### U.S. DEPARTMENT OF HOMELAND SECURITY Federal Emergency Management Agency National Flood Insurance Program

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OMB No. 1660-0008 Expiration Date: November 30, 2018

# **ELEVATION CERTIFICATE**

Important: Follow the instructions on pages 1-9.

A1. Building Owner's Name	SECTION A - PROPERTY INFORMATION					
MARTHA ANN TIMMONS AND MAP		Policy Num	ber:			
A2. Building Street Address (includir Box No. 309 12TH AVENUE	ng Apt., Unit, Suite	, and/or	Bldg. No.) or P.O.	Route and	Company N	AIC Number:
City			State		ZIP Code	- 118 - 27, 11 - 1
INDIAN ROCKS BEACH Florida					33785	
A3. Property Description (Lot and B LOT 31, BLOCK 86, FIRST ADD'N.	lock Numbers, Tax TO RE-REVISED I	Parcel	Number, Legal De F INDIAN BEACH S	scription, etc.) SUB'N.	***	
A4. Building Use (e.g., Residential,	Non-Residential, A	ddition,	Accessory, etc.)	RESIDENTIAL		
A5. Latitude/Longitude: Lat. 27.895	548 L	_ong, -8	2.84442	Horizontal Datur	n: 🗌 NAD 1	1927 🕅 NAD 1983
A6. Attach at least 2 photographs of	the building if the	Certific	ate is being used to	o obtain flood insur	ance.	
A7. Building Diagram Number	7					
A8. For a building with a crawlspace	or enclosure(s)					
a) Square footage of crawlspac	e or enclosure(s)	1	1,500 sq ft			
b) Number of permanent flood (	penings in the cra	wispace	e or enclosure(s) w	ithin 1.0 foot above	e adjacent gr	ade 8
c) Total net area of flood openir	ngs in A8.b 1,64	40 s	g in			
d) Engineered flood openings?		>				
AQ. For a building with an attached (	36369					
As. For a building with an attached g	jarage.					
a) Square rootage of attached g	jarage <u> </u>	'	sqπ		1947 (1947 <b>-</b> 1947	
<li>b) Number of permanent flood (</li>	openings in the atta	ached g	jarage within 1.0 to	ot above adjacent	grade	0
<ul> <li>c) Total net area of flood openir</li> </ul>	ngs in A9.b	0	sq in			
d) Engineered flood openings?	🗌 Yes 🔀 N	0				
SECTION	ON B - FLOOD IN	ISURA	NCE RATE MAP	(FIRM) INFORMA	TION	and the first
	nunity Number		82. County Name			
B1. NFIP Community Name & Comm INDIAN ROCKS BEACH 1:	25117		PINELLAS			B3. State Florida
B1. NFIP Community Name &	25117 6. FIRM Index Date V18/2009	B7. FI Ef R0 09/03	PINELLAS IRM Panel fective/ evised Date /2003	B8. Flood Zone(s AE	) B9. Bas (Zo Floo	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10'
B1. NFIP Community Name &	25117 6. FIRM Index Date v18/2009 e Flood Elevation (	B7. FI Ef 09/03 BFE) da	PINELLAS RM Panel fective/ avised Date /2003	B8. Flood Zone(s AE	) B9. Bas (Zo Floo	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10'
B1. NFIP Community Name & B5. Suffix & B6         B4. Map/Panel       B5. Suffix       B6         12103CO113       G       08         B10. Indicate the source of the Base       D FIS Profile [X] FIRM       C	25117 6. FIRM Index Date V18/2009 Flood Elevation ( Community Determ	B7. Fl Ef 09/03 BFE) da	PINELLAS RM Panel fective/ evised Date /2003 ata or base flood de Other/Source:	B8. Flood Zone(s AE epth entered in Iter	) B9. Bae (Zo Floo	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10'
B1. NFIP Community Name & B5. Suffix & B6         B4. Map/Panel Name & B5. Suffix Number       B5. Suffix & B6         12103CO113       G       08         B10. Indicate the source of the Base       D FIS Profile X FIRM D C         B11. Indicate elevation datum used       B11. Indicate elevation datum used	25117 5. FIRM Index Date V18/2009 Flood Elevation ( Community Determ for BFE in Item B9	B7 FI Ef 09/03 BFE) da ined [	PINELLAS RM Panel fective/ evised Date /2003 ata or base flood de ] Other/Source: GVD 1929 X NA	B8. Flood Zone(s AE epth entered in iter	) B9. Bas (Zo) Floo n B9: ther/Source:	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10'
B1. NFIP Community Name & Suffix       11         B4. Map/Panel       B5. Suffix       B6         B4. Map/Panel       B5. Suffix       B6         12103CO113       G       08         B10. Indicate the source of the Base       Indicate the source of the Base         Image: FIS Profile       FIRM       Image: G         B11. Indicate elevation datum used       B12. Is the building located in a Coardian context of the building located in a C	25117 3. FIRM Index Date V18/2009 Flood Elevation ( Community Determ for BFE in Item B9 astal Barrier Resou	B7. Fl Ef R( 09/03. BFE) da ined [ : ] N rces Sy	PINELLAS RM Panel fective/ avised Date /2003 ata or base flood de ] Other/Source: GVD 1929 X NA vstem (CBRS) area	B8. Flood Zone(s AE epth entered in Iter VD 1988 0 01	b) B9. Bas (Zo) Floo Floo h B9: ther/Source: ected Area ((	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10' 10'
B1. NFIP Community Name & B5. Suffix       B4. Map/Panel       1         B4. Map/Panel       B5. Suffix       B6       D6         B4. Map/Panel       B5. Suffix       B6         12103CO113       G       08         B10. Indicate the source of the Base       □       FIRM       08         B10. Indicate the source of the Base       □       FIRM       0         B11. Indicate elevation datum used       B12. Is the building located in a Coard Designation Date:	25117 3. FIRM Index Date V18/2009 Flood Elevation ( Community Determ for BFE in Item B9 astal Barrier Resou	B7. Fl Ef R0 09/03 BFE) da ined [ : ] N rces Sy CBRS	PINELLAS RM Panel fective/ evised Date /2003 ata or base flood de ] Other/Source: GVD 1929 X NA rstem (CBRS) area ] OPA	B8. Flood Zone(s AE epth entered in Iter AVD 1988 [] Of or Otherwise Prote	) B9. Bas (Zo) Floo n B9: ther/Source: ected Area ((	B3. State Florida se Flood Elevation(s) ne AO, use Base od Depth) 10'

