



## **DIGITAL SIGNATURES**

### **Electronic Plans Review**

Building a Digital Signature to  
Meet State Statute Requirements  
Using a Third Party Certificate Authority

## 2014 Florida Statutes

[Title XXXII REGULATION OF PROFESSIONS AND OCCUPATIONS](#)

[Chapter 471 ENGINEERING](#) [Entire Chapter](#)

### SECTION 025 Seals.

#### **471.025** Seals.—

(1) The board shall prescribe, by rule, one or more forms of seal to be used by licensees. Each licensee shall obtain at least one seal in the form approved by rule of the board and may, in addition, register his or her seal electronically in accordance with ss. [668.001-668.006](#). All final drawings, specifications, plans, reports, or documents prepared or issued by the licensee and being filed for public record and all final documents provided to the owner or the owner's representative shall be signed by the licensee, dated, and sealed with said seal. Such signature, date, and seal shall be evidence of the authenticity of that to which they are affixed. Drawings, specifications, plans, reports, final documents, or documents prepared or issued by a licensee may be transmitted electronically and may be signed by the licensee, dated, and sealed electronically with said seal in accordance with ss. [668.001-668.006](#).

**668.003** Definitions.—As used in this act:

(1) "Certificate" means a computer-based record which:

(a) Identifies the certification authority.

(b) Identifies the subscriber.

(c) Contains the subscriber's public key.

(d) Is digitally signed by the certification authority.

(2) "Certification authority" means a person who issues a certificate.

(3) "Digital signature" means a type of electronic signature that transforms a message using an asymmetric cryptosystem such that a person having the initial message and the signer's public key can accurately determine:

(a) Whether the transformation was created using the private key that corresponds to the signer's public key.

(b) Whether the initial message has been altered since the transformation was made.

A "key pair" is a private key and its corresponding public key in an asymmetric cryptosystem, under which the public key verifies a digital signature the private key creates. An "asymmetric cryptosystem" is an algorithm or series of algorithms which provide a secure key pair.

(4) "Electronic signature" means any letters, characters, or symbols, manifested by electronic or similar means, executed or adopted by a party with an intent to authenticate a writing. A writing is electronically signed if an electronic signature is logically associated with such writing.

**668.004** Force and effect of electronic signature.—Unless otherwise provided by law, an electronic signature may be used to sign a writing and shall have the same force and effect as a written signature.

Reference: <http://www.flsenate.gov/Laws/Statutes/2014/471.025>

Reference(2): <http://www.flsenate.gov/Laws/Statutes/2014/668.001>

### Florida Administrative Code **61G15-23.003** - <https://www.flrules.org/gateway/reference.asp?No=Ref-00790>

#### **61G15-23.003** Procedures for Signing and Sealing Electronically Transmitted Plans, Specifications, Reports or Other Documents.

(1) Engineering work which must be sealed under the provisions of Section 471.025, F.S., may be signed electronically or digitally as provided herein by the professional engineer in responsible charge. As used herein, the terms "certification authority," "digital signature" and "electronic signature" shall have the meanings ascribed to them in Sections 668.003(2), (3) and (4), F.S. The affixing of a digital or electronic signature to engineering work as provided herein shall constitute the sealing of such work.

(a) A scanned image of an original signature shall not be used in lieu of a digital or electronic signature.

(b) The date that the electronic signature file was created or the digital signature was placed into the document must appear on the document in the same manner as date is required to be applied when a licensee uses the manual sealing procedure set out in Rule 61G15-23.002, F.A.C.

