

ELEVATION CERTIFICATE

Important: Read the instructions on pages 1-9.

OMB No. 1660-0008
 Expiration Date: July 31, 2015

SECTION A - PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

A1. Building Owner's Name LANDMARK 24 HOMES			Policy Number:		
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 7 WYNDY COURT			Company NAIC Number:		
City POOLER	State GA	ZIP Code 31322			
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) LOT 436, FOREST LAKES, PHASE 2 (SUBDIVISION MAP BOOK 38S, PAGES 67A-B); CHATHAM COUNTY PIN: 5-1014C-01-102.					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>RESIDENTIAL</u>					
A5. Latitude/Longitude: Lat. <u>32.1424</u> °N Long. <u>81.2747</u> °W Horizontal Datum: <input type="checkbox"/> NAD 1927 <input checked="" type="checkbox"/> NAD 1983					
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.					
A7. Building Diagram Number <u>*3</u>					
A8. For a building with a crawlspace or enclosure(s):			A9. For a building with an attached garage:		
a) Square footage of crawlspace or enclosure(s)	<u>N/A</u>	sq ft	a) Square footage of attached garage	<u>761</u>	sq ft
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade	<u>0</u>		b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade	<u>*9</u>	
c) Total net area of flood openings in A8.b	<u>0</u>	sq in	c) Total net area of flood openings in A9.b	<u>*960</u>	sq in
d) Engineered flood openings?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		d) Engineered flood openings?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number CITY OF POOLER 130261		B2. County Name CHATHAM		B3. State GA	
B4. Map/Panel Number 13051C0019	B5. Suffix G	B6. FIRM Index Date AUGUST 5, 2013	B7. FIRM Panel Effective/Revised Date AUGUST 5, 2013	B8. Flood Zone(s) AE & X(SHADED)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) *AE=20' + 1' FREEBOARD

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
 FIS Profile FIRM Community Determined Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: NGVD 1929 NAVD 1988 Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No
 Designation Date: _____ CBRS OPA

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
 *A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.
 Benchmark Utilized: *LOCAL Vertical Datum: NAVD 88
 Indicate elevation datum used for the elevations in items a) through h) below. NGVD 1929 NAVD 1988 Other/Source: _____
 Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	<u>*19.0</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
b) Top of the next higher floor	<u>*21.3</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	<u>N/A</u>	<input type="checkbox"/> feet <input type="checkbox"/> meters
d) Attached garage (top of slab)	<u>19.0</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	<u>*21.0</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	<u>18.3</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	<u>18.9</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	<u>18.7</u>	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor? Yes No

Check here if attachments.

Certifier's Name	Joseph A. Hale, Jr.	License Number	GA RLS# 2886
Title	Registered Land Surveyor	Company Name	Kern & Company, LLC
Address	6 Mall Court	City	Savannah
		State	GA
		ZIP Code	31406
Signature	<i>Joseph A. Hale, Jr.</i>	Date	05/22/2014
		Telephone	912-354-8400



1/5

N CERTIFICATE, page 2

ANT: In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

ing Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. NDY COURT			Policy Number:
ity COOLER	State GA	ZIP Code 31322	Company NAIC Number:

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments

SECTION A5: METHOD OF DETERMINATION BY USE OF HANDHELD GPS RECEIVER.
 SECTION A7: BUILDING TYPE IS BACK-FILLED STEM WALL FOUNDATION. NO CRAWLSPACE.
 SECTION A9.b: THERE ARE 3 LOUVRE VENTS LOCATED IN THE GARAGE WALL. THERE ARE 6 FLOOD SOLUTIONS LLC FLOOD VENTS (MODEL 1509-F) INSTALLED IN THE GARAGE DOORS. A PORTION OF EACH FLOOD OPENING IS ABOVE THE BASE FLOOD ELEVATION.
 SECTION A9.c: THE TOTAL NET AREA OF THE FLOOD OPENINGS IS APPROXIMATE. THE ATTACHED STATE OF GEORGIA CERTIFICATION OF ENGINEERED FLOOD OPENINGS (FEMA TB-1 AUGUST 2008) INDICATES THAT EACH FLOOD SOLUTIONS LLC FLOOD VENT WILL COVER 131 SQUARE FEET OF ENCLOSED BUILDING AREA.
 SECTION A9.d: THIS BUILDING HAS BOTH ENGINEERED AND NON-ENGINEERED FLOOD OPENINGS.
 SECTION B9: BASE FLOOD ELEVATION DETERMINED ACCORDING TO THE PROCEDURE OF THE COMMUNITY FLOODPLAIN ORDINANCE ADMINISTRATOR. THE 1'(ONE FOOT) FREEBOARD IS A PROVISION OF THE COMMUNITY FLOOD DAMAGE PREVENTION ORDINANCE.
 SECTION B9: THE BASE FLOOD ELEVATION ACCORDING TO THE FLOOD INSURANCE STUDY FLOOD PROFILE IS 19.7' (NAVD 88).
 SECTION C2: THE BENCH MARK USED FOR THIS CERTIFICATE WAS ESTABLISHED USING "EGPS" GPS BASE STATION NETWORK, ELEVATIONS SHOWN ARE REFERENCED TO NAVD 88.
 SECTION C2.a: THE ELEVATION IS FOR THE TOP OF THE GARAGE SLAB. THERE IS LIVING SPACE ABOVE THE GARAGE.
 SECTION C2.b: THE ELEVATION IS FOR THE TOP OF THE FIRST FINISHED FLOOR OF HEATED LIVING SPACE .
 SECTION C2.e: THE ELEVATION IS FOR THE TOP OF THE PLATFORM FOR THE CONDENSING UNIT.

