Department of Land and Natural Resources Engineering Division

Flood

The Elevation Certificate { translated } Part 1 Written by C. Barton Crattie, LS, CFM and Wendy Lathrop, LS, CFM

Over the years we (the authors) keep hearing the crying and moaning from our colleagues about the abuse surveyors endure at the hands of civil engineers, zoning and planning regulators, government officials and all outsiders having no understanding of what surveyors do and especially, no understanding of the knowledge necessary to do the things surveyors do. We as surveyors are simply misunderstood and we get no respect. We fret constantly that we will become irrelevant in the scheme of things and our profession will cease to be. But in the case of the National Flood Insurance Program (NFIP), we deserve all the abuse the public and the government wish to heap upon us.

Floodplain managers, insurance agents, home buyers, community officials, bankers, realtors, builders, and others in the building industry comprise a huge portion of our economy. This massive segment of our country's economic powerhouse relies on the surveyor through his or her interpretation of flood issues via the Elevation Certificate (EC). Though it is a Federal agency, FEMA must recognize state and local policies as well as the rules of various licensing Boards. Depending upon the Board's definition of practice in a given jurisdiction, an Elevation Certificate may be completed by an engineer, architect, land surveyor, or in some cases, a landscape architect. However, FEMA has repeatedly made clear its preference for the services of a surveyor over those of other professionals permitted by their licenses to collect topographic data. That being said, in reality, the surveyor is the lead individual nationwide preparing Elevation Certificates.

As both land surveyors and floodplain managers, we hear both sides of the story. Certified Floodplain Managers (CFMs) appreciate and respect surveyors and the technical aspects of the profession. However, CFMs spend much time lamenting surveyors' shortfalls in completing ECs. This is deserved. If a surveyor is not spending at least two hours on the field work (outside of transferring the benchmark), the job is not being performed adequately. Surveyors are the eyes of floodplain managers. Currently we surveyors are doing a mediocre job of this at

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FEMA Elevation Certificate Coming to Hawaii !!!



The Elevation Certificate {translated} Part 1 (continued)



Featured Articles ...

LOMA's Approved for Many Hawaii Kai Properties

Flood Insurance Rate Map Updates



How to Request a Letter of Map Amendment (LOMA) or Letter of Map Revision Based on Fill (LOMR-F)



January 2012

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The current and selected past issues are also available at:

www.hawaiinfip.org

We welcome your comments and suggestions, as well as, newsworthy articles. Your submissions may be sent to the Department of Land and Natural Resources, Engineering Division, P.O. Box 373, Honolulu, Hawaii 96809.

If you'd like to receive the Wai Halana via email or wish to be removed from our mailing list, contact Jerome Acadimia at (808) 587-0254. **Upcoming Events**

ASFPM 2012 Annual National Conference



The Association of State Floodplain Managers will convene the world's largest and most comprehensive floodplain management conference – our 36th annual gathering – the week of May 20 - 25, 2012, in San Antonio, Texas. We invite you to share your experiences with local, state, and federal officials, industry leaders, consultants, and other interested parties by presenting a paper relevant to our theme, "Mission Mitigation".

Throughout the week, 200 of the industry's experts will conduct plenary and concurrent sessions and share the state-of-the-art in techniques, programs, and resources to accomplish flood mitigation, watershed management, and other community goals. A three-day comprehensive exposition features the materials, equipment, accessories, and services vital to get the job done. Supplementary technical field tours and training workshops provide indepth training. Numerous networking activities offer additional opportunities to learn from each other.

For more info, visit: www.floods.org

FEMA Elevation Certificate Workshop - Coming to Hawaii !!!

The State of Hawai'i, Department of Land and Natural Resources, Engineering Division and FEMA Region IX will cosponsor a free workshop covering the National Flood Insurance Program's (NFIP) Elevation Certificates (EC) on all islands during the week of February 27 - March 1, 2012 for Land surveyors, Architects, Engineers, and County officials who submit and/or review FEMA's EC's.

"The National Flood Insurance Program's Elevation Certificate is an important tool to verify that people's homes are built above the anticipated flood levels to ensure their safety," said William Aila, Chairperson.

