

**Town of Ocean Isle Beach**  
**Three West Third Street**  
**Ocean Isle Beach, NC 28469**  
**Phone (910)579-3469 Fax (910) 579-2940**



**Building Permit**  
**Permit Number:**

**Accepted By:**

**Page 1 of 2**

**Applicant**

**Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Phone:** \_\_\_\_\_

**Approval Date:** \_\_\_\_\_

**Parcel**

**Parcel Number:** \_\_\_\_\_ **Zoning:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Section:** \_\_\_\_\_ **Township:** \_\_\_\_\_  
**Addition:** \_\_\_\_\_ **Block:** \_\_\_\_\_ **Lot(s):** \_\_\_\_\_  
**Legal Description:** \_\_\_\_\_

**Owners**

**Name:** \_\_\_\_\_ **Phone:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Contractors**

**Contractor Type: Builder**

**Name:** \_\_\_\_\_ **License Number:** \_\_\_\_\_  
**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Contractors**

**Contractor Type: Electrician**

**Name:** \_\_\_\_\_ **License Number:** \_\_\_\_\_  
**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Contractors**

**Contractor Type: HVAC**

**Name:** \_\_\_\_\_ **License Number:** \_\_\_\_\_  
**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Contractors**

**Contractor Type: Plumber**

**Name:** \_\_\_\_\_ **License Number:** \_\_\_\_\_  
**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Fees and Receipts:**

Number	Description	Amount
FEE	Building Permit (Calc)	\$ _____
FEE	Electrical Permit	\$ _____
FEE	HVAC Permit	\$ _____
FEE	Plumbing Permit	\$ _____
FEE	Homeowners Recovery Fund	\$ _____
<b>Total Fees:</b>		\$ _____
		\$ _____
<b>Total Receipts:</b>		\$ _____
		\$ _____

**Description**

**Structure Use:**  Residential  Commercial **Start Date:** \_\_\_\_\_  
**Purpose:** \_\_\_\_\_ **End Date:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Construction Value:** \$ \_\_\_\_\_

**Floor Areas**

**Living Space:** \_\_\_\_\_  
**Basement/Storage:** \_\_\_\_\_  
**Garage:** \_\_\_\_\_  
**Decks:** \_\_\_\_\_  
**Porches:** \_\_\_\_\_  
**Other:** \_\_\_\_\_  
**Total Area:** \_\_\_\_\_

**Impervious Surfaces**

**House:** \_\_\_\_\_  
**Garage:** \_\_\_\_\_  
**Driveways:** \_\_\_\_\_  
**Porch/Walk:** \_\_\_\_\_  
**Other:** \_\_\_\_\_  
**Total:** \_\_\_\_\_

**Structure Area:** \_\_\_\_\_ **Site Area:** \_\_\_\_\_ **Percentage of Site:** \_\_\_\_\_

**Other Fields:**

Number of Bedrooms \_\_\_\_\_  
 Number of Bathrooms \_\_\_\_\_  
 Number of Floors \_\_\_\_\_  
 Building Height \_\_\_\_\_  
 Occupancy \_\_\_\_\_  
 Type of Construction \_\_\_\_\_

**Comments:** \_\_\_\_\_

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction. The exterior of the structure shall be completed within three months from the date construction has commenced.

This permit becomes null and void if work or construction authorized is not commenced within six months, or if construction or work is suspended or abandoned for a period of one year at any time after work is commenced.

\_\_\_\_\_  
**Owner/Agent**

\_\_\_\_\_  
**Date**



## Pool Letter Engineering Requirements (VE Flood Zones Only)

- Date
- Engineer Name
- Company Name
- Company Address
- Site Address
- Include Manufacturer Name
- Include Pool Dimensions
- Include a Installation Schematic
- Pool installation shall meet the requirements of FEMA Technical Bulletin 5 and Technical Fact Sheet No. 28
- Pool must not act as an obstruction nor increase the potential for damage to adjacent buildings during a flood

**\*\*\*THIS LETTER MUST ACCOMPANY A BUILDING PERMIT APPLICATION\*\*\***



# Decks, Pools, and Accessory Structures



FEMA



HOME BUILDER'S GUIDE TO COASTAL CONSTRUCTION FEMA 499/August 2005 Technical Fact Sheet No. 28

**Purpose:** To summarize National Flood Insurance Program (NFIP) requirements and general guidelines for the construction and installation of decks, access stairs and elevators, swimming pools, and accessory buildings under or near coastal buildings.

