Section 17
Flood Hazard Zone

17.1 Statutory Authorization, Findings of Fact, Purpose and Objective:

17.1.1 Statutory Authorization: The Legislature of the State of Connecticut has, in CGS Section 8-1, delegated the responsibility to local government units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry. Therefore, the Planning and Zoning Commission of Clinton, Connecticut does regulate as follows:

(a) Severability: See Section 2.2 of these Regulations.

17.1.2 Finding of Fact:

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

(b) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities and, when inadequately anchored, damage uses in the other areas. Uses that are inadequately flood-proofed, elevated or otherwise protected from flood damage also contribute to flood loss.

(c) The Town of Clinton has voluntarily participated in the National Flood Insurance Program (NFIP) since September 30, 1980. The NFIP is founded on a mutual agreement between the federal government and each participating community. Local, state and federal governments must share roles and responsibilities to meet the goals and objectives of the NFIP. The community's role is of paramount importance. Property owners are able to receive federally-subsidized flood insurance only if the community enacts and enforces the minimum floodplain regulations required for participation in the NFIP.

17.1.3 Statement of Purpose: It is the purpose of this Regulation to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

(a) To promote human life and health, and prevent damage to property;

(b) To minimize expenditure of public money for costly flood control projects;

(c) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(d) To minimize prolonged business interruptions;

(e) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;

(f) To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;

(g) To ensure that potential buyers are notified that property is in an area of special flood hazard;

(h) To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions;

(i) To discourage development in a floodplain if there is any practicable alternative to locate the activity, use or structure outside of the floodplain.

17.1.4 Methods of Reducing Flood Losses: In order to accomplish its purposes, this Section includes methods and provisions for:

(a) Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.

(b) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.

(c) Controlling the alteration of natural flood plains, stream channels and natural protective barriers that help accommodate or channel flood waters.

(d) Controlling filling, grading, dredging and other development which may increase flood damage; and

(e) Preventing or regulating the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards in other areas.

17.2 Definitions: For the specific purpose of this Section, the words below shall be interpreted so as to give them the meaning they have in common usage and to give this Section its most reasonable application.

17.2.1 Area of Shallow Flooding - A designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a one percent or greater annual chance of flooding to an average depth of one to three 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.

17.2.2 Base Flood – The flood having a one (1) percent chance of being equaled or exceeded in any given year, also referred to as the one hundred (100) year flood, as published by the Federal Emergency Management Agency (FEMA) as part of a Flood Insurance Study (FIS) and depicted on a Flood Insurance Rate Map (FIRM).

17.2.3 Base Flood Elevation (BFE**)** – The elevation of the crest of the base flood (100-year flood). The height in relation to mean sea level (NGVD of 1929 or NAVD 1988) expected to be reached by the waters of the base flood at pertinent points in the floodplains of coastal and riverine areas.

17.2.4 Basement: That portion of a building having its floor sub grade (below ground level) on all sides.

17.2.5 Breakaway Walls: A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

17.2.6 Building – see definition for "Structure".

17.2.7 Coastal AE Zone – The portion of the Coastal High Hazard Area with wave heights between 1.5 feet and 3.0 feet during the base flood and seaward of the line labeled the "Limit of Moderate Wave Action" (LiMWA) on a Flood Insurance Rate Map (FIRM).

17.2.8 Coastal High Hazard Area – An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. Coastal High Hazard Areas are designated as Zones VE and Coastal AE on a Flood Insurance Rate Map (FIRM).

17.2.9 Cost: As related to substantial improvements, the cost of any reconstruction, rehabilitation, addition, alteration, repair or other improvement of a structure shall be established by a detailed written contractor's estimate.

The estimate shall include, but not be limited to, the cost of materials (interior finishing components, structural components, utility and service equipment); sales tax on materials; building equipment and fixtures, including heating and air conditioning and utility meters; labor; built-in appliances; demolition and site preparation; repairs made to damaged parts of the building worked on at the same time; contractor's overhead; contractor's profit; and grand total.

Items to be excluded include: cost of plans and specifications; survey costs; permit fees; outside improvements such as septic systems, water supply wells, landscaping, sidewalks, fences, yard lights, irrigation systems; and detached structures such as garages, sheds and gazebos.

17.2.10 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 equipment or materials located within the area of special flood hazard, but not including accessory structures 200 square feet or less in total area, valued at $5000.00 or less, that are adequately anchored and provided with flood vents. (Only in A and AE zones)

17.2.11 Elevated Building – A and AE Zones: A non-basement building built to have the top of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers) or shear walls, or by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters.

17.2.12 Elevated Building – VE and Coastal AE Zones: A non-basement building built to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers) or shear walls parallel to the flow of water and adequately anchored so as not to impair the structural integrity of the building during a flood up to the magnitude of the base flood. "Elevated Building" also includes structures, which have the lower area enclosed by means of breakaway walls if the breakaway walls meet the standards of Subsection 17.9.2(d) (Construction Methods: Space Below the Lowest Floor).

17.2.13 Existing Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for serving the lots on which the manufactured home 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) was completed before the effective date of the Flood Hazard Zone Regulations (September 30, 1980).

17.2.14 Expansion to an Existing Manufactured Home Park or Subdivision: The preparation of additional sites by the construction of facilities for serving 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 pads).

17.2.15 Federal Emergency Management Agency (FEMA): The federal agency that administers the National Flood Insurance Program (NFIP).

