

Article 11. Land Development Regulations

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Article 11. Land Development Activities**Sec. 1101 Purpose of Article 11.**

This Article contains the requirements that apply to carrying out the land development process, including site grading and land disturbance activities; addressing flood hazard areas; the installation of streets, drainage facilities and public utilities; and building construction.

Sec. 1102 Overview—project construction.**1102 (a) Development activity.**

- 1) Preconstruction activity.
- 2) Following the issuance of any permit authorizing clearing and grading of a site, areas required to be undisturbed, such as natural buffers or stream greenways, must be designated by survey stakes, flags, ribbon, or other appropriate markings and shall be inspected and approved by the County Engineer, Stormwater Manager, or Planning Department prior to the commencement of any clearing or grading activities.
- 3) Grading.
 - a. Grading shall be done in accordance with the lines and grades drawn on the approved grading plan.
 - b. Required erosion and sedimentation control measures and stormwater drainage facilities are to be installed in accordance with the approved plans as development progresses.

1102 (b) Development phase inspections.

- 1) Requests for inspections shall be made by the owner or contractor to the County Engineer at least twenty-four (24) hours prior to when the inspection is needed. Inspections shall be made and passed prior to continuation of further activity or proceeding into new phases. Inspections are required of each of the following phases, as applicable to the actual work to be performed under the development permit:
 - a. Prior to clearing or clearing and grubbing of the property or any portion included under the development permit, inspection of erosion and sedimentation control measures and protective devices for undisturbed areas. Inspection of erosion and sedimentation control measures will be conducted on a continuing basis by the County Engineer and Stormwater Manager
 - b. Upon completion of street grading, inspection and approval shall be required prior to trenching or continuation with subgrade preparation.
 - c. Upon installation of storm drainage pipe, detention, or other storm water facilities, inspection and approval shall be required prior to continuation with subgrade preparation.
 - d. Street curbing and gutter (if provided). Inspection shall be requested after the sub-grade is compacted and forms or string line have been set. Street width and vertical and horizontal alignment may be spot checked.
 - e. Sub-grade of streets. After compaction, the sub-grade may be roll tested with a 20-ton tandem dump truck, loaded to maximum, legal capacity, and shall pass to the satisfaction of the County Engineer. If deemed necessary by the inspector, additional tests in accordance with Sec. 1107(f) will be required.
 - f. Street base. The base shall be string-lined for depth and crown. The street base shall be roll-tested with a 20-ton tandem dump truck, loaded to maximum, legal capacity, and shall pass to the satisfaction of the County Engineer. If deemed necessary by the inspector, additional tests in accordance with Sec. 1107(f) will be required.
 - g. Paving.
 1. The County Engineer may be on site during the paving process to check consistency, depth, and workmanship, as applicable. For asphalt paving, the temperature of the material will be monitored and the street may be cored after completion to check thickness and density. Satisfactory test results of the cores shall be delivered to the County Engineer prior to approval of a final subdivision plat or certificate of occupancy.

2. Actual stone or binder course tonnage will be documented and certified to the County Engineer. Failure to submit tonnage documentation will prevent acceptance of said road into the County system.

1102 (c) As-built surveys.

- 1) Upon completion of the development activity as authorized by the development permit and prior to final development inspection of public and private improvements, the owner shall submit to the County Engineer a complete set of record drawings showing "as-built" conditions prepared by a licensed engineer or registered Tier B surveyor. These record drawings shall highlight any field changes to the location, vertical and horizontal alignment, and finished elevations of:
 - a. Drainage system pipes and channels.
 - b. Storm water detention facilities.
 - c. Sanitary sewer system (if any).
 - d. Water system.
 - e. Streets, including street centerlines showing angles of deflection and standard curve data of intersection, radii, length of tangents and arcs, and degree of curvature with basis of curve data.
- 2) The submittal and composition of all as-built surveys must also meet the requirements of the Pickens County Storm Water Ordinance and accompanying Design Manual.

1102 (d) Final development inspection.

- 1) Following submission and review of the as-built surveys, the County Engineer or Stormwater Manager shall conduct a final development inspection of the project.
- 2) The owner shall be responsible for correcting any deficiencies identified in the final development inspection prior to approval of a final subdivision plat.

1102 (e) Maintenance surety. (2/16/10)

- 1) Prior to approval of a final subdivision plat or issuance of a certificate of occupancy or certificate of site conformance for a multi-family or nonresidential development, a maintenance surety in a form as described below, or otherwise acceptable to the County Attorney, is required for all public improvements shown on the as-built surveys.
- 2) For subdivisions and for maintenance procedures in general for all development, see the Acceptance of Public Improvements section of the Procedures and Permits Article of this Ordinance.
- 3) The owner shall be responsible for maintenance of all public improvements for 1 year from the date of final plat approval or final development approval, or from 1 year from the date of improvement installation and County Engineer approval if such improvements were deferred and covered under a performance surety.
- 4) The value of the maintenance surety shall be based on twenty-five percent (25%) of the actual cost of construction of the public improvements shown on the as-built surveys. Copies of contractor agreements or actual invoices paid, or as otherwise determined by the County Engineer shall evidence the cost of construction.
- 5) Repairs shall be made for any deficiencies identified within the maintenance period or the provided surety instrument shall be called to complete same.
- 6) The maintenance surety shall be in the form of a valid irrevocable letter of credit or bond issued by a financial institution with a presence in South Carolina or otherwise licensed to provide such services in South Carolina.
- 7) In cases where the maintenance surety is to cover a second phase or any other later phase of a development governed by this development ordinance, said surety shall be required to extend in amount and application to cover the original phase of the project in addition to said later phase for the same period of application as specified in Section 1102(e)(3) if the later phase will utilize the same entrance street as that used by the original phase of the project.

Sec. 1103 Site clearing and grading.**1103 (a) Development permit required.**

- 1) Clearing and grading shall not proceed until issuance of an approved development permit. See the Procedures and Permits Article of this Development Ordinance for details. 1102-(b) 1
- 2) Grading shall be done in accordance with the lines and grades drawn on the approved grading plan.

1103 (b) Erosion and sedimentation control measures.

Required erosion and sedimentation control measures must be installed in accordance with the approved soil erosion and sedimentation control plan prior to any major development activity and as development progresses.

1103 (c) Stormwater drainage facilities.

Required stormwater drainage facilities are to be installed in accordance with the approved stormwater management plan as development progresses.

1103 (d) Clearing and grubbing.

