Department of Land and Natural Resources
Engineering Division

January 2008

# Wai Halana

## Hawaii Flood News

## NGVD ⇨ NAVD?

Source: NFIP/CRS Update, Summer 2007

Effective floodplain management depends on accurate surveys.

Regulatory floodplains are defined by the elevation of the base flood in relation to the elevation of the ground. Base flood elevations are used to determine the required elevation of new buildings in the floodplain. Floodplain management cannot succeed without accurate measurements of flood elevations, ground elevations, and building elevations. Needless to say, if flood elevations are based on one system and ground or building elevations are based on another, things won't work.

NGVD 29 stands for National Geodetic Vertical Datum of 1929. It is the system of vertical measurement that has been used by surveyors and engineers for most of the 20th century and was the basis for relating ground and flood elevations. Now, however, it has been replaced by the more-accurate North American Vertical Datum of 1988 (NAVD 88). Because it has such an impact on floodplain management, it is important for local officials to understand what's happening.

First, what is a "datum?" If we say that a flood will rise to 100 feet, one must ask "100 feet above what?" We need a consistent starting point so we can compare flood and ground elevations. The starting point for measuring elevations is our "datum plane," and the system and records we develop based on that plane are usually just called the "datum." In most cases, when we talk about elevations, we mean "above sea level." But some inland communities' elevation records were developed in relation to some other starting point. For example, the Chicago City Datum was developed with the level of Lake Michigan as its datum plane.

The National Geodetic Survey (NGS), the government people responsible for mapping, needed a common, consistent national datum plane from which to map the whole country. During the 1920s, the NGS established a network of 26 tidal gauges in the United States and Canada. Maps were prepared with elevations based on "Mean Sea Level Datum of 1929." In the 1970s, the name was changed to the National Geodetic Vertical Datum (NGVD) of 1929.

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## Featured Articles ...

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The current and selected past issues are also available at:

NEW URL www.hawaiinfip.org

We welcome your comments and suggestions, as well as, newsworthy articles. Your submissions may be sent to the Department of Land and Natural Resources, Engineering Division, P.O. Box 373, Honolulu, Hawaii 96809. If you'd like to receive Wai Halana via email or wish to be removed from our mailing list, contact Elaine Keb at (808) 587-0227.

# Waimea Levee Repair Work on Kauai Wins Recognition

The Kaua'i Department of Public Works Highway Maintenance Division has received an award from the U.S. Army Corps of Engineers for the Waimea flood control project being the Most Improved Maintenance (project) in the Honolulu district for Fiscal Year 2007.

The Waimea project was selected for this distinction from a total of 26 flood control projects under the jurisdiction of the Army Corps in an area that includes the state of Hawai'i, Guam, American Samoa, and the Commonwealth of the Northern Marianas.

"The amount of work and effort that it took for the Kaua'i County Public Works crew to correct all the deficiencies was phenomenal," said Lincoln Gayagas, who oversees the Rehabilitation and Inspection Program for the Army Corps in the Honolulu district. "They took the Waimea project from the inactive list due to lack of maintenance and turned it into a very well maintained project in record time."

He explained that the Hanapepe and Waimea projects were on the list of unacceptably maintained levees released by the Army Corps last February and are being placed on the active list effective today.

Gayagas also noted that although the levees were on the unacceptable list, at no time did they pose a threat of imminent failure to the public.

Source: Honolulu Advertiser
October 5, 2007

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One reason for the name change was that it was found that the sea is actually not level. There are local variations caused by currents, wind, barometric pressure, temperature, sea bed topography, and salinity differences. The NGS ran more surveys around the country and had trouble making the numbers fit because mean sea level at one location was higher or lower than mean sea level elsewhere. This leveling work also found that ground elevations had risen or fallen due to earthquakes, subsidence, and rebounding of the earth that has continued since the glaciers receded. New satellite technology has discovered distortions in surveyed elevations caused by gravity.

