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

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

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.

		ION A - PROPERTY	INFORM	MATION	And the second s	FOR INSUF	RANCE COMPANY USE
A1. Building Own		11			1 11 5 (11 7 1 7 4 7 4 7 4 7 4 7 4 7 4 7 4 7 4	Policy Numl	per:
Carla L. Krysalka	_		1/	mid- M-V	HW #EL45434FI	VL	***************************************
Box No. 2479 Harbour Lan	•	luding Apt., Unit, Suite	e, and/or	Blag. No.) or	P.O. Route and	Company N	AIC Number:
City				State		ZIP Code	
Sanibel				Florida		33957	
' '		nd Block Numbers, Ta ega, Unit 3, City of Sa					60
A4. Building Use	(e.g., Residen	tial, Non-Residential, A	Addition,	Accessory, e	tc.) Residential		
A5. Latitude/Long	itude: Lat. 26	6°28'47.8"	Long. 08	32°10'32.7"	Horizontal [Datum: NAD 1	1927 × NAD 1983
A6. Attach at leas	it 2 photograpi	ns of the building if the	e Certifica	ate is being u	sed to obtain flood	insurance.	
A7. Building Diag	ram Number	6					
A8. For a building	with a crawls	pace or enclosure(s):					
a) Square fo	otage of crawls	space or enclosure(s)		1	185.60 sq ft		
b) Number of	permanent flo	od openings in the cra	wlspace	or enclosure	(s) within 1.0 foot a	bove adjacent gra	ade 6
c) Total net a	rea of flood op	enings in A8.b		630.00 sq in			800
d) Engineere	d flood openin	gs? 🗵 Yes 🗌 N	lo				
A9. For a building							
	otage of attach			N/A sq ft			
	_	ood openings in the att	ached o	arage within	L0 foot above adiad	cent grade N/A	
		penings in A9.b	J	N/A sq			
•	d flood openin		lo.				
d) Engineere	а пооа орени	gs? 🗌 Yes 🗓 N	4 O				
anne es ta a anticipat de anti	SE	ECTION B - FLOOD I	NSURA	NCE RATE	MAP (FIRM) INFO	RMATION	and the second s
B1. NFIP Commu	nity Name & C	Community Number	Maaring,	B2. County	Name	aaaaaaaaaa≥***aaaaaaaaa≥****aaaaaaaa∞********	B3. State
City of Sanibel 1	20402			Lee			Florida
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	Effe	RM Panel ective/ vised Date	B8. Flood Zone(s)	B9. Base Flood E (Zone AO, us	Elevation(s) se Base Flood Depth)
12071C0506	F	12-07-2018	08-28-2		AE	10'	
R10 Indicate the	source of the	Base Flood Elevation	(BEE) d	ata or base fl	ood denth entered i	n Item B9	
		Community Deter					
B11. Indicate ele	vation datum	used for BFE in Item E	39: 🗌 N	IGVD 1929	⊠ NAVD 1988 [Other/Source:	
B12. Is the build	ing located in	a Coastal Barrier Reso	ources S	ystem (CBRS	s) area or Otherwise	e Protected Area (OPA)? ☐ Yes 区 No
Designatio	n Date:		CBRS	OPA			
	<u></u>						
1							

