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.

SECTION A - PROPERTY INFORMATION					FOR INSU	RANCE COMPANY USE	
A1. Building Own JJCC LONGPOR						Policy Nur	nber:
A2. Building Stree Box No. 203 N. DELAVAN		ncluding Apt., Unit, Sui	ite, and/o	or Bldg. No.)	or P.O. Route and	Company	NAIC Number:
City MARGATE				State New Je	rsey	ZIP Code 08402	
	A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) LOT 1.02, BLOCK 404.02						
A4. Building Use	A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) RESIDENTIAL						
A5. Latitude/Long	tude: Lat. 3	9.33472	Long	74.48278	Horizont	tal Datum: NAD	1927 × NAD 1983
A6. Attach at leas	t 2 photograp	hs of the building if th	e Certific	cate is being	used to obtain flo	od insurance.	
A7. Building Diagr	am Number	6					2)
A8. For a building	with a crawls	space or enclosure(s):					
a) Square foo	tage of craw	space or enclosure(s)	U		279.57 sq ft		
b) Number of	permanent flo	ood openings in the cr	awlspac	e or enclosur	e(s) within 1.0 foo	ot above adjacent gr	ade <u>3</u>
c) Total net ar	ea of flood o	penings in A8.b		600.00 sq ir	1		
d) Engineered	l flood openir	ngs? 🗵 Yes 🗌 🏻	No				
A9. For a building v	vith an attach	ned garage:					
a) Square foot	age of attach	ned garage		550.35 sq f	t		
b) Number of p	permanent flo	ood openings in the at	tached g	arage within	1.0 foot above ac	djacent grade 2	
c) Total net ar	ea of flood op	penings in A9.b		595.00 sq	in		
d) Engineered	flood openin	gs? ⊠ Yes ☐ N	lo				
	SE	CTION B - FLOOD	NSURA	NCE RATE	MAP (FIRM) IN	FORMATION /	6-367
B1. NFIP Commun CITY OF MARGAT	reter to conservation to the to	TOTAL REPORT OF THE PERSON OF		B2. County ATLANTIC	Name	•	B3. State New Jersey
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) e Base Flood Depth)
34001C0453	F	05-30-2014	05-30-2	2014	AE	8.0	
		Base Flood Elevation Community Deterr			17		
B11. Indicate eleva	tion datum u	sed for BFE in Item B	9: 🗌 N	GVD 1929	NAVD 1988	Other/Source:	
B12. Is the building	located in a	Coastal Barrier Reso	urces Sy	stem (CBRS) area or Otherwi	se Protected Area (0	DPA)? ☐ Yes ☒ No
Designation D			CBRS	☐ OPA	8		
esco*	-	8 8					

ELEVATION CERTIFICATE

IMPORTANT: In these spaces, copy the correspondence			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, 203 N. DELAVAN AVENUE	and/or Bldg. No.) or P.	O. Route and Box No.	Policy Number:
City MARGATE	State New Jersey	ZIP Code 08402	Company NAIC Number
SECTION C – BUILDIN	NG ELEVATION INFO	RMATION (SURVEY I	REQUIRED)
 C1. Building elevations are based on: Cons *A new Elevation Certificate will be required w C2. Elevations – Zones A1–A30, AE, AH, A (with Complete Items C2.a–h below according to the Benchmark Utilized: LOCAL BENCH 	when construction of the BFE), VE, V1–V30, V (ne building diagram spe	with REEL AD ADIA AL	PIAE ADIA4 A20 ADIAH ADIA0
Indicate elevation datum used for the elevation NGVD 1929 NAVD 1988 C Datum used for building elevations must be the	Other/Source:		
a) Top of bottom floor (including basement, or b) Top of the next higher floor c) Bottom of the lowest horizontal structural m d) Attached garage (top of slab) e) Lowest elevation of machinery or equipmer (Describe type of equipment and location in f) Lowest adjacent (finished) grade next to bu g) Highest adjacent (finished) grade next to bu h) Lowest adjacent grade at lowest elevation of structural support SECTION D – SURVEY This certification is to be signed and sealed by a land to certify that the information on this Certificate representation.	rawlspace, or enclosure nember (V Zones only) on the servicing the building Comments) wilding (LAG) wilding (HAG) of deck or stairs, including (FOR, ENGINEER, OR the sents my heat offects to sents my heat offects to the sents my heat offerts my h	ing R ARCHITECT CERTIF	No oc
statement may be punishable by fine or imprisonme Were latitude and longitude in Section A provided by	ini under 18 U.S. Code	, Section 1001.	Check here if attachments.
Certifier's Name HOWARD A. TRANSUE	License Numbe GS33541	r	
Title PROFESSIONAL LAND SURVEYOR Company Name SCHAEFFER NASSAR SCHEIDEGG, CE, LLC Address 1425 CANTILLON BOULEVARD			GS3354/ Place Seal
City MAYS LANDING	State New Jersey	ZIP Code 08330	6/26/2017
Signature A.C.	Date 06-20-2017	Telephone (609) 625-7400	Ext.
Copy all pages of this Elevation Certificate and all attac Comments (including type of equipment and location, TEMS A8b AND A9b VENTS ARE SMART VENTS IN SYSTEMS FLOOD VENTS MODEL 1616CS RATED TEM C2e IS THE A.C. PAD.	per C2(e), if applicable MODEL 1540-520 RAT	e)	

