Final As-Built Plans
Using BlueBeam

Office of Construction
Final Estimates

Updated: February 19, 2018

Overview of Discussion Topics:

- Training Help and FAQ
- Toolbars, Views, Search, Panels
- Extract pages
- Plan Components
- Add Text
- Layers
- Child Layers
- Properties, Lock Markups, Subject, Construction Remarks
- Cloud Tool
- Insert page
- Stamps

- Measure Tools
- Embed back-up documentation
- Flattening and Unflattening markups
- Markups after DFEO Review
- Check Mark

- Summary of Markups
- As-Built Signature Sheet
- Digital Signature/Certification
- DFEO Markup and Validation

http://www.fdot.gov/construction/

Office Resources

About us

Divisions

Documents & Publications

Programs & Services

Meetings & Events

Most Requested

Active Contracts

Welcome

The Office of Construction is committed to providing safe and efficient facilities for the traveling public.

Construction Support   **Final Estimates**   **Training**   **Wage Rates**

News

DCE Memo 02-18: Test Pile Location Adjustment
Posted: January 31, 2018

Simple Digital Signature Instructions
Posted: January 9, 2018

Additional help/
training tools

Office of Construction

Training

Topics

Construction Training & Qualification Program (CTQP)

CTQP Information & Providers

Reduced Cost CTQP Training for Small Businesses

CTQP Website

CTQP's Technical Review Teams (TRT)

Sample TRT Meeting Notice **DOT Users Only**

General Information

Construction Training Manual (CTQM)

District Construction Training Administrators

Training Related Information

Meeting Minutes or Training Memos

Schedules (Construction Training)

Training Video Shorts

CBT Request Form

Trainee Privacy Statement

Office of Construction / Training

Training Video Shorts

Alternate Contracting

Aggregate

AASHTO T2 Aggregate Sampling   AASHTO T248 Reduction of Aggregate Samples

Asphalt and Concrete Paving

Contract Modifications

Contractor Past Performance Rating

Contractor Prequalification

Drainage and Environmental

Forterra Pipe Production

Final Estimates

BlueBeam Training   FAQ

Frequently Asked Questions

BlueBeam: Help/Resources
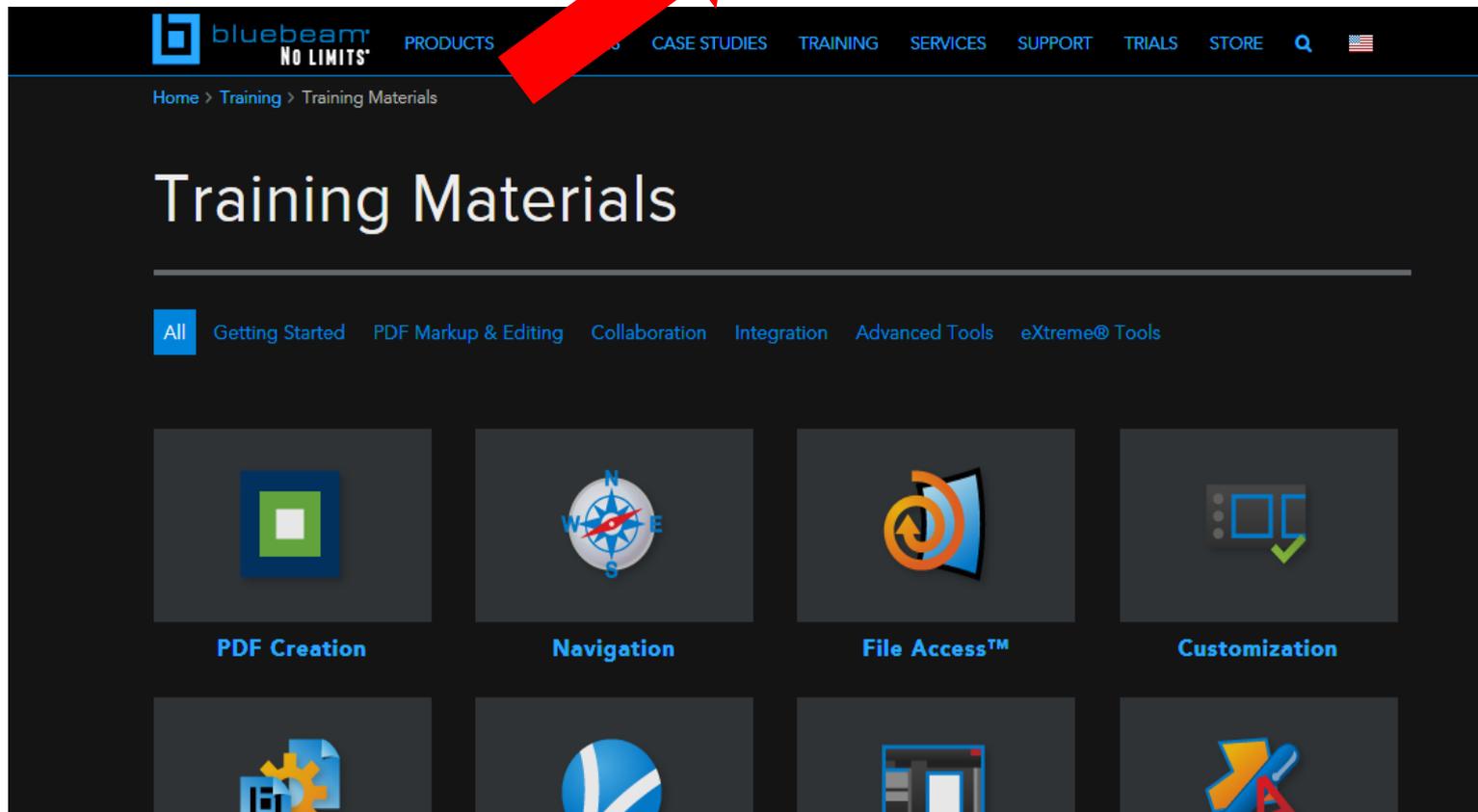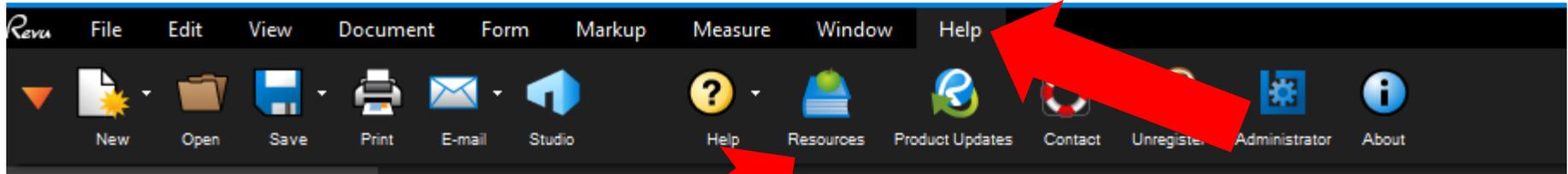
Word Search (OCR)

Makes document word searchable.

CTRL + **F**

Search for a word or phrase in the document.

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BlueBeam: Panels

Recent files, Tool Chest, Bookmarks, etc.

Properties Panel

Markup Panel

Extract Pages

Signed and sealed Contact Plans, and revisions to Contract Plans by the EOR(s) must be **extracted** in order to insert these into the Final As-Built plans.

- Select "Document" or "Thumbnails"
- Right-click
- Select "Extract Pages"
- Select location to save file
- Copy or insert pages into the Final As-Built Plans set. (See next slide.)

Extract Pages (Cont.)