17.2.16 Finished Living Space– As related to fully enclosed areas below the base flood elevation (BFE), a space that is, but is not limited to, heated and/or cooled, contains finished floors, has sheetrock walls that may or may not be painted or wallpapered, and other amenities such as furniture, appliances, bathrooms, fireplaces and other items that are easily damaged by floodwaters and expensive to clean, repair or replace. Unfinished enclosed areas below the BFE should comply with FEMA Technical Bulletin 2, Flood-Damage Resistant Materials Requirements.

17.2.17 Flood or Flooding: A general and temporary condition of partial or complete inundation of normally dry land areas from:

(a) The overflow of inland or tidal wetlands and/or

(b) The unusual and rapid accumulation or runoff of surface waters from any source.

17.2.18 Flood Boundary and Floodway Map (FBFM): The official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated the limits of the regulatory floodway and 100-year floodplain.

17.2.19 Flood Insurance Rate Map (FIRM): The official map of a community on which the administrator has delineated both the special hazard areas and the risk premium zones applicable to the community.

17.2.20 Flood Insurance Study (FIS): The official report provided in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Hazard Boundary – Floodway Map and the water surface elevation of the base flood.

17.2.21 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 (1').

17.2.22 Functionally Dependent Use or Facility: A use or facility that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The terms include only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities. The term does not include seafood processing facilities, long-term storage, manufacturing, sales or service facilities.

17.2.23 Adjacent Grade (HAG): The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

17.2.24 Historic Structure: Any structure that is:

(a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminary 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 places in states with historic preservation programs which have been approved by the Secretary of the Interior.

(d) Individually listed on a local inventory of historic communities with historic preservation programs that have been certified by either:

1) By an approved state program as determined by the Secretary of the Interior; or

2) Directly by the Secretary of the Interior in states without approved programs.

17.2.25 Limit of Moderate Wave Action (LiMWA): The landward limit of the 1.5 foot breaking wave within a Coastal AE Zone. These areas are seaward of the line labeled "Limit of Moderate Wave Action" (LiMWA) on a Flood Insurance Rate Map (FIRM). The effects of wave hazards between the VE Zone and LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

17.2.26 Lowest Floor: The lowest floor of the lowest enclosed area (including basement). An 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 enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Regulation.

17.2.27 Manufactured Home: A structure, transportable in one 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. The term manufactured home does not include a recreational vehicle.

17.2.28 Manufactured Home Park or Subdivision: A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

17.2.29 Market Value: As related to substantial improvement and substantial damage, the market value of the structure shall be determined by (1) the appraised building value of the structure as shown on the Assessor's Field Card prior to the start of the initial repair or improvement; or (2) in the case of damage, the value of the structure prior to the damage occurring.

17.2.30 Mean Sea Level (MSL): The North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map (FIRM) are referenced.

17.2.31 New Construction: Structures for which the "start of construction" commenced on or after the effective date of these Regulations, the initial FIRM, September 30, 1980, and includes any subsequent improvements to such structures.

17.2.32 Recreational Vehicle: A vehicle which is built on a single chassis; four hundred square feet (400 sq. ft.) or less when measured at the longest horizontal projections; designed to be self-propelled or permanently towable by a light duty truck; and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel or seasonal use.

17.2.33 Sand Dunes: Naturally occurring accumulations of sand in ridges or mounds landward of the beach.

17.2.34 Special Flood Hazard Area (SFHA) – The land in the floodplain within a community subject to a one (1) percent or greater chance of flooding in any given year. SFHAs are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the

Flood Insurance Study (FIS) for a community. BFEs provided on Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. SFHAs include, but are not necessarily limited to, the land shown as Zones A, AE, AO, AH, and the Coastal High Hazard Areas shown as Zones VE and Coastal AE on a FIRM. The SFHA is also called the Area of Special Flood Hazard.

17.2.35 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 issues, provided the actual start of construction, repair, reconstruction or improvement was within one hundred eighty (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 placement of a manufactured home on a foundation. Permanent construction does not include the installation of streets and/or walkways; nor doesn't include excavation for a 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.

17.2.36 Structure: A walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank, including propane tanks or cylinders in excess of twenty pounds (20 lbs.).

17.2.37 Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred. "Substantial Damage" also means flood-related damages sustained by a structure on two separate occasions during a ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds twenty-five percent (25%) of the market value of the structure before the damage occurred.

17.2.38 Substantial Improvement: Any combination of repairs, re-construction, alteration or improvements to a structure taking place during a five-year (5) period, in which the cumulative cost equals or exceeds fifty percent (50%) of the market value of the structure. This term includes structures that have incurred "substantial damage", regardless of the actual repair work performed.

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 dimension of the structure. The term does not, however, include any improvement project required to correct existing violations of State and local health, sanitary or safety code specifications which have been identified by the local code enforcement agent and are the minimum necessary to assure safe living conditions.

17.2.39 Variance: A grant of relief from the requirements of this Regulation, which permits construction in a manner that, would otherwise be prohibited by this Regulation.

17.2.40 Violation: Means the failure of a structure or other development to be fully compliant with the community's flood plain management certificate, other certifications, or other evidence of compliance required is presumed to be in violation until such time as that documentation is provided.

17.2.41 Water Surface Elevation: Means the height, in relation to North American Vertical Datum of 1988 (NAVD 88) (or other datum, where specified) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

17.3 General Provisions:

17.3.1 Lands to which this section applies: The provisions of this Section shall apply to all areas of special flood hazards within the jurisdiction of the Clinton Planning and Zoning Commission.

17.3.2 Basis for establishing the areas of Special Flood Hazard Area: The Special Flood Hazard Area (SFHA) identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for Middlesex County, Connecticut. The SFHA includes any area shown on the FIRM as Zones A, AE, AO, AH, Coastal AE and VE, including areas designated as a floodway on a FIRM. Zones VE and Coastal AE are also identified as Coastal High Hazard Areas. The SFHAs are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on a Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. Since mapping is legally adopted by reference into this Regulation it must take precedence when more restrictive until such time as a map amendment or map revision is obtained from FEMA.