ELEVATION CERTIFICATE

IMPORTANT: In these spaces, copy the correspond	FOR INSURANCE COMPANY USE		
Building Street Address (including Apt., Unit, Suite, and 203 N. DELAVAN AVENUE	d/or Bldg. No.) or P.O.	Route and Box No.	Policy Number:
	State New Jersey	ZIP Code 08402	Company NAIC Number
SECTION E – BUILDING EL FOR ZON	EVATION INFORMA E AO AND ZONE A		REQUIRED)
For Zones AO and A (without BFE), complete Items E1 complete Sections A, B,and C. For Items E1–E4, use renter meters.			
E1. Provide elevation information for the following and the highest adjacent grade (HAG) and the lowest a a) Top of bottom floor (including basement,			r the elevation is above or below
crawlspace, or enclosure) is		feet _ meter	s above or below the HAG.
 Top of bottom floor (including basement, crawlspace, or enclosure) is 	-	feet meter	s above or below the LAG.
E2. For Building Diagrams 6–9 with permanent flood o	peninas provided in S	ection 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	
E3. Attached garage (top of slab) is		feet meter	s above or below the HAG.
E4. Top of platform of machinery and/or equipment servicing the building is		feet meter	s above or below the HAG.
E5. Zone AO only: If no flood depth number is availabl floodplain management ordinance? Yes			cordance with the community's certify this information in Section G.
SECTION F - PROPERTY OWN	NER (OR OWNER'S F	REPRESENTATIVE) CE	RTIFICATION 16-307
The property owner or owner's authorized representativ community-issued BFE) or Zone AO must sign here. Th	ve who completes Sec ne statements in Secti	tions A, B, and E for Zo ons A, B, and E are corr	ne A (without a FEMA-issued or ect to the best of my knowledge.
Property Owner or Owner's Authorized Representative	s Name		
Address	City	Sta	ate ZIP Code
Signature	Date	Tel	ephone
Comments			
		9	
			Check here if attachments.

