



ORDINANCE 86-9

AN ORDINANCE CONSTITUTING THE COASTAL CONSTRUCTION CODE FOR CONSTRUCTION WITHIN THE COASTAL BUILDING ZONE AND COASTAL BARRIER ISLAND (AMELIA ISLAND) IN THE UNINCORPORATED AREAS OF NASSAU COUNTY WHICH SHALL BE REFERRED TO AS THE "COASTAL CODE", THE ORDINANCE PROVIDES MINIMUM STANDARDS FOR THE DESIGN AND CONSTRUCTION OF BUILDINGS AND STRUCTURES; PROVIDING AN EFFECTIVE DATE.

The provisions contained herein shall constitute the Coastal Construction Code for construction within the coastal building zone and coastal barrier island in the unincorporated areas of Nassau County, Florida and shall be referred to as the "Coastal Code".

SECTION I - PURPOSE

1.1 - GENERAL

The purpose of the Coastal Code is to provide minimum standards for the design and construction of buildings and structures to reduce the harmful effects of hurricanes and other natural disasters occurring along the coastal areas of the unincorporated areas of Nassau County which front the Atlantic Ocean. These standards are intended to specifically address design features which affect the structural stability of the beach, dunes, and topography of adjacent properties. The Coastal Code is site specific to the coastal building zone and coastal barrier island (unincorporated area of Amelis Island) as defined herein and is not applicable to other locations. In the event of the conflict between this Ordinance and other Ordinances, the requirements resulting in more restrictive design shall apply. No provisions in this chapter shall be construed to permit any construction in any area prohibited by local county or state regulation.

Rescinded by 2005-17  
3-28-05

## SECTION II - SCOPE

### 2.1 - Applicability

The requirements of this Coastal Code shall apply to the following types of construction in the coastal building zone on Amelia Island which is a coastal barrier island.

(a) The new construction of, or improvement to major structures, nonhabitable major structure, and minor structures as defined herein.

(b) Construction which would change or alter the character of the shoreline (e.g. excavation, grading, paving). The Coastal Code does not apply to minor work in the nature of normal beach cleaning or debris removal.

### 2.2 - Existing Structures

The requirements of this chapter shall not apply to existing structures, structures under construction, or structures for which a valid and unexpired municipal or county building permit was issued prior to the adoption of the Coastal Code.

### 2.3 - Multi-Zone Structures

For structures located partially in the coastal building zone, the requirements of the Coastal Code shall apply to the entire structure.

### 2.4 - Construction Seaward of Mean High Water

Structures or construction extending seaward of the mean high water line which are regulated by Section 161.041, Florida Statutes, (e.g. groins, jetties, moles, breakwaters, seawalls, revetments, beach nourishment, inlet dredging, etc.), are specifically exempt from the provisions of this chapter. In addition, the Coastal Code does not apply to piers, pipelines, or outfalls which are regulated pursuant to the provisions of Section 161.053, Florida Statutes.

2.5 - Applications for Permits

Applications for building permits for all construction in the coastal building zone on the coastal barrier island (unincorporated areas of Amelia Island), if not of normal or usual design as determined by the Building Official, shall be certified by an architect or professional engineer registered in the State of Florida. Such certification shall state that the design plans and specifications for the construction are in compliance with the criteria established by this Coastal Code.

SECTION III - DEFINITIONS

3.1 - General

The following terms are defined for general use in the Coastal Code.

(a) "Beach" means the zone of unconsolidated material that extends landward from the mean low water line to the place where there is marked change in material or physiographic form, or to the line of permanent vegetation, usually the effective limit of storm waves. "Beach" is alternatively termed "shore".

(b) "Breakaway wall" or "frangible wall" means a partition independent of supporting structural members that will withstand design wind forces, but will fail under hydrostatic, wave, and runup forces associated with the design storm surge.

(c) "Building Support Structure" means any structure which supports floor, wall or column loads, and transmits them to the foundation. The term shall include beams, grade beams, or joists, and includes the lowest horizontal structural member exclusive of piles, columns, or footings.