ELEVATION CERTIFICATE			C	OMB No. 1660-0008 Expiration Date: November 30, 2018	
IMPORTANT: In these spaces, copy the		FOR INSURANCE COMPANY USE			
Building Street Address (including Apt., U 309 12TH AVENUE	nit, Suite, and/or Bldg. No.) o	r P.O. Route and Box	No.	Policy Number:	
City INDIAN ROCKS BEACH	State Florida	e ZIP Code da 33785		Company NAIC Number	
SECTION C -	BUILDING ELEVATION IN	FORMATION (SUR	VEY RE	QUIRED)	
C1. Building alovations are based on:	Construction Drawings*	Building Linder	Construc	tion* X Finished Construction	
*A new Elevations are based on. *C2. Elevations – Zones A1–A30, AE, A	required when construction of H, A (with BFE), VE, V1–V30,	f the building is complete, V (with BFE), AR, AR	ete. /A, AR/A	E, AR/A1-A30, AR/AH, AR/AO.	
Benchmark Utilized: SEE COMME	NTS Vertic	cal Datum: NAVD 1988	n Fuerto }	Nico only, enter meters.	
Indicate elevation datum used for th	e elevations in items a) throu	igh h) below.	÷		
🗌 NGVD 1929 🔀 NAVD 1	988 🗍 Other/Source:				
Datum used for building elevations	must be the same as that use	ed for the BFE.		Check the measurement used	
a). Top of bottom floor (including ba	sement crawlenace or encir	nsure floor)	2	S feet □ meters	
b). Top of the part higher fleer	asement, ubmopace, or enor	15	5.7	∑ feet □ meters	
b) Top of the lewest herizontal		N/A	· <u> </u>		
<ul> <li>c) Bottom of the lowest honzontal s</li> <li>d) Attached garage (top of clab)</li> </ul>	structural member (v Zones o	oniy) <u> </u>	·	X teet meters	
d) Allached galage (lop of slab)			. <u>-                                    </u>		
e) Lowest elevation of machinery of (Describe type of equipment and	or equipment servicing the build location in Comments)	liding	· · · ·	XI teet meters	
f) Lowest adjacent (finished) grad	e next to building (LAG)		<u>. 0</u>	X feet 🔲 meters	
g) Highest adjacent (finished) grad	le next to building (HAG)		ł. <u>2</u>	X feet 🔲 meters	
<ul> <li>h) Lowest adjacent grade at lowes structural support</li> </ul>	t elevation of deck or stairs, ir	ncluding3	<u> </u>	X feet meters	
SECTION D	- SURVEYOR, ENGINEER	R, OR ARCHITECT C	ERTIFIC	CATION	
This certification is to be signed and sea I certify that the information on this Cert statement may be punishable by fine or	iled by a land surveyor, engin ficate represents my best effo imprisonment under 18 U.S.	eer, or architect autho orts to interpret the data Code, Section 1001.	rized by I a availab	aw to certify elevation information. Ne. I understand that any false	
Were latitude and longitude in Section A	provided by a licensed land	surveyor? 🛛 Yes [	No	Check here if attachments.	
Certifier's Name DAVID C. HARNER	License Ni 2650	umber			
Title PROFESSIONAL LAND SURVEYOR A	ND MAPPER				
Company Name DAVID C. HARNER				Place Seal	
Address 9925 GULF BOULEVARD				Here	
City TREASURE ISLAND	State Florida	ZIP Code 33706		06/15/2018	
Signature	Date 06/15/201	Telephone 8 (727) 360-	-0636	•	
Copy all pages of this Elevation Certificate	and all attachments for (1) co	mmunity official, (2) ins	urance ag	gent/company, and (3) building owner.	
Comments (Including type of equipment A8d: CRAWL SPACE DOOR SYSTEM: FLOOR. C2d: INCLUDED IN ENCLOSI 4.36' ON PINELLAS COUNTY BENCHN HOUSE.	and location, per C2(e), if ap S MODEL 816CS C2a: GRO JRE AREA. BOTTOM OF EL IARK #176, "HALL J". PID N	plicable) UND FLOOR ENCLOS EVATOR SHAFT ELE IO. AGO560. C2e: A/I	SURE. C VATION C COMP	25: LOWEST LIVING AREA =3.5'. BENCHMARK ELEVATION= RESSORS ON WEST SIDE OF	
SPECIAL PURPOSE SURVEY. A5: PE NOT VALID WITHOUT THE SIGNATUR	R GOOGLE MAPS. PAGES ( RE AND THE ORIGINAL RAIS	3 AND 4 ARE NOT AP SED SEAL OF A FLOR	PLICABL NDA LICI	-E. ENSED SURVEYOR & MAPPER.	
FEMA Form 086-0-33 (7/15)	Replaces all prev	vious editions.		Form Page 2 of t	

