can also be used by other persons.

b. Reserved.

16.705(11) *Signage.* All signage that provides emergency information or general circulation directions or identifies rooms and spaces shall comply with the following:

a. Identification. Raised or recessed letters or other types of identification shall be placed in a standard and convenient place.

b. Doors to hazardous areas. Doors not intended for normal use and which might prove dangerous if a blind person were to exit or enter shall be identifiable by a knurling of the door knob or handle.

c. Signs. All sign identification that provides emergency information, general circulation directions, or identifies rooms and spaces shall comply with the following:

(1) Letters and numbers on signs shall have a width-to-height ratio of between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10.

(2) Characters and symbols shall contrast with their background either light characters on a dark background or dark characters on a light background.

(3) Letters and numbers on signs shall be raised or incised 1/32 inch minimum and shall be sans serif characters. Raised characters or symbols shall be at least 5/8 inch high but no higher than 2 inches. Indented characters or symbols shall have a stroke width at least ¼ inch. Symbols or pictographs on signs shall be raised or indented 1/32 inch minimum.

(4) If accessible facilities are identified, then the international symbol of accessibility shall be used.

16.705(12) *Emergency warning systems*. If emergency warning systems are provided, they shall include both audible alarms and visual alarms. Emergency warning systems in medical care facilities may be modified to suit standard health care alarm design practice.

a. Audible alarms. Audible emergency alarms shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by at least 15 decibels or exceeds any maximum sound level with a duration of 60 seconds by 5 decibels, whichever is louder. Sound levels for alarm signals shall not exceed 120 decibels.

b. Visual alarms. At a minimum, visual signal appliances shall be provided in buildings and facilities in each of the following areas: restrooms and any other general usage areas (e.g., meeting rooms), hallways, lobbies, and any other area for common use. Visual alarm signal appliances shall be integrated into the building or facility alarm system. If single station audible alarms are provided, then single station visual alarm signals shall be provided. Visual alarm signals shall have the following minimum photometric and location features:

(1) The lamp shall be a xenon strobe type or equivalent.

(2) The color shall be clear or nominal white (i.e., unfiltered or clear filtered white light).

(3) The maximum pulse duration shall be 2/10 of 1 second (0.2 second) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10 percent of maximum signal.

(4) The intensity shall be a minimum of 75 candela.

(5) The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz.

(6) The appliance shall be placed 80 inches above the highest floor level within the space or 6 inches below the ceiling, whichever is lower.

(7) In general, no place in any room or space required to have a visual signal appliance shall be more than 50 feet from the signal (in the horizontal plane). In large rooms and spaces exceeding 100 feet across, without obstructions 6 feet above the finish floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum of 100 feet apart, in lieu of suspending appliances from the ceiling.

(8) No place in common corridors or hallways in which visual alarm signaling appliances are required shall be more than 50 feet from the signal.

EXCEPTION: In governmental facilities the following requirements may be followed in lieu of the visual alarm requirements of 16.705(12)*"b"*:

If provided, electrically powered, internally illuminated, emergency exit signs shall flash as a visual emergency alarm in conjunction with audible emergency alarms. The flashing frequency of visual alarm devices shall be less than 5 Hz. If such alarms use electricity from the building as power source, then they shall be installed on the same system as the audible emergency alarms.

Visual alarm devices that are mounted adjacent to emergency exit signs may be used in lieu of flashing exit signs.

c. Auxiliary alarms. Sleeping accommodations provided for persons with hearing impairment shall have a visual alarm connected to the building alarm system or shall have a standard 110-volt electrical receptacle into which such an alarm can be connected and a means by which a signal from the building emergency alarm system can trigger such an auxiliary alarm. When visual alarms are in place, the signal shall be visible in all areas of the unit or room. Instructions for use of the auxiliary alarm or receptacle shall be provided.

16.705(13) *Controls and operating mechanisms.* Controls and operating mechanisms in accessible spaces, along accessible routes or part of accessible elements, e.g., thermostats, light switches, dispensed controls, shall comply with this section.

a. Clear floor space that allows a forward or parallel approach by a person using a wheelchair shall be provided at controls, dispensers, receptacles and other operable equipment.

b. The highest operable part of all controls, dispensers, receptacles and other operable equipment shall be placed within 48 inches of the floor for forward reach, between 9 and 54 inches from the floor for side reach and between 9 and 46 inches from the floor for a side reach over an obstruction.

c. Controls and operating mechanisms should be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The maximum force required to activate controls shall be no greater than 5 pounds.

16.705(14) *Assembly areas.*

a. In places of assembly with fixed seating, accessible wheelchair locations shall be provided consistent with the following table:

Capacity of Seating In Assembly Areas	Number of Required Wheelchair Locations
4 to 25	1
26 to 50	2
51 to 300	4
301 to 500	6
over 500	6, plus 1 additional space for each total seating capacity increase of 100

In addition, 1 percent, but not less than one, of all fixed seats shall be aisle seats with no armrests on the aisle side, or removable or folding armrests on the aisle side. Each such seat shall be identified by a sign or marker. Signage notifying patrons of the availability of such seats shall be posted at the ticket office. Aisle seats are not required to comply with 16.705(14)*"d."*

b. Size of wheelchair locations. Each wheelchair location shall provide minimum clear ground or floor spaces as shown in Figure 13.

c. Placement of wheelchair locations. Wheelchair areas shall be an integral part of any fixed seating plan and shall be provided so as to provide people with physical disabilities a choice of admission prices and lines of sight comparable to those for members of the general public. They shall adjoin an accessible route that also serves as a means of egress in case of emergency. At least one companion fixed seat shall be provided next to each wheelchair seating area. When the seating capacity exceeds 300, wheelchair spaces shall be provided in more than one location. Readily removable seats may be installed in wheelchair spaces when the spaces are not required to accommodate wheelchair users.

EXCEPTION: Accessible viewing positions may be clustered for bleachers, balconies, and other areas having sight lines that require slopes of greater than 5 percent. Equivalent accessible viewing positions may be located on levels having accessible egress.

d. Surfaces. The ground or floor at wheelchair locations shall be level and shall comply with subrule 16.705(6).

e. Access to performing areas. An accessible route shall connect wheelchair seating locations with performing areas, including stages, arena floors, dressing rooms, locker rooms, and other spaces used by performers.

16.705(15) *Accessible transient lodging.* Transient lodging includes hotels, motels, inns, boarding houses, dormitories, resorts and other similar places. It does not include establishments located within a building that contains not more than five rooms for rent or hire and that is actually occupied by the proprietor of such establishment as the residence of such proprietor. Accessible sleeping rooms or suites and additional sleeping rooms or suites with auxiliary alarms for persons with hearing impairments shall be provided in conformance with the following table:

Number of Rooms or Suites	Accessible Rooms or Suites	Auxiliary Alarm Rooms or Suites
1 to 25	1	1
26 to 50	2	2
51 to 75	3	3
76 to 100	4	4
101 to 150	5	5
151 to 200	6	6
201 to 300	7	7
301 to 400	8	8
401 to 500	9	9
501 to 1000	2 percent of total	2 percent of total
1001 and over	20 plus 1 for each 100 over 1000	20 plus 1 for each 100 over 1000

661—16.706(103A) Making apartments accessible and functional for the physically handicapped.

16.706(1) *Apartments within multiple-dwelling units.* The requirements of this rule shall apply to the individual dwelling units and the common use spaces which are accessible to the physically handicapped in covered multifamily dwellings. The term multifamily dwellings means any building consisting of four or more dwelling units if such buildings have one or more elevators, and ground floor units in other buildings consisting of four or more units.

Dwelling unit means a single unit of residence for a household of one or more persons. Examples of dwelling units covered by these rules include condominiums, an apartment unit within an apartment building, and other types of dwellings in which sleeping accommodations are provided but toilet or cooking facilities are shared by occupants of more than one room or portion of the dwelling. Examples of the latter include dormitory rooms and sleeping accommodations in shelters intended for occupancy as a residence for homeless persons.

Ground floor means a floor of a building with a building entrance on an accessible route. A building may have one or more ground floors. Where the first floor containing dwelling units in a building is above grade, all units on that floor must be served by a building entrance on an accessible route. This floor will be considered to be a ground floor.

a. The individual dwelling units shall contain an accessible route into and through the unit.

(1) All doors intended for use as passage through the dwelling unit shall have a clear opening of at least 32 inches nominal width with the door open 90 degrees, measured between the face of the door and the stop. Openings more than 24 inches in depth are not considered doorways (see Figure 4).

NOTE: A 34-inch door, hung in the standard manner, provides an acceptable 32-inch opening.

(2) Except at doorways the minimum clear width of the accessible route shall be at least 36 inches wide.

(3) In single-story units special features such as lofts or sunken or raised areas are not required to be on an accessible route provided the areas do not interrupt the accessible route through the remainder of the dwelling unit.

(4) In multistory dwelling units in buildings with elevators, the story of the unit that is served by the building elevator shall be the primary entry to the unit and such entry/accessible floor shall comply with the requirements of *"a"* (1), (2) and (3) above. The entry/accessible floor shall contain a bathroom or powder room which complies with paragraph *"c"* below.

(5) Exterior deck, patio, or balcony surfaces shall be no more than ½ inch below the floor level of the interior of the dwelling unit, unless they are constructed of impervious material such as concrete, brick or flagstone. In such case the surface shall be no more than 4 inches below the floor level of the interior or lower if required by local building code.

(6) Thresholds at exterior doors, including sliding tracks, shall be no higher than ¾ inch. Thresholds and changes in elevations as in (5) above shall be beveled with a slope no greater than 1:2.

b. Kitchens shall meet or be adaptable to meet the following:

(1) A clear floor space at least 30 inches by 48 inches that allows a parallel approach by a person in a wheelchair must be provided at the range or cooktop and the sink. Either a parallel or forward approach must be provided at the oven, dishwasher, refrigerator/freezer or trash compactor.

(2) Clearance between counters and all opposing base cabinets, countertops, appliances or walls must be at least 40 inches. In U-shaped kitchens with sink or cooktop at the base of the "U," the base cabinets must be removable at that location or a 60-inch turning radius must be provided.

c. All bathrooms of covered multifamily dwelling units shall comply with provisions of subparagraph (1) of this paragraph or at least one bathroom in the dwelling unit shall comply with provisions of subparagraph (2) of this paragraph and all other bathrooms and powder rooms within the dwelling unit must be on an accessible route with usable entry doors in accordance with paragraph *"a"* above.

However, in multistory dwelling units, only those bathrooms on the accessible level are subject to these requirements. Where the powder room is the only facility provided on the accessible level of a multistory dwelling unit, the powder room must comply with the provisions of subparagraph (1) or (2) of this paragraph.

(1) Sufficient maneuvering space shall be provided within the bathroom for a person using a wheelchair or other mobility aid to enter and close the door, use the fixtures, reopen the door and exit. Doors may swing into the clear floor space provided at any fixture if the maneuvering space is provided. Maneuvering space may include any kneespace or toespace available below the bathroom fixtures.

