

Digital Signatures for Plan Production Using DocuSign

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Applications

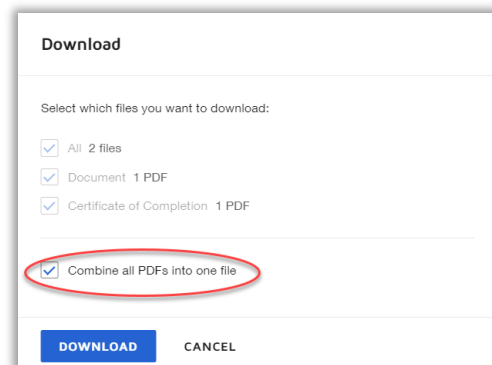
The NDDOT is using 3 different DocuSign applications for Digital Signatures.

- DocuSign Client (DSA)
- DocuSign Portal
- DocuSign Cloud (eSignature)

This document provides guidance on using DocuSign Client for plan production. DocuSign Portal is a tool that is typically used by non-DOT staff working on NDDOT projects. DocuSign Cloud is a tool typically used for contracts, environmental documents, and decision documents where workflows (ordered process of approving a document) are required.

NDDOT staff should not use DocuSign Cloud (eSignature) for plan production. However, consultants can use DocuSign Cloud (eSignature). If consultant choose to use DocuSign Cloud (eSignature), the NDDOT has some requirements.

1. Separate envelopes must be used for each section of the plans. “Envelopes” is referring to the container used for the DocuSign signing process. For example, do not sign section 060 and 075 within one envelope.
2. NDDOT staff must not be directly included in the signing process within the envelope. NDDOT will over-sign the document with DocuSign Client (DSA).
3. The envelope documents must be downloaded and combined into one file. This combining process needs to be done with the Cloud (eSignature) tools in order to maintain the integrity of the digital signature and history of signing process.



This document has been updated for DocuSign Client 9.4. Some of the settings between 9.4 and 8.4 are different.

Prerequisites

ITD assistance is required for many of these prerequisites. You need the computer application DocuSign Client to digitally sign documents. You may also need Adobe Acrobat Pro DC to create pdf Portfolios.

You will need to record a graphic of your actual signature. The help desk or other ITD staff will help you use the Topaz tools.

You will need to setup a digital Logo that represent your PE or LS seal. These logos have been setup based on information from the ND PE LS Board. However, the logo may need to be corrected. Your use of middle name or initial may need to be adjusted on the logo. The Seals obtained before July 2005 look different than the current seals. The earlier seals are smaller (approximately 1.5 inch outer circle). The later (current) seals are larger (1.75 inch outer circle). Your Logo graphic should look like your wet seal. Contact Jon Collado if you need help creating or correcting the format of a seal (Logo).



Pre 2005 seal



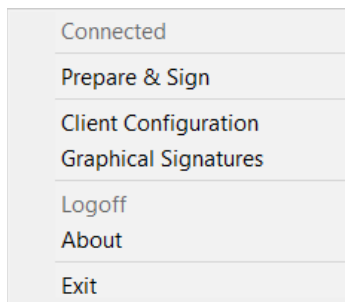
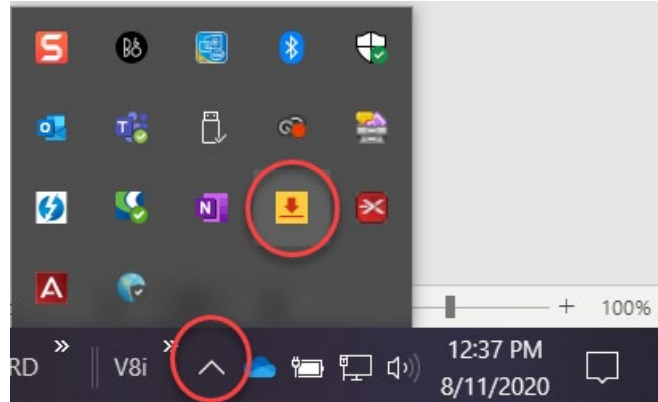
Post 2005 seal



Other format seal

Setup

The process of accessing the “Signature Appliance Control Panel” has changed between DocuSign Client 8.4 and 9.4. The tool within the start menu (Start> DocuSign > Signature Appliance Control Panel) only enables the tools. It does not launch the tools. **The DocuSign Control Panel is opened by selecting it from the Windows Taskbar > System Tray.**

