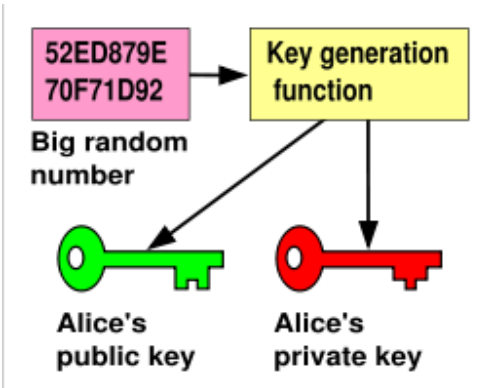
Signing and Sealing Implementation Update

- **Digital Signatures / Digital Certificates / Seals**
  - What are they?
  - How do they work?
  - Can we use Digital Signatures instead of Wet Signatures?
  - Are they legally binding?
  - How do we purchase certificates and who covers the cost?
  - When do we Sign and Seal plans?
- **Signing Software Solution**
  - What software will we be using?
  - What if someone tries to edit the file?
- **Software Installations and Training**
  - Who will install the software?
  - When will the software be installed?
  - How will the training be handled?

Signing and Sealing Implementation Update

- **VDOT will use Digital Signatures to sign and seal plans**
  - **What is a Digital Signature?**
    - **Digital Signatures** are used to sign electronic documents.
    - They are not to be confused with **Electronic Signatures**
    - An **Electronic Signature** is when you go to the grocery store and you sign (with a pen) the little electronic box after using your credit card.
    - A **Digital signature** is a type of **Asymmetric Cryptography** used to simulate the security properties of a handwritten signature on paper. Basically, it's a method of encrypting a file so that the authenticity of the signed document can be publicly verified with the use of Public and Private Keys.



A big random number is used to make a public-key/private-key pair.

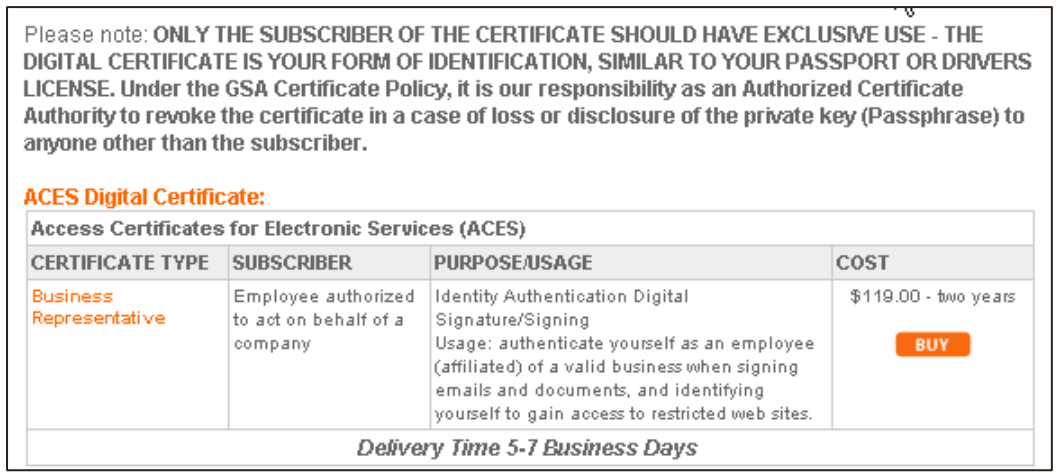
Signing and Sealing Implementation Update

- **VDOT will use ACES Digital Certificates**
  - **What is an ACES certificate?** Just as a driver's license or passport identifies a person in a face-to-face transaction, an ACES certificate identifies a person in an online transaction. An ACES digital certificate ensures authenticity and accountability in citizen-to-government, business-to-government and government-to-government electronic transactions.
  - **ACES or Access Certificates for Electronic Services** is a program administered by the U.S. General Services Administration (GSA) that provides strongly authenticated electronic identity credentials to citizens or business representatives.
  - ACES Certificates are PKI Compliant (Public Key Infrastructure)
  - **VDOT has already purchased the certificates from IdenTrust.**

  - Consultants can also purchase certificates at www.identrust.com. They will be required to purchase and use ACES Certificates.

Signing and Sealing Implementation Update

- **Applying for an ACES Certificate (October - November)**
  - **VDOT Staff** will go to IdenTrust website to apply for their digital certificates.
  - Once at **www.identrust.com**. You will see this web page:



Please note: **ONLY THE SUBSCRIBER OF THE CERTIFICATE SHOULD HAVE EXCLUSIVE USE - THE DIGITAL CERTIFICATE IS YOUR FORM OF IDENTIFICATION, SIMILAR TO YOUR PASSPORT OR DRIVERS LICENSE. Under the GSA Certificate Policy, it is our responsibility as an Authorized Certificate Authority to revoke the certificate in a case of loss or disclosure of the private key (Passphrase) to anyone other than the subscriber.**

ACES Digital Certificate:

Access Certificates for Electronic Services (ACES)			
CERTIFICATE TYPE	SUBSCRIBER	PURPOSE/USAGE	COST
Business Representative	Employee authorized to act on behalf of a company	Identity Authentication Digital Signature/Signing Usage: authenticate yourself as an employee (affiliated) of a valid business when signing emails and documents, and identifying yourself to gain access to restricted web sites.	$119.00 - two years BUY
Delivery Time 5-7 Business Days			

IdenTrust
WE PUT THE TRUST IN IDENTITY

  - **VDOT Staff** will receive a voucher number to use instead of a credit card number.
  - Professional seals will be developed by VDOT CADD Section (No need to purchase)
  - You will be required to fill out a form, have it notarized, and mail it to IdenTrust.
  - IdenTrust will verify your identity and send you an email on how to download your certificate.

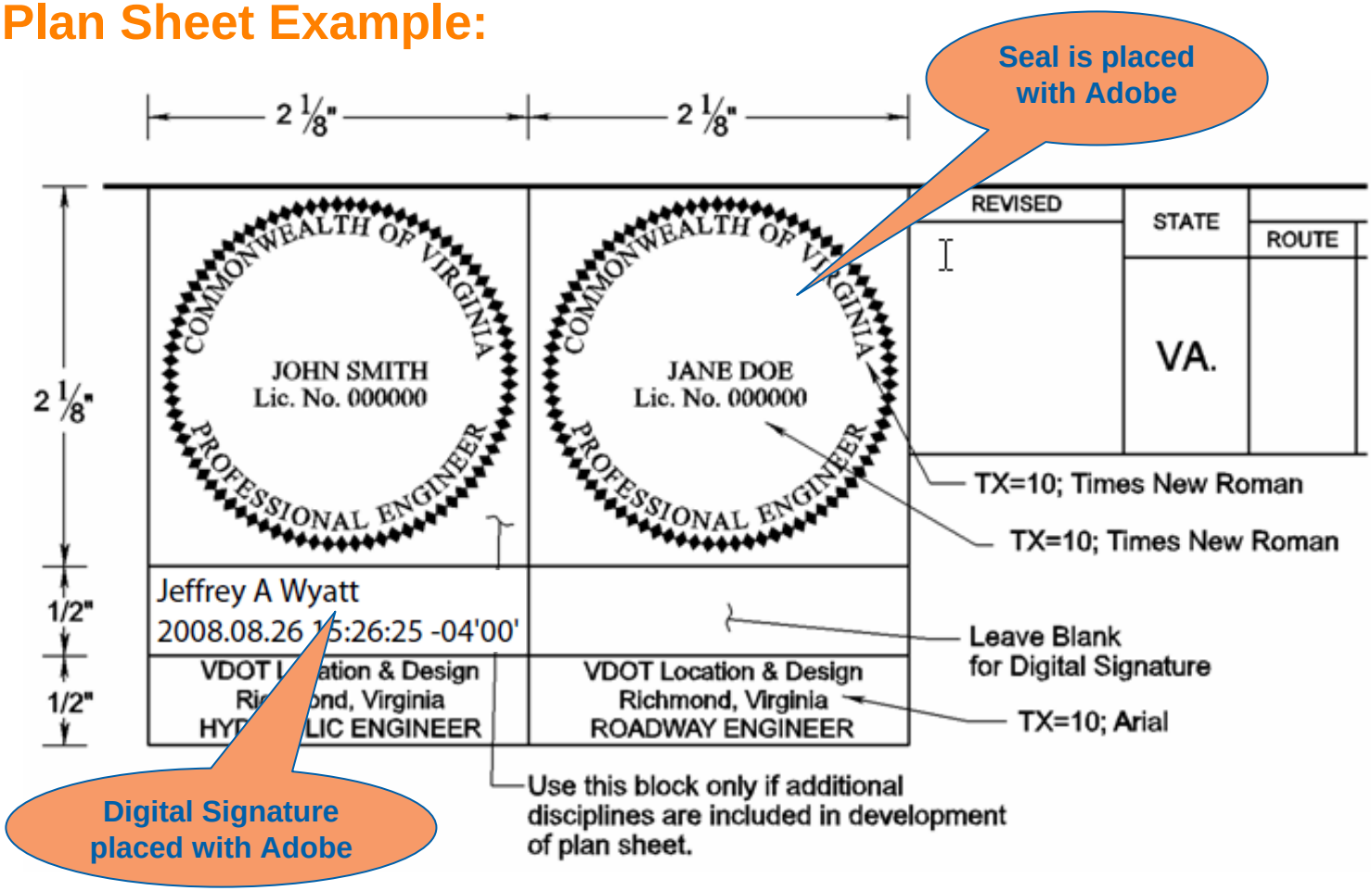
Signing and Sealing Implementation Update