An EC is used to determine the proper flood insurance premium rates; it can be used to document elevation information necessary to ensure compliance with community floodplain regulations; and it may be used to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).

Participants will learn step by step how to complete the EC form and check to ensure accuracy in the future.

To register for this valuable training, please visit www.hawaiinfip.org and click on the 2012 Elevation Certificate Workshop Registration under the "LATEST NEWS" Section. Please contact Kristen Akamine at 808-587-0281 or Jerome Acadimia at 808-587-0254 for further information.

TARGET AUDIENCE: Land surveyors, Architects & Engineers



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best. As professionals we should honestly recognize when we may be practicing outside of our level of competency, and take a step back to make a realistic assessment of our skills and knowledge. While FEMA highly prefers the services of a surveyor to those of any other professional in preparing its EC, that doesn't automatically mean that any surveyor can do the work competently. Unfortunately, both of us have seen a variety of incorrect and incomplete EC forms issued by surveyors.

In 2012, the current level of mediocrity could really come to public attention. The NFIP has a program known as the Community Rating System (CRS), which gives credits to communities for undertaking various proactive steps intended to make that community more flood resistant and better able to recover from flood events. When a certain number of "points" have been accumulated, the community receives a discount as a whole on the quoted flood insurance premiums. This discount can reach as much as a savings of 45%. One of the qualifying activities for CRS is for a community to require and review Elevation Certificates for every new building or substantial improvement to a building in the 1% annual chance floodplain. At present, 20% of those reviewed can have an error of some sort (more than 20% with errors means the community will lose credits).

Recently a CRS rater related a story about going into a community where out of 23 certificates reviewed, 21 had at least one error that needed correction. Why this will become more crucial in 2012 is that at present FEMA is contemplating raising the acceptable rate from 80% up to 90%, meaning that only 10% of the ECs on file can contain an error or omission. If this level is not consistently maintained nationwide, it can be assured at some point FEMA or the local officials will arrive at an alternative method to using the services of surveyors. The local administrator is on your side, as is the FEMA regional office; use their knowledge to your advantage. Do not overlook these valuable resources-—ask questions and make sure you understand the responses to know if your questions have truly been answered.



Floodplain Management Bulletin Elevation Certificate May 2004

An Elevation Certificate is more than a simple inspection. This two-sheet form can mean much for some family's future. This is an important document that should be revered as much or more as a survey of a boundary of the family farm. The answers you provide can have some drastic ramifications on the public, that we surveyors are charged to protect. One incorrectly reported figure could mean many unnecessary tens of thousands of dollars in mandatory premiums over the life of a mortgage or commercial loan. On the other hand, incorrectly reported figures may also result in FEMA paying for expensive flood damage compensation on underinsured and repetitively damaged structures, bankrupting the program through losses beyond the income of insurance premiums collected nationwide. It is our professional duty to eliminate possible errors and educate ourselves, thereby improving the product we are delivering to the public. As surveyors, we are good with numbers but often inept when it comes to working through the administrative side of things. The subtle and un-researched issues cause many faults in land surveyors' Elevation Certificates. We need to apply our knowledge of risk reduction to evaluate variables and minimize or eliminate unknown factors. After all, it is a certification one is sealing.

This article is intended to enumerate some of the primary errors surveyors make as relayed to us from individuals associated with the NFIP over the years. If we as surveyors do not shape up, it is entirely possible that we will be replaced by other methodologies. Most sections of the standard Elevation Certificate will be visited briefly. As a professional, is it worth putting your license and financial well-being on the line for something you don't fully understand? The EC is an important document affecting large sums of money, far exceeding a monthly insurance premium.

Virtually every problem encountered when completing the Elevation Certificate can be answered by reviewing the Instructions included with the Certificate. If you cannot find the answer, state this fact in the "comments" area in Section D. Keeping these two simple principles in mind could eliminate the vast majority of surveyors' errors.

Before you even price the certificate, get your maps and background data together. Prior to starting an actual certificate, the first stop is the FEMA Map Service Center (http://msc.fema.gov). Failing to check if either a Letter of

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Map Amendment (LOMA) or Letter of Map Revision (LOMR) has been issued on the property is flirting with danger that can be categorized as incompetency. If the structure on site is in a Zone "A" (with no Base Flood Elevation), there's an entirely different set of rules from a Zone "AE" (where a detailed study has resulted in establishment of a Base Flood Elevation). Take this sort of information into consideration before consulting with the client.

