

APPENDIX K

24 CFR 200.926

Minimum Property Standards for Property which is not
Multifamily or Care-type Property

The following portions of 24 C.F.R. Part 200 have been included for the convenience of the users of this handbook. These provisions establish procedures for the construction of one and two family dwellings and reference standards found in the Appendices of this handbook.

200.926 Minimum property standards for one- and two-family dwellings.

(a) Construction standards.

- (1) Applicable structures. The standards identified or contained in this section and 200.926 and 200.926a-200.926e shall apply to single family detached homes, duplexes, triplexes and to living units in a structure where the units are located side-by-side in townhouse fashion.
- (2) Applicability of standards to new construction. The standards referenced in paragraph (a)(1) of this section are applicable to:
 - (i) Structures approved for insurance or other benefits prior to the start of construction, including approval under the direct endorsement process described in 203.5 of this chapter;
 - (ii) Structures which are approved for insurance or other benefits based upon participation in an insured warranty program;
 - (iii) Structures which are insured as new construction based upon a Certificate of Reasonable Value issued by the Veterans Administration.

K-1

1994

4910.1

- (b) Conflicting standards. The requirements contained in 200.926d do not preempt local or State standards, nor do they alter or affect a builder's obligation to comply with any local or State requirements. However, a property shall be eligible for benefits only if it complies with the requirements of this subpart, including any referenced standards. When any of the requirements identified in 200.926c are in conflict with a partially accepted local or State code, the conflict will be resolved by the HUD Field

Office servicing the jurisdiction in which the property is to be located.

- (c) Standard for evaluating local or State building codes. The Secretary shall compare a local building code submitted under 200.926(d) or a State code to the list of construction related areas contained in 200.926a.
 - (1) A local or State code will be accepted if it regulates each area and subarea on the list. However, for seismic design, ASCE 7-88, is mandatory.
 - (2) A local or State building code will be partially accepted if it regulates most of the areas on the list provided, however, that no code may be partially accepted if it fails to regulate subareas in more than one of the major areas. The major areas are: fire safety, light and ventilation, structural loads, foundation systems, materials, standards, construction components, glass, mechanical, plumbing and electrical. See 200.926a.
 - (3) For purposes of this paragraph, a local or State code regulates an area or subarea if it establishes a standard concerning that area or subarea.
- (d) Code selection. Any materials required to be submitted under this section must be submitted by the time the lender or other interested party applies for mortgage insurance or other benefits.
 - (1) Jurisdictions without previously accepted building codes. The following submission requirements apply to lenders and other interested parties in jurisdictions without building codes, jurisdictions with building codes which previously have never been submitted for acceptance and jurisdictions with building codes which previously have been submitted for acceptance and have not been accepted or partially accepted by the Secretary.

K-2

1994

4910.1

- (i) In jurisdictions without local building codes:
 - (A) If the State building code is acceptable, the lender or other interested party must comply with the State building code and the requirements of 200.926d;
 - (B) If the State building code is partially acceptable, the lender or other interested party must comply with:
 - (1) The acceptable portions of the partially acceptable code;

- (2) Those portions of the CABO One- and Two-Family Dwelling Code or the Electrical Code for One- and Two-Family Dwellings, designated by the HUD Field Office, in accordance with 200.926c; and
 - (3) The requirements of 200.926d.
- (C) If there is no State building code or if the State building code is unacceptable, the lender or other interested party may comply with:
- (1) The CABO One- and Two-Family Code and the Electrical Code for One- and Two-Family Dwellings, as identified in 200.926b(a); and
 - (2) The requirements of 200.926d.
- (ii) In jurisdictions with local building codes which have never been submitted for review, lenders or other interested parties must:
- (A) Comply with the requirements of 200.926(d)(1)(i)(A), (B) or (C), as appropriate; or
 - (B) Request the Secretary's acceptance of the local building code in accordance with 200.926(d)(1)(iv).

