

Please submit a written response and appropriate documents for the above items within \_\_\_ days, or your product will be removed from the accepted list until your firm can again qualify. If you have any problems furnishing the above within the time stated, please contact this office.

We look forward to receiving the materials indicated so that your firm's listing may be continued.

Sincerely,  
State Director

ATTACHMENT 5

CERTIFICATION BY MANUFACTURER

Delivery location of structure  
for component \_\_\_\_\_

This is to certify that  
Model: \_\_\_\_\_,  
Serial # \_\_\_\_\_,  
manufactured \_\_\_\_\_  
(date) \_\_\_\_\_, 19\_\_ in  
\_\_\_\_\_ (location)  
and being sold to \_\_\_\_\_  
(name of \_\_\_\_\_  
builder-dealer or borrower) has been manu-  
factured in accordance with drawings and  
specifications on file in the FmHA or its suc-  
cessor agency under Public Law 103-354 State  
Office and that the construction complies  
with applicable development standards, ex-  
cept as modified by HUD Acceptance Docu-  
ment (SEB, RLA, ALA.)  
NO. \_\_\_\_\_,  
dated \_\_\_\_\_,  
and in compliance with the FmHA or its suc-  
cessor agency under Public Law 103-354 Ther-  
mal Performance Construction Standards.

Date \_\_\_\_\_

Signature of Authorized Official \_\_\_\_\_

Title \_\_\_\_\_

CERTIFICATION BY BUILDER-DEALER

\_\_\_\_\_(Name of  
builder-dealer) \_\_\_\_\_  
certifies that the foundation and other on-  
site work has been constructed in accordance  
with the drawings and specifications and the  
above structure or component has been  
erected, installed or applied in compliance  
with the applicable development standards.

It is understood that the manufacturer's  
certification does not relieve the builder/  
dealer of responsibility under the terms of  
the builder's warranty required by the Na-  
tional Housing Act.

Date \_\_\_\_\_

Signature of Authorized Official \_\_\_\_\_

Title \_\_\_\_\_

[52 FR 8002, Mar. 13, 1987, as amended at 67  
FR 78327, Dec. 24, 2002]

EXHIBIT C TO SUBPART A OF PART 1924—  
GUIDE FOR DRAWINGS AND SPECI-  
FICATIONS

This exhibit applies to all new buildings to  
be constructed, including all single family  
housing and related facilities and, as appli-  
cable, farm housing and farm service build-  
ings.

I. General

The documents recommended in this ex-  
hibit correspond with the list of exhibits in  
Chapter 3 of the Department of Housing and  
Urban Development (HUD) "Architectural  
Handbook for Building Single-Family Dwel-  
lings" No. 4145.2. This exhibit may be used as  
a public handout and shall be used as a guide  
for drawings and specifications to be sub-  
mitted in support of any type of application  
involving construction of major new build-  
ings or extensive rehabilitation, alterations  
or additions to existing buildings. Descrip-  
tions of work for minor alterations or re-  
pairs need pertain only to work to be done  
and may be in narrative form when accept-  
able to the County Supervisor. Complete and  
accurate drawings and specifications are  
necessary:

- A. To determine the acceptability of the  
proposed development,
- B. To determine compliance with the ap-  
plicable standards and codes,
- C. To prepare a cost estimate, and
- D. To provide a basis for inspections and  
the builder's warranty.

II. Drawings for a Specific Structure

Drawings for individual single dwellings  
shall provide at least the following:

A. *Plot Plan.* Refer to Example Plot Plan  
No. 1, attachment 1 to this exhibit C (avail-  
able in any FmHA or its successor agency  
under Public Law 103-354 office). Ratio: 1:240  
(1" = 20') (at scale, 1" = 20' or 1/4" = 1' 0" min-  
imum):

- 1. Lot and block number.
- 2. Dimensions of plot and north point.
- 3. Dimensions of front, rear and side yards.
- 4. Location and dimensions of garage, car-  
port and other accessory buildings.
- 5. Location and sizes of walks, driveways  
and approaches.
- 6. Location and sizes of steps, terraces,  
porches, fences and retaining walls.
- 7. Location and dimensions of easements  
and established setback requirements, if any.
- 8. Elevations at the following points: (a)  
first floor of dwelling and floor of garage,

carport and other accessory building; (b) finish curb or crown of street at points of extension of lot lines; (c) finish grade elevation at each principal corner of structure; (d) finish grade at bottom of drainage swales at extension of each side of structure as feasible.