The entire area within the typical grading section shall be cleared and grubbed of all trees, bushes, stumps and debris. Such debris shall be disposed of in a lawful manner.

1103 (e) Earthen embankments.

Earthen embankments shall be placed in uniform layers not to exceed a compacted thickness of 6 inches per layer and shall be compacted to a density of 95 percent of the maximum laboratory dry weight per cubic foot as determined by AASHTO (American Association of State Highway and Transportation Officials) Method T-99 in all areas where structures, parking lots and drives, streets, and utilities are to be placed. If necessary, in order to obtain compaction, the contractor shall add moisture to the material as it is placed. All other embankments are to be compacted to a density of at least 90 percent of the maximum laboratory dry weight per cubic foot. Proof rolling shall be accomplished prior to placement of embankments to detect soft spots. (12/4/2017)

Table 11.1: Maximum Cut or Fill Slopes

Depth of Cut or Fill	Cut Slopes*	Fill Slopes*
2 feet or less	2 to 1	2 to 1
2 feet to 5 feet	2 to 1	2 to 1
Over 5 feet	2 to 1	2 to 1**
*Maximum distance of run to rise		
**Guardrails required (see Standard Detail).		

1103 (f) Slopes.

- 1) The maximum slope for all cut or fill slopes shall be as shown on Table 11.1.
- 2) The depth of cut referenced in the table shall be construed to be the maximum cut or fill occurring in any one section of cut or fill. The slope on cut or fill shall be uniform throughout for each section of cut or fill. When a cut is made in rock that requires blasting, slope may be changed to vertical slope upon the written approval of the County Engineer.

Sec. 1104 Soil erosion and sedimentation control.

Soil erosion and sedimentation control shall be governed by the Pickens County Stormwater Ordinance and accompanying Stormwater Design Manual.

Sec. 1105 Flood damage prevention.**1105 (a) Findings of fact.**

- 1) The Special Flood Hazard Areas of Pickens County are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- 2) These flood losses are caused by the cumulative effect of obstructions in flood- plains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, flood-proofed, or otherwise unprotected from flood damages.

1105 (b) Statement of purpose.

It is the purpose of this section to protect human life and health, minimize property damage, and encourage appropriate construction practices to minimize public and private losses due to flood conditions by requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction. Uses of the floodplain which are dangerous to health, safety, and property due to water or erosion hazards, or which increase flood heights, velocities, or erosion are restricted or prohibited. These provisions attempt to control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters, and control filling, grading, dredging and other development which may increase flood damage or erosion. Additionally, the measures listed in this section prevents or regulates the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

1105 (c) Objectives.

The objectives of this section are to protect human life and health, 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 flood blight areas, and to insure that potential home buyers are notified that property is in a flood area. The provisions of the section are intended to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets and bridges located in the flood-plain, and prolonged business interruptions. Also, an important floodplain management objective of this section of the Development Ordinance is to minimize expenditure of public money for costly flood control projects and rescue and relief efforts associated with flooding.

Floodplains are an important asset to the community. They perform vital natural functions such as temporary storage of floodwaters, moderation of peak flood flows, maintenance of water quality, groundwater recharge, prevention of erosion, habitat for diverse natural wildlife populations, recreational opportunities, and aesthetic quality. These functions are best served if floodplains are kept in their natural state. Wherever possible, the natural characteristics of floodplains and their associated wetlands and water bodies should be preserved and enhanced. Decisions to alter floodplains, especially floodways and stream channels, should be the result of careful planning processes that evaluate resource conditions and human needs.

1105 (d) Definitions related to flood damage prevention.

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

Accessory Structure – (Appurtenant Structure) – structures that are located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Accessory Structures should constitute a minimal investment, may not be used human habitation, and be designed to have minimal flood damage potential. Examples of accessory structures are detached garages, carports, storage sheds, pole barns, and hay sheds.

Addition (to an existing building) - an extension or increase in the floor area or height of a building or structure. Additions to existing buildings shall comply with the requirements for new construction regardless as to whether the addition is a substantial improvement or not. Where a firewall or load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and must comply with the standards for new construction.

Agricultural structure - a structure used solely for agricultural purposes in which the use is exclusively in connection with the production, harvesting, storage, drying, or raising of agricultural commodities, including the raising of livestock. Agricultural structures are not exempt from the provisions of this ordinance.

Appeal - a request for a review of the local administrator's interpretation of any provision of this ordinance.

Area of shallow flooding - a designated AO or VO Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard - the land in the floodplain within a community subject to a one percent or greater chance of being equaled or exceeded in any given year.

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

Basement - means any enclosed area of a building that is below grade on all sides.

Building - any structure built for support, shelter, or enclosure for any occupancy or storage.

Coastal High Hazard Area - an area of special flood hazard extending from offshore to the inland limit of the primary frontal dune along an open coast and any other area subject to velocity wave action from storms or seismic sources.

Critical Development - Development that is critical to the community's public health and safety, is essential to the orderly functioning of a community, store or produce highly volatile, toxic or water-reactive materials, or house occupants that may be insufficiently mobile to avoid loss of life or injury. Examples of critical development include jails, hospitals, schools, fire stations, nursing homes, wastewater treatment facilities, water plants, and gas/oil/propane storage facilities.

Development - any man-made 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, or storage of equipment or materials.

Elevated building - a non-basement building built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls parallel to the flow of water.

Executive Order 11988 (Floodplain Management) - Issued by President Carter in 1977, this order requires that no federally assisted activities be conducted in or have the potential to affect identified special flood hazard areas, unless there is no practicable alternative.

Existing construction - means, for the purposes of determining rates, structures for which the start of construction commenced before July 19, 1982.

Existing manufactured home park or manufactured home subdivision - a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before 02.25.1988.

Expansion to an existing manufactured home park or subdivision - the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs).

Flood - a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters, or the unusual and rapid accumulation of runoff of surface waters from any source.

Flood Hazard Boundary Map (FHBM) - an official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of the areas of special flood hazard have been defined as Zone A.

Flood Insurance Rate Map (FIRM) - an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

Flood Insurance Study - the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, as well as the Flood Boundary Floodway Map and the water surface elevation of the base flood.