(2) A professional engineer utilizing a digital signature to seal engineering work shall have their identity authenticated by a certification authority and shall assure that the digital signature is:

(a) Unique to the person using it;

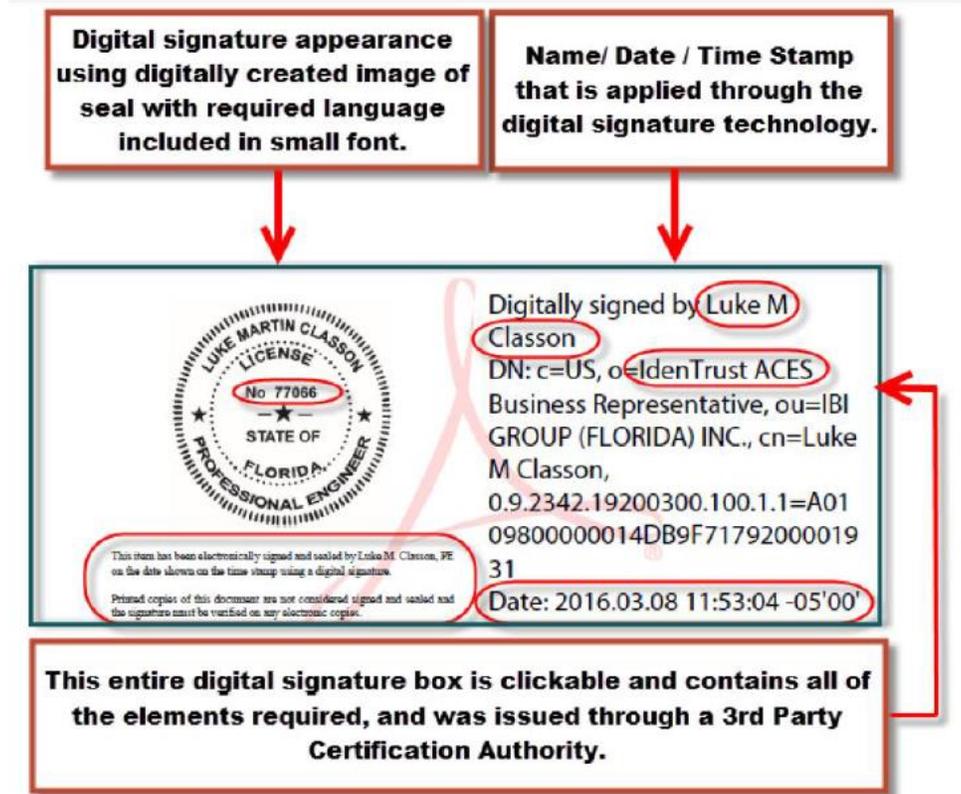
(b) Capable of verification;

(c) Under the sole control of the person using it;

(d) Linked to a document in such a manner that the electronic signature is invalidated if any data in the document are changed

## THE DIGITAL SEAL AND SIGNATURE

An Engineers Digital Signature must be in compliance with the latest State Statute requirements **471.025 & Florida Administrative Code 61G15-23.003**. We cannot approve the plans for your customer's permit until we receive drawings signed and sealed in accord with the State Statute utilizing a certificate authority.



### A Digital Signature

The online equivalent of a notarized signature, in this case the Certificate Authority (CA) serves as the notary in terms of verifying your identity while a trusted timestamp verifies the date and time the signature was applied. Digital signatures allow users to keep their entire workflow online. Individuals can certify and sign drawings and documents as needed right from the comfort of their computers.

### A Digital Signature is made up of several components:

- 1) **Adobe Acrobat Pro or Pro DC** – Most Digital Signatures are built using the Adobe platform. Step one creates the digital certificate. Step two involves scanning a professional's seal and saving the j-peg file on the computer hard drive. Acrobat lets you import it into the digital signature. Step three will add the Certificate Authority (CA) file, token key or serial number to the digital signature as verification of the professional Engineer's identity.
- 2) **Digital Certificate** - A way of proving your identity in online transactions and is unique to you when signing a document. The typical digital certificate includes your full name, email address and your professional qualifications for signing.
- 3) **Certificate Authority (CA)** - A third party verification entity that certifies your identity. They will use software or send you a Token Key on a Smart Card or USB drive that will attach to the digital certificate in Adobe Acrobat. Some companies require background checks or others ways to verify identity.
- 4) **Secure Hash** - When the Engineer clicks "sign" in Adobe Acrobat, a unique digital fingerprint (called a hash) of the document is created using a mathematical algorithm. This hash is specific to this particular document; even the slightest change would result in a different hash. The hash is encrypted using the Engineer's private key

from the digital certificate. The encrypted hash and public key are combined into a digital signature, which is applied to the document.

