CONNECTICUT DEPARTMENT OF TRANSPORTATION

DIGITAL PROJECT DEVELOPMENT MANUAL

Version 6.11

Updated March 2026

INTRODUCTION

This document is for Consultant and State Employees responsible for working on Capital Projects. This manual covers the preparation, review, and delivery of capital project documents across the whole project timeline from project initiation to project completion. This manual also covers design phase scheduling.

Questions or inquiries regarding the subject matter can be forwarded to the following contacts:

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Revision History

Digital Project Development Manual Revision History

Contents

1. Definitions

ACD – The attribute applied to a revision requested by the Processing unit to an ADP discipline subset.

ACD2 – The attribute applied to a revision requested by the Processing unit to an ACD discipline subset.

ADP – The attribute applied to an Addendum discipline subset.

ATLAS – This tool is used to manage the location of various assets, projects, and investigations.

Bluebeam – PDF software.

CIM – Civil Integrated Management

CSI – Construction Special provisions Institute

DCD – The attribute applied to a revision requested by the Processing unit to an FDP discipline subset.

DCD2 – The attribute applied to a revision requested by the Processing unit to a DCD discipline subset.

Discipline Subset – A multi-page PDF document that includes all the contract plan sheets for a discipline. Example would be all the structures sheets would be packaged in (1) multi-page PDF document.

DICO – The attribute applied to a design-initiated change order discipline subset.

DPD – Digital Project Development Manual.

EED – Electronic Engineering Data

Engineer of Record – The engineer's digital signature that is applied to the discipline subsets. For CTDOT staff this would be the Principal Engineer.

FDP –The attribute applied to a final design plans discipline subset.

FIO – The attribute applied to a "for information only" discipline subset.

FPL – The attribute applied to an advertised FDP discipline subset.

O365 – Microsoft Office 365

Project Manager – Lead designer on the project. For CTDOT staff this is the TE 3 or Supervisor of the lead discipline or consultant liaison TE3 or Supervisor.

Set File – Is a consolidated viewer file that is created using Bluebeam. When this file is opened all the contract plans, FDP, Addendum, Change Orders, are sorted by their page labels in the correct order.

S&T – COMPASS Submittals/Transmittals application.

2. Prerequisites and Policies

The following details various requirements and policies that need to be followed when working on a Capital project for the Connecticut Department of Transportation (CTDOT).

Software Requirements

1. Document Management Software – CTDOT uses COMPASS and Office 365 for a document management solution.
2. PDF Software – CTDOT has standardized on Bluebeam its PDF software.
    a. A current license of Bluebeam Revu must be purchased to perform all the procedures in this manual.
    b. A CTDOT Bluebeam profile is available in Appendix A.

Digital Signatures Requirements

1. All contract plans, working drawings, and applicable engineering reports submitted to the Department shall be digitally signed by a CT licensed Engineer or CT licensed Architect in accordance with this manual.
2. Digital contract plans, including Final Design Plans (FDP), Design Completion Data (DCD), Addenda, Addenda Completion Data (ACD), Design Initiated Change Order (DICO), and Working Drawing (WDP) and all engineering reports shall be digitally signed in conformance with this manual.
    a. Digital signatures must meet the requirements of Adobe's Certified Document Services (CDS) or Adobe Approved Trusted List (AATL).
    b. AATL and AATL vendor information is provided at the following website: https://helpx.adobe.com/acrobat/kb/approved-trust-list2.html
    c. Trial CDS/AATL Signatures will not be accepted by the Department, a signature must be purchased from one of the CDS/AATL Vendors.
3. Bluebeam Revu or Extreme is required for all digital signature processes. After contract plans have been advertised, the digital signature is not allowed to be removed.

CAD Standards

1. Standard Computer Aided Design (CAD) Applications shall conform to those listed on the CTDOT CAD Standards Website.

Policies

1. The Consulting Engineer acknowledges and agrees that Contract Plans submitted using the [Digital Submission Procedure set forth in this Manual] has the same force and effect for the purposes of the Consulting Engineer's agreement with the State as a signature and seal of a Connecticut Licensed Professional Engineer or Architect as set forth in § 20-300-10 of the Regulations of Connecticut State Agencies or § 20-293 of the Connecticut General Statutes, as applicable. Nothing in this DPD serves as an authorization for, or endorsement of, the use of this [Digital Submission Procedure] generally by the Consulting Engineer, its subcontractor(s), or any Connecticut Licensed Professional Engineer or Architect with respect to other work it performs for the State or work it performs for other clients.
2. When on call consultants are used for CTDOT projects, the title sheet shall be digitally signed by CTDOT following the procedure in Digital Signatures section of this manual.
3. When a document reaches a final status a "Final Status" shall be placed on the document. This will lock for editing and ensure document retention.

3. Project Creation in COMPASS

Through the Project Generator, new Capital projects are spatially identified by drawing a polygon on a map in CT-Atlas 2.0 (See Section 16). The polygon is given a temporary project identifier with the initial letters of "PP" in its name.

For any questions pertaining to CT-Atlas 2.0 or GIS licenses, create a ticket with the Eng. and Const. GIS Support section of the COMPASS Support Desk:

Once all required steps are completed in CT-Atlas 2.0, including pressing the button to **Notify Compass that project PPxxx-xxxx has been created** (See Creating a Proposed Project), a COMPASS project page – including document libraries, S&T application, and all other features – will automatically generate.

Note: Projects are not promoted to a permanent project number until funding has been approved and the project is in the Financial Obligation Report (OBL). Once funding is in place, the temporary project will graduate to a permanent project number. This transition process (from a proposed project to a permanent project number) is performed in COMPASS and will be reflected by both the permanent number and proposed number shown in COMPASS.

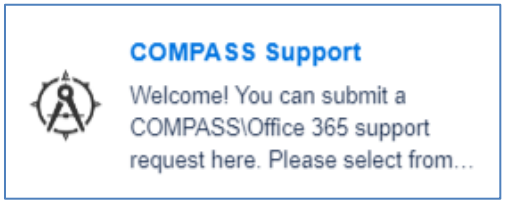
3.1. Creating a Proposed Project (PP)

To create a new project in COMPASS, perform the following steps:

1. Create the project polygon and perform all other required actions in CT-Atlas 2.0 following the guidance provided (See Creating a Proposed Project). This process for new projects includes all projects for the Bureaus of Engineering and Construction and Public Transportation. See Public Transportation and Rail Projects and Planning and Emergency Declaration Projects for unique project promotion processes related to these project types.

2. Once all necessary steps are completed in CT-Atlas 2.0, a project site will automatically generate in COMPASS. It can take up to an hour for this process to complete. Navigate to COMPASS and search for the project number. A red banner will display in the COMPASS project site while the site provisioning process is still in progress: "Project provisioning in progress. Some functionality will be limited."

3. Create a ticket with the COMPASS Support Desk providing the project number and Project Manager name.



4. The COMPASS Support team will provide project site owner permissions to the Project Manager. All DOT staff are automatically project site members. (See COMPASS Project Site Permissions for details.)

5. Populate the Project Staff, including the Project Initiation Staff section.

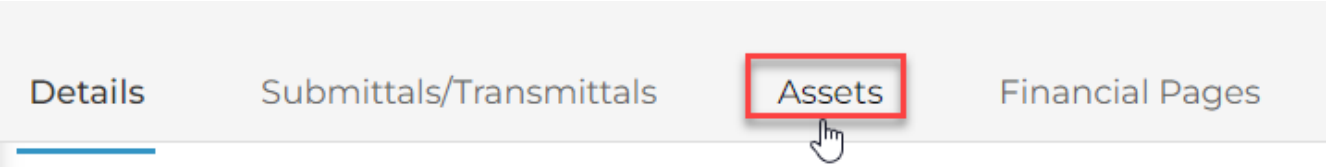
6. Contact all relevant asset stewards and ensure the Work Types and Work Codes are selected properly on the COMPASS Project Assets page. See ECD-2023-9-Project Asset Form for more details.

3.2. COMPASS Project Assets

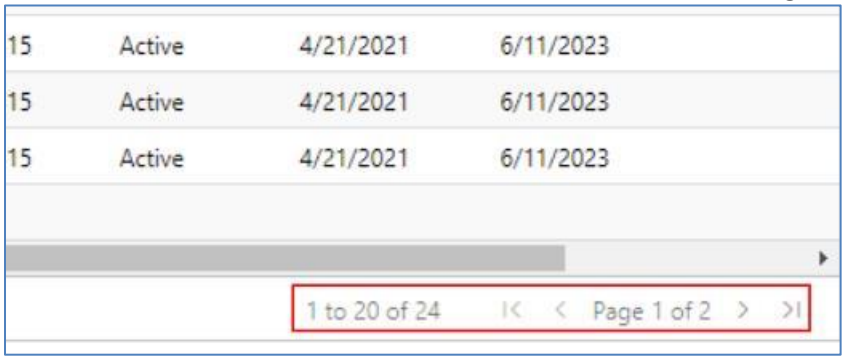
Project assets are to be maintained for the life of a project, from the conceptual phase through construction. See DOT COMPASS Knowledge Center - Assets - Home for more details.

To view and maintain the Asset Work Types and Work Codes:

1. From the COMPASS Details page, select the Assets tab.

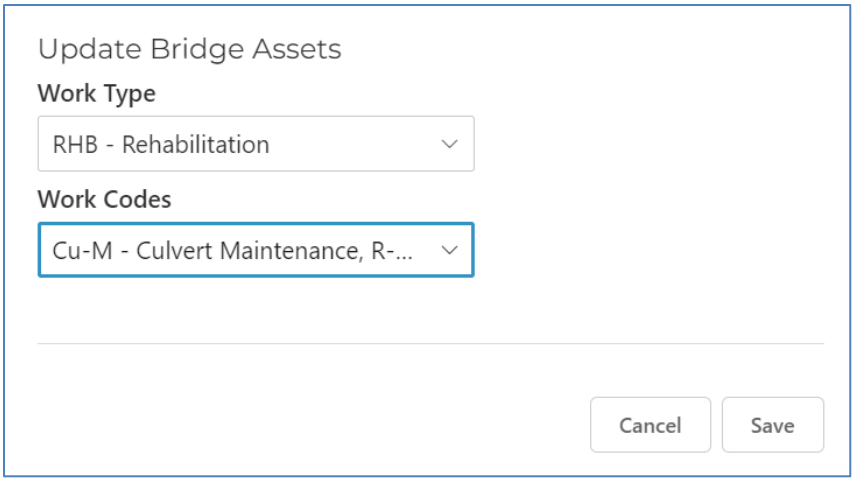


2. The Proposed Project table displays at the top of the Asset page. The table populates 20 records at a time. If more than 20 assets are listed, use the scroll arrows to advance through the records.



3. Select one or more asset records from the Proposed Project table by checking the box(es). Press the Update Asset Info button.

4. An Update Bridge Assets window appears. Select the appropriate Work Type and Work Code(s) from the drop-down menus. Only one Work Type can be selected. One or more Work Codes can be selected, as needed. Press Save.



5. The Work Type and Work Code columns will update to reflect the information selected. The Updated and Updated By columns auto-populate the with the date and name of person who made the most recent update.

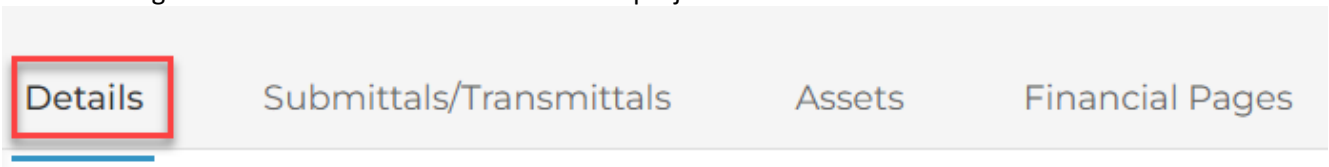
Additional notes:

- Columns in the Proposed Project table can be sorted alphanumerically.
- Assets cannot be added or deleted in the COMPASS project page. To add or remove project assets, make the appropriate revision in CT-Atlas 2.0 (See Managing Assets and Geometry).

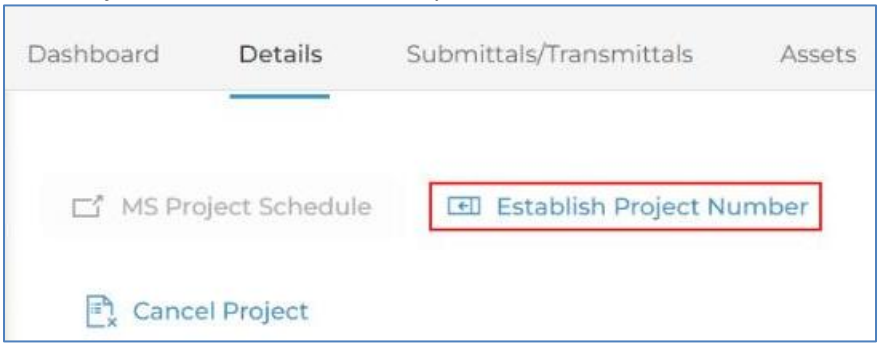
3.3. Proposed Project Information (PPI) Form

1. Before beginning the PPI process,
   a. Verify the Project Initiation Staff section of the Project Staff information is correct. The individual completing the PPI Form must be included in the Project Initiation Staff.
   b. Verify all COMPASS Project Asset information is correct.

2. Navigate to the Details tab on the COMPASS project site.

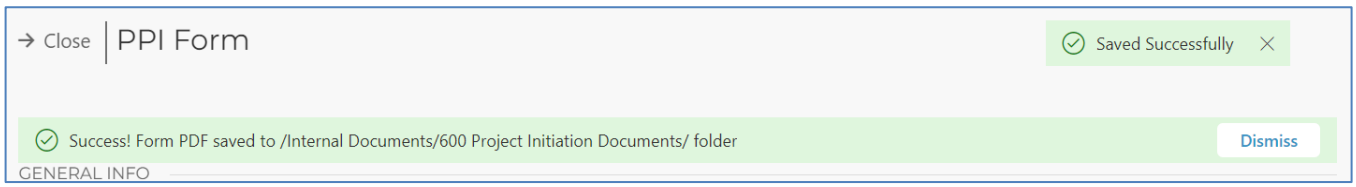


3. Select Establish Project Number button. This opens the blank PPI form.



4. Populate all the fields in the PPI form. **Ensure all fields in the PPI form are filled out before pressing Save Data**. **The Title, Description, Justification, and Comments fields have a 255-character limit**. Press the Save Data button when complete.

5. A PPI PDF document will automatically generate and save in the 600 Project Initiation Documents folder.



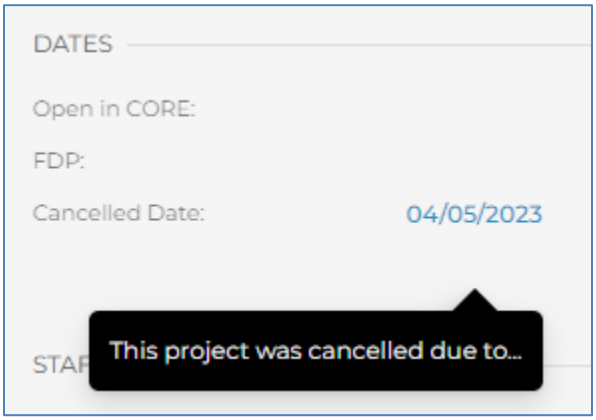
6. Route the document for signature via the S&T using the guidance provided in Attach Files to a COMPASS S&T Envelope and Correspondence and Memoranda in COMPASS. For digital signature guidance, see Signing and Editing PDFs in Office 365.

3.4. Cancel a Proposed Project

To cancel a proposed project, create a ticket with the COMPASS Support Desk, providing:

- **The proposed project number. Verify that the correct proposed project is provided. Once the project cancellation process is completed, it cannot be undone.**
- The cancellation reason.
- A request to cancel the project.

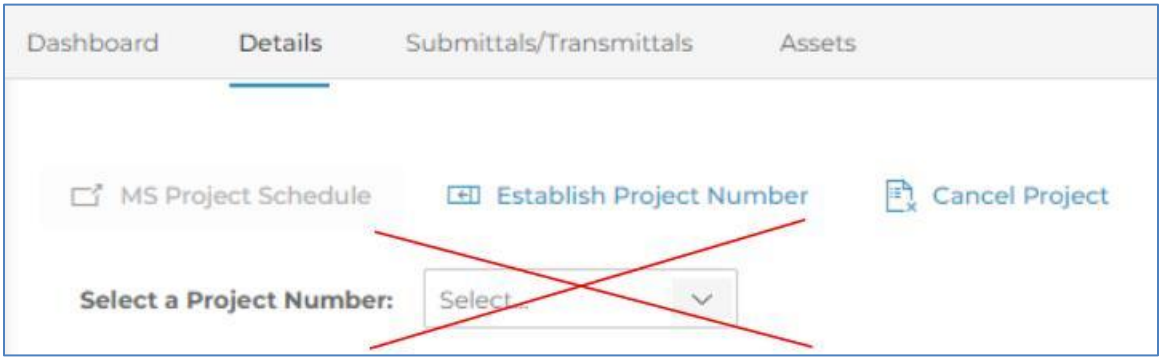
Once the cancellation process is complete, the cancelled date will display in the DATES section on the right side of the Project Details page. Click on the cancelled date to view the cancellation reason.