ELEVATION CERTIFICATE

IMPORTANT: In these spaces, copy the cor			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, § 203 N. DELAVAN AVENUE	Buite, and/or Bldg. No.)	or P.O. Route and Box No.	Policy Number:
City MARGATE	State New Jersey	ZIP Code 08402	Company NAIC Number
SECTI	ON G - COMMUNITY I	NFORMATION (OPTIONAL)	16-367
The local official who is authorized by law or o Sections A, B, C (or E), and G of this Elevation used in Items G8–G10. In Puerto Rico only, er	nter meters.	the applicable item(s) and sign	anagement ordinance can complete n below. Check the measurement
G1. The information in Section C was takengineer, or architect who is authorized data in the Comments area below.)	en from other documer ed by law to certify elev	ntation that has been signed a vation information. (Indicate th	nd sealed by a licensed surveyor, le source and date of the elevation
G2. A community official completed Sect or Zone AO.	ion E for a building loca	ited in Zone A (without a FEM.	A-issued or community-issued BFE)
G3. The following information (Items G4-	·G10) is provided for co	mmunity floodplain managem	ent purposes.
G4. Permit Number	G5. Date Permit Issu	CO. L	Date Certificate of Compliance/Occupancy Issued
G7. This permit has been issued for:] New Construction [Substantial Improvement	
G8. Elevation of as-built lowest floor (including of the building:	ı basement)	feet	meters Datum
G9. BFE or (in Zone AO) depth of flooding at t	he building site:	feet	meters Datum
G10. Community's design flood elevation:			meters Datum
Local Official's Name	4	Title	
Community Name MANGA Signature	T.E	Telephone	
. (16)	·	Date 7/1.0/17	ï
Comments (including type of equipment and local	ation, per C2(e), if appli	cable)	
;			
			Check here if attachments.

ELEVATION CERTIFICATE

See Instructions for Item A6.

OMB No. 1660-0008

Expiration Date: November 30, 2018

IMPORTANT: In these spaces, o	FOR INSURANCE COMPANY USE		
Building Street Address (including 203 N. DELAVAN AVENUE	Policy Number:		
City	State	ZIP Code	Company NAIC Number
MARGATE	New Jersey	08402	

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.

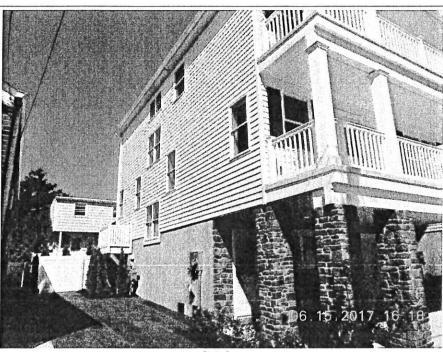


Photo One

Photo One Caption LEFT SIDE VIEW

16-367

Clear Photo One

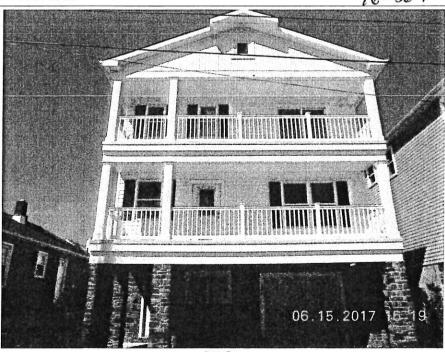


Photo Two

Photo Two Caption FRONT VIEW

Clear Photo Two

ELEVATION CERTIFICATE

Continuation Page

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

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Building Street Address (including 203 N. DELAVAN AVENUE			
City MARGATE	State New Jersey	ZIP Code 08402	Company NAIC Number

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.