9. The following additional elevations, as applicable, if the topography of the site or the design of the structure is such that special grading, drainage or foundations may be necessary. Examples are irregular or steeply sloping sites, filled areas on sites, or multi-level structure designs; (a) finish and existing grade elevations at each corner of the plot; (b) existing and finish grade at each principal corner of dwelling; (c) finish grade at both sides of abrupt changes of grade such as retaining walls, slopes, etc.; (d) other elevations that may be necessary to show grading and drainage.

10. Indication of type and approximate location of drainage swales.

11. When an individual water supply and/or sewage system is proposed, drawings, specifications and other items prescribed in paragraph V of this exhibit.

#### B. Floor Plans.

1. Scale, 1:50 ( $\frac{1}{4}'' = 1' 0''$ ).

2. Floor plan of each floor and basement, if any. Show typical furniture locations to suggest intended use of each habitable space.

3. Plan of all attached terraces and porches, and of garage or carport.

4. If dwelling is of crawl-space type, a separate foundation plan. Slab-type foundation may be shown on sections.

5. Direction, size and spacing of all floor and ceiling framing members, girders, columns or piers.

6. Location of all partitions and indication of door sizes, and direction of door swing.

7. Location and size of all permanently installed construction and equipment such as kitchen cabinets, closets, storage shelving, plumbing fixtures, water heaters, etc. Details of kitchen cabinets may be on separate drawing.

8. Location and symbols of all electrical equipment, including switches, outlets, fixtures, etc.

9. Heating system on separate drawing, or when it may be shown clearly it may be part of the floor or basement plan showing: (a) layout of system; (b) location and size of ducts, piping, registers, radiators, etc.; (c) location of heating unit and room thermostat; (d) total calculated heat loss of dwelling including heat loss through all vertical surfaces, ceiling and floor. When a duct or piped distribution system is used, calculated heat loss of each heated space is required.

10. Cooling system, on separate drawings or, as part of heating plan, floor or basement plan showing: (a) layout of system; (b) location and size of ducts, registers, compressors, coils, etc.; (c) heat gain calculations, including estimated heat gain for each space condi-

tioned; (d) model number and Btu capacity of equipment or units in accordance with applicable Air Conditioning and Refrigeration Institute (ARI) or American Society of Refrigerating Engineers (ASRE) Standard; (e) Btu capacity and total kilowatt (KW) input at stated local design conditions; (f) if room or zone conditioners are used, provide location, size and installation details.

#### C. Exterior Elevations.

1. Scale, 1:50 ( $\frac{1}{4}'' = 1' 0''$ ). Elevations, other than main elevation, which contain no special details may be drawn at 1:100 ( $\frac{1}{8}'' = 1' 0''$ ).

2. Front, rear and both side elevations, and elevations of any interior courts.

3. Windows and doors—indicate size unless separately scheduled or shown on floor plan.

4. Wall finish materials where more than one type is used.

5. Depth of wall footings, foundations, or piers, if stepped or at more than one level.

6. Finish floor lines.

7. Finish grade lines at buildings.

#### D. Details and Sections.

1. Section through exterior wall showing all details of construction from footings to highest point of road. Where more than one type of wall material is used, show each type. Scale 1:25 ( $\frac{3}{8}'' = 1' 0''$ ) minimum.

2. Section through any portion of dwelling where rooms are situated at various levels or where finished attic is proposed, Scale, 1:50 ( $\frac{1}{4}'' = 1' 0''$ ) minimum.

3. Section through stair wells, landings, and stairs, including headroom clearances and surrounding framing. Scale, 1:50 ( $\frac{1}{4}'' = 1' 0''$ ) minimum.

4. Details of roof trusses, if proposed, including connections and stress or test data with seal of architect or engineer responsible. Scale of connections, 1:25 ( $\frac{3}{8}'' = 1' 0''$ ) minimum.

5. Elevation and section through fireplace. Scale, 1:25 ( $\frac{3}{8}'' = 1' 0''$ ) minimum.

6. Elevations and section through kitchen cabinets, indicating shelving. Scale, 1:50 ( $\frac{1}{4}'' = 1' 0''$ ) minimum.

7. Sections and details of all critical construction points, fastening systems, anchorage methods, special structural items or special millwork. Scale as necessary to provide information, 1:25 ( $\frac{3}{8}'' = 1' 0''$ ) minimum.

#### III. Master Drawings for Group Structures

Drawings for a group of structures (such as for several conditional commitments) may be submitted in lieu of drawings for each individual property when a number of applications are simultaneously submitted involving repetition of the same type structure.