Florida Department of Transportation
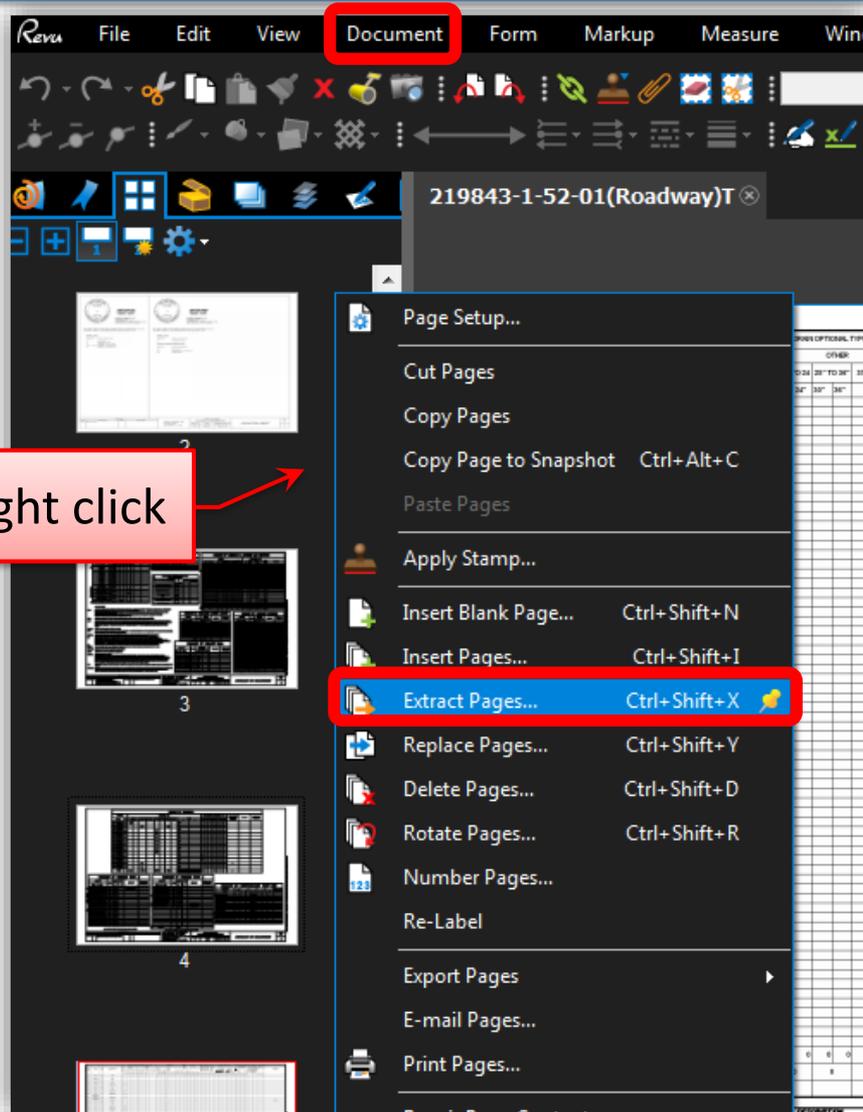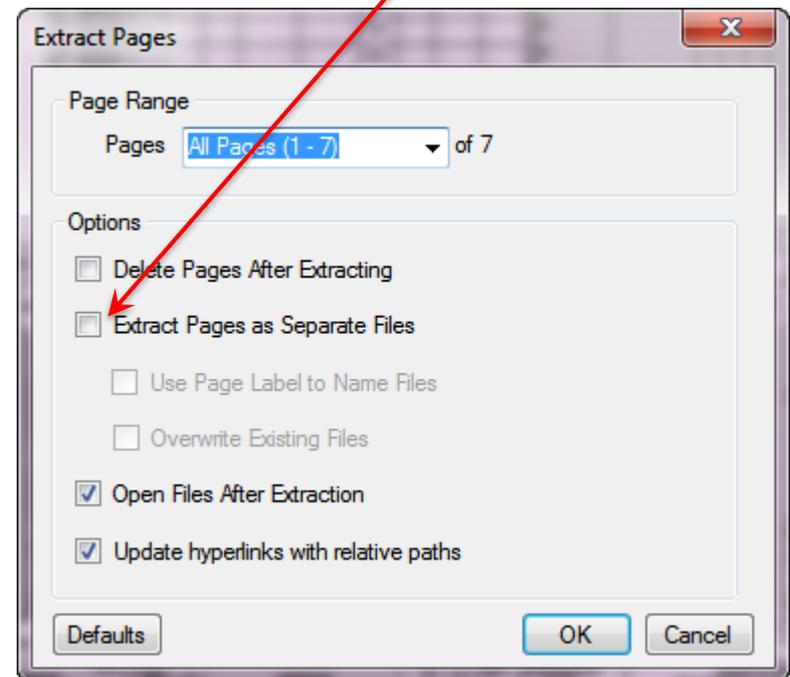
Plans Components

As-Built Plans will be saved into components.

If Contract Plans were not separated into components, this can be done by selecting the plans sheets, **extracting** and saving into separate folders.

Documents library
As-Built Plans

Name

📁 Roadway
📁 Signalization
📁 Signing and Pvmt Marking
📁 Structures

- Select "Document" or "Thumbnails"
- Right-click
- Select "Extract Pages"
- Select location to save file
  (See previous slide.)

Florida Department of Transportation
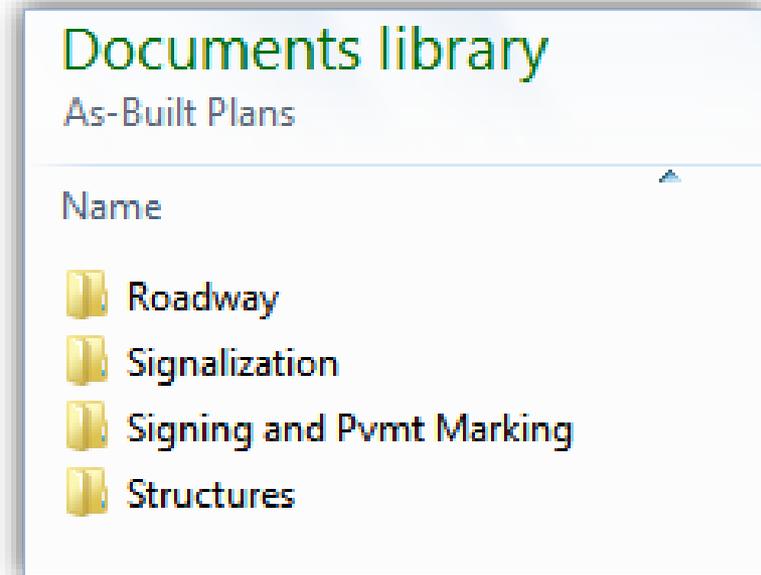
Insert Text
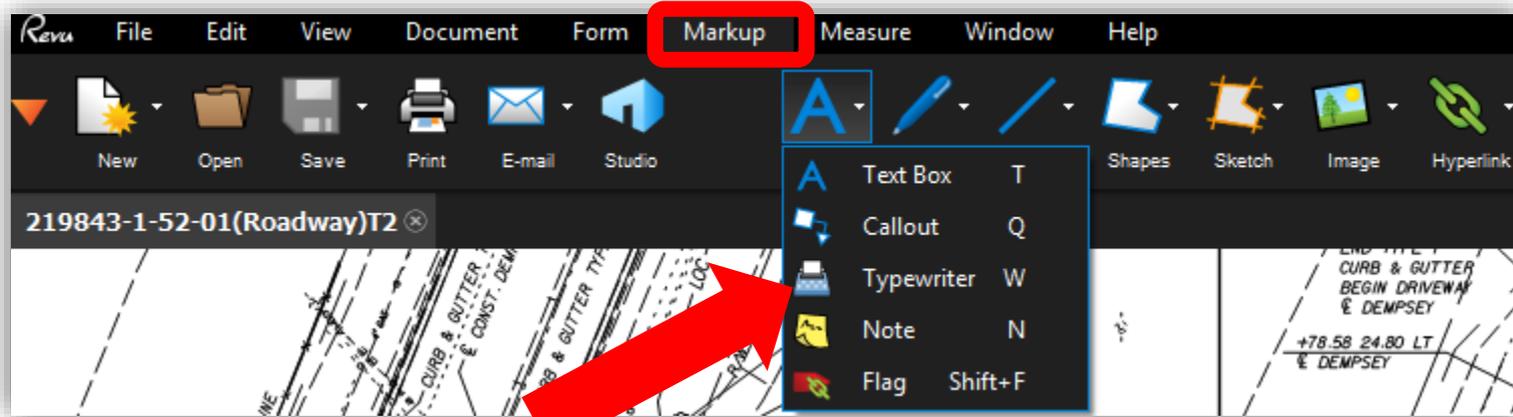
Or select the "Typewriter" icon on the side menu.
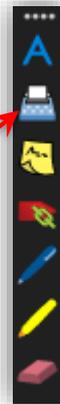
Using the "Text Box" will create a "box" that will block any text or lines behind the box, and will require more formatting.

Adjust the font type, size and color in the Properties panel. Follow the color convention per CPAM 5.12.

Layers

- Note: Assign a Layer to the markups before locking
  - In the Summary of Markups Panel, select the markup and Right-click
  - Select "Layer"
  - Assign the layer. Create New Layer if necessary.

Right-click

Create a New Layer

Child Layers

- Child Layers:
  - Child Layers can be used to organize markups. In this example, Initial Review and Overview are Child Layers for Field Change.
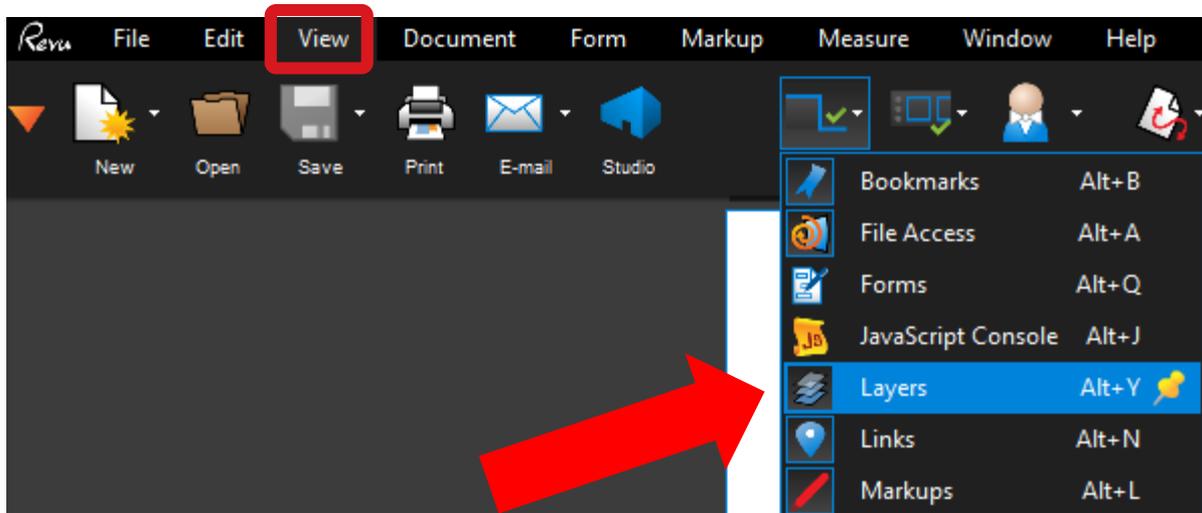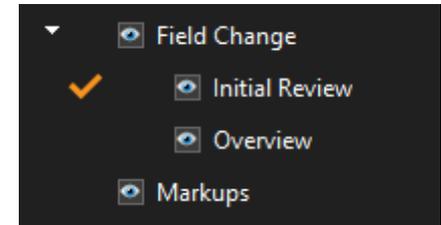
Lock Markups