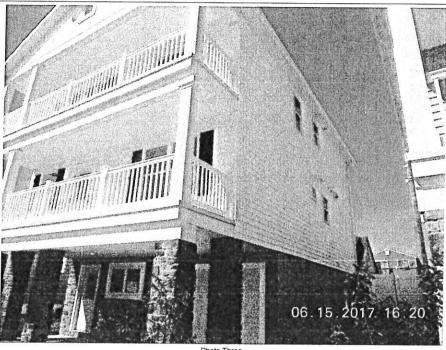


Photo Three

Photo Three Caption FRONT VIEW AND RIGHT SIDE VIEW

Clear Photo Three

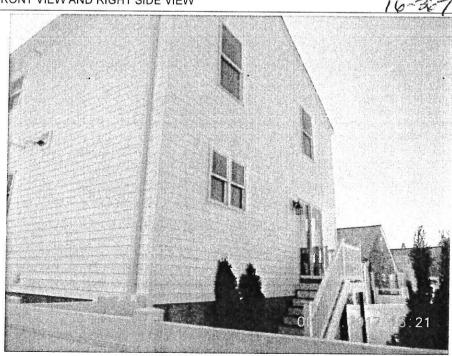


Photo Four

Photo Four Caption REAR VIEW

Clear Photo Four

ELEVATION CERTIFICATE

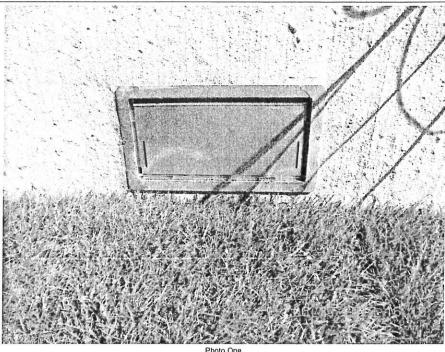
See Instructions for Item A6

OMB No. 1660-0008

Expiration Date: November 30, 2018

IMPORTANT: In these spaces,	FOR INSURANCE COMPANY USE Policy Number:		
Building Street Address (includin 203 N. DELAVAN AVENUE			
City	State	ZIP Code	Company NAIC Number
MARGATE	New Jersey	08402	

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SMART VENT MODEL 1540-520 TYPICAL OF 4 Photo One Caption

13-367

Clear Photo One

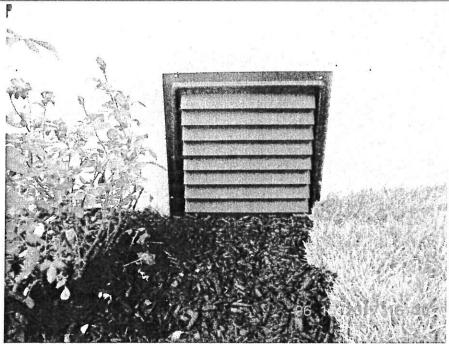


Photo Two

Photo Two Caption CRAWL SPACE DOOR SYSTEMS FLOOD VENT MODEL 1616CS TYPICAL OF 1 Clear Photo Two

ELEVATION CERTIFICATE

Continuation Page

IMPORTANT: In these spaces, copy the c	FOR INSURANCE COMPANY USE			
Building Street Address (including Apt., Unit 203 N. DELAVAN AVENUE	, Suite, and/or Bldg. No.) or	P.O. Route and Box No.	Policy Number:	
City	State	ZIP Code	Company NAIC	Number
MARGATE	New Jersey	08402		
If submitting more photographs than will f with: date taken; "Front View" and "Reaphotographs must show the foundation with	ar View"; and, if required,	"Right Side View" and "	Left Side View."	When applicable.
	Photo Three			
Photo Three Caption			19-367	Clear Photo Three
	f			
		*		18
hoto Four Caption	Photo Four			0
hoto Four Caption				Clear Photo Four

Most Widely Accepted and Trusted

ICC-ES Evaluation Report

ESR-2074

Reissued February 2015 Revised May 2016

This report is subject to renewal February 2017.

www.icc-es.org | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

DIVISION: 08 00 00-OPENINGS

Section: 08 95 43-Vents/Foundation Flood Vents

REPORT HOLDER:

SMARTVENT PRODUCTS, INC. 430 ANDBRO DRIVE, UNIT 1 PITMAN, NEW JERSEY 08071 (877) 441-8368 www.smartvent.com info@smartvent.com

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015, 2012, 2009 and 2006 International Building Code[®] (IBC)
- 2015, 2012, 2009 and 2006 International Residential Code[®] (IRC)
- 2013 Abu Dhabi International Building Code (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC, 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Physical operation
- Water flow

2.0 USES

The Smart Vent[®] units are engineered mechanically operated flood vents (FVs) employed to equalize hydrostatic pressure on walls of enclosures subject to rising or falling flood waters. Certain models also allow natural ventilation.

3.0 DESCRIPTION

3.1 General:

When subjected to rising water, the Smart Vent[®] FVs internal floats are activated, then pivot open to allow flow in either direction to equalize water level and hydrostatic pressure from one side of the foundation to the other. The FV pivoting door is normally held in the closed position by a buoyant release device. When subjected to rising water, the buoyant release device causes the unit to unlatch,

allowing the door to rotate out of the way and allow flow. The water level stabilizes, equalizing the lateral forces. Each unit is fabricated from stainless steel. Smart Vent[©] Automatic Foundation Flood Vents are available in various models and sizes as described in Table 1. The SmartVENT[©] Stacking Model #1540-511 and FloodVENT[©] Stacking Model #1540-521 units each contain two vertically arranged openings per unit.