K-3

1994

4910.1

- (1) If the Secretary determines that the local building code is unacceptable, then the lender or other interested party must comply with the requirements of 200.926(d)(1)(i)(A), (B) or (C), as appropriate.
- (2) If the Secretary determines that the local code is partially acceptable, then the lender or other interested party must comply with:
 - (i) The acceptable portions of the partially acceptable local code;
 - (ii) Those portions of the CABO One- and Two-Family Dwelling Code or Electrical Code for One- and Two-Family Dwellings designated by the HUD Field Office in accordance with 200.926c;

- (iii) The requirements of 200.926d; and
 - (3) If the Secretary determines that the local code is acceptable, then the lender or other interested party must comply with the local building code and the requirements of 200.926d.
- (iii) In jurisdictions with local building codes which previously have been submitted for review and which have been found unacceptable by the Secretary:
- (A) If the local code has not been changed since the date the code or changes thereto were submitted to the Secretary, the lender or other interested party must comply with the requirements of 200.926(d)(1)(i)(A), (B) or (C), as appropriate; or
 - (B) If the local code has been changed since the date when the code or changes thereto were submitted to the Secretary, the lender or other interested party must submit a copy of all changes to the local building code, including all applicable service codes and

K-4

1994

4910.1

- appendices and a copy of the statute, ordinance, regulation or order making such changes in the code, which have been made since the date when the code or other changes thereto were last submitted to the Secretary. However, the lender or other interested party need not submit any part already in the possession of the HUD Field Office. Based upon the Secretary's determination concerning the acceptability of the local code as changed, the lender or other interested party must comply with the requirements of 200.926(d)(1)(ii)(B)(1), (2) or (3), as appropriate.
- (iv) In order to obtain the Department's approval of a local code, the lender or other interested party must submit the following material to the HUD Field Office serving the jurisdiction in which the property is to be constructed:
- (A) A copy of the jurisdiction's local building code, including all applicable service codes and appendices; and

- (B) A copy of the statute, ordinance, regulation, or order establishing the code, if such statute, ordinance, regulation or order is not contained in the building code itself. However, the lender or other interested party need not submit any document already on file in the HUD Field Office.
- (2) Jurisdictions with previously accepted or partially accepted building codes.
 - (i) The lender or other interested party shall submit to the HUD Field Office serving the jurisdiction in which the property is to be constructed:
 - (A) A certificate stating that since the date when the code or any changes thereto were last submitted to the Secretary, the jurisdiction's local building code has not been changed; or

K-5

1994

4910.1

- (B) (1) A copy of all changes to the jurisdiction's building code, including all applicable service codes, and appendices, which have been made since the date when the code or other changes thereto were last submitted to the Secretary. However, the lender or other interested party need not submit any part already in the possession of the HUD Field Office; and
 - (2) A copy of the statute, ordinance regulation, or order making such changes in the code.
- (ii) If, based upon changes to the local building code, the Secretary determines that it is unacceptable, the lender or other interested party must comply with the requirements of 200.926(d)(1)(i)(A), (B) or (C), as appropriate.
- (iii) If the local building code was previously found by the Secretary to be partially acceptable and there have been no changes to it or if the local building code was previously found by the Secretary to be partially acceptable and if, based upon changes to it, the Secretary determines that it is still partially acceptable or if the local building code was previously found by the Secretary to be acceptable and if, based upon changes to it the Secretary determines that it is partially acceptable, then the lender or other interested

party must comply with 200.926(d)(1)(ii)(B), (2)(i), (ii) and (iii).

- (iv) If the local building code was previously found by the Secretary to be partially acceptable and if, based upon changes to it, the Secretary determines that it is acceptable, or if the local building code was previously found by the Secretary to be acceptable and there have been no changes to the code, or if the local building code was previously found by the Secretary to be acceptable and if, based upon changes to it, the Secretary determines that it is still acceptable, then the lender or other interested party must comply with the local building code and the requirements of 200.926d.

K-6

1994

4910.1

- (3) Notification of decision. The Secretary shall review the material submitted under 200.926(d). Following that review, the Secretary shall issue a written notice (except where there is a previously accepted or partially accepted code which has not been changed) to the submitting party stating whether local building code is acceptable, partially acceptable or not acceptable. Where the local building code is not acceptable, the notice shall also state whether the State code is acceptable, partially acceptable or not acceptable. The notice shall also contain the basis for the Secretary's decision and a notification of the submitting party's right to present its views concerning the denial of acceptance if the code is neither accepted nor partially accepted. The Secretary may, in his discretion, permit either an oral or written presentation of views.
 - (i) Fire retardant treated plywood, where approved by a State or local building code, shall not be permitted for use in roof construction unless a HUD technical suitability bulletin has been issued by the Department for that product.
 - (ii) The Secretary shall review the material submitted under 200.926(d). Following that review, the Secretary shall issue a written notice (except where there is a previously accepted or partially accepted code which has not been changed) to the submitting party stating whether the local building code is acceptable, partially acceptable or not acceptable. Where the local building code is not acceptable, the notice shall also state whether the State code is acceptable, partially acceptable or not acceptable. The notice shall also state the basis for the Secretary's decision and a

