



Federal Emergency Management Agency
Region VII
2323 Grand Boulevard, Suite 900
Kansas City, Missouri 64108-2670

NATIONAL FLOOD INSURANCE PROGRAM
REGIONAL GUIDANCE
ON DETERMINING LOWEST FLOOR

February, 1996

One of the standards within the National Flood Insurance Program (NFIP) floodplain management regulations requires that any new, substantially improved or substantially damaged structure be elevated to or above the base flood level.

In regulating floodplain development, many communities have a problem determining the difference between a **basement** and a crawl space. The NFIP does not define "crawl space", however, the regulations are specific on the requirements for new construction or substantial-improvement. As shown on Diagram Number 8 of the elevation certificate instructions and attached at the end of this guidance, the floor/bottom of a crawl space must be above grade and in an area other than a **basement**.

* For floodplain management purposes, the term "**lowest floor**" is used to define the lowest level of any structure (walled and roofed) that must be located to or above the base flood level. Communities which participate in the NFIP must require that new construction and substantial-improvements comply with the following standards:

1. For New Construction and Substantial-Improvements:

The NFIP regulations require that **all** floor levels of a structure, except those **used exclusively** for parking of vehicles, limited storage, or building access in an area other than a **basement**, must be elevated to or above the base flood level. **Basements are NOT PERMITTED below the base flood level.**

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Certain reasonable uses are allowable below the base flood level by following the design and construction requirements as specified in the "fully enclosed area below the lowest floor" criteria, as referenced in **44 CFR 60.3 (c) (5)**. The requirements are, as follows:

- a. Used **solely** for parking of vehicles, building access, or storage in an unfinished area other than a **basement**.
- b. Designed to automatically equalize hydrostatic flood forces on exterior walls for allowing the entry and exit of floodwaters. Designs for meeting this criteria must either: (i) be certified by a registered professional engineer or architect or (ii) provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the **automatic entry and exit** (no human intervention) of floodwaters.

2. For Existing Structures with Basements:

The NFIP regulations affect existing structures that have **basements** when they are being substantially improved or have received substantial-damage.

If a **basement** area is below the base flood level, the **basement** would have to either:

- a. be filled so that the grade inside the enclosed area is equal to or higher than the lowest adjacent grade outside the building on at least one side with openings for any enclosed area or,
- b. have at least one side excavated to lower the grade on the outside of the structure with openings on that side. The remaining structure itself may have to be elevated in place if the **lowest floor** is still below the base flood level.

The bottom of all openings, if required, must be no higher than one foot above grade. However, if the grade inside the foundation walls is above the base flood level, openings are not required.

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NATIONAL FLOOD INSURANCE PROGRAM EXCERPTS FROM CODE OF FEDERAL REGULATIONS

44 Code of Federal Regulations (CFR) 59.1, Definitions:

1. **"Structure"** means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.
2. **"Lowest Floor"** means the **lowest floor** of the lowest enclosed area (**including basement**). An unfinished or flood resistant enclosure, usable for parking of vehicles, building access or storage in an area other than a **basement** area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of 60.3.
3. **"Basement"** means any area of the building having its floor subgrade (below ground level) on **all sides**.

44 CFR 60.3, Floodplain Management Criteria for Floodprone Areas:

1. (b) (5) "Where base flood elevation data are utilized, within Zone A on the community's FHBM or FIRM:
 - (i) Obtain the elevation of the **lowest floor (including basement)** of all new and substantially improved structures, and
 - (ii) Obtain, if the structure has been flood-proofed, the elevation to which the structure was floodproofed, and
 - (iii) Maintain a record of all such information with the official designated by the community."
2. (c) (2) "Require that all new construction and substantial improvement of residential structures within Zones A1-30, AE and AH on the community's FIRM have the **lowest floor (including basement)** elevated to or above the base flood level, unless a community is granted an exception by the Federal Insurance Administrator for the allowance of floodproofed **basements**."
3. (c) (3) "Require that all new or substantial improvements of non-residential structures within Zones A1-30, AE and AH on the community's FIRM (i) have the **lowest floor (including basement)** elevated to or above the base flood level or, (ii) together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and

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hydrodynamic loads and effects of buoyancy."

