

§ 305-23. General.

- A. Alteration or relocation of watercourse.
- (1) No encroachment, alteration, or improvement of any kind shall be made to any watercourse until all adjacent municipalities which may be affected by such action have been notified by the municipality, and until all required permits or approvals have first been obtained from the Department of Environmental Protection Regional Office.
 - (2) No encroachment, alteration, or improvement of any kind shall be made to any watercourse unless it can be shown that the activity will not reduce or impede the flood-carrying capacity of the watercourse in any way.
 - (3) In addition, FEMA and the Pennsylvania Department of Community and Economic Development shall be notified prior to any alteration or relocation of any watercourse.
- B. When Upper Darby Township proposes to permit the following encroachments: any development that causes a rise in the base flood elevations within the floodway; or any development occurring in Zones A1-30 and Zone AE without a designated floodway which will cause a rise of more than one foot in the base flood elevation; or alteration or relocation of a stream (including but not limited to installing culverts and bridges). The applicant shall (as per 44 CFR 65.12):
- (1) Apply to FEMA for conditional approval of such action prior to permitting the encroachments to occur.
 - (2) Upon receipt of the Administrator's conditional approval of map change and prior to approving the proposed encroachments, a community shall provide evidence to FEMA of the adoption of floodplain management ordinances incorporating the increased base flood elevations and/or revised floodway reflecting the post-project condition.
 - (3) Upon completion of the proposed encroachments, a community shall provide as-built certifications. FEMA will initiate a final map revision upon receipt of such certifications in accordance with 44 CFR Part 67.
- C. Any new construction, development, uses or activities allowed within any identified floodplain area shall be undertaken in strict compliance with the provisions contained in this chapter and any other applicable codes, ordinances and regulations.
- D. Within any identified floodplain area, no new construction or development shall be located within the area measured 50 feet landward from the top-of-bank of any watercourse.
- E. If Upper Darby Township determines that only a part of a proposed plot can be safely developed, it shall limit development proceed consistent with this determination.
- F. The Delaware County Planning Commission at its discretion may recommend that the local municipality consider modifying its density requirements to permit an equal number of units on the remainder of the tract as would have resulted under existing ordinances prior to the determination that only a part of a proposed plot can be safely developed. Such recommendation shall not be binding on the local municipality.

- G. When a developer does not intend to develop that plot himself and the Delaware County Planning Commission determines that additional controls are required to ensure safe development, it may require the developer to impose appropriate deed restrictions on the land. Such deed restrictions shall be inserted in every deed and noted on every recorded plat.

§ 305-24. Elevation and floodproofing requirements.

Within any identified floodplain area any new construction or substantial improvements shall be prohibited. If a variance is obtained for new construction or substantial improvements in the identified floodplain area in accordance with the criteria in Article VII, then the following provisions apply:

A. Residential structures.

- (1) In AE, A1-30, and AH Zones, any new construction or substantial improvement shall have the lowest floor (including basement) elevated up to, or above, the regulatory flood elevation.
- (2) In A Zones, where there are no base flood elevations specified on the FIRM, any new construction or substantial improvement shall have the lowest floor (including basement) elevated up to, or above, the regulatory flood elevation determined in accordance with § 305-19C of this chapter.
- (3) In AO Zones, any new construction or substantial improvement shall have the lowest floor (including basement) at or above the highest adjacent grade at least as high as the depth number specified on the FIRM.
- (4) The design and construction standards and specifications contained in the 2009 International Building Code (IBC) and in the 2009 International Residential Code (IRC), or the latest edition thereof adopted by the State of Pennsylvania, and ASCE 24 and 34 Pa. Code (Chapters 401 to 405, as amended) shall be utilized where they are more restrictive.