Because of these shortcomings, the NGS established a new system on which to base elevation measurements. The North American Vertical Datum of 1988 corrects many of the problems with NGVD 29. It is also based on satellite systems that account for differences in gravitational forces in different areas.

One can readily convert elevations in one datum to those based on another. For example, zero in the Chicago City Datum (CCD) is 579.48 feet above zero ("mean sea level") in NGVD 29. If one tries to compare ground elevation in CCD to a flood elevation in NGVD 29, the 579-foot difference will make it readily apparent that something is off. A simple formula can convert elevations from CCD to NGVD 29, and vice versa.

Unfortunately, it's not so easy to convert to NAVD 88. The North American Vertical Datum is the product of thousands of corrections in elevation data. In the Rocky Mountains (where gravitational forces caused a lot of distortion to traditional surveys) the difference can be three feet or more. In other areas, the difference may be only a matter of inches. It takes a computer program called VERTCON to relate those two systems at any given point. (It should



Continued on Page 8

# Important Changes to Agents Program

Many States, including Hawaii (ref: Hawaii State Insurance Commission's memorandum 2006-04A) now require flood insurance training for any agent who writes flood insurance. Beginning January 1, 2008, the NFIP will require this training as a prerequisite for participation in both the Agent Referral and Advertising Co-Op Programs. All agents will still have access to Agents.FloodSmart.gov and all of the other tools and resources currently available.

**Agent Referral Program**
Agents registering for the referral program after January 1, 2008, will be asked to supply proof of training before their name will be added to the referral database. Agents must provide a certificate from their State showing that they have been trained within the last 12 months or a copy of the Certificate of Completion generated for successfully completing one of the NFIP online training courses.

Currently enrolled agents will be asked to provide proof of this training by April 1, 2008. Any agent who does not reply by the April 1 deadline will be removed from the referral database.

**Agent Advertising Co-Op Program**
The Advertising Co-Op Program is also changing. Training will now be a requirement rather than an added incentive for reimbursement. Every flood-trained agent can be reimbursed up to 75 percent on the cost of their advertising. Agents must submit proof of training within the last 12 months when applying for reimbursement. Any individual agent included in the advertisement must submit proof of training with the reimbursement request.

Please continue to visit **Agents.FloodSmart.gov** in the upcoming months for more information and updates.

*In the Courts . . . .*

Source: ASFPM News & Views, October 2007 issue

## Court Rules Against Florida Homeowners

According to a September decision by the Florida Supreme Court, the state's "valued policy law" does not require insurers to compensate policyholders for the total loss of their property if a peril not covered by the policy was partly responsible for the damage.

In the case, *Florida Farm Bureau Casualty v. Cox*, the plaintiffs owned a house that was deemed a total loss after being struck by Hurricane Ivan in 2004. They had no flood insurance policy, but held a homeowner's policy that covered damage caused by wind but not by flood. They argued that they were entitled, under the state's valued policy law, to a "total loss" payment under the homeowner's policy even though the majority of the damage was caused by flood.

The question before the court was whether Florida's 2004 law requires an insurance carrier to pay the face amount of the policy to an owner of a building deemed a total loss when the building is damaged in part by the covered peril but is also significantly damaged by an excluded peril. It does not affect insured buildings that suffer less than total damage.

In overturning two lower court rulings, the justices concluded that "the statute intends that an insurer is liable for a loss [only] by a peril covered under the policy . . . "

The decision affects hundreds of lawsuits filed after Hurricane Ivan, but does not apply to currently disputed claims because Florida's valued policy law was amended in 2005 to make it clear that the insurer's liability in total losses is limited to the damage caused by the covered peril.

# Coastal Building Materials
## Flood-Resistant Materials

Source: FEMA 499, Home Builder's Guide to Coastal Construction, Aug. 2005

Flooding accounts for a large percentage of the damage caused by a coastal storm. Building materials exposed to flooding must be resilient enough to sustain a certain amount of water exposure in order to avoid the need for complete replacement after the flood. FEMA defines a flood-resistant material as any building material capable of withstanding direct and prolonged contact (i.e., at least 72 hours) with floodwaters without sustaining significant damage (i.e., requires more than cosmetic repair).

