



CITY OF ALAMO HEIGHTS  
**PLANNING AND DEVELOPMENT SERVICES DEPARTMENT**

6116 Broadway St, San Antonio, TX 78209  
(210) 826 – 0516 [voice] (210) 832 – 2299 [fax]

**FLOODPLAIN DEVELOPMENT PERMIT APPLICATION**  
**(ORDINANCE NO. 1637)**

1) \$2000.00 FEE REQ'D [Multi-Family/Commercial]    2) \$750.00 FEE REQ'D [Single-Family]

DATE: \_\_\_\_\_

ADDRESS OF PROPERTY: \_\_\_\_\_

NAME OF APPLICANT: \_\_\_\_\_ Tel. No. \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_

NATURE OF PROPOSED CONSTRUCTION:

Residential \_\_\_ Non-Residential \_\_\_ New/Expansion \_\_\_ Existing/Within Footprint \_\_\_

DESCRIPTION OF WORK: \_\_\_\_\_

ESTIMATED COST OF WORK: \$ \_\_\_\_\_

POINT OF CONTACT (If different than applicant): \_\_\_\_\_

POINT OF CONTACT ADDRESS: \_\_\_\_\_

CONTACT PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

**APPLICANT SHALL PROVIDE TWO (2) SETS OF HALF-SCALE PLANS FOR THE PROPOSED CONSTRUCTION / DEVELOPMENT.**

For Official City Use Only

Are other permits/actions required? NO \_\_\_ YES \_\_\_ WHICH? \_\_\_\_\_

1) Large Scale Projects - Meets requirements for Sec. 7-52(1): \_\_\_ 7-4 \_\_\_ 7-32 \_\_\_ 7-33 \_\_\_ 7-53 \_\_\_ 7-71 \_\_\_ 7-72 \_\_\_ 7-74 \_\_\_ 7-75 \_\_\_ 7-111 \_\_\_ 7-113 \_\_\_ 7-114

2) Small Scale Projects - Meets requirements for Sec. 7-52(2): \_\_\_ 7-4 \_\_\_ 7-71 \_\_\_ 7-72 \_\_\_ 7-74 \_\_\_ 7-75 \_\_\_ 7-113 \_\_\_ 7-114

ADDITIONAL REQUIREMENTS SENT TO APPLICANT REGARDING SECTIONS: \_\_\_ 7-4 \_\_\_ 7-32 \_\_\_ 7-33 \_\_\_ 7-53 \_\_\_ 7-71 \_\_\_ 7-72 \_\_\_ 7-74 \_\_\_ 7-75 \_\_\_ 7-111 \_\_\_ 7-113 \_\_\_ 7-114

\_\_\_\_\_ DATE: \_\_\_\_\_

ASSOCIATED BUILDING PERMIT NO: \_\_\_\_\_ DATE ISSUED: \_\_\_\_\_

(Copy of Floodplain Development Permit to be filed in Building Permit file; Original in FDP Master File)

NOTE: Work permitted by the Floodplain Development Permit must be started within six (6) months of the date of issuance, otherwise the permit shall become null and void. Work must be completed within three (3) years of issuance of permit.

## Sec. 7-1. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Appeal* means a request for a review of the floodplain administrator's interpretation of any provision or a request for a variance.

*Area of shallow flooding* means a designated AO, AH or VO Zone on a community's Flood Insurance Rate Map (FIRM) with a one (1) percent chance or greater annual chance of flooding to an average depth of one (1) to three (3) feet, where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

*Area of special flood hazard* is the land in the floodplain within a community subject to a one (1) percent or greater chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zone A, AE, AH, AO, A1-99, VO, V1-30, VE or V.

*Base flood* means the flood having a one-percent chance of being equalled or exceeded in any given year.

