

# ELEVATION CERTIFICATE

**Important:** Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION				FOR INSURANCE COMPANY USE	
A1. Building Owner's Name GLENN AND LINDA WARREN				Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1614 ISLAND MARINA DRIVE				Company NAIC Number:	
City CAROLINA BEACH		State North Carolina		ZIP Code 28428	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) PARCEL ID R08806-004-006-000					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>RESIDENTIAL</u>					
A5. Latitude/Longitude: Lat. <u>34.05655</u> Long. <u>77.89181</u> Horizontal Datum: <input type="checkbox"/> NAD 1927 <input checked="" type="checkbox"/> NAD 1983					
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.					
A7. Building Diagram Number <u>6</u>					
A8. For a building with a crawlspace or enclosure(s):					
a) Square footage of crawlspace or enclosure(s) <u>1709.00</u> sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>9</u>					
c) Total net area of flood openings in A8.b <u>1830.00</u> sq in					
d) Engineered flood openings? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
A9. For a building with an attached garage:					
a) Square footage of attached garage <u>N/A</u> sq ft					
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____					
c) Total net area of flood openings in A9.b _____ sq in					
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No					
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number TOWN OF CAROLINA BEACH 375347			B2. County Name NEW HANOVER		B3. State North Carolina
B4. Map/Panel Number 3720313100	B5. Suffix K	B6. FIRM Index Date 08-28-2018	B7. FIRM Panel Effective/ Revised Date 08-28-2018	B8. Flood Zone(s) AE, VE	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth) 11.0', 12.0'
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input type="checkbox"/> FIS Profile <input checked="" type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____					
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input checked="" type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA					

# ELEVATION CERTIFICATE

OMB No. 1660-0008  
Expiration Date: November 30, 2022

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>			<b>FOR INSURANCE COMPANY USE</b>
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1614 ISLAND MARINA DRIVE			Policy Number:
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## 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–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: \_\_\_\_\_ Vertical Datum: \_\_\_\_\_

Indicate elevation datum used for the elevations in items a) through h) below.

NGVD 1929  NAVD 1988  Other/Source: \_\_\_\_\_

Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

- |                                                                                                                                  |      |                                          |                                 |
|----------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------|---------------------------------|
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor) _____                                                | 8.3  | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| b) Top of the next higher floor _____                                                                                            | 19.5 | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| c) Bottom of the lowest horizontal structural member (V Zones only) _____                                                        | N/A  | <input type="checkbox"/> feet            | <input type="checkbox"/> meters |
| d) Attached garage (top of slab) _____                                                                                           | N/A  | <input type="checkbox"/> feet            | <input type="checkbox"/> meters |
| e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) _____ | N/A  | <input type="checkbox"/> feet            | <input type="checkbox"/> meters |
| f) Lowest adjacent (finished) grade next to building (LAG) _____                                                                 | 7.0  | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| g) Highest adjacent (finished) grade next to building (HAG) _____                                                                | 8.3  | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support _____                               | 7.0  | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |

## 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 efforts 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.

Were latitude and longitude in Section A provided by a licensed land surveyor?  Yes  No  Check here if attachments.

Certifier's Name Stuart Y. Benson	License Number L-2675		
Title Professional Land Surveyor			
Company Name Cape Fear Surveying, PC			
Address 1 N 6th St			
City Wilmington	State North Carolina		ZIP Code 28401
Signature 	Date 12-02-2020	Telephone (910) 762-9496	Ext.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including type of equipment and location, per C2(e), if applicable)  
The lowest equipment serving the building is HVAC with elevation of 17.0'  
Located in Coastal A

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## SECTION G – COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

- G1.  The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)
- G2.  A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.
- G3.  The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate of Compliance/Occupancy Issued
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- G7. This permit has been issued for:       New Construction     Substantial Improvement
- G8. Elevation of as-built lowest floor (including basement) of the building: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_
- G9. BFE or (in Zone AO) depth of flooding at the building site: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_
- G10. Community's design flood elevation: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_

Local Official's Name	Title
Community Name	Telephone
Signature	Date

Comments (including type of equipment and location, per C2(e), if applicable)

Check here if attachments.