notification of the submitting party's right to present its views concerning the denial of acceptance if the code is neither accepted nor partially accepted. The Secretary may, in his or her discretion, permit either an oral or written presentation of views.

K-7

1994

4910.1

- (4) Department's responsibilities.
- (i) Each Field Office will maintain a current list of jurisdictions with accepted local or State building codes, a current list of jurisdictions with partially accepted local or State building codes which have not been accepted. For local codes, the lists will state the most recent date when the code or changes thereto were submitted to the Secretary. The lists, which shall be prepared by the Field Offices, will be available to any interested party upon request. In addition, the list of jurisdictions whose codes have been partially accepted shall be identified in accordance with 200.926c those portions of the codes listed at 200.926b(a) with which the property must comply.
 - (ii) The Department is responsible for obtaining copies of the State codes and any changes thereto.

200.926a Residential building code comparison items.

HUD will review each local and State code submitted under this subpart to determine whether it regulates all of the following areas and subareas:

- (a) Fire safety.
 - (1) Allowable height;
 - (2) Fire separations;
 - (3) Fire resistance requirements;
 - (4) Egress doors and windows;
 - (5) Unit smoke detectors;
 - (6) Flame spread.
- (b) Light and ventilation.
 - (1) Habitable rooms;
 - (2) Bath and toilet rooms.

K-8

1994

4910.1

- (c) Structural loads.
 - (1) Design live loads;
 - (2) Design dead loads;
 - (3) Snow loads (for jurisdiction with snow loading conditions identified in Section 7 of ASCE-7-88 (Formerly ANSI A58.1))
 - (4) Wind loads; Use ASCE-7-88
 - (5) Earthquake loads (for jurisdictions in seismic zones 3 or 4 as identified in Section 9 of ASCE-7-88 (Formerly ANSI A58.1))

- (d) Foundation systems.
 - (1) Foundation depths;
 - (2) Footings;
 - (3) Foundation materials criteria.

- (e) Materials standards.
 - (1) Materials standards.

- (f) Construction components.
 - (1) Steel;
 - (2) Masonry;
 - (3) Concrete;
 - (4) Lumber;
 - (5) Roof construction and covering;
 - (6) Chimneys and fireplaces.

- (g) Glass.
 - (1) Thickness/area requirements;
 - (2) Safety glazing.

- (h) Mechanical.
 - (1) Heating, cooling and ventilation systems;
 - (2) Gas, liquid and solid fuel piping and equipment;
 - (3) Chimneys and vents;
 - (4) Ventilation (air changes).

K-9

1994

4910.1

- (i) Plumbing.
 - (1) Materials standards;
 - (2) Sizing and installing drainage systems;
 - (3) Vents and venting;
 - (4) Traps;
 - (5) Cleanouts;
 - (6) Plumbing fixtures;
 - (7) Water supply and distribution;

(8) Sewage disposal systems.

(j) Electrical.

- (1) Branch circuits;
- (2) Services;
- (3) Grounding;
- (4) Wiring methods;
- (5) Cable;
- (6) Conduit;
- (7) Outlets, switches and junction boxes;
- (8) Panelboards.

200.926b Model codes.

(a) Incorporation by reference. The following model code publications are incorporated by reference in accordance with 5 U.S.C. 522(a) and 1 CFR Part 51. The incorporation by reference of these publications has been approved by the Director of the Federal Register. The locations where copies of these publications are available are set forth below.

- (1) CABO One and Two Family Dwelling Code, 1992 Edition including the 1993 amendments but excluding Chapter I - Administration, and the phrase "or fire retardant wood" contained in the exception of paragraph R-218.2.2(2) but including the Appendices A, B, D, and E of the code. (Available from the Council of American Building Officials, Suite 708, 5203 Leesburg Pike, Falls Church, VA 22041.)
- (2) Electrical Code for One and Two Family Dwellings, NFPA 70A, 1990 Edition, including appendices. Available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

K-10

1994

4910.1

(b) Model code compliance requirements.

