

113/19  
**RECEIVED**  
 OMB No. 1660-0008  
 Expiration Date: November 30, 2018

**JUL 25 2016**

# 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 Jim Silva				Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 108 N. 35th Ave.				Company NAIC Number:	
City BOROUGH OF LONGPORT		State New Jersey		ZIP Code 08403	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Block 113 Lot 19					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>RESIDENTIAL</u>					
A5. Latitude/Longitude: Lat. N <u>39.3211</u> Long. W <u>074.5208</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>7</u>					
A8. For a building with a crawlspace or enclosure(s):					
a) Square footage of crawlspace or enclosure(s) <u>1,129</u> sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>6</u>					
c) Total net area of flood openings in A8.b <u>1,225</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 BOROUGH OF LONGPORT & 345302			B2. County Name ATLANTIC COUNTY		B3. State New Jersey
B4. Map/Panel Number 345302/0001	B5. Suffix B	B6. FIRM Index Date 08/15/1983	B7. FIRM Panel Effective/ Revised Date 08/15/1983	B8. Flood Zone(s) A8**	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 checked="" type="checkbox"/> NGVD 1929 <input 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					

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<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. 108 N. 35th Ave.			Policy Number:
City BOROUGH OF LONGPORT	State New Jersey	ZIP Code 08403	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: private Vertical Datum: NGVD29

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) 7.5  feet  meters
- b) Top of the next higher floor 16.0  feet  meters
- c) Bottom of the lowest horizontal structural member (V Zones only) N/A  feet  meters
- d) Attached garage (top of slab) N/A  feet  meters
- e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) 11.5  feet  meters
- f) Lowest adjacent (finished) grade next to building (LAG) 7.3  feet  meters
- g) Highest adjacent (finished) grade next to building (HAG) 7.6  feet  meters
- h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support 7.1  feet  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 Paul M. Koelling, PLS, CFM	License Number NJ24GS 04328800
Title Licensed Land Surveyor	
Company Name Paul Koelling & Associates, LLC NJ C.O.A. No. 24GA28256300	
Address 2161 Shore Road	
City Linwood	State New Jersey
	ZIP Code 08221

Place  
Seal  
Here

Signature  Date 07/08/2016 Telephone (609) 927-0279

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)  
 \*A8b.) Dwelling has 1 Smart Vents Model #1540-510 engineered for 200 square inches of net area each and 5 Crawl Space Door Systems Flood Vents Model #816CS engineered for 205 square inches of net area each  
 \*\*B8 & B9.) FEMA Pre-FIRM Zone "AE".....Base Flood Elevation 9 ft. (NAVD88) converted = 10.3 ft. (NGVD29)  
 \*\*\*C2a.) enclosure  
 \*\*\*\*C2e.) exterior air unit elev 14.4, ductwork elev. 13.1, water heater elev. 13.1, electrical outlet elev. 11.5

# Building Photographs

See Instructions for Item A6.

For Insurance Company Use:

Building Street Address (including Apt., Unit, Suite, and/or Bldg.) No. or P.O. Route and Box No.  
**108 N. 35<sup>th</sup> Ave.**

Policy Number

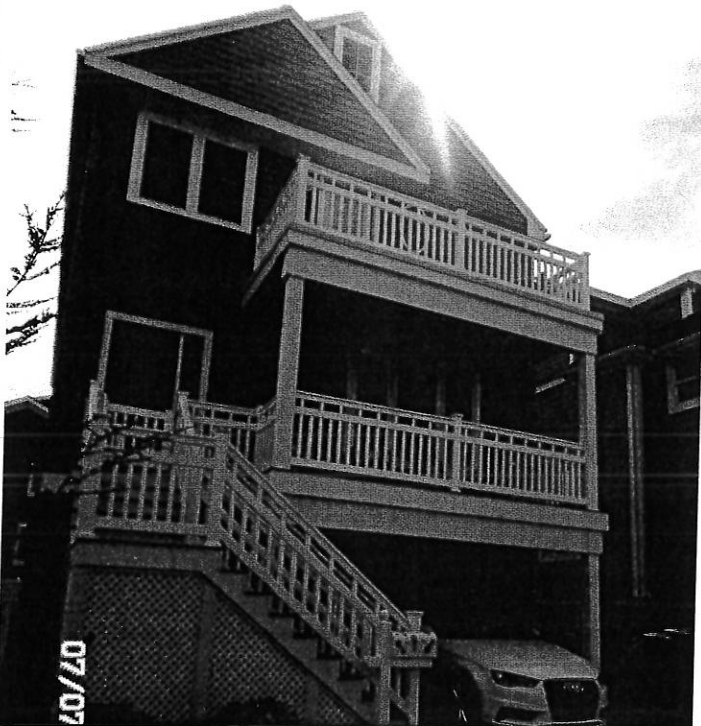
City  
**Longport**

State  
**NJ**

ZIP Code  
**08403**

Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least two 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." If submitting more photographs than will fit on this page, use the Continuation Page on the reverse.



View – Date of Photograph: (See Photo Stamp)

# 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).

## 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]	$A_o$ [in <sup>2</sup> ]	$A_e$ [ft <sup>2</sup> ]
<input 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

## 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.

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

## Identification of the Building and Installed Flood Vents

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

Building Address

## Certifying Design Professional

Name	WILLIAM S. SWIDERSKI, P.E.
Title	ENGINEER
Address	599 SHORE ROAD, SOMERS POINT, NJ 08244
Type of License	PROFESSIONAL ENGINEER
License #	20482
Issuing State	NEW JERSEY

*William S. Swiderski*  
 Signature  
 7/24/12