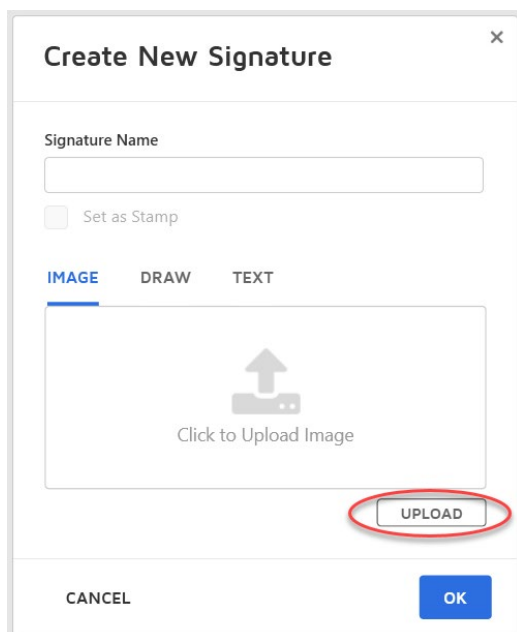
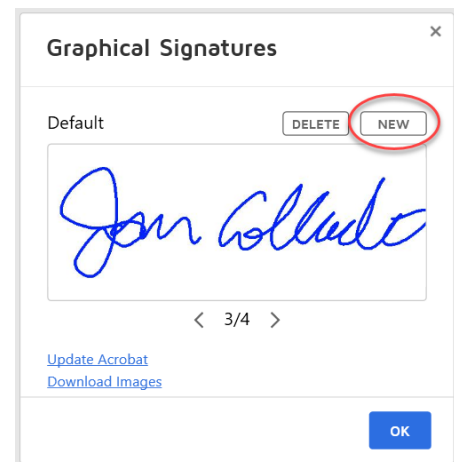


“Client Configuration” settings typically require administrative privileges to change. Client Configuration settings are typically set by NDIT and don’t require user adjustments.

Note, the DocuSign Watermark is no longer used by NDDOT staff. This option is not needed even if large seals (stamps) are used.

End users may need to manage “Graphical Signature” settings. This may include Graphical Signatures, Professional Engineer and Land Surveyor Seals (Stamps-Logos), and combined Signature Seal graphics.

Most users have one graphical signature setup when DocuSign Client is setup. This is the signature ITD staff helped you record with the topaz equipment. Additional graphical signatures need to be added for PE or LS seal Logos. Select the new Signature button.



The New Signature dialog box will open. Select “Upload” and select the image file that represents your PE or LS seal.

Provide a name for the signature such as “PE Stamp”

Make sure to use the “Set as Stamp” Option. Note a user can only have one stamp set in the settings at a time. The “Set as Stamp” option will be disabled if you already have a signature with this setting active. If you need to turn off the “Set as Stamp” setting, that signature will need to be deleted and uploaded again.

Click Ok to create the seal a stamp.

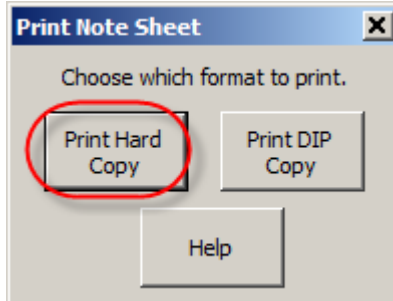
Click “Ok” to close the “Graphical Signatures” dialog box.

A dialog box titled "Create New Signature" with a close button (X) in the top right corner. It contains a "Signature Name" text field with "PE Stamp" entered. Below this is a checkbox labeled "Set as Stamp" which is checked and circled in red. There are three tabs: "IMAGE" (selected), "DRAW", and "TEXT". The "IMAGE" tab shows a circular professional engineer seal for "FIRST LAST", "PE-0000", "NORTH DAKOTA", with a date field "DATE mm/dd/yy". An "UPLOAD" button is to the right of the seal. At the bottom are "CANCEL" and "OK" buttons.

Document Preparation

MicroStation sheets should be created with the PE print drivers and pen tables to create pdf sheets that have empty PE and LS boxes.