(d) "Coastal Barrier Islands" means geological features which are completely surrounded by marine waters that

front upon the open waters of the Gulf of Mexico, Atlantic Ocean, Florida Bay, or Strait of Florida and are composed of quartz sands, clays, limestone, oolites, rock, coral, coquina, sediment, or other material, including soil disposal, which features lie above the line of mean high water. Mainland areas which were separated from the mainland by artificial channelization for the purpose of assisting marine commerce shall not be considered coastal barrier island. Specifically, Amelia Island is a "Coastal Barrier Island".

(e) "Coastal Building Zone" means the land area 5000 feet landward of the coastal construction control line established, pursuant to Section 161.053, Florida Statutes, or the entire Island, whichever is less..

(f) "Column Action" means the potential elastic instability in piles or columns resulting in axial or lateral bending of the member due to compressive stress.

(g) "Construction" means the carrying out of any building, clearing, filling, or excavation or the making of any material change in the size or use of any structure or the appearance of any land. When appropriate to the context, "construction" refers to the act or construction or the result of construction.

(h) "Dune" means a mound or ridge of loose sediments, usually sand-sized, lying landward of the beach, and deposited by natural or artificial means.

(i) "Major Structure" includes but is not limited to residential buildings including mobile homes, commercial, institutional, industrial, and other construction having the potential for substantial impact on coastal zones.

(j) "Mean High Water Line" means the intersection of the tidal plane of mean high water with the shore. Mean high

water is the average height of high waters over a 19-year period. (See Section 177.27(15), F.S.).

(k) "Minor Structure" includes but is not limited to pile-supported, elevated due and beach walkover structures; beach access ramps and walkways; stairways; pile-supported elevated viewing platforms, gazebos, and boardwalks; lifeguard support stands; public and private bathhouses; sidewalks, driveways, parking areas, shuffleboard courts, tennis courts, handball courts, racquetball courts, and other uncovered paved areas; earth retaining walls; sand fences, privacy fences, ornamental walls, ornamental garden structures, aviaries, and other ornamental construction. it shall be a characteristic of minor structures that they are considered to be expendable under design wind, wave, and storm forces.

(l) "Nonhabitable Major Structure" includes but is not limited to swimming pools; parking garages; pipelines; piers; canals, lakes, ditches, drainage structures, and other water retention structures; water and sewage treatment plants; electrical power plants, transmission and distribution lines, transformer pads, vaults, and substations; roads, bridges, streets, and highways; underground storage tanks; communications buildings and towers; flagpoles and signs over 15 feet in height.

(m) "NGVD" means National Geodetic Vertical Datum - a geodetic datum established by the National Ocean Service and frequently referred to as the 1929 Mean Sea Level Datum.

SECTION IV - COASTAL CONSTRUCTION REQUIREMENTS

4.1 - General

Construction within the coastal building zone on Amelia Island shall meet the requirements of this chapter. All

structures shall be designed so as to minimize damage to life, property, and the natural environment. Assistance in determining the design parameters to minimize such damage may be found in the reference documents listed in Section IV.7.

#### 4.2 - Structural Requirements for Major Structures

(a) Foundations - All major structures shall be anchored to their foundations in such a manner as to prevent flotation, collapse, or lateral displacement.

Foundation design and construction shall consider all anticipated loads resulting from design storm conditions, including wave, hydrodynamic, hydrostatic, and wind loads acting simultaneously with dead loads. Erosion computations for foundations design shall account for all vertical and lateral erosion and scour-producing forces, including localized scour due to the presence of structural components.

(1) Pile Foundations - shall be required for buildings located in Federal Emergency Management Agency Flood Insurance Rate Map "V" (velocity) zones or where impacted by wave action.

(a) Pile dimensions, spacing and embedment shall be designed consistent with the requirements of the site, taking into account all vertical, lateral, erosion and scour-producing forces.

(b) Piles shall be driven to a penetration which achieves adequate bearing capacity taking into consideration the anticipated loss of soil above the design grade.