Such clear floor space is illustrated in Figures 10(a), (b), (c) and (d). Clear floor space at fixtures may overlap.

If the shower stall is the only bathing facility provided in the covered dwelling unit, the shower stall shall measure at least 36 inches by 36 inches.

NOTE: Cabinets under lavatories are acceptable provided the bathroom has space to allow a parallel approach by a person in a wheelchair; if parallel approach is not possible within the space, any cabinets provided would have to be removable to afford the necessary knee clearance for forward approach.

(2) Where the door swings into the bathroom there shall be a clear space (2′6″ × 4′0″) within the room to position a wheelchair or other mobility aid clear of the path of the door as it is closed and to permit the use of the fixtures. This clear space can include any kneespace and toespace available below the bathroom fixtures.

Where the door swings out, a clear space shall be provided within the bathroom for a person using a wheelchair or other mobility aid to position the wheelchair such that the person is allowed use of the fixtures. There also shall be a clear space to allow persons using wheelchairs to reopen the door to exit.

When both tub and shower fixtures are provided in the bathroom, at least one shall be made accessible. When two or more lavatories are provided in a bathroom, at least one shall be made accessible.

Toilets shall be located within bathrooms in a manner that permits a grab bar to be installed on one side of the fixture. In locations where toilets are adjacent to walls or bathtubs, the centerline of the fixture shall be a minimum of 1′6″ from the obstacle. The other (nongrab bar) side of the toilet fixture shall be a minimum of 1′3″ from the finished surface of the adjoining walls, vanities, or from the edge of a lavatory. (See Figure 10(a).)

Vanities and lavatories shall be installed with the centerline of the fixture a minimum of 1′3″ horizontally from an adjoining wall or fixture. The top of the fixture rim is a maximum height of 2′10″ above the finished floor. If kneespace is provided below the vanity, the bottom of the apron is at least 2′3″ above the floor. If provided, full kneespace (for front approach) is at least 1′5″ deep. (See Figure 10(c).)

Bathtubs and tub/showers located in the bathroom shall provide a clear access aisle adjacent to the lavatory that is at least 2′6″ wide and extends for a length of 4′0″ (measured from the head of the bathtub). (See Figure 10 Alt. Spec. Clear Floor Space at Bathtub.)

Stall showers in the bathroom may be of any size or configuration. A minimum clear floor space 2′6″ wide by 4′0″ should be available outside the stall. (See Figure 10(d).) If the shower stall is the only bathing facility provided in the covered dwelling unit, or on the accessible level of a covered multistory unit, and measures a nominal 36″ × 36″, the shower stall must have reinforcing to allow for installation of an optional wall-hung bench seat.

d. Walls in bathrooms which are to be adaptable shall be reinforced to allow later installation of grab bars around toilet, tub, shower stall and shower seat where such facilities are provided.

Illustration of minimum areas of reinforcement are shown in Figure 11. Where the toilet is not placed adjacent to a side wall, provision shall be made for floor-mounted foldaway or similar alternative grab bars. Where the powder room (a room with a toilet and sink) is the only toilet facility located on an accessible level of a multistory dwelling unit, it must comply with this requirement for reinforced walls for grab bars.

NOTE: Installation of bathtubs is not limited by the illustrative figures; a tub may have shelves or benches at either end; or a tub may be installed without surrounding walls, if there is provision for alternative mounting of grab bars. For example, a sunken tub placed away from walls could have reinforced areas for installation of floor-mounted grab bars. The same principle applies to shower stalls—e.g., glass-walled stalls could be planned to allow floor-mounted grab bars to be installed later.

Reinforcement for grab bars may be provided in a variety of ways (for example, by plywood or wood blocking) so long as the necessary reinforcement is placed so as to permit later installation of appropriate grab bars.

e. Accessible and usable public and common use areas shall be readily accessible to and usable by handicapped persons.

The following chart identifies the public and common use areas that shall be made accessible, cites the appropriate section of the American National Standards Institute, and describes the appropriate application of the specification, including modifications to the standard:

Basic Components for Accessible and Usable
Public and Common Use Area or Facilities

Accessible element or space	ANSI A117.1	Application
1. Accessible Route(s) ...	4.3	Within the boundary of the site: (a) From public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets or sidewalks to accessible building entrances. (b) Connecting accessible buildings, facilities, elements and spaces that are on the same site. On grade walks or paths between separate buildings with covered multifamily dwellings, while not required, should be accessible unless the slope of finish grade exceeds 8.33% at any point along the route. Handrails are not required on these accessible walks. (c) Connecting accessible building or facility entrances with accessible spaces and elements within the building or facility, including adaptable dwelling units.

			(d) Where site or legal constraints prevent a route accessible to wheelchair users between covered multifamily dwellings and public or common-use facilities elsewhere on the site, an acceptable alternative is the provision of access via a vehicular route so long as there is accessible parking on an accessible route, and necessary site provisions such as parking and curb cuts are available at the public or common use facility.
2.	Protruding objects	4.4	Accessible routes or maneuvering space including, but not limited to, halls, corridors, passageways or aisles.
3.	Ground and floor and surface treatments	4.5	Accessible routes, rooms, and spaces, including floors, walks, ramps, stairs, and curb ramps.
4.	Parking and passenger-loading zones	4.6	If provided at the site, designated accessible parking at the dwelling unit on requests of residents with handicaps, on the same terms and with the full range of choices (e.g., surface parking or garage) that are provided for other residents of the project. See Iowa Administrative Code Chapter 18 of Public Safety [661] for minimum parking requirements.
5.	Curb ramps	4.7	Accessible routes crossing curbs.
6.	Ramps	4.8	Accessible routes with slopes greater than 1:20.
7.	Stairs	4.9	Stairs on accessible routes connecting levels not connected by an elevator.
8.	Elevator	4.10	If provided.
9.	Platform lift	4.11	May be used in lieu of an elevator or ramp under certain conditions.
10.	Drinking fountains and water coolers		Fifty percent of fountains and coolers on each floor, or at least one, if provided in the facility or at the site.
11.	Toilet rooms and bathing facilities .... (including water closets, toilet rooms and stalls, urinals, lavatories and mirrors, bathtubs, shower stalls, and sinks.)	4.22	Where provided in public use and common-use facilities, at least one of each fixture provided per room.

12. Seating, tables, or work surfaces	4.30	If provided in accessible spaces, at least one of each type provided.
13. Places of assembly....	4.31	If provided in the facility or at the site.
14. Common-use spaces and facilities ....(including swimming pools, playgrounds,entrances, rental offices, lobbies, elevators, mailbox areas, lounges, halls and corridors, and the like.)	4.1 through 4.30	If provided in the facility or at the site: (a) Where multiple recreational facilities (e.g., tennis courts) are provided sufficient accessible facilities of a type to ensure equitable opportunity for use by persons with handicaps. (b) Where practical, access to all or a portion of nature trails and jogging paths.
15. Laundry rooms	4.32.6	If provided in the facility or at the site, at least one of each type of appliances provided in each laundry area, except that laundry room serving covered multifamily dwellings would not be required to have front-loading washers in order to meet the requirements. (Where front-loading washers are not provided, management will be expected to provide assistive devices on request if necessary to permit a resident to use a top-loading washer.)

f. Light switches, electrical outlets, thermostats and other environmental controls shall be located no higher than 48 inches, and no lower than 15 inches, above the floor. If the reach is over an obstruction (for example, an overhanging shelf) between 20 and 25 inches in depth, the maximum height is reduced to 44 inches for forward approach; or 46 inches for side approach, provided the obstruction (for example, a kitchen base cabinet) is no more than 24 inches in depth. Obstructions should not extend more than 25 inches from the wall beneath a control. (See Figure 12.)

NOTE: Controls or outlets that do not satisfy these specifications are acceptable provided that comparable controls or outlets (i.e., that perform the same functions) are provided within the same area and are accessible.

Table 705A. Rescinded IAB 3/3/93, effective 5/1/93.

TABLE 705B
SCHEDULE OF FEE FOR HANDICAPPED REVIEW AND COMPLIANCE

Handicapped Review Certificate and Insignia	$15.00
Replacement Insignia	15.00
Plan Review Fee*	30.00
Hourly Rate (additional for over 3 hours, including revised submissions of the same building)	15.00

*Plan Review Fee applies only to buildings reviewed by the commissioner's office.

NOTES: Plans submitted to the state for review and certification shall include a minimum $45.00 payment. If more than the minimum three hours are used in handicapped review, the additional hourly fee will be billed and must be paid before the review certificate is issued.

The plan review fees for state-owned buildings in 661—16.131(103A) include the handicapped review fee.

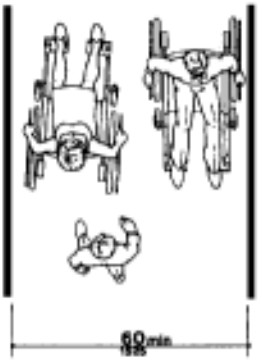
Rules 16.1(103A) through 16.99(103A) are intended to implement Iowa Code sections 103A.10, 103A.11, 103A.13, 103A.14, 103A.15, 103A.16 and 103A.17.

Rules 16.100(103A) through 16.705(103A) are intended to implement Iowa Code sections 103A.7 and 103A.9.

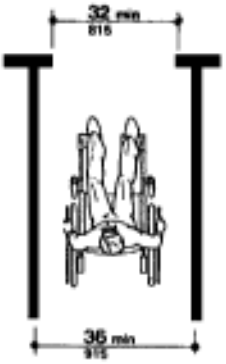
Rule 16.706(103A) is intended to implement Iowa Code sections 103A.7(5), 104A.2 and 104A.3.

661—16.707 to **16.799** Reserved.

NOTE: Figures 1 to 11 are included herein to illustrate acceptable methods of compliance with this code. Some dimensions exceed code requirements but are the preferred dimensions. Other acceptable illustrations can be found in ANSI 117.1-1980 and the minimum guidelines of the federal Architectural and Transportation Barriers Compliance Board rules 36 CFR Part 1190. (Federal Register Wed., Aug. 4, 1982.)