3.5. Promote a Proposed Project to a Permanent Project

Project assets are to be maintained for the life of a project, from the conceptual phase through construction. Once funding is approved and the Engineering and Construction project is in the Financial Obligation Report (OBL), it can be promoted to a permanent project. See Public Transportation and Rail Projects and Planning and Emergency Declaration Projects for unique project promotion processes related to these project types.

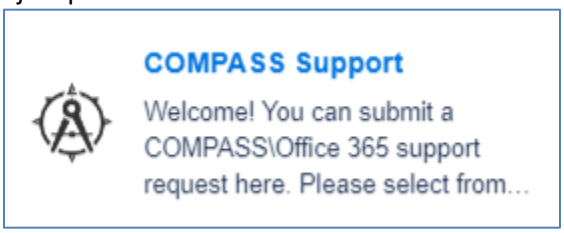
Do not use the Select a Project Number drop-down field.



To request a proposed project be promoted to a permanent project:

1. Verify the scope of the project matches what is portrayed in CT-Atlas 2.0 (e.g., assets, polygons, etc.).

2. Create a ticket with the COMPASS Support Desk, providing:
   a. The proposed project number.
   b. The permanent project number.
   c. The project manager.
   d. A request for project promotion.



3. The COMPASS Support team will review and promote if the project passes the necessary criteria or provide feedback if any changes are required. **Note: The project site URL will not change when the project is promoted; it will continue to contain the proposed project number (PPxxx-xxxx), not the new permanent project number.**

4. Once the promotion process is complete, update the name of the MS Project Schedule to reflect the permanent project number.

***Note**: The COMPASS Project Site Permissions groups and project site URL will continue to reflect the PP number for the life of the project, even after promotion to a permanent project number. For example, if PP123-4567 is promoted to permanent project 9876-5432, the site permissions groups for that project will remain as PP123-4567 for the duration of the project.*

3.6. Public Transportation and Rail Projects

For Public Transportation and Rail projects **NOT in the CTDOT Obligation Plan**, complete the following steps to create and promote a project in COMPASS.

1. Complete all necessary steps in CT-Atlas 2.0 as described in Creating a Proposed Project.

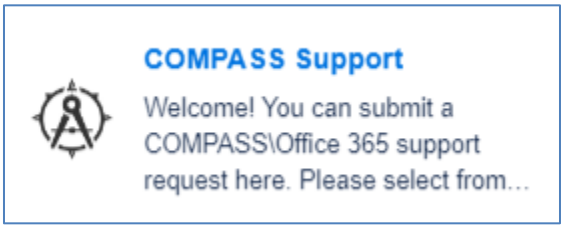
2. Once all necessary steps are completed in CT-Atlas 2.0, a project site will automatically generate in COMPASS. It can take up to an hour for this process to complete. Navigate to COMPASS and search for the PP project number. A red banner will display in the COMPASS project site while the site

provisioning process is still in progress: "Project provisioning in progress. Some functionality will be limited."

3. Navigate to Public Transportation and Rail Project Data Form. If you do not have access to this form, please put in a request to the DOT.Helpdesk@ct.gov

4. Create the new project using the permanent project number, adding all relevant project data to the form.

5. Create a ticket with the COMPASS Support Desk, providing:
    a. The proposed project number.
    b. The permanent project number.
    c. The project manager.
    d. A request for project promotion.
    e. Date when the Public Transportation and Rail Project Data Form was completed. **Note: It takes approximately 48 hours from the time that the Public Transportation and Rail Project Data Form is completed until the project promotion process can take place.**



    f. The COMPASS Support team will review and promote to the permanent project number. **Note: The project site URL will not change when the project is promoted; it will continue to contain the proposed project number (PPxxx-xxxx), not the new permanent project number.**

5. Populate the Project Staff, including the Project Initiation Staff section.

6. Contact all relevant asset stewards and ensure the Work Types and Work Codes are selected properly on the COMPASS Project Assets page. See ECD-2023-9-Project Asset Form for more details.

3.7. Planning and Emergency Declaration Projects in the OBL

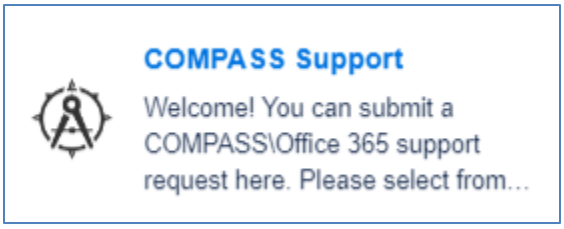
For Planning and Emergency Declaration projects, complete the following steps to create and promote a project in COMPASS.

1. Complete all necessary steps in CT-Atlas 2.0 as described in Creating a Proposed Project.

2. Once all necessary steps are completed in CT-Atlas 2.0, a project site will automatically generate in COMPASS. It can take up to an hour for this process to complete. Navigate to COMPASS and search for the project number. A red banner will display in the COMPASS project site while the site provisioning process is still in progress: "Project provisioning in progress. Some functionality will be limited."

3. Confirm the project is in the Obligation Report (OBL), then create a ticket with the COMPASS Support Desk, providing:
    a. The proposed project number.
    b. The permanent project number.

c. The project manager.
d. A request for project promotion.
e. Indicate whether it is a Planning or Emergency Declaration project.



1. The COMPASS Support team will review and promote to the permanent project number. **Note: The project site URL will not change when the project is promoted; it will continue to contain the proposed project number (PPxxx-xxxx), not the new permanent project number.**

2. Populate the Project Staff, including the Project Initiation Staff section.

3. Contact all relevant asset stewards and ensure the Work Types and Work Codes are selected properly on the COMPASS Project Assets page. See ECD-2023-9-Project Asset Form for more details.

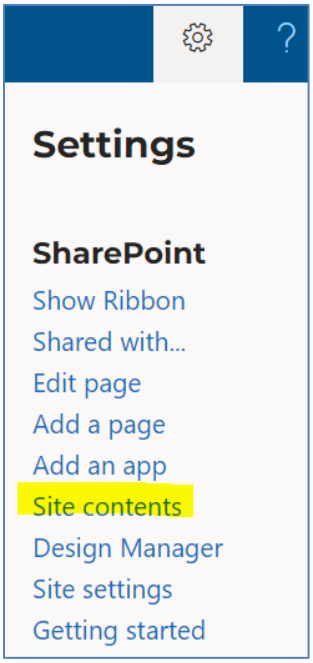
3.8. Pause or Complete a Permanent Project

The project phase displayed for COMPASS projects automatically displays and updates to reflect the phase in the CTDOT Construction Management System (e.g., Site Manager, AASHTOWare, etc.). In some situations, a project manager may need to manually pause or compete a project.

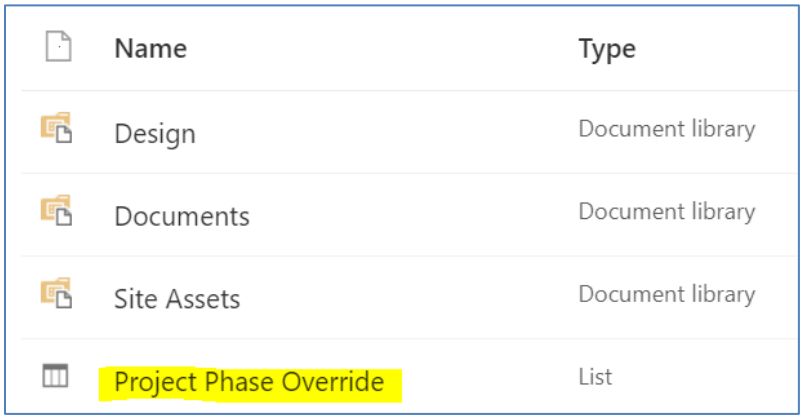
To pause or complete a project, any DOT staff can perform the following steps:

1. Go to COMPASS Projects, or the details or landing page of any COMPASS project site. This process **cannot** be performed via the COMPASS S&T page.

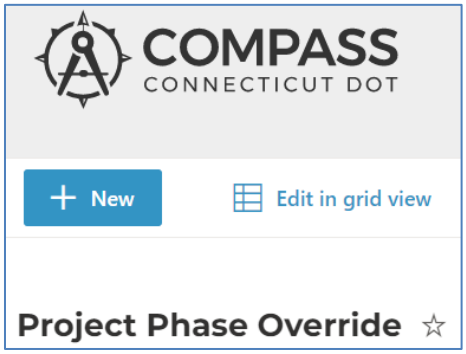
2. Navigate to the gear → Site Contents.



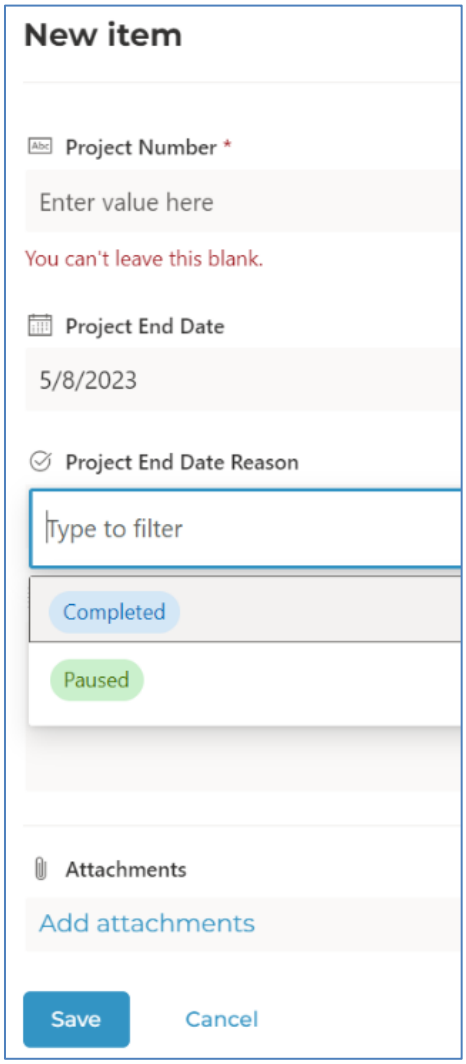
3. Choose Project Phase Override.



4. Press New.



5. Complete the New item field.
    a. Enter the project number in the XXXX-XXXX format (including leading zeroes).
    b. Select either Completed or Paused from the Project End Date Reason drop-down menu.
    c. In the Notes and Details fields, provide the reason for completing or pausing the project, along with any other relevant information.
    d. Verify information is correct, then press Save.



6. To reactivate a paused or completed project, create a ticket with the COMPASS Support Desk.

4. Document Management System

CTDOT uses COMPASS and Office 365 for document management. The objective of COMPASS is to provide CTDOT with project management processes that work in conjunction with a cloud-based digital Transportation Management Solution, utilizing Microsoft Commercial Off-the-Shelf Software (MCOTS) to manage the delivery of all capital projects. Specifically, this solution will provide improved quality and control over complex transportation projects by providing:

- Submittal and Transmittal Ball-In-Court tracking
- Better collaboration and communication using SharePoint online.
- Real-time project scheduling capabilities using integrated MS Project
- Improved resource management
- Real-time project status dashboards
- Document control and content management
- Improved transparency and accountability
- Improved risk management

4.1. COMPASS Overview

COMPASS is a cloud-based application built on Microsoft SharePoint pages. CTDOT users are provided with a CTDOT O365 license which is used to access COMPASS and all other DOT O365 applications. External user invitations are sent to non-CTDOT personnel – such as consultants and contractors – to grant project-specific site access.

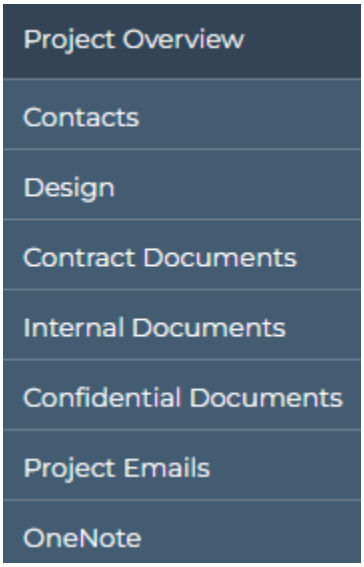
Presently, COMPASS provides a single place to display the following project information:

- Rights-of-Way
- Environmental Permits
- CORE data
- Viewport data
- Composite Project Database (CPD)
- Submittal/Transmittal Application
- Project Staff Management
- MS Project Schedule Integration
- Document Storage/Control
- Security/User Management

Please see COMPASS Knowledge Center - COMPASS Overview.

4.2. Project Folder Structure and Required Documents for Capital Projects

This section details the project folder structure and the required project documents that must be submitted for each project. The figure below illustrates a CTDOT project folder structure for a Capital Project. See COMPASS Permissions Model for details on folder permissions.



Note: In the case where two or more projects are combined or advertised as one project, all contract documents for these projects will be submitted into the lowest numbered project in COMPASS.

Project Folder Structure and List of Project Documentation
DESIGN LIBRARY
The folders in the Design Library are intended to store CAD files and working documents for designers. For more information on working with CAD files stored in COMPASS, please see the CTDOT Digital Design Environment (DDE) Guide CTDOT DDE GUIDE - Bentley Connect Edition.
CONTRACT DOCUMENTS LIBRARY
100_Contract_Plans (PDF) – This folder is in the Contract Documents library and contains only final Contract Plans, which includes the following. There shall not be any working documents uploaded into this folder. • Final plans • Addendum plans **(Subfolder should be created for each addendum)** • Design Initiated Change Order plans. • As-Built plans • Electronic Engineering Data (EED) – Final Prepared by AEC Applications
110_Contract_Documents – This folder is in the Contract Documents library and shall only contain the following final documents. The only working file allowed in this folder is the Contractor Submittal List. This list is to be maintained through the life of the project per ECD-2020-1_Contractor_Submittals.pdf. • Signed Contract • Pre-Bid Questions and Answers • Contract Special Provisions – Final, Addendum, and Design Initiated Change Order special provisions. • State and Federal Minimum Wage Rates and Classifications. • SOM (Source of Materials) • Insurance documents • Pre-Award DBE Review – Specific Contractor • Bonds • Contractor Submittal List
125_Completed_Submittals – This folder is in the Contract Documents library. Contractor submittals – with the exceptions of Payrolls – automatically relocate to this folder from the 120_Contractor Submittals (PDF) folder when marked complete. This folder is read-only. Documents cannot be directly updated to or modified in this folder.

Project Folder Structure and List of Project Documentation

130_Final _Engineering Reports – This folder is in the Contract Documents library and contains all the final engineering reports. There shall not be any working documents uploaded into these folders. **Note**: **Ensure file names in this folder: 1) do not include any special characters and 2) accurately and intuitively describe the document.**

- Hydraulic
  - Hydraulic Report and Hydraulic Report Data
  - Scour Report and Scour Report Data
  - Floodway Report and Floodway Report Data
  - Final Drainage Reports and Final Drainage Report Data
  - USGS Bridge and Channel Assessment Reports
  - Miscellaneous Technical Data, Studies, Investigations or Reports
- Environmental Compliance
  - Task 110
  - Task 210
  - Task 310
  - Underground Storage Tank System Closure Reports
- Bridge
  - Load Rating
- Geotechnical
  - Geotechnical Report Project files - including test boring, laboratory testing data file, and computations

160_Project Photos – This folder is in the Contract Documents library and is where all project photos and videos shall be stored. Both engineering and construction photos shall be stored in this folder.

INTERNAL DOCUMENTS LIBRARY

120_Contractor_Submittals (PDF) – This folder is in the Internal Documents library and contains the following:

- Shop Drawings
- Product Data Sheets
- Product Samples
- Coordination Drawings
- Working Drawings
- Requests for Entitlement
- Correspondence from Contractor
- RFIs
- RFCs
- Schedules
- Payrolls
- Material Testing
- Quality Assurance Submittals
- Operation and Maintenance Manuals
- Spare Parts Transmittals
- Landscape Submittals

When contractors create submittals, all documents automatically uploaded to this folder.

140_Project_Administration – This folder is in the Internal Documents library and is the storage location for final permanent milestone project administration documents. These project administration documents can be defined as, but not limited to, deliverables such as agreements, project approvals, project scope, regulatory documents, design phase schedules, etc. There shall not be any draft documents uploaded into this folder.

Project Folder Structure and List of Project Documentation
• Agreements – Utility, Railroad, Municipal, etc. • Categorical Exclusion • Certification Acceptance Checklist • Commitment list • Consultant Selection Documents – Scope of Services, Notice to Proceed, etc. • Construction Incidental Cost Establishment Report • DBE/SBE Approval with percentage, participation level • Design Approval • Design Exceptions • Design Phase Microsoft Project Schedule - COMPASS • Draft Noise Analysis Report • Environmental Impact Study – EIS • Final Design Report • Final Noise Analysis Report • Finding of No Significant Impact - FONSI • Lighting Agreement • Record of Decision – ROD • Rehabilitation Study Report • Risk Management Documents • RPM – Request for Project Memorandum • Sidewalk Maintenance Agreement • Standalone Transportation Management Plan Document, taken from the final design report. • Stewardship Agreement • Structure Type Study • Waiver to Obligate Funds • White Papers
142_Project Administration Correspondence – This folder is in the Internal Documents library and is for all final project correspondence documents. This is defined as any request memos, response memos, letters, etc., and does not include any documents that are defined in the 140_Project Administration folder. This folder shall not include any working/draft documents. • Meeting Minutes • Request Memos – Survey Request, Design Reviews, Support unit design. • Response Memos – Response to the Request Memos
150_Quantity Calculations – This folder is in the Internal Documents library and is where all the final quantity calculations for contract items shall be stored. • FDP Estimate Quantity Computations
151_Final Design Calculations – This folder is in the Internal Documents library and is where all the final design calculations shall be stored.
170_ROW Files - This folder is in the Internal Documents library and is where the final property maps shall be stored until they are uploaded into the IRMS. Also, the project polygons and parcel polygons file shall be stored here.