- Lock the markups:
  - Avoid "accidental" deletions of markups
  - Can be done in the Properties panel or in the Markup panel

Subject	△	Page	Lock	Checkmark	Author	Date	Color
🖨 Checkmark		Page 1	☐	☐	CN982MI	8/24/2015 12:44:37 PM	🟥
▼ Final As-Built Plans (1)							
🖨 Final As-Built Plans		Page 1	🔒	☐	CN982MI	8/24/2015 1:00:22 PM	🟥
▼ Line (1)							

Note: Assign a Layer to the markups before locking
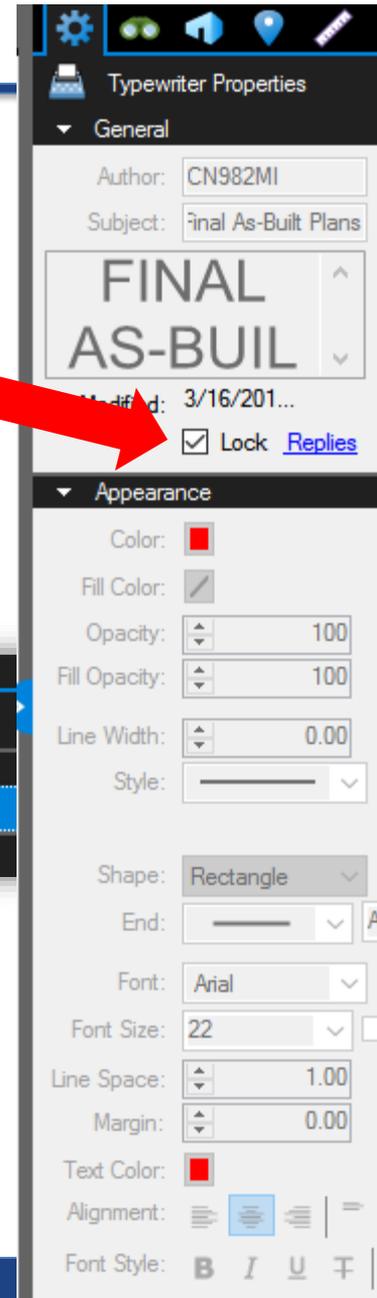
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Subject

- Subject:
  - Allows to "name" the markup.
    - This is how the markup will be listed in the Summary of Markups (below).
  - Can be done in the Properties panel or in the Markup panel

Construction Remarks and Sheet Description

- Can be done in the Properties panel or in the Markup panel

Insert Cloud

Or select the "Cloud" icon on the side menu.

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Notes (during internal review)

Electronic Notes may be added during an internal review. These notes must be removed from the Final As-Built Plan set before submission to the DFEO.
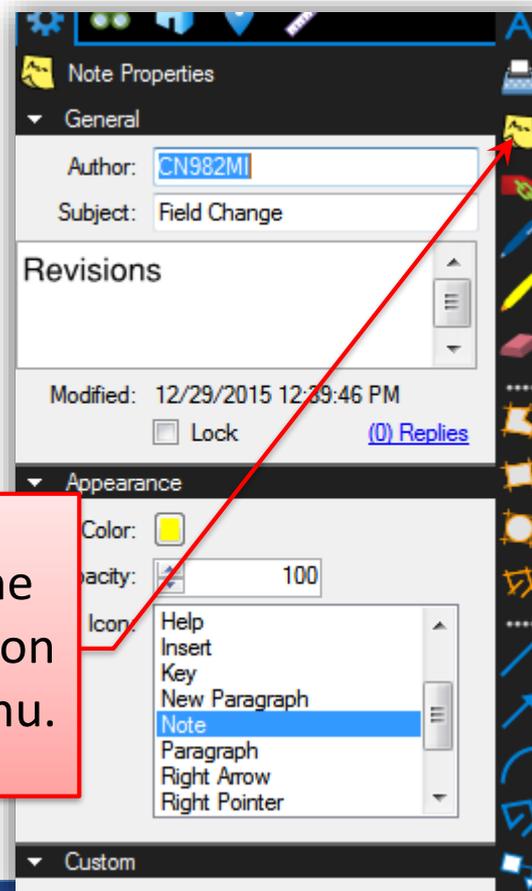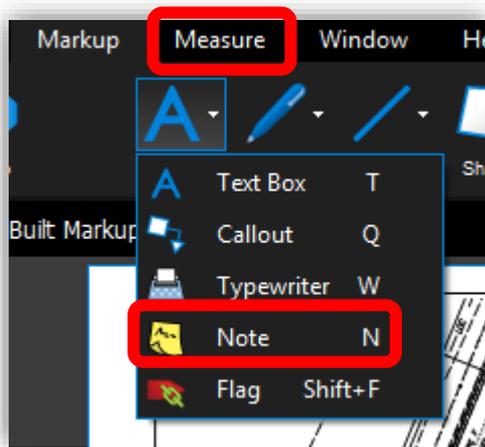
Or select the "Note" icon on the side menu.

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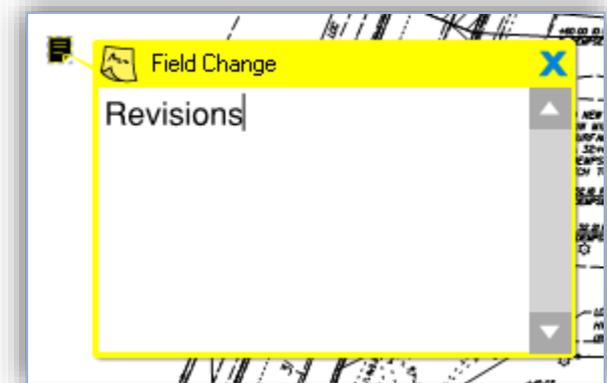
Insert Page

Follow these steps to insert sheets from Extracted files or the Final As-Built Signature Sheet into the Final As-Built plans:

Insert single or multiple pages:

- Select "Document" or "Thumbnails"
- Right-click
- Select "Insert Pages"
- Select file to insert

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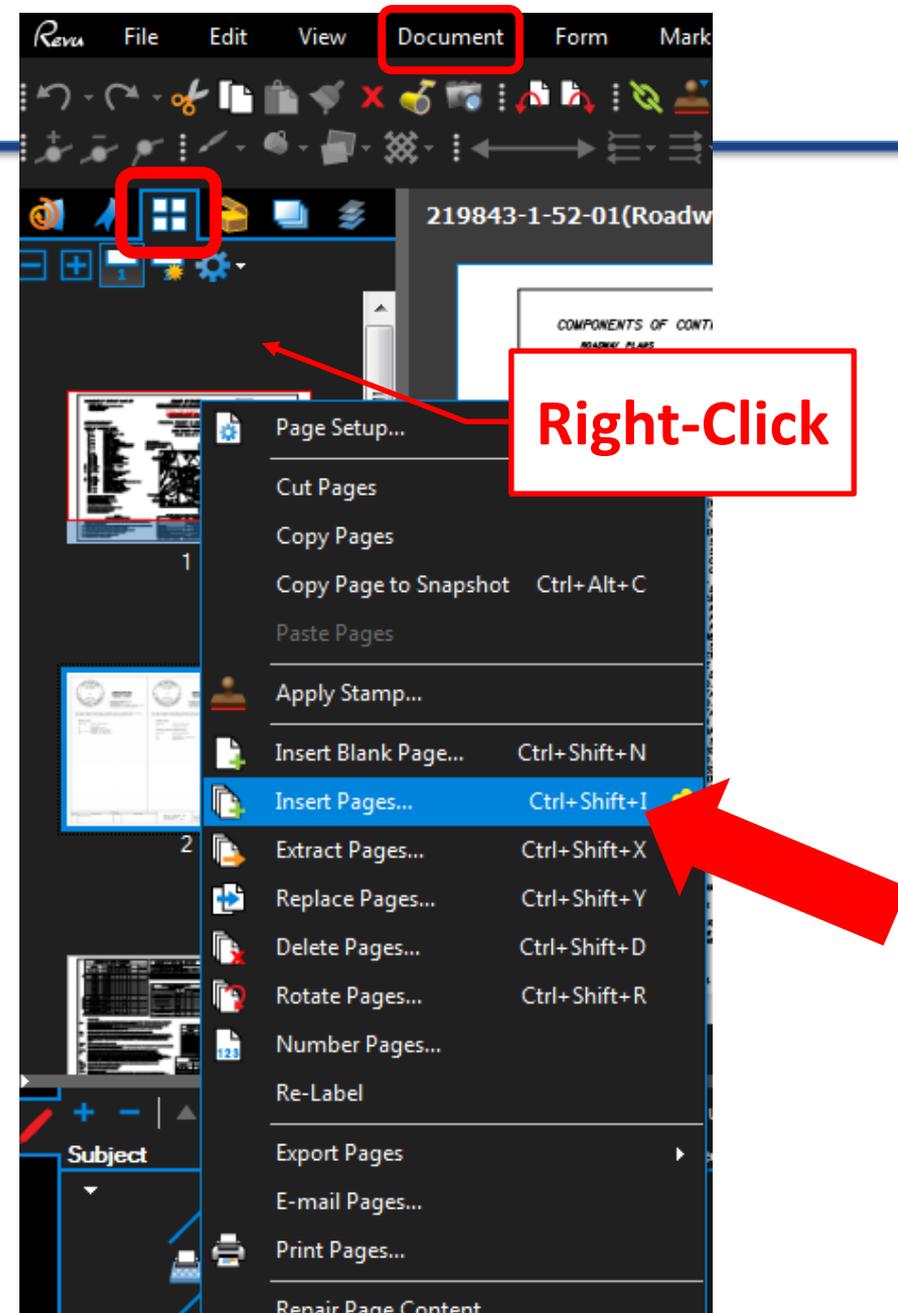
Insert Page (cont.)