The following are examples of flood-resistant materials:

- **Lumber:** pressure-treated or naturally decay-resistant, including redwood, cedar, some oaks, and bald cypress.
- **Concrete:** a sound, durable mix, and when exposed to saltwater or salt spray, made with a sulfate-resisting cement, with a 28-day compressive strength of 5,000 psi minimum and a water-cement ratio not higher than 0.40 - consult ACI 318-02, *Building Code Requirements for Structural Concrete and Commentary*, by the American Concrete Institute International.
- **Masonry:** reinforced and fully grouted.
- **Structural Steel:** coated to resist corrosion.
- **Insulation:** plastics, synthetics, and closed-cell foam, or other types approved by local building officials.

This table lists examples of flood-resistant materials used in coastal homes.

| Location of Material Use | Name of Material |
|---|---|
| Piles and posts | Round, tapered wood piles preservative-treated for ground contact, at a minimum; square-section piles or wood posts preservative-treated for marine use. |
| Piers | Reinforced concrete or concrete masonry units (CMU). |
| Foundation walls | Reinforced concrete or CMU, or wood that is preservative-treated for foundation or marine use. |
| Beams | Solid sawn timbers and glue-laminated products, either naturally decay-resistant or preservative-treated for aboveground exposure; built-up members preservative-treated for ground contact. |
| Decking | Preservative-treated or naturally decay-resistant wood, or composite wood members (e.g., manufactured of recycled sawdust and plastic). |
| Framing | Sawn wood or manufactured lumber (preservative-treated or naturally resistant to decay if in close proximity to the ground). |
| Exterior sheathing | High-capacity shearwall sheathing rated "Exterior". |
| Subflooring | Plywood or oriented strand board (OSB) rated "Exposure 1" or rated "Exterior" if left permanently exposed (e.g., exposed underside of elevated house on open foundation). |
| Siding | Vinyl or naturally decay-resistant wood. |
| Flooring | Latex or bituminous cement formed-in-place, clay, concrete tile, pre-cast concrete, epoxy formed-in-place, mastic flooring, polyurethane formed-in-place, rubber sheets, rubber tiles with chemical-set adhesives, silicone floor formed-in-place, terrazzo, vinyl sheet-goods, vinyl tile with chemical-set adhesives, pressure-treated lumber or naturally decay-resistant lumber. |
| Walls and ceilings | Cement board, brick, metal, cast stone in waterproof mortar, slate, porcelain, glass, glass block, clay tile, concrete, CMU, pressure-treated wood, naturally decay-resistant wood, marine grade plywood or pressure-treated plywood. |
| Doors | Hollow metal |
| Insulation | Foam or closed-cell |
| Trim | Natural or artificial stone, steel, or rubber. |

# How to Order Technical and Administrative Support Data

### Products Available from FEMA Project Library

A variety of technical and administrative support data are generated by FEMA, FEMA contractors, mapping partners, conditional and final map revision requesters, and conditional and final map amendment requesters. These data and FEMA publications related to the processing of the following may be obtained from the FEMA Project Library:

- FEMA-contracted studies and restudies, including studies and restudies performed by participants in the FEMA Cooperating Technical Partners program
- Physical Map Revisions
- Conditional Letters of Map Amendment (CLOMAs)
- Letters of Map Amendment (LOMAs)
- Conditional Letters of Map Revision Based on Fill (CLOMR-Fs)
- Letters of Map Revision Based on Fill (LOMR-Fs)
- Conditional Letters of Map Revision (CLOMRs)
- Letters of Map Revision (LOMRs)

### How To Order Data from FEMA Project Library

Requests for technical and administrative support data should be submitted in writing**,** either by mailing them to the address below or by facsimile transmission to (703) 751-7391.

