OMB No. 1660-0008 Expiration Date: November 3

	75	Expiration Date: November 30, 2018
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. 620 N. RIVER ROAD	esponding information from Section A. uite, and/or Bidg. No.) or P.O. Route and Box	FOR INSURANCE COMPANY USE No. Policy Number:
City VENICE	State ZIP Code Florida 34293	Company NAIC Number
SECTION G	N G - COMMUNITY INFORMATION (OPTIONAL)	NAL)
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 G8–G10. In Puerto Rico only, enter meters.	dinance to administer the community's floodple Certificate. Complete the applicable item(s) at ter meters.	ain management ordinance can complete nd sign below. Check the measurement
G1. The information in Section C was take engineer, or architect who is authorized data in the Comments area below.)	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.)	ned and sealed by a licensed surveyor, cate the source and date of the elevation
G2. A community official completed Section Zone AO.	A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.	a FEMA-issued or community-issued BFE)
G3. The following information (Items G4-	The following information (Items G4–G10) is provided for community floodplain management purposes	nagement purposes.
G4. Permit Number 18-129504 BA	G5. Date Permit Issued	G6. Date Certificate of Compliance/Occupancy Issued
G7. This permit has been issued for:	☐ New Construction ☐ Substantial Improvement	ent
G8. Elevation of as-built lowest floor (including basement) of the building:		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 ☐ meters Datum
Local Official's Name	Title	
Community Name	Telephone	
Signature	Date	2
Comments (including type of equipment and location, per C2(e), if applicable)	ation, per C2(e), if applicable)	
		☐ Check here if attachments

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

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

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.

S	SECTION A - PROPERTY INFORMATION	TY INFORMATION	FOR INSURANCE COMPANY USE
A1. Building Owner's Name LYNDA TENBUSCH			Policy Number:
A2. Building Street Address Box No. 620 N. RIVER ROAD	(including Apt., Unit, S	A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 620 N. RIVER ROAD	nd Company NAIC Number:
City VENICE		State Florida	ZIP Code 34293
A3. Property Description (Lot and Block Numbers, M&B SEC 28-39S-20E PID #0776001210 LEGA	t and Block Numbers, #0776001210 LEGAI	(Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) PID #0776001210 LEGAL DESCRIPTION ATTACHED	etc.)
A4. Building Use (e.g., Resid	ential, Non-Residentia	Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) ACCES	ACCESSORY (METAL BUILDING)
A5. Latitude/Longitude: Lat	Lat. 27°3'23.35	1	Horizontal Datum: ☐ NAD 1927 🔀 NAD 1983
A6. Attach at least 2 photogr	aphs of the building if t	icate is being used to c	
A7. Building Diagram Number	18		
A8. For a building with a crawlspace or enclosure(s):	/lspace or enclosure(s);	
 a) Square footage of crawlspace or enclosure(s) 	wispace or enclosure(0.00 sq ft	
b) Number of permanent	flood openings in the	Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade	ot above adjacent grade 0
c) Total net area of flood openings in A8.b	openings in A8.b	0.00 sq in	
d) Engineered flood openings?	☐ Yes 🗓	No	
A9. For a building with an attached garage	ched garage:		
 a) Square footage of attached garage 	ched garage	1200.00 sq ft	
b) Number of permanent	flood openings in the a	 b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade 6 	djacent grade 6
c) Total net area of flood openings in A9.b	openings in A9.b	630.00 sq in	
d) Engineered flood openings?	ings? ⊠ Yes ☐ No	No	
	ECTION B - FLOOD	SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION	FORMATION
SARASOTA COUNTY, FLORIDA 125144	Community Number DA 125144	B2. County Name SARASOTA	B3. State Florida
34. Map/Panel B5. Suffix Number	B6. FIRM Index Date	B7. FIRM Panel B8. Flood Effective/ Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
2115C0370 F	11-04-2016	11-04-2016 AE	7'
B10. Indicate the source of the ☐ FIS Profile ☑ FIRM	Base Flood Elevation (BFE) Community Determined	Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9	d in Item B9:
B11. Indicate elevation datum used for BFE in Item B9:	used for BFE in Item E	99: 🗌 NGVD 1929 🛛 NAVD 1988	Other/Source:
B12. Is the building located in Designation Date:	a Coastal Barrier Resc	Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA) Designation Date: CBRS OPA	se Protected Area (OPA)? 🔲 Yes 🛛 No