- (1) When a one or two family dwelling is to comply with the model codes set forth in 200.926(a), the following requirements of those model codes shall not apply to those properties:
 - (i) Those provisions of the model codes that require or allow the issuance of permits of any sort.
- (2) Where the model codes set forth in 200.926b(a) designate a building, fire, mechanical, plumbing or other official, the Secretary's designee in the HUD Field Office serving the jurisdiction in which the dwelling is to be constructed shall act as such officials.

(c) Designation of Model Codes. When a one or two family dwelling or townhouse is to comply with portions of the model code or the entire code, the dwelling shall comply with the CABO One and Two Family Dwellings Code 1992 Edition, including the 1993 amendments but excluding Chapter I - Administration, or portions thereof as modified by 200.926d(e) of this part and designated by the HUD Field Office serving a jurisdiction in which the property is located. In addition, the property shall comply with all the standards which are referenced for any designated portions of the model code, and with the Electrical Code for One and Two Family Dwellings, NFPA 70A, 1990.

(1) CABO One and Two Family Dwelling Code, 1992 Edition with the 1993 amendments.

(2) Electrical Code for One and Two Family Dwellings, NFPA 70A, 1990.

200.926C Model code provisions for use in partially accepted code jurisdictions.

If a lender or other interested party is notified that a State or local building code has been partially accepted, then the properties eligible for HUD benefits in that jurisdiction shall be constructed in accordance with the applicable State or local building code, plus those additional requirements identified below. Depending upon the major area identified in 200.926a which is not adequately regulated by the State or local code, the HUD Field Office will designate, in accordance with the schedule below, those portions of one of the model codes with which the property must comply.

K-11

1994

4910.1

Schedule for Model Code Supplements to
Local or State Codes

<p>Deficient major from 200.926a as determined by Field Office review</p>	<p>Portions of the CABO One and Two Family Dwelling Code, 1992 Edition including the 1993 amendments with which a property must comply and Electrical code for One and Two Family Dwellings (NFPA 70A-1990)</p>
---	---

- (a) Fire safety..... Chapters 2, 9,; Section R-402.
- (b) Light and ventilation..... Chapter 2; Section R-309.
- (c) Structural loads..... Chapter 2.
- (d) Foundation systems..... Chapter 3.

- (e) Materials standards..... Chapter 26.
 - (f) Construction components..... Part III.
 - (g) Glass..... Chapter 2.
 - (h) Mechanical..... Part IV.
 - (i) Plumbing..... Part V.
 - (j) Electrical..... Electrical Code for One and
Two Family Dwellings
(NFPA 70A-1990)
-

200.926d Construction Requirements

(a) Application.

(1) General.

These standards cover the agency requirements for accessibility to physically disabled people, variations to standards, real estate entity, trespass and utilities, site conditions, access, site design, streets, dedication of utilities, drainage and flood hazard exposure, special construction and product acceptance, thermal requirements, and water supply systems.

K-12

1994

4910.1

(2) Requirements for Accessibility to Physically Disabled People

The HUD Field Office will advise project sponsors as to the extent accessibility will be required for new construction of one- and two-family dwellings on a project-by-project basis.

(i) Technical Standards

See HUD, Minimum Property Standards, 4910.1 See 24 CFR Part 40.

(3) Variations to standards.

(i) New materials and technologies.

See 200.926d(d). Alternatives, nonconventional or innovative methods and materials shall be equivalent to these standards in the areas of structural soundness, durability, economy of maintenance or operation and usability.

(ii) Variation procedures.

Variations from the requirements of any standard with which the Department requires compliance shall be made in the following ways:

- (A) For a particular design or construction method to be used on a single case or project, the decision is the responsibility of the Field Office. Headquarters concurrence is not required.
 - (B) Where a variation is intended to be on a repetitive basis, a recommendation for a Local Acceptable Standard, substantiating data, and background information shall be submitted by the Field Office to the Director, Office of Manufactured Housing and Regulatory Functions.
- (iii) Variances which require individual analysis and decision in each instance are not considered as repetitive variances even though one particular standard is repeatedly the subject of variation. Such variances are covered by 200.926d(a)(3)(ii)(A).

