U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

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
Policy Number:
Company NAIC Number:

A1. Building Owner's Name Lunare Development Co.

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
3919 Vicolo Terrace
City Fremont State CA ZIP Code 94538

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Lot 31 of Tract 8001, Book 313 of Maps, Pages 7-12, Alameda County Records

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) Residential

A5. Latitude/Longitude: Lat. 37°31'28.1" Long. -121°57'23.7" Horizontal Datum: ☐ NAD 1927 ☒ 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):
a) Square footage of crawlspace or enclosure(s) n/a sq ft
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade n/a
c) Total net area of flood openings in A8.b n/a sq in
d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
a) Square footage of attached garage 555 sq ft
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade 2
c) Total net area of flood openings in A9.b 576 sq in
d) Engineered flood openings? ☒ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
City of Fremont - 065028	Alameda County	California

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
06001C0464G	G	August 3, 2009	August 3, 2009	AE	44.3

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: CITY OF FREMONT BM "A-4" Vertical Datum: NGVD 29
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)	43.93	☒ feet	☐ meters
b) Top of the next higher floor	49.83	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	n/a.	☐ feet	☐ meters
d) Attached garage (top of slab)	43.93	☒ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	45.50	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	43.93	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	49.62	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	n/a.	☐ feet	☐ 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.
☒ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

LICENSED LAND SURVEYOR BRETT J. CHAPPELL EXP. 12-31-15 NO. 7547 STATE OF CALIFORNIA

Certifier's Name Brett J. Chappell License Number LS7547
Title Owner Company Name Chappell Surveying Services
Address 680 Esther Way City Oakdale State Ca ZIP Code 95361
Signature Brett Chappell Date 7/15/2014 Telephone 209 845 9694

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. 3919 Vicolo Terrace	Policy Number:
City Fremont State CA ZIP Code 94538	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 City of Fremont Bench Mark "A-4" EL= 40.22 feet (NGVD 1929) datum shift of +2.75 to get to NAVD 88 Datum.

Signature Brett Chappell Date 7/15/2014

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

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

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 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

Comments

☐ Check here if attachments.

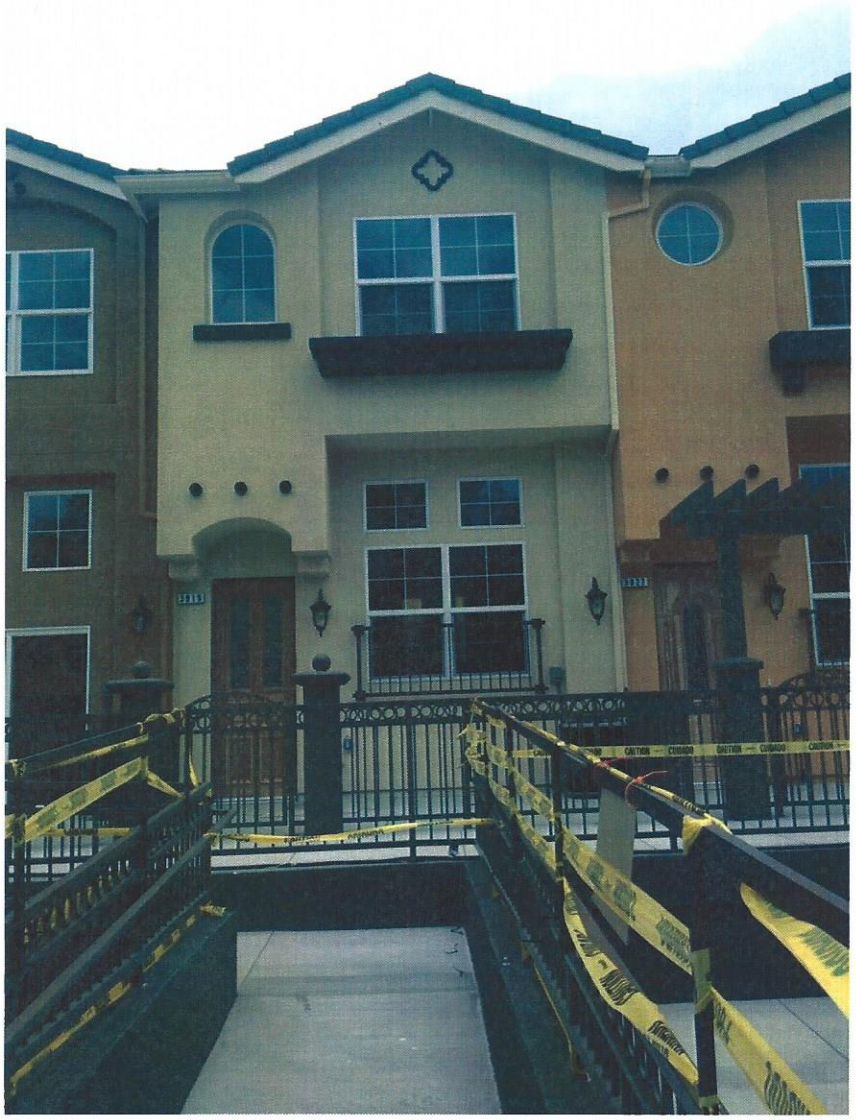
Building Photographs

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. 3919 Vicolo Terrace			Policy Number:
City Fremont	State CA	ZIP Code 94538	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 – Date Taken : 7-14-2014



Building Photographs

Continuation Page

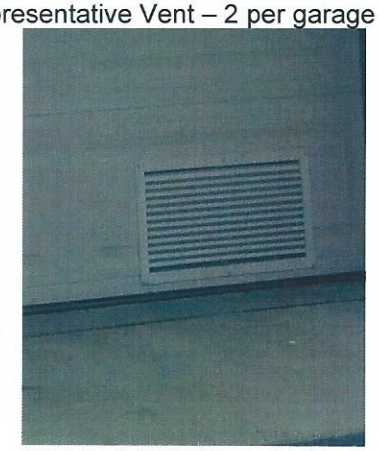
IMPORTANT: In these spaces, copy the corresponding information from Section A.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 3919 Vicolo Terrace	FOR INSURANCE COMPANY USE Policy Number:
City Fremont State CA ZIP Code 94538	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.

Rear View - along Vicolo Terrace – Date Taken : 7-14-2014

Representative Vent – 2 per garage door



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] RAê) to determine the Engineered Opening size for each model listed below. I used the following assumptions: A^o = 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 Aê = 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^o / Aê = 0.033 [1/C] R = 0.033 [1/0.40 for rectangle, long axis horizontal] 5 = 0.4125 in^2 per ft^2
or A^o / Aê = 0.033 [1/C] R = 0.033 [1 / 0.35 for square] 5 = .4719 in^2 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.

WE WILL USE THE 24x12"F" FOR BOTH THE "A" & "B" UNITS

MODEL Number Flood Solutions:	SIZE of OPENING: (WIDTH X HEIGHT)	Net Free Air (square inches):	ENGINEERED OPENING Each vent covers: (square ft.)
1412-F	14" x 12"	67	145
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

6/24/14

SIGNATURE: _____

NAME: *DANIEL G. FARABAUGH*

TYPE OF LICENSE: *CIVIL ENGINEER*

STATE : *CALIFORNIA* LICENSE NUMBER: *C 40362*

REGISTERED PROFESSIONAL ENGINEER
DANIEL GILBERT FARABAUGH
C040352
Exp. 3/31/13
CIVIL
STATE OF CALIFORNIA

5/24/12