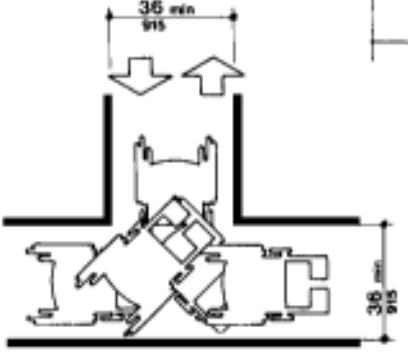


Minimum Clear Width for Two Wheelchairs



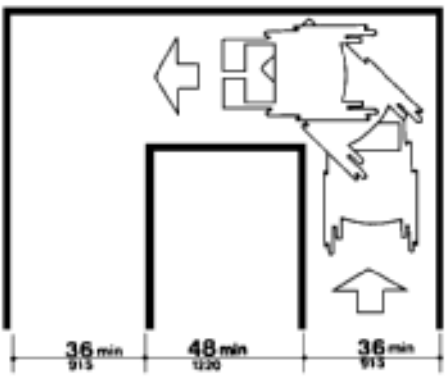
Minimum Clear Width for Single Wheelchair

60-in Diameter Space

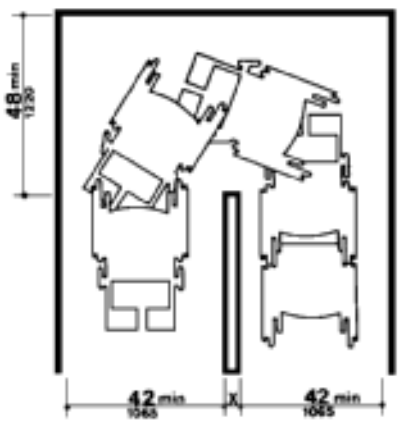


T-Shaped Space for 180° Turns

FIG 1
Wheelchair Turning Space



90° Turn

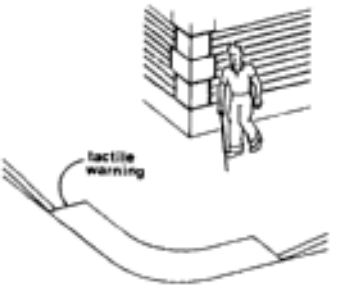


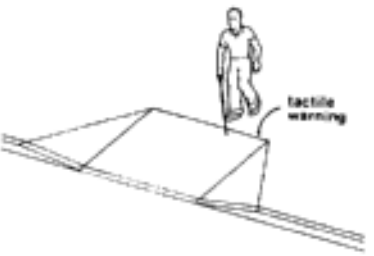
NOTE: Dimensions shown apply when x < 48 in (1220 mm).

Turns around an Obstruction

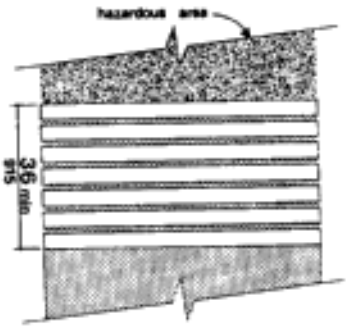
Width of Accessible Route

FIG 1 (Continued)
Wheelchair Turning Space



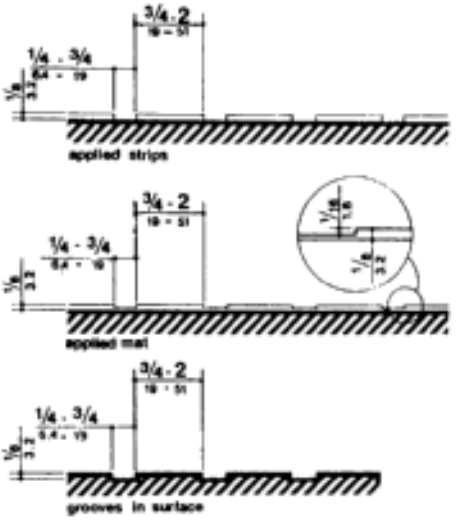


Warning Signals at Curb Ramps



Plan of Tactile Warning Surface

Tactile Warning at Stairs



NOTE: Grooves may only be used indoors.

Sections of Tactile Warning Surfaces

Strips and Grooves used as Tactile Warnings on Walking Surfaces

FIG 2
Tactile Warning of Hazardous Areas

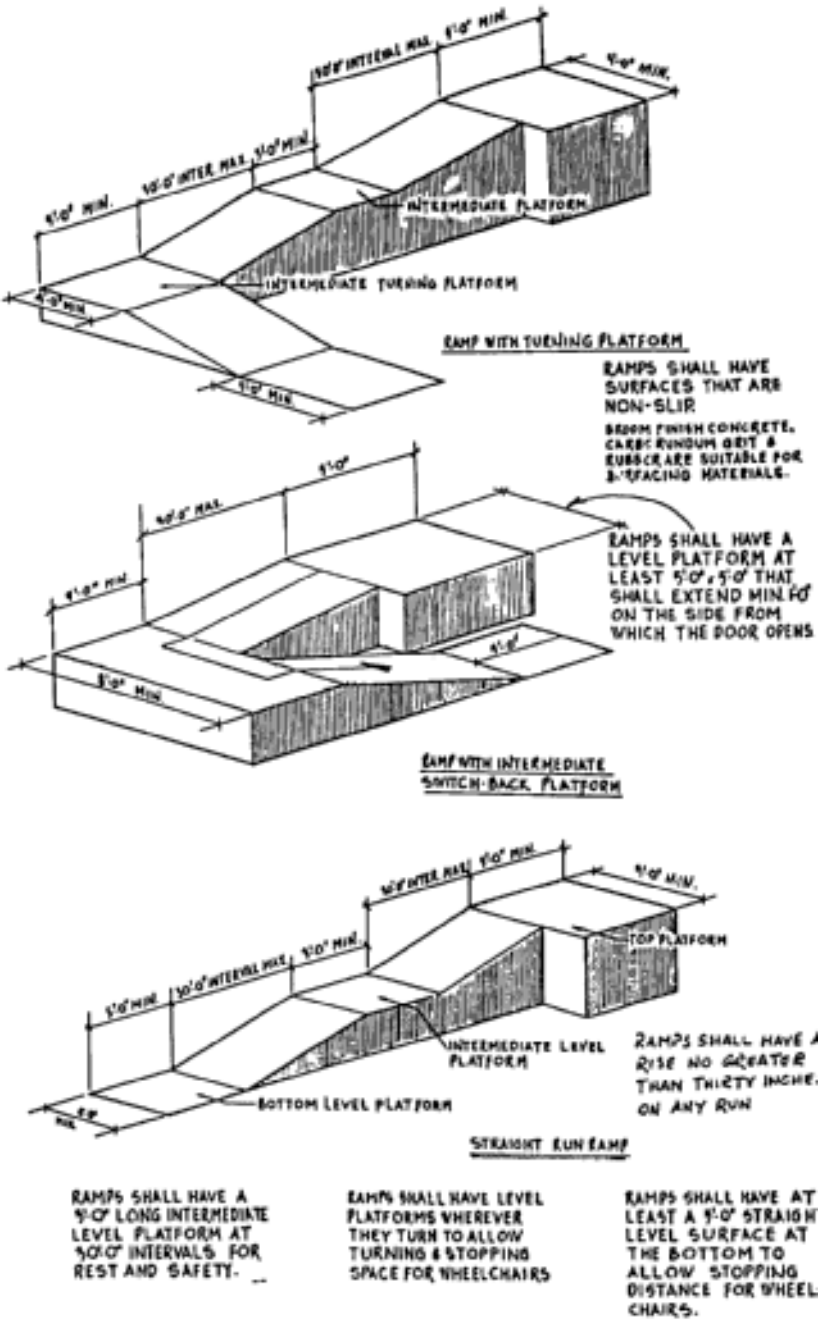

INTERMEDIATE PLATFORM
INTERMEDIATE TURNING PLATFORM
RAMP WITH TURNING PLATFORM
RAMPS SHALL HAVE SURFACES THAT ARE NON-SLIP
BROOM FINISH CONCRETE, CARBORUNDUM GRIT & RUBBER ARE SUITABLE FOR SURFACING MATERIALS.
RAMPS SHALL HAVE A LEVEL PLATFORM AT LEAST 5'0" x 5'0" THAT SHALL EXTEND MIN. 1'0" ON THE SIDE FROM WHICH THE DOOR OPENS
RAMP WITH INTERMEDIATE SWITCH-BACK PLATFORM
TOP PLATFORM
INTERMEDIATE LEVEL PLATFORM
BOTTOM LEVEL PLATFORM
RAMPS SHALL HAVE A RISE NO GREATER THAN THIRTY INCHES ON ANY RUN
STRAIGHT RUN RAMP
RAMPS SHALL HAVE A 5'-0" LONG INTERMEDIATE LEVEL PLATFORM AT 30'-0" INTERVALS FOR REST AND SAFETY.
RAMPS SHALL HAVE LEVEL PLATFORMS WHEREVER THEY TURN TO ALLOW TURNING & STOPPING SPACE FOR WHEELCHAIRS
RAMPS SHALL HAVE AT LEAST A 5'-0" STRAIGHT LEVEL SURFACE AT THE BOTTOM TO ALLOW STOPPING DISTANCE FOR WHEELCHAIRS.

Figure 2a

FIG: 3
Handicapped Parking Spaces
Rescinded IAB 4/17/91, effective 6/1/91

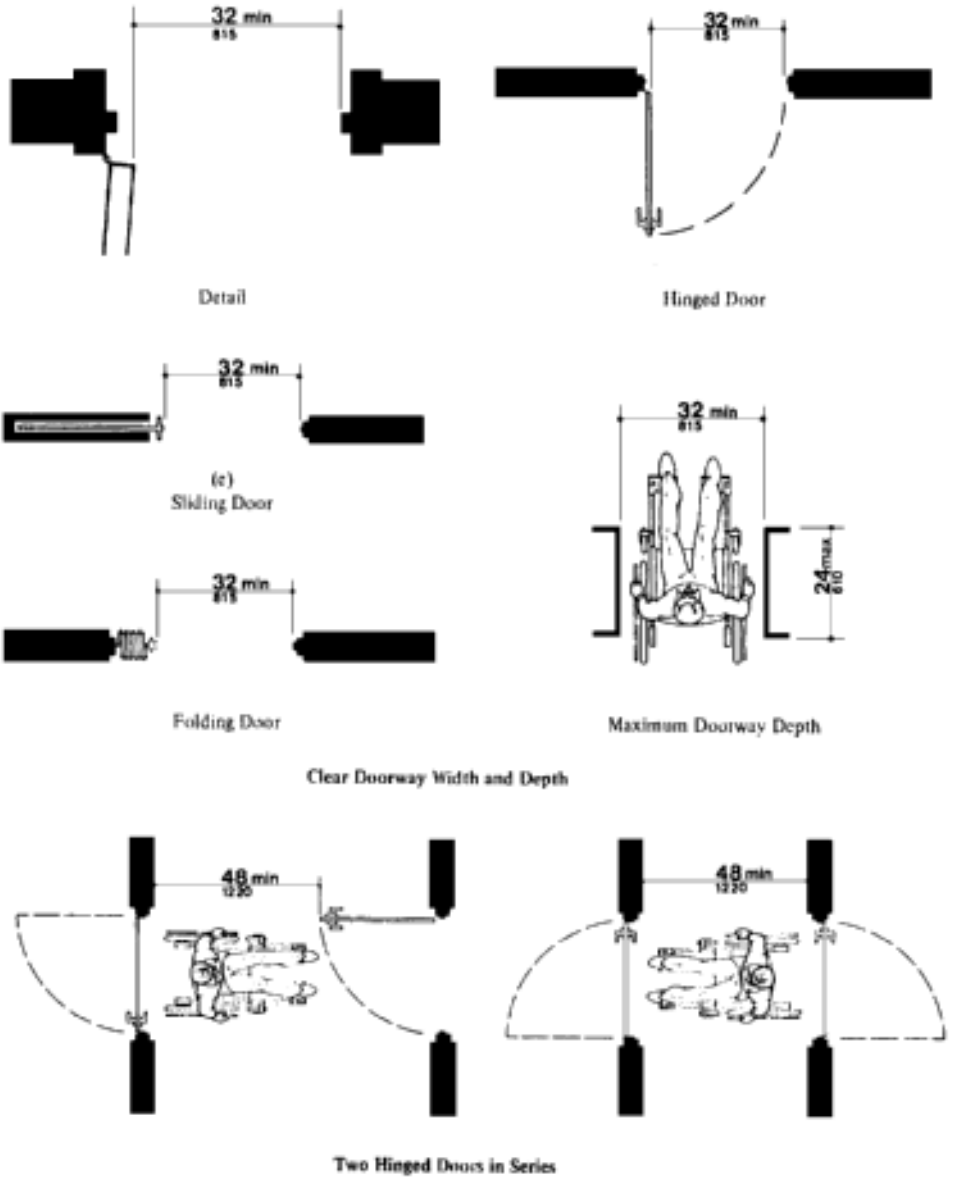
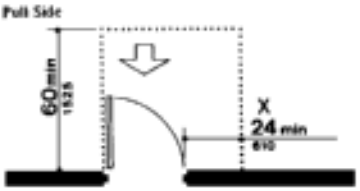
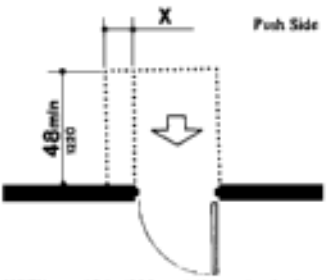