B. Nonresidential structures.

- (1) In AE, A1-30 and AH Zones, any new construction or substantial improvement of a nonresidential structure shall have the lowest floor (including basement) elevated up to, or above, the regulatory flood elevation or be designed and constructed so that the space enclosed below the regulatory flood elevation:
 - (a) Is floodproofed so that the structure is watertight with walls substantially impermeable to the passage of water; and
 - (b) Has structural components with the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
- (2) In A Zones, where no base flood elevations are specified on the FIRM, any new construction or substantial improvement shall have the lowest floor (including basement) elevated or completely floodproofed up to, or above, the regulatory flood elevation determined in accordance with § 305-19C of this chapter.

- (3) In AO Zones, any new construction or substantial improvement shall have its lowest floor elevated or completely floodproofed above the highest adjacent grade to at least as high as the depth number specified on the FIRM.
 - (4) Any nonresidential structure, or part thereof, made watertight below the regulatory flood elevation shall be floodproofed in accordance with the W1 or W2 space classification standards contained in the publication entitled "Flood-Proofing Regulations," published by the U.S. Army Corps of Engineers (June 1972, as amended March 1992) or with some other equivalent standard. All plans and specifications for such floodproofing shall be accompanied by a statement certified by a registered professional engineer or architect, which states that the proposed design and methods of construction are in conformance with the above-referenced standards.
 - (5) The design and construction standards and specifications contained in the 2009 International Building Code (IBC) and in the 2009 International Residential Code (IRC), or the latest edition thereof adopted by the State of Pennsylvania, and ASCE 24 and 34 Pa. Code (Chapters 401 to 405, as amended) shall be utilized where they are more restrictive.
- C. Space below the lowest floor.
- (1) Fully enclosed space below the lowest floor (including basement) is prohibited.
 - (2) Partially enclosed space below the lowest floor (excluding basements), which will be used solely for the parking of a vehicle, building access, or incidental storage in an area other than a basement, shall be designed and constructed to allow for the automatic entry and exit of floodwaters for the purpose of equalizing hydrostatic forces on exterior walls. The term "fully enclosed space" also includes crawl spaces.
 - (3) Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - (a) A minimum of two openings having a net total area of not less than one square inch for every square foot of enclosed space.
 - (b) The bottom of all openings shall be no higher than one foot above grade.
 - (c) Openings may be equipped with screens, louvers, or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.
- D. Historic structures. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement, as defined in this chapter, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic Places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.
- E. Accessory structures. Structures accessory to a principal building need not be elevated or

floodproofed to remain dry but shall comply, at a minimum, with the following requirements:

- (1) The structure shall not be designed or used for human habitation, but shall be limited to the parking of vehicles, or to the storage of tools, material, and equipment related to the principal use or activity.
- (2) Floor area shall not exceed 200 square feet.
- (3) The structure will have a low damage potential.
- (4) The structure will be located on the site so as to cause the least obstruction to the flow of floodwaters.
- (5) Power lines, wiring, and outlets will be elevated to the regulatory flood elevation.
- (6) Permanently affixed utility equipment and appliances, such as furnaces, heaters, washers, dryers, etc., are prohibited.
- (7) Sanitary facilities are prohibited.
- (8) The structure shall be adequately anchored to prevent flotation, collapse, and lateral movement and shall be designed to automatically provide for the entry and exit of floodwater for the purpose of equalizing hydrostatic forces on the walls. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - (a) A minimum of two openings having a net total area of not less than one square inch for every square foot of enclosed space.
 - (b) The bottom of all openings shall be no higher than one foot above grade.
 - (c) Openings may be equipped with screens, louvers, etc., or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.

§ 305-25. Design and construction standards.

The following minimum standards shall apply for all construction and development proposed within any identified floodplain area:

- A. Fill. Within any identified floodplain area the use of fill shall be prohibited. If a variance is obtained in accordance with the criteria in Article VII, then the following provisions apply:
 - (1) If fill is used, it shall:
 - (a) Extend laterally at least 15 feet beyond the building line from all points;
 - (b) Consist of soil or small rock materials only; sanitary landfills shall not be permitted;
 - (c) Be compacted to provide the necessary permeability and resistance to erosion, scouring or settling;
 - (d) Be no steeper than one vertical to two horizontal feet unless substantiated data

justifying steeper slopes is submitted to and approved by the Floodplain Administrator; and

(e) Be used to the extent to which it does not adversely affect adjacent properties.