*Development* means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

*Elevated building* means a nonbasement building built, in the case of a building in Zones A1-30, AE, A, A99, AO, AH, B, C, X and D, to have the top of the elevated floor, or in the case of a building in Zones V1-30, VE or V, to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of pilings, columns (post and piers), or shear walls parallel to the floor of the water and adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of Zone A1-30, AE, A, A99, AO, AH, B, C, X, D, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters. In the case of Zone V1-30, VE or V, "elevated building" also includes a building otherwise meeting the definition of "elevated building," even though the lower area is enclosed by means of breakaway walls, if the breakaway walls meet the standards of section 60.3(e)(5) of the National Flood Insurance Program Regulations.

*Existing construction* means, for the purposes of determining rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before the date. "Existing construction" may also be referred to as "existing structures."

*Flood or flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland or tidal waters;
- (2) The unusual and rapid accumulation or runoff of surface waters from any source.

*Flood insurance rate map (FIRM)* means an official map of a community on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

*Flood insurance study* is the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood, as well as the flood boundary-floodway map.

*Floodplain or flood-prone area* means any land area susceptible to being inundated by water from any source (see definition of flooding).

*Flood-protection system* means those physical structural works for which funds have been authorized, appropriated and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood-modifying works are those constructed in conformance with sound engineering standards.

*Floodway (regulatory floodway)* means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

*Functionally dependent use* means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that

are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

*Habitable floor* means any floor useable for the following purposes: which include working, sleeping, eating, cooking or recreation, or any combination thereof. A floor used for storage purposes only is not a "habitable floor."

*Highest adjacent grade* means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

*Levee* means a manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding.

*Levee system* means a flood-protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

*Lowest floor* means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking or 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 nonelevation design requirement of section 60.3 of the National Flood Insurance Program Regulations.

*Manufactured home* means a structure, transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than one hundred eighty (180) consecutive days. For insurance purposes, the term "manufactured home" does not include park trailers, travel trailers and other similar vehicles.

*Mean sea level* means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929, or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

*New construction* means, for floodplain management purposes, structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community.

*Start of construction* (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Public Law 97-348)), includes substantial improvement and means the date the building permit was issued, provided that actual start of construction, repair, reconstruction, placement or other improvement was within one hundred eighty (180) days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

*Structure* means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

*Substantial improvement* means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure either (1) before the improvement or repair is started or, (2) if the structure has been damaged and is being restored, before the damage occurred. For the purpose of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either (1) any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions, or (2) any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.

*Variance* is a grant of relief to a person from the requirements of this chapter when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner prohibited by this chapter. (For full requirements, see section 60.6 of the National Flood Insurance Program Regulations.)

*Violation* means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in section 60.3(b)(5), (c)(4), (c)(10),

(d)(3), (e)(2), (e)(4) or (e)(5) [of the National Flood Insurance Program Regulations] is presumed to be in violation until such time as that documentation is provided.

*Water surface elevation* means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplain of coastal or riverine areas.

*(Code 1965, App. B, Art. II)*

### **Sec. 7-2. - Findings of fact.**

(a) The flood hazard areas of the city are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.

(b) These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage.

*(Code 1965, App. B, Art. I, § B)*

### **Sec. 7-3. - Statement of purpose.**

It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public harm and private losses in special flood hazard areas with provisions designed:

- (1) To protect human life and property exposed to the hazards of flooding;
- (2) To ensure that potential property owners are notified if property is in a special flood hazard area;
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) To minimize prolonged business interruptions;
- (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in special flood hazard areas;
- (6) To minimize expenditure of future public money for costly flood-control projects;
- (7) To help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas.

*(Code 1965, App. B, Art. I, § C)*

### **Sec. 7-4. - Methods of reducing flood losses.**

In order to accomplish its purposes, this chapter uses the following methods:

- (1) Restricts and prohibits uses that are dangerous to health, safety or property in times of flood or cause excessive increases in flood heights or velocities;
- (2) Requires that uses vulnerable to floods, including public facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Controls, in the sense of providing authoritative guidance, the alteration of natural floodplains, their protective barriers and stream channels;
- (4) Prevents the construction of barriers which will divert floodwaters and subject other lands to greater flood hazards;
- (5) Controls, in the sense of providing authoritative guidance, development which would cause greater erosion or potential flood damage, such as grading, dredging and excavation.