ELEVATION CERTIFICATE

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

IMPORTANT: In these spaces, copy the corresponding in	nformation from Secti	on A.	FOR IN	ISURANCE	COMPANY USE
2479 Harbour Lane				Policy Number:	
City State Sanibel Florid	ZIP C a 33957	1	Compa	ny NAIC N	umber
SECTION C - BUILDING ELE	VATION INFORMATI	ON (SURVEY RE	QUIRE	D)	
C1. Building elevations are based on: Construction *A new Elevation Certificate will be required when cor C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), V Complete Items C2.a–h below according to the building Benchmark Utilized: NGS BENCHMARK X-242	estruction of the building E, V1–V30, V (with BF ag diagram specified in Vertical Datum: N	E), AR, AR/A, AR/. Item A7. In Puerto IAVD 88	AE, AR/	'A1-A30, A	
Indicate elevation datum used for the elevations in ite					
□ NGVD 1929 ☒ NAVD 1988 □ Other/So Datum used for building elevations must be the same a) Top of bottom floor (including basement, crawlspa	as that used for the BF	E.	Che 6.3	eck the mea	asurement used.
b) Top of the next higher floor	,		17.1		meters
c) Bottom of the lowest horizontal structural member	(V Zones only)		N/A		meters
d) Attached garage (top of slab)			N/A		meters
e) Lowest elevation of machinery or equipment serving (Describe type of equipment and location in Comm	cing the building nents)		<u>15.1</u>		meters
f) Lowest adjacent (finished) grade next to building (LAG)		5.8		meters
g) Highest adjacent (finished) grade next to building	(HAG)		6.0	⊠ feet	meters
 h) Lowest adjacent grade at lowest elevation of deck structural support 	or stairs, including		6.2	★ feet	meters
SECTION D – SURVEYOR, I	ENGINEER, OR ARC	HITECT CERTIF	ICATIO	N	
This certification is to be signed and sealed by a land surval of the information on this Certificate represents a statement may be punishable by fine or imprisonment und Were latitude and longitude in Section A provided by a lice	my best efforts to interp ler 18 U.S. Code, Secti	oret the data availa on 1001.	able. I ur	nderstand t	hat any false
		E res E no		Check here	e if attachments.
Certifier's Name Andrew D. Johnson	License Number 6256				**********
Title Professional Surveyor and Mapper Company Name					FIELD
CES, Inc. Address 13041 McGregor Boulevard			_ \		
City Fort Myers	State Florida	ZIP Code 33919			
Signature And Andrews	Date 12-10-2020	Telephone (239) 481-1331	Ext.	occupance accepts of MANA in an internegacion	
Copy all pages of this Elevation Certificate and all attachmen	nts for (1) community of	icial, (2) insurance	agent/co	ompany, an	d (3) building owner.
Comments (including type of equipment and location, per A8. b and c refer to 6 engineered flood vents (Crawl space of permanent openings. Each vent is certified by the many provide coverage for 205 square feet (6 x 205 = 1,230). S C2(e) refers to the elevation at the top of an air conditions	e Door Systems model ufacturer to provide a n ee attached certificatio	et free area of 105 n.	5 square		
				······································	

ELEVATION CERTIFICATE

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

IMPORTANT: In these spaces, copy the correspondin	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	The second secon	FOR INSURANCE COMPANY USE	
Building Street Address (including Apt., Unit, Suite, and/o 2479 Harbour Lane	or Bldg. No.) or P.O. Route a	nd Box No.	Policy Number:	
•	ate ZIP Cod orida 33957	е	Company NAIC Number	
SECTION E – BUILDING ELE FOR ZONE	VATION INFORMATION (S AO AND ZONE A (WITHO		REQUIRED)	
For Zones AO and A (without BFE), complete Items E1–l complete Sections A, B,and C. For Items E1–E4, use nat enter meters.	E5. If the Certificate is intend tural grade, if available. Chec	led to support a ck the measure	LOMA or LOMR-F request, ment used. In Puerto Rico only,	
 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	974ma1110000000000000000000000000000000000	feet Imeter	rs above or below the HAG.	
 b) Top of bottom floor (including basement, crawlspace, or enclosure) is 	Promise Promis	feet □ meter	rs above or below the LAG.	
E2. For Building Diagrams 6–9 with permanent flood oper	enings 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 meter	rs above or below the HAG.	
E3. Attached garage (top of slab) is		feet meter	rs above or below the HAG.	
E4. Top of platform of machinery and/or equipment servicing the building is	The same of the sa]feet ☐ meter	rs above or below the HAG.	
E5. Zone AO only: If no flood depth number is available floodplain management ordinance? Yes			cordance with the community's certify this information in Section G.	
SECTION F - PROPERTY OWN	ER (OR OWNER'S REPRES	SENTATIVE) CI	ERTIFICATION	
The property owner or owner's authorized representative	who completes Sections A.	B. and E for Zo	one A (without a FEMA-issued or	
community-issued BFE) or Zone AO must sign here. The	e statements in Sections A, E	3, and E are co	rrect to the best of my knowledge.	
Property Owner or Owner's Authorized Representative's	Name			
Address	City	St	tate ZIP Code	
Signature	Date	Te	elephone	
Comments		,		
			Check here if attachments.	