- (c) In addition to the normal foundation analysis, the pile foundation analysis shall consider piles in column action, where appropriate, from the bottom of the support structure to the design grade.
  - (d) Consideration shall also be given to the degree of exposure to wave attack and the resulting impact loads on lateral or diagonal bracing between piles.
- (2) Monolithic Foundations - may be permitted in Federal Emergency Management Agency Flood Insurance Rate Map "A" or "B" zones or in locations not impacted by wave action.
- (a) Monolithic foundations may be used if soil conditions permit and if located at an elevation which minimize their effect on the beach and adjacent properties. Due consideration shall be given to their vulnerability to erosion under design storm conditions.
  - (b) In the event that a monolithic foundation is used, the maximum elevation of the top of the slab is to be below the design scour depth (see Chapter 5.28, Shore Protection Manual, U. S. Army Corps of Engineers, 4th edition, 1984) unless positive methods are provided to prevent scour.
  - (c) Other types of spread footings such as running footers or pads may be permitted

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when positive methods of are provided to  
prevent scour.

(b) Understructures - No substantial walls or partitions shall be constructed below the level of the first finished floor.

This does not preclude the construction of:

- (1) Stairways;
- (2) Shearwalls essentially perpendicular to breaking waves;
- (3) Shearwalls essential parallel to breaking waves which do not exceed a maximum of 20% of the building length;
- (4) Wind or sand screens constructed of fabric or wire mesh;
- (5) Light open lattice partitions with individual wooden lattice strips no greater than 3/4" thick or 3" wide;
- (6) Elevator shafts;
- (7) Breakaway or frangible walls; or
- (8) Substantial walls constructed above the wave action and storm surge expected under design storm conditions.

(c) Building and Floor Elevations - The minimum elevation for the underside of the building support structure (excluding foundation) shall be above the elevation of the design breaking wave crests or wave uprush superimposed on the storm surge with dynamic wave setup expected under design storm conditions. The elevation of the storm surge with dynamic wave setup shall be either the elevation established by the Florida Department of Natural Resources Coastal Construction Control Line Study or the base flood elevation for the specific area established by the Federal Emergency Management Agency as determined by the design engineer.

(d) Erosion and Design Grade - The elevation of the soil surface to be used in the design of foundations, calculation of pile reactions and bearing capacities shall not be greater than



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that which would result from the erosion reasonably anticipated as a result of design storm conditions. Calculation of the design grade shall take into account localized scour due to the presence of structural components. Erosion computations for foundation design shall consider all vertical and lateral erosion and scour-producing forces.

(e) Wave Force Design

- (1) Calculations for wave forces resulting from design storm conditions on building foundations and superstructures may be based upon the minimum criteria and methods prescribed in the Naval Facilities Engineering Command Design Manual, NAVFAC DM-26, U. S. Department of Navy; Shore Protection Manual, U. S. Department of the Army Corps of Engineers; U. S. Department of the Army Coastal Engineering Research Center Technical Papers and Reports; the Technical and Design Memoranda of the Division of Beaches and Shores, Florida Department of Natural Resources; or other professionally recognized methodologies which produce equivalent design criteria.
- (2) Breaking, broken, and nonbreaking waves shall be considered as applicable. Design wave loading analysis shall consider vertical uplift pressures and all lateral pressures to include impact as well as dynamic loading and the harmonic intensification resulting from repetitive waves.

(f) Hydrostatic Loads - Calculations for hydrostatic loads shall consider the maximum water pressure resulting from a fully peaked, breaking wave superimposed upon the design storm surge with dynamic wave setup. Both free and hydrostatic loads shall be considered. Hydrostatic loads which are confined shall be determined using the maximum elevation to which the confined water would freely rise if unconfined. Vertical hydrostatic loads shall be considered both vertically downward and upward on horizontal or inclined surfaces of major structures (e.g. floors, slabs, roofs, walls). Lateral hydrostatic loads shall be considered as forces acting horizontally above and below grade on vertical or inclined surfaces. Hydrostatic loads on irregular or curved geometric surfaces shall be determined by considering the separate vertical and horizontal components acting simultaneously under the distribution of the hydrostatic pressures.

(g) Hydrodynamic Loads - Hydrodynamic loads shall consider the maximum water pressures resulting from the motion of the water mass associated with the design storm. Full intensity loading shall be applied on all structural surfaces above the design grade which would affect the flow velocities.