NDDOT Standard Word and Excel files that use the print macro should use the “Print hard Copy” option. Then select the Adobe PDF printer to create pdf sheets that have empty PE and LS boxes.

A dialog box titled "Print Note Sheet" with a close button (X) in the top right corner. It contains the text "Choose which format to print." Below this are two buttons: "Print Hard Copy" (circled in red) and "Print DIP Copy". At the bottom is a "Help" button.

Each section of the plans should be created and signed as a separate pdf file. The individual section needs to be created before signing. The sheets cannot be signed and then merged together as a simple pdf file. Each section of the plans should be named by section number and section description (see the table on the next page). Note the prefix part of the name is important for alpha-numeric sorting.

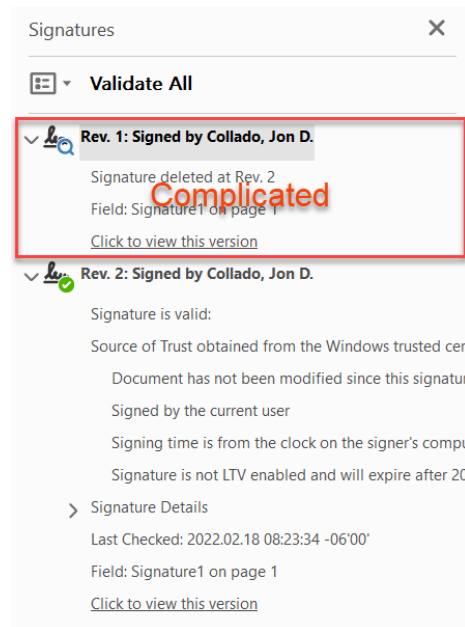
Always keep a backup of an UNSIGNED version of each section. This will simplify future changes such as addendums. Un-signing takes time. Having a backup can help you avoid the Un-signing task.

Avoid unsigned documents. When possible, start over with an unsigned document. Unsigning and signing history is maintained in the digital signature. The deleted (unsigned) signature complicates the review of a document because the number of signatures in the document does not match the number of signatures in the Adobe's "Signature" panel.

The status of the document at the time each signature is placed is tracked. If there are 5 signatures, then the status of the document is tracked 5 times. This also includes deleted – unsigned signatures. Additional tracking increases file size. Avoiding unsigned – deleting signatures helps keep file sizes to a minimum.

On a simple test, a pdf that was signed was 229 KB. That same document signed, unsigned (signature deleted) and resigned was 339 KB.

If you are signing a document (single pdf file) that has multiple signatures, make a backup before you sign the document! If you were to make a mistake with a signature and wanted to delete it, all previous signatures would have to be resigned. The backup file allows you to redo your work without making others redo theirs.



Portfolio Section – File Names

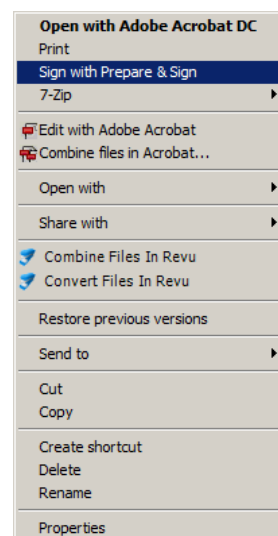
001TS_Title Sheet.pdf
001XA1C_Addendum 1 Cover Letter
001XA1S_Addendum 1 Summary and Approval
001XA2C_Addendum 2 Cover Letter
001XA2S_Addendum 2 Summary and Approval
001XP003 [PE Signed Special Provision -use SP number without spec book year, example ...003 = SP 003(14)]
001XP004 [PE Signed Special Provision -use SP number without spec book year, example ...004 = SP 004(14)]
002TB_Table of Contents.pdf
004SW_Scope of Work.pdf
006NT_Notes.pdf
008QS_Quantities.pdf
010BE_Basis of Estimate.pdf
011DT_Data Tables.pdf
020GD_General Details.pdf
030TP_Typical Sections.pdf
040RM_Removals.pdf
050IM_Inlet Manhole Summary.pdf
051AP_Allowable Pipe List.pdf
055DL_Drainage Layouts .pdf
060PP_Plan and Profiles.pdf
070CT_Contours.pdf
075WL_Wetlands.pdf
076TE_Temporary Erosion Control.pdf
077PE_Permanent Erosion Control.pdf
080LO_Layouts.pdf
081CD_Coordinate and Curve Data.pdf
082SD_Survey Data.pdf
085LS_Landscaping.pdf
090PL_Paving Layouts.pdf
100WZ_Work Zone Traffic Control.pdf
110SN_Signing.pdf
120MK_Marking.pdf
130GR_Guardrail.pdf
140LT_Lighting.pdf
150SL_Signals.pdf
160IT_ITS.pdf
170BR_Bridges.pdf
175SB_Soil Boring.pdf
180PT_Pit Plats and Borrow Areas.pdf
190HR_Haul Road Restrictions.pdf
200XS_Cross Sections.pdf