Flood-resistant material - any building material capable of withstanding direct and prolonged contact (minimum 72 hours) with floodwaters without sustaining damage that requires more than low-cost cosmetic repair. Any material that is water-soluble or is not resistant to alkali or acid in water, including normal adhesives for above-grade use, is not flood-resistant. Pressure-treated lumber or naturally decay-resistant lumbars are acceptable flooring materials. Sheet-type flooring coverings that restrict evaporation from below and materials that are impervious, but dimensionally unstable are not acceptable. Materials that absorb or retain water excessively after submergence are not flood-resistant. Please refer to Technical Bulletin 2-93, Flood-Resistant Materials for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program, document number FIA-TB-2, dated 4/93, and available from the Federal Emergency Management Agency. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

Floodway - 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 one foot.

Freeboard - a factor of safety usually expressed in feet above a flood level for purposes of flood plain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

Functionally dependent facility - a facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, ship repair, or seafood processing facilities. The term does not include long-term storage, manufacture, sales, or service facilities.

Highest Adjacent Grade - the highest natural elevation of the ground surface, prior to construction, next to the proposed walls of the structure.

Historic Structure - any structure that is: (a) listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of the Interior (DOI)) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (b) certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (c) individually listed on a State inventory of historic places; (d) individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified (1) by an approved State program as determined by the Secretary of Interior, or (2) directly by the Secretary of Interior in states without approved programs. Some structures or districts listed on the State or local inventories MAY NOT be "Historic" as cited above, but have been included on the inventories because it was believed that the structures or districts have the potential for meeting the "Historic" structure criteria of the DOI. In order for these structures to meet NFIP historic structure criteria, it must be demonstrated and evidenced that the South Carolina Department of Archives and History has individually determined that the structure or district meets DOI historic structure criteria.

Increased Cost of Compliance (ICC) – applies to all new and renewed flood insurance policies effective on and after June 1, 1997. The NFIP shall enable the purchase of insurance to cover the cost of compliance with land use and control measures established under Section 1361. It provides coverage for the payment of a claim to help pay for the cost to comply with State or

community floodplain management laws or ordinances after a flood event in which a building has been declared substantially or repetitively damaged.

Limited storage - an area used for storage and intended to be limited to incidental items that can withstand exposure to the elements and have low flood damage potential. Such an area must be of flood resistant or breakaway material, void of utilities except for essential lighting and cannot be temperature controlled. If the area is located below the base flood elevation in an A, AE and A1-A30 zone it must meet the requirements of Sec. 1105(k)(2)d of this ordinance.

Lowest Adjacent Grade (LAG) - is an elevation of the lowest ground surface that touches any of the exterior walls of a building or proposed building walls.

Lowest Floor - the lowest floor of the lowest enclosed area. Any unfinished or flood resistant enclosure, usable solely 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 an enclosure is not built so as to render the structure in violation of other provisions of this ordinance.

Manufactured home - a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

Manufactured Home Park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean Sea Level – means, for the purpose of this ordinance, the Nations Geodetic Vertical Datum (NGVD) of 1929, North America Vertical Datum (NAVD) of 1988, or other datum, to which the base flood elevations shown on a community's Flood Insurance Rate Maps (FIRM) are shown.

National Geodetic Vertical Datum (NGVD) of 1929 - as corrected in 1929, elevation reference points set by National Geodetic Survey based on mean sea level.

North American Vertical Datum (NAVD) of 1988 – vertical control, as corrected in 1988 used as the reference datum of Flood Insurance Rate Maps.

New construction - structure for which the start of construction commenced on or after 02.15.1988. The term also includes any subsequent improvements to such structure.

New manufactured home park or subdivision - a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs) is completed on or before 02.15.1988.

Primary Frontal Dune - a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and subject to erosion and overtopping from high tides and waves during coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Recreational vehicle - a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and, (d) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use.

Repetitive Loss – a building covered by a contract for flood insurance that has incurred flood-related damages on 2 occasions during a 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25% of the market value of the building at the time of each such flood event.

Section 1316 of the National Flood insurance Act of 1968 - The act provides that no new flood insurance shall be provided for any property found by the Federal Emergency Management Agency to have been declared by a state or local authority to be in violation of state or local ordinances.

Start of construction - (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348), includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, or improvement was within 180 days of the permit date. The actual start means the first placement of permanent construction of a structure (including a manufactured home) on a site, such as the pouring of slabs or footings, installation of piles, 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 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. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

Structure - a walled and roofed building, a manufactured home, including a gas or liquid storage tank, or other man-made facility or infrastructure that is principally above ground.

Substantial damage - damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Such repairs may be undertaken successively and their costs counted cumulatively. Please refer to the definition of "substantial improvement".

Substantial improvement - any repair, reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures that have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

- a) any project of improvement to a structure to correct existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions (does not include American with Disabilities Act compliance standards); or,
- b) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.
- c) Permits shall be cumulative for a period of five years. If the improvement project is conducted in phases, the total of all costs associated with each phase, beginning with the issuance of the first permit, shall be utilized to determine whether "substantial improvement" will occur.

Substantially improved existing manufactured home park or subdivision - where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction, or improvement commenced.

Variance - is a grant of relief from a term or terms of this ordinance.

Violation - the failure of a structure or other development to be fully compliant with these regulations.

1105 (e) Lands to which this section applies.

This section shall apply to all areas of special flood hazard within the jurisdiction of Pickens County as identified by the Federal Emergency Management Agency in its Flood Insurance Study, dated December 21, 2017 with accompanying maps and other supporting data that are hereby adopted by reference and declared to be a part of this Development Standards Ordinance. Upon annexation any special flood hazard areas identified by the Federal Emergency Management Agency in its Flood Insurance Study for the unincorporated areas of Pickens County, with accompanying map and other data are adopted by reference and declared part of this ordinance.

1105 (f) Warning and disclaimer of liability.

The degree of flood protection required by this Section is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This Section does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This Section shall not create liability on the part of the County or by any officer or employee thereof for any flood damages that result from reliance on this Section or any administrative decision lawfully made hereunder.

1105 (g) Interpretation.

In the interpretation and application of this section all provisions shall be considered as minimum requirements, liberally construed in favor of the governing body, and deemed neither to limit nor repeal any other powers granted under State law. This section is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this section and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

1105 (h) Establishment of flood area permit.

A Flood Area Permit shall be required in conformance with the provisions of this Section prior to the commencement of any development activities within an area of special flood hazard. See the Procedures and Permits Article of this Development Ordinance for application and approval requirements.

1105 (i) Compliance.

No Structure or land shall hereafter be located, extended, converted, or structurally altered without full compliance with the terms of this ordinance and other applicable regulations.