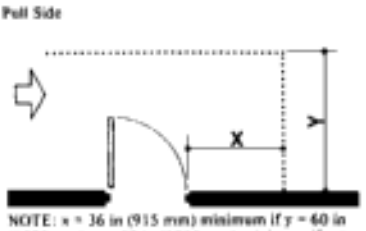
FIG 4
Doorway Widths and Maneuvering Clearances



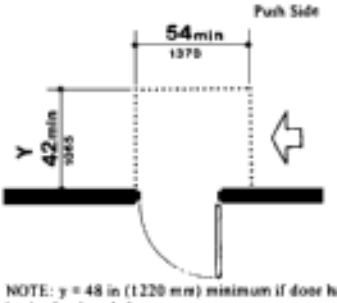


NOTE: x = 12 in (305 mm) if door has both a closer and latch.

Front Approaches – Swinging Doors

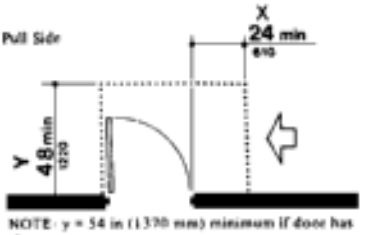


NOTE: x = 36 in (915 mm) minimum if y = 60 in (1525 mm); x = 42 in (1065 mm) minimum if y = 54 in (1370 mm).

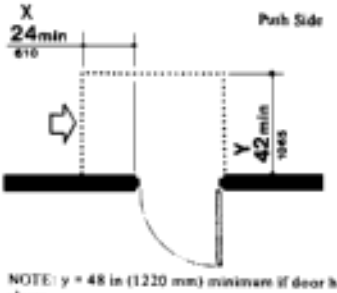


NOTE: y = 48 in (1220 mm) minimum if door has both a latch and closer.

Hinge Side Approaches – Swinging Doors



NOTE: y = 54 in (1370 mm) minimum if door has closer.



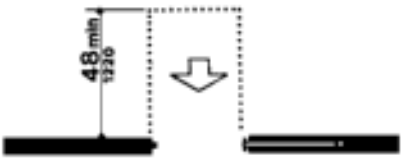
NOTE: y = 48 in (1220 mm) minimum if door has closer.

Latch Side Approaches – Swinging Doors

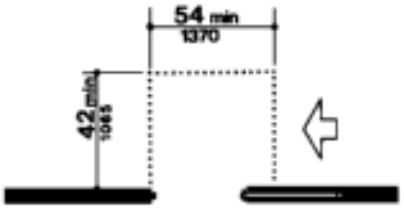
NOTE: All doors in alcoves shall comply with the clearances for front approaches.

Maneuvering Clearances at Doors

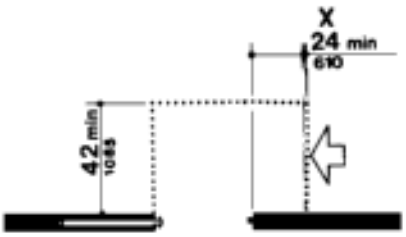
FIG 4 (Continued)
Doorway Widths and Maneuvering Clearances



Front Approach – Sliding Doors



Slide Side Approach – Sliding Doors

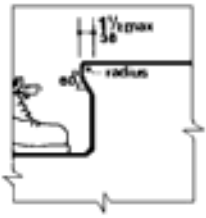


Latch Side Approach – Sliding Doors

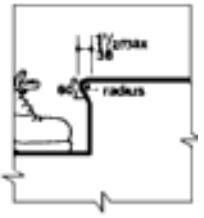
NOTE: All doors in alcoves shall comply with the clearances for front approaches.

FIG 4 (Continued)
Doorway Widths and Maneuvering Clearances

Flush Riser

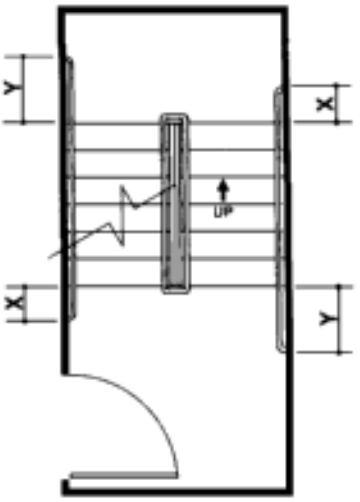


Angled Nosing

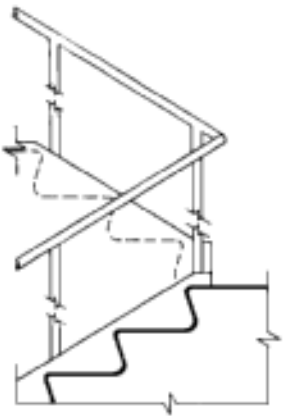


Rounded Nosing

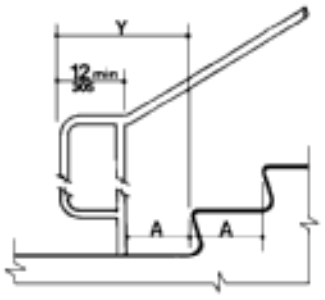
Usable Tread Width and Examples of Acceptable Nosings



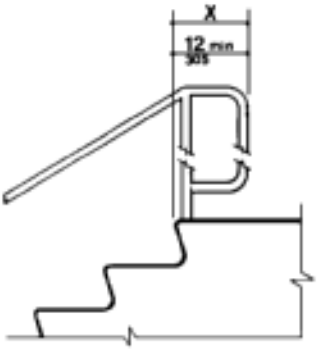
Plan



Elevation of Center Handrail

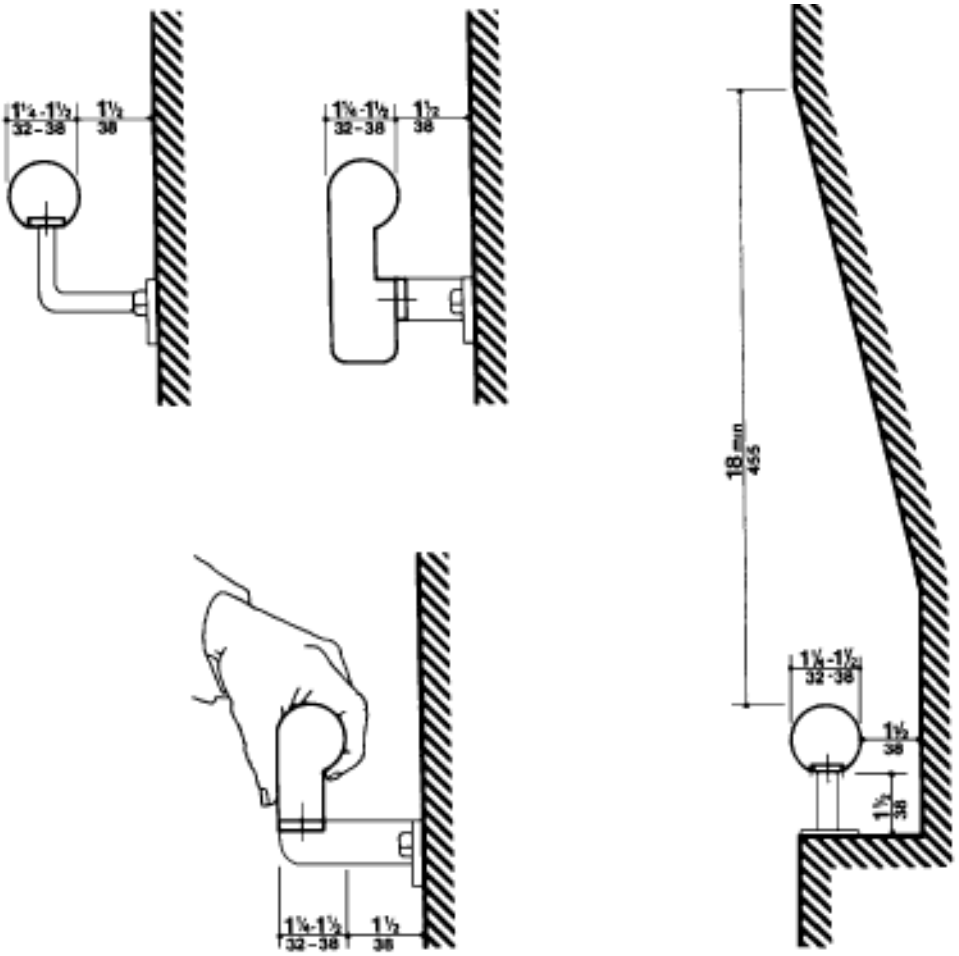


Extension at Bottom of Run



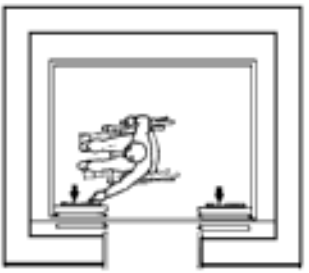
Extension at Top of Run

FIG 5
Stair Handrails

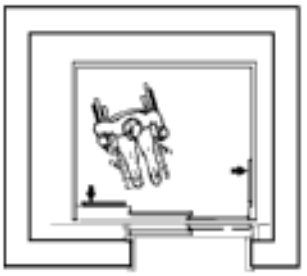


Size and Spacing of Handrails and Grab Bars

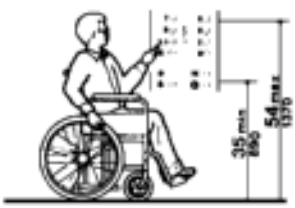
FIG 5 (Continued)
Stair Handrails



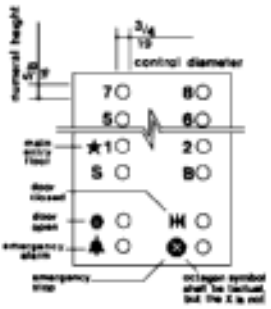
Alternate Locations of Panel with Center Opening Door