The SFHA's include any area shown on the FIRM as Zones A, AE and VE, including areas designated as a floodway on a FIRM. The Zone VE and Coastal AE Zone bounded by a line labeled "Limit of Moderate Wave Action" (LiMWA) are also identified as a Coastal High Hazard Area on a FIRM. Also included in the SFHA are areas of potential, demonstrable or historical flooding, including any area contiguous with, but outside the SFHA identified by FEMA, and where the land surface elevation is lower than the base flood elevation (BFE) as shown in the FIS, and where the area is not protected from flooding by a natural or man-made feature. The FIRM and FIS are on file in the Planning and Zoning Office, Town Hall, Clinton.

17.3.3 Compliance: No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the terms of this Section or other applicable regulations.

17.3.4 Zone Determination in Regards to Building Location: When a structure is located or proposed to be located straddling flood zones the following apply:

(a) Portion of Structure in Flood Zone: If any portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be in the SFHA. The entire structure must meet the construction requirements of the flood zone. The structure includes any attached additions, garages, decks, sunrooms, or any other structure attached to the main structure. Decks or porches that extend into a more restrictive flood zone will require the entire structure to meet the standards of the more restrictive zone.

(b) Structures in Two Flood Zones: If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire (i.e., V Zone is more restrictive than A zone; structure must be built to the highest BFE). The structure includes any attached additions, garages, decks, sunrooms, or any other structure attached to the main structure. (Decks or porches that extend into a more restrictive zone will require the entire structure to meet the requirements of the more restrictive zone.)

(c) No Structures Entirely or Partially Over Water: New construction, substantial improvements and repair to structures that have sustained substantial damage cannot be constructed or located entirely or partially over water.

17.3.5 Abrogation and Greater Restriction: This Section is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this Section and another regulation easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

17.3.6 Interpretation: In the interpretation and application of this Section, all provisions shall be:

(b) Considered as minimum requirements.

(c) Liberally construed in favor of the governing body; and

(d) Deemed neither to limit nor repeal any other powers granted under state statutes.

17.3.7 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 man-made or natural causes. This Section does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free of flooding or flood damages. This Section shall not create liability on the part of the Town of Clinton, any officer or employee thereof, or the Federal Insurance Administration for any flood damages that may result from reliance on this Section or any administration decision lawfully made there under.

17.4 Administration: The Planning and Zoning Commission is hereby appointed to administer and implement this Regulation by granting or denying Flood Hazard Area

Permit applications in accordance with its provisions. The Commission may delegate this role to the Zoning Enforcement Officer, with support from the Town Engineer.

17.4.1 Flood Hazard Area Permit A Floodplain Development Permit shall be required in conformance with the provisions of this Regulation prior to the commencement of any development activities. Permits issued under this Regulation shall expire if actual construction of a permitted structure does not commence within one hundred and eighty (180) days of the permit approval date.

17.4.2 A Floodplain Development permit is hereby established for all construction and other development to be undertaken in Special Flood Hazard Areas in this community. Prior to any development activities, application for a Floodplain Development permit shall be made to the Flood Regulation Administrator on forms provided and may include, but not be limited to, plans in duplicate drawn to scale showing, at a minimum, the property lines and location of the parcel; the nature, location, dimensions, and elevations of the area in question; limit and extent of the 100-year floodplain, the limit of moderate wave action (LiMWA) boundary line, floodway boundary line and base flood elevation(s); existing and proposed structures, fill, storage of materials, drainage facilities and the location of the foregoing. Specifically, the following information is required to be submitted to the Flood Regulation Administrator:

The applicant shall provide at least the following information, where applicable. Additional information may be required on the permit application form.

1) Base flood elevation (BFE) for the site in question as determined in the FEMA Flood Insurance Study (FIS) or Flood Insurance Rate Map (FIRM). The FIS flood profiles provide more accurate BFE data than the FIRM. The extent of the 100-year floodplain, limit of moderate wave action (LiMWA), and floodway must be depicted with a boundary line on any site plans and shown in relation to existing and proposed structures or development;
2) Elevation in relation to mean sea level of the proposed lowest floor, including basement, of all new construction, substantial improvements or repairs to structures that have sustained substantial damage;
3) Elevation in relation to mean sea level to which any non-residential new construction, substantial improvements or repair to structures that have sustained substantial damage will be dry flood-proofed;
4) Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development. Computations by a registered professional engineer must be submitted that demonstrate that the altered or relocated segment will provide equal or greater conveyance than the original stream segment. The applicant must submit any maps, computations or other materials required by the Federal Emergency Management Agency (FEMA) in order to officially amend or revise the Flood Insurance Rate Map. The applicant must pay any fees or other costs assessed by FEMA for this purpose. The applicant must also provide assurances that the conveyance capacity of the altered or relocated stream segment will be maintained;
5) A statement and supporting documentation (all costs of project, market value of structure, etc.) verifying that the proposed alterations to an existing structure

meets or does not meet the criteria of the substantial improvement and/or substantial damage definition. If a development meets the definition of substantial improvement and/or substantial damage, the structure must be brought into compliance with all floodplain regulations as if it were new construction;

6) Where applicable the following certifications by a registered professional engineer or architect are required, and must be provided to the Flood Regulation Administrator. The design and methods of construction must be certified to be in accordance with accepted standards of practice and with the provisions of Section 17.9.