A. *Master plot plan* shall include the following:

1. Scale which will provide the following information in a clear and legible manner.

2. North point.

3. Location and width of streets and rights-of-way.

4. Location and dimensions of all easements.

5. Dimensions of each lot.

6. Location of each dwelling on lot with basic dimensions.

7. Dimensions of front, rear and side yards.

8. Location and dimensions of garage, carports and other accessory buildings.

9. Identification of each lot by number and indication of basic plan and elevation type.

10. Location of walks, driveways and other permanent improvements.

B. *Typical plot plan* for each basic type dwelling may be submitted in lieu of fully detailing each lot on master plot plan, when topography and lot arrangements present no individual planning or construction problems.

1. Information not shown on the typical plot plan shall be included on the master plot plan.

2. Typical plot plans shall not be used for corner lots, lots with irregular boundaries, lots involving pronounced topographic variations or other lots where individual detailing is necessary.

3. Location of dwelling on typical lot and full dimensions.

4. Location and dimensions of all typical improvements, such as garage, carport, accessory buildings, walks, drives, steps, porches, terraces, trees, shrubs, retaining walls, fences, etc.

C. *Grading* may be shown on separate grading plan or on the master plot plan. Scale shall be sufficiently large to provide the following information in clear and legible manner:

1. Contours of existing grade at intervals of not more than 1.524 m (5 feet). Intervals less than 1.524 m (5 feet) may be required when indicated by the character of the topography.

2. Location of house and accessory buildings on each lot.

3. Identification of each lot by number.

4. Elevations in accordance with individual plot plan including bench mark and datum or, in lieu of finish grade elevations, contours of proposed finish grading may be submitted. Contour intervals selected shall be appropriate to the topography of the site.

5. Lot grading shall be shown by indicating protective slopes and approximate location of drainage swales.

6. Location of drainage outfall, if any drainage is not to a street.

D. *Floor plans, elevations, sections and details* shall be submitted for each basic plan. Alternate elevations to basic plan may be shown at scale, 1:100 ( $\frac{1}{8}'' = 1' 0''$ ).

#### IV. Specifications

Form FmHA or its successor agency under Public Law 103-354 1924-2, "Description of Materials," or other acceptable and comparable descriptions of all materials forms shall be submitted with the drawings. The

forms shall be completed in accordance with the instructions on Form FmHA or its successor agency under Public Law 103-354 1924-2 to describe the materials to be used in the construction.

A. Form FmHA or its successor agency under Public Law 103-354 1924-2 may be reproduced if size, format and printed text are identical to the current official form. When it is reproduced, the following deletions must be made:

1. All lines indicating FmHA or its successor agency under Public Law 103-354 form numbers or other Government agency initials and/or numbers, and

2. The United States Government Printing Office (GPO) imprint and reference number.

B. The material identification shall be in sufficient detail to fully describe the material, size, grade and when applicable, manufacturer's model or identification numbers. When necessary, additional sheets must be attached as well as manufacturer's specification sheets for equipment and/or special materials, such as aluminum siding or carpeting.

#### V. Individual Water Supply and Sewage Disposal Systems

When an individual water and/or sewage disposal system is proposed, the following additional information must be submitted:

A. *Approval and recommendations of other authorities.*

1. A written opinion by the health authority having jurisdiction that the site is suitable and acceptable for the proposed systems(s) and,

2. If available, a soils report from the local USDA-Soil Conservation Service and any recommendations they may have.

3. Approval of appropriate environmental control authority.

4. A signature of the health authority on the plot plan indicating approval of the design of the proposed system.

B. *Plot Plan.* Refer to Example Plot Plan No. 2, attachment 2 to this exhibit C (available in any FmHA or its successor agency under Public Law 103-354 office).

1. Location and size of septic tank, distribution box, absorption field or bed, seepage pits and other essential parts of the sewage disposal system and distance to all individual wells, open streams or drainageways.

2. Location of well, service line and other essential parts of the water supply system and distance to other wells and/or sewage disposal systems.

3. Exact location of individual systems (water or sewage) on adjacent properties and description of system, if available.

C. Construction details of all component parts of individual water supply and sewage disposal systems shall clearly indicate material, equipment and construction. Extra

sheets and drawings should be added as necessary to fully explain the proposed installation.

EXHIBIT D TO SUBPART A OF PART 1924—  
THERMAL PERFORMANCE CONSTRUCTION STANDARDS

I. Purpose

This exhibit prescribes thermal performance construction standards to be used in all housing loan and grant programs. These requirements shall supersede the thermal performance requirements in any of the development standards in §1924.4(h) of this subpart.