K-13

1994

4910.1

(b) General acceptability criteria.

(1) Real estate entity.

The property shall comprise a single plot except that a primary plot with a secondary plot for an appurtenant garage or for other use contributing to the marketability of the property will be acceptable provided the two plots are in such proximity as to comprise a readily marketable real estate entity.

(2) Service and facilities.

(i) Trespass.

Each living unit shall be one that can be used and maintained individually without trespass upon adjoining properties, except when the windowless wall of a detached dwelling is located on a side lot line. A detached dwelling may be located on a side lot line if:

- (A) Legal provision is made for permanent access for the maintenance of the exterior portion of the lot line wall, and
- (B) The minimum distances from the dwelling to the dwellings on the abutting properties are not less than the sum of

the side yard distances computed as appropriate for the type of opposing walls. (Minimum distance 10 ft.)

(ii) Utilities.

Utility services shall be independent for each living unit, except that common services such as water, sewer, gas and electricity may be provided for living units under a single mortgage or ownership. Separate utility service shut-off for each unit shall be provided. For living units under separate ownership, common utility services may be provided from the main to the building line when protected by an easement or covenant and maintenance agreement acceptable to HUD, but

K-14

1994

4910.1

shall not pass over, under or through any other living unit. Individual utilities serving a living unit may not pass over, under or through another living unit under the same mortgage unless provision is made for repair and maintenance of utilities without trespass or when protected by an easement of covenant providing permanent access for maintenance and repair of the utilities. Building drain cleanouts shall be accessible from the exterior where a single drain line within the building serves more than one unit.

(3) Site conditions.

- (i) The property shall be free of those foreseeable hazards and adverse conditions which may affect the health and safety of the occupants or the structural soundness of the improvements, or which may impair the customary use and enjoyment of the property. The hazards include toxic chemicals, radioactive materials, other pollution, hazardous activities, potential damage from soil or other differential ground movements, ground water, inadequate surface drainage, flood, erosion, or other hazards located on or off site. The site must meet the standards set forth at 24 CFR Part 51, and HUD Handbook 4910.1, Section 606 for termite and decay protection.
- (ii) When special conditions exist or arise during construction which were unforeseen and which

necessitate precautionary or hazard mitigation measures, the HUD Field Offices shall require corrective work to mitigate potential adverse effects from the special conditions as may be necessary. Special conditions include rock formations, unstable soils or slopes, high ground water level, springs, or other conditions which may adversely effect a property. It shall be the builder's responsibility to assure proper design, construction and satisfactory performance where they are present.

K-15

1994

4910.1

(4) Access.

- (i) Each property shall be provided with vehicular or pedestrian access by public or private streets. Private streets shall be protected by permanent easement.
- (ii) Each living unit shall have a means of access such that it is unnecessary to pass through any other living unit.
- (iii) The rear yard shall be accessible without passing through any other living unit.
- (iv) For a row type dwelling, the access may be by means of alley, easement, passage through the dwelling, or other means acceptable to the HUD Field Office.

(c) Site design.

(1) General.

- (i) A site design shall be provided which includes an arrangement of all site facilities necessary to create a safe, functional, healthful, durable and energy efficient living environment.
- (ii) These site design standards are applicable only in communities which have not adopted criteria for site development applicable to one and two family dwellings.
- (iii) Single family detached houses situated on individual lots located on existing streets with utilities need not comply with the requirements of 200.926d(c)(2), (3) and (4)(ii).

(2) Streets.

- (i) Existing or proposed streets on the site shall connect to private or public street and shall provide all-weather access to all building for essential and emergency use, including access for deliveries, service, maintenance and fire equipment.

K-16

1994

4910.1

- (ii) Streets shall be designed for dedication for public use and maintenance or, when approved by the HUD Field Office, may be retained as private streets where protected by permanent easements.

(3) Dedication.

Utilities shall be located to permit dedication to the local government or appropriate public body.

(4) Drainage and flood hazard exposure.