7) Non-residential flood-proofing must meet the provisions of Section 17.9.1.2;

8) Fully enclosed areas below the base flood elevation (BFE) must meet the minimum design criteria in Section 17.9.1.3;

9) No increase in floodway water surface elevations are allowed. Any development in a floodway must meet the provisions of Section 17.9.4;

10) Breakaway walls must meet the design criteria specified in Section 17.9.2(I) and 17.9.2(j); and

11) Structural anchoring must meet the design criteria specified in Section 17.9.2(d) and 17.9.2(e).

17.4.3 Upon completion of the applicable portion of construction, the applicant shall provide verification to the Flood Regulation Administrator of the following as is applicable: Lowest floor elevation shall be verified for:

1) A structure in Zones A, AE, AO or AH is the top of the lowest floor including basement);

2) A structure in Zones VE and Coastal AE is the lowest horizontal structural member (excluding pilings or columns);

3) A non-residential structure that has been dry flood-proofed is the elevation to which the flood-proofing is effective. (Note: For insurance purposes, a dry flood-proofed, non-residential structure is rated based on the elevation of its lowest floor unless it is floodproofed to one foot above the BFE.);

17.4.4 Deficiencies detected by the review of the above listed shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

17.5 DUTIES AND RESPONSIBILITIES OF THE FLOOD REGULATION ADMINISTRATOR

Duties of the Flood Regulation Administrator shall include, but not be limited to:

17.5.1 Review all permit applications for completeness, particularly with the requirements of Section 17.4.

17.5.2 Review all permit applications to determine whether the proposed development and building sites will be reasonably safe from flooding.

17.5.3 Review all permit applications to assure that the permit requirements of this Regulation have been satisfied.

17.5.4 Review all permit applications to assure that all necessary federal and state permits have been received. Require that copies of such permits be provided and maintained on file with the permit application. Such permits include, but are not limited to, Wetlands Permit, Coastal Area Management (CAM) Permit, Water Diversion Permit, Dam Safety Permit, and Army Corps of Engineers 401 and 404 Permits.

17.5.5 Notify the regional planning agency and affected municipality at least thirty-five (35) days prior to a public hearing if any change of regulation or use of a flood zone will affect an area within five hundred (500) feet of another municipality.

17.5.6 Notify the adjacent communities and the Connecticut Department of Energy and Environmental Protection (CTDEEP), Land and Water Resources Division, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.

17.5.7 Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

17.5.8 Obtain, record and maintain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new construction, substantial improvement or repair to a structure that has sustained substantial damage.

17.5.9 Obtain, record and maintain the elevation (in relation to mean sea level) to which all new construction, substantial improvement or repair to a structure that has sustained substantial damage has been flood-proofed.

17.5.10 In coastal high hazard areas (VE and Coastal AE Zones), obtain, record and maintain the elevation of the bottom of the lowest horizontal structural member for all new construction, substantial improvement or repair to a structure that has sustained substantial damage.

17.5.11 When flood-proofing is utilized for a particular structure, the Flood Regulation Administrator shall obtain certification from a registered professional engineer or architect, in accordance with Section 17.9.1.2.

17.5.12 Where interpretation is needed as to the exact location of boundaries of the special flood hazard area (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Flood Regulation Administrator shall make the necessary interpretation utilizing any data available to render a decision. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Regulation**.**

17.5.13 Require the applicant to provide base flood elevation data for all proposed development, including manufactured home parks and subdivisions.

17.5.14 When base flood elevation data or floodway data have not been provided in accordance with Section 17.3.2 and 17.4, the Flood Regulation Administrator shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer the provisions of this Regulation.

17.5.15 In Coastal High Hazard Areas (VE and Coastal AE Zones), certification shall be obtained from a registered professional engineer or architect that the structure is designed to be securely anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash, in accordance with Section 17.9.2.

17.5.16 In Coastal High Hazard Areas (VE and Coastal AE Zones), the Flood Regulation Administrator shall review plans for adequacy of breakaway walls, in accordance with Section 17.9.2.

17.5.17 All records pertaining to the provisions of this Regulation shall be obtained and maintained in the office of the Flood Regulation Administrator for public inspection.

17.5.18 Upon completion of the permitted development and prior to issuance of a Certificate of Occupancy (CO), necessary as-built surveys (prepared by a Connecticut Licensed Professional as per Connecticut State Statutes) and engineering and architectural certifications shall be provided to the Flood Regulation Administrator demonstrating compliance with the approved plans and standards set forth in Section 17.4.

17.6 Application Requirements, Procedures and Decision Process for all other permit requirements: See Section 4 of these Regulations.

17.7 <u>Provision for Flood Hazard Reduction</u>: In all areas of special flood hazards, the following standards are required:

17.7.1 New construction, substantial improvements, and repair to structures that have sustained substantial damage shall be constructed using methods and practices that minimize flood damage.

17.7.2 New construction, substantial improvements, and repair to structures that have sustained substantial damage shall be constructed with materials and utility equipment that are flood-damage resistant and conform to the provisions of FEMA Technical Bulletin 2, Flood Damage-Resistant Material Requirements. This includes, but is not limited to, flooring, interior and exterior walls, wall coverings and other materials installed below the base flood elevation plus one (1.0) foot.

17.7.3 New construction, substantial improvements, and repair to structures that have sustained substantial damage shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

17.7.4 New construction, substantial improvements, and repair to structures that have sustained substantial damage cannot be constructed or located entirely or partially over water unless it is a functionally dependent use or facility.