## Key Issues

- Any deck, accessory building, or other construction element that is structurally dependent on or attached to a V-zone building is considered part of the building and must meet the NFIP regulatory requirements for construction in the V zone (see NFIP Technical Bulletin 5-93 and Fact Sheet Nos. 2, 4, 5, 8, 11, 27, and 30). Attached construction elements that do not meet these requirements are prohibited.
- If prohibited elements are attached to a building that is otherwise compliant with NFIP requirements, a higher flood insurance premium may be assessed against the entire building.
- Swimming pools, accessory buildings, and other construction elements outside the perimeter (footprint) of, and not attached to, a coastal building may alter the characteristics of flooding significantly or increase wave or debris impact forces affecting the building and nearby buildings. If such elements are to be constructed, a design professional should consider their potential effects on the building and nearby buildings.
- This *Home Builder's Guide to Coastal Construction* strongly recommends that all decks, pools, accessory structures, and other construction elements in A zones in coastal areas be designed and constructed to meet the NFIP V-zone requirements.
- Post-storm investigations frequently reveal envelope and structural damage (to elevated buildings) initiated by failure of a deck due to flood and/or wind forces. Decks should be given the same level of design and construction attention as the main building, and failure to do so could lead to severe building damage.



**Damage from Hurricane Opal in Florida. This deck was designed to meet State of Florida Coastal Construction Control Line (CCCL) requirements. The house predated the CCCL and was not.**

## Decks

### Requirements

- If a deck is structurally attached to a V-zone building, the bottom of the lowest horizontal member of the deck must be elevated to or above the elevation of the bottom of the building's lowest horizontal member.
- A deck built below the Design Flood Elevation (DFE) must be structurally independent of the main building and must not cause an obstruction.
- If an at-grade, structurally independent deck is to be constructed, a design professional must evaluate the proposed deck to determine whether it will adversely affect the building and nearby buildings (e.g., by diverting flood flows or creating damaging debris).

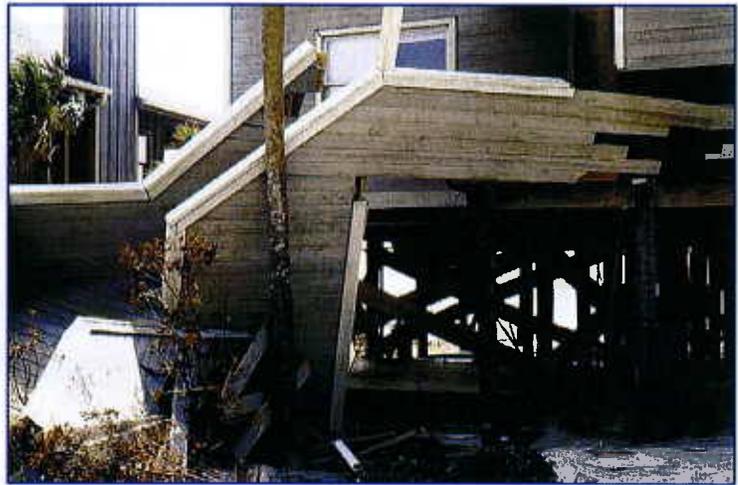
## Recommendations

- Decks should be built on the same type of foundation as the primary building. Decks should be structurally independent of the primary structure and designed to resist the expected wind and water forces.
- Alternatively, decks can be cantilevered from the primary structure; this technique can minimize the need for additional foundation members.
- A “breakaway deck” design is discouraged because of the large debris that can result.
- A “breakaway deck” on the seaward side poses a damage hazard to the primary structure.
- Decks should be constructed of flood-resistant materials, and all fasteners should be made of corrosion-resistant materials.