1105 (j) Administration.

1) Adoption of letter of Map Revisions (LOMR)

All LOMRs that are issued in the areas identified in Section 1105(e) are hereby adopted.

2) Building Official or his/her designee—designated as administrator.

The Building Official or his/her designee is hereby appointed to administer and implement the provisions of this Section.

3) Building Official or his /her designee—Duties and responsibilities.

The duties of the Building Official regarding any land within an area of special flood hazard shall include, but not be limited to:

- a. Review all development permits to ensure that the requirements of this ordinance have been satisfied.
- b. Advise permittee that additional federal or State permits may be required, and if specific federal or State permits are known, require that copies of such permits be provided and maintained on file with the development permit.
- c. Watercourse alterations
 1. Notify adjacent communities and the South Carolina Department of Natural Resources, Land Resources and Conservation Districts Division, State Coordinator for the National Flood Insurance Program, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
 2. In addition to the notifications required for watercourse alterations per Sec. 1105(j)(3) c.1, written reports of maintenance records must be maintained to show that maintenance has been provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished. This maintenance must consist of a comprehensive program of periodic inspections, and routine channel clearing and

- dredging, or other related functions. The assurance shall consist of a description of maintenance activities, frequency of performance, and the local official responsible for maintenance performance. Records shall be kept on file for FEMA inspection.
3. If the proposed project will impact the configuration of the watercourse, floodway, or base flood elevation for which a detailed Flood Insurance Study has been developed, the applicant shall apply for and must receive approval for a Conditional Letter of Map Revision with the Federal Emergency Management Agency prior to the start of actual construction.
 4. Within 60 days of completion of an alteration of a watercourse, referenced in the certification requirements of Sec. 1210(b)(3), the applicant shall submit as-built certification, by a registered professional engineer, to the Federal Emergency Management Agency.
- d. Prevent encroachments within floodways unless the certification and flood hazard reduction provisions of Sec. 1105(k)(2) e are met.
 - e. Cooperate with neighboring communities with respect to the management of adjoining floodplains and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
 - f. Notify adjacent communities prior to permitting substantial commercial developments and large subdivisions to be undertaken in areas of special flood hazard and/or flood-related erosion hazards.
 - g. Certification requirements –
 1. Obtain and review actual elevation (in relation to mean sea level) of the lowest floor of all new or substantially improved structures, in accordance with administrative procedures outlined in Sec. 1210(b)(3).
 2. Obtain the actual elevation (in relation to mean sea level) to which the new or substantially improved structures have been floodproofed, in accordance with the floodproofing certification outlined in Sec. 1210(b)(3).
 3. When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with the non-residential construction requirements outlined in Sec. 1105(k)(2) b.
 4. A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in the coastal high hazard area requirements outlined in Sec. 1105(k)6 of this ordinance.
 - h. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
 - i. Where a map boundary showing an area of special flood hazard and field elevations disagree, the base flood elevations for flood protection elevations (as found on an elevation profile, floodway data table, etc.) shall prevail. The correct information should be submitted to FEMA as per the map maintenance activity requirements outlined in Sec. 1105(k)(2) g.
 - j. When base flood elevation data or floodway data has not been provided in accordance with Sec. 1105(e), obtain, review, and reasonably utilize best available base flood elevation data and floodway data available from a federal, State, or other source, including data developed pursuant to the standards for subdivision proposals outlined in Sec. 1105(k)(2) i, in order to administer the provisions of this ordinance. Data from preliminary, draft, and final Flood Insurance Studies constitutes best available data from a federal, state, or other source. Data must be developed using hydraulic models meeting the minimum requirement of NFIP approved model. If an appeal is pending on the study in accordance with 44 CFR Ch. 1, Part 67.5 and 67.6, the data does not have to be used.
 - k. When the exact location of boundaries of the areas special flood hazards conflict with the current, natural topography information at the site the property owner may apply and be approved for a Letter

of Map Amendment (LOMA) by FEMA. The local administrator in the permit file will maintain a copy of the Letter of Map Amendment issued from FEMA.

- l. Make on-site inspections of projects in accordance with the administrative procedures outlined in Sec. 1504.
- m. Serve notices of violations, issue stop-work orders, revoke permits and take corrective actions in accordance with the administrative procedures in Sec. 1504.
- n. Maintain all records pertaining to the administration of this ordinance and make these records available for public inspection.
- o. Notify the South Carolina Department of Natural Resources Land, Water and Conservation Division, within six (6) months, of any annexations or detachments that include special flood hazard areas. The community must incorporate applicable maps from surrounding jurisdictions into this ordinance within 90 days of date of the annexation.
- p. Review and receive evidence relating to compliance with Executive Order 11988. The President issued Executive Order 11988, Floodplain Management May 1977. E.O. 11988 directs federal agencies to assert a leadership role in reducing flood losses and losses to environmental values served by flood- plains. Proposed developments must go through an eight-step review process. Evidence of compliance with the executive order must be submitted as part of the permit review process.
- q. Perform an assessment of damage from any origin to the structure using FEMA's Residential Substantial Damage Estimator (RSDE) software to determine if the damage equals or exceeds fifty (50) percent of the market value of the structure before the damage occurred.
- r. Perform an assessment of permit applications for improvements or repairs to be made to a building or structure equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. Cost of work counted for determining if and when substantial improvement to a structure occurs shall be cumulative for a period of five years. If the improvement project is conducted in phases the total of all cost associated with each phase, beginning with the issuance of the first permit, shall be utilized to determine whether "substantial improvement" will occur.

Methods of Market Value Determination. The market values shall be determined by one of the following methods:

- 1. The current assessed building value as determined by the County's assessor's office or the value of an appraisal performed by a licensed appraiser at the expense of the owner, within the past six months.
- 2. One or more certified appraisals from a registered professional licensed appraiser in accordance with the laws of South Carolina. The appraisal shall indicate actual replacement value of the building or structure in its pre-improvement condition, less depreciation for functionality and obsolescence and site improvements.
- 3. Real Estate purchase contract within 6 months prior to the date of the application for a permit.

1105 (k) Provisions for flood hazard reduction.

1) General Standards.