ELEVATION CERTIFICATE

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

MPORTANT: In these spaces, copy the corre	sponding information from Se	ction A.	FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, St 2479 Harbour Lane	ite, and/or Bldg. No.) or P.O. Rou	ute and Box No.	Policy Number:
City Sanibel	State ZIP Florida 339	Code 957	Company NAIC Number
SECTIO	N G - COMMUNITY INFORMAT	ION (OPTIONAL)	Accessors to the control of the cont
The local official who is authorized by law or or Sections A, B, C (or E), and G of this Elevation used in Items G8–G10. In Puerto Rico only, en G1. The information in Section C was take engineer, or architect who is authorized.	Certificate. Complete the applicater meters. en from other documentation that	ble item(s) and sign has been signed a	below. Check the measurement nd sealed by a licensed surveyor,
data in the Comments area below.) G2. A community official completed Section Zone AO.			
G3.	G10) is provided for community f	loodplain managem	ent purposes.
G4. Permit Number 19-57249	G5. Date Permit Issued	G6. [Date Certificate of Compliance/Occupancy Issued
G7. This permit has been issued for:	New Construction Substant	ial Improvement	
G8. Elevation of as-built lowest floor (including of the building:	g basement)	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	t meters Datum
Local Official's Name	Title		
Community Name	Telepho	ne	
Signature	Date		
Comments (including type of equipment and lo	cation, per C2(e), if applicable)		
			Check here if attachments.

BUILDING PHOTOGRAPHS

ELEVATION CERTIFICATE

See Instructions for Item A6.

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

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt.	Policy Number:		
2479 Harbour Lane			
City	State	ZIP Code	Company NAIC Number
Sanibel	Florida	33957	

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 Caption

Front View 12/09/2020

Clear Photo One



Photo Two Caption

Rear View 12/09/2020

Clear Photo Two

BUILDING PHOTOGRAPHS

ELEVATION CERTIFICATE

Continuation Page

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

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.

2479 Harbour Lane

City State ZIP Code Company NAIC Number Sanibel Florida 33957

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

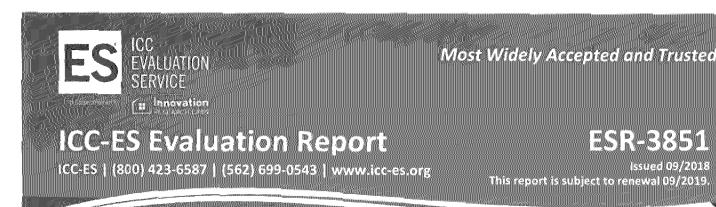
Photo Three Caption

Right Side View 12/09/2020

Clear Photo Three



Photo Four Caption



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



"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"



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Certification of Engineered Flood Openings

In accordance with the Code of Federal Regulations for the National Flood Insurance Program

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 Code of Federal Regulations for the National Flood Insurance Program (NFIP) 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. Vent opening measurements were measured and certified by Mr. Christopher Mark Loney, Virginia P.E. NO. 029000. Detailed calculations were prepared as outlined In "Review of certification of Engineered Flood Openings," prepared by Dr. Georg Reichard, Associate Professor of Building Construction, Virginia Tech (available upon request from Crawl Space Door Systems, Inc. billy@crawlspacedoors.com)

Design Characteristics

Section 2.6.2.2 of ASCE/SEI 24-05 provides an equation to determine the required net area of engineered openings (A_o) for a given enclosed area (A_a). 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 restricted flow rate through the main frame opening in case the louver is blown out during a flood event; 2) the flow rate through the individual openings between louver blades; and 3) the flow rate through projected openings between louver blades following hydraulic short-tube theory. The maximum total enclosed area (Ae) 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 at a minimum rate of 5 feet/hour;
- The (maximum) difference between the exterior and interior floodwater levels shall not exceed 1 foot during base flood
- 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_0) as provided by the manufacturer.