If the structure is actually in Zone "X", "B", or "C", meaning it is outside the 1% annual chance floodplain, federal regulations do not mandate flood insurance coverage, although a lender may still require a policy. The lender has not made the determination of the zone affecting the structure itself; instead it has contracted with a flood zone determination vendor to provide this service, and it is fair to ask the lender to have the vendor recheck its determination before requiring your client to spend hard-earned dollars on an unnecessary EC. Provide a survey or other substantive proof of the structure's location in relationship to the property lines, and have the lender forward this material to the vendor along with its request for a re-determination. Remind your client and the lender that only structures trigger the federal mandatory flood insurance requirement, as vacant land is not insurable against flood damage. Too often we see zone determinations that state there is a 1% annual chance floodplain "somewhere" on the property, which may not be where the insurable improvements are. Don't waste the public's hard-earned money. Be able to inform both your client and the lender of the ramifications of the NFIP and flood issues: an incorrectly completed EC can mean that a building is over-insured or under-insured. From the floodplain manager's point of view, an incorrect EC also means that the building can be over- or under-regulated. The point is to complete the form correctly to protect a broad range of interests (including the surveyor's).

Please, practice within your level of competence. The certificate is fraught with many potential pitfalls awaiting the neophyte thinking his knowledge exceeds that of his fellow citizen. For instance, surveyors will on a regular basis enter the client's address in Item A2 rather than the subject property address. This is a simple administrative blunder, but one that causes many problems in the insurance industry. There is not much liability there, other than to your reputation.

For Item A5, Latitude and Longitude, just remember that what you report only needs to be within 4 poles (66 feet) of the true location (NAD 1983). On the earth's surface, one second of arc is equal to about 100.8 horizontal feet or 0.0002778 decimal degrees. 66 horizontal feet will equal to about 0.00018 decimal degrees or 0.64 seconds. Google Earth is usually in pretty good agreement with a hand-held GPS unit. The USGS quadrangle maps on its website are another reasonable source of these figures. Something overlooked: If the check box in Section D, at the bottom of the first page of the EC identifies the origin of the Lat/ Long as being provided by a Licensed Land Surveyor, describe the method of determination. While there is nothing requiring this information, documenting the method used to determine latitude and longitude offers you some protection if someone later complains about the level of accuracy. Consider this information as metadata, since it will primarily be used to place a site and its EC into a geographic information system. Surveyors should help prevent the data from being used for purposes never intended by documenting the source, to overcome the public's general inattention to and disregard of data's inherent accuracy or inaccuracy.

As for Item A6, regarding photographs, these are only required for insurance rating purposes. In these cases, take a front and rear picture of the structure. Go ahead and shoot both sides as well. If the structure is unusual, particularly if it doesn't fit any of the nine standard Building Diagrams included in the EC instructions, take more photos. Concentrate on the foundation and its relationship to the adjoining grade. If the surveyor is in doubt about anything (vent types, structure diagram), take a photograph and include it with the package with a clear label of its orientation and identifying significant features you want to point out ("right side of house showing cantilevered second story deck-no ground posts under deck"). You are not limited to the number of photographs you can include.

The section on building diagrams is an ever-evolving project, an ongoing effort with each update of the EC in an attempt to produce a clearer set of choices for such a complicated issue. Match as best you can. If you have a structure that doesn't match any of the building diagrams, you can draw your own diagram and include it with the package as an attachment, mixing diagram types if it is appropriate. But be extremely cautious about including your own drawing rather than using one of the nine in the EC. A supplemental sketch (not a replacement drawing) is fine, but some insurance writers are not adept enough at reading drawings to figure out something beyond the norm. Remember that both lowest adjacent grade (LAG) and a building diagram have been required for all insurance applications made after October 1997 (see the Insurance Agent's Manual, CERT-1, available online from FEMA's website).