210_Construction – This folder is in the Internal Documents library. See Construction Documentation for more information.
• **01 – Project Documents**
  ○ Semi and Monthly Payment Estimates
  ○ Construction Orders with Backup
  ○ Copies of Cost-Plus Sheets with backup

Project Folder Structure and List of Project Documentation

- All Delivery Tickets, Bituminous Concrete, Processed Aggregate Base, Concrete, etc.
- Material Certifications, etc. (All Laboratory Reports)
- Nuclear Density Test and Data Sheets (CON-125, 133)
- Pile Driving Logs (CON-87)
- Environmental Correspondence, Logs, etc.
- Utility Forms (CON-40 and 41)
- Contractor Payrolls
- EEO/AA Reports (30-60-90s)
- Labor Wage Checks (CON-131)
- Hazardous Waste Manifests
- Stores Requisitions and Transfer Vouchers
- Purchase Orders and Requisitions
- Correspondence
- Computer Disks - properly labeled.
- Any Other Related Records
- Town Correspondence File - Includes:
  - General Material
  - Request for and response to matters concerning highway, bridge, signing, lighting, etc. by town officials.
  - Written commitments to first officials and/or elected, appointed state, federal officials.
  - Mapping Prepared by district or filed with district.

- **02 – Internal Documents**
  - Consultant Ratings
  - Other Sensitive Documents
  - This folder has unique permissions. See COMPASS Permissions Model for details.
- **03 – Measurements and Payments**
  - Field Books (all) Volumes 1,2,3, & 4s
- **04 – Consultant Negotiations**
  - Consultants Billings with Backup
  - Sensitive documents pertaining to CEI negotiations.
  - This folder has unique permissions. See COMPASS Permissions Model for details.
- **05 – Environmental**
  - USACE Work Start Notification Form
  - USACE Compliance Certification Form
  - APA/Watershed Resource Maps
  - CTDEEP De Minimis Change Request
  - CTDEEP De Minimis Change Approval
  - CTDEEP Notice of Non-Compliance/Notice of Violation
  - CTDEEP Non-Compliance Monitoring Reports
  - CTDEEP Work Commencement Form
  - CTDEEP Compliance Certification Form
  - CTDEEP Permit Notification Correspondence
  - CTDEEP Site Inspection Reports & ROM's
  - CTDEEP/USACE Permit Extension Request
  - CTDEEP/USACE Permit Extension Approval
  - CTDEEP/USACE Time-of-Year Waiver Request

Project Folder Structure and List of Project Documentation
○ CTDEEP/USACE Time-of-Year Waiver Approval ○ CTDEEP/USACE Emergency Authorization Request ○ CTDEEP/USACE Emergency Authorization Approval ○ CTDEEP Emergency Authorization Extension ○ Complaints ○ OEP Routine Inspection Report ○ OEP Semifinal Inspection Report ○ CTDEEP Stormwater Notice of Termination Form ○ Wetland Mitigation As-Builts ○ USCG Deviation Letters ○ Submittals Satisfying CTDEEP/USACE Special Conditions
211_Materials Testing – This folder is in the Internal Documents library. Follow guidance provided in the Materials Evaluation and Specifications Unit (MESU) COMPASS Construction Bulletin.
220_FHWA – This folder is in the Internal Documents library and is used by the FHWA for their purposes.
230_Contract_Administration – This folder is in the Internal Documents library and is used by the CTDOT Contracts unit.
240_Contract_Development – This folder is in the Internal Documents library and is the location where the Designer uploads the following supplemental contract documents: • All contract special provisions and Notice to Contractors (NTC), in Word format, both final and addendum special provisions. All contract special provisions shall be uploaded to the subfolder **FDP Specs. No other documents shall be uploaded to the FDP Specs subfolder except the contract special provisions and NTCs in Word format.** • If the project contains CSI specifications, the designer is to create a sub-folder to the 240_Contract Development folder named **CSI Specs** and upload all CSI specifications to this location. **No other documents shall be uploaded to the CSI Specs subfolder except the CSI specifications NTCs in Word format. See Design Review Phase for instructions on how to create the CSI Specs folder.** • Estimator Proposal Estimate • Calendar Day Estimate • Electronic Engineering Data Files uploaded by the Designer. • Permit Applications and Approvals
310_Milestone_Submissions – This folder is in the Internal Documents library and is the location where the designer shall submit all milestone submission documents. This includes plans, special provisions, reports, estimates, etc. This folder has sub-folders for 30, 60, 90, and 100 submissions.
320_Permit_Development – This is in the Internal Documents library and can be used to store documents for the development of permits. Note: At FDP, the permit applications and approvals must be uploaded into the 240 Contract Documents folder. The processing unit then adds the permits and applications to the contract and uploads the contract into the 110 Contract Documents folder. • Permits Needs Determination Form (PNDF) • Wetland Flagging Coordination • Natural Diversity Database (NDDB) Coordination • CTDEEP Fisheries Correspondence • LEAN Meeting Minutes • Project Manager Meeting (PMM) Minutes • Permit Review Comments • Responses to Permit Review Comments
600_Project Initiation Documents – This folder is in the Internal Documents library and is where any project

Project Folder Structure and List of Project Documentation
initiation documents can be stored. This would include any plans developed by the Project Concepts unit or any other documents created in the project concepts phase.
CONFIDENTIAL DOCUMENTS LIBRARY
131_Engineering_Reports_Confidential –This folder is in the Confidential Documents library and is only seen by a select number of people. • Bid Analysis
141_Project_Administration_Confidential – This folder is in the Confidential Documents library and shall be used for documents that only CTDOT should have access to. • Consultant Payroll information
231_Contract_Administration_Confidential – This folder is in the Confidential Documents library. Access is limited to the CTDOT Contracts Unit.
241_Contract_Development_Confidential – This folder is in the Confidential Documents library and contains the final engineers estimate and calendar day estimate developed by the cost estimating unit. • Final Engineers Estimate • Final Calendar Day Estimate

4.3. COMPASS Project Site Permissions

Access to COMPASS project sites is provided using site permission groups. Each permission group has a unique set of rights and restrictions.

CTDOT personnel and FHWA are automatically added to all COMPASS site members groups.

The Project Manager will be added to the site owners permissions group (full control of site) when a ticket is created during the project creation process (see Creating a Proposed Project (PP)). The Project Manager (PM) is responsible for granting and maintaining project site access for all consultants, contractors, and stakeholders. The PM may also choose to invite another team member(s) to the site owners group and delegate the site permissions management role to that individual(s).

It is recommended to limit the number of staff in the site owners group. The majority of CTDOT and consultant staff will remain in the site members permissions group.

4.3.1 Site Permissions Groups Defined

There are four permissions group per project: Site Owners, Site Members, Site Stakeholders and Site Contractors. There is a program-wide Compass Owners group which is **not** to be edited or changed by project staff.

Please see COMPASS Knowledge Center - Site Permissions Groups Defined.

Site Permissions Summary Table

FUNCTION	Compass Owners	Site Owners	Site Members	Site Stakeholders	Site Contractors
Invite or remove users from site permissions groups	X	X			
Delete a submittal as the submittal owner	X	X	X		
Delete a submittal on behalf of another user (proxy)	X	X			
Reopen a complete S&T envelope (internal CTDOT staff only)	X	X			
Start, edit, revise & resubmit, or complete a review cycle as the submittal owner	X	X	X		
Start, edit, revise & resubmit, or complete a review cycle on behalf of another user (proxy)	X	X			
Start or finalize a Bluebeam Studio Session as the submittal owner	X	X	X		
Start or finalize a Bluebeam Studio Session on behalf of another user (proxy)	X	X			
Modify the Approval Matrix	X	X			
View the Approval Matrix	X	X	X		
Function as submittal owner per the Approval Matrix for Contractor submittals	X	X	X		
Function as submittal owner for internal-internal or internal-external submittals	X	X	X		
View and add posts to the submittal Comments/Log	X	X	X		
Access the Dashboard and Details pages*	X	X	X		
Create a submittal	X	X	X	X	X
Replace a submittal document in response to an R&R	X	X	X	X	X
Review a submittal (Submittal Reviewer Section)	X	X	X	X	X
Contribute documents to a submittal at any time in the review workflow	X	X	X		
Reassign or add reviewers to a review assignment (Submittal Reviewer Section)	X	X	X		
Approve or Reject Uploads as the submittal owner	X	X	X		
Approve or Reject Uploads on behalf of another user (proxy)	X	X			
Delink files from a submittal envelope as the submittal owner	X	X	X		
Delink files from a submittal envelope on behalf of another user (proxy)	X	X			
View document version history	X	X	X		
Modify/edit files in the 125_Completed_Submittals folder	X				
Pre-approved consultants who cannot access the Dashboard and Details pages should fill out the form Getting Started with SharePoint for Consultants (ct.gov) to gain access to these pages and enable improved collaboration in COMPASS.					

4.3.2 Setting up Site Permissions Groups

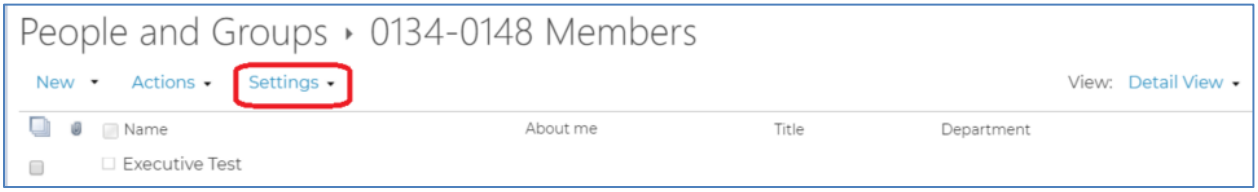
The project manager or delegated staff member is responsible for maintaining the site permissions throughout the duration of the project.
Please see COMPASS Knowledge Center - Setting up Site Permissions Groups.

4.3.3 Restricted Elements

Users should not make any restricted changes to project sites.

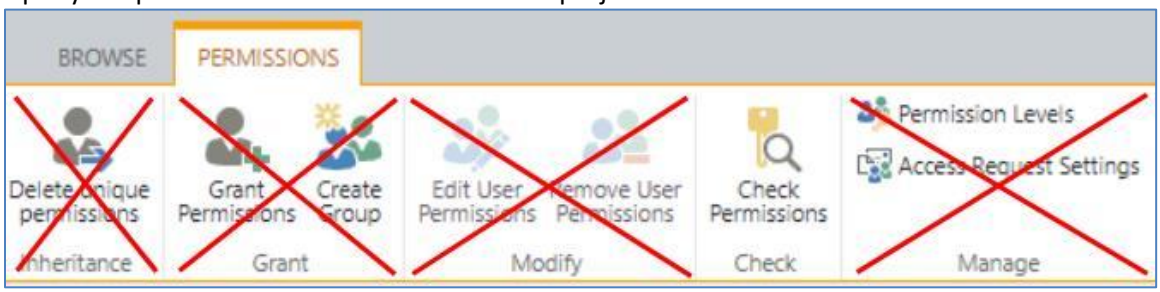
4.3.3.1 Restricted Element – Settings Menu

Do **not** use any of the functionality under the Settings menu.



4.3.3.2 Restricted Element – Permissions Ribbon

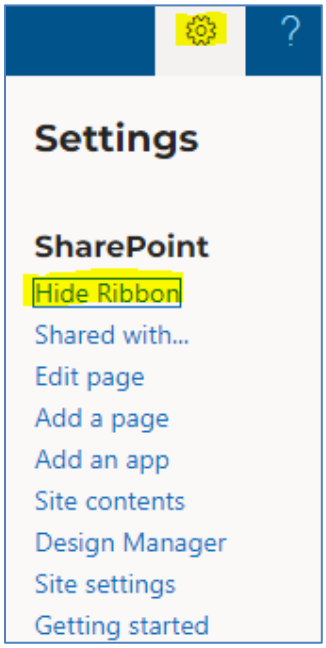
Do **not** use the menu items in the Inheritance, Grant, Modify or Manage sections of the ribbon. Do not delete permissions, grant new permissions, or create new permissions groups. The Check Permissions button can be used to query the permission of an individual for that project site.



4.3.3.3 Restricted Element – Modifying Site Styles

Do **not** use the Browser, Page, or Publish option in the ribbon. **Best practice**: Keep the ribbon hidden to avoid accidentally selecting one of these restricted elements.

To hide the ribbon, go to the Gear -> Hide Ribbon.



4.3.3.4 Restricted Element – Unique Permissions

Do **not** remove the two groups included in all project site members groups:

- CTDOT staff: DOT-CompassDOTUsers group
- FHWA staff (Connecticut): DOT Compass – Regulatory Partners Members

Do **not** modify any of the unique folder permissions established program-wide, as noted in the COMPASS Permissions Model (sharepoint.com).

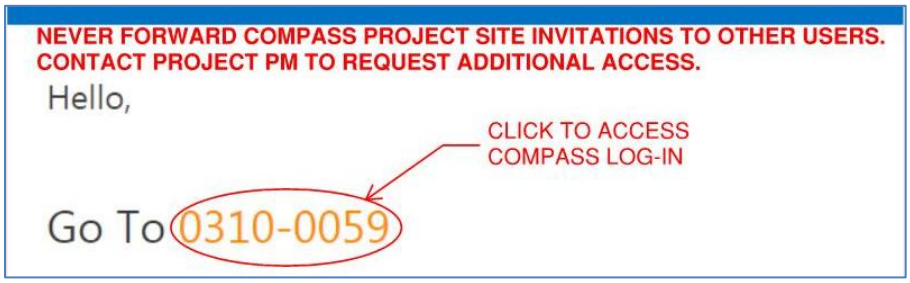
4.3.4 Accepting an Invitation (External Users)

External users (*e.g.,* Contractors, Consultants, Stakeholders, etc.) invited to join a COMPASS project site will need to take the following steps to accept a COMPASS invitation. ***External users should never forward their invitations to other users. A unique invitation needs to be sent to each user requiring project site access.***

If other individuals need access to a COMPASS project site, a request should be sent to the PM.

Note: Depending on the user's email settings, the email notification may route to the SPAM or Junk folder or display in the "Other" section in Outlook.

1. The external user will receive an email invitation with a direct link to the project page.



2. On the SharePoint Online invitation acceptance page,
    a. External users with an existing work / company Office 365 account should click Organizational Account and log-in using their company Office 365 username and password.
    b. External users without an existing Microsoft account should select "Create a Microsoft account" and follow the steps to set-up a new, free account using the email address to which the invitation as sent.

4.3.5 Consultant Staff

Pre-Approved BOEC Consultant staff are typically invited to the Site Members Group by the Site Owner.

4.3.5.1 Inviting Individual Consultants to a Project Site

Individual consultants can be invited to project sites in the same manner as CTDOT staff or other external users. Consultants should be invited via their company email address.

4.3.5.2 Inviting Consultants by Vendor Using Dynamic Groups

Site owners should invite consultants to the Site Members Permissions Group using the following format: "DOT Consultant - " followed by their vendor name.

Do not use for the site owners group.

To use this option, the following elements are **required**:

- Company is a pre-qualified BOEC consultant. Please see Prequalified Consultants for Year 2024 (ct.gov) for list.
- Individual consultant staff must complete Getting Started with SharePoint for Consultants (ct.gov).

4.3.5.3 BOEC Consultant Access – Required Forms

All consultants: To better collaborate in COMPASS and view some frequently requested documentation, pre-approved Bureau of Engineering and Construction (BOEC) Consultants should follow the instructions provided

in Getting Started with SharePoint for Consultants (ct.gov). Completing this form provides access to many resources, including:

- COMPASS Dashboard, Details and Asset tabs
- Access to CTDOT Owned Special Provisions
- Access to DOT BOEC Consultants - Home (sharepoint.com)
- Ability for CTDOT Site Owners to manage permissions via company domain.

For OneDrive sync only: For consultants who need to sync to OneDrive for use of CAD files or other needs, please see guidance provided in this document: ctdot-connect-dde-volume-1---getting-started.pdf

4.4. Navigating COMPASS

For CTDOT users, follow the instructions provided in COMPASS Overview to log-in to Office 365 and access COMPASS.

Please see COMPASS Knowledge Center S&T - Navigating COMPASS for details.

4.5. CTDOT Staff Contact, Organization, and Status Information

Please see COMPASS Knowledge Center S&T - CTDOT Staff Contact, Organization, and Status Information for details.