- (i) Residential structures with basements located in FEMA-designated areas of special flood hazard. The elevation of the lowest floor in structures with basements shall be at or above the base flood level (100 year flood level) required for new construction or substantial improvement of residential structures under regulations for the National Flood Insurance Program (NFIP) (see 44 CFR 60.3 through 60.6), except where variances from this standard are granted by communities under the procedures of the Federal Emergency Management Agency (FEMA) at 44 CFR 60.6(a) or exceptions from this NFIP standard for basements are approved by FEMA in accordance with procedures at 44 CFR 60.6(c).
- (ii) Residential structures without basements located in FEMA-designated areas of special flood hazard. The elevation of the lowest floor in structures without basements shall be at or above the FEMA-designated base flood elevation (100 year flood level).
- (iii) Residential structures located in FEMA-designated "coastal high hazard areas". (A) Basements or any permanent enclosure of space below the lowest floor of a structure are prohibited.

(B) Where FEMA has determined the base flood level without establishing stillwater elevations, the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) and its horizontal supports shall be at or above the base flood level.

K-17

1994

4910.1

- (iv) "Critical Actions" as defined in 24 CFR 55.2(b)(2). The lowest floor of a structure (including the basement and all mechanical, electrical, and service equipment) shall be at or above the FEMA-designated 500 year frequency flood elevation. "Critical Actions" located in FEMA-designated "floodways" (as defined in 24 CFR 55.2(b)(4)) and "coastal high hazard areas" (as defined in 24 CFR 55.2(b)(1)) are prohibited.
 - (v) Streets. Streets must be usable during runoff equivalent to a 10 year return frequency. Where drainage outfall is inadequate to prevent runoff equivalent to a 10 year return frequency from ponding over 6 inches deep, streets must be made passable for commonly used emergency vehicles during runoff equivalent to a 25 year return frequency except where an alternative access street not subject to such ponding is available.
 - (vi) Crawl spaces. Crawl spaces must not pond water or be subject to prolonged dampness.
- (d) Special construction and product acceptance.
- (1) Structural features of factory produced (modular or panelized) housing or components.
 - (i) For factory fabricated systems or components, HUD Handbook 4950.1, "Technical Suitability of Products Program Processing Procedures" shall apply.
 - (ii) The requirements of this Part shall apply to structural features, consisting of factory fabricated systems or components assembled either at the factory or at the construction site, if the total construction is covered by these standards and can be inspected on-site for determination of compliance.

K-18

(2) Non-structural or non-standard features.

These features include methods of construction, systems, sub-systems, components, materials and processes which are not covered by these requirements. See HUD Handbook 4950.1 for procedures to be followed in order to obtain acceptance of non-structural components or materials. See HUD Handbook 4910.1 Appendix F for a list of Use of Materials Bulletins. Products and methods shall conform to the appropriate Use of Materials Bulletin.

(3) Standard features.

These features include methods of construction, systems, sub-systems, components, materials and processes which are covered by national society or industry standards. For a list of standards to which compliance is required, see HUD Handbook 4910.1, Appendices C, E and F.

(e) Energy efficiency

All detached One and Two Family Dwellings and One Family Townhouses not more than three stories in height shall comply with the CABO Model Energy Code, 1992 Edition, Residential Buildings, except for Sections 101.3.1, 101.3.2, 104 and 105, but Section 101.3.2.2, Historic Buildings, shall remain, and including the Appendix, and HUD intermediate MPS Supplement 4930.2 Solar Heating and Domestic Hot Water Systems, 1989 edition.

(f) Water supply systems.

(1) General.

- (i) Each living unit shall be provided with a continuing and sufficient supply of safe water under adequate pressure and of appropriate quality for all household uses. Newly constructed residential property for which a building permit has been applied for on or after June 19, 1988 from the competent authority with jurisdiction in this matter shall have lead-free water piping. For

purposes of these standards, water piping is "lead-free" if it uses solders and flux containing not more than 0.2 percent lead and pipes and pipe fittings containing not more than 8.0 percent lead. This system shall not impair the function or durability of the plumbing system or attachments.

- (ii) The chemical and bacteriological standards of the local health authority shall apply. In the absence of such standards, the maximum contaminant levels of EPA shall apply. A water analysis may be required by either the health authority or the HUD Field Office.
- (iii) Whenever feasible, connection shall be made to a public water system. When a public system is not available, connection shall be made to a community system which shall comply with HUD Handbook 4940.2.