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A note of caution: If the circumstance arises requiring the inclusion of a supplemental diagram, be careful to avoid even implying which is the "lowest floor"-that is a flood insurance matter, a determination not to be made by the surveyor. Years ago the insurance folks wanted surveyors to circle the line and elevation in Section C on which the policy writers should rate the structure, thereby placing the burden of determination on the surveyors rather than the policy writers. We should not volunteer our necks for them by practicing outside our area of expertise. Our responsibility is to be eyes in the field, not insurance mavens. A surveyor would need to be very, very careful in labeling things clearly and thoroughly if drawing a separate building diagram. Adding many photographs can accomplish a similar outcome without incurring the liability of stating which is the lowest floor for rating purposes.

One last point about buildings: if you find multiple structures on site, such as a principal residence and a garage or a variety of farm buildings, do not try to use one EC to accommodate them all. The buildings may be in different flood zones, they may be subject to different Base Flood Elevations, and they very likely are best described by different building diagrams rather than a single uniform one. A separate form should be filled out for each such structure, clearly identifying which of the multiple buildings on site is the subject of each EC. Include a survey or sketch showing all the buildings, labeling them in a way that can be carried over to and referenced in Section A of the EC.

Items A8 and A9 address enclosures and vents or openings. Reported incorrectly, the client will pay dearly for years to come. Reported incorrectly, you, the surveyor, possibly could pay dearly for years to come by order of a judge. Go to FEMA's website and look up 44 CFR 59.1 to read the definition of "Lowest Floor". If you provide an incorrect answer, the insurance agent will misinterpret what is intended to be the "lowest floor" and guess who will be blamed for the overpayment of premiums when the error is discovered? As for vents or openings, make sure they can never be placed in a closed position. If they have moving parts requiring human action to open them (such as sliding panels, levers, or cranks), make sure that they are disabled in the "open" position. If louvers or panels can be closed they must be discounted from square inch calculations. Count for open square inches only what will allow water to flow through. Fancy grillwork is difficult to measure as an obstruction to flood water, and the EC instructions do allow some leeway in this calculation. Here is where another set of labeled photographs will be worth many words (and document against liability).

While never mentioned in the instructions for Elevation Certificates or in the NFIP Flood Insurance Manual, there is another important consideration besides the vent being no more than 1.0 foot above the adjacent grade. Yes, the vent must be within a foot of grade, but more significantly, the vent must not be above the Base Flood Elevation (BFE), in order to allow the flood waters into the enclosed area. Please see FEMA Technical Bulletin No. 1 (TB-1), pages 13-17. Ideally, this means we should never have to report anything above BFE in our square inch calculation for the vent, only counting and listing the portion of the vent below BFE in A8 and A9. Vents located above the BFE are unable to equalize the hydrostatic pressure by allowing entry and exit flow.

But here we find a discrepancy between the technical guidance in TB-1 and real life. While TB-1 does say that only portions of flood openings below BFE count toward compliance, that doesn't mean that flood openings otherwise within a foot of adjacent grade should be ignored. It may in fact be physically impossible to have the opening below BFE, depending on the relationship between the structure and the ground. If LAG is right at BFE (thereby complying with 44 CFR 60.3 requirements for structures to be at or above BFE, but meaning the building is in the SFHA), no part of the flood opening can be below BFE without being down in the dirt. Here's where Section D comments are useful once again.

In Part 2, we will wrap up our discussion of proper completion of the Elevation Certificate.



Part 2 will be featured in the April 2012 issue of the Wai Halana. However, a copy of the article can be read on-line at http://www.amerisurv.com/content/view/9019/153/



Flood Insurance Rate Maps Updates

Approved Hawaii Kai Area LOMAs:

