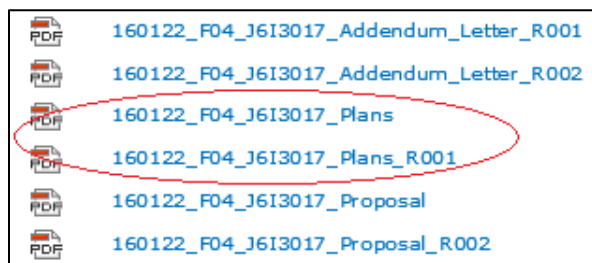


Preparing As-built (Final) Plans in Construction Using Bluebeam Revu

The intent of this method of as-built plans is to markup changes that have occurred in the field. The intent is NOT to delete original line drawings and/or details.

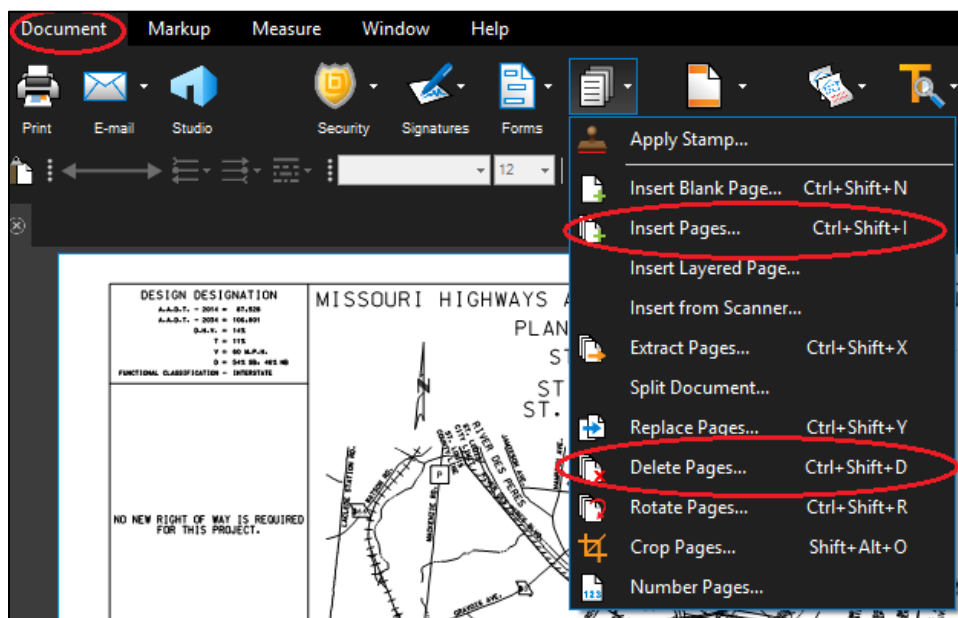
1. Obtain .pdf version of contract final plans and any revised contract plan sheets. These can be obtained from District Design personnel, from ProjectWise (if you have access), or from the Contract and Bidding Section at the following link: [Bid Proposals and Plans](#). Soon you will be able to obtain plan sheets from eProjects.

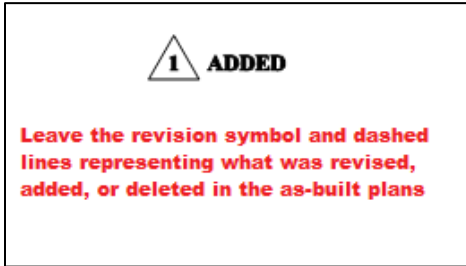
Be sure to obtain all revised plan sheets as well (see below).



File the plan sheets in your working folder.

2. Delete the plan sheet(s) that the revised sheet(s) will replace. This is easily done with the Delete Pages function under the Document menu. Then insert the revised plan sheet(s) in their respective order.





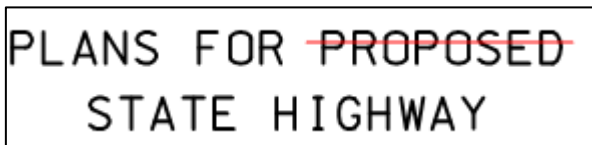
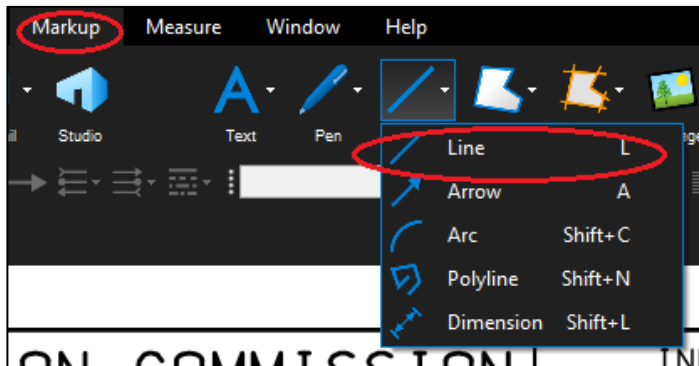
Do not delete, mark through, or alter the revision marks on the plan sheets. Those “marks” are part of the contract plans and need to remain on the plan sheet(s).

3. Remember that the original design plan sheets will always be available to future users, so the as-built set only needs to include the basic plan sheets that are deemed pertinent. On these basic sheets, you should apply “mark-up” notes and graphics to record any notable changes that were made during construction. Sheets that include engineering design changes should be replaced in their entirety with the revised sheet from the Project Manager. Delete all sheets that are not considered pertinent to the as-built record, including: Summary of Quantity sheets (Sheet No. 3), Traffic Control Sheets, Erosion Control Sheets, Pavement Marking Sheets, Permanent Signing Sheets, and Cross-Sections. Use judgment on whether or not to retain any Special Sheets. Sheets that are considered pertinent and should be retained include, but may not be limited to, Title sheet, Typical Sections, Plan Sheets, Culvert Sections, Signal, and Lighting Sheets.

For Bridge plans, update the quantities, and retain all sheets except for plans of the old bridge that are marked “FOR INFORMATION ONLY”. The Bridge Division has the older plans on file. Replace any sheets that include revisions from the Bridge Project Manager. Apply any mark-up notes needed to document pertinent information from observations during construction.