Select file to insert
- Click "Add"
- Select file
- Click "Open"
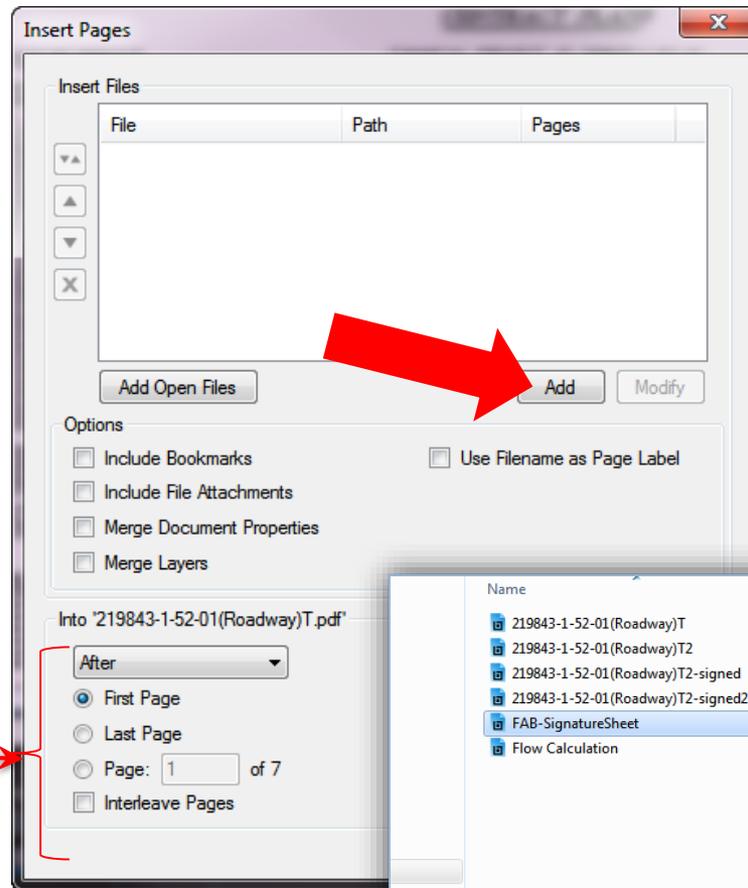
Select the destination of the sheets to insert in the dialog box or "drag and move" the thumbnails to the correct location.

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Create Stamp

Create Stamp (Cont.)

- A new "Tab" will open
- Type the text for the stamp (Ex.: VOID)
- In the Properties Panel:
  - "Name" the Subject
  - Select the font, size, rotation angle, Subject, etc.
  - Lock
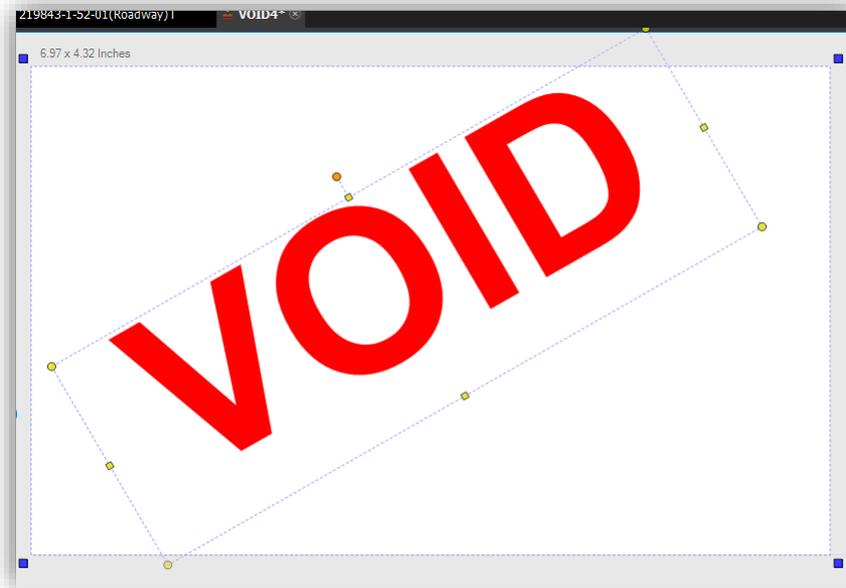
Create Stamp (Cont.)

- In the Left Panel, select "Tool Chest"
  - Look up the recently used tools
  - Right-click
  - Select "Add Item to My Tools"
  - Select Item from the "My Tools" to reuse. No need to re-create the stamp. Can create any stamp.

Measure

NOTE: Calibrate before using these tools. If measuring on sheet with a different scale, calibrate again.

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Measure: Calibrate

1. Select a known distance
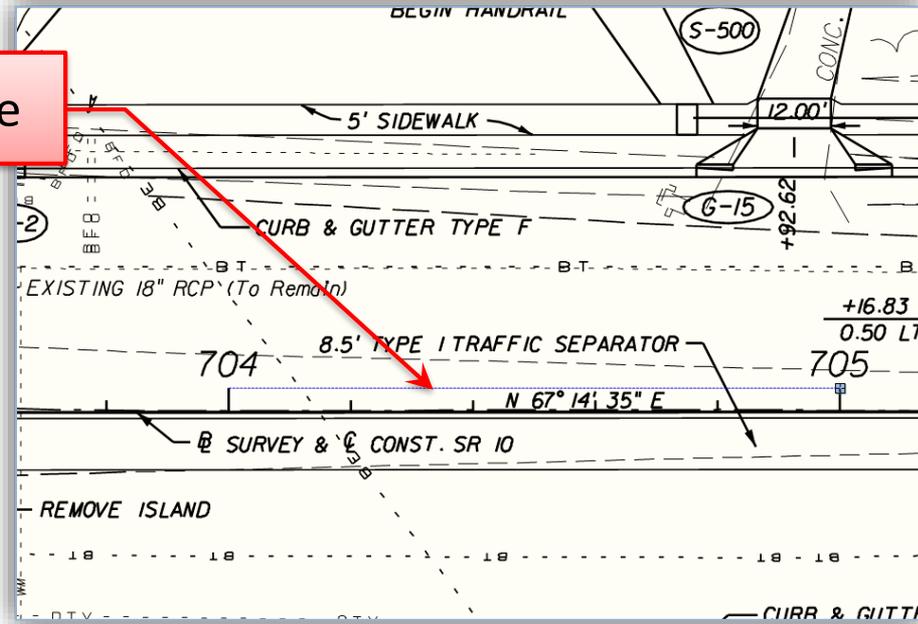
2. Verify and enter desired number of decimal places.

Calibration

Enter measurement between the two points.

100.00 ft   ft ▼   (Measured 2.50 in)

OK   Cancel

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Measure: Linear Distance

"Snap" the cursor to select the distance to be measured.
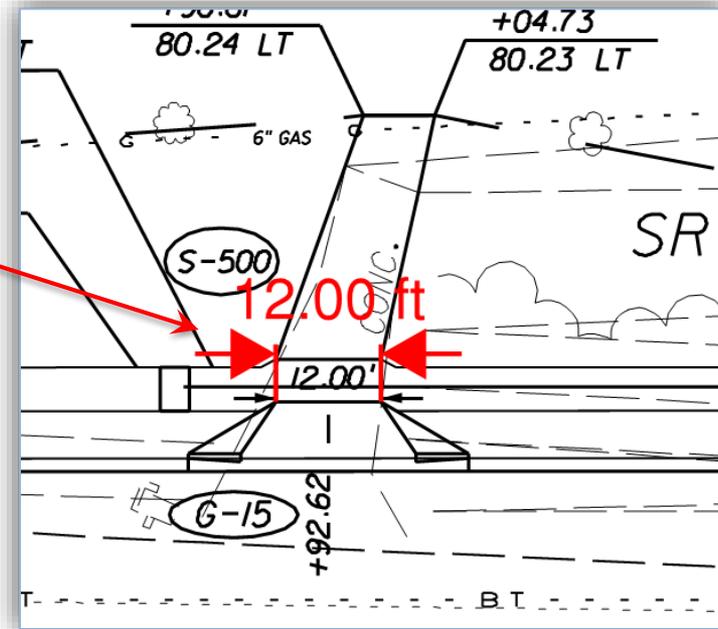
Measure: Area

1. "Snap" the cursor to the area to be measured.
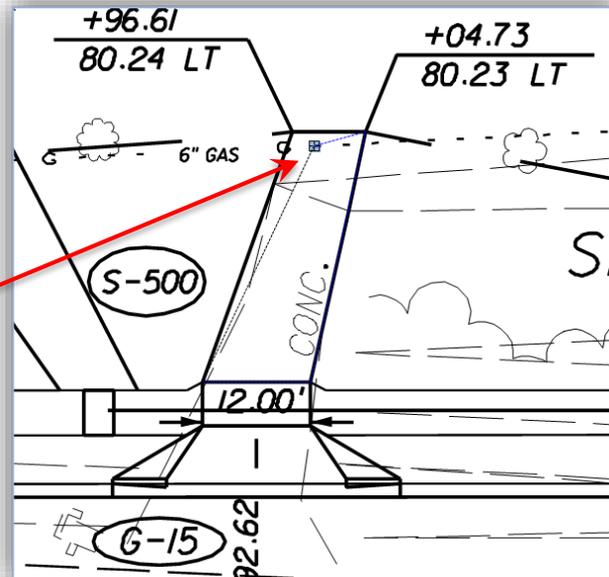
2. Once done, press "Enter".