### **Sec. 7-33. - Variance procedures.**

(a) The city council shall hear and render judgment on requests for variances from the requirements of this chapter. Variance requests shall be processed as follows:

- (1) For cut and/or fill, building or building permits, the applicant shall present the disapproved permit to the council, together with information as to why the variances should be granted. The council will then hear the request as soon as practical.
- (2) For subdivision plats, the applicant may submit the disapproved permit and the request for variance, prior to plat submission or in conjunction with other data required for the platting process. This request shall be handled similar to paragraph (a) above. If the applicant chooses to submit the disapproved permit as part of the plat submission process, then the variance request shall be handled similar to other variances requested under the subdivision regulations, except that criteria for the floodplain variance shall be governed by this section.

- (3)The city engineer shall reply in writing as to his evaluation of the applicant's request and make a recommendation as to approval or denial of the variance request.
- (4)If the council approves the request, the permit will be issued with variances or any special conditions that are attached to the variance.
- (b)Any person or persons aggrieved by the decision of the council may appeal such decision to a court of competent jurisdiction.
- (c)The city engineer shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
- (d)Variances, without regard to the procedures set forth in the remainder of this section, may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Sites and Places or the state historic survey list.
- (e)Upon consideration of the factors noted above and the intent of this chapter, the council may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this chapter.
- (f)Variances shall not be issued within any designated flood-way if any increase in flood levels during the base flood discharge would result.
- (g)Prerequisites for granting variances:
- (1)Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
  - (2)Variances shall be granted only upon (1) a showing of good and sufficient cause, (2) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (3) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public or conflict with existing local laws or ordinances.
- (h)Any applicant to whom a variance or variances are granted shall be given written notice of the specific parts of the floodplain chapter for which variances were granted and that the cost of flood insurance will be commensurate with the increased risk resulting from the granting of the variance or variances.
- (i)Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use, provided that (i) the criteria outlined in [section 7-33](#) are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

*(Code 1965, App. B, Art. IV, § D)*

### **Sec. 7-51. - Establishment.**

A floodplain development permit shall be required for all development in any area of special flood hazard as defined in this chapter to ensure conformance with the provisions of this chapter.

*(Code 1965, App. B, Art. III, § C)*

### **Sec. 7-52. - Permit required.**

No structure or land in an area of special flood hazard shall hereinafter be located, altered, have its use changed or otherwise be developed unless a floodplain development permit has been issued pursuant to the terms of this chapter.

Requests for floodplain development permits for proposed development in the Flood Zone AE areas of the city shall be processed in accordance with the following requirements:

- (1)For new structures for which no footprint existed prior to the effective date of this section, or for the expansion of the footprint of structures existing prior to the effective date of this section, an application for a floodplain development permit shall comply with [section 7-4](#), [section 7-32](#), [section 7-53](#), [section 7-71](#), [section 7-72](#), [section 7-74](#), [section 7-75](#), [section 7-111](#), [section 7-113](#) and [section 7-114](#) as such sections may apply.
- (2)For (i) interior remodeling of an existing structure; (ii) exterior remodeling of an existing structure that does not change the existing footprint, first floor elevation or elevation of the land; (iii) removal and replacement of an existing structure with a new structure of the same footprint, first floor elevation and location, or in an improved location, and no change in the elevation of the land; (iv) replacement of multiple existing structures with one structure up to the aggregate footprint of the multiple structures and in keeping with (iii) above; or (v) replacement of an existing structure or structures such that they are elevated on columns or pilings such that the lowest horizontal structural elements are at or above the base flood elevation and the elevation of the land is not changed, and in keeping with (iii) above, an application for a floodplain development permit shall comply with [section 7-4](#), [section 7-71](#), [section 7-72](#), [section 7-74](#), [section 7-75](#), [section 7-113](#) and [section 7-114](#)

as such sections may apply. Further, work allowed under subsection (2) must present the least possible resistance to the flow of the base flood, which can be accomplished by orientation of the structure, minimal structural elements, and other design features.