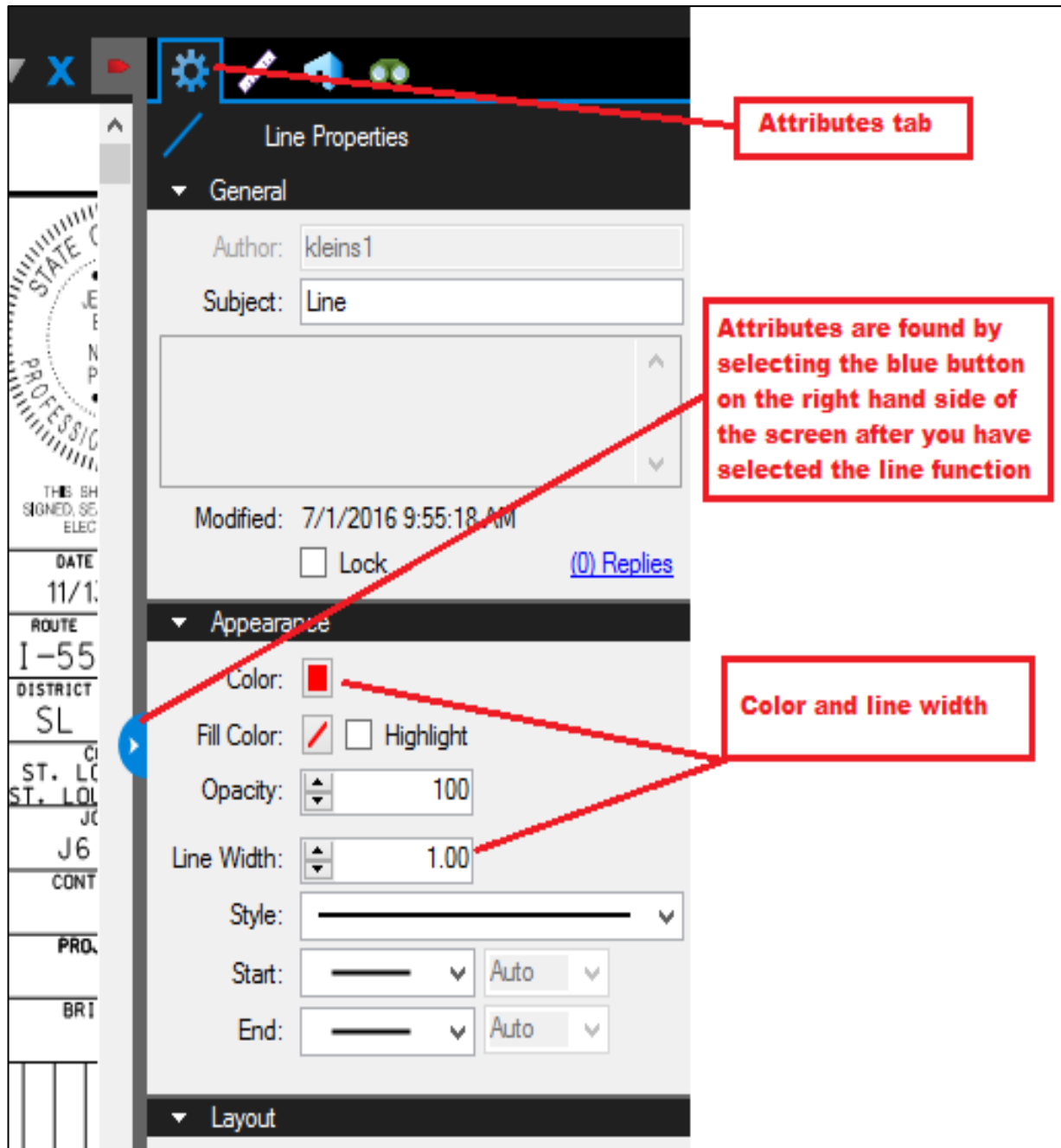
Note: Be sure to save your file often, so not to lose any changes you have made.

4. Cross out the plan sheet(s) that you have deleted on the title sheet. This is done with the Line function under the Markup menu. Also, cross out “Proposed” on the title sheet (it is not necessary to cross out the word “proposed” elsewhere on the plan sheets).