Case No.	Address
11-09-3102A	750 Kumukahi Place
11-09-3104A	628 Kumukahi Place
11-09-2482A	6977 Niumala Loop
11-09-2517A	744 Kumukahi Place
11-09-1587A	214/216 Opihikao Way 218/220 Opihikao Way
11-09-3277A	807 Kumukahi Place
12-09-0645A	217/219 Opihikao Way
11-09-3476A	$\begin{array}{l} \underline{\text{Opihikao Way}}\\ 106/108 , 110/112 , 114/116 , 118/120 , \\ 122/124 , 126/128 , 130/132 , 136/138 , \\ 140/142 , 144/146 , 148/150 , 168/170 , \\ 172/174 , 176/178 , 180/182 , 184/186 , \\ 188/190 , 192/194 , 196/198 , 202/204 , \\ 206/208 , 210/212 , 222/224 , 226/228 , \\ 230/232 , 234/236 , 238/240 , 242/244 , \\ 246/248 , 250/252 , 254/256 , 258/260 , \\ 262/264 , 266/268 , 270/272 , 274/276 , \\ 278/280 , 282/284 , 286/288 \\ \hline \\ \underline{\text{Opihikao Place}} \\ 301/303 , 305/307 , 309/311 , 313/315 , \\ 317/319 , 341/343 , 345/347 , 349/351 , \\ 353/355 , 357/359 , 361/363 , 365/367 , \\ 369/371 , 373/375 , 377/379 , 381/383 , \\ 385/387 , 389/391 , 393/395 , 397/399 , \\ 401/403 , 405/407 , 409/411 , 413/415 , \\ 417/419 , 421/423 , 425/427 , 429/431 , \\ 433/435 , 437/439 , 441/443 , 445/447 , \\ 449/451 , 453/455 , 457/459 , 461/463 , \\ 465/467 , 469/471 , 473/475 , 477/479 , \\ 481/483 , 485/487 , 489/491 , 493/495 , \\ 497/499 , 501/503 , 505/507 \\ \hline \end{array}$



LOMAs approved for many Hawaii Kai Properties



Since the new Digital Flood Insurance Rate Maps (DFIRMs) for Oahu became effective on January 19, 2011, many Hawaii Kai Marina front residents found themselves in unfamiliar "waters" because previous to the January map change, the Hawaii Kai area was predominantly in a D flood zone.

FEMA defines a "D" zone as an area of undetermined flood risk. In other words, the area was not studied and the Mandatory Flood Insurance Requirement does not apply to D zones. However, several years ago FEMA initiated a Hurricane Flood Insurance Risk analysis for the southern shorelines of the Hawaiian Islands. This study has since been finalized and, for Oahu, was recently incorporated into their DFIRMs. The changes that were seen in East Oahu, were increased flood heights or newly mapped high risk zones (AE & VEzones).

Many of the properties along the marina were partially included in the newly mapped high risk flood zone, triggers lenders to require flood insurance coverage as a condition of their mortgages. However, many property owners and/or community associations have been challenging the revisions to the DFIRMs through FEMA's Letter of Map Amendment (LOMA) process and have been successful. See the Flood Insurance Map Updates to the left to check out if your Hawaii Kai property has an approved LOMA. These property owners were successful in demonstrating that their structures are located above the anticipated Base Flood Elevations. For more information on the LOMA process, please page 7.

Keep in mind, although flood insurance may not be required for these properties, it may be prudent to maintain flood insurance coverage because of the structure's proximity to the marina. FEMA's Preferred Risk Policy (PRP) is an affordable flood insurance policy for structures which are located in a low-to-moderate (B, C, and X) flood zones. Maximum coverage of \$250,000 building and \$100,000 structure would cost less than \$33 per month. For more information on the PRP policy visit: www.floodsmart.gov





How to Request a Letter of Map Amendment (LOMA) or Letter of Map Revision Based on Fill (LOMR-F)

What is a LOMA or a LOMR-F?

The Federal Emergency Management Agency (FEMA) applies rigorous standards to develop Flood Insurance Rate Maps (FIRMs) and uses the most accurate hazard information available. However, limitations in the scale or topographic detail of the source maps used to prepare a FIRM may cause small elevated areas to be included in a Special Flood Hazard Area (SFHA). SFHAs are high-risk areas subject to inundation by the base (1-percent-annual-chance)flood; they are also referred to as 1-percent-annual-chance floodplains, base floodplains, or 100-year floodplains.

To change the flood hazard designation for properties in these areas, FEMA has established the LOMA process for properties on natural high ground and the LOMR-F process for properties elevated by the placement of fill. LOMAs and LOMR-Fs are letter determinations that officially amend an effective FIRM. They can establish that a property is not in an SFHA and, by doing so, remove the Federal flood insurance requirement.