OMB No. 1660-0008

	S website.	source for latitude/longitude: 2018 aerial photograph from Sarasota County GIS website	source for latitude/longitude: 2018 ae
TH SIDE OF BUILDING = 9.7'.)X LOCATED ON NORT	ACHINERY = ELECTRIC BREAKER BO	**C2e). LOWEST ELEVATION OF M
a coverage area of 205 square	Model #816CS, yields	 -comments (including type of equipment and location, per C2(e), if applicable) -**A9c). 6 engineered flood vents, crawl space door systems flood vent model. Model #816CS, yields a coverage are feet per vent. Total Coverage = 1230 square feet. 	Jomments (including type of equipme **A9c). 6 engineered flood vents, cray feet per vent. Total Coverage
ent/company, and (3) building owner.	official, (2) insurance age	Opy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, an	opy all pages of this Elevation Certifica
Ext.	Telephone (941) 493-1396	Date 08-13-2019	Signature and S. Frut
	ZIP Code 34285	State Florida	City VENICE
DATE 8 13 2019			Address 606 CYPRESS AVE.
RANDALL E. BRITT, PLS FLORIDA CERTIFICATE #3979			Company Name BRITT SURVEYING INC.
C 1005 R			Title LAND SURVEYOR
		License Number PLS 3979	Certifier's Name RANDALL E. BRITT
	? ⊠Yes □No	Were latitude and longitude in Section A provided by a licensed land surveyor?	Were latitude and longitude in Section
aw to certify elevation information. e. I understand that any false	rchitect authorized by la erpret the data available ection 1001.	Inis certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevaterify that the information on this Certificate represents my best efforts to interpret the data available. I understand statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.	Inis certification is to be signed and so certify that the information on this Costatement may be punishable by fine
ATION	RCHITECT CERTIFIC	SECTION D SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION	SECTION
N/A X feet meters		Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	h) Lowest adjacent grade at low structural support
5.4 X feet meters		rade next to building (HAG)	
5.2 X feet meters		ade next to building (LAG)	f) Lowest adjacent (finished) grade next to building (LAG)
9.7 X feet meters		Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	e) Lowest elevation of machine (Describe type of equipment
N/A			
N/A		Bottom of the lowest horizontal structural member (V Zones only)	
N/A			 b) Top of the next higher floor
5.9 🛛 feet 🔲 meters	or)	Top of bottom floor (including basement, crawlspace, or enclosure floor)	 a) Top of bottom floor (including
	BFE.	☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: Datum used for building elevations must be the same as that used for the BFE	☐ NGVD 1929 ☒ NAVD 1988 Datum used for building elevations must
	Now.	Indicate elevation datum used for the elevations in items a) through h) below	Indicate elevation datum used for
NE, AR/A1–A30, AR/AH, AR/AO. Rico only, enter meters.	gram specified in Item A7. In Puerto Vertical Datum: NAVD 1988	Complete Items C2.a-h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters. Benchmark Utilized: SARCO BM #785 Vertical Datum: NAVD 1988	
	iding is complete.	Tones A1_A30 AF AH A (with BEE) VE VA V30 V with BEE; AR ARV	C2. Elevations – Zones A1_A30 AF
tion* X Finished Construction	☐ Building Under Construction*	☐ Construction Drawings*	C1. Building elevations are based on:
QUIRED)	ATION (SURVEY RE	C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)	SECTION C
Company NAIC Number	ZIP Code 34293	State Z Florida 3	City VENICE
Policy Number:		Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 620 N. RIVER ROAD	620 N. RIVER ROAD
FOR INSURANCE COMPANY USE		MPORTANT: In these spaces, copy the corresponding information from Section A.	MPORTANT: In these spaces, copy
Expiration Date: November 30, 2018			

OMB No. 1660-0008

	EODIATION (SUBVEY NOT	SECTION E - BILLI DING ELEVATION INFORMATION (CURVITY NOT DECEMBED
Company NAIC Number	ZIP Code 34293	VENICE Florida
Policy Number:	or P.O. Route and Box No.	620 N. RIVER ROAD
FOR INSURANCE COMPANY USE	E	IMPORTANT: In these spaces, copy the corresponding information from Section A.
Expiration Date: November 30, 2018		