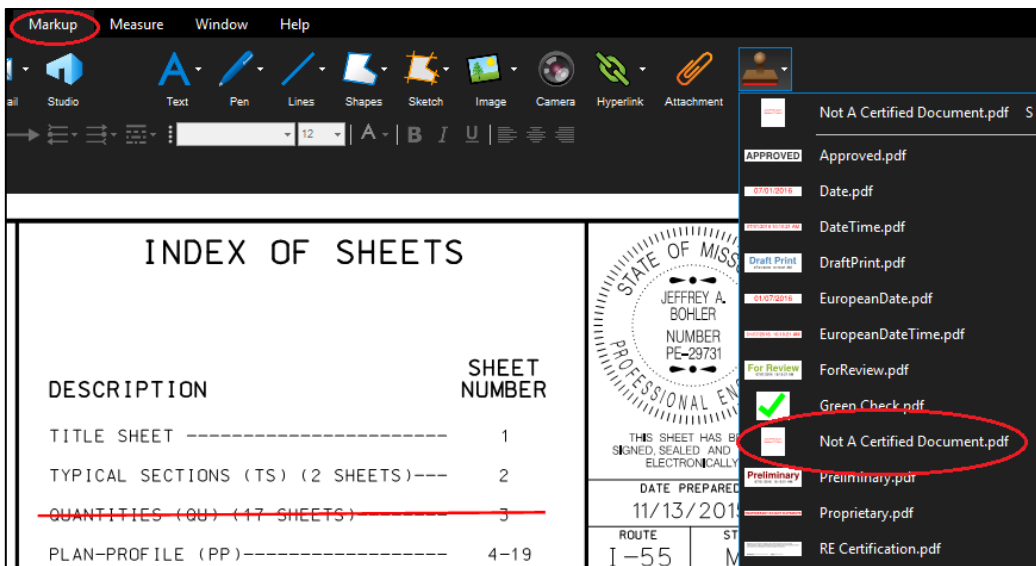
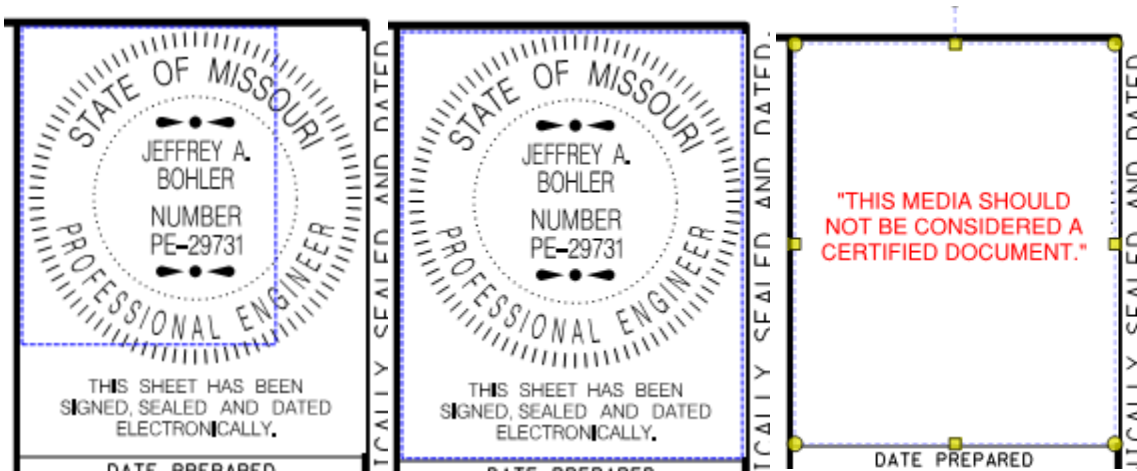
INDEX OF SHEETS	
DESCRIPTION	SHEET NUMBER
TITLE SHEET -----	1
TYPICAL SECTIONS (TS) (2 SHEETS)---	2
QUANTITIES (QU) (17 SHEETS) -----	3
PLAN-PROFILE (PP)-----	4-19
ADA SHEETS (ADA)-----	20-29
PAVEMENT MARKING (PM)-----	30-58
SIGNALS (SG)-----	59-77
LIGHTING (LT)-----	78-80
TRAFFIC CONTROL (TC) -----	81-102
SIGNING (SN)-----	103-104
BRIDGE DRAWINGS (B)	
A0531-----	1-2

The attributes for the line are: width =1.0 color = red.



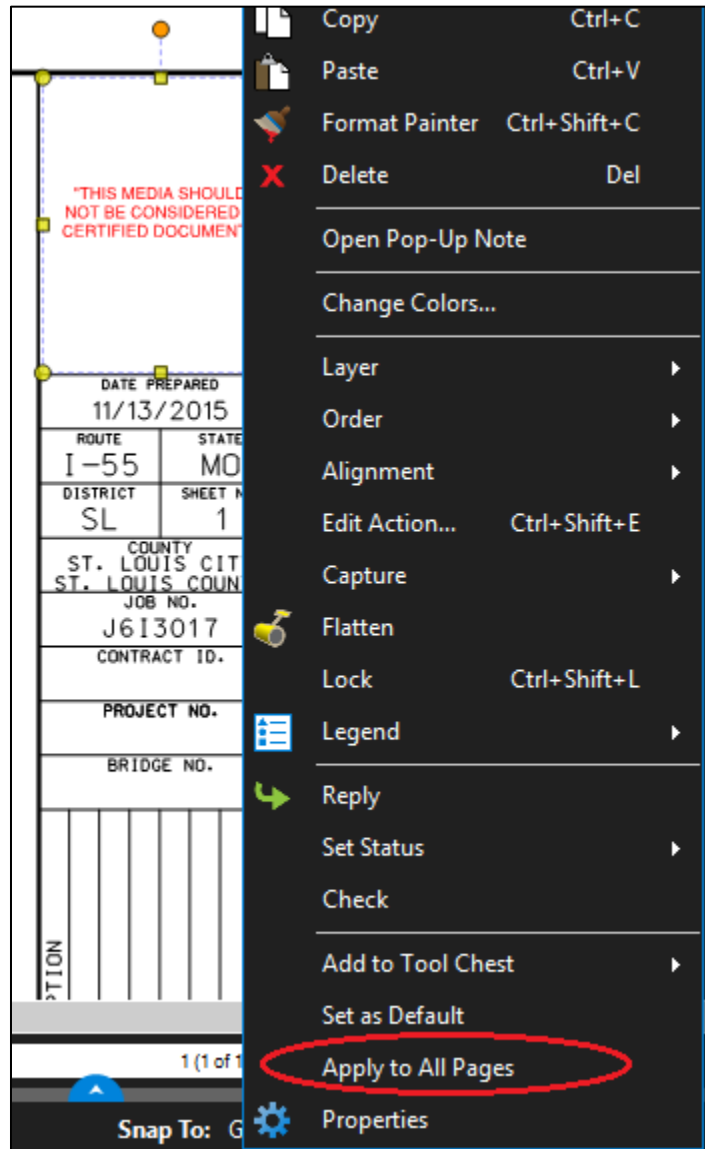
5. Remove (cover) the Project Manager’s seal. You will use the “Not A Certified Document.pdf” stamp to complete this. Stamps can be found under the Markup menu.

Select the stamp and drag it from the upper left corner of the seal area to the lower right corner (blue outline shows drag area). Be sure to cover the entire seal and text.

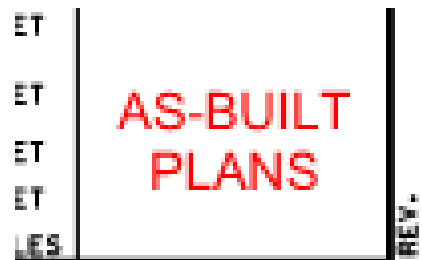
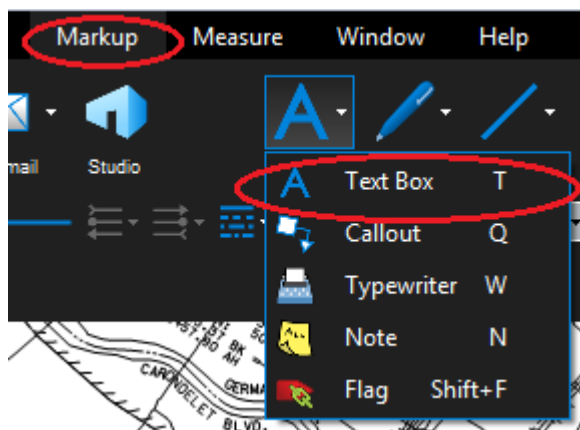


6. Apply “Not A Certified Document.pdf” stamp to all plan sheets. To do this, right click on the stamp you just added and select apply to all pages. This will automatically place the stamp in the exact same location on every sheet.