31.62 sq yd
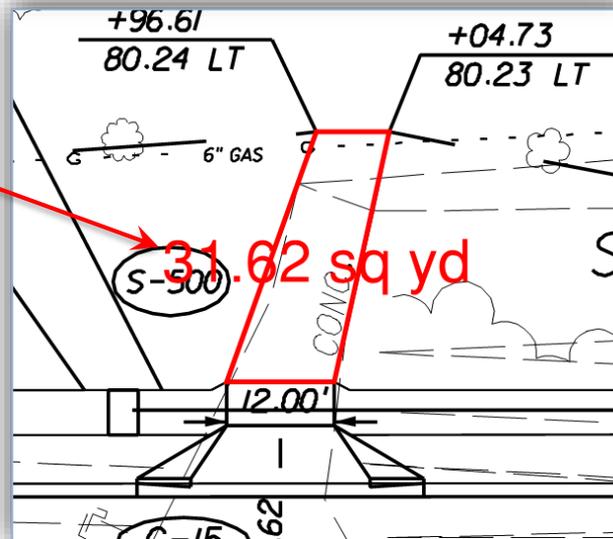
Measure: Area Units

In the Properties Panel:
- Ensure "Independent Units" is checked.
- Can change units and Recalculate.
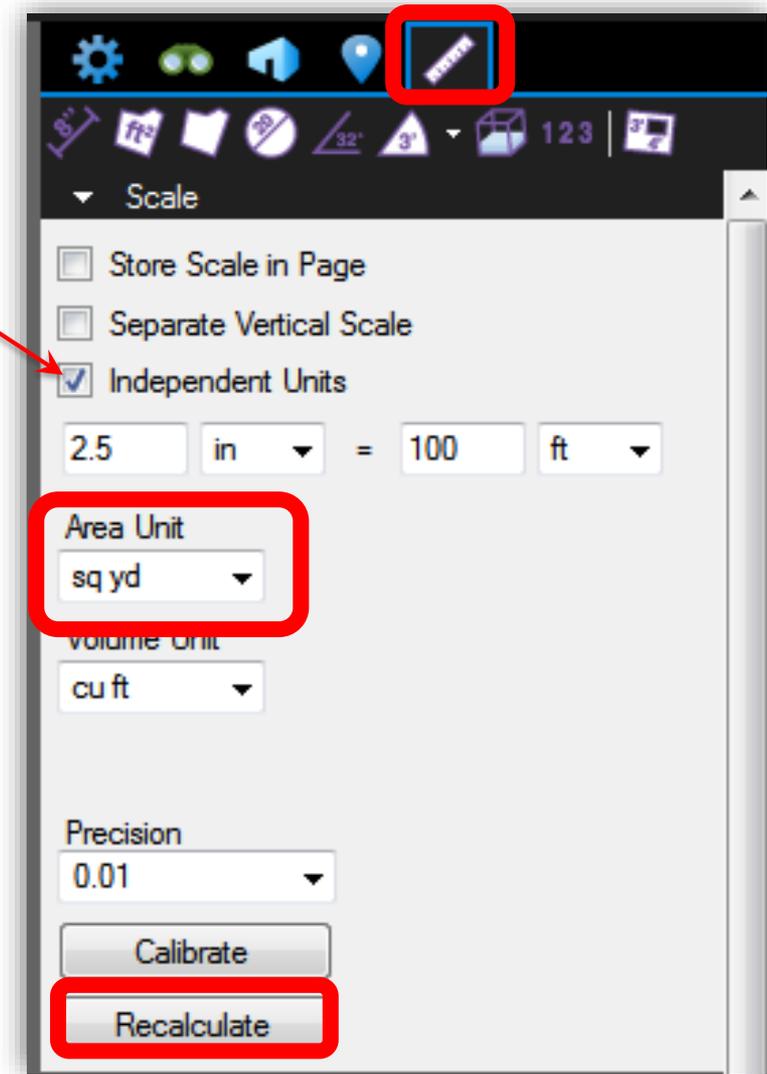
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Embed Backup Documentation

This will not insert additional pages into the As-Built Plans. An embedded file will become "part" of the file. It is not an attachment. Will be listed in the Summary of Markups.

Select the File

With the cursor, place the "paperclip" where desired. This is a link to the embedded document.

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Embed Backup Documentation (Cont.)

Subject

File Attachment Properties

General

Author: CN982MI
Subject: Calcs

Modified: 8/24/2015 2:38:01 PM
☐ Lock   (0)

Appearance

Color: ■
Opacity: 100
Icon:
- File Icon
- Graph
- **Paperclip**
- Attachment
- Tag

☐ Show Filename

File: Flow Calculation.pdf
Description:
Modified: 8/5/2015 11:20:09 AM
Size: 14 KB

[Extract...]

Custom

File Attachments

Name	Location
Flow Calculation.pdf	Page 5

File Properties

Title:
Author:
Subject:
Project:
Revisor:
Client:

List of embedded files

Open embedded file. Will open in a different tab.

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Embed Backup Documentation (Cont.)

**Warning:**

The "Attachment" option in the Properties panel allows adding a document. However, there will be no link to it and it will not be listed in the Markup panel, making it difficult for the reviewer to know that there is a document attached.

DO NOT USE

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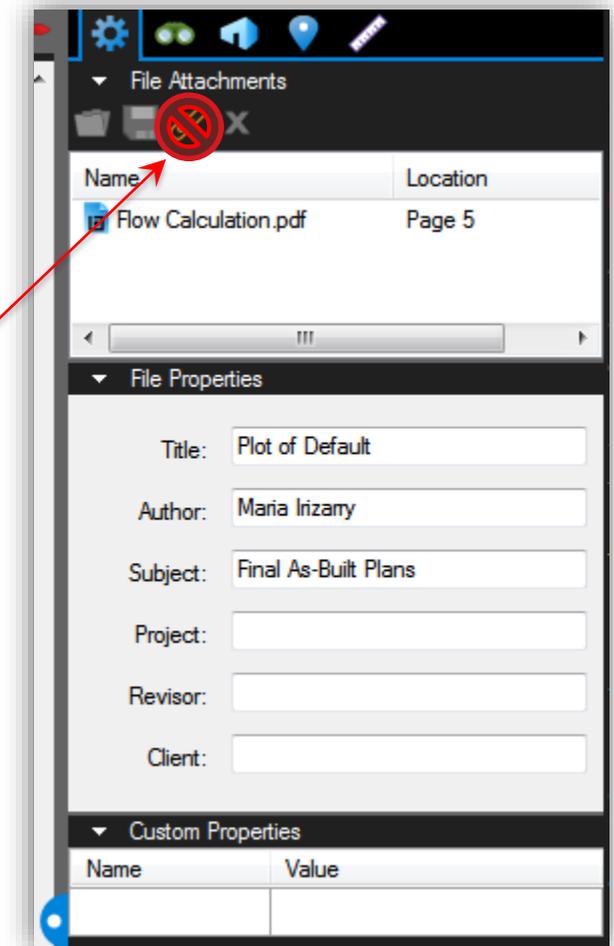
Before Signing and Sealing

- "Flatten" all changes/markups to the Final As-Built Plans set before digitally signing and sealing.
  - This protects the changes/markups that the RE is responsible for when digitally signing and sealing the Final As-Built Plans set.
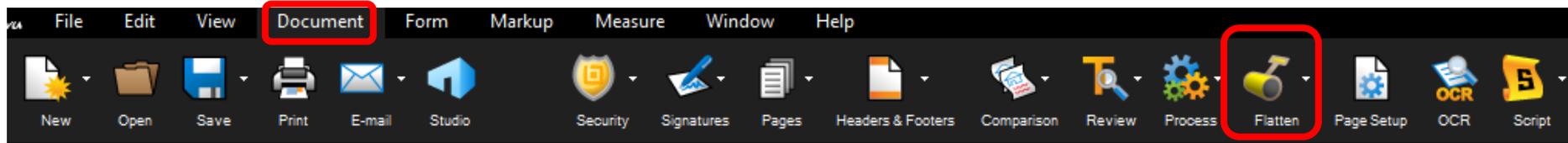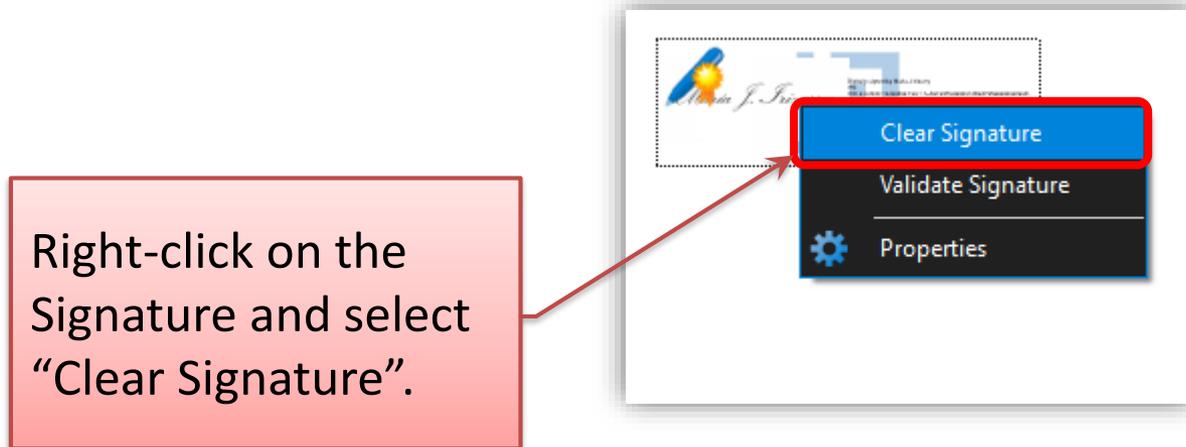

This will allow the RE to "Unflatten" the changes/markups incorporated included in the Final As-Built Plans set, before making any changes as directed by the DFEO.
- RE will be able to digitally sign and seal the Final As-Built Plans set before resubmitting to the DFEO.
- "Flatten" all markups before signing and sealing (again).

