



# 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 TIMOTHY & VALERIE E. O'NEILL				Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1440 JUPITER ROAD				Company NAIC Number:	
City VENICE		State Florida		ZIP Code 34293	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) LOTS 5120, 5121, 5122, 5123 & 5124, SOUTH VENICE UNIT 20, TAX ID #0457020041, DETACHED GARAGE					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>NON-RESIDENTIAL</u>					
A5. Latitude/Longitude: Lat. <u>27.04204°</u> Long. <u>-82.42352°</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>1A</u>					
A8. For a building with a crawlspace or enclosure(s):					
a) Square footage of crawlspace or enclosure(s) <u>939</u> sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>5</u>					
c) Total net area of flood openings in A8.b <u>640</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>0</u> sq ft					
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade <u>0</u>					
c) Total net area of flood openings in A9.b <u>0</u> sq in					
d) Engineered flood openings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number SARASOTA COUNTY - 125144			B2. County Name SARASOTA		B3. State Florida
B4. Map/Panel Number 12015C-0341	B5. Suffix F	B6. FIRM Index Date 11-04-2016	B7. FIRM Panel Effective/ Revised Date 11-04-2016	B8. Flood Zone(s) AE	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth) 10'
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, 2018

<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. 1440 JUPITER ROAD			Policy Number:	
City VENICE	State Florida	ZIP Code 34293	Company NAIC Number	

## 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: NGS BM#643 EL: 9.45'      Vertical Datum: NAVD1988

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)   | 8.8 | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| b) Top of the next higher floor   | N/A | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| c) Bottom of the lowest horizontal structural member (V Zones only)   | N/A | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| d) Attached garage (top of slab)  | N/A | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| e) Lowest elevation of machinery or equipment servicing the building<br>(Describe type of equipment and location in Comments) | N/A | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| f) Lowest adjacent (finished) grade next to building (LAG)  | 8.4 | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| g) Highest adjacent (finished) grade next to building (HAG)   | 8.6 | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support                                  | N/A | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |

## SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

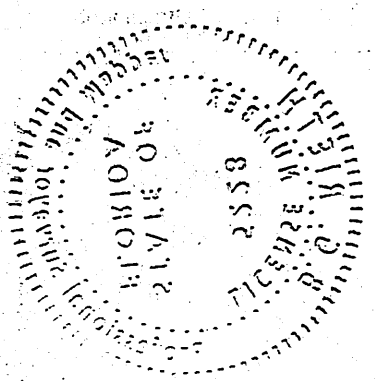
This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable 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 B. GREGORY RIETH	License Number 5228	<p style="font-size: 2em; opacity: 0.5; position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%);">Place Seal Here</p>	
Title PSM/CFM			
Company Name STRAYER SURVEYING AND MAPPING, INC.			
Address 742 SHAMROCK BLVD			
City VENICE	State Florida		ZIP Code 34293
Signature 	Date 01-11-2019	Telephone (941) 497-1290	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)  
 FILE #18-01-29. SECTION A5 WAS DERIVED FROM A HAND HELD G.P.S. UNIT (GPSTEST APP - NO CONVERSION). SUBJECT STRUCTURE HAS 5 VENTS, ENGINEERED FOR 1,025 SQUARE FEET (TOTAL). CERTIFICATE VALID ONLY WITH ORIGINAL SIGNATURE & RAISED SEAL.



# ELEVATION CERTIFICATE

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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.

**ELEVATION CERTIFICATE**

**BUILDING PHOTOGRAPHS**

See Instructions for Item A6.

OMB No. 1660-0008

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City VENICE	State Florida	ZIP Code 34293	Company NAIC Number

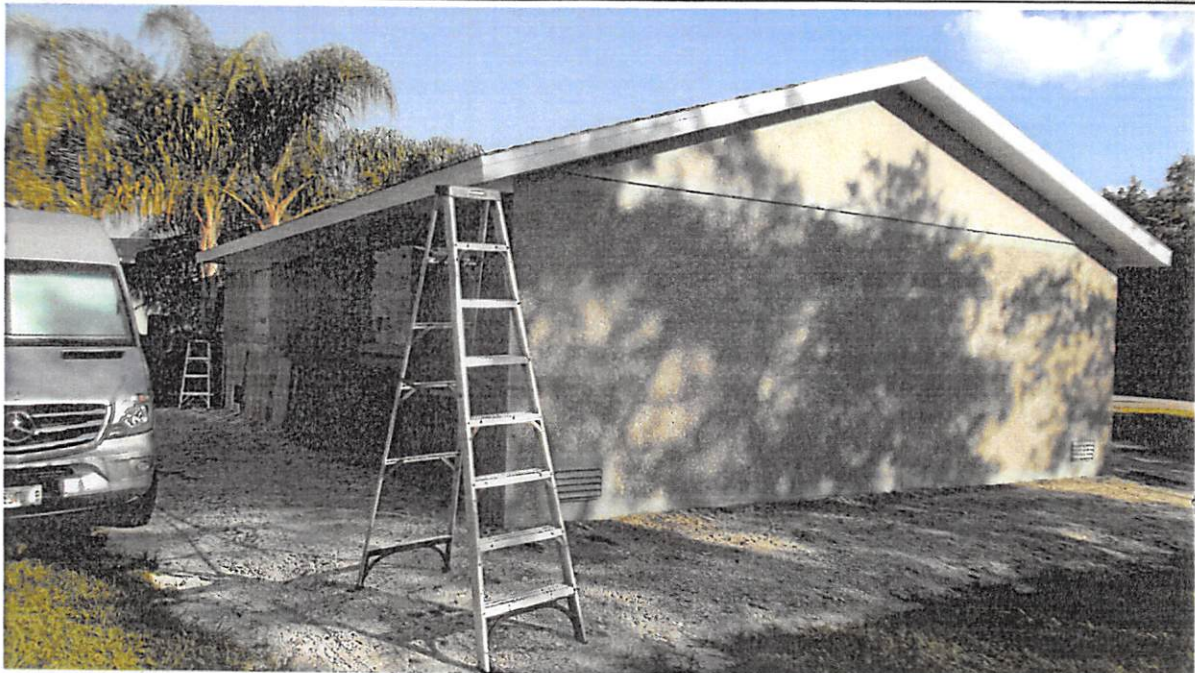
If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, 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.