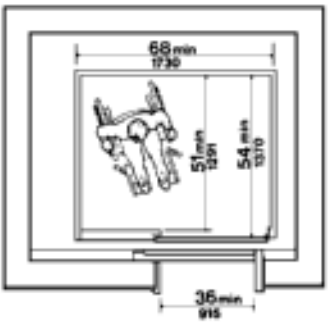
Alternate Locations of Panel with Side Opening Door



Control Height

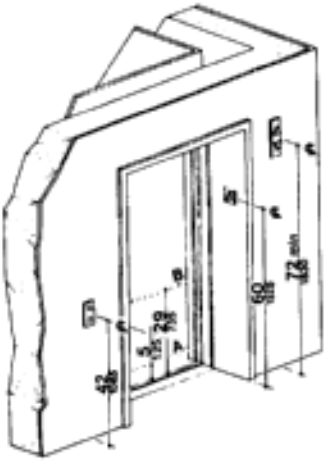


Panel Detail



NOTE: Elevator cars with a minimum width less than that above but no less than 54 in (1 370 mm) are allowed for elevators with capacities of less than 2000 lb. A center opening door application may necessitate increasing the 68-in (1 730-mm) dimension.

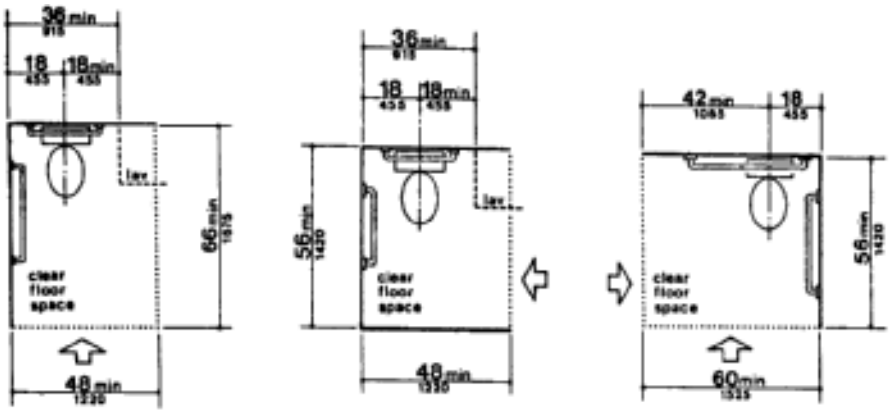
Minimum Dimensions of Elevator Cars



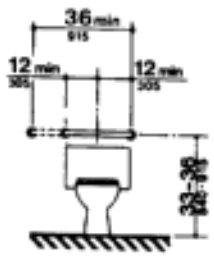
NOTE: The automatic door reopening device is activated if an object passes through either line A or line B. Line A and line B represent the vertical locations of the door reopening device not requiring contact.

Hoistway and Elevator Entrances

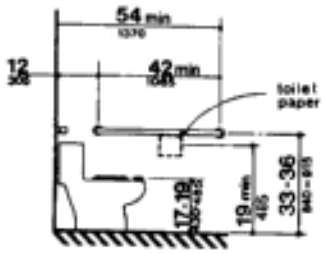
FIG 6
Car Controls



Clear Floor Space at Water Closets

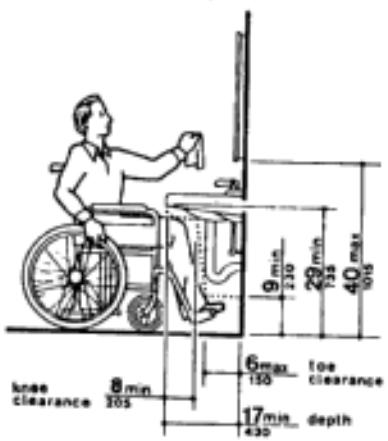


Back Wall



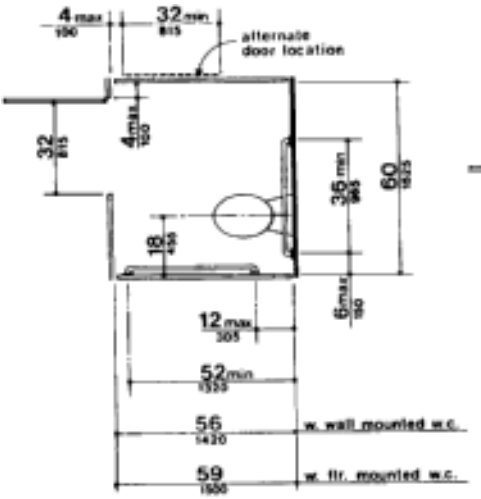
Side Wall

Grab Bars at Water Closets

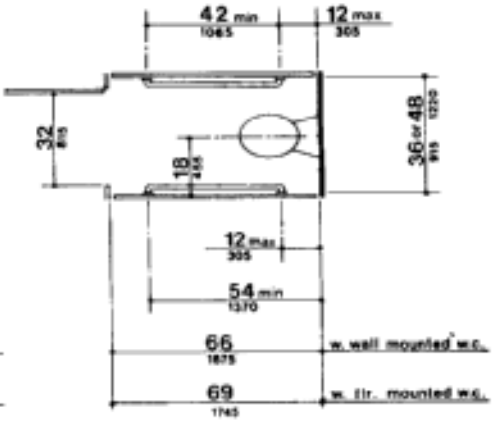


Lavatory Clearances

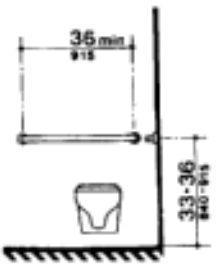
FIG 7
Toilet Facilities



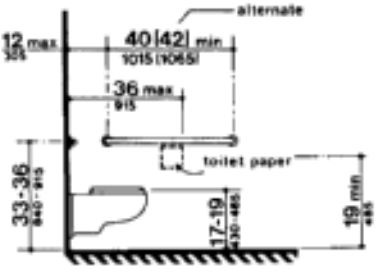
Standard Stall



Alternative Stall



Rear Wall of Standard Stall

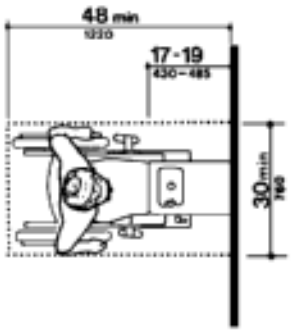


Side Walls

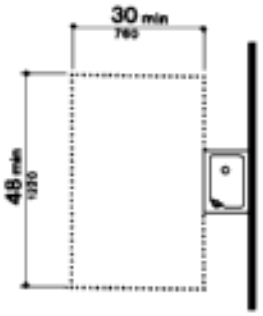
Toilet Stalls

FIG 7 (Continued)
Toilet Facilities

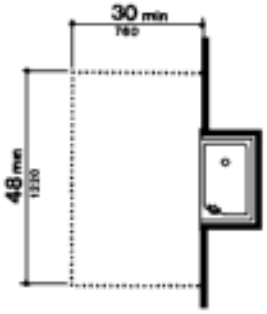
Spout Height and
Knee Clearance



Clear Floor Space

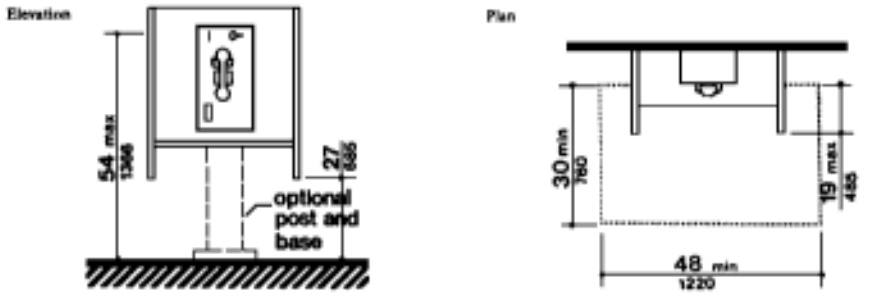


Free-Standing
Fountain or Cooler

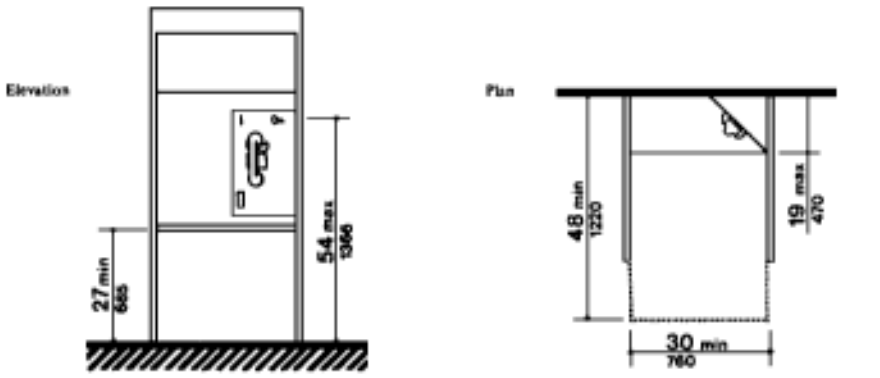


Built-In
Fountain or Cooler

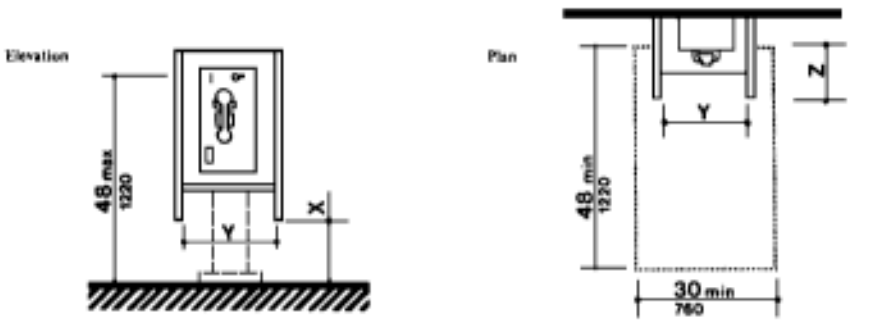
FIG 8
Drinking Fountains and Water Coolers



Side Reach Possible



Full Height Enclosure

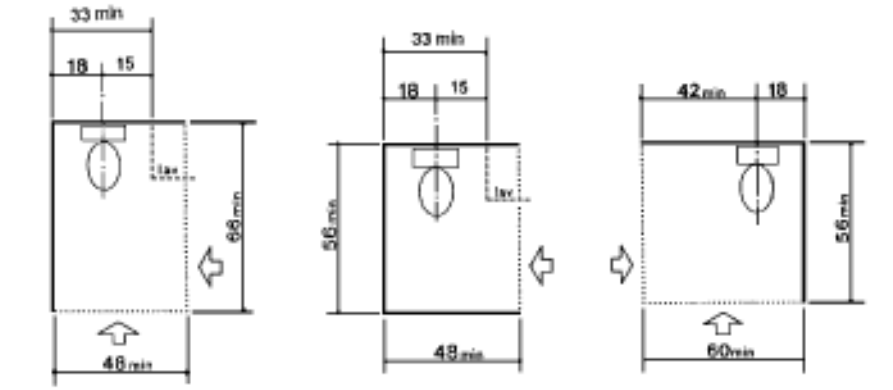


NOTE: If y < 30 in (760 mm), then x shall be ≥27 in (685 mm).