Signing and DocuSign Settings

The pdf file needs to be opened with “DocuSign SA Prepare & Sign” in order to sign a document. Right click on the pdf file and select “Sign with Prepare & Sign”.

Settings for “Prepare & Sign” will have to be adjusted for different types of signatures. Example, your PE Stamping Signature will be different then a general signature. The settings can be adjusted within DocuSign by selecting **“Tools > Settings”** from the menu.

There are 2 tabs to the settings; General and Signatures. The setting shown below are used for a PE or LS seal that uses the small format. PE or LS seals that use the large format will have different width and height settings.

A screenshot of the 'Prepare & Sign Settings' dialog box. The 'GENERAL' tab is selected. Under 'General Settings', there are two checkboxes: 'Verify signatures when documents are opened' (unchecked) and 'One-Touch Signatures' (checked). Below these are two spinners for 'Width' (set to 1.5) and 'Height' (set to 2.25). A dropdown menu for 'Measurement Units' is set to 'Inch'. Under 'Signature Date & Time Format', there are two dropdowns: 'Date' (set to 'MM/dd/yy') and 'Time' (blank). There is also an unchecked checkbox for 'Display GMT offset'. At the bottom are 'CANCEL' and 'SAVE' buttons.

Enable “One Touch Signatures”.

Set “Measurement” Units to Inch.

Use “MM/dd/yy” for the date format

The time field should be blank – deleted. The NDDOT doesn’t use this field.

Prepare & Sign Settings

GENERAL

SIGNATURES

Digital Signatures

Field Name

SignatureNNN

Prompt for Signature Reason

Appearance

Show Signature Field

Graphical Signature

Initials

Stamp

Date & Time

Signer's Name

Title

Reason

Graphical Signature Location

Left

Top

Text Alignment

Left

Center

Scale Graphical Signature

Permissions to Clear

Signature can be cleared by

Signer only

Electronic Signatures

Field Name

SignatureNNN

Prompt for Signature Reason

Appearance

Show Signature Field

Graphical Signature

Initials

Stamp

Date & Time

Signer's Name

Title

Reason

Graphical Signature Location

Left

Top

Text Alignment

Left

Center

Scale Graphical Signature

CANCEL

SAVE

Settings on the right side of this panel (Electronic Signatures) are not used for plan production. Only the “Digital Signatures” settings need to be addressed

The following options are always turned **ON** for Plan Production

- Show Signature Field
- Graphical Signature
- Stamp
- Date and Time
- Scale graphical signature

The following options are turned **OFF** for Plan Production

- Prompt for Signature Reason
- Initials
- Title
- Reason

The table below shows settings adjustments for the different types of signatures used on plans.

	Digital Tab				General Tab	
	Stamp (PE – LS seal)	Signer's Name	Graphical Signature Location	Text Alignment	Width (Inches)	Height (Inches)
Type of Signature						
Large PE or LS seal	Yes	No	Top	Center	1.75	1.75
Small PE or LS seal	Yes	No	Top	Center	1.5	2.5
Title Sheet OPD or District	No	Yes	Left	NA	2.75	0.75

Note the height setting for small PE or LS Seals is taller than the typical PE-LS box. This height is used to force the date to be placed below the seal. Users will need to practice (familiarize themselves with this setting) in order to center their seal, signature and date within a PE-LS box.

Date Placement for Large Seals

DocuSign has limited controls to place the date in the correct location. The Large Seal setting discussed above will place the date lower in the seal than what is desired.

The NDDOT has reviewed this issue and has 2 recommendations. One option is to ignore the formatting problem. The date can still be read if you zoom in.