Work permitted hereunder must be started within six (6) months of the date of approval of the required floodplain development permit, otherwise the permit shall become null and void.

*(Code 1965, App. B, Art. III, § D; Ord. No. 1637, 5-8-06; Ord. No. 1861, 4-12-10)*

### **Sec. 7-53. - Application.**

(a) Application for a floodplain development permit shall be presented to the city engineer, on forms furnished by him, prior to any proposed cut and/or fill or building. Application for a floodplain development permit for a proposed subdivision may be presented prior to or in conjunction with other data required for the platting process. For platting purposes, a floodplain development permit shall serve only as an approval of the floodplain chapter requirements. No cut and/or fill, building or other site alterations shall proceed until the permit is approved. The permit application shall be accompanied by supporting hydrology and hydraulic data prepared by a registered professional civil engineer, in accordance with the forms article of this chapter. It may also include, but not be limited to, plans in duplicate drawn to scale showing the locations, dimensions and elevations of proposed structures, and the location of the foregoing in relation to areas of special flood hazard. See [section 7-114](#) for supplementary application floodplain development permit for building or structure in the flood hazard area. Additionally, the following information is required:

- (1) Elevation, in relation to mean sea level, of the lowest floor (including basement) of all proposed structures;
- (2) Elevation, in relation to mean sea level, to which any nonresidential structure shall be floodproofed;
- (3) Certification from a registered professional civil engineer or registered architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of [section 7-72\(2\)](#);
- (4) Certification of the fair market value of an existing structure, prepared by a certified real estate appraiser, and a cost estimate of proposed improvements to such structure, prepared by a registered architect or registered professional engineer, shall be submitted to verify whether or not the proposed improvements exceed fifty (50) percent of the fair market value of the existing structure. In the case of a structure that has suffered damage, the data will verify the fair market value of the structure before the damage occurred;
- (5) Description by a registered professional civil engineer of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.
- (6) Permit review fee in the amount of one thousand five hundred dollars (\$1,500.00) to cover the cost for the city to secure from its floodplain consultant a review of the applicant's permit application, and for the cost of processing the permit application.

(b) Approval or denial of a floodplain development permit by the city engineer shall be based on all of the provisions of this chapter and the following relevant factors outlined below. A permit shall be denied if any factor is not satisfactorily addressed.

- (1) The danger to life and property due to flooding or erosion damage; velocities in excess of six (6) fps shall be considered erosive, and the product of the velocity times the depth of flow in excess of that shown as within the "safe range" by [section 7-112](#) shall be considered dangerous. Mitigating measures shall be addressed;
- (2) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (3) The danger that materials may be swept onto other lands to the injury of others; materials to be stored in special flood hazard areas shall be properly restrained by anchorage or restraints so that flotation and displacement will not occur during the inundation period;
- (4) Access to the property elevated to or above the elevation of the flood of record for ordinary and emergency vehicles must be provided for new construction and proposed subdivisions;
- (5) The cost of providing governmental services during and after flooding conditions;
- (6) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the sites, shall be analyzed as delineated in [section 7-111](#);
- (7) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
- (8) The relationship of the proposed use to the comprehensive plan for that area with respect to the dedication of additional drainage easement, in accordance with the existing subdivision regulations.

(c) All proposed drainage improvements to be made within the limits of the areas of special flood hazard as set forth in [section 7-6](#) shall require a performance bond which shall be filed with the city engineer after the approval of the floodplain development permit. For improvements being made in a subdivision under the requirements:

(1) A performance bond will be executed by a surety company, licensed to do business in the state in an amount equal to the cost estimate, such cost estimate to include an inflation factor based upon a locally recognized construction cost index, as approved by the city engineer, of all uncompleted and unaccepted improvements required by this chapter; with the condition that the developer shall complete such improvements and have them approved by the city engineer within three (3) years from the date of approval of the floodplain development permit;

(2) The performance bond shall be substantially in the same form as the bond instrument set out in [section 7-113](#) of this chapter. The city engineer is authorized to sign the bond instrument on behalf of the city and the city attorney shall approve the same as to form.