17.7.5 The bottom of all electrical, heating, plumbing, ventilation and air conditioning equipment, appliances, fixtures and components, HVAC duct work and duct systems, and any other utility service equipment, facilities, machinery, or connections servicing a structure shall be elevated one (1.0) foot above the base flood elevation (BFE). This includes, but is not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation duct work, washer and dryer hook-ups, electrical junction boxes, and circuit breaker boxes. Systems, fixtures, equipment and components shall not be mounted on or penetrate through breakaway walls intended to fail under flood loads. Connections or other equipment that must be located below the BFE plus one (1.0) foot elevation are permitted only when no other elevation alternative is available and provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of the base flood event. Electrical wiring systems that must be located below the BFE plus 1.0 foot shall conform to the standards for wet locations.

17.7.6 New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

17.7.7 New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharges from the system into flood waters.

17.7.8 On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

17.7.9 In all flood zones, underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood. In VE and Coastal AE zones, above-ground storage tanks which are located outside or inside of a structure must be elevated one (1.0) foot above the base flood elevation (BFE). Where elevated on platforms, the platforms shall be cantilevered from or knee braced to the building or shall be supported on elevated foundations that conform to the standards for the particular flood zone as described in Section 17.9.2. In A and AE zones, above-ground storage tanks which are located outside or inside of a structure shall be elevated one (1.0) foot above the base flood elevation (BFE) or shall be securely anchored to prevent flotation, collapse or lateral movement under conditions of the base flood. Anchored tanks must have the top of the fill pipe located at least one (1.0) foot above the BFE and have a screw fill cap that does not allow for the infiltration of flood water.

17.7.10 In any portion of a watercourse that is altered or relocated, the flood carrying capacity must be maintained. Notify adjacent communities and the Connecticut Department of Energy and Environmental Protection (DEEP), Land and Water Resources Division prior to any alteration or relocation of a watercourse.

17.7.11 If any portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be located within the SFHA and must meet the construction requirements of the flood zone. The structure includes any structurally attached additions, garages, decks, porches, sunrooms, patios or any other structure attached to the main structure.

17.7.12 If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire structure (i.e., VE zone is more restrictive than AE zone; structure must be built to the highest BFE). The structure includes any structurally attached additions, garages, decks, porches, patios, sunrooms, or any other structure attached to the main structure.

17.7.13 Compensatory Storage: The water holding capacity of the floodplain, except those areas that are tidally influenced, shall not be reduced. Any reduction caused by filling, new construction or substantial improvements involving an increase to the footprint to the structure shall be compensated for by deepening and/or widening of the floodplain. Storage shall be provided on-site, unless easements have been gained from adjacent property owners; it shall be provided within the same hydraulic reach and a volume not previously used for flood storage; it shall be hydraulically comparable and incrementally equal to the theoretical volume of flood water at each elevation, up to and including the

100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Compensatory storage can be provided off-site if approved by the municipality.

17.7.14 Equal Conveyance: Within the floodplain, except those areas which are tidally influenced, as designated on the Flood Insurance Rate Map (FIRM) for the community, encroachments resulting from filling, new construction or substantial improvements involving an increase in footprint of the structure, are prohibited unless the applicant provides certification by a registered professional engineer demonstrating, with supporting hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that such encroachments shall not result in an (0.0 feet) increase in flood levels (base flood elevation). Work within the floodplain and the land adjacent to the floodplain, including work to provide compensatory storage shall not be constructed in such a way so as to cause an increase in flood stage or flood velocity.

17.8 STANDARDS FOR WATERCOURSES WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS, ADOPTED FLOODWAYS, AND/OR FLOOD MAPPING

17.8.1 The **Flood Regulation Administrator** shall require base flood elevation (BFE) data be provide with any application for new construction, substantial improvement, repair to structures which have sustained substantial damage or other development in Zone A without a FEMA-published BFE (un-numbered A Zone). **A registered professional engineer must determine the BFE in accordance with accepted hydrologic and hydraulic engineering practices and document the technical methods used. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.** The **Flood Regulation Administrator** shall obtain, review and reasonably utilize any BFE and floodway data available from a federal, state or other source, including data developed for subdivision proposals, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in un-numbered A Zones on the community's Flood Insurance Rate Map (FIRM) meet the standards in Section 17.4 and Section 17.9.2. If no BFE can be determined, the lowest floor, including basement, must be elevated to three (3) feet above the highest adjacent grade next to the structure.

17.8.2 When BFEs have been determined within Zone AE on the community's FIRM but a regulatory floodway has not been designated, the Flood Regulation Administrator must require that no new construction, substantial improvements, repair to structures which have sustained substantial damage or other development, including fill, shall be permitted which will increase the water surface elevation of the base flood more than one (1.0) foot at any point within the community when all existing and anticipated development is considered cumulatively with the proposed development.

17.8.3 The **Flood Regulation Administrator** may request floodway data of an applicant for watercourses without FEMA-published floodways. When such data is provided by an applicant or whenever such data is available from any other source (in response to the

municipality's request or not), the community shall adopt a regulatory floodway based on the principle that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than one (1.0) foot at any point within the community.

17.8.4 The **Flood Regulation Administrator** shall obtain, review and reasonably utilize any BFE and floodway data available from a federal, state or other source, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in any area of potential, demonstrable or historical flooding within the community meet the standards in Section 17.4.4 and Section 17.9.2.

17.8.5 Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones AE and AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one (1.0) foot, provided that the community first completes all of the provisions required by Section 65.12.

17.9 SPECIFIC STANDARDS

17.9.1 Construction Standards in Special Flood Hazard Areas (SFHA), Zones A and AE.

17.9.1.1 Residential Construction

(a) All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are residential structures shall have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE). Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.