Signature <i>Joe A. Baker, Jr.</i>	Date 05/22/2014
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SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

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.

- 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 _____ feet meters above or below the HAG.
 - b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ feet meters above or below the LAG.
- .2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8–9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ feet meters above or below the HAG.
- E3. Attached garage (top of slab) is _____ feet meters above or below the HAG.
- E4. Top of platform of machinery and/or equipment servicing the building is _____ feet meters above or below the HAG.
- E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? Yes No Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

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.

Property Owner's or Owner's Authorized Representative's Name			
Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			

Check here if attachments.

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

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.

- G1. 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.)
- G2. A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.
- G3. The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued
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- 7. This permit has been issued for: New Construction Substantial Improvement
- 8. 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 _____

2/5

Building Photographs

See Instructions for Item A6.

IMPORTANT: In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.

Policy Number:

7 WYNDY COURT

City
POOLER

State
GA

ZIP Code
31322

Company NAIC Number:

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.

FRONT VIEW
05/22/2014



REAR VIEW
05/22/2014



LEFT SIDE VIEW
05/22/2014



RIGHT SIDE VIEW
05/22/2014



Building Photographs

Continuation Page

IMPORTANT: In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.

7 WYNDY COURT

City
POOLER

State
GA

ZIP Code
31322

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.

TYPICAL FLOOD VENT IN GARAGE WALL

05/22/2014



FLOOD SOLUTIONS LLC
FLOOD VENT MODEL 1509-F

05/22/2014



CONDENSING UNIT

05/22/2014



CERTIFICATION OF ENGINEERED FLOOD OPENINGS (FEMA TB-1 August 2008)

I do hereby certify that the **FLOOD SOLUTIONS LLC** Flood Vent properly installed and sized in accordance with Federal Emergency Management Agency's (FEMA's) National Flood Program regulations is designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for entry and exit of floodwater during floods up to and including the base 100-year flood.

I also do hereby certify that I calculated the Non Engineered Net Free Air and Engineered Opening size for each model and size of FLOOD SOLUTIONS LLC flood vents. The results of the calculations are recorded in the table below. The Engineered size opening calculation was performed using the formula in FEMA Technical Bulletin 1 – August 2008, Openings In Foundation Walls for Buildings Located in Special Flood Hazard Areas In accordance with the National Flood Insurance Program (NFIP) and ASCE/SEI 24-05, Flood Resistance Design and Construction.

I measured the Non Engineered Net Free Air by calculating the minimum distance between the top blade and the top of the vent times the clear opening width of the vent; plus the minimum distance between the bottom blade and the bottom of the vent the clear opening width of the vent; plus the minimum distance between each blade times the number of spaces between the blades in vent times the clear opening width of the vent.

I used the formula in TB 1 – August 2008 ($A^0 = 0.033 [1/C] RA^2$) to determine the Engineered Opening size for each model listed below. I used the following assumptions: A^0 = total net area of openings required (in^2); 0.033 = coefficient corresponding to a factor of safety of 5.0 ($in^2 hr/ft^3$); $c = 0.40$ opening coefficient (ASCE 24 Table 2-3 "rectangular, long axis horizontal, short axis vertical unobstructed during design flood") or $C = 0.35$ (square unobstructed during design flood); $R = 5 ft/hr$ worst case rate of rise and fall; and $A^E = 1 ft^2$ total enclosed area.

Note: When the horizontal dimension is twice or more the vertical dimension, use 0.4; as the dimensions approach a square, interpolate from 0.4 to 0.35.

$$A^0 / A^E = 0.033 [1/C] R = 0.033 [1/0.40 \text{ for rectangle, long axis horizontal}] R = 0.4125 \text{ in}^2 \text{ per ft}^2$$

$$\text{or } A^0 / A^E = 0.033 [1/C] R = 0.033 [1 / 0.35 \text{ for square}] R = .4719 \text{ in}^2 \text{ per ft}^2$$

Each individual opening, and any louvers, screens, or other covers, shall be designed to allow automatic entry and exit of floodwaters during design flood or lesser flood conditions; there shall be a minimum of two openings on different sides of each enclosed area; if a structure has more than one enclosed area below the DFE, each area shall have openings; openings shall not be less than 3 inches in any direction in the plane of the wall; the bottom of each required opening shall be no more than 1 ft. above the adjacent grade; the difference between the exterior and interior floodwater levels shall not exceed 1 ft. during base flood conditions; in the absence of reliable data on the rates of rise and fall, assume a rate of rise and fall of 5ft/hr; where data or analysis indicated more rapid rates of rise and fall, the total net area of the required openings shall be increased to account for the higher rates of rise and fall.

MODEL Number Flood Solutions:	SIZE of WALL OPENING: (WIDTH X HEIGHT)	Net Free Air (square inches):	ENGINEERED OPENING (square inches) Each vent covers: (square ft.)
1412-F	14-1/2" x 12"	67	145
1509-F	16" x 9-1/4"	55	131
1608-F	16" x 8"	51	124
1608-D	16" x 8"	51	124
1608-C	16" x 8"	65	158
1616-F	16" x 16"	104	221
1616-D	16" x 16"	102	216
2412-F	24" x 12"	113	274
2412-D	24" x 12"	110	267
2416-F	24" x 16"	156	362
2416-D	24" x 16"	154	357
3208-F	32" x 8"	104	252
3208-D	32" x 8"	104	252

SIGNATURE: 

NAME: DANIEL G. FARABAUGH

TYPE OF LICENSE: PROFESSIONAL ENGINEER

STATE: GEORGIA LICENSE NUMBER: 19406

DAN FARABAUGH, P.E.
FARABAUGH ENGINEERING AND TESTING, INC.
401 WIDE DR., MCKEESPORT, PA 15135