Note: applying markups to all plan sheets is a handy function and can be used in other aspects of PDF files.



7. Now you will need to place "AS-BUILT PLANS" to all plan sheets. Place the text in the lower right-hand corner using the text box function under the Markup menu. Make sure the text is Arial font, font size 12, and colored red.

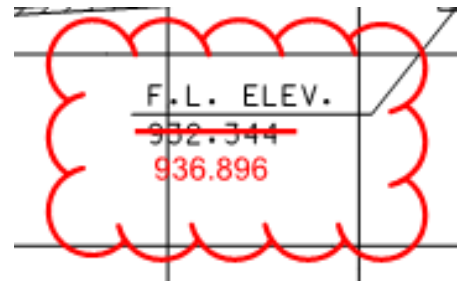
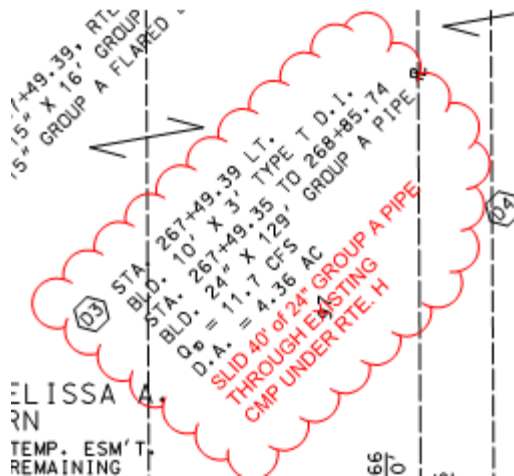
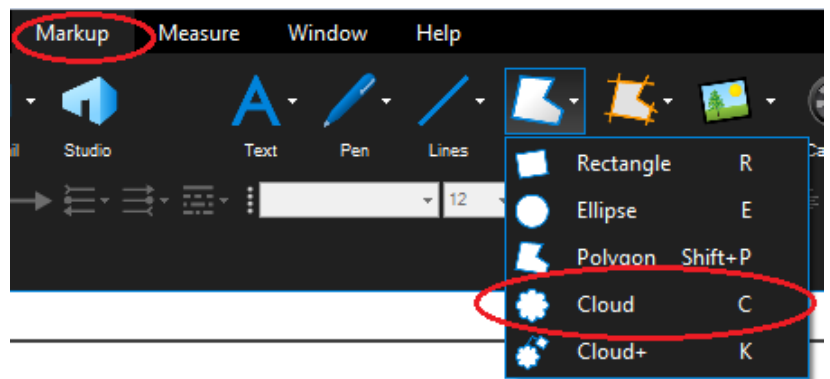
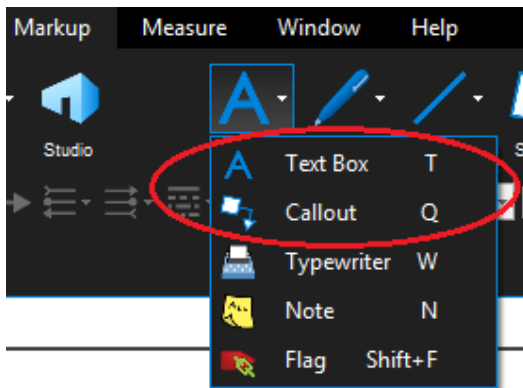


8. Copy "AS-BUILT PLANS" to all plan sheets using the same procedure in #6 above.

9. Add the applicable contract ID, project number, and bridge number to all plan sheets using the procedure in #6 above. The font size can be changed to fit within the contract/project/bridge boxes.

JOB NO. J6I3017	ON THIS SHEET IT HA
CONTRACT ID. 160122-F04	
PROJECT NO.	
BRIDGE NO.	

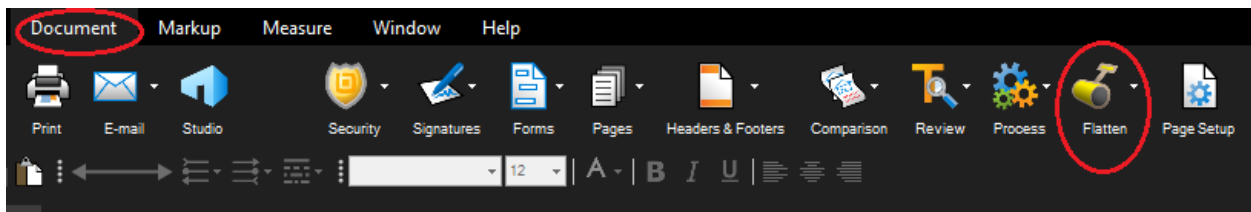
10. Apply your field changes and notes to the plan sheets using the text box, text call out, and cloud shape (below are some examples).