FEMA has identified 7 categories into which requests for FIS data are separated. Thee categories are:

| | |
|---|---|
| Category 1- | Paper copies, diskettes, or microfiche of hydrologic and hydraulic backup data for current or historical FISs |
| Category 2- | Paper or Mylar copies of topographic mapping developed during the FIS process |
| Category 3- | Paper copies or microfiche of survey notes developed during the FIS process |
| Category 4- | Paper copies of individual Letter of Map Change |
| Category 5- | Paper copies of preliminary map panels |
| Category 6- | Computer tapes or CD-ROMs of Digital Line Graph or Digital Flood Insurance Rate Map files |

A non-refundable fee of $135 will be required to initiate requests for data from categories 1,2,and 3 from non-exempt requestors*. This fee will cover the preliminary costs of research and retrieval. The costs of processing requests in categories 1,2, and 3 will vary based on the complexity of the research involved in retrieving the data and the volume and medium of the data to be reproduced and distributed. The initial fee will be applied against the total costs to process the data request, and the requestor will be invoiced for the remainder of the fee. No data will be provided to a requestor until the entire fee has been paid.

The final fees for processing FIS data requests for Categories 1,2,and 3 are calculated by adding labor charges (actual hours times $33 per hour); reproduction costs of materials used; and a standard charge to cover the costs related to library maintenance.

No initial fee will be required to initiate requests for data from categories 4 through 7. Each requestor will be contacted regarding the availability of the materials and the fee associated with obtaining the requested materials.

The cost of processing requests under categories 4 through 7 will not vary. Therefore, FEMA has established the flat user fees shown below for these categories of requests.

| | |
|---|---|
| Category 4 - | $40 for first letter; $10 for each additional letter |
| Category 5 - | $35 for first panel; $2 for each additional panel |
| Category 6 - | $150 for first county; $100 for each additional county in the same request. |
| Category 7 - | $25 per copy. |

To initiate a request, the Flood Insurance Study Data Request Form must be completed. (Download a copy of the form here). Written request should be mailed and fees (if applicable) to:

FEMA Project Library
Cc/o Michael Baker Jr., Inc.
3601 Eisenhower Avenue
Alexandria, Virginia 22304

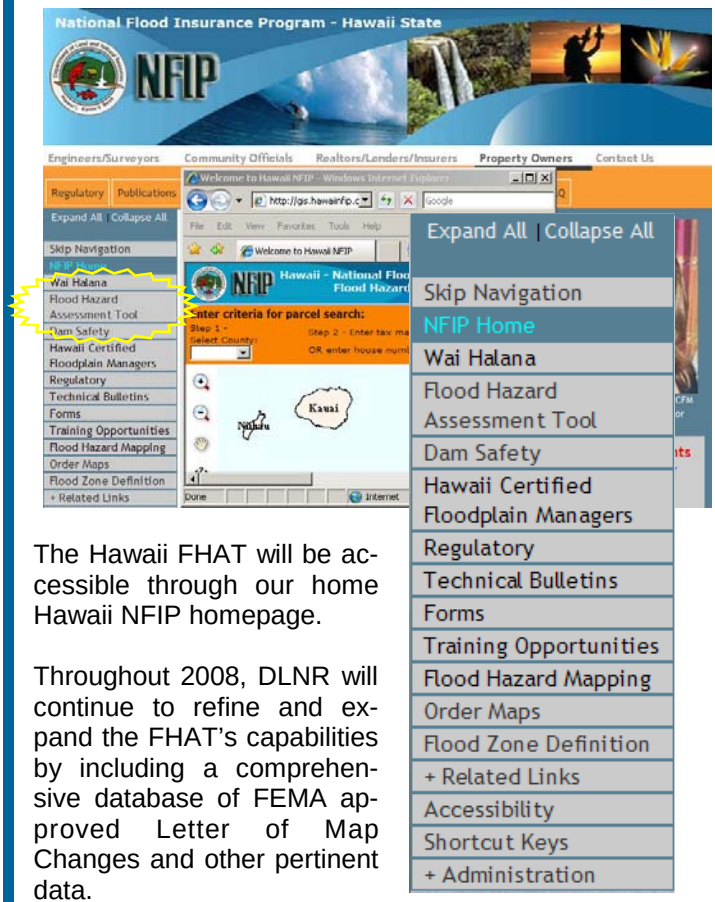
Once research has been completed (about 6 days), an information specialist will contact you to discuss materials, cost, and methods of obtaining the items relevant to your request. You will be invoiced for the remainder of the fees.