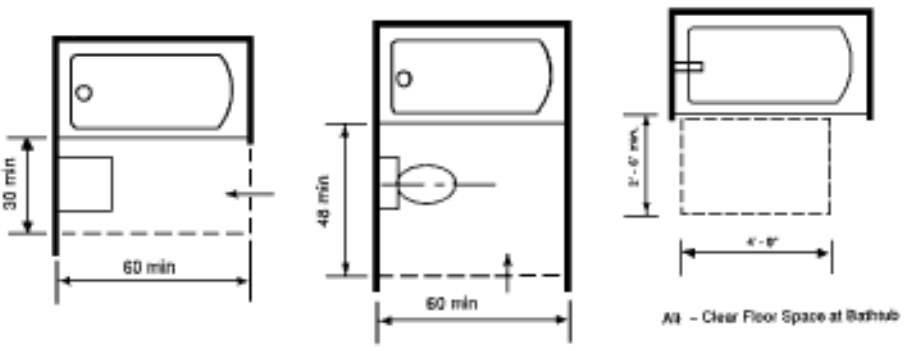
NOTE: If z > 12 in (305 mm), then y shall be ≥30 in (760 mm).

Forward Reach Required

FIG 9
Mounting Heights and Clearances for Telephones

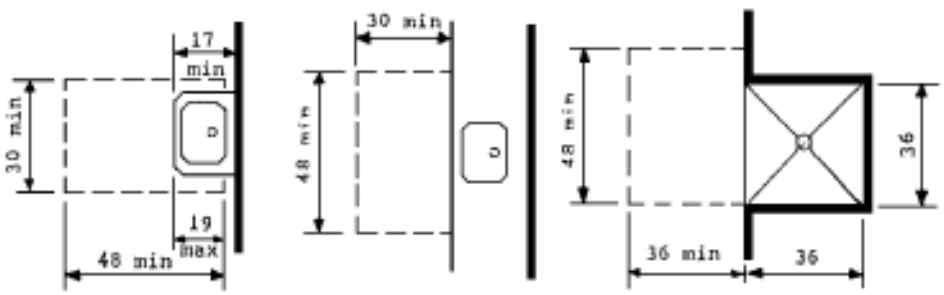


(a) Clear Floor Space for Water Closets



All – Clear Floor Space at Bathtub

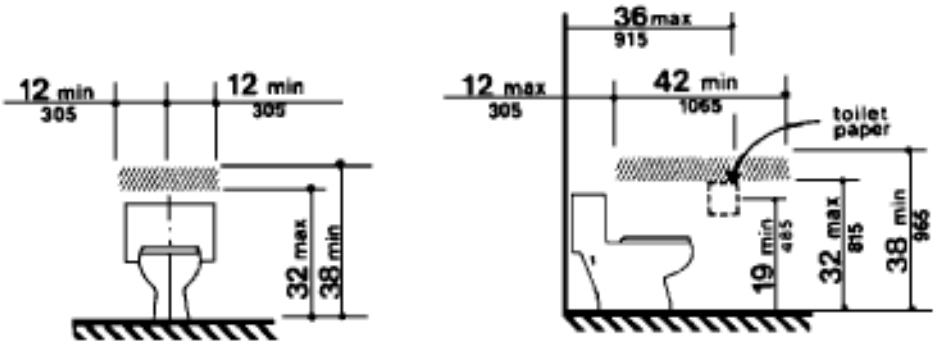
(b) Clear Floor Space at Bathtubs



(c) Clear Floor Space at Lavatories

(d) Clear Floor Space at Shower

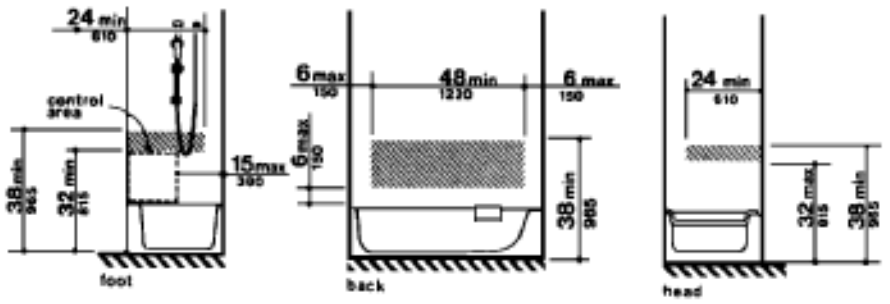
Fig. 10 Clear Floor Space for Adaptable Bathrooms



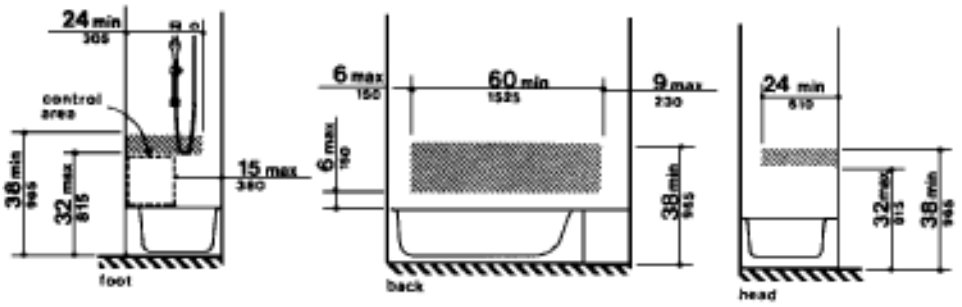
Note: The hatched areas are reinforced to receive grab bars.

Reinforced Areas for Installation of Grab Bars

FIG 11
Water Closets, Bathtubs and Showers in Adaptable Bathrooms



With Seat in Tub

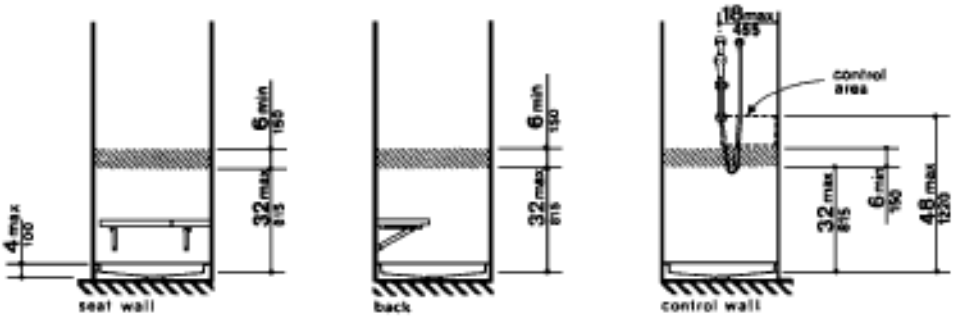


With Seat at Head of Tub

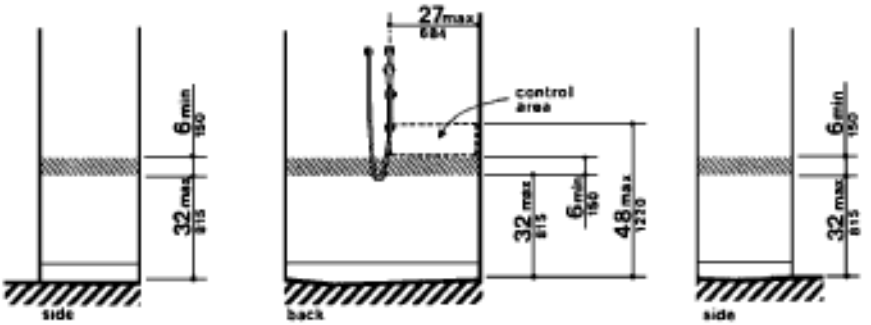
NOTE: The hatched areas are reinforced to receive grab bars.

Location of Grab Bars and Controls of Adaptable Bathtubs

FIG 11 (Continued)
Water Closets, Bathtubs and Showers in Adaptable Bathrooms



36-in by 36-in (915-mm by 915-mm) Stall

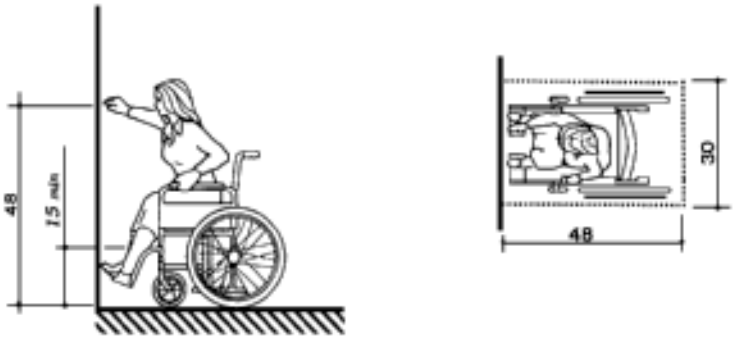


30-in by 60-in (750-mm by 1525-mm) Stall

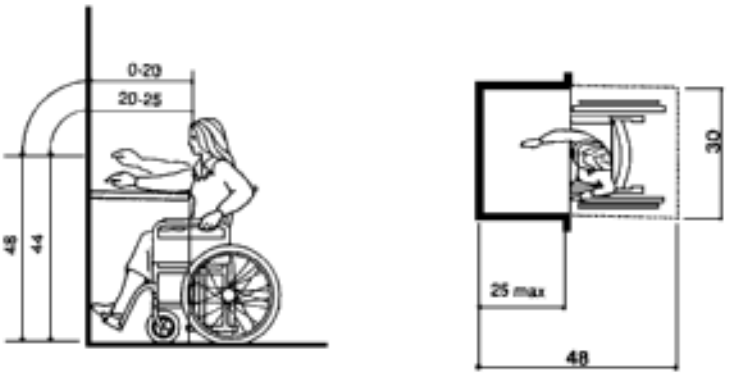
NOTE: The hatched areas are reinforced to receive grab bars.