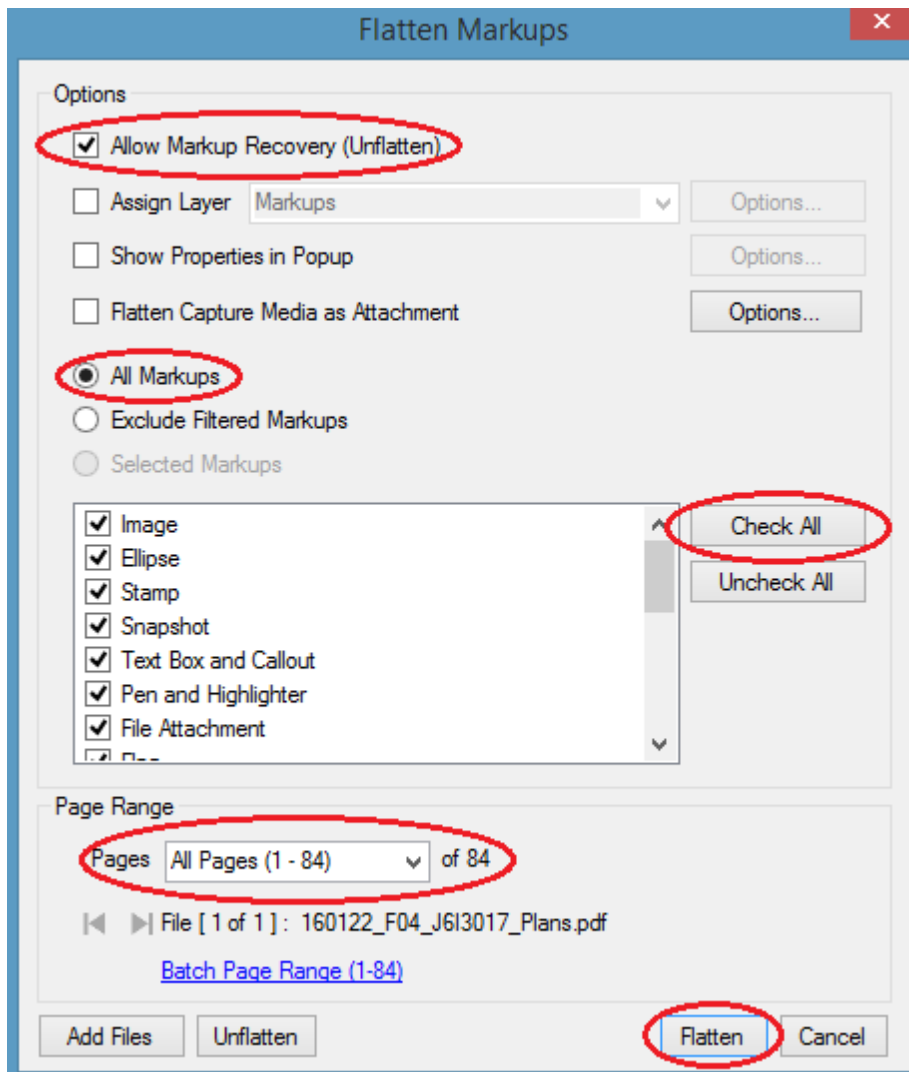
ESTIMATED QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	72	---	72
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	480 165	---	160 165
Supplementary Television Camera Inspection	each	6	---	6
Foundation Inspection Holes	linear foot	240 233.7	---	240 233.7
Sonic Logging Testing	each	6	---	6
Structural Steel Piles (12 in.)	linear foot	935 995	---	935 995
Pre-bore for Piling	linear foot	220	---	220
Pile Point Reinforcement	each	22	---	22
Class B Concrete (Substructure)	cu. yard	174.7	---	174.7

"AS BUILT DRILLED SHAFT" DATA			
SHAFT NO.	BOTTOM OF DRILLED SHAFT (Elev.)	BOTTOM OF ROCK SOCKET (Elev.)	REMARKS
BENT 2			
1	998.00	970.50	
2	998.00	970.50	
3	998.00	970.50	
4	998.00	970.50	
5	998.00	970.50	
6	998.00	970.50	

11. Once you have all your comments, notes, and other markups added to the plan sheets, you will need to flatten the document. This will "embed" the changes into the document. To do this, click on the Flatten function under the Document menu.

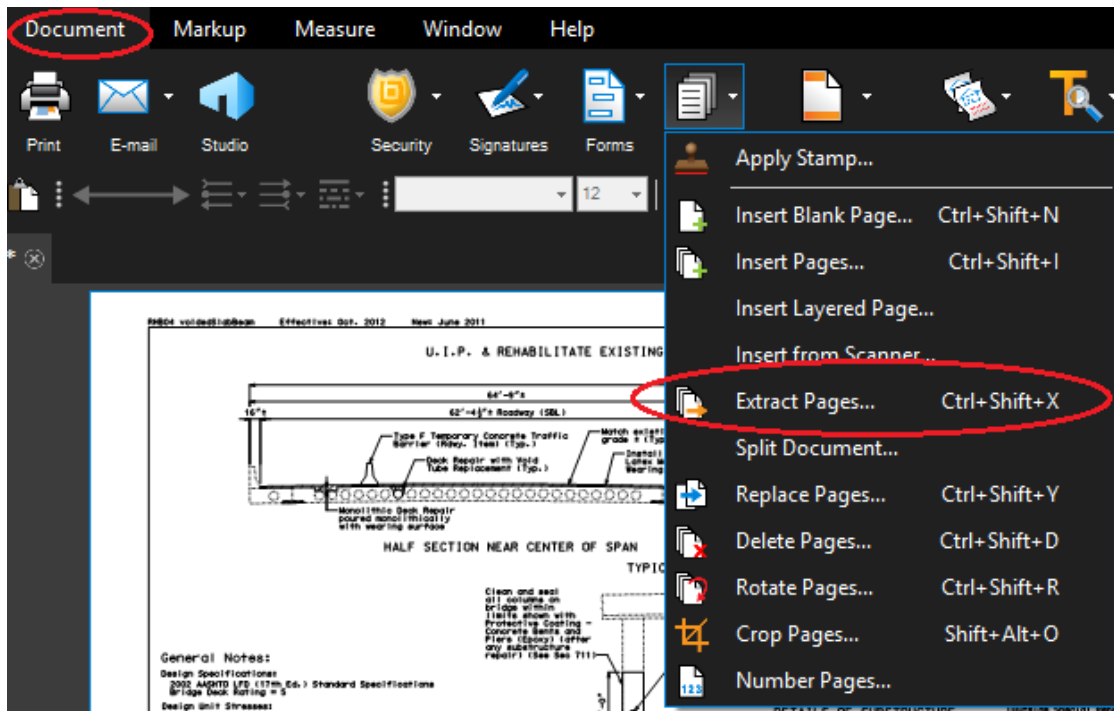


When you click on Flatten, the Flatten Markups menu will pop up. Be sure to select: Allow Markup Recovery (Unflatten), All Markups, Check All (this ensures any markups you have added are flattened), All Pages, and then click on the Flatten button.

