

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expires March 31, 2012

Important: Read the instructions on pages 1-9.

SECTION A - PROPERTY INFORMATION			For Insurance Company Use:	
A1. Building Owner's Name LANDMARK 24 HOMES OF GA, LLC			Policy Number	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 615 WYNDHAM WAY			Company NAIC Number	
City POOLER	State GA	ZIP Code 31322		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) LOT 477, FOREST LAKES, PHASE 2 (SUBDIVISION MAP BOOK 38-S, PAGES 67A & 67B); CHATHAM COUNTY PARCEL ID: 5-1014C-06-007				
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) RESIDENTIAL				
A5. Latitude/Longitude: Lat. 32.1455°N Long. 081.2727°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 3				
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) N/A sq ft			a) Square footage of attached garage *515 sq ft	
b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 0			b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade *9	
c) Total net area of flood openings in A8.b 0 sq in			c) Total net area of flood openings in A9.b *724 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 F	B6. FIRM Index Date 09/26/2008	B7. FIRM Panel Effective/Revised Date 09/26/2008	B8. Flood Zone(s) AE	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) *20' + 1' FREEBOARD
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9. <input type="checkbox"/> FIS Profile <input checked="" type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other (Describe) _____					
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input checked="" type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other (Describe) _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA					

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)	
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input checked="" type="checkbox"/> 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. Use the same datum as the BFE. Benchmark Utilized LOCAL Vertical Datum NGVD 29 Conversion/Comments -0.91'/VERTCON	
Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor) *19.2	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
b) Top of the next higher floor *21.4	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
c) Bottom of the lowest horizontal structural member (V Zones only) N/A	<input type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
d) Attached garage (top of slab) 19.2	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) *21.5	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
f) Lowest adjacent (finished) grade next to building (LAG) 18.6	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
g) Highest adjacent (finished) grade next to building (HAG) 19.0	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support 18.4	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters (Puerto Rico only)

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.			
<input checked="" type="checkbox"/> Check here if comments are provided on back of form.		Were latitude and longitude in Section A provided by a licensed land surveyor? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Certifier's Name Joseph A. Hale, Jr.		License Number GA RLS# 2886	
Title Registered Land Surveyor	Company Name Kern-Coleman & Co., LLC		
Address 6 Mall Court	City Savannah	State GA	ZIP Code 31406
Signature <i>Joe A. Hale, Jr.</i>	Date 2/25/2013	Telephone 912-354-8400	




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. 615 WYNDHAM WAY			Policy Number	
City POOLER	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.
SECTION A9.a: THE SQUARE FOOTAGE OF THE GARAGE IS APPROXIMATE.
SECTION A9.b: THERE ARE 5 AIR VENTS IN THE GARAGE WALL, THEY ARE DISABLED PERMANENTLY IN THE OPEN POSITION TO PERMIT AUTOMATIC ENTRY AND EXIT OF FLOODWATERS. THERE ARE 4 FLOOD SOLUTIONS LLC FLOOD VENTS (MODEL 1509-F) INSTALLED IN THE GARAGE DOOR.
SECTION A9.c: THE INFORMATION PROVIDED IS BASED ON THE MANUFACTURER SPECIFICATIONS. THE ATTACHED STATE OF GEORGIA CERTIFICATION OF ENGINEERED FLOOD OPENINGS (FEMA TB-1 AUGUST 2008) INDICATES THAT EACH VENT WILL COVER 131 SQUARE FEET OF ENCLOSED BUILDING AREA.
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 ELEVATIONS ARE REFERENCED TO NAVD 88.
SECTION C2: THE BENCH MARK USED FOR THIS CERTIFICATE IS SHOWN ON THE RECORDED SUBDIVISION PLAT: BM-1, DISC IN CONCRETE MONUMENT; ELEVATION 17.62' (NGVD 29). THE NAVD 88 HEIGHT IS COMPUTED BY APPLYING THE VERTCON SHIFT VALUE (-0.91') TO THE NGVD 29 HEIGHT.
SECTION C2.a: THE ELEVATION IS FOR THE TOP OF THE GARAGE FLOOR. 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 	Date 2/25/2013	<input checked="" type="checkbox"/> Check here if attachments
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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.
E2. 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
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Signature	Date	Telephone
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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 and G9.

- 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-G9) 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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- G7. This permit has been issued for: New Construction Substantial Improvement
G8. Elevation of as-built lowest floor (including basement) of the building: _____ feet meters (PR) Datum _____
G9. BFE or (in Zone AO) depth of flooding at the building site: _____ feet meters (PR) Datum _____

Building Photographs

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 615 WYNDHAM WAY			For Insurance Company Use: Policy Number
City POOLER	State GA	ZIP Code 31322	Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least two 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." If submitting more photographs than will fit on this page, use the Continuation Page on the reverse.

FRONT VIEW
2/25/2013



REAR VIEW
2/25/2013



LEFT SIDE VIEW
2/25/2013



RIGHT SIDE VIEW
2/25/2013



Building Photographs

Continuation Page

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 615 WYNDHAM WAY			For Insurance Company Use: Policy Number
City POOLER	State GA	ZIP Code 31322	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."

(TYPICAL) "DISABLED" AIR VENT USED AS FLOOD OPENING
2/25/2013



FLOOD VENTS IN GARAGE DOOR
2/25/2013



(TYPICAL) FLOOD SOLUTIONS LLC
FLOOD VENT IN GARAGE DOOR
2/25/2013



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 ($A^o = 0.033 [1/C] RA^e$) to determine the Engineered Opening size for each model listed below. I used the following assumptions: A^o = total net area of openings required (in²); 0.033 = coefficient corresponding to a factor of safety of 5.0 (in² hr/ft²); 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 ft² 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.

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

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

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