17.9.1.2 Non-Residential Construction.

All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are commercial, industrial or non-residential structures shall:

(a) Have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE); or

(b) In lieu of being elevated, non-residential structures may be dry flood-proofed to one (1.0) foot above the BFE provided that together with all attendant utilities and sanitary facilities the areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, and provided that such structures are composed of structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall review and/or develop structural design specifications and plans for the construction and shall certify that the design and methods of construction are in accordance with acceptable standards of practice for meeting the provisions of this section. Such certification shall be provided to the Flood Regulation Administrator on the FEMA Floodproofing Certificate, Form 81-65.

(c) Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.

17.9.1.3 Fully Enclosed Areas Below the Base Flood Elevation of Elevated Buildings.

All new construction of residential and nonresidential structures, substantial improvements, or repair to structures that have sustained substantial damage, that include fully enclosed areas formed by a foundation and other exterior walls shall have the lowest floor elevated to one (1.0) foot above the base flood elevation (BFE). The elevated building shall be designed to preclude finished living space below the lowest floor and be designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls (wet flood-proofing). Designs for complying with this requirement must either be certified by a registered professional engineer or architect as meeting the requirements of ASCE 24 Section 2.6.2.2, or meet the following minimum criteria listed in sections (a)-(h) below:

(a) Provide a minimum of two (2) openings (hydraulic flood vents) having a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding. The enclosed area is measured on the exterior of the enclosure walls. These hydraulic openings must be located on at least two different exterior walls of each enclosed area. If the structure has more than one enclosed area, openings must be installed in the exterior walls of each enclosed area so that flood waters can enter directly from the outside;

(b) The bottom of all openings shall be no higher than one (1.0) foot above the higher of either the final interior grade or floor elevation, or the finished exterior grade adjacent to the outside of the foundation wall. At least one entire side of the structure's fully enclosed area must be at or above grade. Fill placed around the foundation walls must be graded so that the elevation inside the enclosed area is equal to or higher than the adjacent outside elevation on at least one side of the building. The finished floor of the enclosed area shall be no lower than the bottom of the foundation openings. The foundation slab of a residential structure, including the slab of a crawlspace, must be set equal to the outside finished grade on at least one side of the building;

(c) The openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of flood waters in both directions without any external influence or control such as human intervention, including the use of electrical and other non-automatic mechanical means. These coverings must not block or impede the automatic flow of floodwaters into and out of the enclosed area. Other coverings may be designed and certified by a registered professional engineer or approved by the [title of local administrator];

(d) Openings shall not be less than three (3) inches in any direction in the plane of the wall;

(e) The area cannot be used as finished living space. Use of the enclosed area shall be the minimum necessary and shall only be used for the parking of vehicles, building access or limited storage. Access to the enclosed area shall be the minimum necessary to allow for the 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). The enclosed area shall not be used for human habitation;

(f) All interior walls, floor, and ceiling materials located below one (1.0) foot above the BFE shall be unfinished and flood damage-resistant in accordance with FEMA Technical Bulletin 2, Flood Damage-Resistant Requirements.

(g) Electrical, plumbing, HVAC duct work, machinery or other utility equipment and connections that service the structure (including, but not limited to, furnaces, oil or

propane tanks, air conditioners, heat pumps, hot water heaters, ventilation, washer and dryer hook-ups, electrical junction boxes, circuit breaker boxes and food freezers) are prohibited in the fully enclosed area below the BFE plus one (1.0) foot. Utilities or service equipment located in this enclosed area, even if elevated to one (1.0) foot above the BFE in the space, may subject the structure to increased flood insurance rates.

(h) A residential building with a structurally attached garage having the floor slab below the BFE is considered an enclosed area below the BFE and must meet the standards of Sections 17.9.1.3 (a)-(g). A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters in both directions. Flood openings or vents are required in the exterior walls of the garage or in the garage doors. Garage doors that must be manually opened do not meet the flood vent opening requirements in Section 17.9.1.3 (a)-(c). In addition to the automatic entry of floodwaters, the areas of the garage below BFE plus one (1.0) foot must be constructed with flood damage-resistant materials per the requirements of FEMA Technical Bulletin 2. Garages attached to non-residential structures must also meet the aforementioned requirements or be dry floodproofed as per the requirements of Section 17.9.1.2.

17.9.2 Construction Standards in Coastal High Hazard Areas, **Zones VE and Coastal AE**

Located within the Special Flood Hazard Areas (SFHA) are areas designated as **Coastal High Hazard Areas.** These areas have additional flood hazards associated with wave wash, erosion scour, and high wind. Therefore, the following provisions shall apply:

(a) All new construction, substantial improvement and repair to structures that have sustained substantial damage shall be located at least 25 feet landward of the reach of mean high tide.

(b) All new construction, substantial improvement and repair to structures that have sustained substantial damage shall be elevated so that the bottom of the lowest horizontal structural member (excluding pilings, pile caps, and columns) is elevated at least one (1.0 foot) above the base flood elevation (BFE), with all space below the lowest horizontal supporting member open and free of obstruction so as not to impede the flow of water. Basement floors that are below ground on all sides are prohibited.

(c) The bottom of all electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE and cannot be located below the structure. Any service equipment that must be located below the BFE must be floodproofed to prevent water from entering during conditions of flooding. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls designed to breakaway under flood loads.

(d) All new construction, substantial improvement and repair to structures that have sustained substantial damage shall be securely anchored on pilings or columns.

(e) All pilings and columns and the attached structures shall be anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. The anchoring and support system shall be designed with wind and water loading values required by applicable State or local building codes.