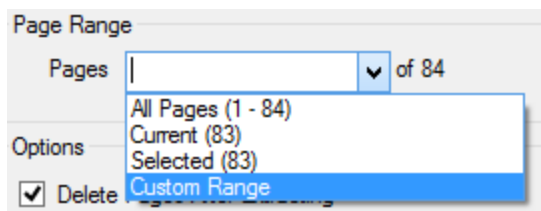


12. If the project includes bridge plans, the plan sheets will have to be separated into two documents; roadway plans and bridge plans. This is for the purpose of making roadway as-built plans publically available in the future without the bridge plans. Skip to Step 13 if the project does not include bridge plans.

The easiest way to separate the plan sheets is to extract pages using the Extract Pages function under the Document menu.

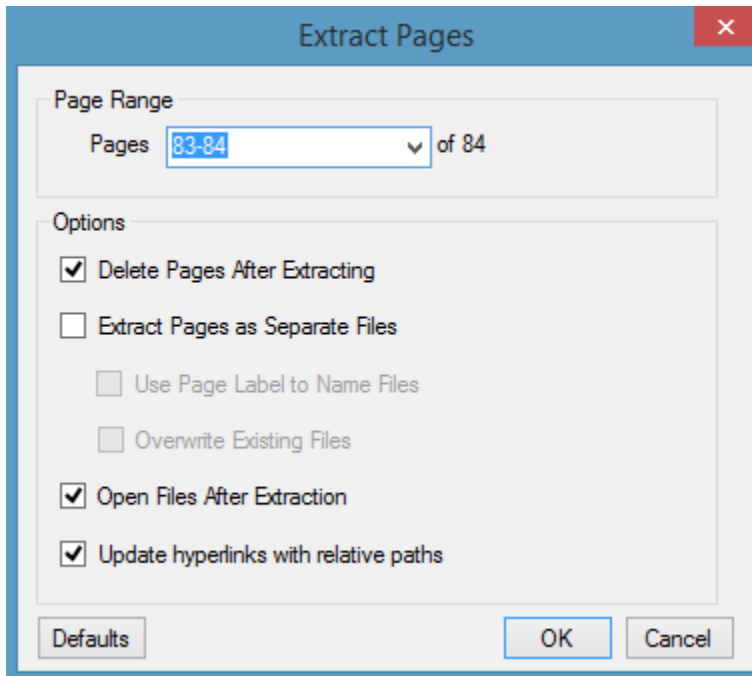


To choose the range of pages to extract, select the down arrow in the pages box and click on Custom Range.

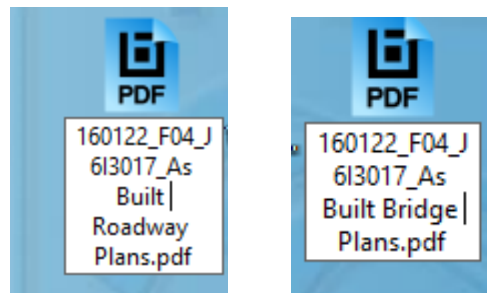


Be sure to enter a range of pages. In the example below, pages 83 through 84 are going to be extracted. Click on: Delete Pages After Extracting (this will delete the bridge plan sheets from the original document), Open File After Extraction (this will let you see the pages and ensure that you have extracted the correct sheets), and Update hyperlinks with relative paths. Then Click on OK. A box will appear asking you where you want to file your extracted file.

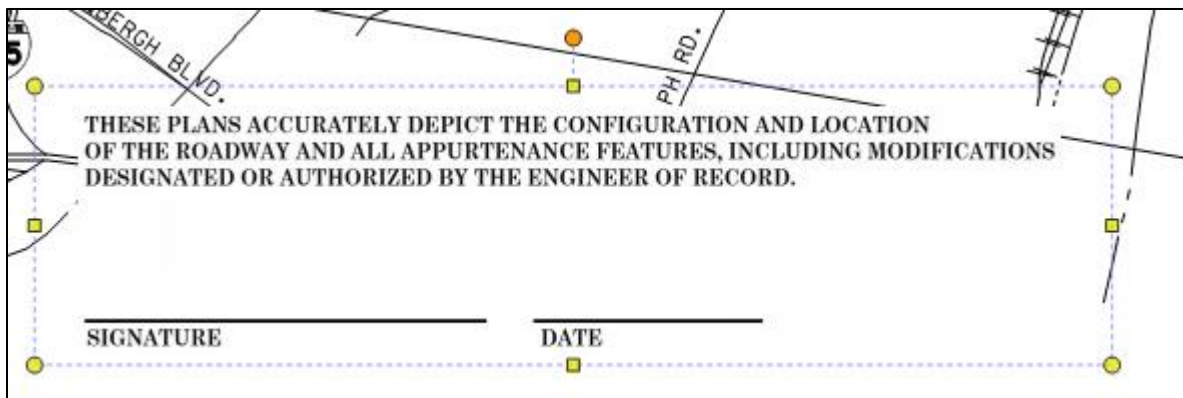
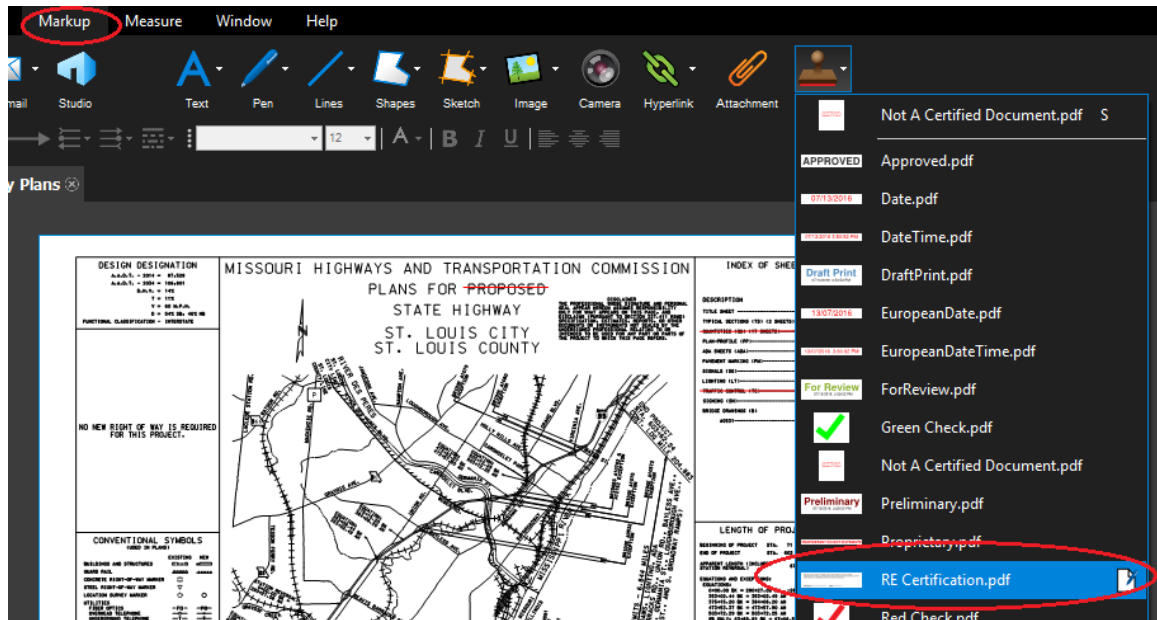
If you did not extract the correct sheets, close the newly extracted file and from the original file, select Undo (Edit menu, History, Undo) and repeat the process (delete the newly created/extracted files too).