	3 8	i j	2 2	임		E5.	E4.	E3.	E2.		<u> </u>	987		ĕ Ç	වූ
	Ognacule	Cinchin	charty Owner or Owner S	mmunity-issued BFE) or	SEC	ľ		Attached garage (top of slab) is				For Zones AO and A (with complete Sections A, B,an enter meters.	SE	City VENICE	620 N. RIVER ROAD
			Address	er's authorized representate Zone AO must sign here.	SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION	Zone AO only: If no flood depth number is available, floodplain management ordinance? Yes N	Top of platform of machinery and/or equipment servicing the building is	f slab) is	For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages the next higher floor (elevation C2.b in the diagrams) of the building is	Top of bottom floor (including basement, crawlspace, or enclosure) is Top of bottom floor (including basement, crawlspace, or enclosure) is	Provide elevation information for the following and check the appropriate boxes to show whether the elevation the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).	ut BFE), complete Items I d C. For Items E1–E4, use	SECTION E – BUILDING E FOR ZOI		direction of the second of the
	Date	City		tive who completes Section	VNER (OR OWNER'S RE	ble, is the top of the botto ☐ No ☐ Unknown. T			openings provided in Sec		nd check the appropriate t	E1–E5. If the Certificate is natural grade, if available	ELEVATION INFORMAT	State Z Florida 3	inwor bidg. No.) of F.O. Route allia Box No.
	Telephone	State		ons A, B, and E for Zone A	PRESENTATIVE) CERTI	is the top of the bottom floor elevated in accordance with No		_ ☐ feet ☐ meters	xtion A Items 8 and/or 9 (s _ ☐ feet ☐ meters	_ ☐ feet ☐ meters	ooxes to show whether the	intended to support a LO e. Check the measuremer	BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)	ZIP Code Co 34293	
Check here if attachments.	one	ZIP Code		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.	FICATION	the o	윽	☐ above or ☐ below the HAG.	ee pages 1–2 of Instructions), ☐ above or ☐ below the HAG.	☐ above or ☐ below the HAG.	e elevation is above or below	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.	QUIRED)	Company NAIC Number	Policy Number:

BUILDING PHOTOGRAPHS

ELEVATION CERTIFICATE

See Instructions for Item A6.

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

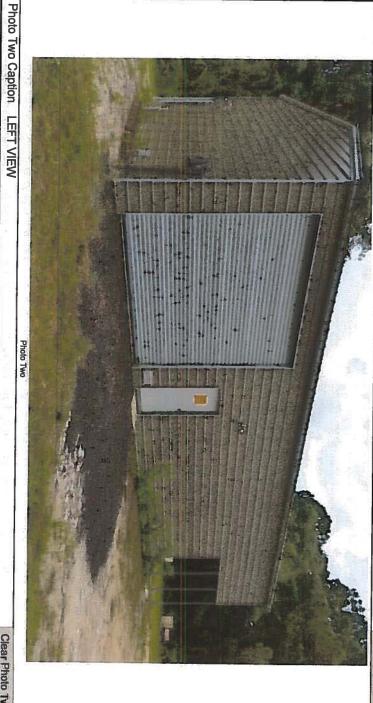
IMPORTANT: In these spaces, copy the corresponding information from Section A. 620 N. RIVER ROAD Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. VENICE Florida State ZIP Code Company NAIC Number Policy Number: FOR INSURANCE COMPANY USE

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

Clear Photo One



LEFT VIEW

BUILDING PHOTOGRAPHS

Continuation Page

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

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. 620 N. RIVER ROAD VENICE Florida State ZIP Code Company NAIC Number Policy Number: FOR INSURANCE COMPANY USE

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 Caption REAR VIEW

Clear Photo Three



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

BUILDING PHOTOGRAPHS

ELEVATION CERTIFICATE

Continuation Page

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

IMPORTANT: in these spaces, copy the corresponding information from Section A. VENICE CEV 620 N. RIVER ROAD Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. Florida State 34293 ZIP Code Policy Number: Company NAIC Number FOR INSURANCE COMPANY USE

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.

