

DEPARTMENT OF HOMELAND SECURITY  
**Federal Emergency Management Agency**  
**ELEVATION CERTIFICATE**

OMB Control Number: 1660-0008  
 Expiration: 11/30/2018

**IMPORTANT: FOLLOW THE INSTRUCTIONS ON PAGES 9-16**

*Copy all data from this Elevation Certificate and attach it to all attachments for (1) community official, (2) insurance agent/contractor, and (3) building owner.*

**SECTION A - PROPERTY INFORMATION**

A1. Building Owner's Name  
**STEIN BUILDERS** Policy Number: \_\_\_\_\_

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg No.) or P.O. Route and Box No.  
**494 YELLOWBIRD STREET** Company NAIC Number: \_\_\_\_\_

City **MARCO ISLAND** State **FL** Zip Code **34145**

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)  
**LOT 14, BLOCK 19, MARCO BEACH UNIT 1**

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

A5. Latitude/Longitude: Lat **25.949918** Long **-81.718581** Horizontal Datum:  NAD 1927  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 **1b**

A8. For a building with a crawlspace or enclosure(s)  
 a) Square footage of crawlspace or enclosure(s) **N/A** sq ft  
 b) Number of permanent flood openings in the crawlspace or enclosure(s) within 10 foot above adjacent grade \_\_\_\_\_  
 c) Total net area of flood openings in A8 b) **N/A** sq in **3**  
 d) Engineered flood openings?  No  Yes  No

A9. For a building with an attached garage:  
 a) Square footage of attached garage **513** sq ft  
 b) Number of permanent flood openings in the attached garage within 10 foot above adjacent grade \_\_\_\_\_  
 c) Total net area of flood openings in A9 b) **318** sq in  
 d) Engineered flood openings?  Yes  No

**SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION**

B1. NFIP Community Name & Community Number **COLLIER COUNTY - 120067** B2. County Name **COLLIER** B3. State **FL**

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO use base flood depth)
12021C - 0829	H	5/16/2012	5/16/2012	AE	8.0

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/Source \_\_\_\_\_

B11. Indicate elevation datum used for BFE in Item B9:  NGVD 1929  NAVD 1988  Other/Source \_\_\_\_\_

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

C2. Elevations - Zones A1 - A30, AE, AH, A (with BFE), VE, V1 - V30, V (with BFE), AR, ARIA, 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

A new Elevation Certificate will be required when construction of the building is complete

Benchmark Utilized: **COL 15** Vertical Datum **2.58'**

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

a) Top of bottom floor (including basement, crawlspace, or enclosure floor) **9.1** feet  feet  meters  
 b) Top of the next higher floor **N/A**: feet  feet  meters  
 c) Bottom of the lowest horizontal structural member (V zones only) **N/A**: feet  feet  meters  
 d) Attached garage (top of slab) **7.5** feet  feet  meters  
 e) Lowest elevation of machinery of equipment servicing the building **9.1** feet  feet  meters  
 f) Lowest adjacent (finished) grade next to building (LAG) **7.3** feet  feet  meters  
 g) Highest adjacent (finished) grade next to building (HAG) **7.6** feet  feet  meters  
 h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support **7.2** feet  feet  meters


# ELEVATION CERTIFICATE

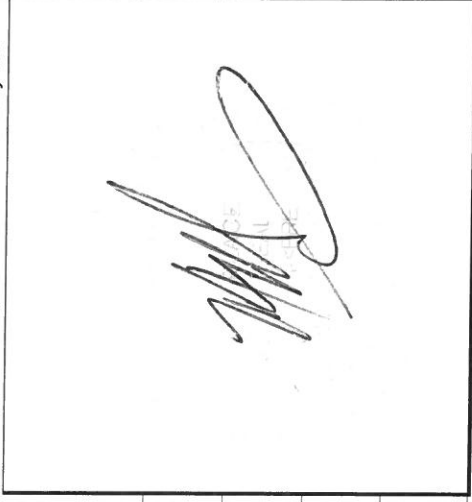
OMB Control Number: 1660-0008  
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## SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

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.