(f) A registered professional engineer or architect shall develop structural specifications and plans for the construction and shall certify that the design, specifications and plans

for construction are in accordance with acceptable standards and are in compliance with the provisions contained in 17.9.2(a) – (d).

(g) There shall be no fill used for structural support. Minor grading and the placement of minor quantities of non-compacted fill shall be permitted for landscaping and drainage purposes under and around buildings, and for support of parking slabs, pool decks, patios and walkways installed at current grade. The fill must wash out from storm surge, thereby rendering the building free of obstruction, prior to generating excessive loading forces, ramping effects, or wave deflection. The Flood Regulation Administrator shall approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by a registered professional engineer, architect and/or soil scientist, which demonstrates that the following factors have been fully considered: (1) Particle composition of fill material does not have a tendency for excessive natural compaction; (2) Volume and distribution of fill will not cause wave deflection to adjacent properties; and (3) Slope of fill will not cause wave run-up or ramping.

(h) There shall be no alteration of sand dunes that would increase potential flood damage.

(i) Prior to construction, plans for any structures that will have breakaway walls, lattice work or insect screening must be submitted to the Flood Regulation Administrator for approval.

(j) Non-supporting breakaway walls, lattice work or mesh screening shall be allowed below the base flood elevation provided it is not part of the structural support of the structure and is designed so as to break away, under abnormally high tides or wave action, without damage to the structural integrity of the structure on which it is to be used and provided the following design specifications are met: (1) Design safe loading resistance of each wall shall not be less than ten (10) pounds per square foot or more than twenty (20) pounds per square foot; or (2) If more than twenty (20) pounds per square foot, a registered professional engineer or architect shall certify that the design wall collapse would result from a water load less than that which would occur during the base flood event, and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components prior to or during the collapse of such wall. Enclosures of 300 square feet or more are subject to increased insurance premiums.

(k) Areas enclosed by breakaway walls shall contain hydraulic flood vents per the requirements of Section 17.9.1.3.

(l) If breakaway walls, lattice work or insect screening are utilized, the resulting enclosed space shall not be designed to be used for human habitation, but shall be designed to be used only for parking of vehicles, building access, or limited storage. Enclosures of 300 square feet or more are subject to increased insurance premiums.

(m) Any alteration, repair, reconstruction, or improvement to a structure shall not enclose the space below the lowest floor except with breakaway walls, lattice work, or insect screening as provided for in 17.9.2(h) and 17.9.2(i) of this section.

(n) To protect the building envelope, an exterior door shall be installed at the top of the stairs that provides access to the lowest (habitable) floor of the structure.

(o) The base of a chimney or fireplace shall not extend below the BFE plus one foot. When vertical support is required, a chimney or fireplace shall be vertically supported on pile or column foundations embedded at least as deep as the rest of the structure foundation or deeper where needed to support the chimney against water and wind loads. The

chimney and fireplace system shall be designed to minimize transfer of water and wind loads to the structure or structure foundation.

17.9.3 Manufactured (Mobile) Homes and Recreational Vehicles (RVs).
Anchoring:

(a) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

(b) All manufactured homes to be placed or substantially improved within Zones A, AE and VE shall be elevated on a permanent foundation and be securely anchored to an adequately anchored foundation system, such that the lowest floor of the manufactured home is one foot (1') above the base flood elevation, and in accordance with the provisions of this Section:

(c) Over-the-top ties be provided at each of the four (4) corners of the manufactured home, with two (2) additional ties per side at intermediate locations, with manufactured homes less than fifty feet (50') long requirement one (1) additional tie per side.

(d) Frame ties be provided at each corner of the home with five (5) additional ties per side at intermediate points, with manufactured homes less than fifty feet (50') long requiring four (4) additional ties per side.

(e) All components of the anchoring system be capable of carrying a force of four thousand eight hundred pounds (4,800 lbs).

(f) Any additions to the manufactured home be similarly anchored.

17.9.3.1 In Special Flood Hazard Areas (SFHA) with Zones **A and AE**, any manufactured (mobile) home to be newly placed, undergoing a substantial improvement or repaired as a result of substantial damage, shall be elevated so that the bottom of the frame is located one (1.0) foot above the base flood elevation (BFE). The manufactured home must also meet all the construction standards for Zones A and AE as per Section 5.3.1. The foundation and anchorage of manufactured homes to be located in floodways shall be designed and constructed in accordance with ASCE 24. This includes SFHAs outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing manufactured home park in which a manufactured home has incurred substantial damage as a result of a flood.

17.9.3.2 In Special Flood Hazard Areas (SFHA) with **Zones VE and Coastal AE**, any manufactured (mobile) home to be newly placed, undergoing a substantial improvement or repaired as a result of sustained substantial damage, shall be elevated so that the bottom of the lowest horizontal structural member located one (1.0) foot above the base flood elevation (BFE). The manufactured home must also meet all the construction standards

for Zones VE and Coastal AE as per Section 5.3.2. This includes SFHAs outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing manufactured home park in which a manufactured home has incurred substantial damage as a result of a flood.

17.9.3.3 All manufactured (mobile) homes within SFHA shall be placed on a permanent foundation which itself is securely anchored and to which the structure is securely anchored so that it will resist flotation, lateral movement and hydrostatic pressures. Anchoring may include, but not be limited to, the use of over-the-top or frame ties to ground anchors.

17.9.3.4 All manufactured (mobile) homes within SFHA shall be installed using methods and practices that minimize flood damage. Adequate access and drainage should be provided. Elevation construction standards include piling foundations placed no more than ten (10) feet apart, and reinforcement is provided for piers more than six (6) feet above ground level.