- **PDF Files will become the official format for plan submittals instead of TIFF files (Why?)**
  - PDF files allow for Digital Signatures and Stamps to be used
  - All changes are recorded
  - Adobe will Invalidate signatures if changes are made to the original
  - Allows for multiple signatures in one file
  - Enables Cryptographic technology

  Note: Tiff files will be created from MicroStation as usual for VDOT staff and converted to PDF files before added to Falcon. This will be done with a behind the scene automated process.
- **Engineering Documents that require a signature and seal will also need to be in PDF Format.**
  - Only the Cover Sheets of Reports will need to be signed and sealed
- **A Signing Solution is required to place Digital Signatures and Stamps**
  - VDOT will be using Adobe Standard (Version 9)
  - Software has already been purchased
  - Training will be provided

Signing and Sealing Implementation Update

- **Plan Sheet Example:**



Signing and Sealing Implementation Update

- **Digital Signatures Enhance and Expand Digital Government**
  - **VDOT, DMME** (Department of Mines, Minerals and Energy) and **VEAP** (Virginia Enterprise Application Program) are conducting a pilot for implementing PKI (Public Key Infrastructure) based “Digital Signatures” in the executive branch agencies of the Commonwealth of Virginia.
  - The **Uniform Electronic Transactions Act** Title 59.1, Chapter 42.1 does support Professional Engineers, Certified Landscape Architects and Land Surveyors to sign and seal their work electronically. The Purpose of **UETA** is to enable electronic commerce by providing that contracts and records are not invalid simply because they are in an electronic format rather than on paper.
  - Title 54.1, Chapter 4 of the **Code of Virginia** (1950), as amended, also supports Professional Engineers, Land Surveyors, and Landscape Architects to sign and seal their work electronically.

When to Sign and Seal Plans
"Cut-Off Dates Spreadsheet"

Column 2

Column 9

Link To Column Descriptions

VIRGINIA DEPARTMENT TRANSPORTATION

CONTRACT DOCUMENTS AND PROCESSING CUT-OFF DATES FOR ADVERTISEMENT OF CONSTRUCTION AND MAINTENA

2009

Falcon Location: Current Drawings	Falcon Location: Plan File Room	Falcon Location: Plan File Room						Falcon Location: Plan File Room	
					BIDDABILITY REVIEW				
ALL PLANS REVIEWED AND PRE-ADVERTISEMENT CONFERENCE HELD	PLAN COORDINATION REVIEW: PLAN REVISIONS COMPLETE AND PLAN COORDINATION REVIEW BEGINS	PLAN COORDINATION REVIEW COMPLETE AND PROJECT MANAGER CERTIFICATION BEGINS	PROJECT MANAGER CERTIFICATION ENDS AND PLAN COORDINATION PROCESSING BEGINS --INITIATE ENVI. CERT. & VERIFICATION	PLAN COORDINATION PROCESSING ENDS AND CONTRACT DEVELOPMENT BEGINS--	CONTRACT DEVELOPMENT COMPLETE ENVI. CERT. & VERIFICATION COMPLETE AND TITLE SHEET SIGNED	END BIDDABILITY REVIEW BY DISTRICT CONSTRUCTION ENGINEER STAFF	REVISIONS TO CONTRACT DOCUMENTS PER BIDDABILITY COMMENTS ENDS	ADVERTISEMENT SUBMISSION: COMPLETE PLAN ASSEMBLY TO PLAN COORDINATION WITH ADV. REQUESTS	
1	2	3	4	5	6	7	8	9	
August 5, 2008	August 19, 2008	August 29, 2008	September 8, 2008	September 10, 2008	October 17, 2008	October 31, 2008	November 13, 2008	November 18, 2008	
August 29, 2008	September 15, 2008	September 25, 2008	October 2, 2008	October 6, 2008	November 13, 2008	December 1, 2008	December 11, 2008	December 16, 2008	
September 26, 2008	October 10, 2008	October 23, 2008	October 30, 2008	November 3, 2008	December 12, 2008	December 29, 2008	January 9, 2009	January 14, 2009	
November 3, 2008	November 18, 2008	December 2, 2008	December 9, 2008	December 11, 2008	January 22, 2009	February 5, 2009	February 18, 2009	February 23, 2009	
December 4, 2008	December 18, 2008	December 31, 2008	January 8, 2009	January 12, 2009	February 20, 2009	March 6, 2009	March 18, 2009	March 23, 2009	
January 2, 2009	January 20, 2009	January 30, 2009	February 6, 2009	February 10, 2009	March 19, 2009	April 2, 2009	April 14, 2009	April 17, 2009	
February 9, 2009	February 24, 2009	March 6, 2009	March 13, 2009	March 17, 2009	April 22, 2009	May 6, 2009	May 18, 2009	May 21, 2009	
March 10, 2009	March 24, 2009	April 3, 2009	April 10, 2009	April 14, 2009	May 20, 2009	June 4, 2009	June 16, 2009	June 19, 2009	
April 6, 2009	April 20, 2009	April 30, 2009	May 7, 2009	May 11, 2009	June 17, 2009	July 1, 2009	July 14, 2009	July 17, 2009	
May 8, 2009	May 22, 2009	June 4, 2009	June 11, 2009	June 15, 2009	July 22, 2009	August 5, 2009	August 17, 2009	August 20, 2009	
June 8, 2009	June 22, 2009	July 2, 2009	July 10, 2009	July 14, 2009	August 19, 2009	September 2, 2009	September 15, 2009	September 18, 2009	
July 1, 2009	July 16, 2009	2009	August 4, 2009	August 6, 2009	September 14, 2009	September 28, 2009	October 8, 2009	October 14, 2009	

Begin Date
March 24, 2009 for
August 2009 Adv.

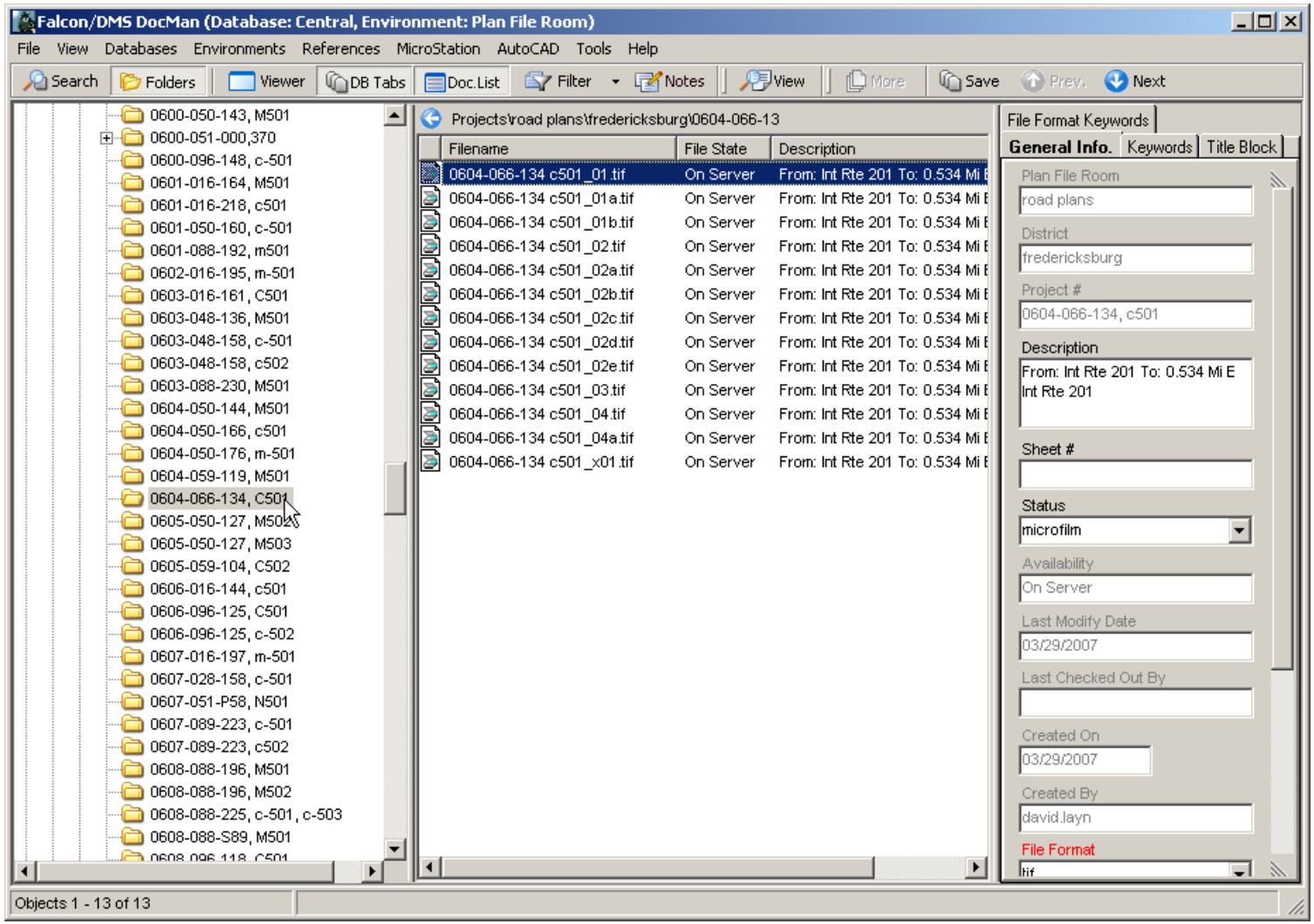
When to Sign and Seal Plans
"Cut-Off Dates Spreadsheet"