Another option is to use the "Title" field to manually type the date. The "Date" field also needs to be used as a place holder. A "space" character should be typed in the actual date format.



Type a space
in this field

Prepare & Sign Settings

GENERAL SIGNATURES

General Settings

☐ Verify signatures when documents are opened

☒ One-Touch Signatures

Width: 1.75 Height: 1.75

Measurement Units: Inch

Signature Date & Time Format

Date: | Time: |

☐ Display GMT offset

CANCEL SAVE

Choose Signature

Before signing this document, verify that the content you are signing is correct.

Sign as: Collado, Jon D.

Title: 9/16/21

Default: DELETE NEW

Jon Collado

< 1/4 >

CANCEL SIGN

Final Plan Deliverables

Two different versions of the final plans must be created for final plan deliverables: a digital signature (DS) version and an electronic distribution (ED) version. The digital signature version is created as an adobe portfolio. The electronic distribution version is a simple pdf where the digital signatures have been converted to simple graphical signatures.

The digital signature version of plans should use the suffix “_DS” in the file naming convention. The electronic distribution version of plans should use the suffix “_ED” in the file naming convention.

The Lead Designer or assigned technical support person (consultant projects) should deliver both the DS and ED version of the plans to Programming (O:\81 Special Projects\DIP PLANS). After the project is bid, Programming will notify the Record Center that the DS version of plans is ready to be stored in FileNet. The Record Center will store the DS original version of plans in FileNet.

“Digital Signature” Version of Plans

Digital signatures (security) must persist in the DS version. The Adobe Portfolio format allows files to be joined without removing the digital signature security.

Creating Adobe PDF Portfolio

Within Adobe Pro, select “File > Create > PDF Portfolio”. Use the Add Files button to add the individual sections of the plans. Remember to save your changes.

Reminders

- Include the cross sections as a sperate section within the portfolio.
- Include the standard drawings as a separate section within the portfolio. The standard drawings in the final portfolio should be the only PE stamped sheets that don’t include the digital signature security.

“Electronic Distribution” Version of Plans

The “electronic distribution” version of plans does not include digital signatures, does not include electronic distribution statements, and does not use an adobe portfolio.

A flattened pdf file of the plans will be created showing the seal, signature, and date. A flattened pdf is where the portfolio has been merged into a simple pdf and the digital signature security has been removed. The flattened file will combine all sections of the plans.

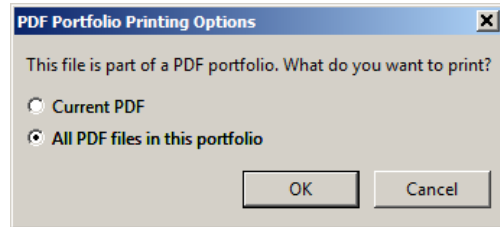
Remember to use separate volumes (files), if needed, in order to keep file sizes under 200 MB. Files larger than this may be too difficult to download.

When digital signatures are used to produce plans, no paper deliverable is sent to the NDDOT Programming division.

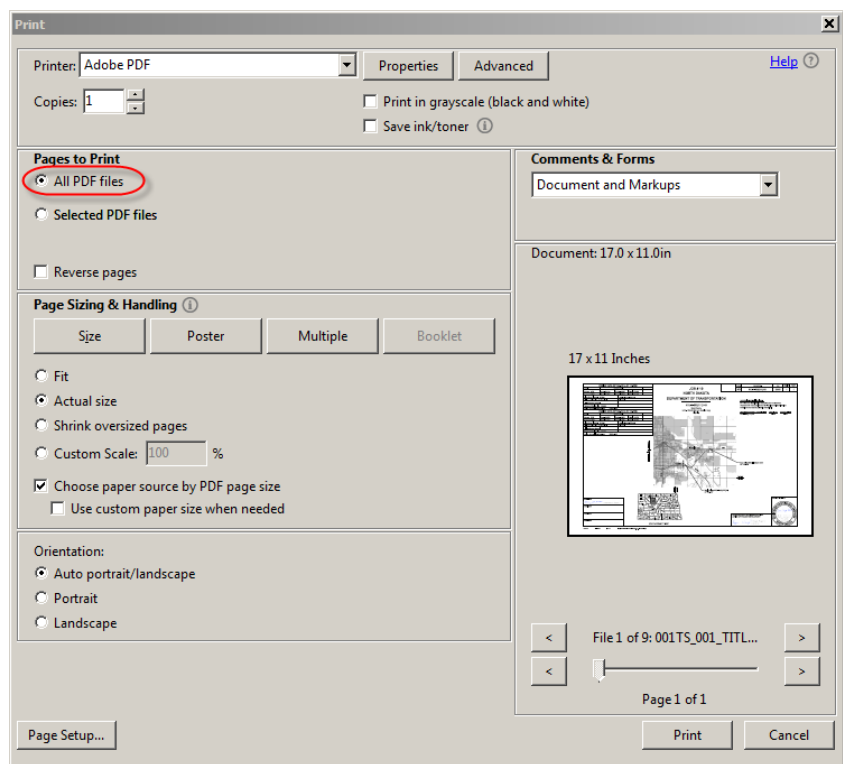
Removing Digital Signatures for Electronic Distribution of Plans