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**SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED)  
FOR ZONE AO AND ZONE A (WITHOUT BFE)**

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

- E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).
- a) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_  feet  meters  above or  below the HAG.
  - b) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_  feet  meters  above or  below the LAG.
- E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is \_\_\_\_\_  feet  meters  above or  below the HAG.
- E3. Attached garage (top of slab) is \_\_\_\_\_  feet  meters  above or  below the HAG.
- E4. Top of platform of machinery and/or equipment servicing the building is \_\_\_\_\_  feet  meters  above or  below the HAG.
- E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance?  Yes  No  Unknown. The local official must certify this information in Section G.

**SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION**

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner or Owner's Authorized Representative's Name

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code

Signature \_\_\_\_\_ Date \_\_\_\_\_ Telephone \_\_\_\_\_

Comments

Check here if attachments.

# BUILDING PHOTOGRAPHS

See Instructions for Item A6.

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If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.



Photo One

Photo One Caption

FRONT VIEW

Clear Photo One

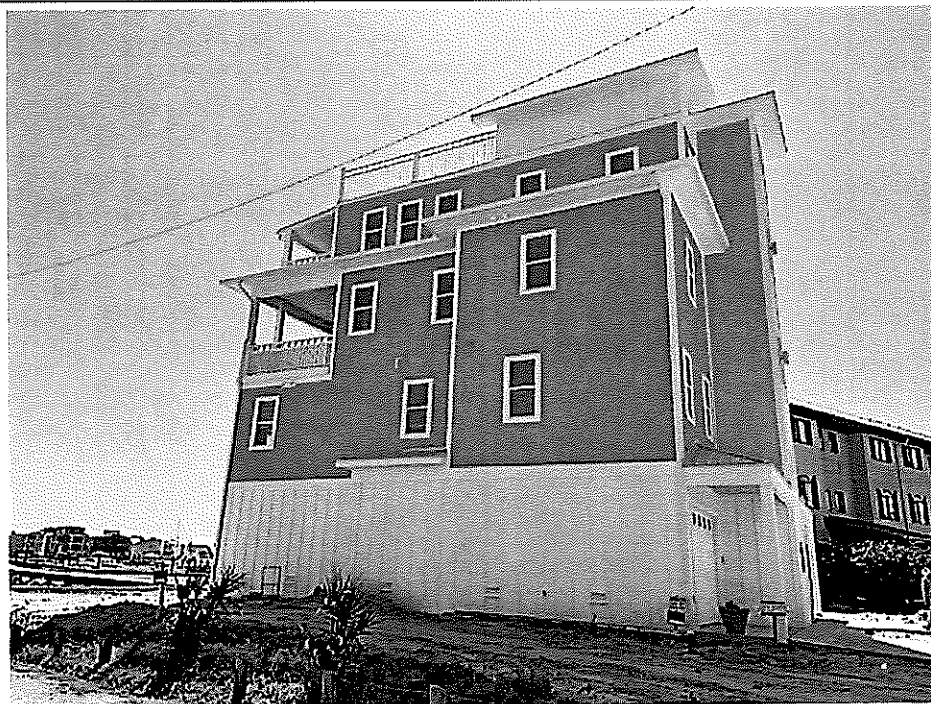


Photo Two

Photo Two Caption

LEFT VIEW

Clear Photo Two

**ELEVATION CERTIFICATE**

**BUILDING PHOTOGRAPHS**

Continuation Page

OMB No. 1660-0008

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If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8.