GINIA DEPARTMENT OF TRANSPORTATION
ADVERTISEMENT OF CONSTRUCTION AND MAINTENANCE PROJECTS (EXCLUDING NO-PLAN PROJECTS)
2009

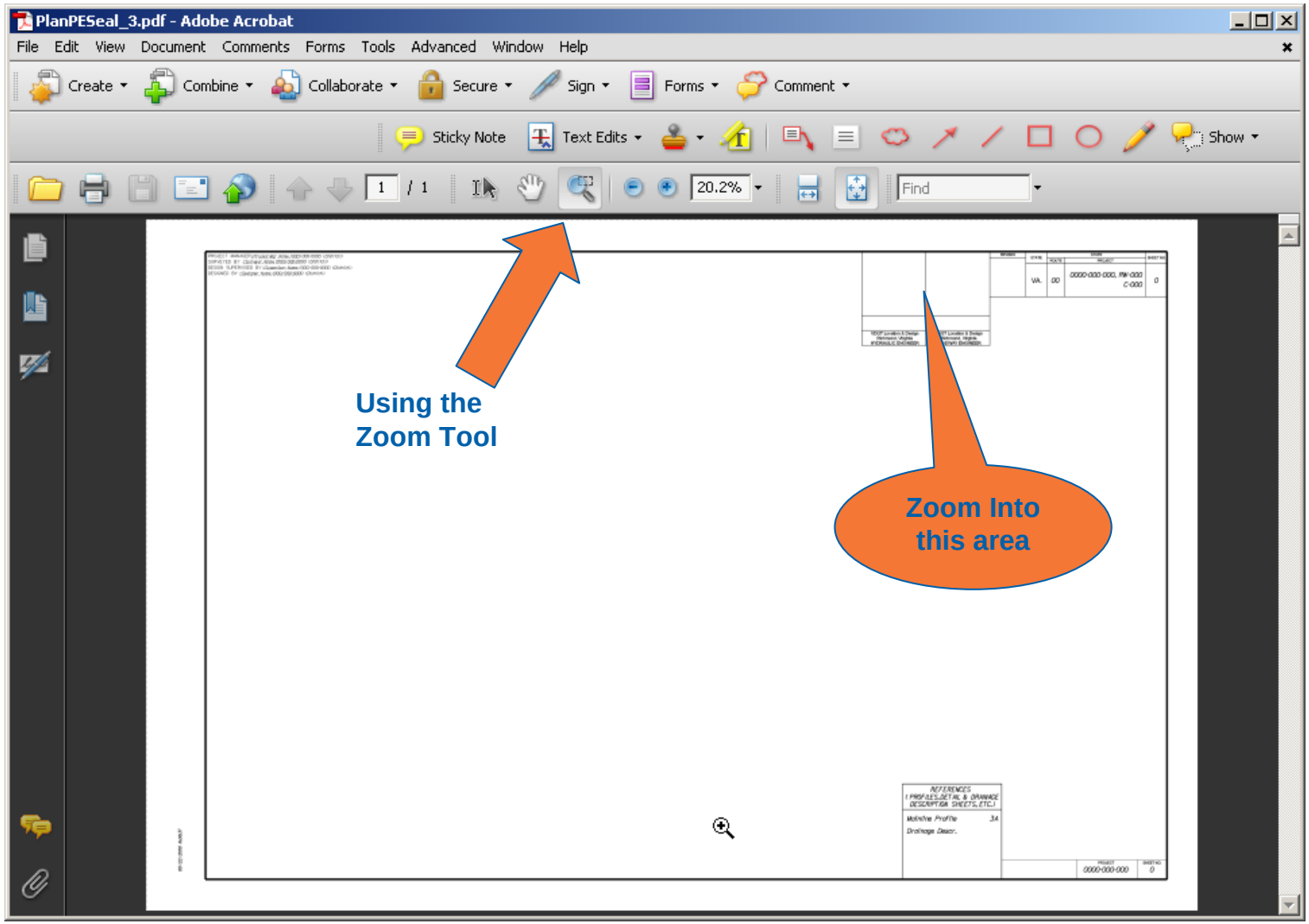
		Falcon Location: Plan File Room				
BIDDABILITY REVIEW						
END BIDDIBILITY REVIEW BY DISTRICT CONSTRUCTION ENGINEER STAFF	REVISIONS TO CONTRACT DOCUMENTS PER BIDDIBILITY COMMENTS ENDS	ADVERTISEMENT SUBMISSION: COMPLETE PLAN ASSEMBLY TO PLAN COORDINATION WITH ADV. REQUESTS	ADVERTISEMENT SUBMISSION TO SCHEDULING & CONTRACT ENGR. AND PRINT REPRODUCTION FOR PS&E BEGINS	RIGHT OF WAY CERTIFICATION	FINAL PS&E TO FHWA	ADVERTISEMENT
7	8	9	10		11	12
October 31, 2008	November 13, 2008	November 18, 2008	December 3, 2008		December 10, 2008	January 13, 2009
December 1, 2008	December 11, 2008	December 16, 2008	December 30, 2008		January 7, 2009	Febr...
December 29, 2008	January 9, 2009	January 14, 2009	January 29, 2009		February 5, 2009	
February 5, 2009	February 18, 2009	February 23, 2009	March 6, 2009		March 13, 2009	April 14, ...
March 6, 2009	March 18, 2009	March 23, 2009	April 3, 2009		April 10, 2009	May 12, 2009
April 2, 2009	April 14, 2009	April 17, 2009	April 30, 2009		May 7, 2009	June 9, 2009
May 6, 2009	May 18, 2009	May 21, 2009	June 4, 2009		June 11, 2009	July 14, 2009
June 4, 2009	June 16, 2009	June 19, 2009	July 2, 2009		July 10, 2009	August 11, 2009
July 1, 2009	July 14, 2009	July 17, 2009	July 30, 2009		August 6, 2009	September 8, 2009
August 5, 2009	August 17, 2009	August 20, 2009	September 2, 2009		September 10, 2009	October 13, 2009
September 2, 2009	September 15, 2009	September 18, 2009	October 1, 2009		October 8, 2009	November 10, 2009
September 28, 2009	October 8, 2009	October 14, 2009	October 27, 2009		November 3, 2009	December 8, 2009

2009
August Advertisement

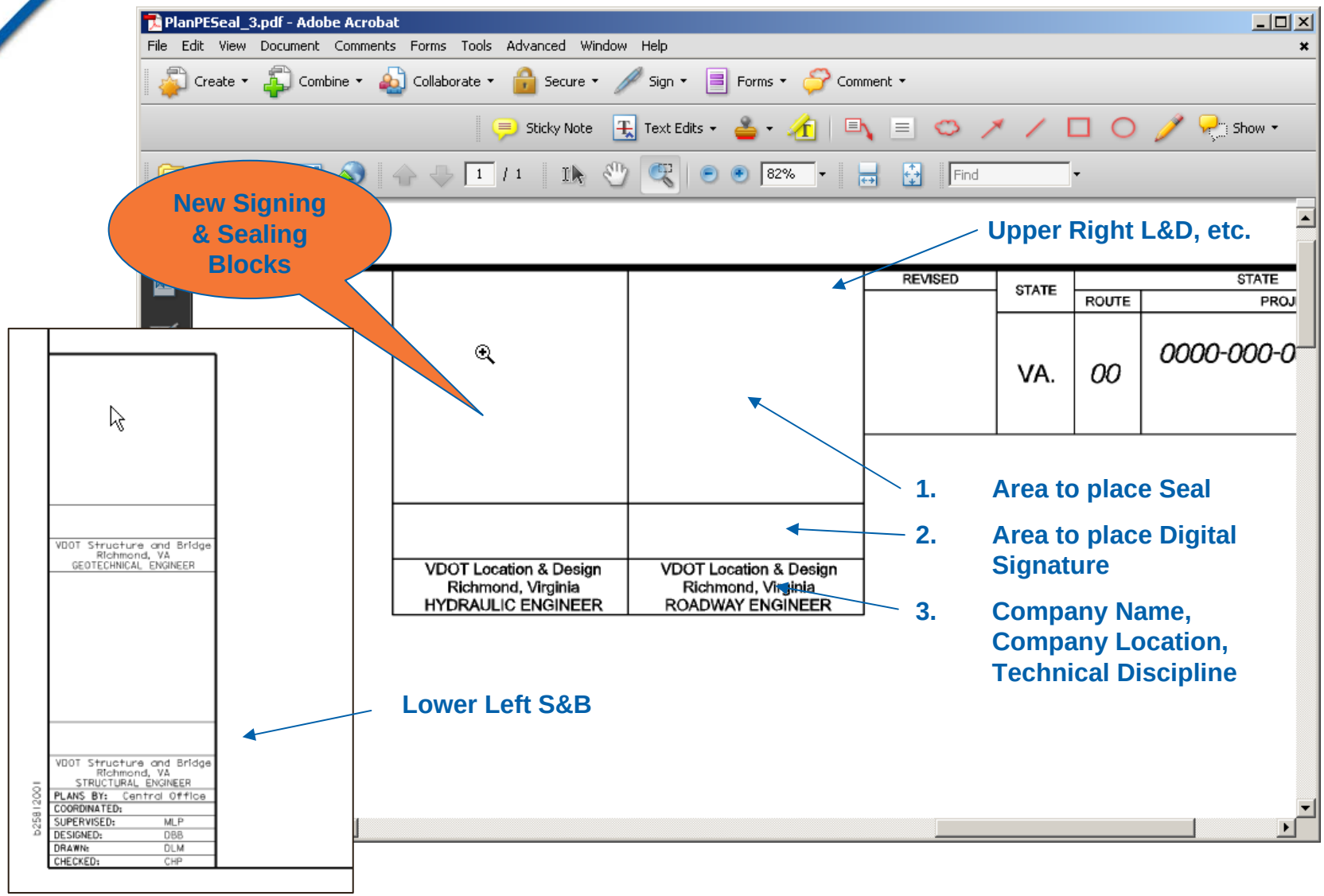
Check out files from Falcon (Plan File Room)
Sign & Seal, Check files back in