3.2 Engineered Opening:

The FVs comply with the design principle noted in Section 2.7.2.2 and Section 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)] for a maximum rate of rise and fall of 5.0 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24, Smart Vent FVs must be installed in accordance with Section 4.0.

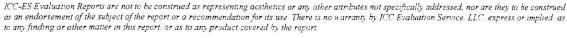
3.3 Ventilation:

The SmartVENT® Model #1540-510 and SmartVENT® Overhead Door Model #1540-514 both have screen covers with \$^1/4\$-inch-by-\$^1/4\$-inch (6.35 by 6.35 mm) openings, yielding 51 square inches (32 903 mm²) of net free area to supply natural ventilation. The SmartVENT® Stacking Model #1540-511 consists of two Model #1540-510 units in one assembly, and provides 102 square inches (65 806 mm²) of net free area to supply natural ventilation. Other FVs recognized in this report do not offer natural ventilation.

4.0 DESIGN AND INSTALLATION

SmartVENT³ and FloodVENT⁵ are designed to be installed into walls or overhead doors of existing or new construction from the exterior side. Installation of the vents must be in accordance with the manufacturer's instructions, the applicable code and this report. Installation clips allow mounting in masonry and concrete walls of any thickness. In order to comply with the engineered opening design principle noted in Section 2.7.2.2 and 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)]. the Smart Vent[®] FVs must be installed as follows:

- With a minimum of two openings on different sides of each enclosed area.
- With a minimum of one FV for every 200 square feet (18.6 m²) of enclosed area, except that the SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 must be installed with a minimum of one FV for every 400 square feet (37.2 m²) of enclosed area.





- Below the base flood elevation.
- With the bottom of the FV located a maximum of 12 inches (305.4 mm) above the higher of the final grade or floor and finished exterior grade immediately under each opening.

5.0 CONDITIONS OF USE

The Smart Vent^{\$} FVs described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Smart Vent[®] FVs must be installed in accordance with this report, the applicable code and the manufacturer's installation instructions. In the event of a conflict, the instructions in this report govern.

5.2 The Smart Vent[®] FVs must not be used in the place of "breakaway walls" in coastal high hazard areas, but are permitted for use in conjunction with breakaway walls in other areas.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364). dated August 2015.

7.0 IDENTIFICATION

The Smart VENT[®] models recognized in this report must be identified by a label bearing the manufacturer's name (Smartvent Products, Inc.), the model number, and the evaluation report number (ESR-2074).

TABLE 1-MODEL SIZES

MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT [®]	1540-520	15 ³ / ₄ " X 7 ³ / ₄ "	200
SmartVENT [®]	1540-510	15 ³ / ₄ " X 7 ³ / ₄ "	200
FloodVENT [®] Overhead Door	1540-524	15 ³ / ₄ " X 7 ³ / ₄ "	200
SmartVENT [®] Overhead Door	1540-514	15 ³ / ₄ " X 7 ³ / ₄ "	200
Wood Wall FloodVENT®	1540-570	14" X 8 ³ / ₄ "	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8 ³ / ₄ "	200
SmartVENT® Stacker	1540-511	16" X 16"	400
FloodVent [®] Stacker	1540-521	16" X 16"	400

For SI: 1 inch = 25.4 mm; 1 square foot = m²

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

16-367

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.	1632CS	16
Biologica		2032CS	20
In	stallation Requirements and Limitations	2424CS	24

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	HxW [in]	A_o [in ²]	A _e [ft ²]
	8,16CS	8 x 16	105	205
	1220CS	12 x 20	235	500
	1232CS	12 x 32	305	645
X	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 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)

- 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.

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 203 N. DELAVAN AVENUE

MARCATE, NJ 08402

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 Signature

Issuing State NEW JERSEY

SEAR OF STATE OF SEAR OF SEAR

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