* For a list of exempt requesters, click here

# Flood Insurance Rate Maps *Updates*

## Hawaii Flood Hazard Assessment Tool

DLNR's consultant, Onyx Group is nearing the completion of a year long project to make finding your flood hazard information quick and easy. In the next month, visit our website www.hidlnr.org for the debut of the Hawaii Flood Hazard Assessment Tool (FHAT).




The Hawaii FHAT will be accessible through our home Hawaii NFIP homepage.

Throughout 2008, DLNR will continue to refine and expand the FHAT's capabilities by including a comprehensive database of FEMA approved Letter of Map Changes and other pertinent data.

NFIP Dictionary

*Keyword:*

## No-Rise Certification for Floodways

**Definition/Description:**

Any project in a floodway must be reviewed to determine if the project will increase flood heights. An engineering analysis must be conducted before a permit can be issued. The community's permit file must have a record of the results of this analysis, which can be in the form of a No-rise Certification. This No-rise Certification must be supported by technical data and signed by a registered professional engineer. The supporting technical data should be based on the standard step-backwater computer model used to develop the 100-year floodway shown on the Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM).

**NFIP Requirement:**

- 60.3 (d) (3) - Floodway Requirement

**Other Applicable NFIP Regulations:**

- 60.3 - Criteria for land management and use
  - (c) (10)
  - (d) (2)

**Guidance:**

- IS-9 Managing Floodplain Development Through The National Flood Insurance Program (NFIP) (pages 5-22, 23, 7-59)
- Managing Floodplain Development (IS-9)
  - Encroachment Review (5-21 to 5-24)
  - Example No-Rise Certification (5-23)

http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/no_rise.shtm

# New Flood Control Law for Hawaii County

On November 20, 2007, Hawaii County Council approved the second reading of Bill 51. The passage of this bill will raise the standards for floodplain management in Hawaii County.

All of the hard work that went into drafting this revised floodplain management ordinance, has resulted in the adoption of higher regulatory standards to further protect Big Island residents against flooding. Some of the new language includes the inclusion of a 50 foot buffer zone. By adding the buffer zone, this will effectively increase the Special Flood Hazard Area (SFHA) , for regulatory purposes, by 100 feet. Another major improvement to the regulations is the requirement of a one foot freeboard for structures built within the SFHA or buffer zones. Further improvements to existing regulations which already exceeded the minimum NFIP standards, include an increase in the county's cummulative substantial improvement requirement from 3 years to 10 years. This will mean older homes will be monitored for a longer period to determine if any future improvements will be considered as a substantial improvement. To view a copy of this new Bill, visit www.hawaiinfip.org

# Floodplain Mapping Updates

## Digital format now firmly established as data source for GIS

As part of its mission to reduce loss of life and property from all types of hazards, the Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP). The agency's Mitigation Division maintains and updates the maps produced for this program. Updated versions of these maps and data are being released in GIS formats.

In 1968, Congress passed the National Flood Insurance Act and created NFIP. This act required that flood zones be established to define locations subject to higher probability of flooding. Maps were created that showed the location of the 100-year floodplain, known as Special Hazard Flood Areas (SHFA).

Zones were assigned to these areas, which triggered specific building standards and flood insurance rates. SHFA were further divided into specific risk zones designated by a letter or letters that denote the type and risk of flooding. For example, AE Zone identifies a floodplain with a 100-year flood elevation and VE Zone indicates flooding along a coastline. Shaded X Zone areas indicate low to moderate risk of flooding located in a 500-year floodplain and X Zone areas are outside a 500-year floodplain.