Development may not occur in the floodplain where alternative locations exist due to the inherent hazards and risks involved. Before a permit is issued, the applicant shall demonstrate that new structures cannot be located out of the floodplain and that encroachments onto the floodplain are minimized. In all areas of special flood hazard the following provisions are required:

- a. Reasonably Safe from Flooding - Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.
- b. Anchoring - All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

- c. Flood Resistant Materials and Equipment - All new construction and substantial improvements shall be constructed with flood resistant materials and utility equipment resistant to flood damage in accordance with Technical Bulletin 2, Flood Damage-Resistant Materials Requirements, dated 8/08, and available from the Federal Emergency Management Agency.
- d. Minimize Flood Damage - All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damages.
- e. Critical Development - Shall be elevated to the 500-year flood elevation or be elevated to the highest known historical flood elevation (where records are available), whichever is greater. If no data exists establishing the 500 year flood elevation or the highest known historical flood elevation, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates 500 year flood elevation data.
- f. Utilities - Electrical, ventilation, plumbing, heating and air conditioning equipment (including ductwork), and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of the base flood plus 1-ft.
- g. Water Supply Systems - All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- h. Sanitary Sewage Systems – New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding,
- i. Gas Or Liquid Storage Tanks – All gas or liquid storage tanks, either located above ground or buried, shall be anchored to prevent flotation or lateral movement resulting from hydrodynamic and hydrostatic loads.
- j. Alteration, Repair, Reconstruction, Or Improvements - Any alteration, repair, reconstruction, or improvement to a structure that is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" as contained in this ordinance. This includes post-FIRM development and structures.
- k. Non-Conforming Buildings or Uses - Non-conforming buildings or uses may not be enlarged, replaced, or rebuilt unless such enlargement or reconstruction is accomplished in conformance with the provisions of this ordinance. Provided, however, nothing in this ordinance shall prevent the repair, reconstruction, or replacement of an existing building or structure located totally or partially within the floodway, provided that the bulk of the building or structure below base flood elevation in the floodway is not increased and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.
- l. American with Disabilities Act (ADA) - A building must meet the specific standards for floodplain construction outlined in Sec. 1105(k)(2), as well as any applicable ADA requirements. The ADA is not justification for issuing a variance or otherwise waiving these requirements. Also, the cost of improvements required to meet the ADA provisions shall be included in the costs of the improvements for calculating substantial improvement.

2) Specific Standards.

In all areas of special flood hazard (Zones A, AE, AH, AO, A1-30, V, and VE) where base flood elevation data has been provided, as set forth in Sec. 1105(e) or outlined in the Duties and Responsibilities of the Local Administrator Sec. 1105(j)(2) the following provisions are required:

a. Residential Construction

New construction or substantial improvement of any residential structure (including manufactured homes) shall have the lowest floor elevated no lower than one (1) foot above the base flood elevation. No basements are permitted. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the elevated buildings requirements in Sec. 1105(k)(2)d.

b. Non-Residential Construction

New construction or substantial improvement of any commercial, industrial, or non-residential structure (including manufactured homes) shall have the lowest floor elevated no lower than one (1) foot above the level of the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the

unimpeded movements of floodwaters shall be provided in accordance with the elevated buildings requirements in Sec. 1105(k)(2) d. No basements are permitted. Structures located in A-zones may be floodproofed in lieu of elevation provided that all areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered, professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certifications shall be provided to the official as set forth in the floodproofing certification requirements in Sec. 1210(b)(3). A variance may be considered for wet- floodproofing agricultural structures in accordance with the criteria outlined in Sec. 1306 of this ordinance. Agricultural structures not meeting the criteria of Sec. 1306 must meet the non-residential construction standards and all other applicable provisions of this ordinance. Structures that are floodproofed are required to have an approved maintenance plan with an annual exercise. The local administrator must approve the maintenance plan and notification of the annual exercise shall be provided to it.

c. Manufactured Homes

1. Manufactured homes that are placed or substantially improved on sites outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, must be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated no lower than one (1) foot above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
2. Manufactured homes that are to be placed or substantially improved on sites in an existing manufactured home park or subdivision that are not subject to the provisions for residential construction in Sec. 1105(k)(2)a of this ordinance must be elevated so that lowest floor of the manufactured home is elevated no lower than one (1) foot above the base flood elevation, and be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement.
3. Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. For the purpose of this requirement, manufactured homes must be anchored to resist flotation, collapse, or lateral movement in accordance with Section 19-425.39 of the South Carolina Manufactured Housing Board Regulations, effective date May 25, 1990, as amended. Additionally, when the elevation requirement would be met by an elevation of the chassis at least 36 inches or less above the grade at the sight, reinforced piers or other foundation elements of at least equivalent strength shall support the chassis. When the elevation of the chassis is above 36 inches in height an engineering certification is required.
4. An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood-prone areas. This plan shall be filed with and approved by the local administrator and the local Emergency Preparedness Coordinator.

d. Elevated Buildings

New construction or substantial improvements of elevated buildings that include fully enclosed areas that are usable solely for the parking of vehicles, building access, or limited storage in an area other than a basement, and which are subject to flooding shall be designed to preclude finished space and be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

1. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
 - a. Provide a minimum of two openings on different walls having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding,
 - b. The bottom of each opening shall be no more than one foot above the higher of the interior or exterior grade immediately under the opening.
 - c. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic flow of floodwaters in both directions; and,

- d. Fill placed around foundation walls must be graded so that the grade inside the enclosed area is equal to or higher than the adjacent grade outside the building on at least one side of the building.
- e. Only the portions of openings that are below the base flood elevation (BFE) can be counted towards the required net open area.

2. Hazardous Velocities

Hydrodynamic pressure must be considered in the design of any foundation system where velocity waters or the potential for debris flow exists. If flood velocities are excessive (greater than 5 feet per second), foundation systems other than solid foundations walls should be considered so that obstructions to damaging flood flows are minimized.