Photo Three

Photo Three Caption

REAR VIEW

Clear Photo Three



Photo Four

Photo Four Caption

RIGHT VIEW

Clear Photo Four

**DIVISION: 08 00 00—OPENINGS**  
**Section: 08 95 43—Vents/Foundation Flood Vents**

**REPORT HOLDER:**

**CRAWL SPACE DOOR SYSTEMS, INC.**

**EVALUATION SUBJECT:**

**CRAWL SPACE DOOR SYSTEMS FLOOD VENT  
 MODEL #CSBA816  
 CRAWL SPACE STACKED MODELS: #ICCSTACKED2;  
 #ICCSTACKED4  
 FLOOD VENT INSULATED KIT #ICCINSULATED**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2018 and 2015 *International Building Code*®
- 2018 and 2015 *International Residential Code*®

**Properties evaluated:**

- Physical operation
- Water flow
- Weathering

**2.0 USES**

Crawl Space Door Systems flood vents are used to provide for the equalization of hydrostatic flood forces on exterior walls.

**3.0 DESCRIPTIONS**

**3.1 General:**

Crawl Space Door Systems flood vents are engineered mechanically operated flood vents. Upon contact with flood water, the flood vents automatically open and allow flood water to enter and exit enclosed areas. The vents are constructed of general purpose ABS SP-9010 plastic. The Crawl Space Flood Vent Model #CSBA816 has a faux louver with either a solid plastic plate or wire mesh attached to the back of the louver. The louver is dislodged from the vent upon contact with flood waters. See Figure 1 for an illustration of the flood vent Model #CSBA816.

The Flood Vent Insulated Kit Model #ICCINSULATED is constructed of general purpose ABS SP-9010 plastic. The vent frame opening is filled with a 2-inch thick (51 mm) extruded polystyrene Styrofoam™ Brand Scoreboard Foam Insulation Board (ESR-2142). The insulation board is dislodged from the vent upon contact with flood waters,

allowing flood waters to enter and exit enclosed areas. See Figure 2 for an illustration of the Flood Vent Insulated Kit Model #ICCINSULATED.

The Crawl Space Stacked Model #ICCSTACKED2 contains two vertically arranged Crawl Space Flood Vents (Model #CSBA816) in one assembly. The Crawl Space Stacked Model #ICCSTACKED4 contains four Crawl Space Flood Vents (Model #CSBA816) in one assembly, with two sets of side by side flood vents vertically arranged.

**3.2 Engineered Opening:**

The Crawl Space Door Systems static flood vents comply with the design principle noted in Section 2.7.2.2 of ASCE/SEI 24 for a rate of rise and fall of 5 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24-14, the flood vents must be installed in accordance with Section 4.0 of this report.

**3.3 Ventilation:**

The Crawl Space Flood Vent Model #CSBA816 and Crawl Space Stacked Models #ICCSTACKED2 and #ICCSTACKED4 are available covered with metal wire mesh with 0.108 inch by 0.108 inch (2.74 mm by 2.74 mm) openings. The mesh is covered by a faux louver with 11/16 inch (17.5 mm) vertical clearance between each blade. The Crawl Space Flood Vent Model #CSBA816 provides 11 square inches (7097 mm<sup>2</sup>) of net free area to supply natural ventilation when equipped with wire mesh. The Crawl Space Stacked Models #ICCSTACKED2 and #ICCSTACKED4 supply 22 square inches (14,194 mm<sup>2</sup>) and 44 square inches (28,388 mm<sup>2</sup>), respectively, of net free area to supply natural ventilation when equipped with wire mesh. The Crawl Space Flood Vent Model #CSBA816 covered with a solid plastic plate, Crawl Space Stacked Models #ICCSTACKED2 and #ICCSTACKED4 covered with a solid plastic plate, and the Flood Vent Insulated Kit Model #ICCINSULATED do not offer natural ventilation.

**4.0 DESIGN AND INSTALLATION**

The Crawl Space Door Systems flood vents are designed to be installed into walls or doors of existing or new construction from the exterior side. Installation of the vents must be in accordance with the manufacturer's instructions, the applicable code and this report. In order to comply with the engineered opening design principle noted in Sections 2.7.2.2 and 2.7.3 of ASCE/SEI 24-14, the vent must be installed as follows:

- With a minimum of two openings; one on different sides of each enclosed area.