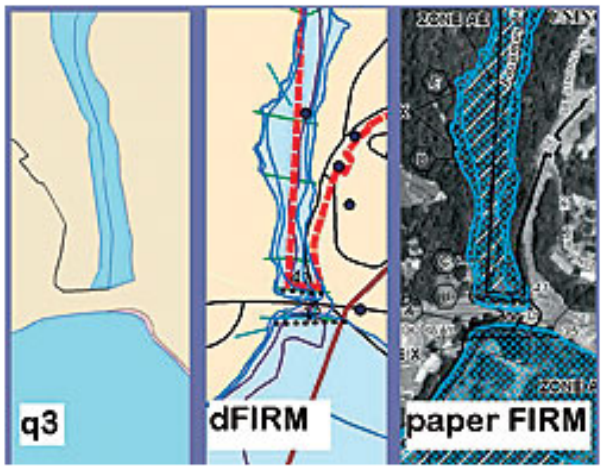
FEMA's floodplain maps, also called Flood Insurance Rate Maps (FIRM), are the nationally accepted source of data for determining if a building is located in a flood zone. These maps are used to determine the type of construction allowed and assign flood insurance rates. The first paper FIRM maps, the result of detailed topographic and hydraulic studies, rolled off the presses in 1973 and were state of the art for that time.

In the 1980s, digital data, mostly in the form of CADD files, began to be used to process and produce the paper FIRMs. GIS came of age in the early 1990s as Windows-based applications spread to desktops across the nation. FEMA responded by releasing digital versions of the FIRM data, called q3, in popular GIS formats.

This data represented the agency's best efforts to provide the GIS community with accurate floodplain data. However, q3 data had some problems. Base flood elevations, river cross sections, study data, river depths, and other features shown on paper maps were missing from q3 data. The data provided was compressed into a single layer of zones and panels. Producing effectively symbolized maps from q3 data was challenging. Quality control was not as stringent, and the data occasionally contained anomalies. These shortcomings were evident to FIRM users, and use of paper maps continued despite the debut of digital versions. Although GIS users made maps using q3 data, these maps could not be used for final flood zone determinations.

It took an act of Congress to usurp the power of paper and restore trust in digital FIRM data. In 2003, Congress and President George W. Bush began a multi-year, billion dollar program called Map Modernization. In addition to updating paper maps, this effort will also provide reliable digital FIRM data (dFIRMs) to the GIS community.

Map Modernization is well under way today. It has just undergone a midcourse adjustment. Almost half the new maps and data have been released to the public. Digital FIRM data comes in countywide coverages and is usually available from a local GIS or tax assessor's office or online at FEMA's Map Services Center (msc.fema.gov).




*Details from the same area shown on a q3, dFIRM, and paper FIRM for the same area.*

Source: ArcUser Magazine, July-September 2007 issue

**Hawaii Mapping Updates:**

Preliminary DFIRMs for Maui and Hawaii County should be completed in early 2008 and become effective in early 2009.

Oahu and Kauai DFIRMs have been effective since 2004.

*Make Hawaii a Great Place to Live !*

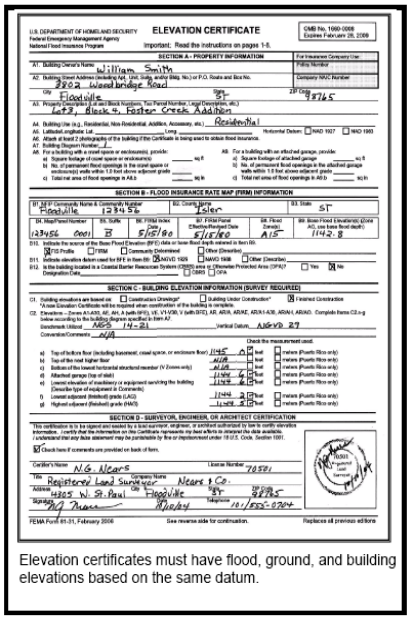
Dept. of Land and Natural Resources
Engineering Division
P.O. BOX 373
Honolulu, Hawaii 96809



Continued from Page 2, "NGVD -> NAVD?"

be noted that VERTCON 2.0 is not considered reliable beyond the boundaries of the lower 48 United States.)