## Access Stairs and Elevators

### Requirements

- Open stairs and elevators attached to or beneath an elevated building in a V zone are excluded from the NFIP breakaway wall requirements (see NFIP Technical Bulletin 9-99 and Fact Sheet No. 27), but must meet the NFIP requirement for the use of flood-resistant materials (see NFIP Technical Bulletin 2-93 and Fact Sheet No. 8). Large solid staircases that block flow under a building are a violation of NFIP free-of-obstruction requirements (see NFIP Technical Bulletin 5-93)
- Although they need not be designed to break away under flood forces, access stairs and elevators are obstructions; therefore, the loads they may transfer to the main building must be considered by the design professional.



*The rails on these stairs were enclosed with siding, presenting a greater obstacle to the flow of flood water and contributing to the flood damage shown here.*

### Recommendations

- Open stair handrails and risers should be used because they allow wind and water to pass through rather than act as a barrier to flow.
- The bottom of the stair, like the foundation of the primary structure, should be designed and constructed to remain in place during a windstorm or a flood.
- Stairways not considered the primary means of egress can be constructed with hinged connections that allow them to be raised in the event of an impending storm or flood (check code requirements before employing this technique).
- Elevators should be installed in accordance with the guidance in NFIP Technical Bulletin 4-93 and the building code.



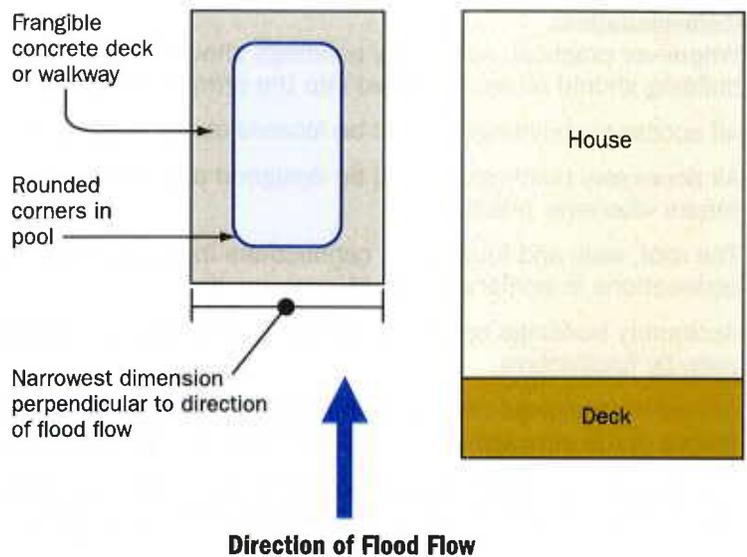
*Large solid stairs such as these block flow under a building and are a violation of NFIP free-of-obstruction requirements.*

## Swimming Pools

### Requirements

- An at-grade or elevated pool adjacent to a coastal building is allowed only if the pool will not act as an obstruction that will result in damage to the building or nearby buildings.

- When a pool is constructed near a building in a V zone, the design professional must assure community officials that the pool will not increase the potential for damage to the foundation or elevated portion of the building or any nearby buildings. Pools can be designed to break up (“frangible pools”) during a flood event, thereby reducing the potential for adverse impacts on nearby buildings.
- Any pool constructed adjacent to a coastal building must be structurally independent of the building and its foundation.
- A swimming pool may be placed beneath a coastal building only if the top of the pool and the accompanying pool deck or walkway are flush with the existing grade and only if the lower area (below the lowest floor) remains unenclosed. Under the NFIP, lower-area enclosures around pools constitute a recreational use and are not allowed, even if constructed to breakaway standards.