(d) If a floodplain development permit application is disapproved, the city engineer shall notify the applicant in writing of the section and specific requirement of the floodplain chapter within which the proposed development does not comply and the nature of such noncompliance.

*(Code 1965, App. B, Art. IV, § C; Ord. No. 1563, 9-13-04)*

### **Sec. 7-54. - Continuing obligations.**

It shall be unlawful to develop any property within an area of special flood hazard, except in accordance with the terms of a floodplain development permit. Drawings and other material or criteria, submitted to the city engineer in applying for such permit, shall, upon approval and issuance of such a permit, be a part of a condition and term of such permit. In addition, all standards and requirements of this chapter and all factors listed herein as relevant in approving or denying such permit shall be a part of such a permit and a condition and term of such a permit. In addition to named materials required to be submitted in applying for such a permit, the city engineer may require additional submission in order to verify whether such a permit should be issued. The conditions and terms shall constitute a continuing obligation upon all future occupants or users of the land, to the extent the same are applicable after development has been completed.

*(Code 1965, App. B, Art. VI, § C)*

### **Sec. 7-71. - General standards.**

In all areas of special flood hazards, the following provisions are required for all new construction and substantial improvements:

(1) All new construction or substantial improvements shall be designed or modified and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;

(2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;

(3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;

(4) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed or located so as to prevent water from entering or accumulating within the components during conditions of flooding;

(5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;

(6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters;

(7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding;

(8) Filling or the disposal of any materials, which will diminish the water flow capacity of any waterway or floodplain defined by this chapter, must be compensated for with remedial action by additional excavation or otherwise so as not to diminish water capacity; and

(9) Floodplain engineering and procedures requirements within FEMA or the U.S. Corps of Engineers official flood-prone areas shall conform to the engineering criteria as set out in [section 7-111](#)

*(Code 1965, App. B, Art. V, § A)*

## Sec. 7-72. - Specific standards.

In all areas of special flood hazards where base flood elevation data have been provided as set forth in [section 7-6](#), [section 7-32\(7\)](#) or [section 7-73\(c\)](#), the following provisions are required:

(1)*Residential construction:* New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to one (1) foot above the base flood elevation. A registered professional civil engineer, registered architect or registered public surveyor shall submit a certification to the city engineer that the standard of this section is satisfied.

Floodproofing will not be allowed as a substitute for the lowest floor, including basement, being elevated one (1) foot above the base flood elevation.

(2)*Nonresidential construction:* New construction or substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to or above the base flood level or, 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 hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop or review structural design, specifications and plans for the construction and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification, which includes the specific elevation in relation to mean sea level to which such structures are floodproofed, shall be maintained by the floodplain administrator.

(3)*Enclosures:* New construction and substantial improvements, with fully enclosed areas below the lowest floor that are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. 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 (2) openings, having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding, shall be provided;

b. The bottoms of all openings shall be no higher than one (1) foot above grade;

c. Openings may be equipped with screens, louvers, valves or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.

(4)*Manufactured homes:*

a. In accordance with the zoning chapter, modular and manufactured housing is not permitted to be constructed in the city.

b. If, in the future, construction of manufactured housing should be permitted, then the following provisions shall apply:

1. Require that all manufactured homes to be placed within Zone A shall be installed using methods and practices which minimize flood damage. For the purpose of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

2. All manufactured homes shall be in compliance with this section.

3. Require that all manufactured homes to be placed or substantially improved within Zones A1-30, AH and AE on the community's FIRM be elevated on a permanent foundation, such that the lowest floor of the manufactured home is at or above the base flood elevation, and be securely anchored to an adequately anchored foundation system, in accordance with the provision of paragraph (4) of this section.