3. Enclosures below BFE

- a. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).
- b. The interior portion of such enclosed area shall not be partitioned or finished into separate rooms, except to enclose a single storage area and must be void of utilities except for essential lighting as required and cannot be temperature controlled.
- c. One wet location switch and/or outlet connected to a ground fault interrupt breaker may be installed below the required lowest floor elevation specified in the specific standards outlined in Sec. 1105(k)(2).
- d. All construction materials below the required lowest floor elevation specified in the specific standards outlined in Sec. 1105(k)(2) should be of flood resistant materials.

e. Floodways

Located within areas of special flood hazard established in Sec. 1105(e), are areas designated as floodways. The floodway is an extremely hazardous area due to the velocity of floodwaters that carry debris and potential projectiles and has erosion potential. The following provisions shall apply within such areas:

- 1. No encroachments, including fill, new construction, substantial improvements, additions, and other developments shall be permitted unless:
 - a. It has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood. Such certification and technical data shall be presented to the local administrator.
 - b. A Conditional Letter of Map revision (CLOMR) has been approved by FEMA. A Letter of Map Revision must be obtained upon completion of the proposed development.
- 2. If Sec. 1105(k)(2)(e)1 is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Sec. 1105(k).
- 3. No manufactured homes shall be permitted, except in an existing manufactured home park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring and the elevation standards of Sec. 1105(k)(2)c are met.
- 4. Permissible uses within floodways may include: general farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm, and other similar agricultural, wildlife, and related uses. Also, lawns, gardens, play areas, picnic grounds, and hiking and horseback riding trails are acceptable uses, provided that they do not employ structures or fill. Substantial development of a permissible use may require a no-impact certification. The uses listed in this subsection are permissible only if and to the extent that they do not cause any increase in base flood elevations or changes to the floodway configuration.

f. Recreational Vehicles

1. A recreational vehicle is ready for highway use if it is:
 - a. on wheels or jacking system;
 - b. attached to the site only by quick-disconnect type utilities and security devices; and,
 - c. has no permanently attached additions.
2. Recreational vehicles placed on sites shall either be:
 - a. on site for fewer than 180 consecutive days; and b) be fully licensed and ready for highway use, or
 - b. meet the development permit and certification requirements of Sec.1210, general standards outlined in Sec. 1105(k)(1) and manufactured homes standards in Sec. 1105(k)(2)c.

g. Map Maintenance Activities

The National Flood Insurance Program requires flood data to be reviewed and approved by FEMA. This ensures that flood maps, studies and other data identified in Article I.D accurately represent flooding conditions so appropriate floodplain management criteria are based on current data, the following map maintenance activities are identified:

1. Requirement to Submit New Technical Data
 - a. For all development proposals that impact floodway delineations or base flood elevations, the community shall ensure that technical data reflecting such changes be submitted to FEMA within six months of the date such information becomes available. These development proposals include:
 - i. Floodway encroachments that increase or decrease base flood elevations or alter floodway boundaries;
 - ii. Fill sites to be used for the placement of proposed structures where the applicant desires to remove the site from the special flood hazard area;
 - iii. Alteration of watercourses that result in a relocation or elimination of the special flood hazard area, including the placement of culverts; and
 - iv. Subdivision or large-scale development proposals requiring the establishment of base flood elevations in accordance with Sec. 1105(k)(2) I.
 - b. It is the responsibility of the applicant to have technical data, required in accordance with Sec. 1105(k)(2) g, prepared in a format required for a Conditional Letter of Map Revision or Letter of Map Revision, and submitted to FEMA. Submittal and processing fees for these map revisions shall also be the responsibility of the applicant.
 - c. The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:
 - i. Proposed floodway encroachments that increase the base flood elevation; and
 - ii. Proposed development which increases the base flood elevation by more than one foot in areas where FEMA has provided base flood elevations but no floodway.
 - d. Floodplain development permits issued by the Floodplain Administrator shall be conditioned upon the applicant obtaining a Letter of Map Revision from FEMA for any development proposal subject to Sec. 1105(k)(2) g.
2. Right to Submit New Technical Data

The Floodplain Administrator may request changes to any of the information shown on an effective map that does not impact floodplain or floodway delineations or base flood elevations, such as labeling or planimetric details. Such a submission shall include appropriate supporting documentation made in writing by the local jurisdiction and may be submitted at any time.

h. Accessory Structures.

1. A detached accessory structure or garage, the cost of which is greater than \$3,000, must comply with the requirements as outlined in FEMA's Technical Bulletin 7-93 Wet Floodproofing Requirements or be elevated in accordance with Sec. 1105(k)(2)a and (2)d or dry floodproofed in accordance with Sec. 1105(k)(2)b.
2. When accessory structures of \$3,000 or less are to be placed in the floodplain, the following additional criteria shall be met:
 - a. Accessory structures shall not be used for any uses other than the parking of vehicles and storage,
 - b. Accessory structures shall be designed to have low flood damage potential,
 - c. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters,
 - d. Accessory structures shall be firmly anchored to prevent flotation, collapse or lateral movement of the structure,
 - e. Service facilities such as electrical and heating equipment shall be installed in accordance with Sec. 1105(k)(1) f; and
 - f. Openings to relieve hydrostatic pressure during a flood shall be provided below base flood elevation in conformance with Sec. 1105(k)(2) d.1.
 - g. Accessory structures shall be built with flood resistance materials in accordance with Technical Bulletin 2, Flood Damage-Resistant Materials Requirements, Dated 8/08, and available from the Federal Emergency Management Agency. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

i. Swimming Pool Utility Equipment Rooms

If the building cannot be built at or above the BFE, because of functionality of the equipment then a structure to house the utilities for the pool may be built below the BFE with the following provisions:

1. Meet the requirements for accessory structures in Sec. 1105(k)(2)h.
2. The utilities must be anchored to prevent flotation and shall be designed to prevent water from entering or accumulating within the components during conditions of the base flood.

j. Elevators

1. Install a float switch system or another system that provides the same level of safety is necessary for all elevators where there is a potential for the elevator cab to descend below the BFE during a flood per FEMA's Technical Bulletin 4-93 Elevator Installation for Buildings Located in Special Flood Hazard Areas.
2. All equipment that may have to be installed below the BFE such as counter weight roller guides, compensation cable and pulleys, and oil buffers for traction elevators and the jack assembly for a hydraulic elevator must be constructed using flood-resistant materials where possible per FEMA's Technical Bulletin 4-93 Elevator Installation for Buildings Located in Special Flood Hazard Areas.

k. Fill.

An applicant shall demonstrate that fill is the only alternative to raising the building to meet the residential and non-residential construction requirements of Sec. 1105(k)(2)a and (2)b and that the amount of fill used will not affect the flood storage capacity or adversely affect adjacent properties. The following provisions shall apply to all fill placed in the special flood hazard area:

1. Fill may not be placed in the floodway unless it is in accordance with the requirements in Sec. 1105(k)(2)e.1,
2. Fill may not be placed in tidal or non-tidal wetlands without the required State and federal permits,
3. Fill must consist of soil and rock materials only. A registered professional geotechnical engineer may use dredged material as fill only upon certification of suitability. Landfills, rubble fills, dumps, and sanitary fills are not permitted in the floodplain,

4. Fill used to support structures must comply with ASTM Standard D-698, and its suitability to support structures certified by a registered, professional engineer,
5. Fill slopes shall be no greater than two horizontal to one vertical. Flatter slopes may be required where velocities may result in erosion; and,
6. The use of fill shall not increase flooding or cause drainage problems on neighboring properties.
7. Fill may not be used for structural support in the coastal high hazard areas
8. Will meet the requirements of FEMA Technical Bulletin 10-01, Ensuring That Structures Built on Fill In or Near Special Flood Hazard Areas Are Reasonably Safe From Flooding.