*Siting and design recommendations for swimming pools in coastal areas.*

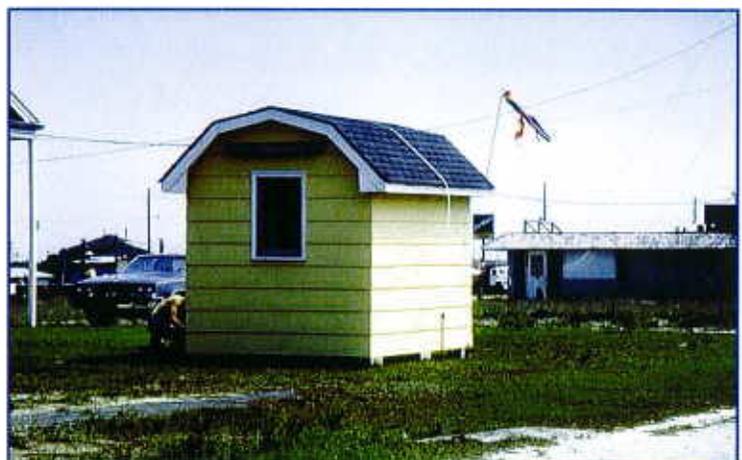
### Recommendations

- Pools should be oriented with their narrowest dimension perpendicular to the direction of flood flow.
- Concrete decks or walkways around pools should be frangible (i.e., they will break apart under flood forces).
- Molded fiberglass pools should be installed and elevated on a pile-supported structural frame.
- No aboveground pools should be constructed in a V-zone site unless they are above the DFE and have an open, wind- and flood-resistant foundation.
- Pool equipment should be located above the DFE whenever practical.
- Check with community officials before constructing pools in V zones.

### Accessory Buildings

#### Requirements

- Unless properly elevated (to or above the DFE) on piles or columns, an accessory building in a V zone is likely to be destroyed during a coastal storm; therefore, these buildings must be limited to small, low-value structures (e.g., small wood or metal sheds) that are disposable. See NFIP Technical Bulletin 5-93.
- If a community wishes to allow unelevated accessory buildings, it must define "small" and "low cost." NFIP Technical Bulletin 5-93 defines "small" as less than 100 square feet and "low cost" as less than \$500. Unelevated accessory buildings must be unfinished inside, constructed with flood-resistant materials, and used only for storage.
- When an accessory building is placed in a V zone, the design professional must determine the effect that debris from the accessory building will have on nearby buildings. If the accessory building is large enough that its failure could create damaging debris or divert flood flows, it must be elevated above the DFE.



*Small accessory building anchored to resist wind forces.*

## Recommendations

- Whenever practical, accessory buildings should not be constructed. Instead, the functions of an accessory building should be incorporated into the primary building.
- All accessory buildings should be located above the DFE whenever practical.
- All accessory buildings should be designed and constructed to resist the locally expected wind and water forces whenever practical.
- The roof, wall, and foundation connections in accessory buildings should meet the requirements for connections in primary buildings.
- Accessory buildings below the DFE should be anchored to resist being blown away by high winds or carried away by floodwaters.
- Accessory buildings (including their foundations) must not be attached to the primary building; otherwise, failure of the accessory building could damage the primary building.
- Orienting the narrowest dimension of an accessory building perpendicular to the expected flow of water will create less of an obstruction to flowing water or wave action, and may result in less damage.

## Additional Resources

FEMA. NFIP Technical Bulletin 2-93, *Flood Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas*. (<http://www.fema.gov/fima/techbul.shtm>)

FEMA. NFIP Technical Bulletin 4-93, *Elevator Installation for Buildings Located in Special Flood Hazard Areas*. (<http://www.fema.gov/fima/techbul.shtm>)

FEMA. NFIP Technical Bulletin 5-93, *Free-of-Obstructions Requirements for Buildings Located in Coastal High Hazard Areas*. (<http://www.fema.gov/fima/techbul.shtm>)

Mounded septic systems can require significant volumes of fill, which, if placed under or immediately adjacent to buildings, likely will constitute an obstruction that diverts flood flow and waves. Mounded septic systems may be allowed in V zones if they will not worsen flood and wave conditions for the buildings they serve, or for other nearby buildings (see the discussion in the section on Fill for guidance on evaluating mounded systems near elevated buildings).

An additional consideration for septic systems in V zones is addressed by Section 60.3(a)(6)(ii) of the NFIP regulations, which requires “on-site waste disposal systems to be located to avoid impairment to them or contamination from them during flooding.” FEMA 348 provides additional guidance.

## Swimming Pools and Spas

Two primary considerations are related to the placement of swimming pools and spas under or adjacent to buildings in V zones:

- Whether the pool and/or spa configuration is subject to NFIP use limitations for enclosed areas under elevated buildings, and
- Whether the pool or spa will lead to increased flood loads on buildings or exacerbate scour and erosion near buildings.