5. Digital Project Processes

5.1. Processes by Project Phase

The following shows the processes included in this manual separated by project phase. Also included in this table is a link to the process map that corresponds to each document/process:

Project Initiation Phase	
Document/Process	**Requirements**
Project Schedule	• Project Schedule should be set up in accordance with Design Phase Project Scheduling
Preliminary Design Phase	
Preliminary Contract Plans	• Plans shall be grouped in accordance with Contract Plan Grouping • Plans shall be formatted in accordance with Contract Plan Format
Preliminary Contract Special Provisions	• Contract Special Provisions shall be prepared in accordance with Contract Special Provisions
Cost Estimate	• Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Preliminary Design (30%) Review	• Design Reviews shall be accomplished in accordance with Section 10 Digital Review and Commenting
Project Schedule	• Project Schedule should be set up in accordance with Section 11 Design Phase Project Scheduling
Permit Applications/ Documents	• Shall be uploaded and formatted in accordance with Environmental Permits
Rehabilitation Study Reports	• Shall be uploaded and formatted in accordance with Engineering Reports
Structure Type Studies	• Shall be uploaded and formatted in accordance with Engineering Reports
Categorical Exclusion	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Design Exception	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Design Approval Letter	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Project Correspondence	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Project Polygon	• Shall be prepared and uploaded in accordance with Project Location (Geo-Spatial Boundary or Route ID and Mileage)
Final Design Phase	
Document/Process	**Requirements**
Contract Plans	• Plans shall be grouped in accordance with Contract Plan Grouping • Plans shall be formatted in accordance with Contract Plan Format
Contract Special Provisions	• Special Provisions shall be prepared in accordance with Contract Special Provisions
Engineering Reports	• Engineering Reports shall be prepared in accordance with Engineering Reports

Project Schedule	• Project Schedule should be set up in accordance with Design Phase Project Scheduling
Cost Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Permit Applications/ Approvals	• Shall be uploaded and formatted in accordance with Environmental Permits
Design Calculations	• Design Calculations shall be submitted in accordance with Design Calculations
Semi Final (60%) and Final Design (90%) Reviews	• Design Reviews shall be accomplished in accordance with Section 10 Digital Review and Commenting
Quantity Calculations	• Quantity Calculations shall be submitted in accordance with Estimates and Quantity Calculations
Final Design Report	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Final Design Statement	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Sidewalk Maintenance Agreement	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Lighting Agreement	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
DBE/SBE Goals	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Commitment List	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Waivers	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Standalone Transportation Management Plan	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
Project Correspondence	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents

Contract Processing Phase

Document/Process	Requirements
FDP	
Contract Plans	• Plans shall be grouped in accordance with Contract Plan Grouping • Plans shall be formatted in accordance with Contract Plan Format • Plans shall be checked by the PDF Checker
Contract Special Provisions	• Special Provisions shall be prepared in accordance with Contract Special Provisions
Proposal Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Federal Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Calendar Day Estimate	• Calendar Day Estimate shall be prepared in accordance with Estimates and Quantity Calculations
Permit Applications/	• Shall be uploaded and formatted in accordance with Environmental

Approvals	Permits
Ordering Paper Copies of Contract Documents	• Paper copies of contract documents can be ordered in accordance with Paper Plans
EED	• Shall be prepared and uploaded in accordance with Electronic Engineering Data (EED)
Project Polygon	• Shall be prepared and uploaded in accordance with Project Location (Geo-Spatial Boundary or Route ID and Mileage)
DCD	
Contract Plans	• Plans shall be grouped in accordance with Contract Plan Grouping • Plans shall be formatted in accordance with Contract Plan Format • Plans shall be checked by the PDF Checker
Contract Special Provisions	• Special Provisions shall be prepared in accordance with Contract Special Provisions
Proposal Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Federal Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Calendar Day Estimate	• Preliminary Cost Estimates shall be prepared in accordance with Estimates and Quantity Calculations
Permit Applications/ Approvals	• Shall be uploaded and formatted in accordance with Environmental Permits
Addendum	
Contract Plans	• Plans shall be prepared in accordance with Contract Plan and Special Provision Revisions (Addenda and Design Initiated Change Order)
Contract Special Provisions	• Special Provisions shall be prepared in accordance with Contract Plan and Special Provision Revisions (Addenda and Design Initiated Change Order)
EED	• Shall be prepared and uploaded in accordance with Electronic Engineering Data (EED)
Award Phase	
Signed Contract	• Signed Contract will be uploaded into COMPASS in accordance with section xx.

Construction Phase	
Document/Process	**Requirements**
Contractor Submittals	• Contractor submittals shall be uploaded in accordance with Contractor Submittals
Contract Plans	• Plans shall be prepared in accordance with Contract Plan and Special Provision Revisions (Addenda and Design Initiated Change Order)
Contract Special Provisions	• Special Provisions shall be prepared in accordance with Contract Plan and Special Provision Revisions (Addenda and Design Initiated Change Order)
DICO Memo	• DICO memo shall be prepared in accordance with Design Initiated Change Order (DICO)
Plan As-Builts	• Plan As-Builts shall be accomplished in accordance with As-Built Comments - Final Plans
Project Correspondence	• Shall be uploaded and formatted in accordance with Project Administration and Project Correspondence Documents
EED	• Shall be prepared and uploaded in accordance with Electronic Engineering Data

	(EED)
Project Polygon	• Shall be prepared and uploaded in accordance with Project Location (Geo-Spatial Boundary or Route ID and Mileage)

5.1.1 Paper Plans

The Department's Print Shop has closed. The following alternative duplicating methods are available, if necessary:

- All routine photocopies can be performed on the multifunction copiers throughout the Department.
- Specialized duplication services and business cards can be ordered through DAS Printing Services. https://portal.ct.gov/DAS/Services/For-State-Employees/Print-Mail-and-Courier-Services
- Project plans/specs and wide-format prints should be printed on the wide-format printers located throughout the Department or utilize State Contract 19PSX0006, Document Imaging Services. https://webprocure.proactiscloud.com/maincontractboard/contractviewdoc.do?docid=696&eboid=51&&mimeType=application/pdf&docName=Contract%20Award.pdf&docUniqueName=Contract%20Award.pdf&contract=463

Questions can be addressed to Deb Ello at debra.ello@ct.gov or 860-594-2257.

6. Document Preparation and Format

6.1. Contract Plan Grouping

Contract plans shall be grouped by discipline into individual multiple page PDF files called discipline subsets. The project manager is tasked with determining the discipline subset numbering and grouping and whether to use a single volume or multiple volumes for the project. Discipline subset file sizes shall be a maximum of 60MB. The following details each of these options:

Single volume digital contracts are used when each discipline or consulting firm designing the project is responsible for 3 subsets or less. The following is an example of a single volume project.

> Note: The first and second subsets shall always be 01-General and 02-Revisions. The 03 subset does not always need to be 03-Highways, the 04 does not always need to be 04-Structure, etc. FIO subsets shall be numbered at the end of the project before the standard subsets. The Standards subsets shall not be numbered.

Multiple volumes are used if the project has 1 or more of the following characteristics:

a. Most of the discipline/firm designers are responsible for more than 3 subsets each. This allows the individual designers to number their subsets independently of the other disciplines.
b. There are multiple sites on the project. Splitting these sites up into volumes will provide better organization of the project.
c. Combining multiple projects into one project.

The larger the project is, typically the more subsets will be required, and their labels will be more specific. The subsets shall be split up by volume and each volume shall be controlled by its assigned designer. For example, all the subsets designed by the highway designer shall be in the same volume (02) and each subset shall have a unique subset number.

> Note: The first and second subsets when using multiple volumes shall always be 01.01-General and 01.02-Revisions. The 01.03 subset does not always need to be 01.03-Highways, the 01.04 does not always need to be 01.04-Structure, etc. FIO subsets shall be numbered at the end of the project before the standard subsets. The Standards subsets shall not be numbered.

Combining Projects

In the event 2 or more projects are combined into one project, the following shall be done:

- Each project shall be given its own volume.
- The lowest project shall always be volume 1.
- Each project shall have its own title sheet, which reference each other with a note.
- There shall only be (1) Revisions subset. This subset shall be in volume 1 and named 01.02 – Revisions.
- The Revisions subset shall be the responsibility of the project manager on the projects.
- Each project shall have its own detailed estimate sheets.
- There shall only be (1) set of Highway Standards and (1) set of Traffic Standards when the projects are combined.
- There shall not be any duplicate special provisions after the projects are combined.
- There shall only be (1) calendar day chart.

The next two figures show examples of the single volume and multiple volume options.

Single Volume Option

Label (Discipline Subset)	File contents (but not limited to)
01-General	Title Sheet Detail Estimate Sheet
02-Revisions	Index of Revisions Sheets
03-Highways	**ABBREVIATION** — **DESCRIPTION** INX — Index of Drawings INP — Index of Plans SVY — Survey Control Data ALN — Alignment Plans ROW — Right of Way Plans TYP — Typical Sections MDS — Miscellaneous Detail Sheets PLN — Highway Plans DRN — Drainage Plans SED — Sedimentation and Erosion Control Plans PRO — Profile XSC — Cross Sections SGP — Site Grading Plans IGP — Intersection Grading Plans SUP — Superelevation Diagrams BOR — Boring Logs PIT — Test Pit Data STG — Staging Plans (includes plans, profiles, and cross sections)
04-Structure	Index of Drawings All Structure Sheets Note: Multiple subsets may be required for multiple Sites Ex: 04_Structure_Br.No.1266
05-Traffic	Index of Drawings Signing Pavement Markings MPT Traffic Signal Plans Etc.
06-Landscape	Index of Drawings All Landscape Sheets required.
07-Environmental	Index of Drawings All Environmental Compliance Sheets required
08-Utiltiy	Utility Design plans. For example, 07_AT & T, 07_CL & P, 07_MDC, etc.
09-CL&P FIO**	CL & P For Information Only plans
10-AT&T FIO**	AT & T For Information Only plans
CTDOT Highway STD	CTDOT Highway Design Standard Index and Sheets required
CTDOT Traffic STD	CTDOT Traffic Engineering Standard Index and Sheets required

* If a discipline must be broken up into more than one subset, keep the label the same with the addition of “1” at the end of the first subset, “2” at the end of the second subset, etc.

** For Information only discipline subset shall be submitted as individual pdf files based on the entity providing the information only.

Multiple Volume Option

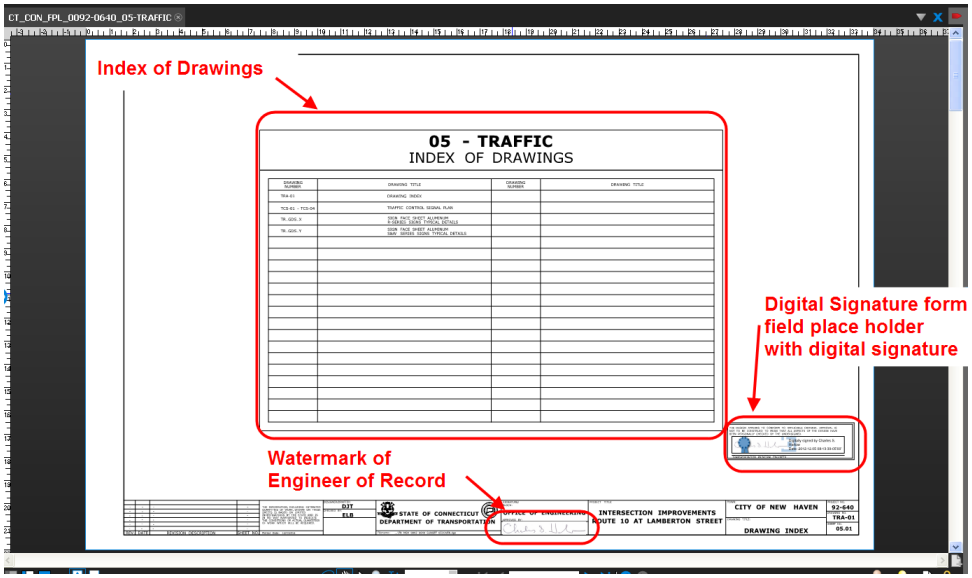
Label (Discipline Subset)	File contents (but not limited to)	Designer/ Firm
01.01-General	Title Sheet, Detail Estimate Sheet	Lead
01.02-Revisions	Index of Revision Sheets	Lead
01.03-Wtlnd Re-establish	Wetland Reestablishment plans	Designer 1
01.04-Stg Acc.	Staging and Access Plans	Designer 1
02.01-Typ Sections	Typical Sections	Designer 2
02.02-Alignments	Alignment Geometry	Designer 2
02.03-Plan	Plans	Designer 2
02.04-Profiles	Profiles	Designer 2
02.05-ROW Brk	Right of Way Breakout	Designer 2
02.06-Drain	Drainage Plans	Designer 2
03.01-Retaining Wall 1	Retaining wall details	Designer 3
03.02-Retaining Wall 2	Retaining wall details	Designer 3
03.03-Bridge 00456	Bridge_456	Designer 3
03.04-Bridge 01983	Bridge_1983	Designer 3
03.05-Bridge 01984	Bridge_1984	Designer 3
04.01-Stage 1	Stage Construction Details 1	Designer 4
04.02-Stage 2	Stage Construction Details 2	Designer 4
04.03-Stage 3	Stage Construction Details 3	Designer 4
05.01-SPM	Signing and Pavement Marking Site 1	Designer 5
05.02-SPM	Signing and Pavement Marking Site 2	Designer 5
05.03-SPM	Signing and Pavement Marking Site 3	Designer 5
06.01-IMS	IMS Plans and Details Site1,2,3	Designer 6
07.01-Env 1	Environmental Details Site 1	Designer 7
07.02-Env 2	Environmental Details Site 2	Designer 7
07.03-Env 3	Environmental Details Site 3	Designer 7
08.01-" Utility	Utility Design plans. For example, 07_AT & T, 07_CL & P, 07_MDC, etc.	Designer 8
09.01-CL&P FIO	CL & P For Information Only plans	Designer 8
09.02-AT&T FIO	AT & T For Information Only plans	Designer 8
CTDOT Highway STD	*CTDOT Highway Design Standard Index and Sheets required	Designer 1
CTDOT Traffic STD	CTDOT Traffic Engineering Standard Index and Sheets required	Designer 5

6.2. Contract Plan Format

Digital contract plans (preliminary, semi-final, FDP, ADP, DICO, etc.) shall be formatted in accordance with the following:

1. Contract Plans shall be in submitted to CTDOT in PDF format.
2. PDF Plans must be sized either 36" x 24" for projects created before June 2007 or sized 34" x 22" for projects created after June 2007
3. PDF plans shall be measurable to scale in the PDF.

4. PDF plans shall be able to be printed to paper and scaled appropriately.
5. Text must be searchable.
6. All levels must have the ability to be displayed on or off, unless approved otherwise.
7. All information on the digital contract PDF plans shall have been created from Bentley Software or an approved alternate. The only information that shall be added to the plans using a PDF editing software are as follows:
    - Page labels
    - Sheet numbers
    - Watermarks and flatten comments.
    - Any digital signature fields.
    - Digital Signature
8. Discipline subsets shall be published directly from a CAD application. Scanned images or raster image formats will not be accepted except For Information Only sheets, these can be scanned. See Publishing CAD Files for more instructions on how to publish from Bentley Software.
9. Each discipline subset shall contain bookmarks; one for each page.
10. The first page of each subset shall be a subset cover sheet, this includes FIO subsets. This cover sheet shall contain both; an index of drawings contained within the subset that includes both drawing numbers and drawing titles and the form field place holder(s) which receives the digital signatures. This table must include the subset name and number displayed as a heading in the table as shown in the figure below.



11. The first page of the subset 01_General shall be the CTDOT digital project title sheet which includes an index of the subsets contained within the project, sheet count totals for all subsets, a list of drawings for the 01_General Subset, and an area(s) reserved for applying the digital signature(s). Consultants will need to delete the CTDOT signature blocks on the title sheet and place a digital signature placeholder.
12. The 01-General subset shall include all detailed estimate sheets.
13. The 02_Revisions subset must be included in each digital project and there shall only be (1) revision subset.
14. Subset 02_Revisions shall contain only revision sheet(s), titled “Index of Revisions.” These revision sheets are used for tracking all sheet changes due to addenda and design-initiated change order (DICO) with respect to the entire project. These sheets are originally blank and unsigned and shall be managed and updated as needed by the Project Manager. The CTDOT Revision Contract Sheets can be found as a seed file in the CTDOT CAD workspace.

15. Plans *For Information Only* (FIO) shall be submitted digitally, in individual subsets based on the entity providing the information, Amtrak, CL & P, AT&T, Designer etc. These subsets do not require a digital signature, but each sheet in the subset shall be labeled; "For Information Only". The subset numbers shall be selected by the lead designer so that the FIO subsets are last. Each sheet shall be numbered correctly.
16. Utility drawings shall be submitted in accordance with the following:
    - Utility plans *For Information Only* (FIO) shall be submitted in a utility subset based on the utility company, AT&T subset, CL&P subset, etc. These subsets do not require a digital signature, but each sheet shall be labeled; "For Information Only". FIO utility subsets shall be numbered so that they are the last subsets. Example Labels; 10_CL&P_FIO, 11_AT&T_FIO. These subsets must have page labels assigned.
    - Utility company designed plans that include work being done by the State's Contractor shall be submitted in a utility subset based on the utility company, AT&T subset, CL&P subset, etc. These subsets do not require a digital signature. Example Labels; 10_CL&P, 11_AT&T. These subsets must have page labels assigned.
    - Utility plans that are designed by a Consultant firm that include work being done by the States Contractor shall be submitted in a utility subset based on the utility company, AT&T subset, CL&P subset, etc., and shall be digitally signed in accordance with this manual. Example Labels; 10_CL&P, 11_AT&T. These subsets must have page labels assigned.
17. CTDOT Standard sheets shall also be delivered digitally.
18. Footers, displaying the sheet number, shall be placed on each page of each PDF subset.
19. As-built information shall be digitally applied to the contract subsets by District Personnel after the job is complete using Bluebeam.
20. Preliminary Contract Plans shall be submitted to CTDOT in accordance with this section, but do not need to be digitally signed. These review documents shall be uploaded into the 310_Milestone_Submission folders in COMPASS.
21. A Bluebeam set file shall be created at FDP and updated for any addendums or change orders.
22. Contract Plan subsets, FDP, DCD, DCD2, ADP, and DICO, must be checked by the Discipline Subset PDF Checker.