Up until recently, most FEMA Flood Insurance Rate Maps used NGVD 29. However, FEMA's new maps are using NAVD 88 as the basis for published flood elevations. If local surveyors or your community have not made the switch, errors will arise unless elevations in NGVD 29 or a local datum are converted to NAVD 88.



ELEVATION CERTIFICATE

Important: Read the instructions on pages 1-8.

SECTION A - PROPERTY INFORMATION

A1. Building Owner's Name: William Smith

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 3302 Woodbridge Road

City: Floodville | State: ST | ZIP Code: 98765

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): Lot 3, Block 16, Foster Creek Addition

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Residential

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number: Floodville 123456 | B2. County Name: Esher | B3. State: ST

B4. Map/Panel Number: 123456 0001 | B5. Suffix: B | B6. FIRM Index Date: 5/15/80 | B7. FIRM Panel Effective/Revised Date: 5/15/80 | B8. Flood Zone(s): AE | B9. Base Flood Elevation(s) (Zone AO, use base flood depth): 1142.8

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
☑ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other (Describe)

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe)

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ☐ CBRS ☐ OPA

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-g below according to the building diagram specified in Item A7.
Benchmark Utilized: NGS IN-21 | Vertical Datum: NGVD 29
Conversion/Comments: N/A

Check the measurement used.

| | | | |
|---|---|---|---|
| a) Top of bottom floor (including basement, crawl space, or enclosure floor) | 1145 | ☒ feet ☐ meters | (Puerto Rico only) |
| b) Top of the next higher floor | N/A | ☐ feet ☐ meters | (Puerto Rico only) |
| c) Bottom of the lowest horizontal structural member (V Zones only) | N/A | ☐ feet ☐ meters | (Puerto Rico only) |
| d) Attached garage (top of slab) | 1149 | ☒ feet ☐ meters | (Puerto Rico only) |
| e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment in Comments) | 1149 | ☒ feet ☐ meters | (Puerto Rico only) |
| f) Lowest adjacent (finished) grade (LAG) | 1145 | ☒ feet ☐ meters | (Puerto Rico only) |
| g) Highest adjacent (finished) grade (HAG) | 1149 | ☒ feet ☐ meters | (Puerto Rico only) |

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best effort to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

☑ Check here if comments are provided on back of form.

Certifier's Name: N.G. Nears | License Number: 78581

Title: Registered Land Surveyor | Company Name: Nears & Co.

Address: 4305 W. St. Paul | City: Floodville | State: ST | ZIP Code: 98765

Signature: N.G. Nears | Date: 10/15/07 | Telephone: 808-555-0704

FEMA Form 81-31, February 2006 | See reverse side for continuation. | Replaces all previous editions

Elevation certificates must have flood, ground, and building elevations based on the same datum.

What is most important is that the same datum be used consistently. Since the base flood elevations used by the NFIP are on the FIRM, the FIRM datum must be used for the FEMA Elevation Certificate, Letters of Map Amendment, Letters of Map Revision, and other insurance-related purposes.

A community and the surveyors in the community may normally use NAVD 88 for most purposes, but if the community's FIRM uses NGVD 29, then NGVD 29 must be used for all flood, ground, and building elevations on elevation certificates and other NFIP uses.

It is basically the responsibility of the professional surveyor, engineer, or architect to use the appropriate datum on FEMA documents. However, the community must be aware of the potential for errors if more than one datum is used. You don't need to know the conversion factor between the two, but you do need to ensure that the same datum is used for all elevations on the same document. In time, that datum will be NAVD 88 for just about every community. Meanwhile, local officials should review their bench marks and other elevation reference marks to ensure that they state which datum is referenced and that they are consistent with any code requirements.

For more information on datums and their use in FEMA mapping, see http://www.fema.gov/pdf/fhm/frm_gsab.pdf