Obtaining a LOMA or LOMR-F

A LOMA application form can be downloaded from the FEMA website at www.fema.gov/plan/prevent/fhm/dl_mt-ez. shtm. FEMA does not charge a fee to review a LOMA request, but requesters are responsible for providing the required mapping and survey information specific to their property. For FEMA to remove a structure from the SFHA through the LOMA process, Federal regulations require the Lowest Adjacent Grade (LAG) elevation, the lowest ground touching the structure, to be at or above the Base Flood Elevation (BFE).

The exception to this requirement is when the submitted property information shows that the structure is outside the SFHA; in this case, the property is referred to as "out as shown." If elevation information is required for the LOMA request, the requestor should submit the elevation data requested on the MT-EZ form (www.fema.gov/plan/ prevent/fhm/dl_mt-ez.shtm). An Elevation Certificate, which includes this required elevation data, may be submitted to meet this data requirement and may be available from the community in lieu of a new survey.

If the property has been elevated by fill, the requester will need to use the LOMR-F process. Application forms are available at www.fema.gov/plan/prevent/fhm/dl_mt-1.shtm. For a LOMR-F to be issued, the LAG must be at or above the BFE, and community floodplain officials must determine that the land and any existing or proposed structures to be removed from the SFHA are "reasonably safe from flooding." FEMA charges a fee for the engineering review of LOMR-Fs. Fee information is located at www.fema.gov/plan/prevent/fhm/frm_fees.shtm.

Please send completed application forms to the attention of the LOMA Manager at the LOMC Clearinghouse, 7390 Coca Cola Drive, Suite 204, Hanover, MD 21076.

What if no BFEs have been Determined?

In some instances, BFEs for a certain SFHA have not yet been determined. FEMA will attempt to calculate the BFE when a LOMA application is submitted for properties of less than 50 lots or 5 acres. Sometimes, a BFE can be developed from sources such as U.S. Geological Survey topographic quadrangle maps. If that information is not available, the property owner will be asked to supply a survey for the property with the information necessary to allow FEMA to develop a site-specific BFE. National Flood Insurance Program (NFIP) regulations require that the requester determine the BFEs for properties larger than 50 lots or 5 acres. A variety of computational methods can be employed to determine BFEs, but these methods can be expensive. Before computational methods are used, every attempt should be made to obtain information, in the form of floodplain studies or previous computations,



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from Federal, State, or local agencies. Data obtained from these agencies may be adequate to determine BFEs with little or no additional research, calculation, or cost.

The FEMA document *Managing Floodplain Development in Approximate Zone A Areas, A Guide for Obtaining and Developing Base (100-Year) Flood Elevations* provides guidance on computing BFEs. This document, which can be viewed on the FEMA website at www.fema.gov/pdf/fhm/frm_zna.pdf, provides methods for developing BFEs, as well as a list of agencies that can be contacted to determine whether BFE data are already available.

How will a LOMA or LOMR-F Affect my Flood Insurance Requirement?

The Federal flood insurance requirement applies to structures in SFHAs that carry a mortgage backed by a federally regulated lender or servicer. If you have a LOMA or LOMR-F proving that your property is not in the SFHA, the mandatory Federal flood insurance requirement no longer applies. However, your lender still has the prerogative to require flood insurance as a condition of the loan. Even if your lender requires flood insurance, however, premiums are lower for structures outside the SFHA.

If FEMA issues a LOMA or LOMR-F and your lender agrees to waive the flood insurance requirement, you may be entitled to a refund of the premium paid for the current policy year. To cancel your policy, you can submit a copy of the LOMA or LOMR-F and the lender's waiver to your flood insurance agent or broker. The agent will send these documents and a completed cancellation form to the appropriate insurance provider.

It is important to note that approximately 30 percent of all flood insurance claims occur in areas designated as moderate or minimal flood risk. Therefore, not having a flood insurance policy could have disastrous consequences, leaving you with no financial protection from future flood losses. FEMA recommends flood insurance coverage even if it is not required by law or a lender. The good news is that you may be eligible to pay much less for flood insurance coverage if your property is removed from the SFHA.