6.3. CTDOT For Information Only Sheets

Plans provided *For Information Only* (FIO) shall be submitted digitally, in individual subsets based on the entity providing the information, Amtrak, CL & P, AT&T, Designer etc. These subsets do not require a digital signature, but each sheet in the subset shall be labeled; "For Information Only". The first sheet of each FIO subset shall be a subset cover sheet. These sheets shall be placed on a border and numbered.

The subset numbers shall be selected by the Project Manager so that the FIO subsets are last. for uploading and attributing FIO Plans. Information only sheets may be scanned, but must conform to the following:

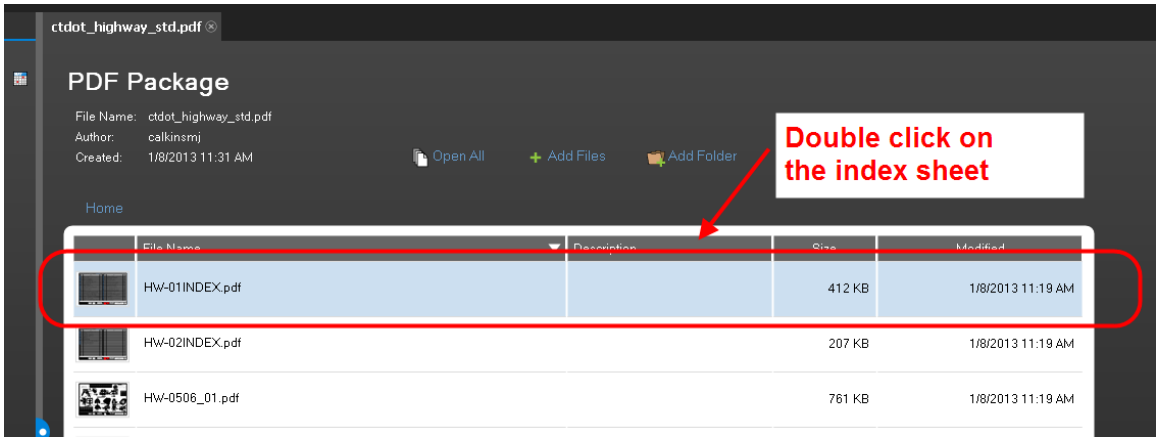
- Minimum Size 22"x34"
- Minimum dpi = 300.

6.4. CTDOT Standard Plan Sheets

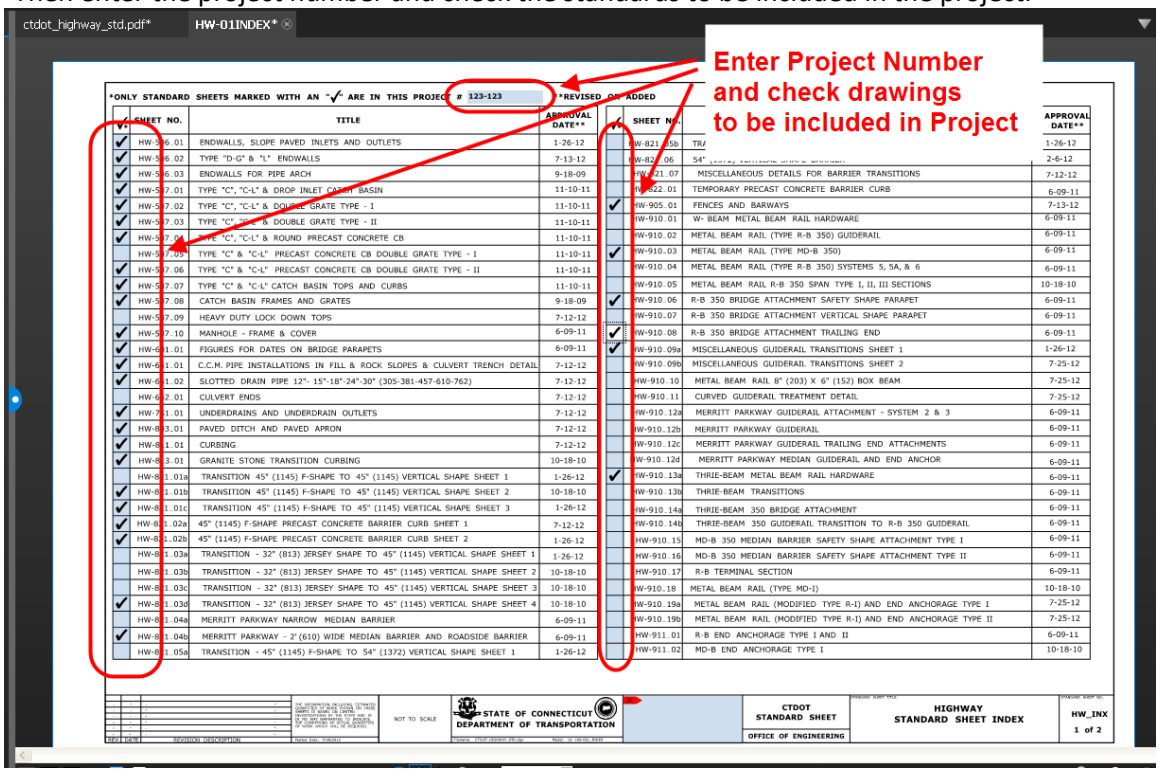
Standard sheets shall also be delivered digitally into COMPASS using the Submittals/Transmittals application. The following shows how to obtain the latest version of the CTDOT Standard Sheets and how to prepare them for a digital project.

1. Download the latest standards from the following link for the project: CTDOT Standard Drawings Website
2. Upload the standard subset into COMPASS in accordance.

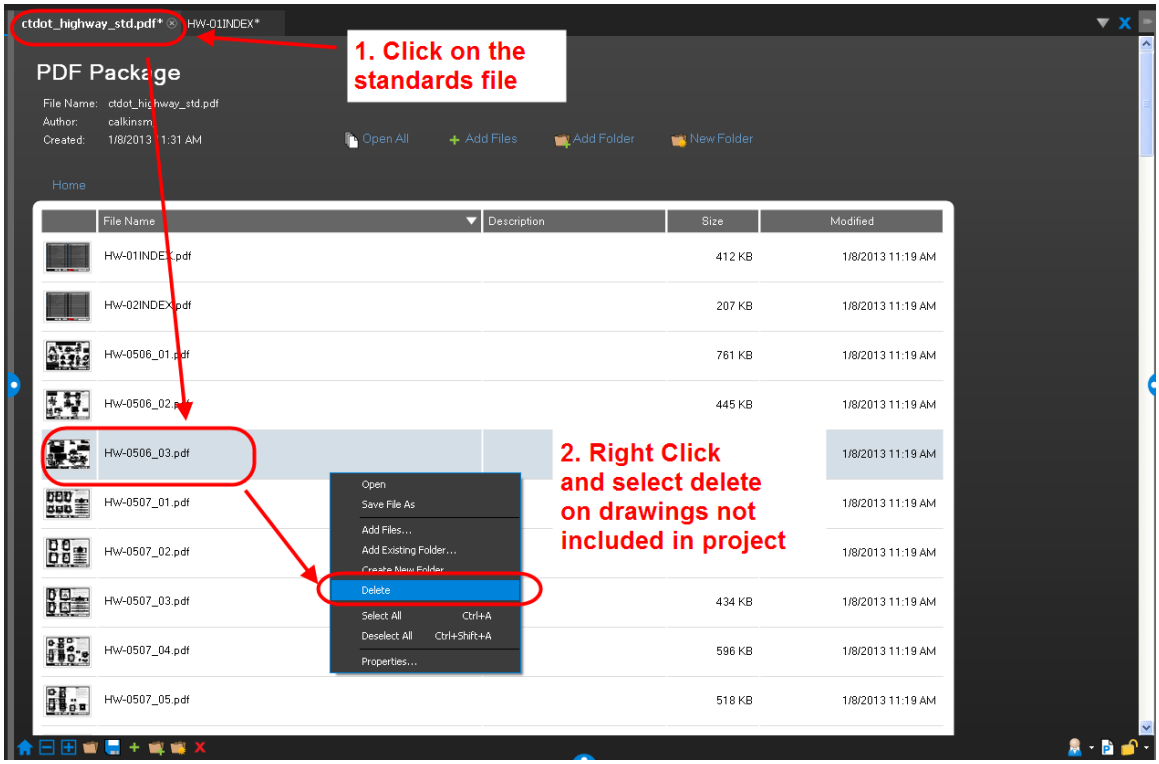
3. Next open the standards from COMPASS by double clicking on it. Once it opens click on the index sheet.



4. Then enter the project number and check the standards to be included in the project.



5. Delete the standards that are not included in the project as shown below:



6. Next digitally sign all index sheets.
7. Then upload the standards into the 100_Contract Plans folder in COMPASS.

6.5. Contract Special Provisions

1. Digital Contract Special provisions shall be submitted in MS Word format. See Contract Development to access Owned Special Provisions and Instructions and Templates for Special Provisions. CSI special provisions shall be submitted in pdf format.
2. FDP and Addendum special provisions and CSI special provisions shall be submitted to CTDOT in accordance with the following:
    - The complete specification section or special provision shall be reissued when a specification section or special provision is modified. A vertical line in the right margin, to allow for quickly identifying changes or deletions made, shall appropriately mark all revisions.
    - FDP, revised FDP special provisions, Addendum special provisions, and revised addendum special provisions shall be uploaded into the 240_Contract_Development folder under the project in COMPASS.
3. Design Initiated Change Order special provisions shall be prepared and submitted in accordance with the following:
    - The complete specification section or special provision shall be reissued when a specification section or special provision is modified. A vertical line in the right margin, to allow for quickly identifying changes or deletions made, shall appropriately mark all revisions.
    - On each sheet of the revised specification, “C#” shall be placed in the bottom right corner of the footer. For example, “C1”
    - The consultant or state design Project Manager shall follow guidance for submission of DICO specifications.
    - Submission of DICO specs to be in .pdf format.
    - Stamping requirements of specs – The current guidance mentions placing the change order identifier in the bottom right of the new spec but does not mention stamping any voided or revised specs.

6.6. Estimates and Quantity Calculations

Estimates

Cost Estimates shall be prepared in accordance with the procedures detailed on this website:
Cost Estimating

Preliminary cost estimates shall be uploaded into the 310_Milestone Submissions folder under the applicable project.

Final Proposal and Federal Estimates shall be uploaded into the 240_Contract_Development folder under the applicable project.

Calendar Day estimates shall be uploaded into the 240_Contract_Development folder under the applicable project.

Quantity Calculations

Quantity Calculations shall be formatted and submitted in accordance with the following:

- Shall be native PDF whenever possible.
- Scanned pages shall be readable and have a minimum resolution of 200 dpi.
- Pages in the PDF can be any size. 8.5" x 11" is recommended.
- Shall be uploaded into the **150_Quantity Calculations folder** under the applicable project in COMPASS.

6.7. Environmental Permits

Environmental permit applications, permit approvals, and other permit documents shall be uploaded into COMPASS and formatted in accordance with the following:

Permit Need Determination Form (PNDF) and Other Permit Documents

- Shall be native PDF whenever possible.
- The PNDF shall be uploaded into the 320_Permit_Development Folder under the project in COMPASS.

Environmental Permit Applications:

- Shall be native PDF whenever possible.
- Scanned pages in the application must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- All pages, except plans sheets, shall be sized 8.5" x 11". Plan sheets can be sized up to 34" x 22".
- Before FDP, each permit application shall be in an individual multi-page PDF file. Each permit shall be then uploaded into the 320_Permit_Development Folder under the project COMPASS.
- At FDP, all approved individual multi-page PDF files shall be uploaded into the 240_Contract_Development folder under the project in COMPASS.

Environmental Permit Approval

- Shall be native PDF whenever possible.
- Scanned pages in the permit must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- Shall be sized 8.5" x 11".
- Before FDP, each permit approval shall be in an individual multi-page PDF file. Each permit shall be then uploaded into the 320_Permit_Development Folder under the project in COMPASS.
- At FDP, the individual multi-page PDF files be uploaded into the 240_Contract_Development folder under the project in COMPASS.

6.8. Contractor Submittals

See Contractor Submittals for format, submittal, and review requirements for Contractor Submittals such as Working Drawings, Shop Drawings, Product Data Sheets, RFIs, and RFCs.

6.9. Engineering Reports

Hydraulic, Scour, Floodway, and Final Drainage reports: Shall be formatted in accordance with the following:

- Shall be native PDF whenever possible.
- Scanned sheets in the reports must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- All sheets except plans sheets shall be sized 8.5" x 11". Plan sheets can be sized up to 34" x 22".
- Shall be digitally signed and watermarked.
- Any data files that must accompany the PDF report shall be uploaded into COMPASS in a zipped folder.
- The reports and zipped folder for any data files shall be submitted into the 130_Engineering_Reports folder under the applicable project.
- The final status shall also be applied.
- Preliminary reports shall be uploaded into the 310_Milestone_Submissions folder in COMPASS.

Task 110, Task 220, Underground Storage Tank System Closure Reports: Shall be formatted in accordance with the following. The content of the report shall be in accordance with the Scope defined by the Division of Environmental Compliance:

- Shall be native PDF whenever possible.
- Scanned sheets in the reports must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- All sheets except plans sheets shall be sized 8.5" x 11". Plan sheets can be sized up to 34" x 22".
- Shall be digitally signed.
- These reports shall be submitted into the 130_Engineering_Reports folder under the applicable project in COMPASS.
- Preliminary reports shall be uploaded into the 310_Milestone_Submissions folder in COMPASS.

Rehabilitation Study Reports and Type Study Reports: Shall be created and formatted in accordance with the Bridge Manual:

- Final reports shall be uploaded into the 140_Project_Administration folder in COMPASS.
- Preliminary reports shall be uploaded into the 310_Milestone_Submissions folder in COMPASS.

Bridge Load Ratings: Shall be created and formatted in accordance with the Bridge Load Rating Manual:

- Final load ratings shall be digitally signed.
- Final reports shall be uploaded into the 130_Engineering_Reports folder in COMPASS.
- Preliminary reports shall be uploaded into the 310_Milestone_Submissions folder in COMPASS.

Geotechnical Reports:

- Shall be native PDF whenever possible.
- Scanned sheets in the reports must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- All sheets except plans sheets shall be sized 8.5" x 11". Plan sheets can be sized up to 34" x 22".
- These reports shall be submitted into the 130_Engineering_Reports folder under the applicable project.
- Preliminary reports shall be uploaded into the 310_Milestone_Submissions folder in COMPASS.

6.10. Project Administration and Project Correspondence Documents

Project Administration Documents

Final project administration documents shall be stored in the 140_Project_Administration folder under the project in COMPASS in accordance with the following:

- Shall be in PDF Format.
- Scanned documents must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- The document must be uploaded into COMPASS.
- Draft project administration documents can also be created and worked on in COMPASS. These files shall be located under the user's discipline the Design library in COMPASS.

Project Correspondence Documents

Project correspondence documents shall be stored in the 142_Project Administration Correspondence folder under the project in COMPASS in accordance with the following:

- Shall be in PDF Format.
- Scanned documents must have a maximum resolution of 200 dpi and a minimum of 125 dpi.
- The document must be uploaded into COMPASS.

This folder is for all final project correspondence documents. This is defined as any request memos, response memos, emails, letters, etc. and does not include any documents that are defined in the 140_Project_Administration folder. This folder shall not include any working/draft documents.

- Emails – The sender of the email is required to store a PDF of the email message in COMPASS.
- Letters
- Meeting Minutes
- Request Memos – Survey Request, Design Reviews, Support unit design.
- Response Memos – Response to the Request Memos

6.11. Project Location (Geo-Spatial Boundary or Route ID and Mileage)

The project location shall be prepared and submitted in accordance with CT Asset Tracking & Location System (ATLAS).

6.12. Design Calculations

Design Calculations for all structural elements on a project shall be formatted and submitted in accordance with the following:

- Shall be native PDF format whenever possible.
- Scanned pages shall be readable and have a minimum resolution of 125 dpi.
- Pages in the PDF can be any size. 8.5” x 11” page size is recommended.
- Shall be uploaded into the **151_Final Design Calculations folder** under the project in COMPASS.

6.13. Electronic Engineering Data (EED)

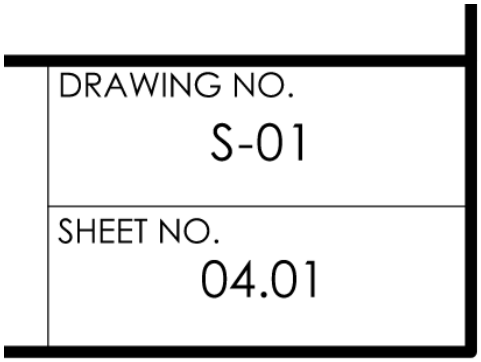
Electronic Engineering Data shall be prepared and submitted in accordance with Electronic Engineering Data (EED).