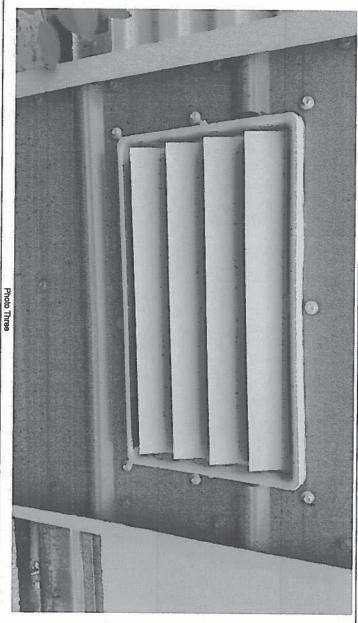


Photo Three Caption FLOW THROUGH

Clear Photo Three

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

Photo Four

Clear Photo Four

Building Diagrams

elevations in Items C2.a-h. the square footage of attached garage and the area of flood openings in square inches in Items A9.a-c, and the the square footage of crawlspace or enclosure(s) and the area of flood openings in square inches in Items A8.a-c. the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item A7, The following diagrams illustrate various types of buildings. Compare the features of the building being certified with

is taken at the bottom of the lowest horizontal structural member (see drawing in instructions for Section C). In A zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, the floor elevation

DIAGRAM 1A All slab-on-grade single- and multiple-floor buildings

other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least 1 side.*

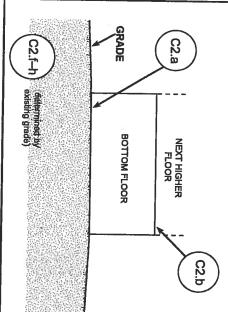


DIAGRAM 1B

All raised-slab-on-grade or slab-on-stem-wail-with-fill single- and multiple-floor buildings (other than split-level), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature - The bottom floor is at or above ground level (grade) on at least 1 side.*

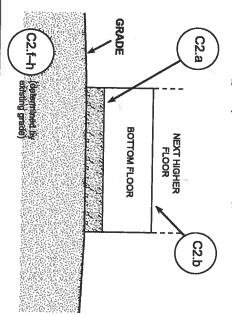


DIAGRAM 2A

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

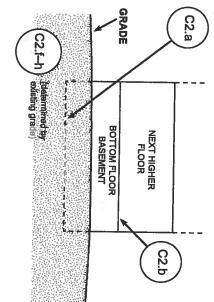
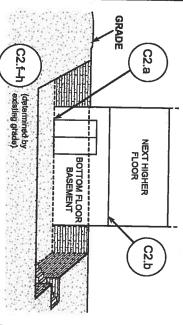


DIAGRAM 2B

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature — The bottom floor (basement or underground garage) is below ground level (grade) on all sides; most of the height of the walls is below ground level on all sides; and the door and area of egress are also below ground level on all sides.*



garage, workshop, etc. A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office

DESCRIPTION:

parcel of land lying Sarasota County, Florida, described as follows: in Section 28, Township 39 South, Range 20

the 300.00 feet; distance of 1056.60 47"47"W., BEGINNING; right of way line, Easterly Right 777 - 100 foot of said Section South, Commence at the POINT Range way line, a distance of 2533.91 feet, to the POINT OF; thence continue along said right of way line, N.36° a distance of 300.00 feet; thence N.53°12'13"E., a of 1056.60 feet; thence S.36°47'47"E., a distance of et; thence S.53°12'13"W., a distance of 1056.60 feet of BEGINNING. Parcel contains 7.2769 Acres, more or 20 n 28, a distance of of Way lineof West wide Southeast Corrnerof Section 28, Township East; thence N.89°46'36"W., along the Southeast; right of way) thence N.36°47'47"W., River Road 967.38 feet, to a point on the along the South (State Road No. along 39 line said to

TRAILS", Also the Public Records of know recorded in a S Lot 19 of "The Miscellaneous Sarasota County, Florida. Unrecorded Plat Book 1, Plat of MYAKKA Pages 6, RIVER 6A-6E,

Certification of Engineered Flood Openings

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

designed in accordance with the requirements of the Code of Federal Regulations for the National Flood Insurance Program (NFIP) I hereby certify that the Crawl Space Door Systems flood vents 816CS, 1220CS, 1232CS, 1616CS, 1624CS, 1632CS, 2032CS, 2424CS, and 2436CS are

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 Professor of Building Construction, Virginia Tech (available upon request from Crawl Space Door Systems, Inc. billy@crawlspacedoors.com) calculations were prepared as outlined in "Review of certification of Engineered Flood Openings," prepared by Dr. Georg Reichard, Associate

Design Characteristics

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. between louver blades following hydraulic short-tube theory. The maximum total enclosed area (A_e) that can be serviced by a single event; 2) the flow rate through the individual openings between louver blades; and 3) the flow rate through projected openings equation to calculate 1) the restricted flow rate through the main frame opening in case the louver is blown out during a flood enclosed area (A_n) . This equation is based on the hydraulic formula for the flow rate across sharp edged orifices. I have utilized this 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

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
- with design practices related to protection of life and property; A factor of safety of 5 has been assumed, which is consistent
- The net area of openings (A_o) as provided by the manufacturer.