B. Drainage facilities.

- (1) Storm drainage facilities shall be designed to convey the flow of stormwater runoff in a safe and efficient manner. The system shall ensure proper drainage along streets and provide positive drainage away from buildings. The system shall also be designed to prevent the discharge of excess runoff onto adjacent properties.
- (2) Storm drainage facilities shall be designed to convey the flow of surface waters without damage to persons or property. The system shall insure drainage at all points along streets and provide positive drainage away from buildings and on-site waste disposal sites.
- (3) Drainage plans shall be consistent with local and regional drainage plans. The facilities shall be designed to prevent the discharge of excess runoff onto adjacent properties. Upper Darby Township may require retention basins prior to discharge to prevent increase in flood elevation downstream.

C. Water and sanitary sewer facilities and systems.

- (1) All sanitary sewer systems located in any designated floodplain district shall be designed to prevent the discharge of untreated sewage into floodwaters and be floodproofed up to the regulatory flood elevation. The installation of sewage disposal facilities requiring soil absorption systems where such system will not function due to a high groundwater, flooding, or unsuitable soil characteristics shall be prohibited. Upper Darby Township may require that the developer note on the face of the plat and in any deed of conveyance that soil absorption fields are prohibited in designated areas.
- (2) All water systems located in any designated floodplain districts, whether public or private, shall be floodproofed up to the regulatory flood elevation. If there is an existing public water supply system on or near the subdivision, Upper Darby Township shall require the developer to connect to this system where it is economically feasible. All new or replacement water supply and sanitary sewer facilities and systems shall be located, designed and constructed to minimize or eliminate flood damages and the infiltration of floodwaters.
- (3) No part of any on-site waste disposal system shall be located within any identified floodplain area except in strict compliance with all state and local regulations for such systems. If any such system is permitted, it shall be located so as to avoid impairment to it, or contamination from it, during a flood.
- (4) The design and construction provisions of the UCC and FEMA #348, "Protecting Building Utilities from Flood Damages," and The International Private Sewage Disposal Code shall be utilized.

D. Other utilities. All other public and/or private utilities and facilities including gas and electric

shall be elevated or floodproofed up to the regulatory flood.

- E. Elevation of streets. The finished elevation of proposed streets shall not be less than the one-hundred-year flood elevation. Upper Darby Township may require, where necessary, profiles and elevations of streets to determine compliance with the requirements. Drainage openings shall be sufficient to discharge flood flows without unduly increasing flood heights.
- F. Storage. All materials that are buoyant, flammable, explosive, or in times of flooding could be injurious to human, animal or plant life, and not listed in § 305-26, Development which may endanger human life, shall be stored at or above the regulatory flood elevation or floodproofed to the maximum extent possible.
- G. Placement of buildings and structures. All buildings and structures shall be designed, located, and constructed so as to offer the minimum obstruction to the flow of water and shall be designed to have a minimum effect upon the flow and height of floodwater.
- H. Anchoring.
 - (1) All buildings and structures shall be firmly anchored in accordance with accepted engineering practices to prevent flotation, collapse or lateral movement.
 - (2) All air ducts, large pipes, storage tanks, and other similar objects or components located below the regulatory flood elevation shall be securely anchored or affixed to prevent flotation.
- I. Floors, walls and ceilings.
 - (1) Wood flooring used at or below the regulatory flood elevation shall be installed to accommodate a lateral expansion of the flooring, perpendicular to the flooring grain, without causing structural damage to the building.
 - (2) Plywood used at or below the regulatory flood elevation shall be of a marine or water-resistant variety.
 - (3) Walls and ceilings at or below the regulatory flood elevation shall be designed and constructed of materials that are water-resistant and will withstand inundation.
 - (4) Windows, doors, and other components at or below the regulatory flood elevation shall be made of metal or other water-resistant material.
- J. Paints and adhesives.
 - (1) Paints and other finishes used at or below the regulatory flood elevation shall be of marine or water-resistant quality.
 - (2) Adhesives used at or below the regulatory flood elevation shall be of a marine or water-resistant variety.
 - (3) All wooden components (doors, trim, cabinets, etc.) used at or below the regulatory flood elevation shall be finished with a marine or water-resistant paint or other finishing material.