Location of Grab Bars and Controls of Adaptable Showers

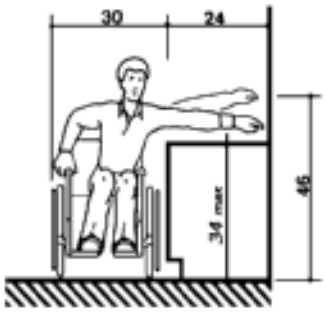
FIG 11 (Continued)
Water Closets, Bathtubs and Showers in Adaptable Bathrooms



(a)
High Forward Reach Limit

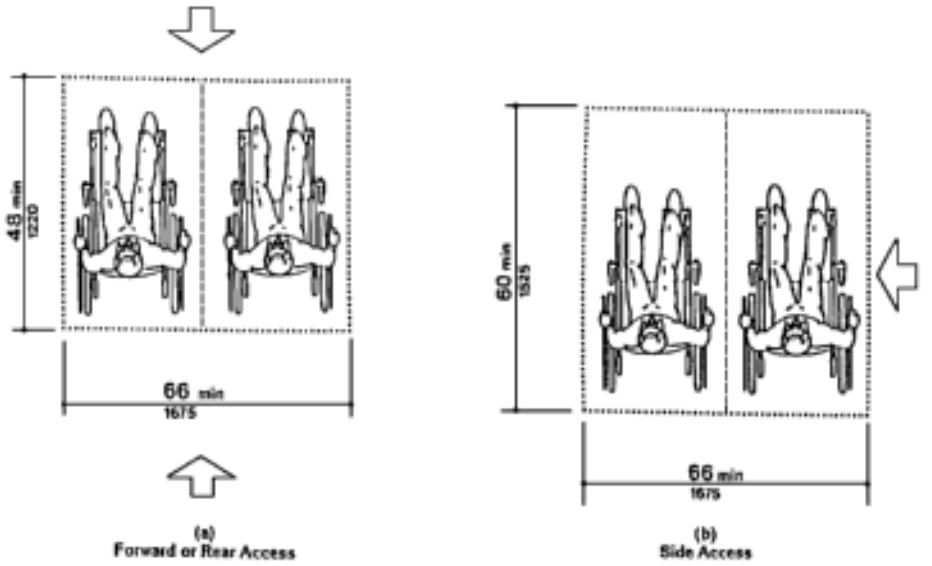


(b)
Maximum Forward Reach over an Obstruction

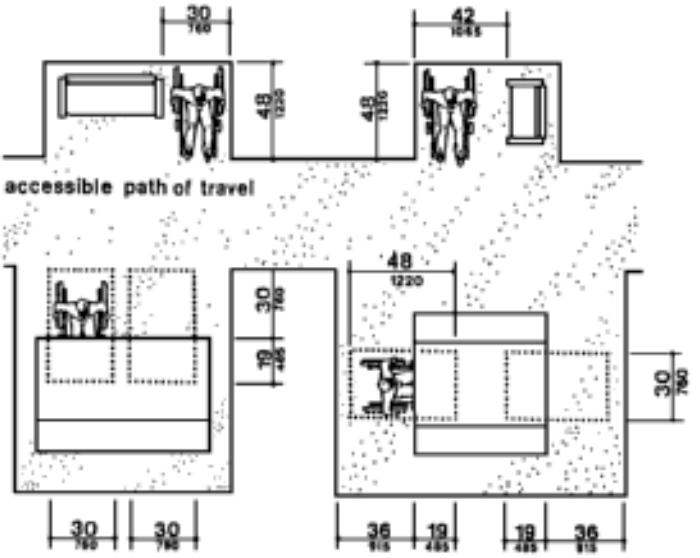


(c)
Maximum Side Reach over Obstruction

Fig. 12 Reach Ranges



Space Requirements for Wheelchair Seating Spaces in Series



Minimum Clearances for Seating and Tables

Figure 13
Wheelchair Seating

DIVISION VIII

NOTE: Pursuant to Iowa Code section 103A.10, subsection 4, paragraph *"a,"* Division VIII applies to any new construction to which the state of Iowa building code generally applies, to all new construction in jurisdictions which have adopted the state of Iowa building code, a local building code, or a compilation of requirements for building construction, and, in addition, to any new construction anywhere in the state which will contain more than 100,000 cubic feet of enclosed space that is heated or cooled.

661—16.800(103A) Iowa state building code thermal and lighting efficiency standards.

16.800(1) *Scope*. Rules 661—16.800(103A) to 661—16.802(103A) establish thermal and lighting efficiency standards for the design of new buildings and structures or portions thereof and additions to existing buildings which provide facilities or shelter intended primarily for human occupancy or use by regulating their exterior envelopes and selection of their heating, ventilation, and air-conditioning systems, service water heating, electrical distribution and illuminating systems and equipment for the efficient use of energy.

16.800(2) *Applicability.* Rules 661—16.800(103A) to 661—16.802(103A) apply to design and construction of buildings which provide facilities or shelter intended primarily for human occupancy or use throughout the state of Iowa. Rule 661—16.801(103A) establishes standards for design and construction of low-rise residential buildings. Rule 661—16.802(103A) establishes standards for nonresidential and high-rise residential design and construction.

NOTE: In any case in which the language of a code adopted herein by reference is in conflict with these rules or the Code of Iowa, the language of these rules or the Code of Iowa shall prevail.

661—16.801(103A) Adoption of residential energy code. The "Model Energy Code," 1992 edition, chapters 1 through 7 and including all charts, figures, and appendices, as published by the Council of American Building Officials, 5203 Leesburg Pike, Falls Church, Virginia 22041, is adopted by reference as the residential energy code of the state of Iowa building code, applicable to low-rise residential construction throughout the state of Iowa on or after November 16, 1994, with the following amendments:

16.801(1) Add a new subsection 101.3.1.3 as follows:

101.3.1.3 Other exemptions—Exemptions of other buildings or classes of buildings shall be requested from the commissioner in writing. Exemptions shall be granted if the commissioner determines the requirements are unreasonable as they apply to a particular building or class of buildings based upon the data supplied with the written request or additional data if requested by the commissioner.

16.801(2) Add a new subsection 101.3.2.4 as follows:

101.3.2.4 Occupancy — The occupancies and use of all buildings shall be as defined by the uniform building code as adopted by the state building code, Iowa Code chapter 103A.

16.801(3) Add a new subsection 102.3 as follows:

102.3 Code compliance. All materials and equipment used to comply with the requirements of this code shall meet the minimum requirements of the Iowa state building code or other applicable building codes.

16.801(4) Add to section 103 the following:

Procedures for obtaining approval of alternate materials and methods of construction are specified in rule 661—16.3(103A).

16.801(5) Delete section 104.1 and replace with the following:

104.1 General requirements. Nothing in these rules shall exempt or change the requirements of Iowa Code chapters 114 and 118, pertaining to registered architects or engineers.

104.1.1 Review by architect or engineer. The plans and specifications for all buildings to be constructed after January 1, 1978, and which exceeds a total volume of 100,000 cubic feet of enclosed space that is heated or cooled shall be reviewed by a registered architect or registered engineer for compliance with applicable energy efficiency standards.

104.1.2 Statement of review. A statement that a review has been accomplished and that the design is in compliance with the energy efficiency standards shall be signed and sealed by the responsible registered architect or registered engineer. This statement shall be filed with the commissioner on the form furnished by the commissioner, prior to construction or the obtaining of any local permits.

104.1.2.1 Submission fee. Included with the statement shall be a remittance of $15.00 (checks shall be made payable to the Treasurer, State of Iowa).

104.1.3 Additional buildings. If the plans and specifications relating to energy efficiency for a specific structure have been approved, additional buildings may be constructed from those same plans and specifications without need of further approval if construction begins within five years of the date of approval. Alterations of a structure which has been previously approved shall not require a review because of these changes, provided the basic structure remains unchanged and no additional energy is required for heating, cooling or lighting.

104.1.4 Changes to approved plans. No changes shall be made to any approved plan or specifications which either decreases or increases the amount of energy used for heating, cooling, or lighting, unless approved by the responsible registered architect or registered engineer in writing and notice filed with the commissioner.

104.1.5 Local plan review. The review of plans and specifications for buildings constructed with a volume of less than 100,000 cubic feet of enclosed space which is heated or cooled shall be in accordance with local or other building code requirements pertaining to plan review, as required by Iowa Code section 103A.19.

16.801(6) Add an additional subsection to 104 as follows:

104.3 Retention of plans and specifications. Plans and specifications shall not be filed with the commissioner, however, the person signing the approval statement or the owner shall maintain a copy of the approved plans and specifications, for a period of five years following substantial completion of the construction.

16.801(7) Delete subsections under section 105 and insert in lieu thereof the following:

105.1 Inspections. Inspection and review of construction shall be performed in the same manner as the other construction, in accordance with Iowa Code section 103A.19.

16.801(8) Delete the exception to section 402.5 and replace it with the following:

EXCEPTION: Except for a comparison of energy consumption between the alternative design and the standard design, single and multifamily dwellings are exempt.

16.801(9) Add the following subsections and figures to section 502.2.

502.2.1.6 HOME HEATING INDEX. In addition to the requirements of this code for detached one- and two-family dwellings the calculated Home Heating Index (HHI) of Type A-1 residential buildings shall be no greater than Five Btu per Fahrenheit Degree—Day per square foot.

502.2.1.6.1. The Home Heating Index shall be calculated using the following formula:

$$HHI = \frac{BLC \times 24 \times C}{A_t}$$

BLC = The Building Loss Coefficient expressed as Btu/hr. °F.

A_t = Total square foot area of heated space (including heated basements and basements which contain the heating equipment).

C = Correction factor from Figure 12 (to correct for solar gain and to adjust the maximum heat loss to an average hourly heat loss).