									- 4
Ш	닏	닏	닏	닏	Ш	ᆜ	Ш	닏	<u> </u>
2436CS	2424CS	2032CS	1632CS	1624CS	1616CS	1232CS	1220CS	816CS	Model
24 x 36	24 x 24	20 x 32	16 x 32	16 x 24	16 x 16	12 x 32	12 x 20	8 x 16	[in]
850	570	630	405	310	180	305	235	105	[in ²]
1765	1230	1240	835	670	395	645	500	205	[ft²]

Table 1 Maximum total enclosed area (Ae) that can be given net area of engineered openings (Ao) serviced by each individual model based on the

This certification will be voided if the following installation

Installation Requirements and Limitations

requirements and limitations are not enforced: There shall be a minimum of two openings on different sides of

- each enclosed area subject to flooding;
- above the higher of the interior or exterior grade that is immediately under each opening; The bottom of all openings shall be no higher than one foot
- the automatic entry or exit of floodwaters at any time; No temporary (e.g. during cold weather) or permanent solid cover may be placed into or over the flood vent that would block
- Where data or analyses indicate more rapid rates of rise and fall, the required number of openings shall be increased to account and fall are less than 5 feet per hour. for those different conditions. The number or size of the openings may be decreased if data or analyses indicate rates of rise

Certifying Design Professional

	Steve A. Geci	Title President
Company	Geci & Associates Engineers, Inc.	
Address	2950 N 12 th Avenue, Pensacola, FL 32503	
License	Florida	License No. 33658
Signature:	MAND.	Date: 11/29/17

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**

Engineered Flood Vent Durable Plastic — No Rust or Ro

Hood 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 resardant treatment. FEMA compliant, engineered certified. No coyer to allow the automatic entry and exit of floodwaters. Quick and easy to install.





816CS 8×16	MODEL (In)
16 105	W Net Area (in²)
205	Eclosed Area (ft²)



Founded on great products, orinciples and customer service

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)

Professor of Building Construction, Virginia Tech (available upon request from Crawl Space Door Systems, Inc. billy@crawlspacedoors.com) calculations were prepared as outlined in "Review of certification of Engineered Flood Openings," prepared by Dr. Georg Reichard, Associate as set forth below. Vent opening measurements were measured and certified by Mr. Christopher Mark Loney, Virginia P.E. NO. 029000. Detailed to provide automatic equalization of hydrostatic flood forces by allowing for the entry and exit of floodwaters, when properly installed and sized

Design Characteristics

enclosed area (A_e). This equation is based on the hydraulic formula for the flow rate across sharp edged orifices. 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. between louver blades following hydraulic short-tube theory. The maximum total enclosed area (A_a) that can be serviced by a single equation to calculate 1) the restricted flow rate through the main frame opening in case the louver is blown out during a flood Section 2.6.2.2 of ASCE/SEI 24-05 provides an equation to determine the required net area of engineered openings (Ao) for a given These values are based on the following assumptions: event; 2) the flow rate through the individual openings between louver blades; and 3) the flow rate through projected openings I have utilized this

assumed at a minimum rate of 5 feet/hour; In absence of reliable data, the rates of rise and fall have been

- floodwater levels shall not exceed 1 foot during base flood The (maximum) difference between the exterior and interior
- with design practices related to protection of life and property; A factor of safety of 5 has been assumed, which is consistent
- The net area of openings (A_0) as provided by the manufacturer.

Installation Requirements and Limitations

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

- each enclosed area subject to flooding; There shall be a minimum of two openings on different sides of
- above the higher of the interior or exterior grade that is immediately under each opening: The bottom of all openings shall be no higher than one foot
- the automatic entry or exit of floodwaters at any time; No temporary (e.g. during cold weather) or permanent solid cover may be placed into or over the flood vent that would block
- Where data or analyses indicate more rapid rates of rise and fall, the required number of openings shall be increased to account and fall are less than 5 feet per hour. for those different conditions. The number or size of the openings may be decreased if data or analyses indicate rates of rise

*	Model	H×W [in]	A [in²]	A. [ft²]
	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 (Ae) that can given net area of engineered openings (A.) serviced by each individual model based on the be

Certifying Design Professional

Signature: Date: 11/29/17 135/0NA
Date: 11

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**