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Doliny Number	MPORTANT: In these spaces, copy the corresponding information from Section A.			
	or P.O. Route and Box No.	hit, Suite, and/or Bldg. No.)	Building Street Address (including Apt., Unit, 3 309 12TH AVENUE	
Company NAIC Number	ZIP Code 33785	State Florida	City INDIAN ROCKS BEACH	
OT REQUIRED)	ORMATION (SURVEY NO	JILDING ELEVATION IN FOR ZONE AO AND ZO	SECTION E - BUIL	
ort a LOMA or LOMR-F request, urement used. In Puerto Rico only,	tificate is intended to suppor available. Check the measu	lete Items E1E5. If the Ce E1E4, use natural grade, i	For Zones AO and A (without BFE), complete complete Sections A, B, and C. For Items E1-	
ther the elevation is above or below	ropriate boxes to show whet (LAG).	ollowing and check the app the lowest adjacent grade	<ol> <li>Provide elevation information for the follo the highest adjacent grade (HAG) and th a) Top of bottom floor (including basement)</li> </ol>	
eters above or below the I			crawlspace, or enclosure) is b) Top of bottom floor (including baseme	
eters above or below the i	feet me	anent flood openings provi	crawlspace, or enclosure) is E2 For Building Diagrams 6–9 with permane	
eters above or below the I	[] feet [] me	n 	the next higher floor (elevation C2.b in the diagrams) of the building is	
eters above or below the H	feet [] me		E3. Attached garage (top of slab) is	
eters above or below the l	[] feet [] me	aquipment	E4. Top of platform of machinery and/or equi servicing the building is	
accordance with the community's ust certify this information in Section	the bottom floor elevated in nown. The local official must	er is available, is the top o	E5. Zone AO only: If no flood depth number i floodplain management ordinance?	
CERTIFICATION	ER'S REPRESENTATIVE)	PERTY OWNER (OR OW	SECTION F - PROPE	
State ZIP Code	City	presentative's Name	Property Owner or Owner's Authorized Repre	
Telephone	Date		Signature	
			Comments	