This is done by printing the portfolio into pdf files and then combining files. The following are some tips and warnings about the portfolio flattening workflow.

- The pdf files must be printed to another pdf file. Use the “Adobe PDF” printer. If this step is skipped the digital signature graphics including PE-LS seals will be stripped off the sheets. We want the PE and LS graphics to remain on the sheets.
- You will be prompted for what parts of the portfolio you want to print. But you will also have to reselect this option during the printing process. If you don’t use both settings you will not get all the sections in the portfolio.
 - First Setting

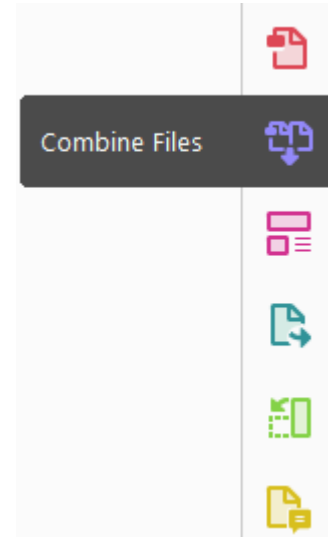


- Second Setting

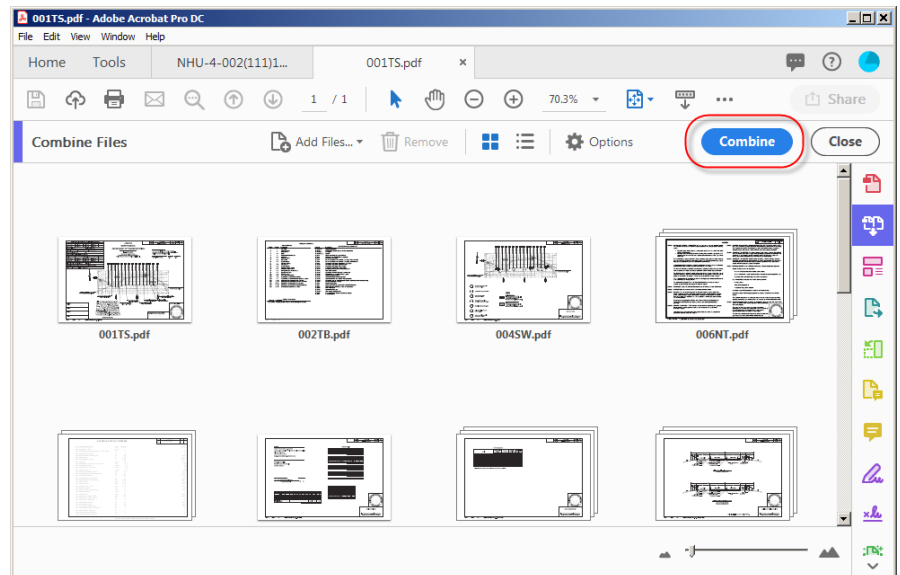


- Use the “Choose paper source by PDF page size” and “Auto portrait/Landscape” options as shown in dialog box above. If these options are not used the sheets will be undesirably rotated.
- A separate folder to store the printed – recreated pdf files is recommended. Each section will be a printed to another pdf. You will be prompted for a file name for each of the printed pdf files. If you use the default standard names the files should auto sort in the merge process.

- After the portfolio has been printed to separate pdf files use the “Combine Files” tool to merge multiple pdf files into one.