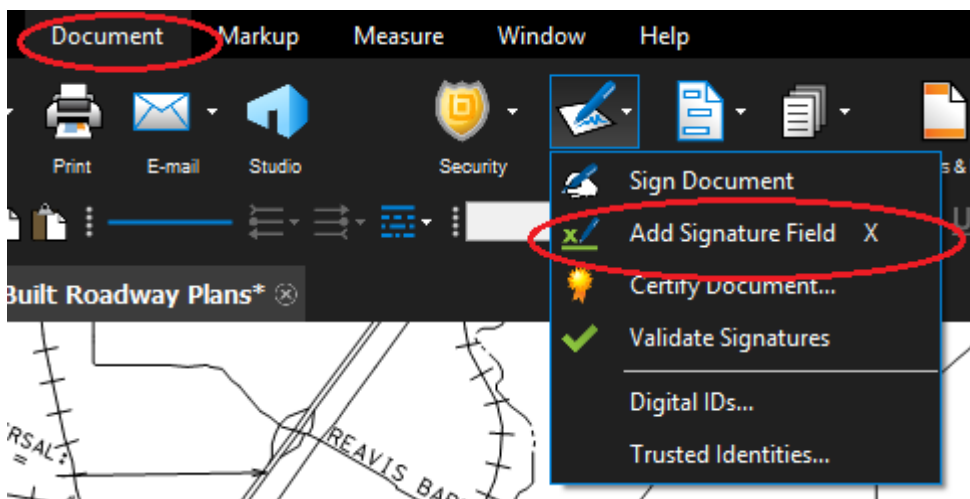
13. Now you need to give the roadway and bridge as-built files distinctive names. One of the easiest ways to do this is to go to the folder where the as-built files are stored and right click on their titles, select rename. The naming convention is: Contract ID_Job No_As Built Roadway Plans.pdf and Contract ID_Job No_As Built Bridge Plans.pdf.

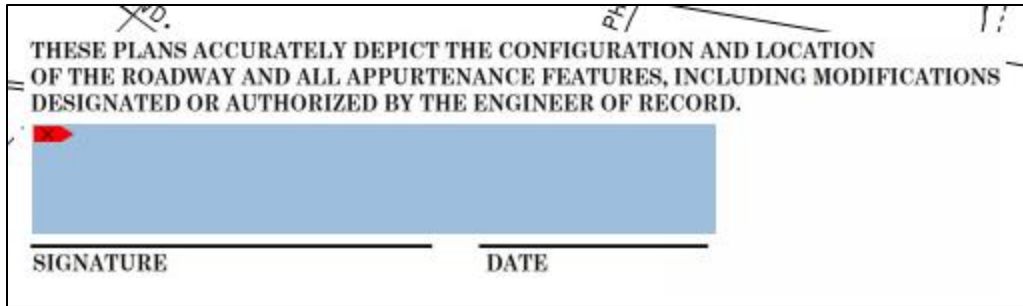


14. Placing the RE's certification stamp is the next step. Similar to Step 5 above, you will place the RE Certification.pdf stamp to the title sheet. Drag the stamp area in the location you want the RE's certification to appear. Make sure the stamp area will be large enough for the RE's digital (Step 15). Keep in mind the text part of the stamp does not have a clear background and will cover line drawings.

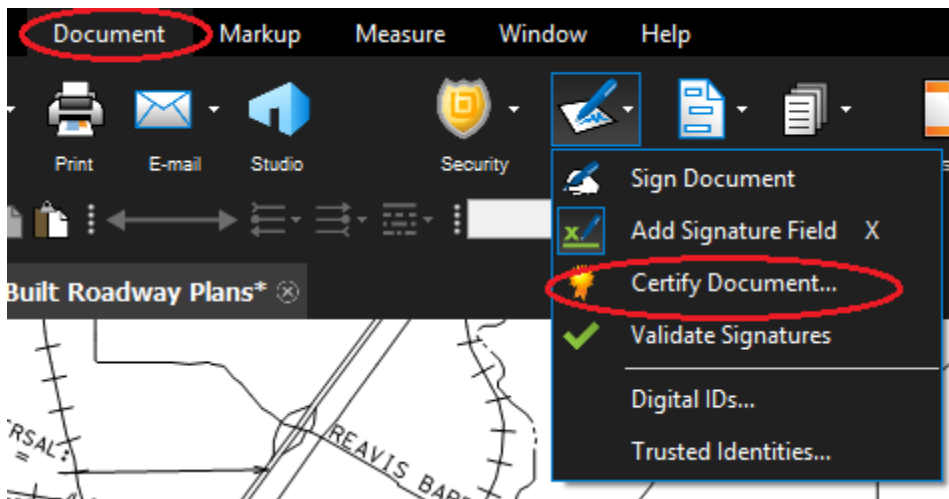


15. Next, place a digital signature field within the certification stamp/area. See example below for signature field placement.