K. Electrical components.

- (1) Electrical distribution panels shall be at least three feet above the base flood elevation.
- (2) Separate electrical circuits shall serve lower levels and shall be dropped from above.

L. Equipment. Water heaters, furnaces, air-conditioning and ventilating units, and other electrical, mechanical or utility equipment or apparatus shall not be located below the regulatory flood elevation.

M. Fuel supply systems. All gas and oil supply systems shall be designed to prevent the infiltration of floodwaters into the system and discharges from the system into floodwaters. Additional provisions shall be made for the drainage of these systems in the event that floodwater infiltration occurs.

N. Excavation and grading. Where any excavation or grading is proposed or where any existing trees, shrubs, or other vegetative cover will be removed in the designated floodplain district, the developer shall consult the Delaware County Conservation District representative concerning plans for erosion and sediment control and to also obtain a report from the Conservation District on the soil characteristics of the site so that a determination can be made as to the type and degree of development that the site may accommodate. A copy of this report shall be forwarded to Upper Darby Township and the Delaware County Planning Commission. Before undertaking any excavation or grading, the developer shall obtain a grading and excavation permit from Upper Darby Township.

O. Uniform Construction Code coordination. The standards and specifications contained in 34 Pa. Code (Chapters 401 to 405), as amended, and not limited to the following provisions, shall apply to the above and other sections and subsections of this chapter to the extent that they are more restrictive and supplement the requirements of this chapter:

- (1) International Building Code (IBC) 2009, or the latest edition thereof adopted by the State of Pennsylvania: Secs. 801, 1202, 1403, 1603, 1605, 1612, 3402, and Appendix G.
- (2) International Residential Building Code (IRC) 2009, or the latest edition thereof adopted by the State of Pennsylvania: Secs. R104, R105, R109, R322, Appendix E, and Appendix J.

§ 305-28. Special requirements for manufactured homes.

- A. Within any identified floodplain area, manufactured homes shall be prohibited. If a variance is obtained in accordance with the criteria in Article VII, then the following provisions apply.
- B. Within any floodway area/district, manufactured homes shall be prohibited. If a variance is obtained in accordance with the criteria in Article VII, then the following provisions apply.
- C. Within any identified floodplain area, manufactured homes shall be prohibited within the area measured 50 feet landward from the top-of-bank of any watercourse.
- D. Where permitted within any identified floodplain area, all manufactured homes, and any improvements thereto, shall be:

- (1) Placed on a permanent foundation;
 - (2) Elevated so that the lowest floor of the manufactured home is at least 1 1/2 feet above base flood elevation;
 - (3) Anchored to resist flotation, collapse, or lateral movement; and
 - (4) Have all ductwork and utilities including HVAC/heat pump elevated to the regulatory flood elevation.
- E. Installation of manufactured homes shall be done in accordance with the manufacturers' installation instructions as provided by the manufacturer. Where the applicant cannot provide the above information, the requirements of Appendix E of the 2009 International Residential Building Code or the U.S. Department of Housing and Urban Development's "Permanent Foundations for Manufactured Housing," 1984 Edition, draft or latest revision thereto, and 34 Pa. Code Chapters 401 to 405 shall apply.
- F. Consideration shall be given to the installation requirements of the 2009 IBC and the 2009 IRC, or the latest editions thereto adopted by the State of Pennsylvania, and 34 Pa. Code, as amended, where appropriate and/or applicable to units where the manufacturers' standards for anchoring cannot be provided or were not established for the proposed units' installation.