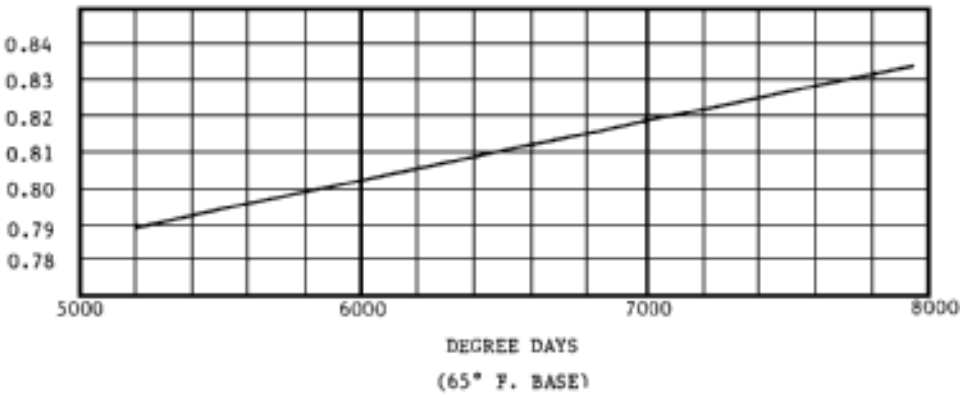
NOTE: The Building Loss Coefficient (BLC) shall include the above grade walls, below grade walls, roof/ceiling, floor over unheated space, slabs on grade and infiltration based on ½ air change per hour. These values are obtained by using the standard ASHRAE methods and equations 1 and 2 in this chapter, infiltration heat loss (H_{inf}) shall be computed as follows unless the procedure used includes infiltration in determining the component heat loss.

H_{inf}(Btu/hr. °F) = (VOLUME OF HEATED SPACE IN CUBIC FEET) × 0.009

Other methods of calculation may be used to verify the HHI such as the Thermal Performance Calculation Method (including solar) as developed by the Iowa State University Energy Extension Service, Manual "J" as published by the Air Conditioning Contractors of America or any other recognized method.

FIGURE 12

CORRECTION FACTOR C



16.801(10) Add the following subsection to section 503.4:

503.4.3.1 Vent dampers. Automatic vent dampers may be added to gas fired equipment not otherwise equipped under the following conditions:

1. The unit and installation procedure must be approved by the American Gas Association.
2. The installation must be made in accordance with the approved installation procedures.
3. The installation does not effect the operation or the warranty provisions of the equipment to which it is attached.

16.801(11) Add new subsections to section 503.4 as follows:

503.4.8 Oversizing of equipment. System design heating/cooling capacity. The rated capacity of the heating/cooling system at design conditions shall not be greater than 130 percent for heating, 115 percent for cooling at design output load calculated in accordance with section 503.2 whenever appropriate equipment is available. Equipment designed for standby purposes is not included in this capacity limitation requirement. The cooling capacity of heat pumps is exempt from this limitation.

503.4.9 Combustion air. Combustion air shall be supplied as required by chapter 6 of the uniform mechanical code as adopted as part of the state building code.

16.801(12) Add at the end of the first paragraph of section 503.10:

Provisions of the duct requirements of the uniform mechanical code as adopted as part of the state building code shall be used if different from these standards.

16.801(13) Delete section 601.1 and replace with the following:

601.1 General. The requirements contained in this chapter are applicable only to buildings containing less than 100,000 cubic feet of enclosed heated or cooled space and three stories or less in height. The provisions of this chapter are limited to residential buildings, which have more than two dwelling units, that are heated only or heated and mechanically cooled and to other buildings that are heated only. Buildings constructed in accordance with this chapter are deemed to comply with this code.

One- and two-family dwellings must comply with the Home Heating Index requirements of amendment 16.801(9) above.

16.801(14) Add to RS-8 in Section 701.1:

IES pamphlets EMS-1, EMS-2, and EMS-3 are included as part of this standard.

Rules 16.100(103A) to 16.800(103A) are intended to implement Iowa Code sections 103A.7, 103A.9 and 104A.2 and chapter 104B and Public Law 100-430.

661—16.802(103A) Adoption of nonresidential energy code. The 1993 codified version of "ASHRAE/IES 90.1-1989, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings," including appendices A, B, C, and D, published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1971 Tullie Circle N.E., Atlanta, Georgia 30329-2398, is adopted by reference as the nonresidential energy code of the state of Iowa building code, applicable to nonresidential or high-rise residential construction within the state of Iowa on or after November 16, 1994, with the following amendments:

16.802(1) Article 101 is amended by adding the following exception:

(4) Exemptions to applicability of the nonresidential and high-rise residential energy code to other buildings or classes of buildings shall be requested from the commissioner in writing. Exemptions will be granted if the commissioner determines that the requirements are unreasonable as they apply to a particular building or class of buildings based upon the data supplied with the written request or additional data requested by the commissioner.

16.802(2) Article 101 is further amended by adding the following new section 101.1:

101.1 Application to existing buildings.

101.1.1 Additions to existing buildings. Additions to existing buildings may be made without requiring the entire building or structure to comply. Additions to buildings or structures shall be constructed in conformance with the provisions of this standard which apply to new construction.

101.1.2 Historic buildings. Historic buildings are exempt from the provisions of this standard. For purposes of this rule, a "historic building" is a building which has been specifically designated as historic pursuant to Iowa Code section 103A.42 or which has been included in the National Register of Historic Places or has been determined to be eligible for such a listing.

101.1.3 Change of occupancy. A change of occupancy or use of an existing building or structure constructed under this code which would result in an increase in demand for either fossil fuels or electrical energy supply shall not be permitted unless the building or structure complies with the provisions of this code.

101.1.4 Mixed occupancy. When a building houses more than one occupancy, each portion of the building shall conform to the requirements for the occupancy housed therein.

EXCEPTION: When minor accessory uses occupy no more than 10 percent of the area of any floor of a building, the major use shall be considered the building occupancy.

101.1.5 Occupancy. The occupancies and uses of all buildings shall follow the definitions established in the Uniform Building Code, 1991 edition, published by the International Conference of Building Officials.

16.802(3) Article 102 is amended by adding the following unnumbered paragraph at the end of the article:

Alternate materials and methods of construction. Procedures for the approval of alternate materials and methods of construction are established in rule 661—16.3(103A).

16.802(4) Article 105 is amended by adding the following unnumbered paragraph at the end of the article:

Code compliance. All materials and equipment used to comply with the requirements of this standard shall meet the minimum requirements established in this chapter or other applicable building codes.

16.802(5) Article 106 is amended by omitting the introductory paragraph and inserting the following new sections in lieu thereof:

106.1 Review by architect or engineer. The plans and specifications for any building constructed after January 1, 1978, which exceed 100,000 cubic feet of enclosed space that is heated or cooled, shall be reviewed by an architect registered pursuant to Iowa Code chapter 544A or by an engineer registered pursuant to Iowa Code chapter 542B for compliance with applicable energy efficiency standards.

106.1.1 Statement of review. A statement that a review for compliance with applicable energy efficiency standards and that the design is in compliance within these standards shall be signed and sealed by the responsible registered architect or registered engineer. The statement shall be filed with the commissioner on a form prescribed and provided by the commissioner prior to construction or the issuance of any local building permits.

106.1.1.1 Submission fee. Included with the statement of review shall be a remittance of $15. Checks should be made payable to "Treasurer, State of Iowa."

106.1.2 Additional buildings. If plans and specifications related to energy efficiency have been approved for a specific structure, additional buildings may be constructed from those same plans and specifications, without need of further approval regarding compliance with energy efficiency standards, if construction of any additional structure commences within five years of the date of approval of the plans and specifications. Alterations of a structure for which the design has been previously approved shall not require review or further approval, provided that the basic structure of the building remains unchanged and that the alterations do not result in increased energy usage for heating, cooling, or lighting.

106.1.3 Changes to approved plans. No changes shall be made in approved plans or specifications prior to completion of original construction which would result in either decreased or increased demand for energy used for heating, cooling, or lighting, unless the changes are approved by the responsible registered architect or registered engineer in writing and notice of the changes has been filed with the commissioner.

106.1.4 Local plan review. The review of plans and specifications for buildings of less than 100,000 cubic feet of enclosed space that are heated or cooled shall be conducted in accordance with local or other building code requirements for plan reviews established pursuant to Iowa Code section 103A.19.

106.1.5 General requirements. Nothing in these rules shall be interpreted to alter the requirements established in Iowa Code chapter 542B or the rules of the engineering and land surveying examiners board pertaining to registered engineers or in Iowa Code chapter 544A or the rules of the architectural examining board pertaining to registered architects.

106.2 Details. The plans and specifications shall show all pertinent data and features of the building and equipment and systems governed by this standard including, but not limited to, design criteria, exterior envelope component materials, "U" values of the envelope system, "R" values of insulating materials, size and type of apparatus and equipment, equipment and systems controls and other pertinent data to indicate conformance with the requirements of this standard.

106.3 Retention of plans and specifications. The building owner or the registered architect or registered engineer who signs the approval statement shall maintain a copy of the approved plans and specifications and of the signed approval statement for a period of five years following substantial completion of the construction. Plans and specifications shall not be filed with the commissioner but shall be made available to the commissioner on request.

16.802(6) Article 107 is amended by omitting the introductory paragraph and inserting in lieu thereof the following:

Inspections and review of construction regarding this standard shall be performed in the same manner as inspections and review of construction related to other portions of this chapter.

16.802(7) Section 301.1 Exterior Design Conditions is amended by adding the following ASHRAE Alternative Component Package Tables: Burlington, IA #35; Des Moines, IA #63; Mason City, IA #130; Moline, IL #144; Omaha, NE #159; and Sioux City, IA #202.

16.802(8) Section 403.1 is amended by inserting the following new subsections:

403.1.1 Vent dampers. Automatic vent dampers may be added to gas-fired mechanical equipment, not otherwise equipped, if all of the following conditions are met:

403.1.1.1 The unit and installation method must be approved by the American Gas Association.

403.1.1.2 The installation must be made in accordance with approved installation procedures.

403.1.1.3 The installation does not affect the operation or warranty provisions of the equipment to which the vent damper is attached.

16.802(9) Section 403.2.4 is amended by adopting the ventilation standard established by the Uniform Building Code, 1991 edition, published by the International Conference of Building Officials as the referent for the minimum ventilation requirement.

16.802(10) The first exception to section 403.2.6.6 is amended by adding the ventilation requirement of the Uniform Building Code, 1991 edition, as the referent for the minimum ventilation requirement.

16.802(11) Subsection 403.2.9.3 is amended by adding the following unnumbered paragraph at the end of the subsection:

Provisions of the duct requirements of the Uniform Mechanical Code, 1991 edition, published by the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials shall apply.

These rules are intended to implement Iowa Code section 103A.7 and Public Law 102-486.

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*Effective date of IAB amendments to [O.P.P. 5.600 to 5.629] Division VI (16.600 to 16.629) delayed 70 days by the Administrative Rules Review Committee.
†Inadvertently dropped out from 1/7/81 IAC Supplement replacement pages.
**Effective date (1/1/89) of 16.120(2)[3802 "h" only] delayed until adjournment of the 1988 Session of the General Assembly by the Administrative Rules Review Committee at its December 13, 1988, meeting.

CHAPTER 17
CRIME VICTIM REPARATION

[Prior to 4/20/88, see Public Safety Department[680] Ch 17]
Program transferred to the Department of Justice—Attorney General[61] Ch 9, IAB 9/20/89. See 1989 Iowa Acts, House File 700.