(2) Individual Water Systems.

- (i) The system should be capable of delivering a flow of 5 gpm over at least a 4 hour period.
- (ii) Water that, to be potable, requires continuing or repetitive treatment to be safe bacterially or chemically shall also comply with the requirements of 24 CFR 203.52 or 24 CFR 234.64, whichever is applicable.
- (iii) After installation, the system shall be disinfected in accordance with the recommendations or requirements of the local health authority. In the absence of a health authority, system cleaning and disinfection shall conform to the current EPA Manual of Individual Water Supply Systems.
- (iv) Bacteriological or chemical examination of a water sample collected by a representative of the local or state health authority shall be made when required by that authority or the HUD Field Office.

K-20

1994

4910.1

(3) Location of wells.

- (i) A well located within the foundation walls of a dwelling is not acceptable except in arctic

or subarctic regions.

- (ii) Water which comes from any soil formation which may be polluted, contaminated, fissured, creviced or less than 20 ft. below the natural ground surface is not acceptable, unless acceptable to the local health authority.
- (iii) Individual water supply systems are not acceptable for individual lots in areas where chemical soil poisoning has been or is practiced if the overburden of soil between the ground surface and the water bearing strata is coarse grained sand, gravel, or porous rock, or is creviced in a manner which will permit the recharge water to carry the toxicants into the zone of saturation.
- (iv) The following table shall be used in establishing the minimum acceptable distances between wells and sources of pollution located on either the same or adjoining lots. These distances may be increased by either the health authority having jurisdiction or the HUD Field Office.

K-21

1994

4910.1

DISTANCE FROM SOURCE OF POLLUTION

Source of Pollution	Minimum Horizontal Distance (ft.)
Property Line	10
Septic Tank	50
Absorption Field	100/1
Seepage Pit	100/1
Absorption Bed	100/1
Sewer Lines	
w/Permanent Watertight Joints	10
Other Sewer Lines	50
Chemically Poisoned Soil	25/3
Dry Well	50
Other	___/2

Note:

- 1 This clearance may be increased or decreased depending upon soil and rock penetrated by the well and aquifer conditions. The clearance may be increased in creviced

limestone and permeable strata of gravel and sand. The clearance may be reduced to 50 ft. only where the ground surface is effectively separated from the water bearing formation by an extensive, continuous impervious strata of clay, hardpan, or rock. The well shall be constructed so as to prevent the entrance of surface water and contaminants.

- 2 The recommendations or requirements of the local health authority shall apply.
- 3 This clearance may be reduced to 15 feet only where the ground surface is effectively separated from the water bearing formation by an extensive, continuous impervious strata of clay, hardpan, or rock.

(4) Well Construction

- (i) The well shall be constructed so as to allow the pump to be easily placed and to function properly.
- (ii) (A) All drilled wells shall be provided with a sound, durable and watertight casing capable of sustaining the loads imposed.

K-22

1994

4910.1

- (B) The casing shall extend from a point several feet below the water level at drawdown or from an impervious strata above the water level to 12 in. above either the ground surface of the pump room floor. The casing shall be sealed at the upper opening to a depth of at least 15 feet.
- (iii) Bored wells shall be lined with concrete, vitrified clay or equivalent materials.
- (iv) The space between the casing or liner and the wall of the well hole shall be sealed with cement grout.
- (v) The well casing shall not be used to convey water except under positive pressure. A separate drop pipe shall be used for the suction line.
- (vi) When sand or silt is encountered in the water-bearing formation, the well shall either be compacted and gravel packed, or a removable strainer or screen shall be installed.

- (vii) The surface of the ground above and around the well shall be compacted and graded to drain surface water away from the well.
- (viii) Openings in the casing, cap, or concrete cover for the entrance of pipes, pumps or manholes shall be water tight.
- (ix) If a breather is provided, it shall extend above the highest level to which surface water may rise. The breather shall be watertight, and the open end shall be screened and positioned to prevent entry of dust, insects, and foreign objects.