17.9.3.5 Recreational vehicles placed on sites within Zones A and AE in the SFHA shall either be on the site for fewer than 180 consecutive days, and be fully licensed and ready for highway use, or meet all the general standards of Section 17.7 and the elevation and anchoring requirement of Section 17.9.3.1, 17.9.3.3, and 17.9.3.4. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

17.9.3.6 Recreational vehicles placed on sites within Zone **VE and Coastal AE** in the SFHA shall either be on the site for fewer than 180 consecutive days, and be fully licensed and ready for highway use, or meet all the general standards of Section 5.1, the **VE and Coastal AE Zone construction requirements** of Section 17.9.2, and the elevation and anchoring requirement of Section 17.9.3.2, 17.9.3.3, and 17.9.3.4. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

17.9.4 Floodways

Located within Special Flood Hazard Areas (SFHA) are areas designated as floodways on the community's Flood Insurance Rate Maps (FIRM) or Flood Boundary and Floodway Maps (FBFM). Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and has erosion potential, no encroachments, including fill, new construction, substantial improvements, repairs to substantially damaged structures and other developments shall be permitted unless certification, with supporting technical data, by a registered professional engineer is provided demonstrating, through hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that encroachments shall not result in

any (0.00 feet) increase in flood levels during occurrence of the base flood discharge published by FEMA. Buildings and structures meeting the standard above and located in whole or in part in the floodway shall be designed and constructed in accordance with ASCE 24. Fences in the floodway must be aligned with the flow and be of an open design. A permit may be given which allows encroachments resulting in increases in base flood elevations provided the community first obtains a conditional floodway revision by meeting the requirements of C.F.R. 44, Chapter 1, Subsection 65.12.

17.9.5 Standards for Development in Areas of Shallow Flooding (Zones AO and AH)

Located within the Special Flood Hazard Areas (SFHA) are areas designated as shallow flooding areas (AO and AH Zones). These areas have 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 indeterminate. In AO and AH zones, the following provisions apply:

17.9.5.1 For residential structures, all new construction, substantial improvements and repair to structures that have sustained substantial damage shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the Flood Insurance Rate Map (FIRM). If no depth number is specified, the lowest floor, including basement, shall be elevated at least three (3.0) feet above the highest adjacent grade.

17.9.5.2 For non-residential structures, all new construction, substantial improvements and repair to structures that have sustained substantial damage shall:

(a) Have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the Flood Insurance Rate Map (FIRM). If no depth number is specified, the lowest floor, including basement, shall be elevated at least three (3.0) feet above the highest adjacent grade; or

(b) Together with attendant utility and sanitary facilities be completely flood-proofed to above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the FIRM, or if no depth number is specified at least three (3.0) feet above the highest adjacent grade, so that any space below that level 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. Designs for complying with this requirement must either be certified by a registered professional engineer or architect.

17.9.5.3 On-site drainage for all proposed structures in AO and AH Zones located on slopes shall provide adequate drainage paths to guide flood waters around and away from such structures.

17.9.5.4 Fully enclosed areas below the lowest floor in AO and AH Zones must comply with the provisions of Section 17.9.1.3 for hydraulic flood vents.

17.10 <u>Subdivision Proposals</u>:

(a) All subdivision proposals shall be consistent with the need to minimize flood damage.

(b) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

(c) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.

(d) Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least three (3) lots or two (2) acres (whichever is less).

17.11 Variance Procedure – Zoning Board of Appeals:

17.11.1 The Board shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination made by the ZEO in the enforcement or administration of the provisions of Section 17.

17.11.2 Those aggrieved by the decision of the Board, or any taxpayer, may appeal such decision to the Superior Court of the County of Middlesex, Middletown, Connecticut, as provided in CGS Section 8-8.

17.11.3 In passing upon such applications, the Board shall consider all technical evaluations, all relevant factors, standards specified in other provisions of Section 17 and:

(a) The danger that materials may be swept onto other lands to the injury of others.

(b) The danger to life and property due to flooding or erosion damage.

(c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.

(d) The importance of the services provided by the proposed facility to the community.

(e) The necessity to the facility of a waterfront location where applicable.

(f) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage.

(g) The compatibility of the proposed use with existing and anticipated development.

(h) The relationship of the proposed use to the comprehensive plan and flood plain management program of that area.

(i) The safety of access to the property in times of flood for ordinary and emergency vehicles.

(j) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site.

(k) The costs of provided governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems and streets and bridges.

17.11.4 Generally, variances may be issued for new construction and substantial improvements to be erected on a lot one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood elevation level, providing items (a) – (k) in Subsection 17.11.3 have been fully considered, and not located or partially located in Flood Hazard Areas designated Zone V, VE or designated coastal barriers. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.

17.11.5 Upon consideration of the factors of Subsection 17.11.3 and the purposes of this regulation, the Board may attach such conditions to the granting of variances, as it deems necessary to further the purposes of Section 17.

17.11.6 The records of all appeal actions shall be maintained in the Planning and Zoning Office and the Commission shall report any variances to the Federal Emergency Management Agency (FEMA) in its biennial report.

17.11.7 Conditions for Variances:

(a) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the state Inventory of Historic Places, without regard to the procedures set forth in the remainder of this Section.

(b) Variances should not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(c) Variances shall only be issued upon determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(d) Variances shall only be issued 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.

(3) A determination that the granting of a variance will not result in increased flood heights, increase flood insurance rates, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section 17.5 or conflict with existing local laws or ordinances.

(e) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting

from the reduced lowest flood elevation, up to amounts as high as $25 for $100 of insurance coverage.

17.12 <u>Enforcement</u>: Enforcement of this Section shall be in accordance with Section 5 of these Regulations.