6.14. Contract Plan Drawing and Sheet Numbering

6.14.1 Drawing Number

The drawing number is used primarily for sheet to sheet referencing, typically in, but not limited to section details, section cuts, and detail callouts. Drawing numbers in digital contracts shall consist of the discipline designator followed by a hyphen and the sheet number. Examples of discipline designators are HWY, PRO, IND, XSC, S, TR, A, E, etc.

The first sheet in a discipline subset shall have “01” in the drawing number as shown below:

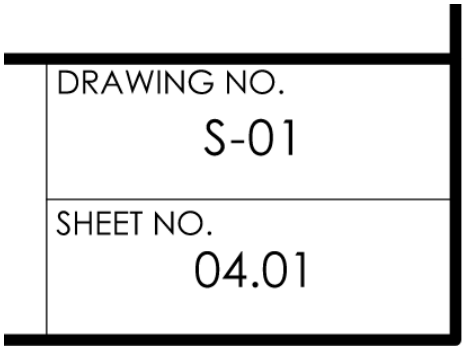


6.14.2 Final Plan Page Labels and Sheet Numbers

Page labels and sheet numbers are applied to the discipline subset after the contract plans are published to PDF.

Page labels and sheet numbers shall be managed and placed on the discipline subsets, using the number pages and header and footer tools within Bluebeam. Page labels and sheet numbers shall be applied to all submissions of contract plans.

The first sheet in every subset shall start out at 01. For example, the first sheet in the 05-Traffic subset shall be 05.01.



The page label and sheet number place holder shall be determined by the total estimated sheet count. For less than 100 sheets two place holders is adequate. For greater than or equal to 100 sheets three place holders are necessary. For subsets less than 10 sheets, two placeholders shall be used i.e., 01.01 thru 01.04 for a four-sheet subset.
The page labels and sheet numbers must be placed correctly because it is used to correctly assemble the contract plans into a properly ordered consolidated set that District Construction takes advantage of during construction of the project.

Single Volume Projects:
The page labels and sheet numbers, for single volume projects shall be a concatenation of the discipline subset number, a decimal point, and the sheet number. For example, the page labels and sheet numbers for subset "4" would be as follows; less than 100 sheets 04.01, 04.02, 04.03, etc. or Greater than 100 sheets 04.001, 04.002, 04.003 etc.
The Project Manager should determine the total number of subsets and give each discipline their corresponding subset number.

Multi Volume Projects:

For a multi volume project the page labels and sheet numbers shall be a concatenation of the volume number, a decimal point, the discipline subset number, a decimal point, and finally the sheet number. Example: Volume 2, Subset 5; 02.05.01, 02.05.02, 02.05.03.

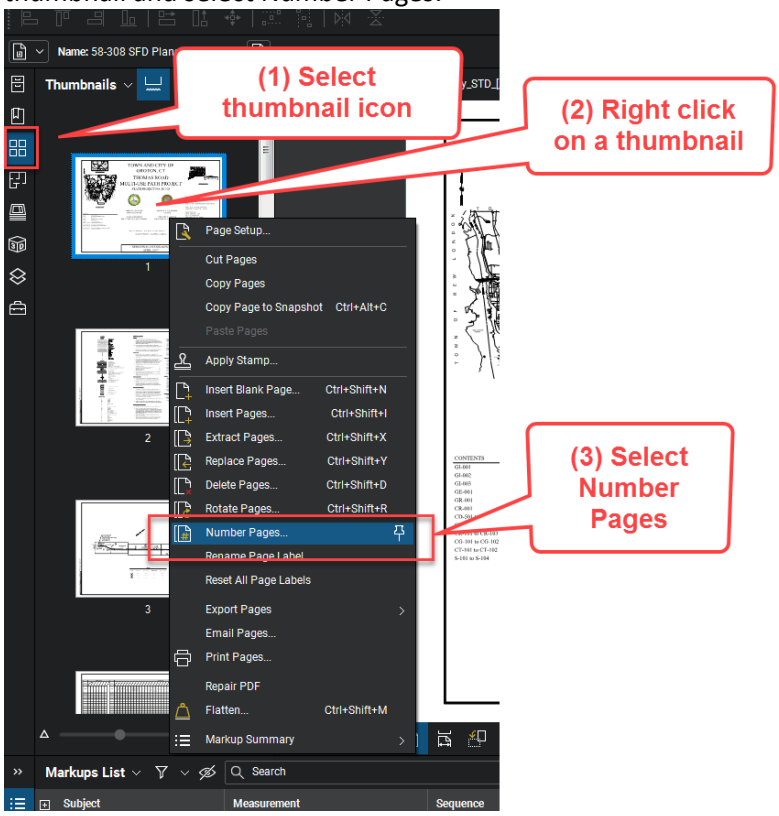
Volume numbers shall be used on large projects. They are effective because the Project Manager only must deliver to the other engineers their perspective volume numbers, allowing them to manage their subset numbers independently of the other discipline volumes and subset counts.

Subset numbers shall start at 01 for all volumes.

BLUEBEAM - Applying Page Labels and Sheet Numbers

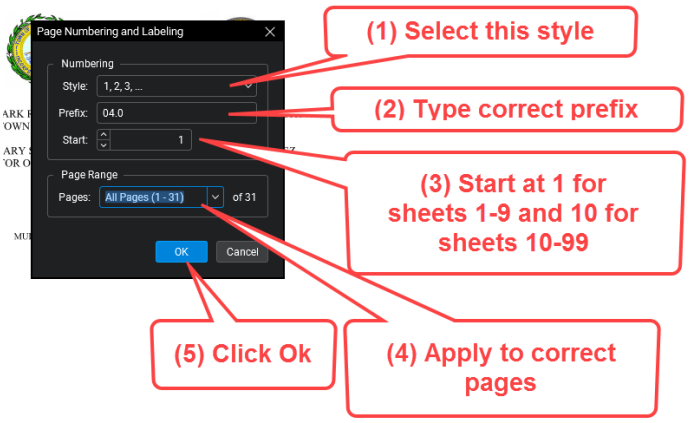
To apply page labels and sheet numbers in Bluebeam follow the figures below:

1. First page labels must be applied to the discipline subset. Go to the thumbnail pane as shown below, right click on a thumbnail and select Number Pages:

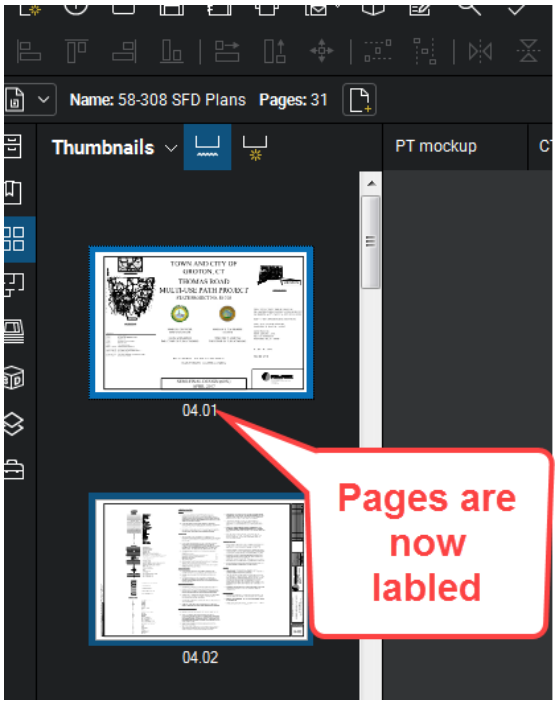


For subsets that contain less than 10 sheets the page labels can be applied to all the sheets at once. In the case where there are 10 or more sheets in the subset the following will have to be done twice to get the correct number of place holders.

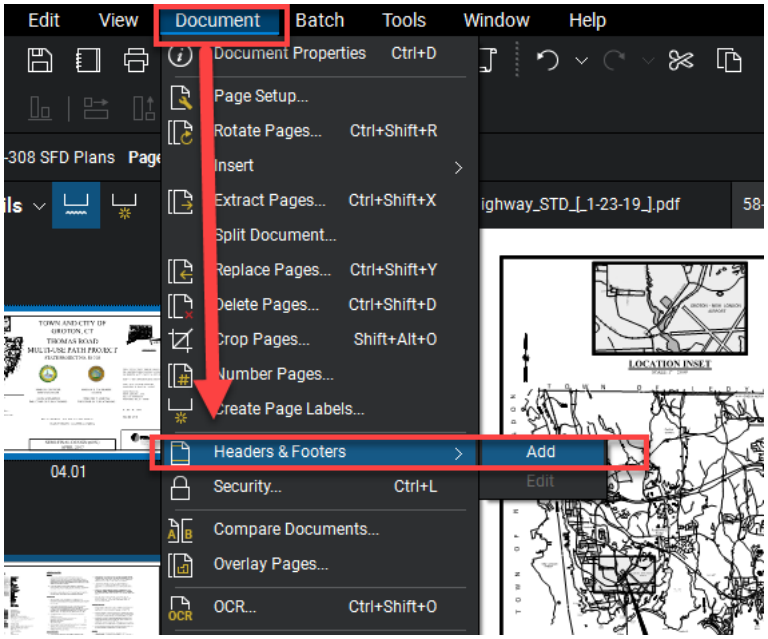
2. Select the correct style, insert correct prefix for the sheets being numbered, and apply to the correct pages. For example, if the 04 subset has 99 sheets the prefix shall be “04.0” for sheets 1-9 and “04.” For sheet 10 through 99.



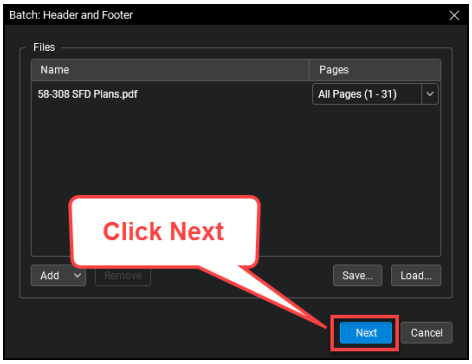
3. Now the pages will be labeled:

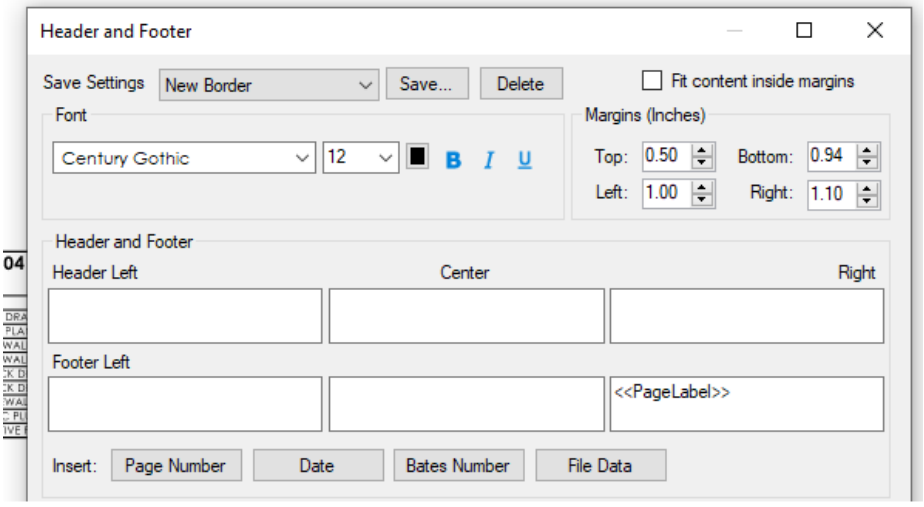


4. Next, we will apply the sheet numbers. From Bluebeam select the Document tab and then “Header & Footer”



5. Place the sheet numbers, as shown below: Note the margins may have to be adjusted as necessary. After you select the font, set the margins, and type in <<PageLabel>> as shown below. Then click save for save settings. The next time you are going to apply sheet numbers to a subset, you can simply select the saved settings. Then click OK.



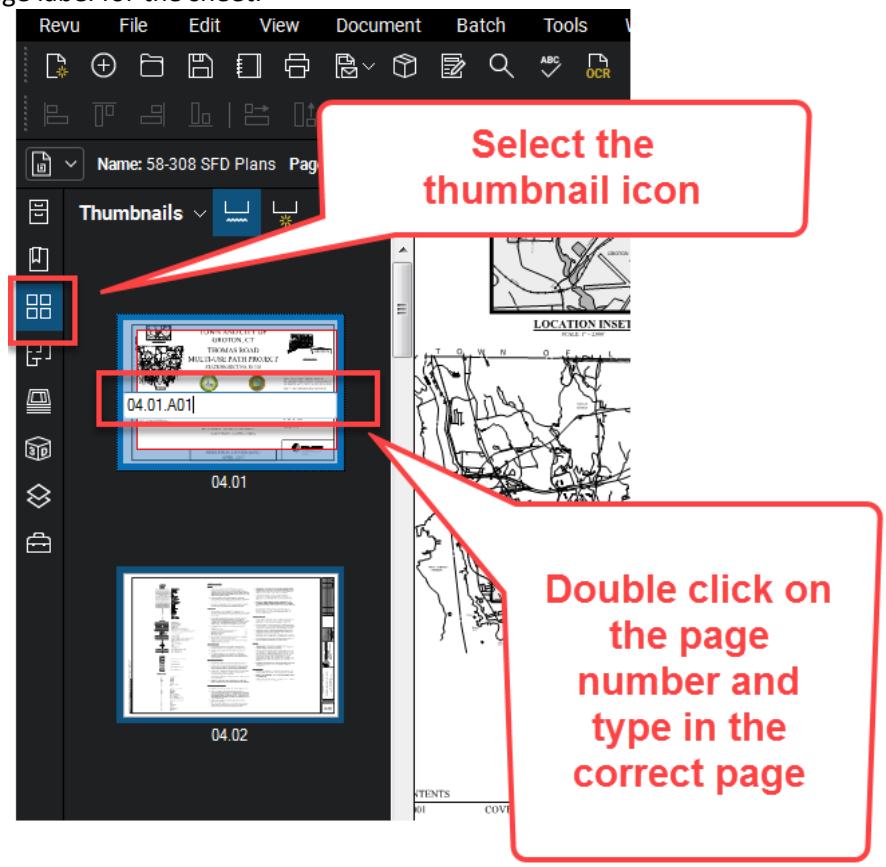


6.14.3 Addendum and Design Initiated Change Order Page Labeling and Sheet Numbers

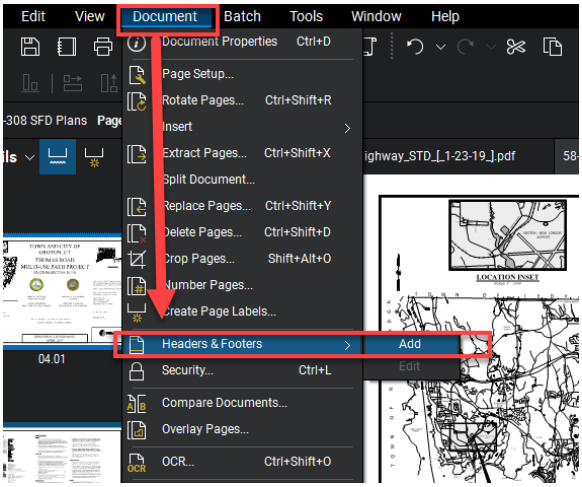
Page labels and sheet numbers for an Addendum need to have ".A##" at the end and Change Orders need to have ".C##" at the end.

To apply page labels and sheet numbers in Bluebeam follow the figures below:

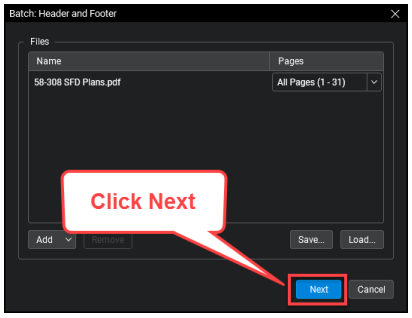
1. First page labels must be applied to each sheet in the addendum or change order. This can only be done one sheet at a time.
2. Go to the thumbnail pane as shown below and then double click on the page label. Then type in the correct page label for the sheet.