4. (c) (7) "Require within Zone AO on the community's FIRM that all new construction and substantial improvements of residential structures have the **lowest floor (including basement)** elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified).
5. (c) (8) "Require within Zone AO on the community's FIRM that all new construction and substantial improvements of non-residential structures (i) have the **lowest floor (including basement)** elevated above the highest adjacent grade as least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or (ii) together with attendant utility and sanitary facilities be completely floodproofed to that level to meet the floodproofing standard specified."
6. (c) (5) "Require, for all new construction or substantial improvements, that fully enclosed areas below the **lowest floor** that are usable solely for parking of vehicles, building access or storage in an area other than a **basement** and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing the entry and exit of flood waters."

FOR ADDITIONAL INFORMATION, CONTACT:

YOUR COMMUNITY S FLOODPLAIN ADMINISTRATOR

or

YOUR STATE'S NFIP CONTACT

Iowa-Bill Cappuccio-(515) 281-8942

Kansas-Don Kostecki-(913) 296-2933

Missouri-George Riedel-(314) 526-9141

Nebraska-Brian Dunnigan-(402) 471-2081

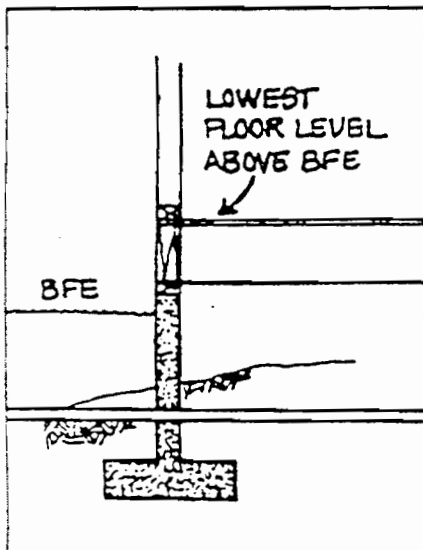
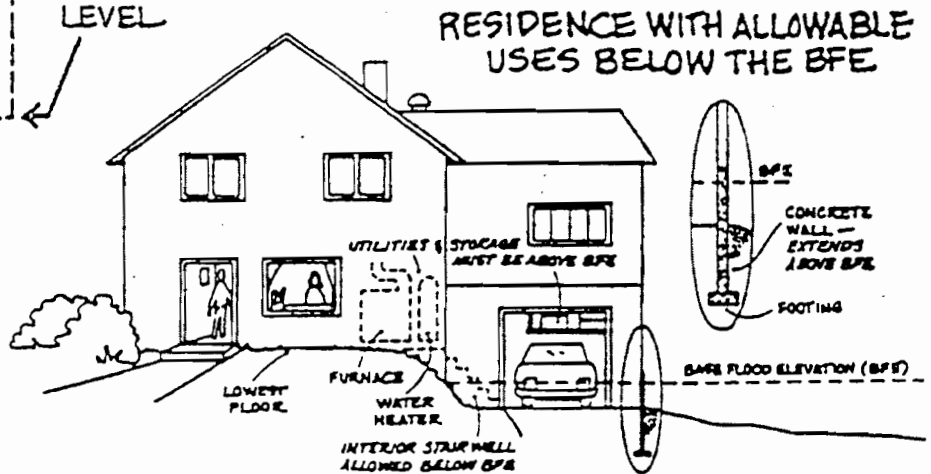
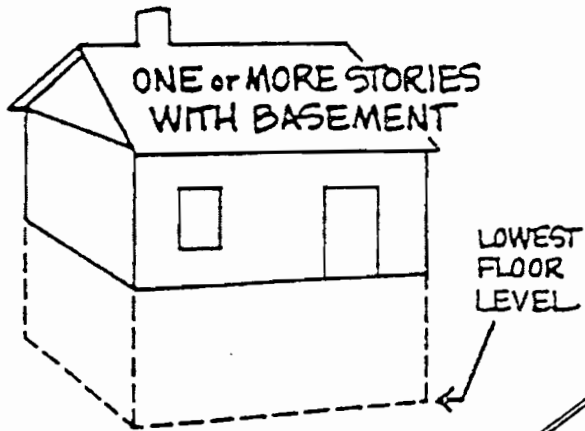
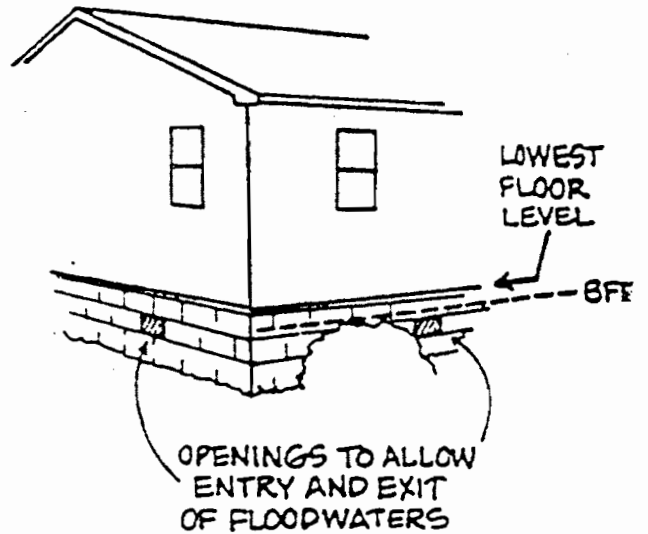
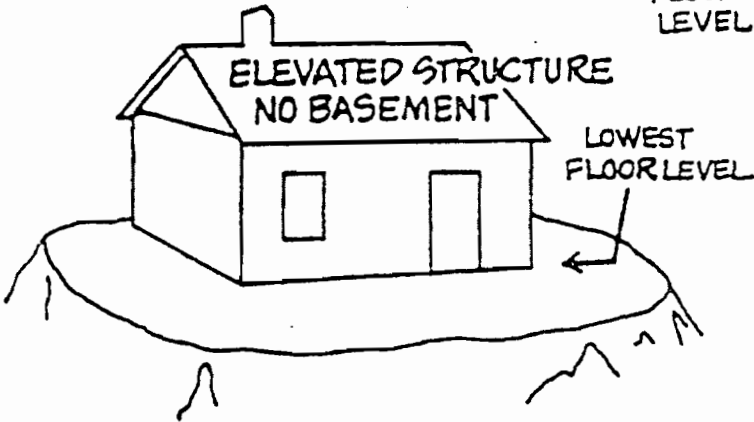
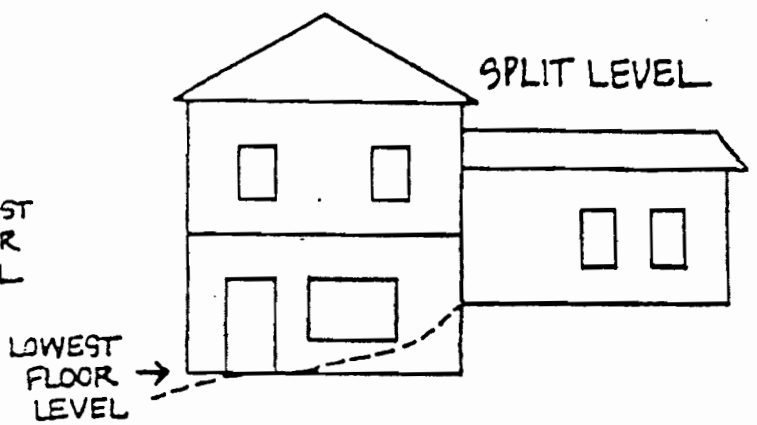
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DETERMINING LOWEST FLOOR LEVEL RESIDENTIAL STRUCTURES