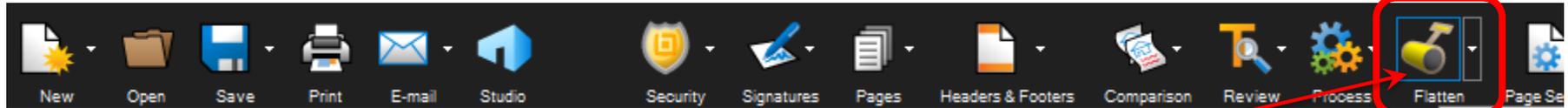**FDOT** Florida Department of Transportation
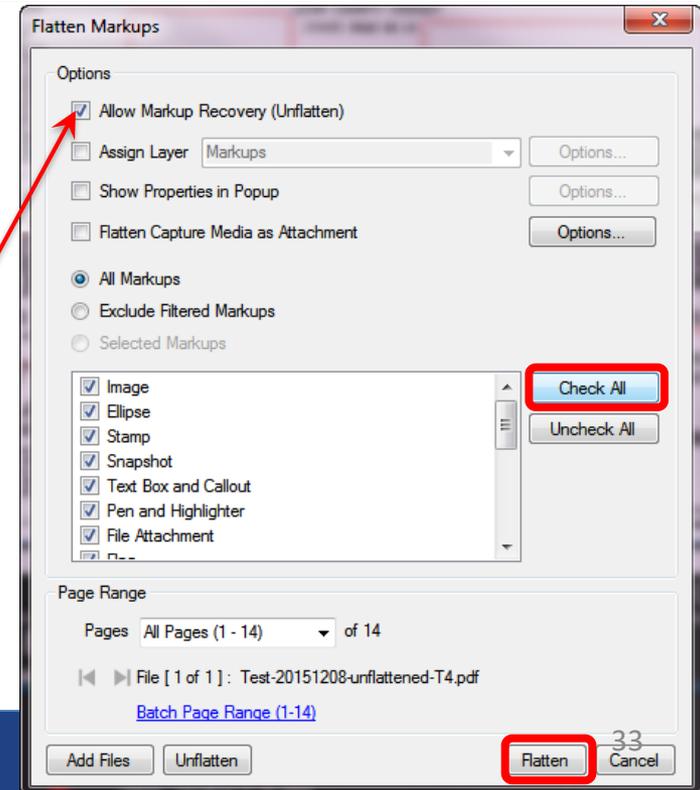
Revisions by the RE After DFEO Review

- If DFEO personnel identify errors or omissions in the Final As-Built Plans:
    - DFEO personnel will assign all markups to a new Layer and color convention, corresponding to their review type (i.e., initial review, etc.). (See **CPAM 5.12**.)
    - The DFEO will submit the Final As-Built Plans back to the RE.
    - Note that the markups by the DFEO will not be flattened. These markups will be listed in the Summary of Markups.
    - The RE will need to <u>clear the digital signature</u> before being able to make new markups.

Right-click on the Signature and select "Clear Signature".

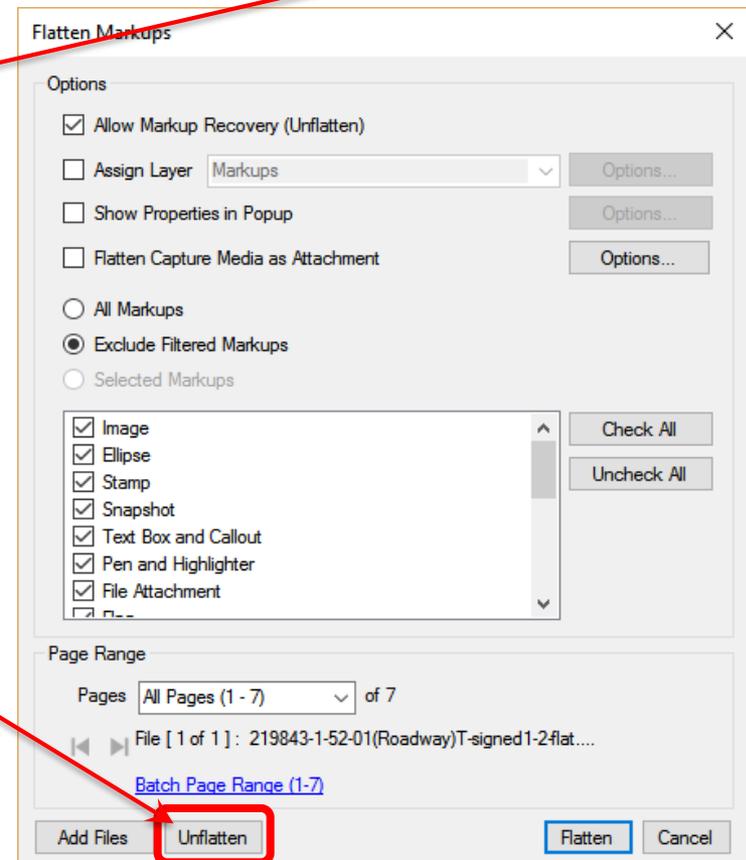**Florida Department of Transportation**

Revisions by the RE After DFEO Review (Cont.)

- How to unflatten:

Select "Flatten"

Select "Unflatten".
All markups by the RO will appear in the Summary of Markups.

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# Revisions by the RE After DFEO Review (Cont.)

- RE will incorporate markups or correct errors, as necessary.
- Before digitally signing and sealing the Final As-Built Plans for re-submittal to the DFEO:
  - Flatten the markups by the RE only
  - Note: RE can chose to only flatten the markups he/she is responsible for. To do this, ensure RE/RO have a assigned a Layer to their markups.
    - Filter the Layers in the Summary of Markups by selecting the RO layer(s) that will be flattened.
    - Flatten the markups
- Digitally sign and seal the Final As-Built Plans and resubmit to DFEO.
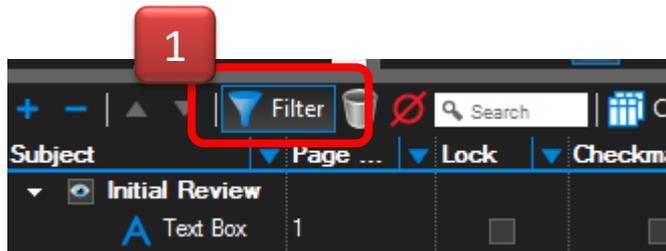
In this example, changes by the RE are in the "Markups" layer, and markups by the DFEO are in the "Initial Review" layer.
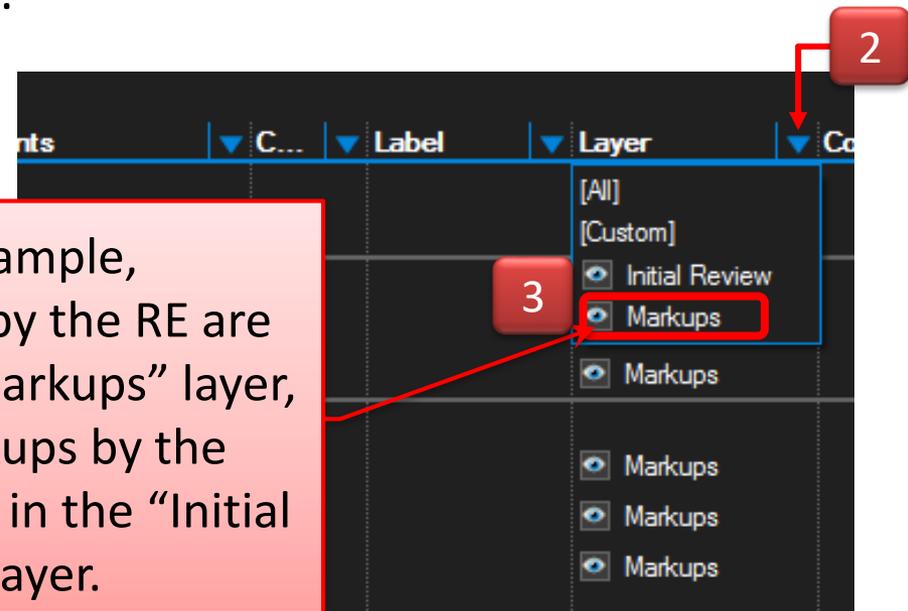
Document Certification
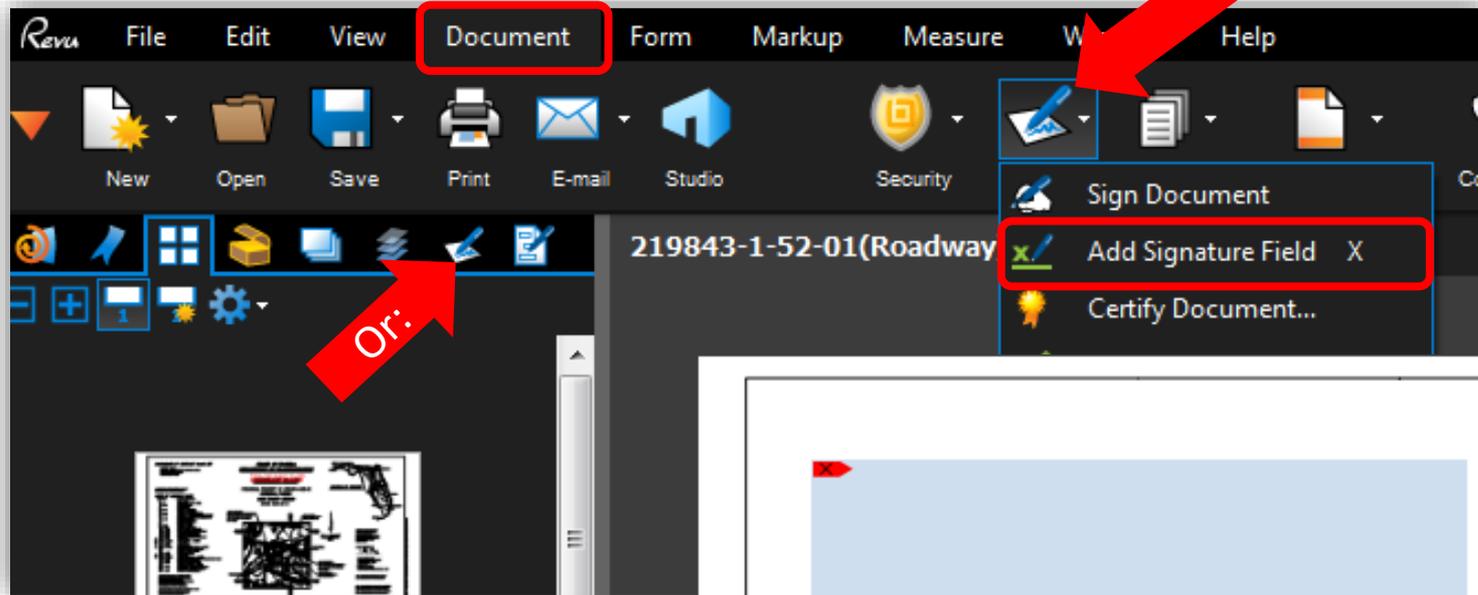
Add one (or multiple) Signature Field(s)