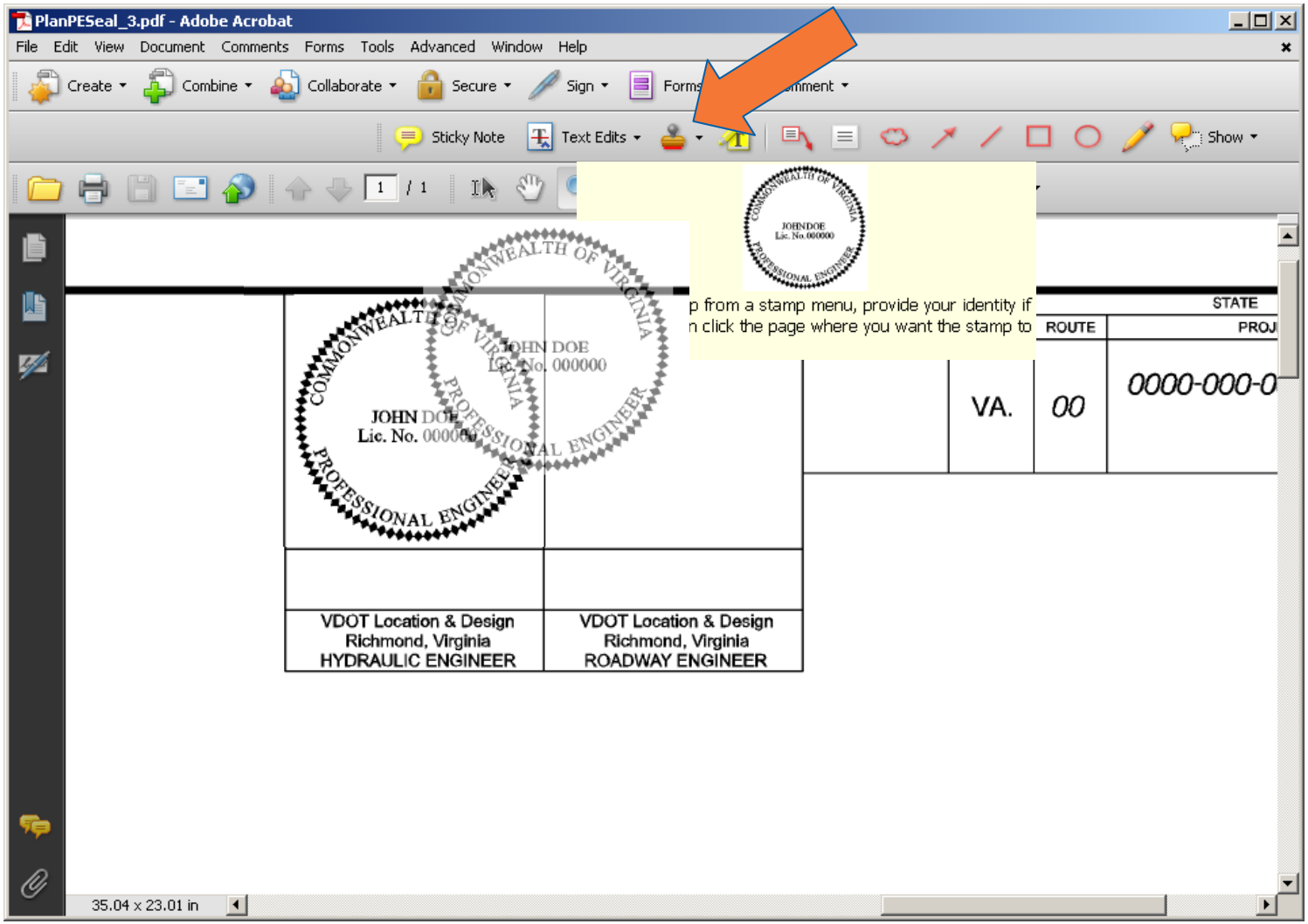
File will open with Adobe Standard Plans will now be in PDF Format



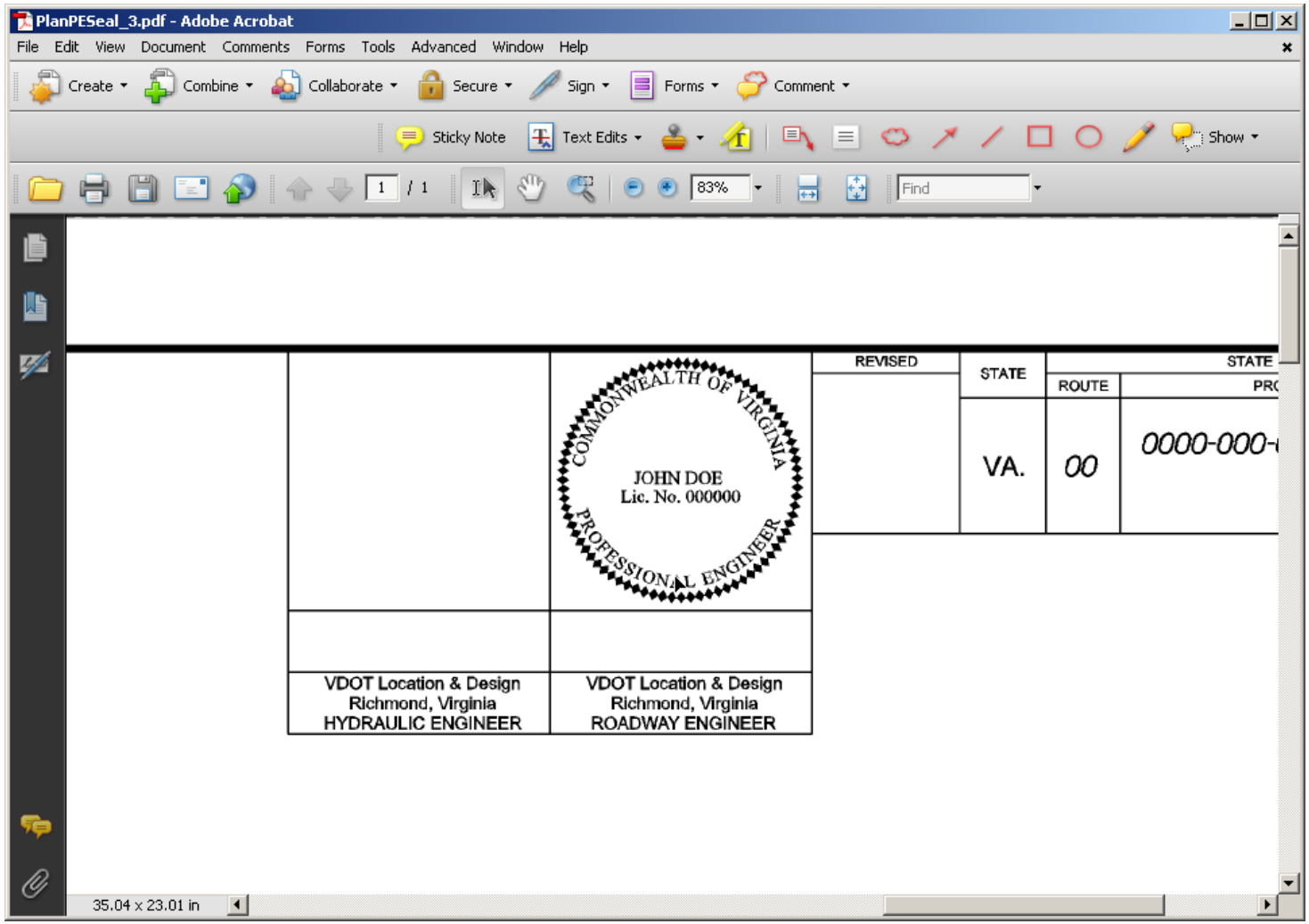
Zoom into the blocks created for Signing and Sealing (Upper Right L&D etc., Lower Left S&B)