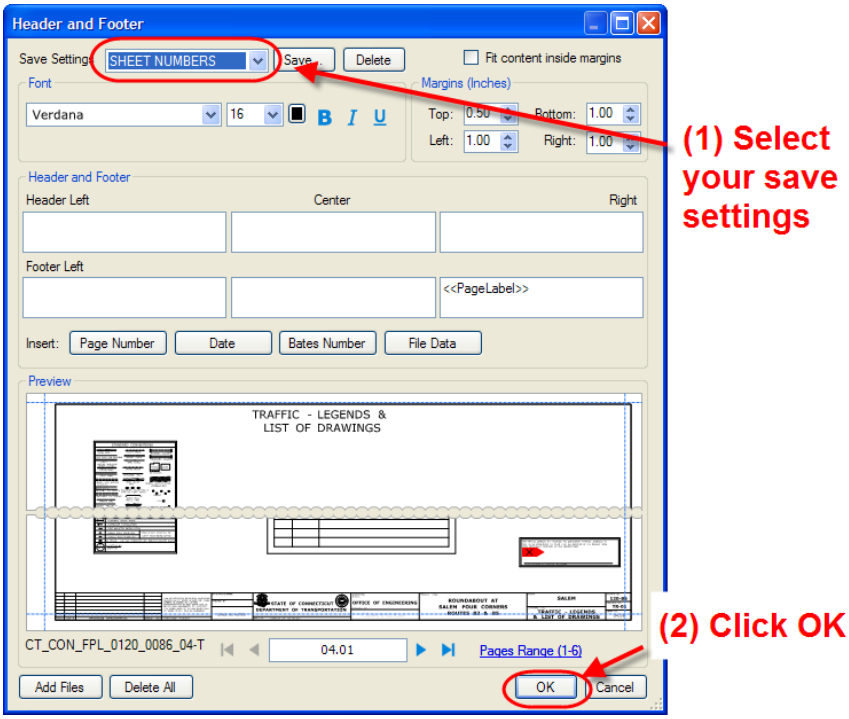


3. After all page labels have been applied, the sheet numbers can be applied. From Bluebeam select the Document tab and then "Header & Footer"



4. Select your sheet numbers saved settings from before and click OK. Note the margins and size may have to be adjusted as necessary.





6.15. Consolidating Contract Plan Discipline Subsets

The consolidation of the contract plan discipline subsets is accomplished using the Set feature in Bluebeam. This feature creates a single viewer file called a "Set File" that allows users to take multiple digitally signed files, sort them by their sheet numbers, and view them in order without combining the files.

The project manager shall create a Set file for the project at DCD that contains all the discipline subsets, DO NOT include the highway and traffic standard subsets. When an Addendum or Change Order is required for the project, the project manager shall update the set file to include the Addenda or Change Order subsets.

The following shows when and how a set file will be created and updated throughout the life of a project.

See Appendix C for general use of a set file. **Note: To use a set file the contract plans folder must be synced to the user's computer. For outside consultants that are unable to sync in COMPASS please contact mathew.calkins@ct.gov for assistance in creating the set file.**

Note: Steps 1-5 of Appendix A must be followed to create and use the Set File feature in Bluebeam.

Also, the PDF checker must be run on the subsets, and they must receive a PASS status for the Set File to sort the subsets correctly. See section 6.3 information on the PDF checker.

6.15.1 When a Set File is Created and Updated

Set File Creation

1. The project manager shall create a set file of all the discipline subsets at DCD, see Section 6.15.2

Set File Updates

2. If any Addendum subsets are required for the project, these Addendum subsets shall be added to the set file by the project manager.
3. If any Design Imitated Change Order subsets are required for the project, these Design Initiated Change Order subsets shall be added to the set file by the project manager.

See Section 6.15.3 for updating the set file.

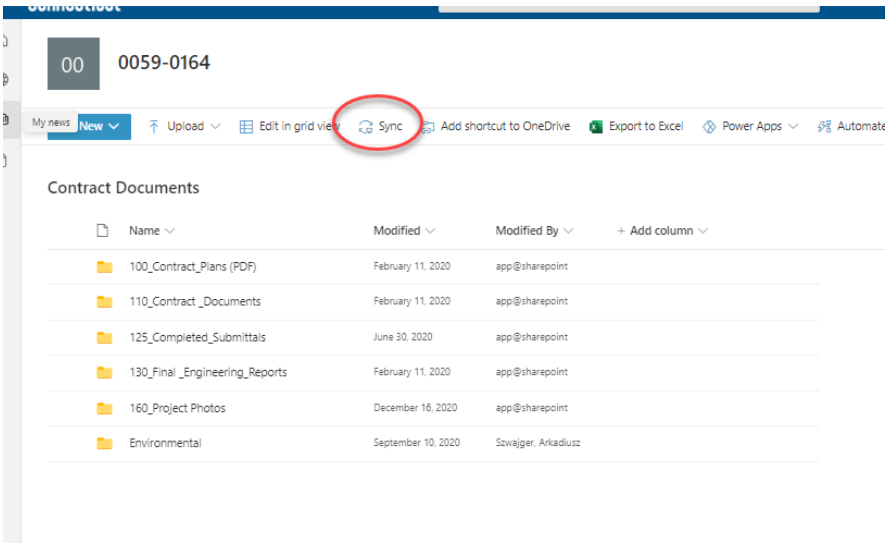
6.15.2 Creating a Set File

Note: Steps 1-5 of Appendix A must be followed to create and use the Set File feature in Bluebeam.

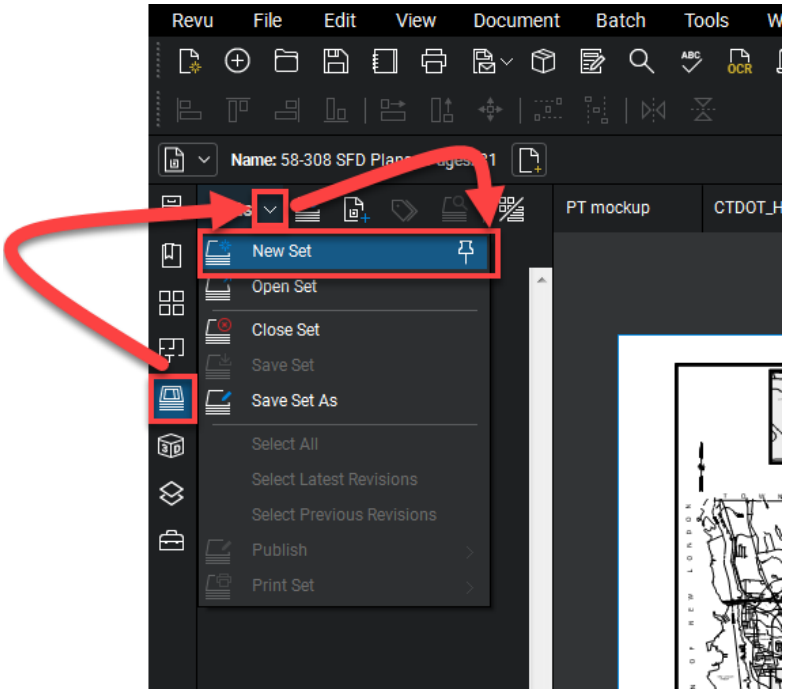
Also, the PDF checker must be run on the subsets, and they must receive a PASS status for the Set File to sort the subsets correctly. See section 6.3 information on the PDF checker.

After all the discipline subsets have been submitted into COMPASS for DCD the project manager shall create the project's set file in accordance with the following:

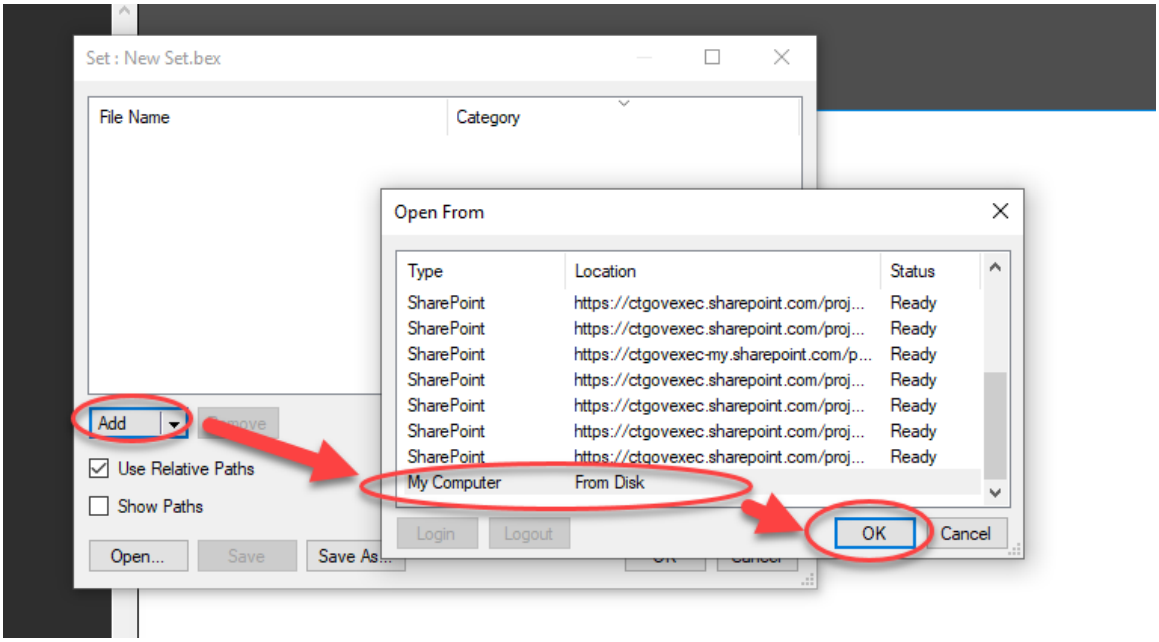
1. Sync the contract documents library from COMPASS.



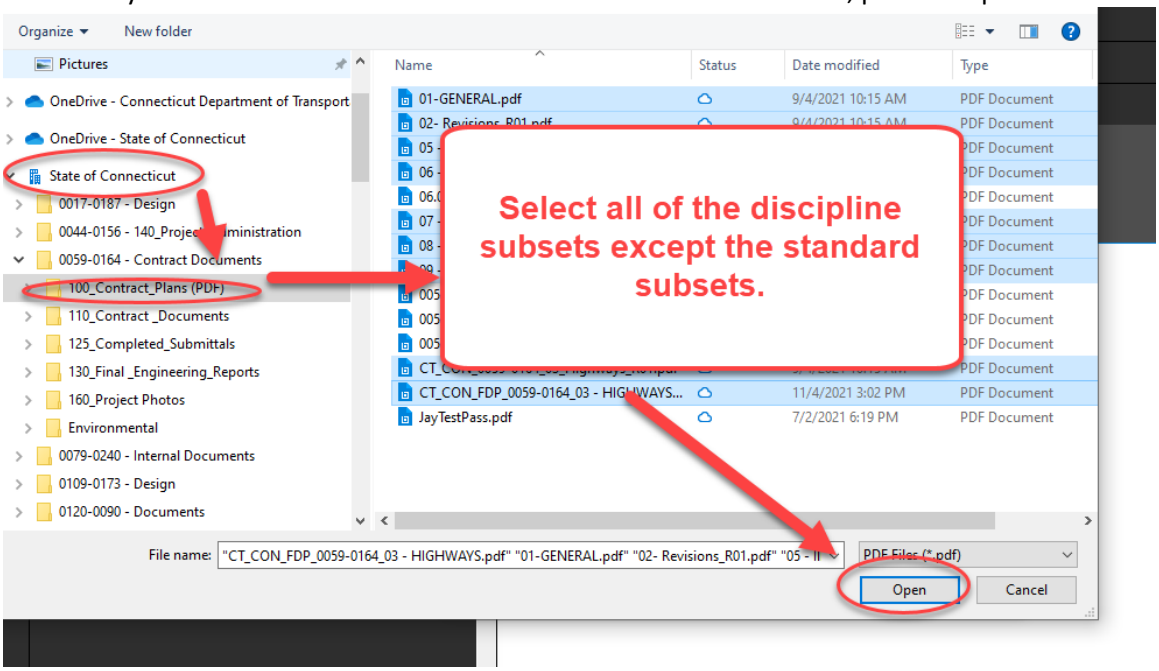
2. Launch Bluebeam from the desktop icon on your computer.
3. Next Click on the Set Icon and select New Set as shown below:



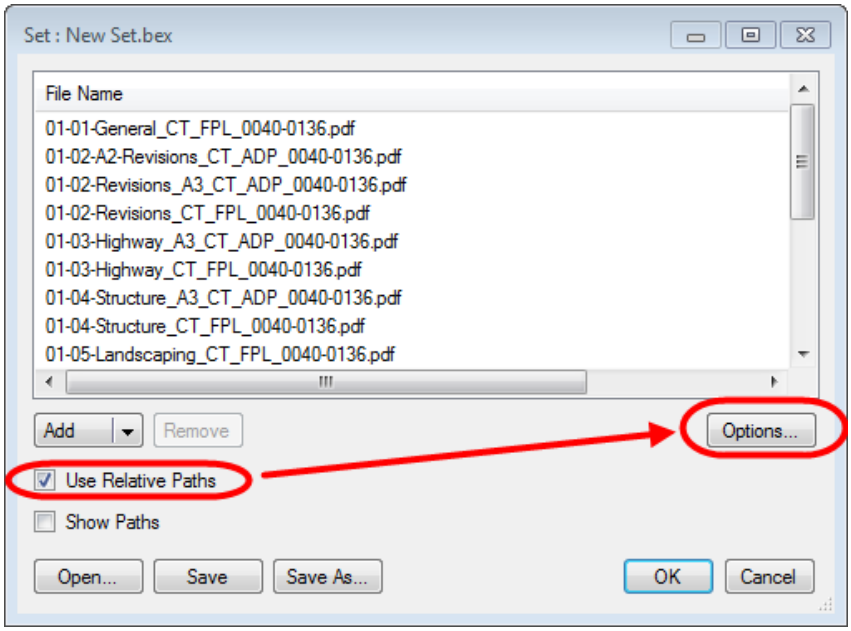
4. Then click Add and then My Computer and OK as shown below:



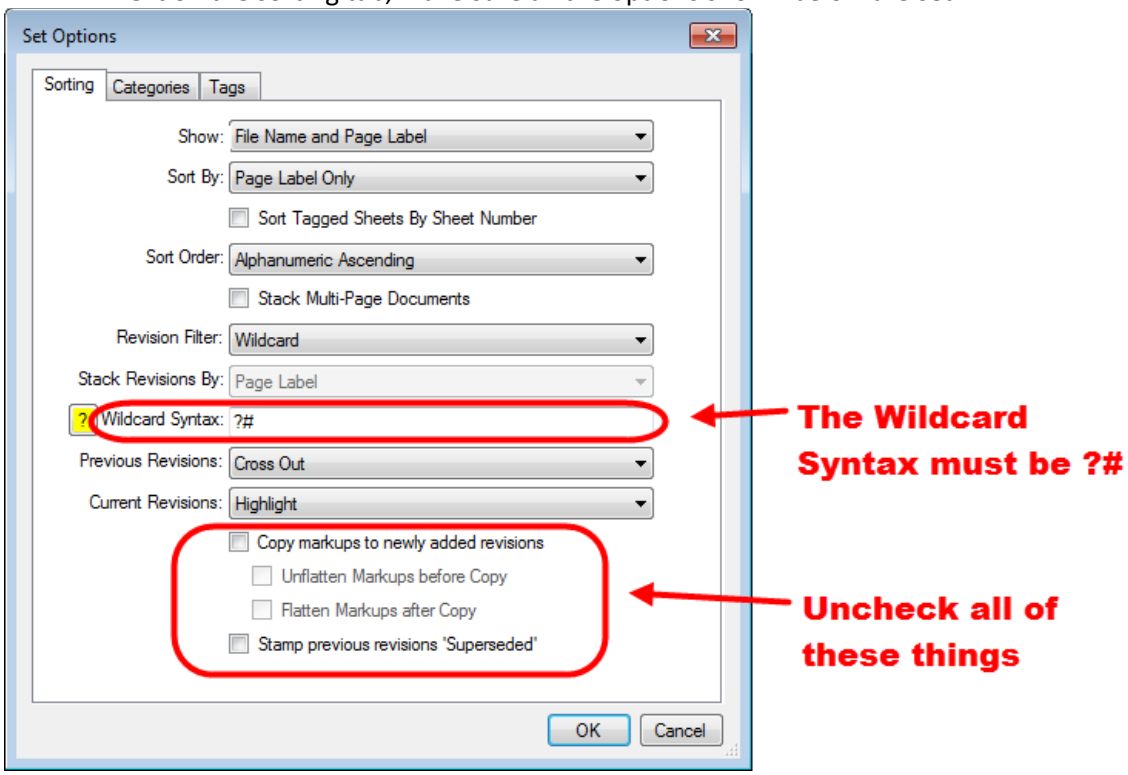
5. Next browse out to your project's 100 Contract Plans folder in the synced folders on your computer and select all plans except the standard subsets. Then click Open: After you click Open it may take a minute for Bluebeam to load all the files into the set, please be patient.