Drag the mouse to insert the signature block on the sheet.
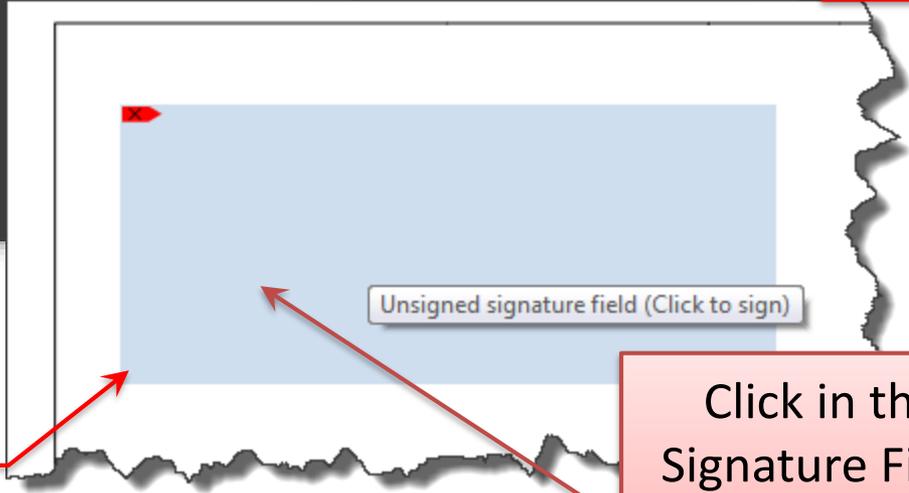
Click in the Signature Field to digitally sign the document.
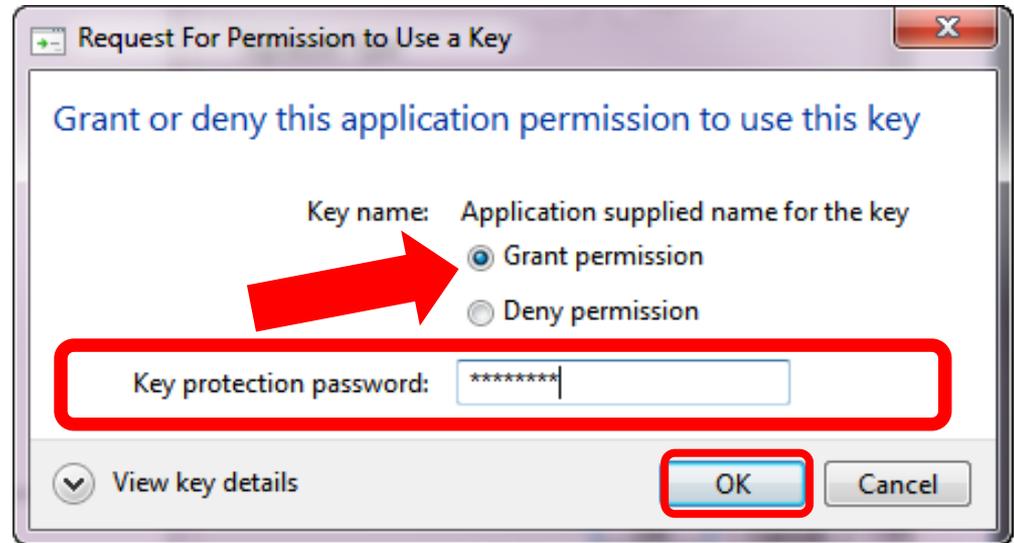
Or select "Certify Document"

Document Certification (Cont.)

This will allow DFEO personnel to make markups as necessary.

Document Certification (Cont.)

- Select "Grant Permission"
- Enter the Key Protection Password.

Document Certification (Cont.)

User will be prompted to Save the file.

As-Built Signature Sheet

Final As-Built Plans Signature Sheets are available for download at:
http://www.fdot.gov/construction/eConstruction/AsBuiltPlans.shtm

As-Built Signature Sheet

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Ashley W Anderson

PRINTED COPIES OF THE DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

FLORIDA DEPARTMENT OF TRANSPORTATION
605 SUWANNEE STREET
TALLAHASSEE, FL 32303
CERTIFICATE OF AUTHORIZATION: N/A
ASHLEY ANDERSON, P. E. NO. 99999

This project was constructed in substantial compliance with these plans as provided by the Engineer of Record. These plans reflect "as-built" conditions and no changes were made to the plan sheets.

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Ashley W Anderson

PRINTED COPIES OF THE DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32303
CERTIFICATE OF AUTHORIZATION: 12345
ASHLEY ANDERSON, P. E. NO. 99999

The above named professional engineer shall be responsible for the following changes, indicated in redline revision, in accordance with Rule 61G15-23.004, F.A.C. This project was constructed in substantial compliance with these plans as provided by the Engineer of Record.

ROADWAY PLANS

SHEET NO.	DESCRIPTION OF CHANGE
1	PROJECT DETAILS
4-6	BASE THICKNESS CHANGED
SQ1-25	ADDED FINAL QUANTITIES
34	AS-BUILT OPTIONAL MATERIALS INDICATED
66	SIDEWALK REALIGNMENT

SIGNING & PAVEMENT MARKING PLANS

S2-S4	ADDED FINAL QUANTITIES

Date	Name	Position (Title)	Review Type
RESIDENT OFFICE			
10/25/2017	JANE DOE	CSS	
10/25/2017	JOHN DOE	PA	
10/30/2017	JOE SMITH		QA
DISTRICT OFFICE			
04/15/2016	PETER PIPER	IA REVIEW	QC OTHER
07/05/2016	TOM THUMB	60% QC REVIEW	QC (INITIAL)

REVISIONS				ROADWAY ENGINEERS, INC.	STATE OF FLORIDA				

DATE DESCRIPTION DATE DESCRIPTION
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32303
CERTIFICATE OF AUTHORIZATION: 12345
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
ROAD NO. 999 COUNTY LEON FINANCIAL PROJECT ID 123456-1-52-01
FINAL "AS-BUILT" SIGNATURE SHEET
SHEET NO. 2A

Procedures for digitally signing and sealing are described in *Rule 61G15-23, F.A.C.*
https://www.flrules.org/gateway/ChapterHome.asp?Chapter=61G15-23

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As-Built Signature Sheet (Cont.)

- Refer to *CPAM 5.12* for requirements.

- **Note:** Green checkmark or yellow ribbon next to the digital signature means that the Digital Certificate/ Signature has been validated.