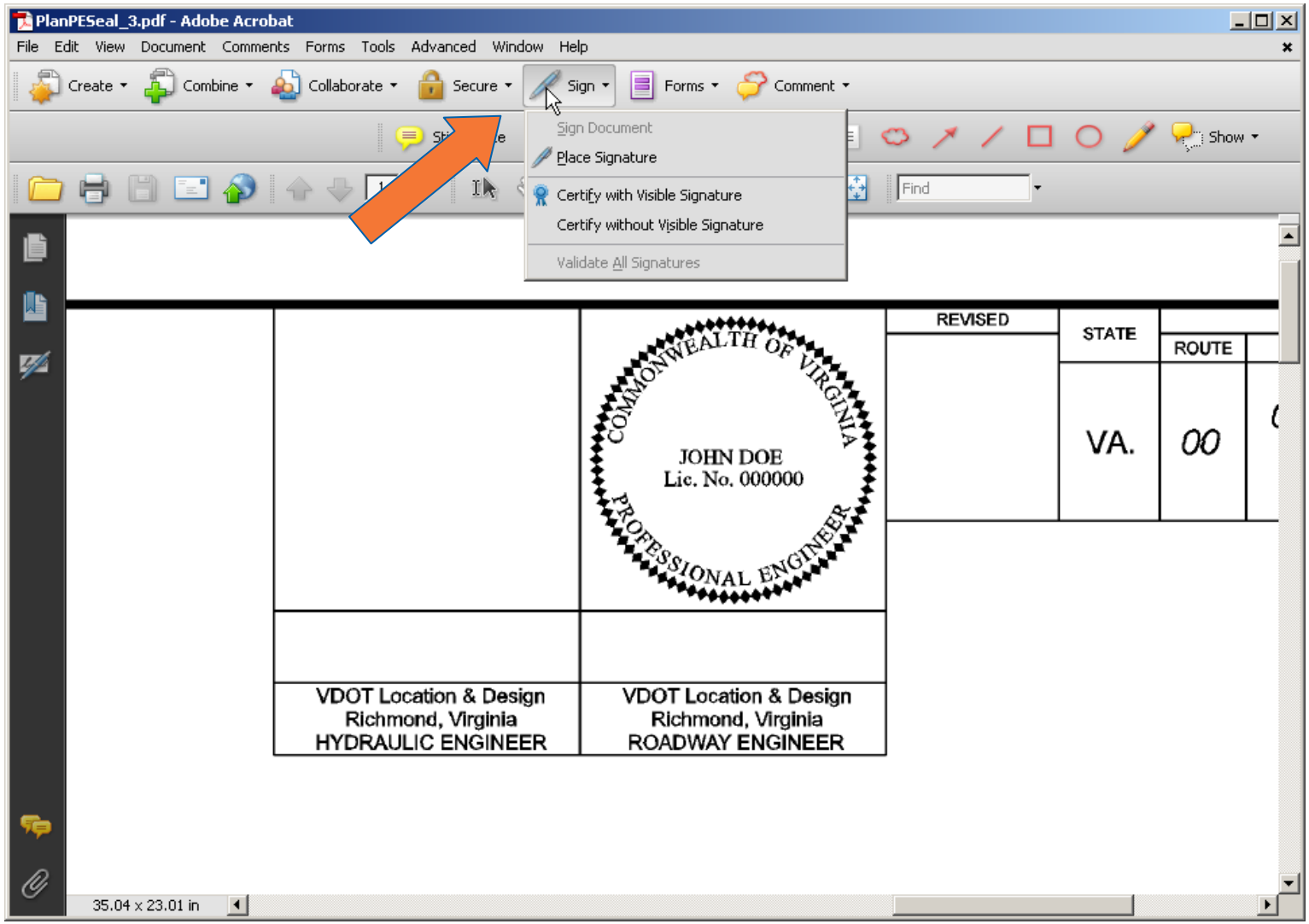
Select the Place Stamp Tool and drag the Seal into the block on the Plan Sheet



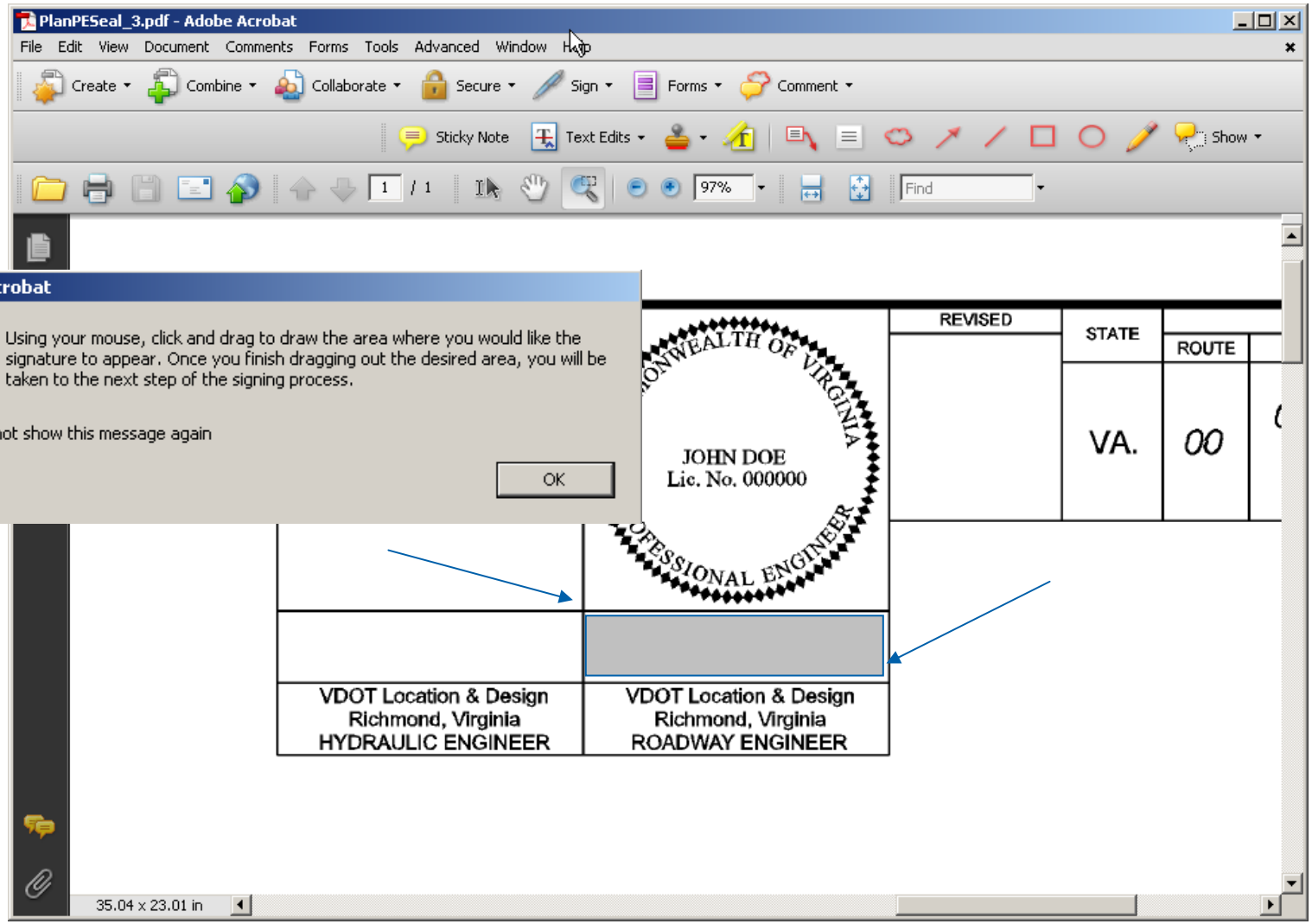
Plan Sheet with Seal inserted into the PDF File