I. Standards for Subdivision Proposals

1. All subdivision proposals shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations;
2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and
4. The applicant shall meet the requirement to submit technical data to FEMA in Sec. 1105(k)(2)g when a hydrologic and hydraulic analysis is completed that generates base flood elevations.

m. Standards for Streams without Established Base Flood Elevations and/or Floodways

Located within the areas of special flood hazard (Zones A and V) established in Sec. 1105(e), are small streams where no base flood data has been provided or where no floodways have been identified. The following provisions apply within such areas:

1. No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within 100 feet of the stream bank unless certification with supporting technical data by a registered, professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
2. If Sec. 1105(k)(3) a is satisfied and base flood elevation data is available from other sources, all new construction and substantial improvements within such areas shall comply with all applicable flood hazard ordinance provisions of Sec. 1105(k) and shall be elevated or floodproofed in accordance with elevations established in accordance with Sec. 1105(j)(3)k.
3. Data from preliminary, draft, and final Flood Insurance Studies constitutes best available data. Refer to FEMA Floodplain Management Technical Bulletin 1-98 Use of Flood Insurance Study (FIS) Data as Available Data. If an appeal is pending on the study in accordance with 44 CFR Ch. 1, Part 67.5 and 67.6, the data does not have to be used.
4. In all areas of special flood hazard where base flood elevation data are not available, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates base flood elevations for all subdivision proposals and other proposed developments containing at least 50 lots or 5 acres, whichever is less.
5. When base flood elevation data is not available from a federal, State, or other source one of the following methods may be used to determine a BFE. For further information regarding the methods for determining BFEs listed below refer to FEMA's manual Managing Floodplain Development in Approximate Zone A Areas.

a. Contour Interpolation

- i. Superimpose approximate Zone A boundaries onto a topographic map and estimate a BFE.
- ii. Add one-half of the contour interval of the topographic map that is used to the BFE.

b. Data Extrapolation

A BFE can be determined if a site within 500 feet upstream of a reach of a stream reach for which a 100-year profile has been computed by detailed methods, and the floodplain

and channel bottom slope characteristics are relatively similar to the downstream reaches.

c. Hydrologic and Hydraulic Calculations

Perform hydrologic and hydraulic calculations to determine BFEs using FEMA approved methods and software.

n. Standards for Streams with Established Base Flood Elevations but without Floodways.

Along rivers and streams where Base Flood Elevation (BFE) data is provided but neither floodway are identified for a Special Flood Hazard Area on the FIRM or in the FIS, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

o. Standards for Areas of Shallow Flooding (AO Zones).

Located within the areas of special flood hazard established in Sec. 1105, are areas designated as shallow flooding. The following provisions shall apply within such areas:

1. All new construction and substantial improvements of residential structures shall have the lowest floor elevated to the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor shall be elevated at least three (3) feet above the highest adjacent grade.
2. All new construction and substantial improvements of non-residential structures shall:
 - a. have the lowest floor elevated to the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor shall be elevated at least three (3) feet above the highest adjacent grade; or,
 - b. be completely floodproofed together with attendant utility and sanitary facilities to or above that level so that any space below that level is water- tight 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. All structures on slopes must have drainage paths around them to guide water away from the structures.

(Section Amended on 12/4/2017)

Sec. 1106 Installation of stormwater drainage facilities.

Stormwater control facilities shall be governed by the Pickens County Stormwater Ordinance and accompanying Stormwater Design Manual.

1106 (a) Timing of installation.

Construction of the stormwater system shall be initiated as part of the grading of the site. Storm water detention facilities shall be constructed prior to the installation of any other site improvements, and may be utilized under proper design as sedimentation basins during development. Installation of all other storm drainage pipes, culverts, headwalls, and ditches, shall be coordinated with the construction of streets and other site improvements, as appropriate.

1106 (b) Maintenance responsibilities.

- 1) It shall be the responsibility of the developer to maintain all facilities required by the stormwater management plan during construction and for a one-year maintenance period following approval of the final subdivision plat or issuance of a certificate of

occupancy, as applicable. The developer shall be responsible for removing temporary structures or facilities at the completion of the construction.

- 2) The owners of the property shall be responsible for maintaining the permanent facilities identified by the stormwater management plan to remain after construction is complete, following the one-year maintenance period.
- 3) Should an owner or developer, whichever is the responsible party, fail to maintain the stormwater management facilities in a state of service intended by the stormwater management plan, then the County Engineer, or Stormwater Manager, shall notify the responsible party in writing of the deficiencies and specific minimum maintenance requirements to remedy such deficiencies.
- 4) If the responsible party fails to perform the required maintenance work within a reasonable period of time (30 days maximum) then the owner shall be in violation of the provisions of this Ordinance.

Sec. 1107 Installation of streets and utilities.

1107 (a) Grading.

- 1) All streets shall be graded to their full width by the developer so that pavement extensions or sidewalks, where required or if installed in the future, can be constructed on the same level plane.
- 2) Preparation of roadway: Before grading is started the entire area to be paved shall be first cleared of all stumps, roots, brush and other objectionable materials. In all areas to be graded or filled, the developer shall stockpile the topsoil later to be spread in all disturbed areas not paved.
- 3) Grading shall be done in accordance with the Site Clearing and Grading Section of this Article.

1107 (b) Installation of utilities; general.

- 1) After grading is completed and approved, the curb lines shall be staked by the developer's Registered Land Surveyor. Before any base is applied, all of the underground utilities—water mains, sewer mains, gas mains, or any other underground utilities, and all service connections related thereto, that will be located under the street base shall be installed completely and provided throughout the length of the street and across the flat section. Service connections for sanitary sewer (if required) and water shall be extended to the right-of-way lines.
- 2) All utility manholes and valve boxes shall be brought to the finished grade within the roadway section.
- 3) All utility locations shall correspond to the typical cross-sectional layout included in the Pickens County Standard Design Specifications.
- 4) No private improvements, such as private lawn sprinkler systems, yard lighting, and the like, shall be installed within a public right-of-way except by authorization of the County Engineer. Such authorization, if issued, shall require the owner to assume all repair costs of the owner's facilities should they become damaged.