(h) Design Conditions - General

- (1) Foundations for all major structures shall be designed for the horizontal and vertical pressures generated by wave forces between the elevation of the design breaking wave crests or wave uprush superimposed upon the storm surge and the stable soil elevation of the site.
- (2) All major structures except mobile homes, shall be designed to withstand 140 mph

windspeeds. Horizontal wind velocity pressures shall not be less than the values given below:

BASIC WIND VELOCITY DESIGN PRESSURE  
(Pounds Per Square Foot)

<u>Standard Building Code</u>		<u>South Florida Building Code</u>	
<u>Height (ft)</u>	<u>Pressure (psf)</u>	<u>Height (ft)</u>	<u>Pressure (psf)</u>
0-30	41	0-5	30
31-50	54	5-15	37
51-100	65	15-25	45
101-200	79	25-35	50
201-300	92	35-55	56
301-400	101	55-75	63
401-500	109	75-100	68
501-800	121	100-150	75
801-1000	133	150-250	83
over 1000	137	250-350	97
		350-550	109
		550-750	121
		750-1000	132
		over 1000	137

\* The above table is based upon the formula  $P = .00256 \times V^2 \times (H/30)^{2/7}$ , where: P = pressure in pounds/square foot

V = 140 mph

H = height above grade in feet

(3) Appropriate share factors shall be applied for resistance against overturning and uplift as required elsewhere in this code. Internal pressures on internal walls, ceilings and floors resulting from damaged windows or doors shall also be considered in the design unless the specified windows and doors have been tested by an approved testing agency and have been shown to be capable of withstanding the design pressures required herein.

(4) Mobile homes shall conform to the Federal Mobile Home Construction and Safety Standards of the Uniform Standards Code ANSI book A-119.1, pursuant to s.320.823, Florida Statutes, in addition to the other requirements contained in this chapter.

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4.3 - Structural Requirements for Nonhabitable Major Structures

Nonhabitable major structures need not meet the specific structural requirements of Section 4.2, except that they shall be designed to produce the minimum adverse impact on the beach and dune system and shall comply with the applicable standards of construction found elsewhere in this code. All sewage treatment and public water supply systems shall be flood-proofed to prevent infiltration of surface water anticipated under design storm conditions. Underground utilities, excluding pad transformers and vaults, shall be flood-proofed to prevent infiltration of surface water expected under design storm conditions or shall otherwise be designed to function when submerged under such storm conditions.

4.4 - Structural Requirements for Minor Structures - Minor structures need not meet the specific structural requirements of Section 4.2, except that they shall be designed to produce the minimum adverse impact on the beach and dune system found elsewhere in this code.

4.5 - Location of Construction - Construction, except for elevated walkways, lifeguard support stands, piers, beach access ramps, gazebos, and coastal or shore protection structures, shall be located a sufficient distance landward of the beach to permit natural shoreline fluctuations and to preserve dune stability. Construction, including excavation, may occur to the extent that the natural storm buffering and protection capability of the dune is not diminished.

4.6 - Public Access - Where the public has established an accessway through private lands to lands seaward of mean high tide or water line by prescription, prescriptive easement, or any

other legal means, development or construction shall not interfere with such right of access unless a comparable alternative accessway is provided. The developer shall have the right to improve, consolidate, or relocate such public accessways so long as they are:

- (a) Of substantially similar quality and convenience to the public:
- (b) Approved by the local government: and
- (c) Consistent with the coastal management element of the local comprehensive plan adopted pursuant to Section 163.3178, Florida Statutes.

4.7 - References - Assistance in determining the design parameters and methodologies necessary to comply with the requirements of this chapter may be obtained from:

Shore Protection Manual, U. S. Army Corps of Engineers, 4th edition, 1984.

U.S. Department of the Army, Coastal Engineering Research Center's Technical Papers and Reports.

Florida Department of Natural Resources, Division of Beaches and shores Technical and Design Memoranda.

Naval Facilities Engineering Command Design Manual, NAVFAC DM-26, U. S. Department of the Navy.

ADOPTED this 25th day of February, 1986.

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NASSAU COUNTY, FLORIDA

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T. J. GREESON

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