- If individual sections are not named correctly, they will not automatically sort correctly. If non standard names are used, the sections will need to be manually rearranged before the combine button is selected. You should be able to drag and drop the files in the correct location.



Related Plan Documents

Special Provisions, Addendums, and Change Orders are related plan documents. Each of these have 2 different versions, Sealed and Unsealed.

- Special Provision Sealed – Both RCN 300101 and 800395
- Special Provision Unsealed – RCN 300101
- Addendum Sealed – Both RCN 300101 and 800395
- Addendum Unsealed – RCN 300101
- Change Order Sealed – RCN 800395
- Change Order Unsealed – RCN 300101

The professional engineer sealed documents have a longer records retention. PE sealed addendums and change orders are typically plan sheets. The PE sealed version of Special Provisions and Addendums are stored twice in File Net. This guide is focusing on the PE “sealed” versions.

- RCN 300101 – Agreements, 6 Year Retention
- RCN 800395 – State Plans, 75 Year Retention

Special Provisions and Addendums with digital signatures are not stored in FileNet as independent documents. They are stored with the Contract Proposal (RCN 300101) and the Contract Plans (RCN 800395).

There are few exceptions to the term “sealed” as it applies to addendums and change orders. Some plan sheets are seldom sealed such as cross sections, quantity summaries and the table of contents. However all addendums and change orders that include plan sheets are to be processed and stored as “sealed” sheets. Example, a change order that deletes a sheet and only changes the table of contents for the plans would still be processed as a “sealed” document.

PE Sealed Special Provisions

PE sealed special provisions will be stored with the plans. These special provisions should be placed after the title sheet. Special provisions that do not require a PE seal should not be included in the plans.

PE sealed special provisions need to be stored in only the DS version of plans. Use PDF portfolios to maintain digital signatures within the DS version of plans.

The Engineer of Record for the special provision is responsible for making sure that the PE sealed special provision is stored with the plans. If the PE sealed special provision is not stored with the plans it will be deleted when the proposal is deleted (6 year retention). PE special provisions should have the same retention as the plans. The Engineer of Record should work with the lead designer to make sure the PE sealed special provision is stored with a Digital Signature in the DS version of Plans. The DS version maintains the “original”.

Addendums (Before Bid Opening)

The following steps outline how an addendum is processed regarding digital signatures. The term designer and lead designer are used synonymously in these steps because some of these steps can be delegated. However the Lead Designer is responsible for reviewing addendums and ensuring that addendums were correctly incorporated into the final plans and that the integrity of the digital signature plans is maintained.

For consultant projects on the state system, the consultant designer will process files discussed in these steps. Technical support should only assist with file transfers to the Programming division.

1. The designer creates the addended sheets.
2. The designer groups addended sheets into separate pdf files if needed. If the addendum spans multiple sections, group the sheets from each section as separate pdf files before digitally signing them. Addended sheets will eventually be move independently to the end of each section in the original plans.
3. The designer creates an ED version of the DS sheets. The ED version groups addended sheets as a single pdf for that addendum number. This file should have a "ED_AD#" suffix. The "#" character in the suffix should be replaced by the actual addendum number. The ED version contains only the revised plan sheets.
4. The designer renames the original plan from a "DS" suffix to a "DS_AD#" suffix. The "#" character in the suffix should be replaced by the actual addendum number. If previous addendums were processed only the addendum number will need to be revised.
5. The designer incorporates the digitally signed addended sheets to the original digitally signed plan set. A portfolio is used to group files while maintaining the integrity (security) of the digital signatures. If an addendum replaces an entire section, then that section can simply be replaced. If the addendum replaces part of a section, then place the addended sheets at the end of the applicable section and place large red X's on the superseded sheets. Use adobe commenting tools to place the red X's in order to maintain the digital signatures.
6. The Designer incorporates the Plan Addendum Summary and Approval form in both the ED_AD# and DS_AD# documents. Place the summary and approval form in front of the addended sheets in the ED version. Place the summary and approval form after the title sheet in the DS_AD# version.
7. The lead Designer delivers both the ED_AD# and the DS_AD# versions to programing (O:\81 Special Projects\DIP PLANS).
8. Programing Division places the addendum cover letter that is created by Construction division in both the ED_AD# and DS_AD# versions. The cover letter should be placed before the Plan Addendum Summary and Approval sheets.
9. Programing Division will process the ED_AD# addendum version as they did before. They will post the addendum on the internet.
10. The DS_AD# plans are held in the "O:\81 Special Projects\DIP PLANS" directory until the project is awarded. The original plans are held before being transferred to FileNet in order to simplify the incorporation of other potential addendums.