(Code 1965, App. B, Art. V, § B)

## Sec. 7-74. - Standards for areas of shallow flooding (AO/AH zones).

There are no specific areas within the city designated as shallow flooding. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet, where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, should any areas ever be so designated, the following provisions shall apply:

(1) 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 (2) feet if no depth number is specified).



- (2) All new construction and substantial improvements of nonresidential structures:
  - a. 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 (2) feet if no depth number is specified); or,
  - b. 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 hydrodynamic loads and effects of buoyancy.
- (3) A registered professional engineer or architect shall submit a certification to the floodplain administrator that the standards of [section 7-53](#) are satisfied.
- (4) Require within Zone AH or AO adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

*(Code 1965, App. B, Art. V, § D)*

### **Sec. 7-75. - Floodways.**

Located within the areas of special flood hazard established in [section 7-6](#) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potentials, the following provisions shall apply:

- (1) Encroachments are prohibited, including fill, new construction, substantial improvements and other development, unless certification by a professional registered engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
- (2) If the preceding paragraph is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article.

*(Code 1965, App. B, Art. V, § E)*

### **Sec. 7-111. - Floodplain engineering and procedures requirements within FEMA or U.S. Corps of Engineers official flood-prone areas.**

*(a) For proposed subdivision plat.*

- (1) Run the 25-year ultimate development runoff discharge through area with existing "n" values of drain.
- (2) Compare the 25-year water surface elevation profile against the federal agency 100-year profile; whichever is higher controls.
- (3) If a federal agency 100-year profile is not available, use the U.S. Geological Survey Chart (100-year frequency discharge vs. drainage area, existing conditions) to establish the runoff for the local area and compare with the 25-year values; if 100-year values are greater, use for hydraulic calculations.
- (4) With the existing floodplain established for water surface elevations, run frictional depths in the channel opposite the proposed subdivision for existing conditions, using  $Q_s$  available.
- (5) If floodplain water surface profiles are available for 100-year  $Q_s$ , superimpose the 100-year water surface elevation in the existing section and calculate existing  $AR^{2/3}$  value furnished.
- (6) Any fill encroachment proposed in this section must furnish the same  $AR^{2/3}$  value as the existing section and be solved for a depth  $\Delta h_v$  below the original (existing) frictional depth line.
- (7) Run a backwater curve on proposed finished fill contours to verify that the water surface elevation did not rise due to fill encroachment.

*(b) For proposed building in existing officially designated FEMA or U.S. Corps of Engineers flood-prone areas.*

- (1) If a federal agency water surface profile is available for the 100-year frequency discharge, superimpose the 100-year water elevation in the existing section and calculate existing  $AR^{2/3}$  value furnished.
- (2) Superimpose the proposed building into the floodplain section to see if the remaining  $AR^{2/3}$  value will be equal to the existing value furnished at a depth  $\Delta h_v$  below the existing water surface elevation. If so, OK; if not, additional  $AR^{2/3}$  value will have to be furnished or building cannot be approved for construction.
- (3) If a federal agency 100-year frequency water surface profile is not available, use U.S. Geological Survey Chart (100-year frequency discharge vs. drainage area, existing conditions) to calculate runoff and run backwater profile and frictional depths through the proposed building site.

(4) Make frictional depth checks with the proposed building superimposed into the existing section and furnish the same AR<sup>2</sup>/3 value as the existing section a depth delta hv down from the original water surface elevation.

(5) If the water surface profile had to be established, run a backwater curve through the proposed section with the building to verify that there is not rise in the existing water surface elevations.

(c) *For subdivisions.* Proposed plats will be checked for the 25-year water surface elevations plus freeboard, and the 100-year water surface elevations without freeboard, whichever is higher will control. Land to be built on will be filled to these controlling elevations.

(d) *For building permits only.*

(1) Residential finished floor slabs will be one (1) foot above the 100-year water surface elevation.