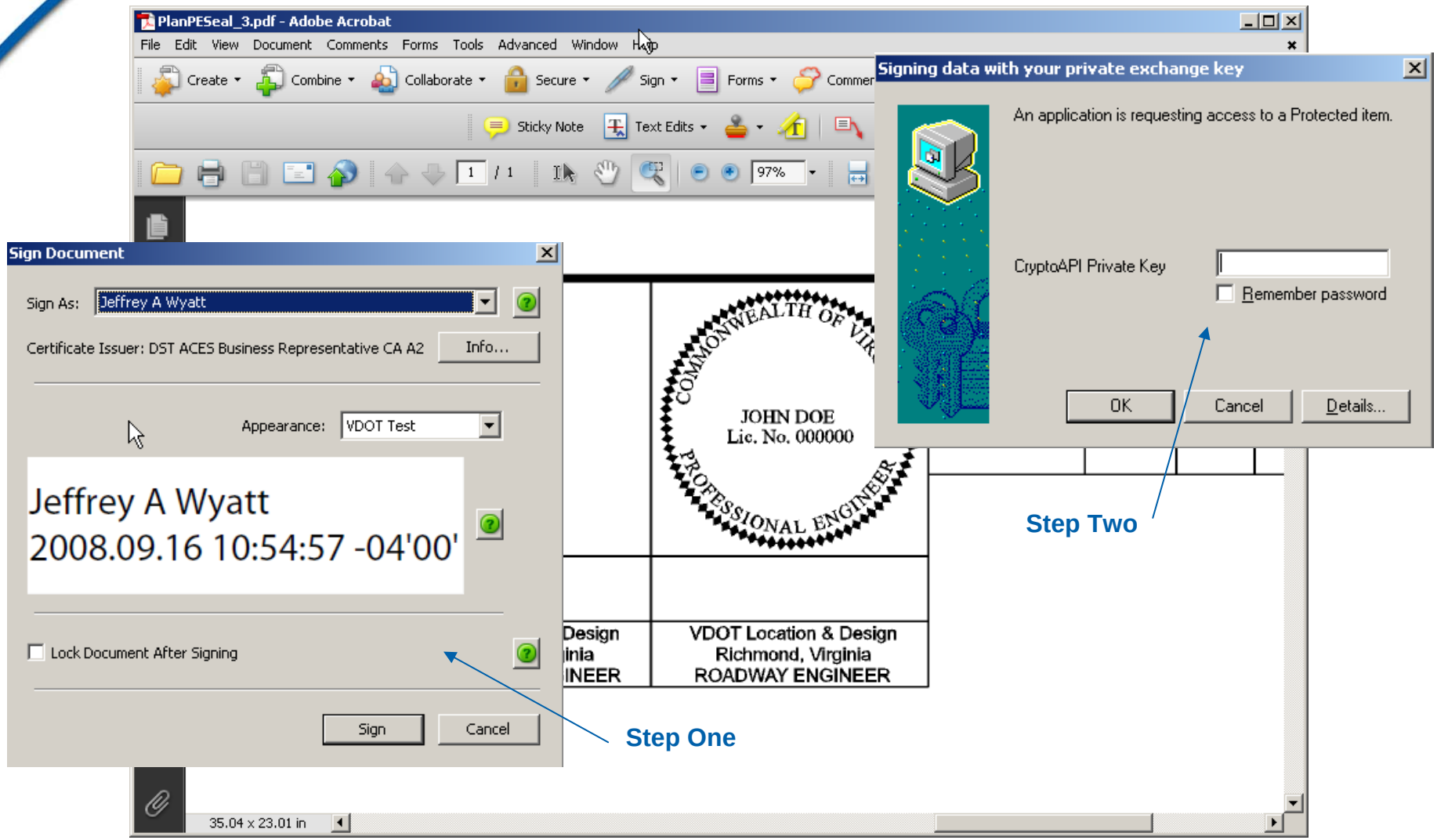
Insert Digital Signature using the Sign/Place Signature Tool



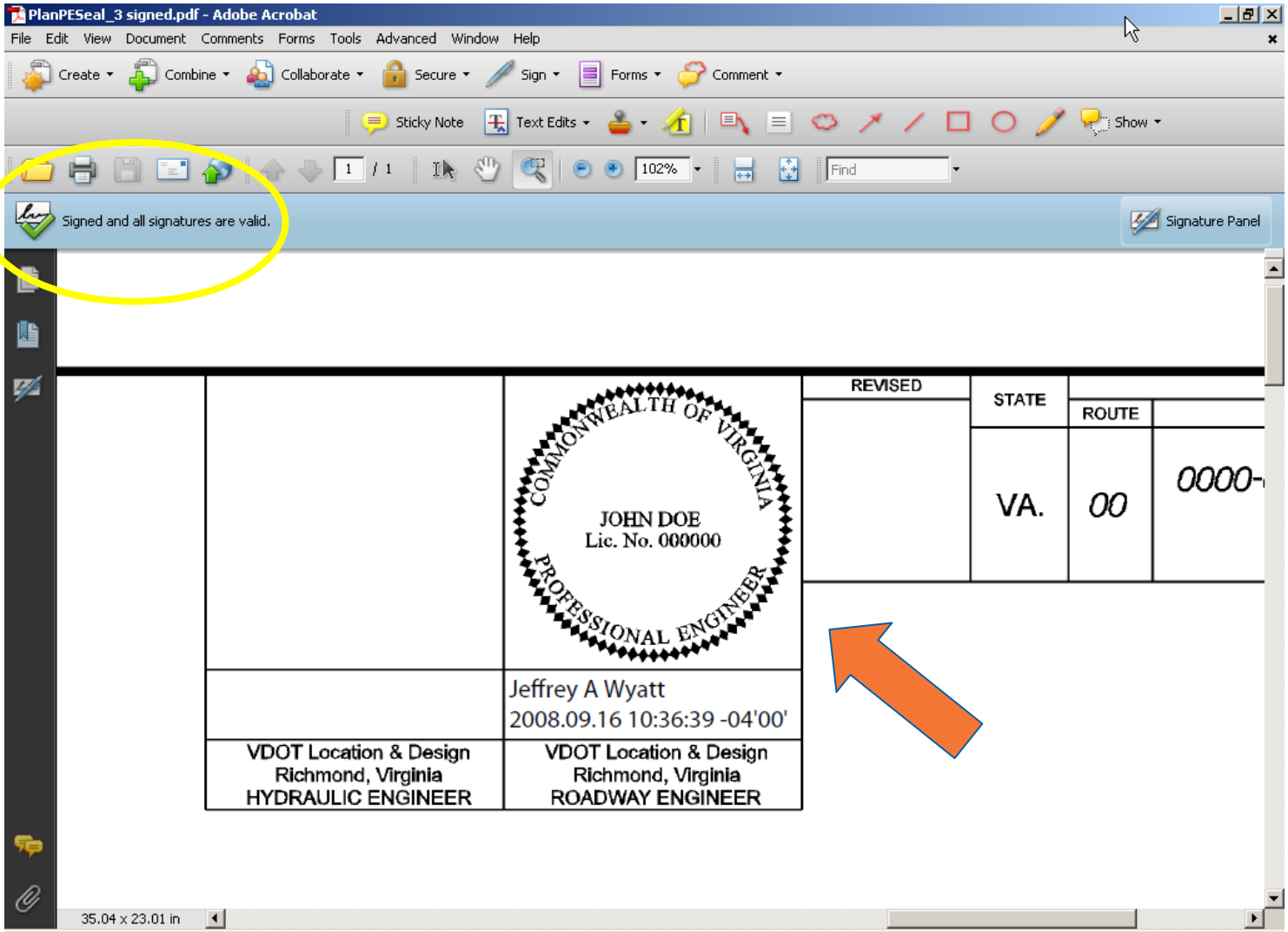
Using your mouse, click and drag the area where you would like the signature to appear



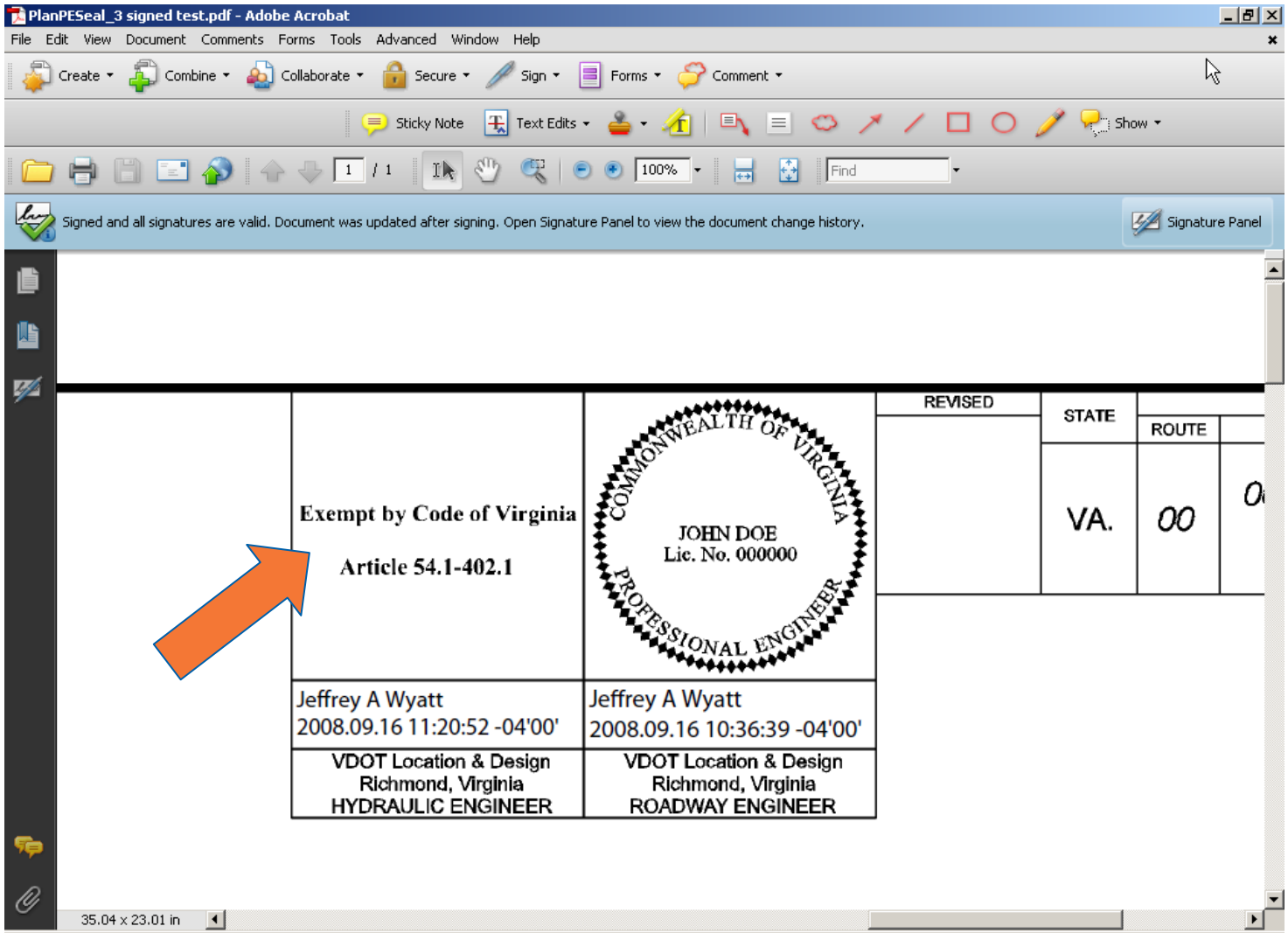
Select which Certificate to use and the Appearance of the Signature, then key in your Password