11. The Records Center will place the final plans (digital signature version) in FileNet after the project is awarded. The record center will review the "O:\81 Special Projects\DIP PLANS" folder. There should be only one DS related file left in this directory at the time of award. The designer is responsible for correctly combining the original DS plan set with all DS addendum sheets. The Record Center will delete the job subfolder from the dip plans-bid opening directory after the DS plan set has been incorporated into FileNet.

See the Design Manual, section 1-09.01, "Plan Revisions Prior to Bid Opening" for additional guidance.
<http://www.dot.nd.gov/manuals/design/designmanual/Chapter%201.pdf#page=118>

Contract Plan Sets (After Bid Opening)

Design Division (Jesse Carlsen) will make the contract set of plans after the project has been awarded to the contractor. Change orders are not included in the contract plans. The contents of contract plans should represent the plans at the time the contractor was awarded the project.

Note the contract plan set is not the same as the original plans. Digitally signed plan revisions for change order should be included in the original plans.

Plan Revisions for Change Orders

Change orders are process like addendums where the digital signed sheets are incorporated into the original portfolio and an electronic distribution version (ED) version is processes as discussed in the design manual.

If the change order spans multiple sections, group the sheets from each section as separate pdf files before digitally signing them. Change Order sheets will eventually be move independently to the end of each section in the original plans.

The ED file should have a "ED_CO#" suffix. The "#" character in the suffix should be replaced by the actual change order number. The ED version of the change order should only include the revised or added sheets.

Change orders are typically included in the As-built plans, but As-built plans don't typically maintain digital signatures. Therefor Change Orders also need to be stored with the original plans which are stored in FileNet. The lead designer must check out the original plans from FileNet, add the change order sheets, place X's over superseded sheets as necessary, and load the original plan set back into FileNet. If agreed upon, the lead engineer may delegate the FileNet posting to the engineer signing the changed sheets. On consultant projects, the technical support representative will assist in file transfers to and from FileNet.

On change order projects, the original plans should be renamed with a "DS_CO#" suffix and the change order sheets should be incorporated at the end of each applicable section. A portfolio is used to group files while maintaining the integrity (security) of the digital signatures.

If the change order replaces an entire section or part of a section, then place the revised sheets at the end of the applicable section and place large red X's on the superseded sheets. Unlike addendums, if a change order replaces an entire section, the old section must be maintained. Use adobe commenting tools to place the red X's in order to maintain the digital signatures.

There are 3 different types of Change Orders.

- Type 1 - Construction phase revisions that do not need to be sealed.
- Type 2 - Construction phase revisions that need to be sealed but are within inherent variability.
- Type 3 - Construction phase revisions that need to be sealed because they result in a functional design change.

See the Design Manual, section 1-09.02, "Construction Phase Revisions after Bid Opening (Change Orders)" for additional guidance.

<http://www.dot.nd.gov/manuals/design/designmanual/Chapter%201.pdf#page=119>

Change Orders with PE seals (Type 2 and 3) need to be stored in FileNet with the records control number (RCN) 800395. Change orders without PE seals (Type 1) are stored in FileNet with RCN 300101. If the PE sealed change order is not saved under RCN 800395, the original document will not be retained for the correct period of time.

Construction (District) staff is responsible for storing types 1 and 2 change orders in FileNet. The lead signing engineer (engineer making the functional design change) is responsible for storing type 3 change orders in FileNet.

[As-built \(Record Drawings\) plans using Digital Signatures](#)

As-built plans are typically generated from the Contract Plan Set. The As-built plan set doesn't include digital signatures.

The as-built plans should be named according to CADD Standards (project number and the word "Asbuilt"). See CADD Manual, 2.9 Final Plan Delivery – PDF Plan Sets for additional information on plans with multiple project numbers.

See Decision Document on NDDOT As-Built Plan Process that was approved on 8/16/18 for additional guidance and As-Built work flows.