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

Certifier's Name <b>WILLIAM A. MACRIDES</b>		License Number <b>PLS 5621</b>	
Title <b>PROFESSIONAL LAND SURVEYOR</b>		Company Name <b>NAPLES LAND SURVEYS</b>	
Address <b>6101 LANCEWOOD WAY</b>	City <b>NAPLES</b>	State <b>FL</b>	Zip Code <b>34116</b>
Signature 	Date <b>5/12/16</b>	Telephone <b>239-353-9300</b>	



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

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

**CENTERLINE ELEV = 5.6' NAVD**

**POOL EQUIPT = 8.2' NAVD**

**C2e = IS THE AC OUTSIDE THE RESIDENCE**

**FLOOD VENT INFO: CRAWL SPACE DOOR SYSTEMS INC, MODEL 816CS RATED AT 106 SQ IN PER 205 SQ FT (SEE ATTACHED ENGINEERED CERTIFICATE)**

Signature  Date **5/12/16**

## 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.

E.1 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 HAG
- E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A items 8 and/or 9 (see pages 8-9 of instruction), 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			

**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 G 8-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	15-7487	G5. Date Permit Issued	G6. Date Certificate of Compliance/Occupancy Issued
G7. This permit has been issued for: <input type="checkbox"/> New Construction <input type="checkbox"/> Substantial Improvement			
G8. Elevation of as-built lowest floor (including basement) of the building: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____			
G9. BFE or (in Zone AO) depth of flooding at the building site: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____			
G10. Community's design flood elevation: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____			

Local Official's Name	Kelli Defedericis	Title	Floodplain Coordinator
Community Name	City of Marco Island.	Telephone	
Signature		Date	5-17-14

Comments  
Each vent covers 200 sq feet.

# BUILDING PHOTOGRAPHS

OMB Control Number: 1660-0008  
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See instructions for Item A6

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>	
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. <b>494 YELLOWBIRD STREET</b>	
City <b>NAPLES</b>	State FL Zip Code <b>34145</b>
FOR INSURANCE COMPANY USE	
Policy Number:	
Company NAIC Number:	

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"; "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



LEFT



REAR



RIGHT

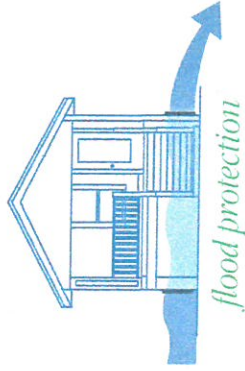


# Plastic – No Rust or Rot Crawlspace Flood Vent for Homes (New Construction & Replacement)

*Easy Access • Modular Use • Can Be Painted*

## Flood Vent (No Cover)

One-piece ventplate with easy to insert vermin screen and fixed louver. Made of durable PVC/ABS plastic (no rust or rot) with a UV retardant treatment. FEMA compliant, engineered certified. No cover to allow the automatic entry and exit of floodwaters. Quick and easy to install.



	MODEL	HxW (m)	Net Area (m <sup>2</sup> )	Enclosed Area (ft <sup>2</sup> )
<input checked="" type="checkbox"/>	816CS	8 X 16	105	205
<input type="checkbox"/>	1220CS	12 X 20	235	500
<input type="checkbox"/>	1232CS	12 X 32	305	645
<input type="checkbox"/>	1616CS	16 X 16	180	395
<input type="checkbox"/>	1624CS	16 X 24	310	670
<input type="checkbox"/>	1632CS	16 X 32	405	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	850	1765



**Crawl Space  
Door Systems**  
® I N C O R P O R A T E D

*Crawlspace Doors & Vents  
Crawlspace Lowerers/Screens  
Engineered FEMA Flood Vents*

## 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. 0790000. 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.

- 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.

### 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. curing 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.

Model	H x W (in)	$A_o$ (in <sup>2</sup> )	$A_e$ (ft <sup>2</sup> )
816CS	8 x 16	136	205
1220CS	12 x 20	237	500
1232CS	12 x 32	306	645
1616CS	16 x 16	184	395
1624CS	16 x 24	312	670
1632CS	16 x 32	478	835
2032CS	20 x 32	630	1240
2424CS	24 x 24	570	1230
2436CS	24 x 36	852	1765

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

### Certifying Design Professional

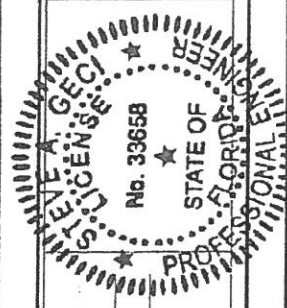
Name, Title Steve A. Geci, President, Geci & Associates Engineers, Inc.

Address 2950 N 12<sup>th</sup> Avenue, Pensacola, FL 32503

License Florida Professional Engineer, License No. 33658

Signature

*Steve A. Geci* 10/30/12



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

The flood vent models marked in Table 1<sup>(\*)</sup> are being installed at the following building:

Building Address