II. Policy

All loan or grant applications involving new construction (except for new Single Family Housing (SFH)) and all applications for conditional commitments (except for new SFH) shall have drawings and specifications prepared to comply with paragraphs IV A or C and IV D of this exhibit. All new SFH construction shall have drawing and specifications prepared to comply with paragraph IV F of this exhibit.

III. Definitions

A. *British thermal unit* (Btu) means the quantity of heat required to raise the temperature of one pound (.4535 Kg.) of water by one degree Fahrenheit (F). For example, one Btu is the amount of heat needed to raise the temperature of one pound of water from 59 degrees F to 60 degrees F.

B. *Glazing* is the material set into a sash or door when used as a natural light source and/or for occupant's views of the outdoors.

C. "*R*" value, thermal resistance, is a unit of measure of the ability to resist heat flow.

The higher the R value, the higher the insulating ability.

D. "*U*" value is the overall coefficient of heat transmission and is the combined thermal value of all the materials in a building section. U is the reciprocal of R. Thus  $U=1/R$  or  $R=1/U$  or  $1/C$  where C is the thermal conductance and is the unit of measure of the rate of heat flow for the actual thickness of a material one square foot in area at a temperature of one degree Fahrenheit. The lower the U value, the higher the insulating ability.

E. *Winter degree-day* is a unit based on temperature difference and time. For any one day, when the mean temperature is less than 65 degrees F (18.3 degrees Celsius), there are as many degree-days as the number of degrees difference between the mean temperature for the day and 65 degrees F. The daily mean temperature is computed as half the total of the daily maximum and daily minimum temperatures.

F. *CABO Model Energy Code, 1992 Edition (MEC-92)*—This code sets forth the minimum energy/thermal requirements for the design of new buildings and structures or portions thereof and additions to existing buildings. The MEC is maintained by the Council of American Building Officials (CABO).

IV. Minimum Requirements

A. All multifamily dwellings to be constructed with FmHA or its successor agency under Public Law 103-354 loan and/or grant funds and all repair, remodeling, or renovation work performed on single family and multifamily dwellings with FmHA or its successor agency under Public Law 103-354 loan and/or grant funds shall be in conformance with the following, except as provided in paragraphs IV C 3 and IV D of this exhibit:

NEW CONSTRUCTION—MAXIMUM U VALUES FOR CEILING, WALL AND FLOOR SECTION OF VARIOUS CONSTRUCTION

Winter degree days <sup>1</sup>	Ceilings <sup>2</sup>	Walls	Floors <sup>3</sup>	Glazing <sup>4</sup>	Doors <sup>5</sup>
1000 or less .....	0.05	0.08	0.08	1.13	
1001 to 2500 .....	.04	.07	.07	.69	
2501 to 4500 .....	.03	.05	.05	.69	Storm door if hollow core door or if over 25% glass.
4501 to 6000 .....	.03	.05	.05	.47	Storm Door.
6001 or more .....	.026	.05	.05	.47	Storm Door.

NOTE. U values are not adjusted for framing. Values calculated for components may be rounded. For example, a total R value of 18.88 converts to a U value of .0529 rounded to .05.

<sup>1</sup>Winter degree-days may be obtained from the ASHRAE Handbook; the "NAHB Insulation Manual for Homes/Apartments"; local utilities; and the National Climatic Center, Federal Building, Asheville, NC. Manuals are available from NAHB RF, Rockville, MD 20850, or NMWIA, 382 Springfield Avenue, Summit, NJ 07901. Other sources of degree day data may be used if available from a recognized authority.

<sup>2</sup>Insulation must be continuous (i.e. no gaps) above all ceiling joists. In pitched roof construction, compression of insulation at the outside building walls is permitted to allow a 1" ventilation space under the roof sheathing. For any loose fill insulation, a baffle must be provided. Raised trusses are not required.

<sup>3</sup>For floors of heated spaces over unheated basements, unheated garages or unheated crawl spaces, the U value of floor section shall not exceed the value shown. A basement, crawl space, or garage shall be considered unheated unless it is provided with a positive heat supply to maintain a minimum temperature of 50 degrees F. Positive heat supply is defined by ASHRAE as "heat supplied to a space by design or by heat losses occurring from energy-consuming systems or components associated with that space."

<sup>4</sup>Where the walls of an unheated basement or crawl space are insulated in lieu of floor insulation, the total heat loss attributed to the floor from the heated area shall not exceed the heat loss calculated for floors with required insulation.