(2) Business, industrial or commercial. Builder will have the option to place uninhabited basements below 100-year water surface elevation, but building must be floodproofed, in accordance with

[section 7-72](#)

(Code 1965, App. B, Attach. A)

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**Sec. 7-113. - Performance bond.**

**PERFORMANCE BOND**

STATE OF TEXAS	( )
	( )
COUNTY OF _____ / _____ / _____	( )

KNOW ALL MEN BY THESE PRESENTS;

That we, \_\_\_\_\_, the undersigned developer as principal, and \_\_\_\_\_, as surety, do hereby acknowledge ourselves to be held and firmly bound unto the City of Alamo Heights, a municipal corporation of the County of Bexar and State of Texas, in the full and just sum of \$\_\_\_\_\_, for the payment of which will and truly to be made, we hereby bind ourselves and our respective heirs, administrators, executors and assigns jointly and severally, firmly by these presents.

WHEREAS, the principal had petitioned the Floodplain Administrator of the City of Alamo Heights for permission to \_\_\_\_\_ within the jurisdiction of the City of Alamo Heights which is shown on plans entitled \_\_\_\_\_, and which is more particularly described as follows, TO WIT:

WHEREAS, said plans and a Floodplain Development Permit for said development were approved by the Floodplain Administrator; and

WHEREAS, the Floodplain Ordinance of the City of Alamo Heights requires that the site improvements set out below be completed by the principal in conformance with the standards established by said ordinance within three (3) years from the date on which the Floodplain Development Permit was approved: \_\_\_\_\_

\_\_\_\_\_ ; and

WHEREAS, the aforesaid ordinance requires a Guarantee of Performance that such site improvements will have been completed and will have been accepted by the City within three (3) years of the date on which the Floodplain Development Permit was approved; and

WHEREAS, the undersigned Developer has elected to provide to the City of Alamo Heights such a Guarantee of Performance;

NOW THEREFORE, the condition of this obligation is such that if the principal shall, on or before the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, construct or cause to be constructed the above-mentioned improvements in accordance with the requirement of the City of Alamo Heights Floodplain Ordinance, then this obligation shall be void; otherwise, the obligations under this bond shall remain in full force and effect.

IN TESTIMONY WHEREOF, WITNESS OUR HAND AND SEAL this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 20 \_\_\_\_\_.

	DEVELOPER AND PRINCIPAL
	BY: _____
	TITLE: _____
	BY: _____
	ATTORNEY-IN-FACT

APPROVED AND ACCEPTED this \_\_\_\_\_ day of \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_, 20 \_\_\_\_\_.

	CITY OF ALAMO HEIGHTS
	BY: _____
	TITLE: _____

APPROVED AS TO FORM: \_\_\_\_\_

CITY ATTORNEY

*(Code 1965, App. B, Attach. C)*

**Sec. 7-114. - Supplementary application.**

SUPPLEMENTARY APPLICATION, BUILDING OR STRUCTURE IN FLOOD HAZARD AREA

(To Accompany Application for Building Permit)

City or Town \_\_\_\_\_ County \_\_\_\_\_

Location \_\_\_\_\_

Intended Use \_\_\_\_\_ Value Of Improvement \$ \_\_\_\_\_

Type of Construction \_\_\_\_\_ No. of Stories \_\_\_\_\_

Owner \_\_\_\_\_ Address \_\_\_\_\_

Exist. Ground Elev. \_\_\_\_\_ MSL; Fin. Ground Elev. \_\_\_\_\_ MSL; Reg. Flood Datum Elev. at

Site \_\_\_\_\_ MSL; RFD Velocity \_\_\_\_\_ Ft./Sec.