- With a minimum of one vent for the square footage of enclosed area noted in Table 1.
- Below the base flood elevation.
- With the bottom of the vent located a maximum of 12 inches (305 mm) above grade.

**5.0 CONDITIONS OF USE**

The Crawl Space Door Systems flood vents described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The Crawl Space Door Systems flood vents must be installed in accordance with this report, the applicable code and the manufacturer’s published installation instructions. In the event of a conflict, the instructions in this report govern.
- 5.2 The Crawl Space Door Systems flood vents must not be used in the place of “breakaway walls” in coastal high hazard areas but are permitted for use in conjunction with breakaway walls in other areas.
- 5.3 The Crawl Space Door Systems flood vents are manufactured under a quality control system with inspections by ICC-ES.

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated August 2015 (Editorially revised October 2017).

**7.0 IDENTIFICATION**

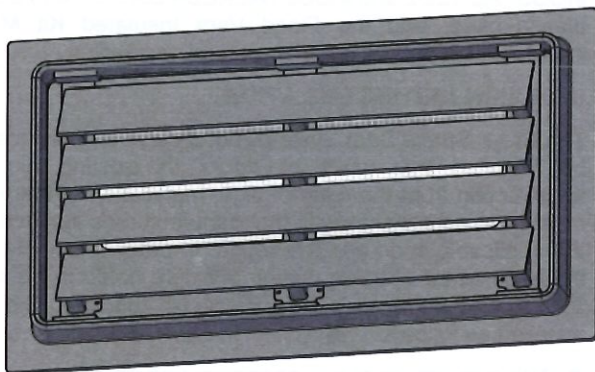
7.1 The Crawl Space Door Systems flood vents recognized in this report must be identified by a label bearing the manufacturer’s name (Crawl Space Door Systems), the model number, and the evaluation report number (ESR-3851).

7.2 The report holder’s contact information is the following:

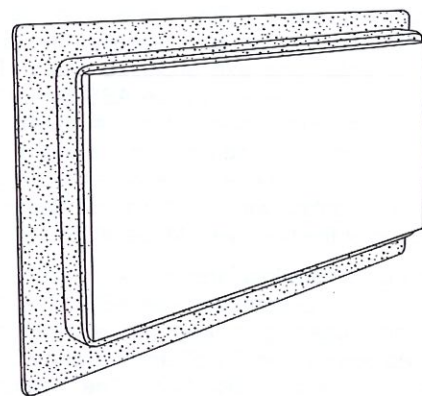
**CRAWL SPACE DOOR SYSTEMS, INC.**  
 3669 SEA GULL BLUFF DRIVE  
 VIRGINIA BEACH, VIRGINIA 23455  
 (757) 363-0005  
[www.crawlspacedoors.com](http://www.crawlspacedoors.com)

**TABLE 1—CRAWL SPACE DOOR SYSTEMS FLOOD VENTS**

MODEL	OVERALL VENT SIZE (Width x Height x Depth) (in)	ROUGH OPENING SIZE (Width x Height) (in)	ENCLOSED AREA COVERAGE (ft <sup>2</sup> )
CSBA816	18 <sup>1</sup> / <sub>4</sub> x 10 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>4</sub>	16 x 8 <sup>1</sup> / <sub>4</sub>	305
ICCINSULATED	18 <sup>1</sup> / <sub>4</sub> x 10 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>4</sub>	15 <sup>3</sup> / <sub>4</sub> x 8	300
ICCSTACKED2	30 x 30 x 2 <sup>3</sup> / <sub>4</sub>	24 x 24	610
ICCSTACKED4	40 <sup>1</sup> / <sub>2</sub> x 24 <sup>3</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>4</sub>	35 <sup>1</sup> / <sub>4</sub> x 19 <sup>1</sup> / <sub>2</sub>	1,220



**FIGURE 1—CRAWL SPACE DOOR SYSTEMS FLOOD VENT**



**FIGURE 2—FLOOD VENT INSULATED KIT**