1107 (c) Installation of public water system.

If a public water system is to be installed, the improvements are to be reviewed, approved and inspected by the providing jurisdiction. Installation shall be coordinated with the construction of streets under the County's direction, as applicable.

1107 (d) Installation of sanitary sewerage.

- 1) Approval and permitting.
- 2) If a public sanitary sewerage system is to be installed, the improvements are to be reviewed, approved and inspected by the providing jurisdiction. Installation shall be coordinated with the construction of streets under the County's direction, as applicable.
- 3) Replacement of pavement.
 - a. General. Contractor shall fully restore and replace all pavement, curbs, gutters, sidewalks and other surface structures removed or disturbed, to a condition that is as near original condition as possible.
 - b. Pavement cuts.
 - i. All pavement cuts on County streets or roads shall be made by sawing prior to excavation to eliminate uneven and ragged edges.

- ii. All road cuts shall have a six (6) inch thick concrete cap (3,000 psi in 28 days) which shall extend not less than 12 inches beyond the edges of the back-filled ditch.
 - iii. Final asphalt patches shall match the existing pavement type but be no less than 1½ inches thick. Special care shall be exercised to match existing slopes and grades for a smooth transition.
 - c. Pavement replacement. Where sewer lines are installed in existing paved streets, the streets in which the sewer lines are installed shall receive a full width asphalt repaving in accordance with these specifications.
- 4) Location and protection of existing underground utilities.
 - 5) It is the responsibility of the contractor to locate all underground utilities and to protect same. Utility lines or services damaged by the contractor shall be repaired by the contractor at the contractor's own expense.

1107 (e) Street installation.

- 1) After the earth work has been completed, all storm drainage and other underground utilities have been installed under the roadbed, and the backfill in all such ditches thoroughly compacted, the subgrade shall be brought to the lines, grades and cross section shown on the plans.
- 2) If any sections of the subgrade are composed of unsuitable or unstable material, such material shall be removed to the depth directed by the County Engineer and replaced with suitable, thoroughly compacted material.
- 3) Preparation of subgrade.
 - a. Prior to placement of the street base, the subgrade shall be compacted to 95% density.
 - b. When the street is to be used for construction traffic before the paving work is completed, a layer of No. 3 stone can be laid as a traffic surface if the developer so desires.
 - c. This material shall not be used as part of the base material.
 - d. It may be worked into the subgrade; or it shall be removed before the base course is set up for paving.
 - e. Provision shall be made to drain low points in road construction when the final paving surface is delayed.
 - 1. Provide break in the berm section when the curbing has not been constructed.
 - 2. Use 6-inch pipe sections to provide drainage under curb to side slopes. (4) Abutting property shall be suitably sloped to the right-of-way line.
- 4) Street base, curbing and paving.

Street base, curbing and paving shall be installed by the developer in accordance with the requirements and standards of this Development Standards Ordinance.

1107 (f) Testing requirements; streets.

When testing is required by the County Engineer, it is the responsibility of the developer to insure that all required tests are made and reported to the County Engineer. The cost of all testing and quality control shall be performed at the expense of the developer by qualified testing laboratories.

Table 11.2: Testing Requirements

Type of Test to be Performed	Minimum Number of Tests	Testing Standards
Sub-grade Compaction	Each 500 linear feet of roadway	95% Max Density ASTM-1557 Field Tests ASTM D-1556 F-2922 and D-2167
Base Compaction	Each 500 linear feet of roadway	100% Max Density ASTM-1557 Field Tests ASTM D-1556 F-2922 and D-2167
Asphalt Density	Each 1,000 linear feet of roadway	92% Laboratory Density
Asphalt Thickness	Each 500 linear feet of roadway	Deficient in thickness no more than ¼"

1107 (g) Protection of shoulders.

- 1) Immediately after grading and filling and re-spreading of topsoil, all areas of disturbed soil shall be fertilized and seeded (or in steep areas sodded or otherwise appropriately treated) with suitable vegetative cover to retard erosion.
- 2) When all construction is completed, all slopes and shoulders shall be cleared of all rubbish and shall have a stand of grass to prevent undue erosion, either by sprigging, sodding, or seeding.

1107 (h) Traffic control devices.

Street signs, traffic control signs, and devices such as striping and signalization, shall be provided through payment of fees to the County Engineer.

1107 (i) Foreign material on streets.

- 1) The developer, builders, and/or homeowners shall be responsible for keeping dirt, mud, building materials, concrete, etc., off of the pavement and curbing of existing County or County roads during construction of buildings in all developments covered by these regulations.
- 2) Before the streets are accepted by Pickens County, all litter and trash shall be removed from the dedicated rights-of-way and surrounding areas.

1107 (j) Bridge piling.

Bridge piling shall be driven to SC DOT load standards for loading. Certification of pile load shall be by registered Professional Engineer.

1107 (k) Burial of construction debris.

No debris of any kind shall be buried at the site of any construction or development.

1107 (l) Pavement Cuts.

- 1) All utility construction plans within County right-of-way shall be reviewed and approved by the County Engineer.
- 2) All trenches shall be backfilled and compacted the same day the trench is opened.
 - a. Trenches under the paving shall be returned to 95% compaction. The backfill in all such ditches will be thoroughly compacted; the subgrade shall be brought to the lines, grades, and typical roadway section shown on the plans.
 - b. Compaction tests at a rate of one per 150 feet of trench shall be provided to verify compaction.
 - c. Trenches elsewhere shall be returned to 90% compaction.
- 3) The County's policy is no existing County roads can be open cut unless unusual circumstances warrant it. Storm sewers thirty-six (36) inches or smaller shall be bored. Contact the County Engineer for permission to open cut any existing County road. If the County allows open cutting, all trenches under existing paving shall be back-filled and compacted in 6-inch lifts.
 - a. The paving cut shall be widened to a minimum of 12 inches beyond the edges of the trench and excavated to allow for the 6 inches of 3000 psi concrete and 2 inches of asphaltic concrete to be placed.
 - b. The edges of the paving cut shall be smooth.
 - c. A final wearing surface of 2 inches of Type "E" asphaltic concrete shall be poured and rolled after the concrete is cured.

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