Finished Product
Signature Block / Seal / Digital Signature



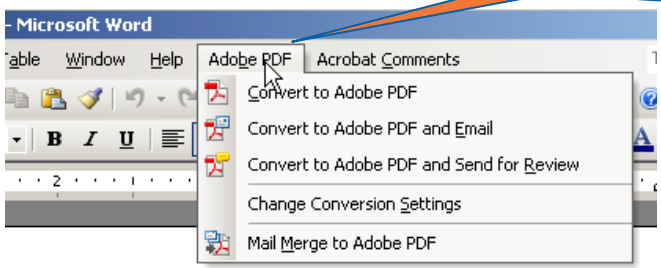
Exempt Employees will have a Stamp and Digital Certificate

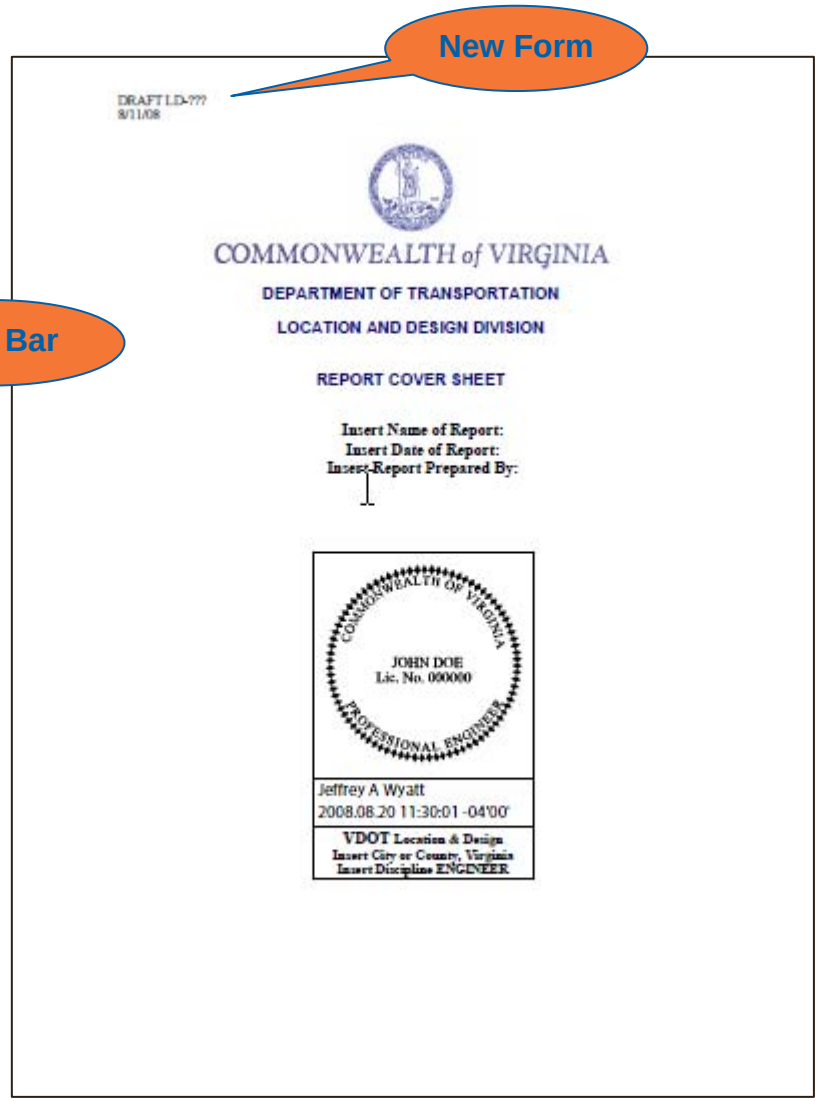


Example Cover Sheet for a Report

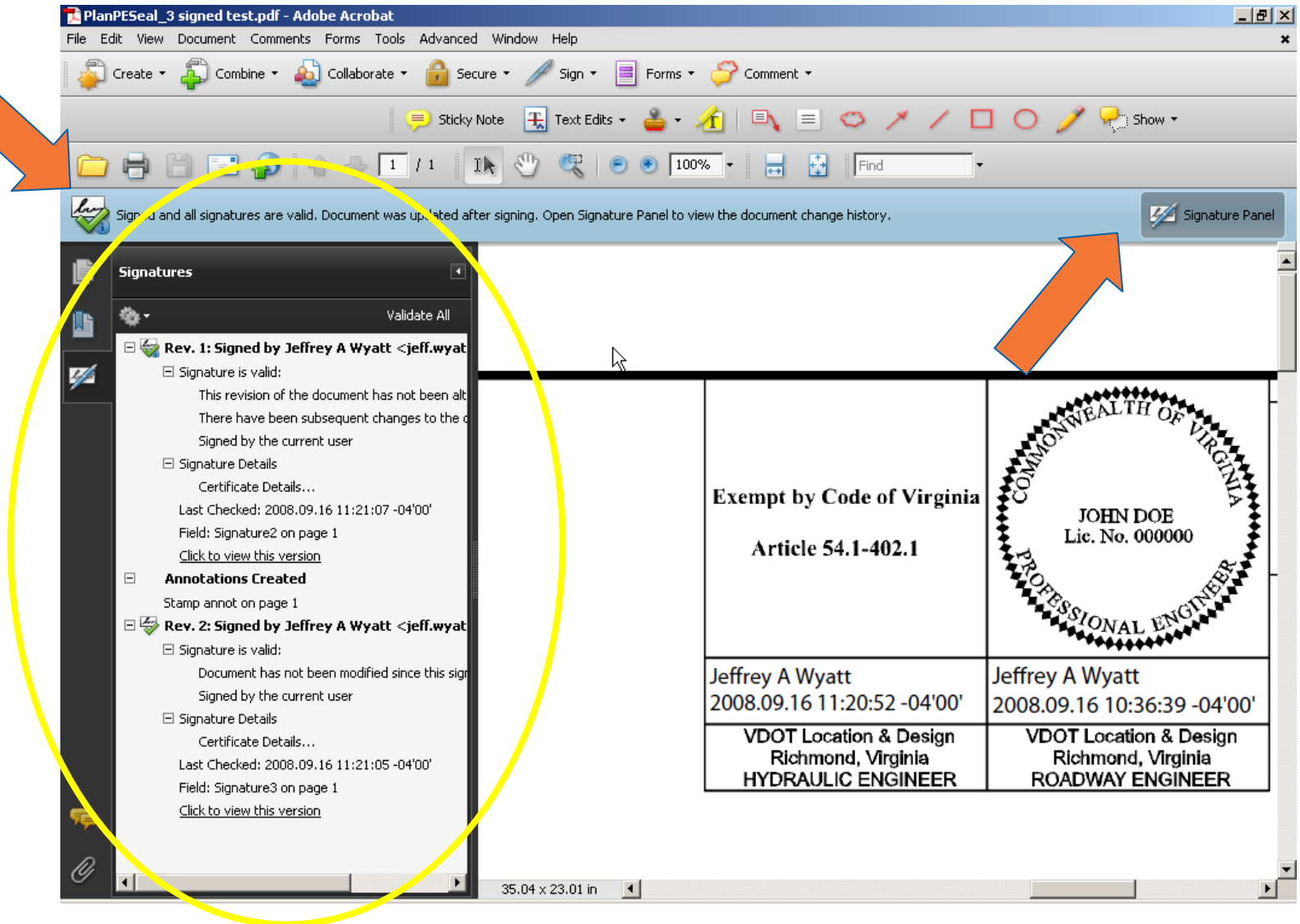
Adobe Standard

- Adobe can open a file from any location (Not necessary to use Falcon).
- Adobe can save other formats to a PDF.
- Reports will be signed and sealed with Adobe just like plans.
- Adobe allows you to save a file back to any location. (Not necessary to use Falcon)