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			Expiration trate, November 30, a
IMPORTANT: In these spaces, copy t	he corresponding information	on from Section A.	FOR INSURANCE COMPANY
Building Street Address (including Apt., 309 12TH AVENUE	, Unit, Suite, and/or Bldg. No.)	or P.O. Route and Bo	k No. Policy Number:
City INDIAN ROCKS BEACH	State Florida	ZIP Code 33785	Company NAIC Number
i in a state	SECTION G - COMMUNITY	INFORMATION (OPTI	IONAL)
The local official who is authorized by I Sections A, B, C (or E), and G of this E used in Items G8G10. In Puerto Rico	aw or ordinance to administer levation Certificate. Complete only, enter meters.	the community's flood the applicable item(s)	plain management ordinance can comple and sign below. Check the measurement
G1. The information in Section C engineer, or architect who is data in the Comments area to	was taken from other docume authorized by law to certify ele below.)	entation that has been s evation information. (In	signed and sealed by a licensed surveyor dicate the source and date of the elevatio
G2. A community official complet or Zone AO.	ed Section E for a building loc	ated in Zone A (withou	t a FEMA-issued or community-issued BI
G3. The following information (Ite	ems G4–G10) is provided for c	community floodplain m	anagement purposes.
G4. Permit Number	G5. Date Permit Iss	sued	G6. Date Certificate of Compliance/Occupancy Issued
G7. This permit has been issued for:	New Construction	☐ Substantial Improve	ment
G8. Elevation of as-built lowest floor ( of the building:	including basement)		🗋 feet 🔲 meters Datum
G9. BFE or (in Zone AO) depth of floo	oding at the building site:		feetmeters
G10. Community's design flood elevati	on:		feet meters
Local Official's Name		Title	· · · · · · · · · · · · · · · · · · ·
Community Name		Telephone	
Signature		Date	
Comments (including type of equipment	t and location per C2(e) if an	nlicable)	· · · · · · · · · · · · · · · · · · ·
		producy	
			Check here if attachme

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## BUILDING PHOTOGRAPHS

OMB No. 1660-0008 Expiration Date: November 30, 2018

000 1130 0000		Expiration Date. November 50, 2016			
IMPORTANT: In these spaces, copy the corresponding information from Section A.					
it, Suite, and/or Bldg. No.)	or P.O. Route and Box No.	Policy Number:			
State	ZIP Code	Company NAIC Number			
Florida	33785				
	corresponding information it, Suite, and/or Bldg. No.) State Florida	corresponding information from Section A.         iit, Suite, and/or Bldg. No.) or P.O. Route and Box No.         State       ZIP Code         Florida       33785			

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 Two Caption REAR VIEW 06/15/2018

CI CUATION ACOTICIOATE

Photo Two

#### **BUILDING PHOTOGRAPHS** Continuation Page

OMB No. 1660-0008 Expiration Date: November 30, 2018

	EVATION CERTIFICATE Continuation Page				
IMPORTANT: In these spaces, copy the corresponding information from Section A.					
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 309 12TH AVENUE					
State	ZIP Code	Company NAIC Number			
Florida	33785				
	ding information nd/or Bidg. No.) State Florida	ding information from Section A.         nd/or Bidg. No.) or P.O. Route and Box No.         State       ZIP Code         Florida       33785			

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 One

Photo One Caption TYPICAL FLOOD OPENINGS 06/15/2018

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Photo Two

Photo Two Caption N/A

FEMA Form 086-0-33 (7/15)

### 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 <u>net area</u> of engineered openings  $(A_o)$  for a given <u>enclosed</u> <u>area</u>  $(A_e)$ . 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<sub>o</sub>) 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;

*)	Model	H x W [in]	A <sub>o</sub> (in <sup>2</sup> )	A <sub>e</sub> (ft <sup>2</sup> ]
8	816CS	8 x 16	106	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	408	835
	2032CS	20 x 32	630	1240
	2424CS	24 x 24	570	1230
	2436CS	24 x 36	852	1765

Table 1 Maximum total <u>enclosed area</u> (A<sub>e</sub>) that can be served by each individual model based on the given <u>net area</u> of engineered openings (A<sub>o</sub>)

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- 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**

Name, Title Steve A. Geci, President, Geci & Associates Engineers, Inc.	NEVEN GAM
Address 2950 N 12th Avenue, Pensacola, FL 32503	S. JCENSK.C.
License Florida Professional Engineer, License No. 33658	No. 33658 * E
signature	STATE OF
dentification of the Building and Installed Flood Vents (By Others)	ONAL ENIN
The flood vent models marked in Table 1*) are being installed at the following building:	
Ruilding Address	