K-23

1994

4910.1

- (5) Pump and equipment.
 - (i) Pumps shall be capable of delivering the volume of water required under normal operating pressure within the living unit. Pump capacity shall not exceed the output of the well.
 - (ii) Pumps and equipment shall be mounted to be free of objectionable noises, vibrations, flooding, pollution, and freezing.
 - (iii) The suction line shall terminate below the maximum drawdown of the water level in the well.
 - (iv) Horizontal segments of suction line shall be placed below the frost line in a sealed casing pipe or in at least 4 in. of concrete. The distance from suction lines to sources of pollution shall be not less than shown in the table at 200.926d(f)(3)(iv) of this section.
- (6) Storage tanks.
 - (i) A pressure tank having a minimum capacity of 42 gallons shall be provided. However, prepressured tanks and other pressurizing devices are acceptable provided that delivery between pump cycles equals or exceeds that of a 42 gallon tank.
 - (ii) Tanks shall be equipped with a clean-out plug at the lowest point, and a suitable pressure

relief valve.

200.926e Supplemental information for use with the CABO One and Two Family Dwelling Code.

The following shall be used in Table No. R-201.2, Climatic and Geographic Design Criteria of the CABO One and Two Family Dwelling Code.

(a) Roof live loads.

Roof slope 3 in 12 or less: 20 psf

Roof slope over 3 in 12: 15 psf

Roof used as deck: 40 psf

K-24

1994

4910.1

(b) Roof snow load. The roof snow load shall be in accordance with Section 7 of ASCE 7-88 (Formerly ANSI A58.1).

(c) Wind pressures. The minimum Design Wind Pressures (net pressures) set forth below apply to areas designated as experiencing basic wind speeds up to and including 80 mph, as shown in ASCE 7-88, Figure 1, Basic Wind Speed Map. These pressures also apply to buildings not over 30 ft. in height above finish grade, assuming exposure C or defined in ASCE 7-88 (Formerly ANSI A58.1).

(1) Minimum design wind pressure criteria.

(i) Buildings (for overturning, racking or sliding); $p = 20$ psf.

(ii) Chimneys, $p = 30$ psf.

(iii) Exterior walls, $p = 15$ psf inward or outward. Local pressure at corners of walls shall be not less than $p = 30$ psf outward. These local pressures shall not be included with the design pressure when computing overall loads. The pressures shall be applied perpendicularly outward on strips of width equal to 10 percent of the least width of building.

(iv) Partitions, $p = 10$ psf.

(v) Windows, $p = 20$ psf inward or outward.

(vi) Roof, $p = 20$ psf inward or outward.

Roofs with slopes greater than 6 in 12 shall be designed to withstand pressures acting inward normal to the surface, equal to the design wind pressure for exterior walls. Overhanging eaves, cornices, and ridges, 40 psf

upward normal to roof surface. These local pressures shall not be included with the design pressure when computing overall loads. The pressures shall be applied perpendicularly outward on strips of width equal to 10 percent of the least width of building. Net uplift on horizontal projection or roof shall not be less than 12 psf.

K-25

1994

4910.1

- (2) Severe wind design pressures. If the construction is higher than 30 ft., or if it is located in an area experiencing wind speeds greater than 80 mph, higher design wind pressures than shown above are required. Use Section 6 of ASCE 7-88 for higher criteria and for determining where wind speeds greater than 80 mph occur. Pressures are assumed to act horizontally on the gross area of the vertical projection of the structure except as noted for roof design.
- (d) Seismic conditions shall be in accordance with Section 9 of ASCE 7-88 (Formerly ANSI A 58.1-82).
- (e) Subject to damage from: weathering. A jurisdiction's weathering region shall be as established by the map in ASTM C 62-88.
- (f) Subject to damage from: frost line depth. Exterior wall footings or foundation walls including those of accessory buildings shall extend a minimum of 6 in. below the finished grade and, where applicable, the prevailing frost line.
- (g) Subject to damage from: termites. "Yes" shall be used in locations designated as Very Heavy, Moderate to Heavy and Slight to Moderate. "No." shall be used in locations designated as None to Slight. The map for Termite Infestation Probability in Appendix A of CABO, One and Two Family Dwelling Code shall be used to determine the jurisdiction's region.
- (h) Subject to damage from: decay. "Yes" shall be used in locations designated as moderate to severe and slight to moderate. "No." shall be used in locations designated as none to slight. The Decay Probability map in Appendix A of CABO, One and Two Family Dwelling Code shall be used to determine the jurisdiction's decay designation.

K-26

1994