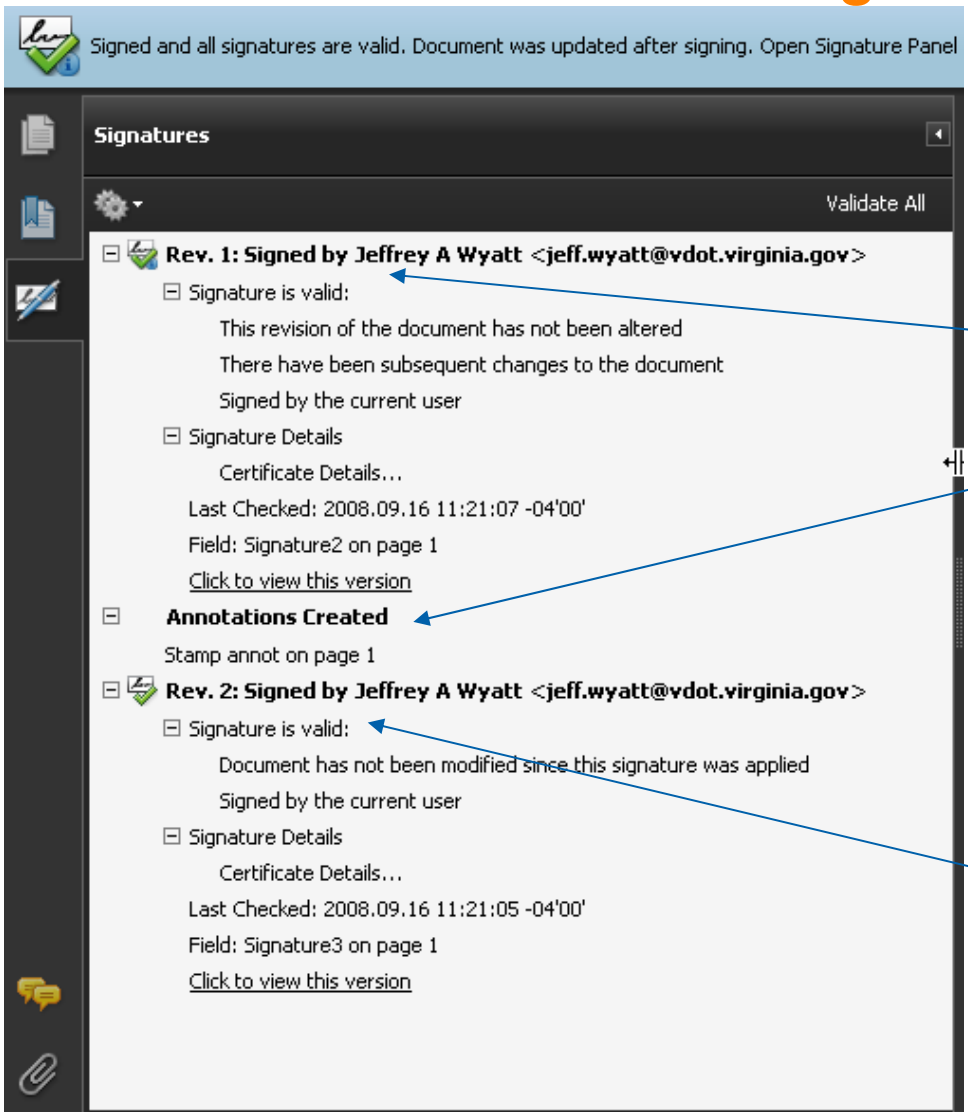




Validating Signatures



Signature Panel - Displays Signatures and Tracks Changes to the Document



First Signature Valid

Document has not been altered

Signed by Current User

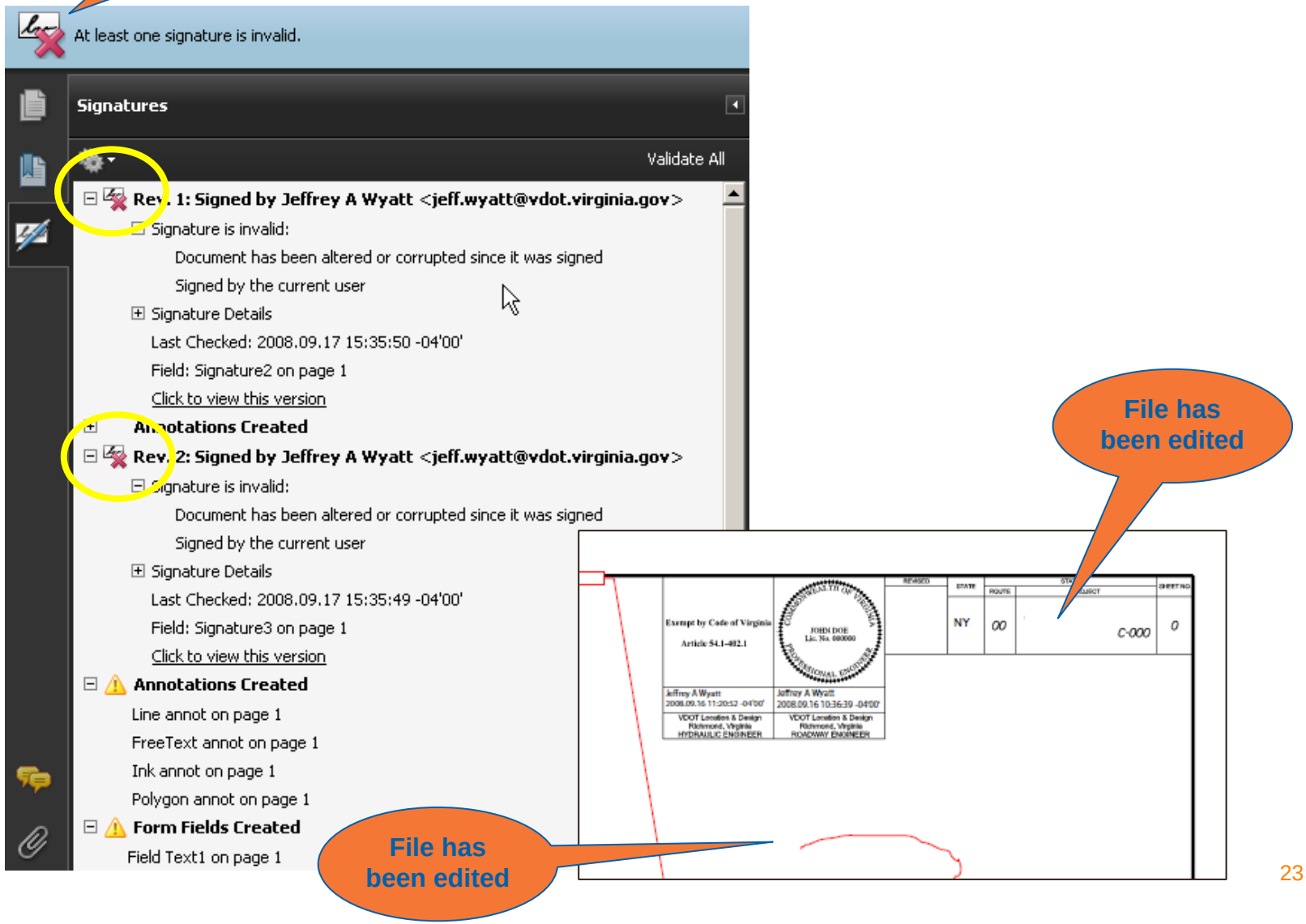
Notice Adobe tracked the addition of the second stamp. Since it was placed by the same user the signature is still valid. This ability to track changes is why it was necessary to switch from TIFF to PDF.

Second Signature Valid

Document has not been altered

Signed by Current User

Signature Panel - Displays Signatures and Tracks Changes to the Document



Software Installations and Training

- **Software Installations**
  - 400 Copies of the Adobe Standard Software has been purchased
  - Software has been sent to the Certification Lab for testing so that it can be loaded on VDOT PC's
  - 400 ACES Digital Certificates have been purchased
  - Software will be installed on the PC's of staff in a "Responsible Person" position
  - Software will either be pushed out over the network or one of the CADD Support Team members will install it for you.
  - The CADD Support Team will make sure the software is working on each machine before we leave the district and residency offices.
  - Installations will take place November through February or sooner if possible

- **Training**
  - There will be training on Falcon, Adobe, and Digital Certificates.
  - Training will be held at each District Office and at the Central Office
  - One on One Training will be available. (It may be done remotely)
  - Training will be in January and February or sooner if possible

Signing and Sealing Implementation Update

- **Questions about Digital Signatures and Digital Certificates**
  - **Contact Jeff Wyatt**
  - **804-786-4715**
  - **Jeff.Wyatt@VDOT.Virginia.gov**