FRONT VIEW 01/11/2019

Photo One Caption

Clear Photo One



REAR VIEW 01/11/2019

Photo Two Caption

Clear Photo Two

**ELEVATION CERTIFICATE**

**BUILDING PHOTOGRAPHS**

Continuation Page

OMB No. 1660-0008

Expiration Date: November 30, 2018

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>			<b>FOR INSURANCE COMPANY USE</b>
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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.



VENTS 01/11/2019

Photo Three Caption

Clear Photo Three



VENTS 01/11/2019

Photo Four Caption

Clear Photo Four

# Certification of Engineered Flood Openings

In accordance with NFIP, FEMA TB 1-08, and ASCE/SEI 24-05

I hereby certify that the **Crawl Space Door Systems flood vents 816CS, 1220CS, 1232CS, 1616CS, 1624CS, 1632CS, 2032CS, 2424CS, and 2436CS** are designed in accordance with the requirements of the NFIP "Flood Insurance Manual" (2011) to provide automatic equalization of hydrostatic flood forces by allowing for the entry and exit of floodwaters, when properly installed and sized as set forth below. This certification follows the design requirements and specifications established in FEMA Technical Bulletin 1-08, "Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings in Special Flood Hazard Areas", and the ASCE Standard for "Flood Resistant Design and Construction" (ASCE/SEI 24-05). The actual vent opening measurements were determined and certified by Mr. Christopher Mark Loney, Virginia PE No. 029000. Calculations are based on the spreadsheet formulas, and "Review of certification of Engineered Flood Openings, dated January 16, 2012" prepared by Dr. Georg Reichard, Associate Professor of Building Construction, Virginia Tech.

## Design Characteristics

Section 2.6.2.2 of ASCE 24 provides an equation to determine the required net area of engineered openings ( $A_o$ ) for a given enclosed area ( $A_e$ ). This equation is based on the hydraulic formula for the flow rate across sharp edged orifices. I have utilized this equation to calculate 1) the respected flow rate through the individual openings between louvers; 2) the flow rate through the main frame opening in case the louver is blown out during a flood event; and 3) the flow rate of water flowing through louver blades following hydraulic short tube theory. The ultimate maximum total enclosed area ( $A_e$ ) that can be serviced by a single vent has then been determined by utilizing the lowest flow rate of the three assessed scenarios for each vent and is listed in Table 1.

These values are based on the following assumptions:

- In absence of reliable data, the rates of rise and fall have been assumed with 5 feet/hour;
- The (maximum) difference between the exterior and interior floodwater levels has been assumed with 1 foot during base flood conditions;
- A factor of safety of 5 has been assumed, which is consistent with design practices related to protection of life and property;
- The net area of openings ( $A_o$ ) as provided by the manufacturer.

*)	Model	H x W [in]	A <sub>o</sub> [in <sup>2</sup> ]	A <sub>e</sub> [ft <sup>2</sup> ]
<input type="checkbox"/>	816CS	8 x 16	106	205
<input type="checkbox"/>	1220CS	12 x 20	237	500
<input type="checkbox"/>	1232CS	12 x 32	306	645
<input type="checkbox"/>	1616CS	16 x 16	184	395
<input type="checkbox"/>	1624CS	16 x 24	312	670
<input type="checkbox"/>	1632CS	16 x 32	408	835
<input type="checkbox"/>	2032CS	20 x 32	630	1240
<input type="checkbox"/>	2424CS	24 x 24	570	1230
<input type="checkbox"/>	2436CS	24 x 36	852	1765


**Table 1** Maximum total enclosed area ( $A_e$ ) that can be served by each individual model based on the given net area of engineered openings ( $A_o$ )

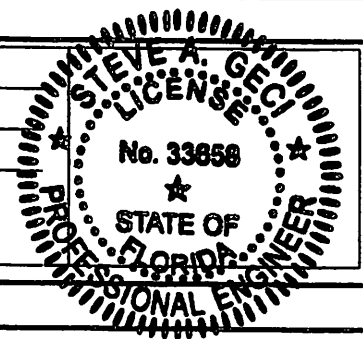
## Installation Requirements and Limitations

This certification will be voided if the following installation requirements and limitations are not enforced:

- There shall be a minimum of two openings on different sides of each enclosed area;
- The bottom of each required opening shall be no more than 1ft above the adjacent ground level;
- No temporary (e.g. during cold weather) or permanent solid cover may be placed into or over the flood vent that would block the automatic entry or exit of floodwaters at any time;
- Where analysis indicates rates of rise and fall greater than 5 ft/hr, the total enclosed area as given in Table 1 shall be reduced accordingly to account for the higher rates of rise and fall.

## Certifying Design Professional

<b>Name, Title</b>	Steve A. Geci, President, Geci & Associates Engineers, Inc.
<b>Address</b>	2950 N 12 <sup>th</sup> Avenue, Pensacola, FL 32503
<b>License</b>	Florida Professional Engineer, License No. 33658
<b>Signature</b>	 10/30/12



## Identification of the Building and Installed Flood Vents (By Others)

The flood vent models marked in Table 1\*) are being installed at the following building:

*Building Address*