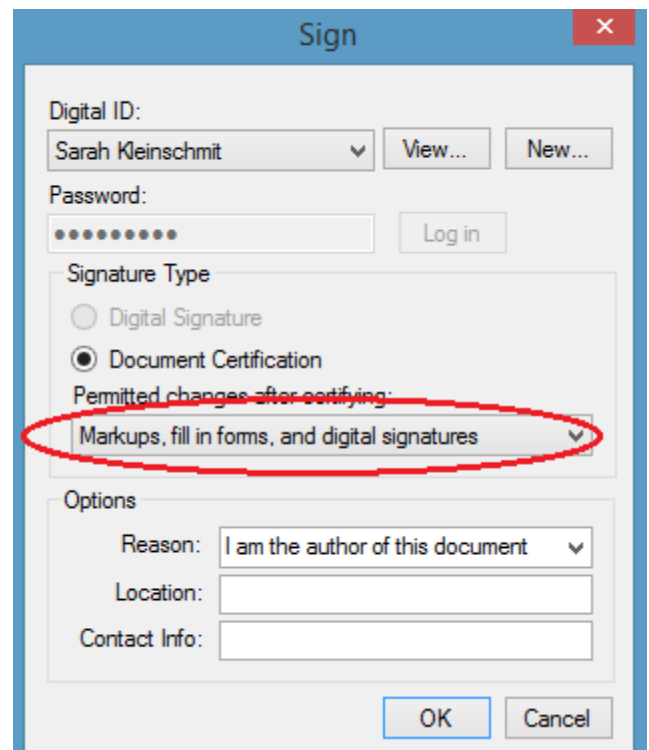
16. The document needs to be certified now (do not confuse this with the RE digitally signing). Certifying the document will “lock” the document from any changes other than allowable markups, such as check marks the Final Plans Processor may add.



Once you select Certify Document the Sign box/menu will appear.

If you have not created a digital ID, you will need to do that to proceed. Separate instructions for creating a Digital ID will be available on Central Office Construction and Material’s SharePoint page.

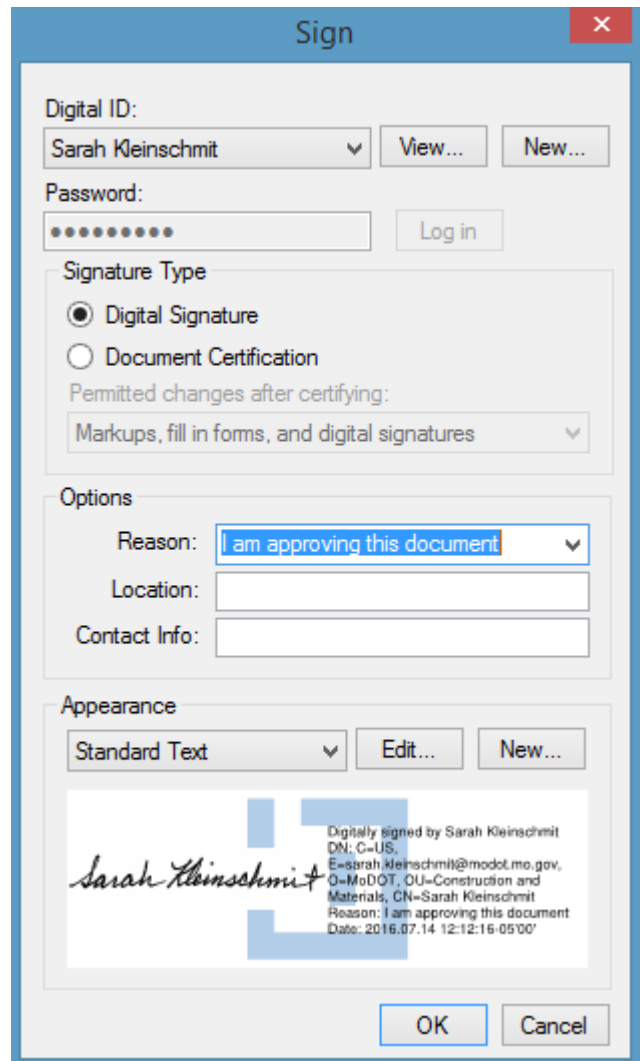
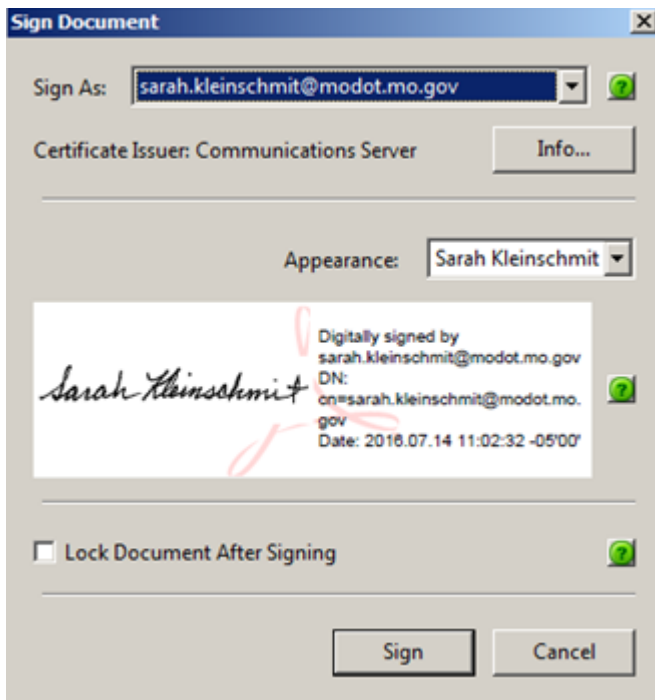
If you have created your digital ID proceed with the following: type in your Password and select Log In, make sure Document Certification is toggled on, select Markups, fill in forms and digital signatures from the down arrow menu. You can fill in the Reason is you want. Click OK.



Bluebeam will ask you to save the document. You can save it in the same location with the same name.

17. If you have bridge plans, you can follow Steps 14 through 16 for those plan sheets. It is not required to have the RE's certification on the bridge plans.

18. The plan sheets are now ready for the RE to digitally sign. The digital signature can be applied with Adobe Acrobat or Bluebeam Revu.



19. Once the RE has digitally signed the plan sheets, they can then be further processed by the District Final Plans and Reports Processor.