- 5) **Professional's Seal** - Scan the wet stamp of the professional's seal into a 2" square j-png file on the computer hard drive. It can then be integrated with your digital certificate using the Adobe software.

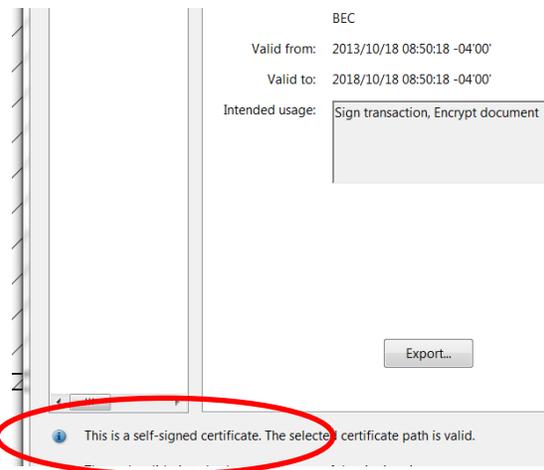
### How does it Work?

When you apply a digital signature on a drawing, a cryptographic operation binds the digital certificate and the data being signed such as a PDF or other drawing file into one unique descriptor. Any change to the drawing will remove your unique descriptor and will be indicated when opened in Adobe. A Signature Invalid warning will display, "This Document has been modified".

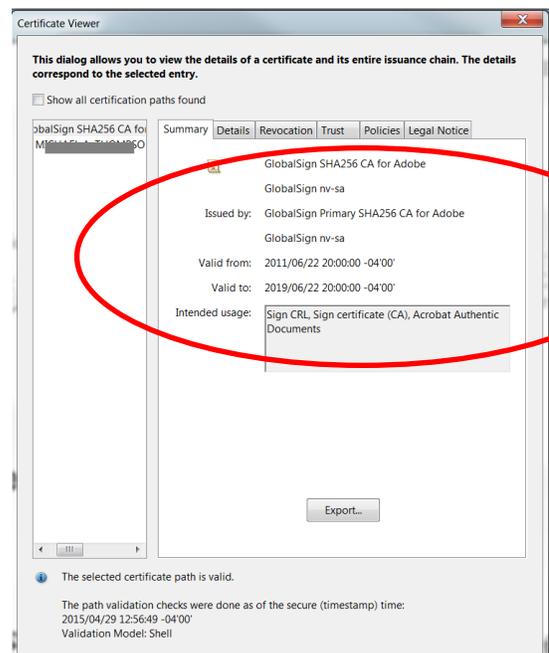
Authentication – Since a third-party validated certificate was used to apply the signature, recipients can easily verify the validity of the drawing. A right click on the digital signature displays a pop up screen to validate the signature, show the Summary, Certificate Authority, Revocation, Trust, Date/Time, Signature Properties and Policies. When the drawing is opened in Adobe it will ask the recipient to validate the signature.

Data integrity – when the signature is verified, it checks that the data in the document matches what was in the hash when the signature was applied. Even the slightest change to the original document results a fail.

**Engineers can no longer Self-Sign thier own Digital Signature. The new requirement involves having your identity, digital seal, and signature validated by a 3<sup>rd</sup> party Certificate Authority. Some local Engineers that submit to our ePlans system are using **IdenTrust, Cosign, and GlobalSign**. For example, these companies validate your identity then have you download software or they will send you a USB drive with a token key or serial number to add to the signature.**



Wrong - Self Signed



Correct - Certificate Authority Attached