The NFIP permits a swimming pool or spa to be placed beneath an elevated building only if the top of the pool/spa and accompanying deck or walkway are flush with the existing grade, and only if the space around the pool/spa remains unenclosed. However, some states and communities may prohibit restrict pools and spas beneath elevated buildings – designers should check with the jurisdiction for any additional requirements.

Pools and spas are allowed adjacent to coastal buildings only if these amenities will not act as obstructions that lead to damage to nearby buildings. This effectively means that most pools and spas must be installed in-ground (either frangible or immovable), or completely elevated above the BFE. This constraint applies where the ground level is below, at, or above the BFE.

The NFIP limits the use of enclosures to parking of vehicles, building access, and storage. Because pools and spas are for recreational use, they are not allowed to be enclosed, even if enclosed by glass or breakaway walls. Use of lattice and insect screening around pools and spas is permitted.

Registered design professionals must certify to local officials that a pool or spa beneath or near a V zone building will not be subject to flotation or displacement that will damage building foundations during a coastal flood. Figure 18 shows a case where a spa was displaced and likely caused failure of two piles that supported an elevated deck. Pools, pool decks, and walkways that are placed under or adjacent to coastal buildings must be structurally independent of the building and its foundation.

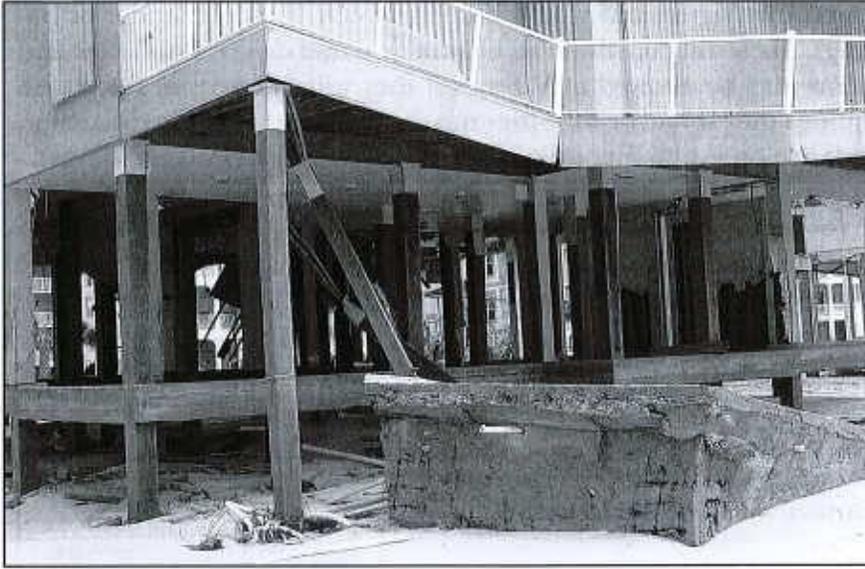


Figure 18. Movement of a spa likely caused failure of two piles supporting an elevated deck.

## The NFIP

The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as protection against flood losses, in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces adequate floodplain management regulations, FEMA will make flood insurance available within the community.

Title 44 of the U.S Code of Federal Regulations contains the NFIP criteria for floodplain management, including design and construction standards for new and substantially improved buildings located in SFHAs identified on the NFIP's Flood Insurance Rate Maps. FEMA encourages communities to adopt floodplain management regulations that exceed the minimum NFIP criteria. As an insurance alternative to disaster assistance, the NFIP reduces the escalating costs of repairing damage to buildings and their contents caused by floods.

## NFIP Technical Bulletins

This is one of a series of Technical Bulletins that FEMA has produced to provide guidance concerning the building performance requirements of the NFIP. These requirements are contained in Title 44 of the U.S. Code of Federal Regulations at Section 60.3. The bulletins are intended for use by State and local officials responsible for interpreting and enforcing the requirements in their floodplain management regulations and building codes, and by members of the development community, such as design professionals and builders. New bulletins, as well as updates of existing bulletins, are issued periodically, as necessary. The bulletins do not create regulations; rather, they provide specific guidance for complying with the requirements of existing NFIP regulations. Users of the Technical Bulletins who need additional guidance