(")	Model	[in]	[in²]	[ft²]
X	816CS	8 x 16	105	205
	1220CS	12 x 20	235	500
	1232CS	12 x 32	305	645
	1616CS	16 x 16	180	395
	1624CS	16 x 24	310	670
	1632CS	16 x 32	405	835
	2032CS	20 x 32	630	1240
	2424CS	24 x 24	570	1230
	2436CS	24 x 36	850	1765

Table 1 Maximum total enclosed area (A_e) that can be

serviced by each individual model based on the

A_o

A,

HxW

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 subject to flooding; The bottom of all openings shall be no higher than one foot
- given net area of engineered openings (A_o) above the higher of the interior or exterior grade that is immediately under each opening;
- 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 data or analyses indicate more rapid rates of rise and fall, the required number of openings shall be increased to account for those different conditions. The number or size of the openings may be decreased if data or analyses indicate rates of rise and fall are less than 5 feet per hour.

Certifying Design Professional

Name	Steve A. Geci	Title President	WEVE A. CO.
Company	Geci & Associates Engineers, Inc.		S'S' CENS
Address	2950 N 12 th Avenue, Pensacola, FL 32503		No. 33658
License	Florida	License No. 33658	STATE OF
Signature		Date: 1/29/17	ORIOA ENGIN

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

2479 Harbour Lane, Sanibel, Florida 33957

TABLE 1—CRAWL SPACE DOOR SYSTEMS FLOOD VENT

MODEL	OVERALL VENT SIZE	ROUGH OPENING SIZE	ENCLOSED
	(Width x Height x Depth)	(Width x Height)	AREA COVERAGE
	(in)	(in)	(ft²)
CSBA816	$18^{1}/_{4} \times 10^{1}/_{2} \times 1^{3}/_{4}$	16 x 8 ¹ / ₄	305

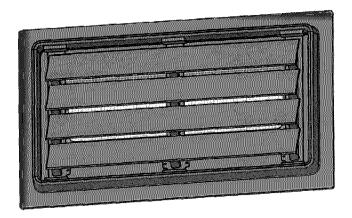


FIGURE 1—CRAWL SPACE DOOR SYSTEMS FLOOD VENT

Certification of Engineered Flood Openings

In accordance with the Code of Federal Regulations for the National Flood Insurance Program

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 Code of Federal Regulations for the National Flood Insurance Program (NFIP) 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. Vent opening measurements were measured and certified by Mr. Christopher Mark Loney, Virginia P.E. NO. 029000. Detailed calculations were prepared as outlined In "Review of certification of Engineered Flood Openings," prepared by Dr. Georg Reichard, Associate Professor of Building Construction, Virginia Tech (available upon request from Crawl Space Door Systems, Inc. billy@crawlspacedoors.com)

Design Characteristics

Section 2.6.2.2 of ASCE/SEI 24-05 provides an equation to determine the required <u>net area</u> of engineered openings (A_o) for a given <u>enclosed 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 restricted flow rate through the main frame opening in case the louver is blown out during a flood event; 2) the flow rate through the individual openings between louver blades; and 3) the flow rate through projected openings between louver blades following hydraulic short-tube theory. The 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 at a minimum rate of 5 feet/hour;
- The (maximum) difference between the exterior and interior floodwater levels shall not exceed 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.

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 subject to flooding;
- The bottom of all openings shall be no higher than one foot above the higher of the interior or exterior grade that is immediately under each opening;
- 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 data or analyses indicate more rapid rates of rise and fall, the required number of openings shall be increased to account for those different conditions. The number or size of the openings may be decreased if data or analyses indicate rates of rise and fall are less than 5 feet per hour.

*)	Model	H x W [in]	A _o [in²]	A _e [ft²]
X	816CS	8 x 16	105	205
	1220CS	12 x 20	235	500
	1232CS	12 x 32	305	645
	1616CS	16 x 16	180	395
	1624CS	16 x 24	310	670
	1632CS	16 x 32	405	835
	2032CS	20 x 32	630	1240
	2424CS	24 x 24	570	1230
	2436CS	24 x 36	850	1765

Table 1 Maximum total <u>enclosed area</u> (A_e) that can be serviced by each individual model based on the given <u>net area</u> of engineered openings (A_o)

Certifying Design Professional

Name	Steve A. Geci	Title President	WEVE A. C.
Company	Geci & Associates Engineers, Inc.		S CENS
Address	2950 N 12 th Avenue, Pensacola, FL 32503	1 4	No. 33658
License	Florida	License No. 33658	STATE OF
Signature		Date: 1/29/17	ORIOA CITA

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:

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2479 Harbour Lane, Sanibel, Florida 33957