\_\_\_\_\_ Floor Elev. \_\_\_\_\_ MSL: Proposed Use \_\_\_\_\_; \_\_\_\_\_ Floor Elev. \_\_\_\_\_ MSL; Proposed Use \_\_\_\_\_

\_\_\_\_\_ Floor Elev. \_\_\_\_\_ MSL: Proposed Use \_\_\_\_\_; \_\_\_\_\_ Floor Elev. \_\_\_\_\_ MSL; Proposed Use \_\_\_\_\_

Maximum Loading on Walls:	Hydrostatic (Uplift) Pressure on Floor Slabs (Maximum) _____ / _____ / _____ PSF
Non-Flood Load _____ PSF	Foundation Type(s) _____
Hydrostatic Load _____ PSF	Lowest Footer Elev. (Bottom) _____ MSL
Hydrodynamic Load _____ PSF	Sewage Disposal: _____ Septic Tank. _____ Pub. Syst., _____ Other (Explain)
Impact Load _____ PSF	Potable Water: _____ Individual Well _____ Pub. Syst., _____ Other (Explain)
Total Flood Load _____ PSF	
Exterior Wall Construction Type(s):	Floor Construction Type(s):

Above \_\_\_\_\_ Floor \_\_\_\_\_ Floor \_\_\_\_\_

Above \_\_\_\_\_ Floor \_\_\_\_\_ Floor \_\_\_\_\_

Above \_\_\_\_\_ Floor \_\_\_\_\_ Floor \_\_\_\_\_

Above \_\_\_\_\_ Floor \_\_\_\_\_ Floor \_\_\_\_\_

Types of Waterproofing \_\_\_\_\_

Type(s) of Joints: Walls \_\_\_\_\_ Floors \_\_\_\_\_; Waterstops/Seals (Types): Walls \_\_\_\_\_ Floor \_\_\_\_\_

Sump Location \_\_\_\_\_ Sump Type \_\_\_\_\_

All Tanks and/or Buoyant Equipment Are \_\_\_\_\_ Are Not \_\_\_\_\_ Anchored to Prevent Flotation

Alternate Power Source Is \_\_\_\_\_ Is Not \_\_\_\_\_ Provided For Emergency Operation of Sump Pump

Sanitary, Drainage & Water Supply Facilities Are \_\_\_\_\_ Are Not \_\_\_\_\_ Protected From Contamination & Back Flow by Flood Water

Retaining Wall(s) Are \_\_\_\_\_ Are Not \_\_\_\_\_ Used to Protect Building/Structure

Intentional Flooding Is \_\_\_\_\_ Is Not \_\_\_\_\_ Planned For This Building/Structure

Temporary And/Or Emergency Flood Proofing Is \_\_\_\_\_ Is Not \_\_\_\_\_ Planned For This Building/Structure

Building Structure Is \_\_\_\_\_ Is Not \_\_\_\_\_ Protected Against Erosion By Flood Flows

Site Is \_\_\_\_\_ Is Not \_\_\_\_\_ Protected Against Erosion By Flood Flows

Classification Of Building/Structure: FP \_\_\_\_\_, Primary \_\_\_\_\_ Secondary \_\_\_\_\_ Flood Hazard Area.

SPACES: List below all spaces of the building or structure below the Regulatory Flood Datum including their name, room number, and proposed flood-proofing classification (i.e. W1, W2, etc.). List all contents of each space (see [Chapter 10](#) of the Flood-Proofing Regulations). Mark all items which are to be either protected contingently or removed to safe refuge upon receipt of flood warning with an asterisk (\*); all such items must be mentioned in the Owner's Contingency Plan. Attach additional sheets if necessary.

The applicant hereby certifies that the above information is correct and that the plans submitted herewith conform to those submitted for occupancy permit application. The applicant agrees to comply with the provisions of the Zoning Ordinance, the Building Code and all other laws and ordinances affecting the construction and occupancy of this proposed building.

Signature Of Architect/Engineer _____	Address _____
SEAL	The undersigned will supervise the construction of the work above.
	Signature _____
	Title _____
Date _____	Address _____

	(Signature) _____
Clerk _____	APPROVED FOR COMPLIANCE WITH BUILDING CODE
	Date _____

(Code 1965, App. B, Attach. D)