Checkmark

- Select the Typewriter
- In the Properties Panel: Change Font to "Windings 2"
- Type the letter P in upper case
- Can be added to "My Tools"

✓

Typewriter Properties

General

Author: CN982MI

Subject: Checkmark

Modified: 9/28/2015 9:49:04 AM

☐ Lock   (0) Replies

Appearance

Color: 🟥

Fill Color: ⬜

Opacity: 100

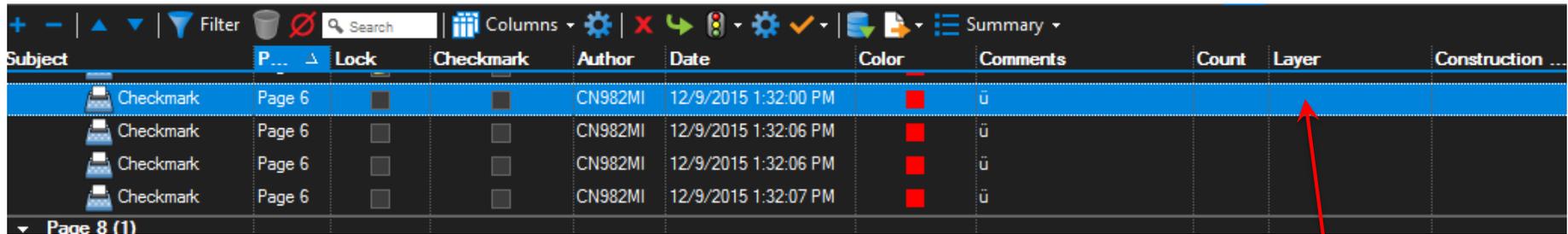Fill Opacity: 100

Line Width: 0.00

Style: ────────────

Shape: Rectangle

End: ──── │ Auto │ ⬜

Font: Wingdings 2

Font Size: 8 ☐ Auto

Line Space: 1.00

Margin: 0.00

Text Color: 🟥

Alignment: ▤ ▤ ▤ │ ▤ ▤ ▤

Font Style: **B** *I* U̲ T̶ │ X¹ X₁

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Markup Panel

- All markups are listed in the Markup Panel (bottom panel).
  - The name of the author and date markup was made are shown.
- Each item on the list is a link to each markup.
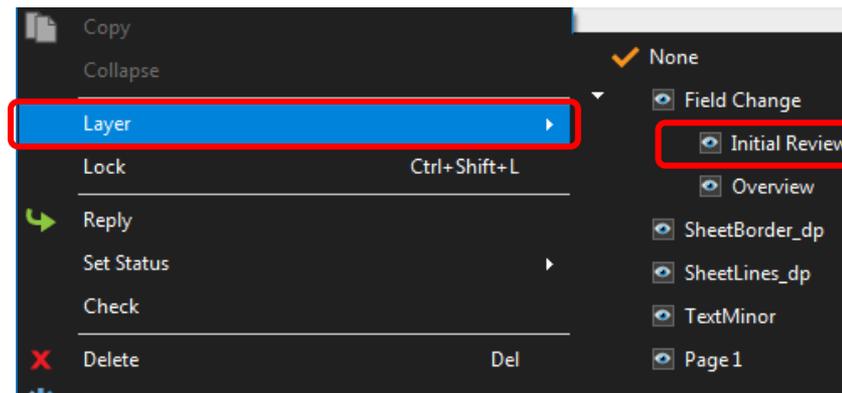
Markup Panel: Layers (DFEO ONLY)

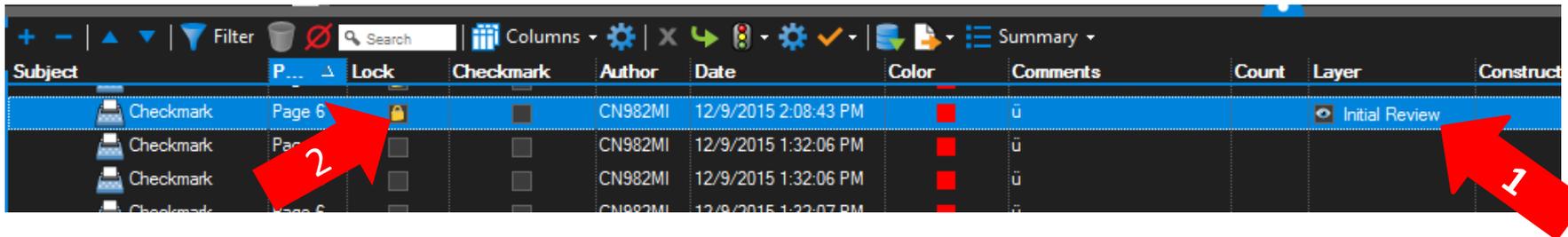Right-click

For any markups by **DFEO personnel** on digitally signed and sealed Final As-Builts Plans:

- Before locking the markup, select the markup from the Markup Panel
- In the "Layer" column: **Right-click**
  - Select "Layer"
  - Select a layer or Create New Layer
   - It is recommended to use "Initial Review" or "Overview"
- Lock the markup

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Markup Panel: Layers (DFEO ONLY) – cont.

- Assigning a "Layer" to markups made by DFEO personnel on digitally signed and sealed Final As-Built Plans will allow the RE to correct any findings by the DFEO without altering those markups.
- The RE will be able to sign and seal only what he/she is responsible for. (See slide: *__Before Signing and Sealing__*.)
- Original markups by DFEO personnel will not be erased.

Summary of Markups
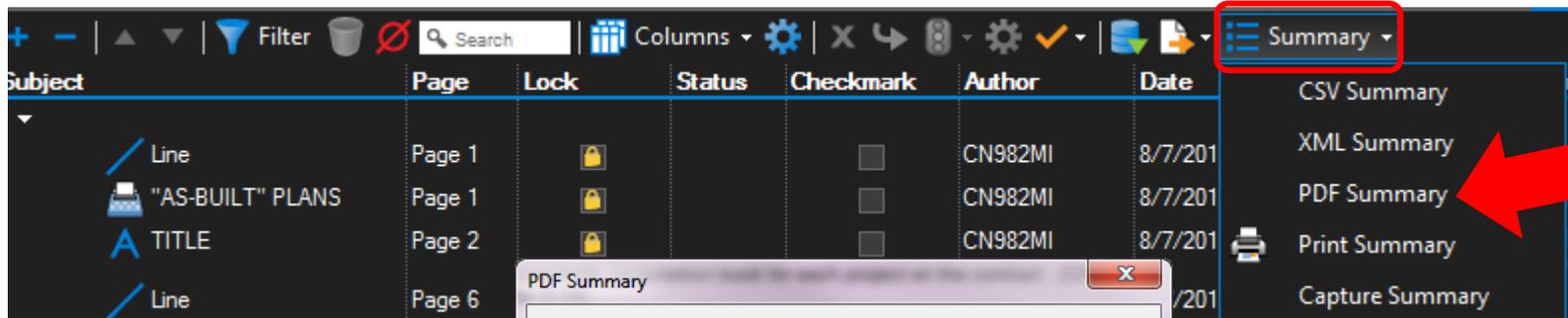
Check this box **ONLY IF** the Summary of Markups is to be inserted in the Final As-Built Plans PDF file. By default, the Summary of Markups pages will be inserted after the last plan sheet, but it can be moved to the desired location within the file.

A Summary of Markups in the current file will include links to each markup for easy navigation through the document. Although this is not a requirement, the RE can insert the Summary of Markups behind the Final As-Built Signature Sheet.
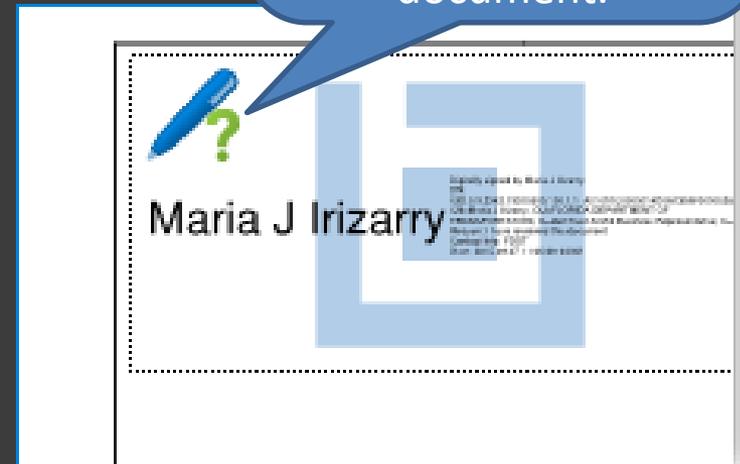
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DFEO

- Use color convention per *CPAM 5.12*
- Validate signature after any markups/changes.
  - A validated signature will have a green checkmark next to it.
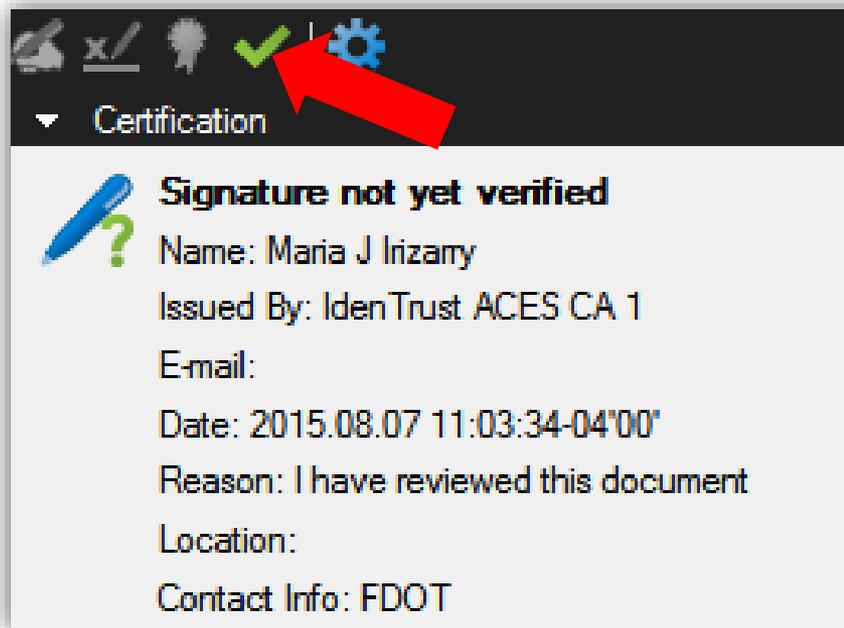
> A green question mark ("?") indicates that changes have been made to the previously certified document.

Ashley Anderson, P.E.
Office of Construction
Final Estimates Specialist
Ashley. Anderson@dot.state.fl.us

Sherry Valdes
Office of Construction
Final Estimates Specialist
Sherry. Valdez@dot.state.fl.us