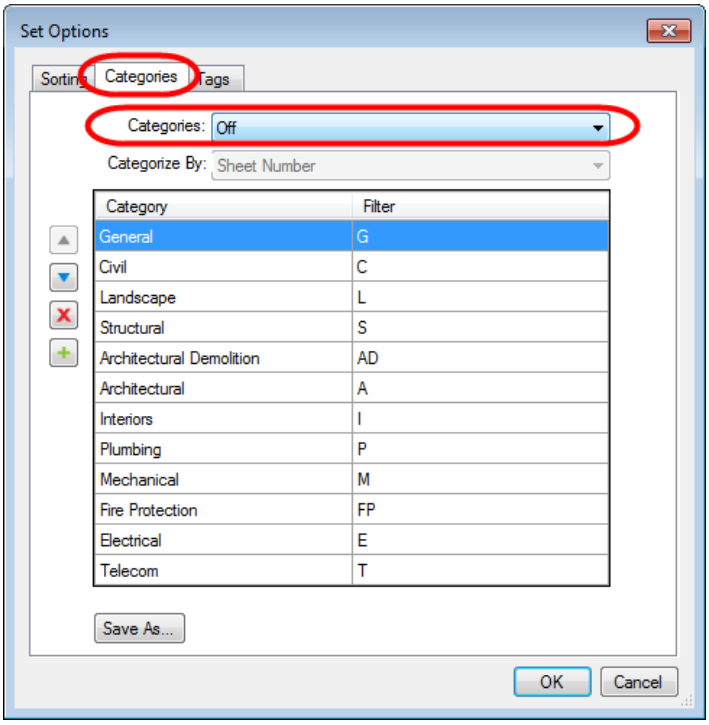
6. Next Click on Relative Paths and then click options:



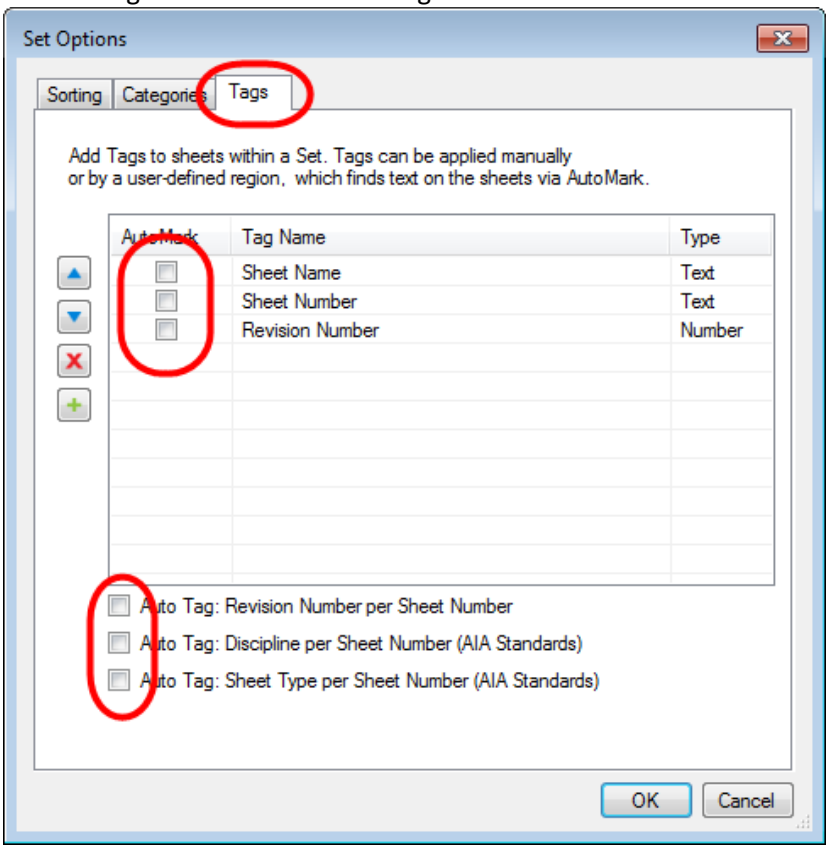
7. Next on the sorting tab, make sure all the options shown below are set:



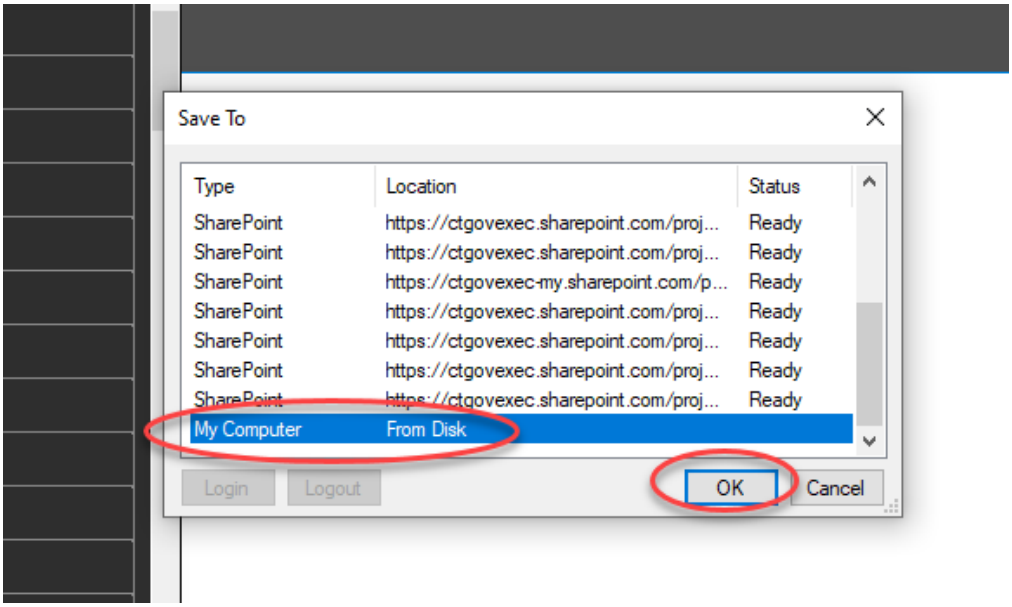
8. Then on the Categories Tab make sure the categories are turned off:



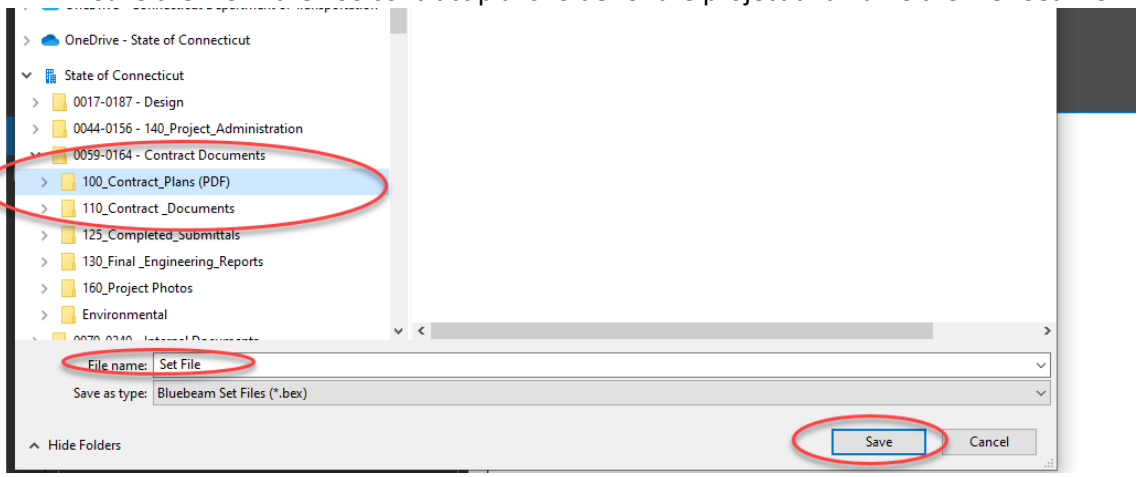
9. Then on the Tags Tab make sure nothing is checked and then click OK:



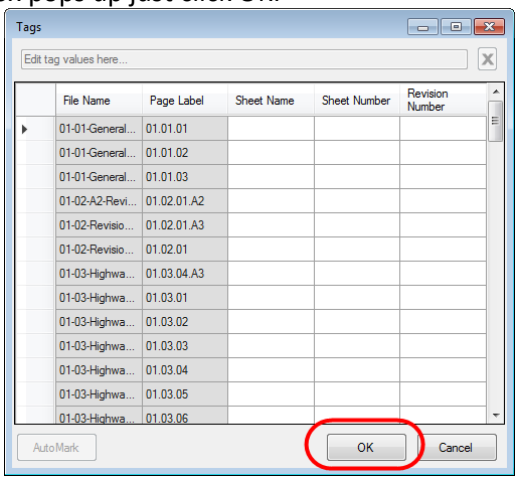
10. Next click Save, this may take a while depending on how big the project is, please be patient. When the box pops up choose My computer and click OK:



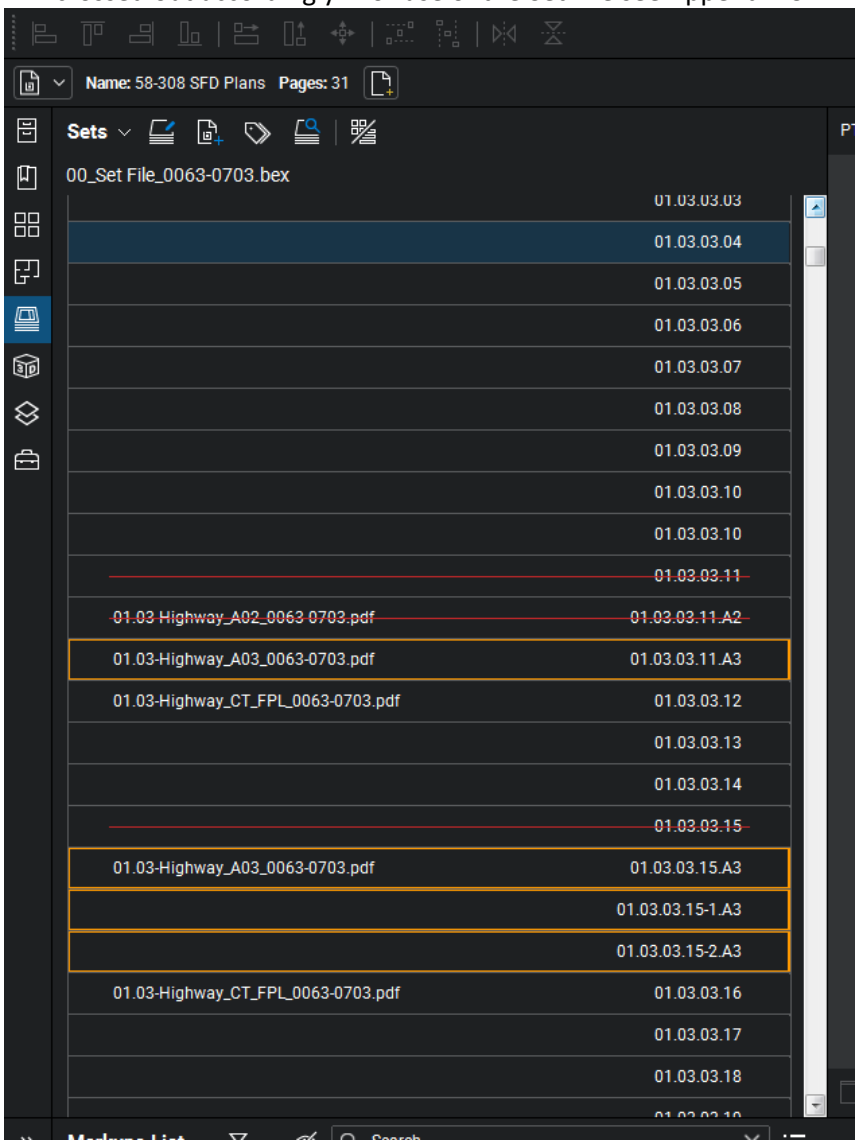
11. Save the file in the 100 contract plans folder of the project and name the file “Set File”.



12. When the Tags box pops up just click OK:



13. Now the set file has been created. As you see below all the sheets from the files are listed and crossed out accordingly. For use of the Set File see Appendix C:



6.15.3 Updating a Set File

Note: Steps 1-5 of Appendix A must be followed to create and use the Set File feature in Bluebeam.

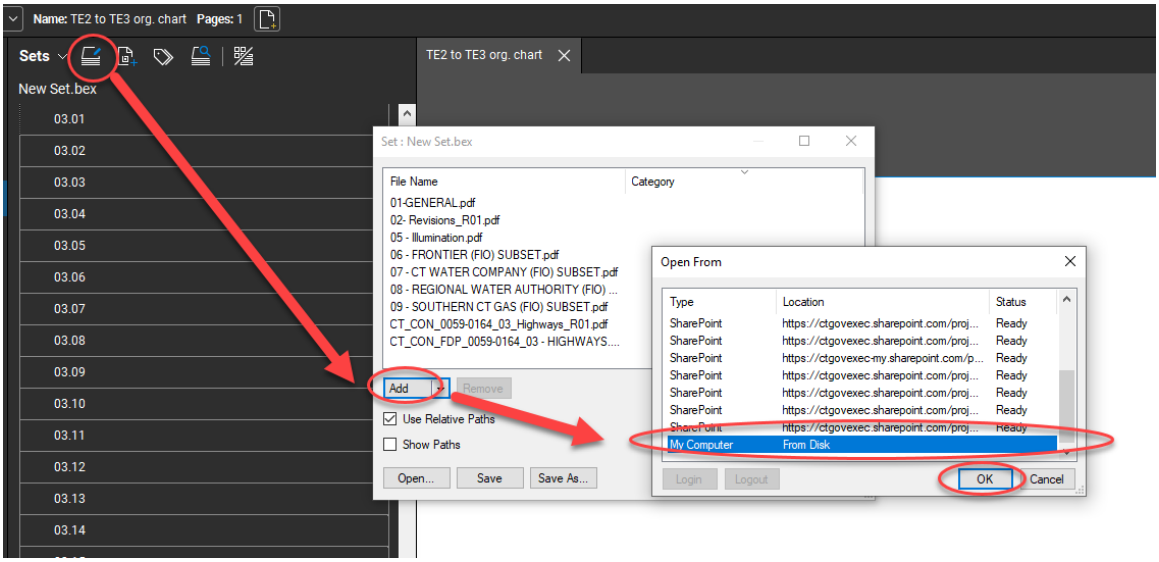
Also, the PDF checker must be run on the subsets, and they must receive a PASS status for the Set File to sort the subsets correctly. See section 6.3 information on the PDF checker.

The following will show how to update a set file. When an Addendum or Change Order is required for the project, the set file shall be updated by the project manager.

6.15.4 Adding a File to the Set File

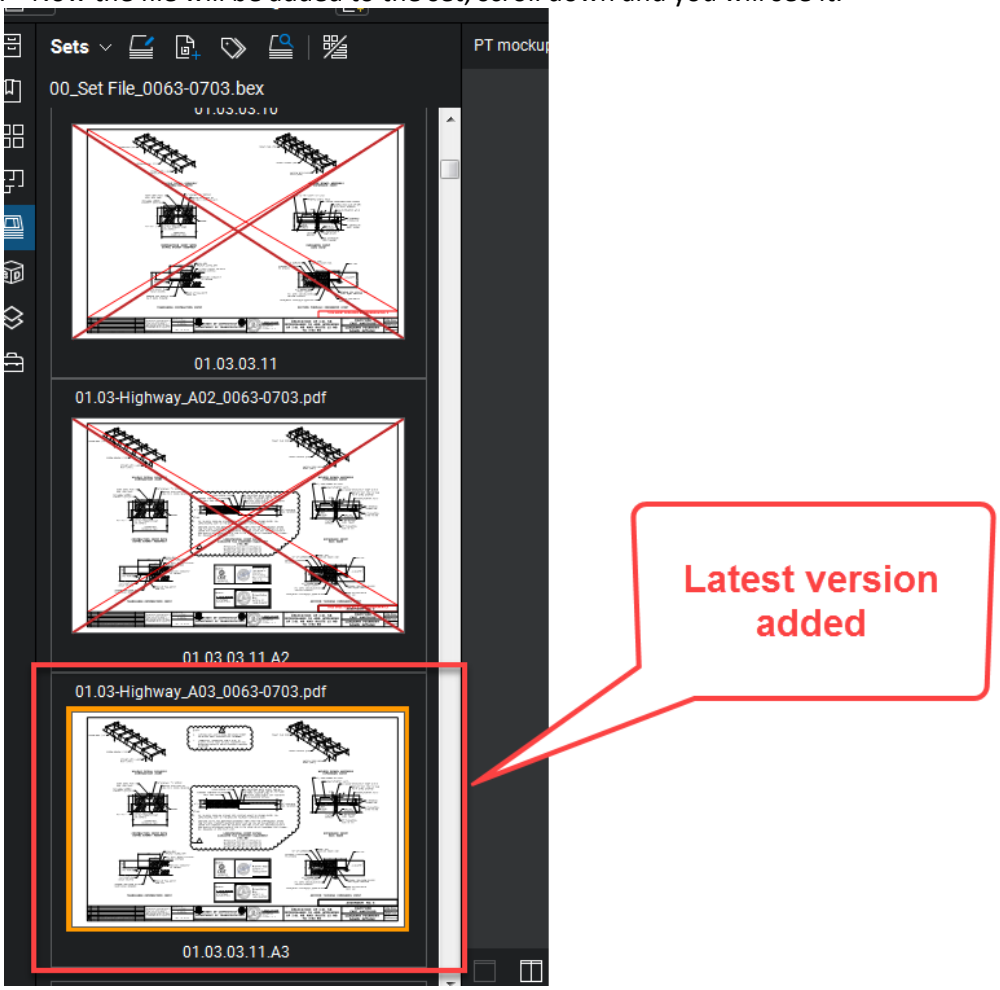
1. Double click on the set file from the sync folders on your computer. This may take a while depending on how big the project is, please be patient.

2. Next click on the Set icon and click Add as shown below:



3. Next browse out to your project and select the files to add to the set and click Open. This may take a minute to add the additional file to the set so please be patient. After it finishes click OK.

4. Now the file will be added to the set, scroll down and you will see it.

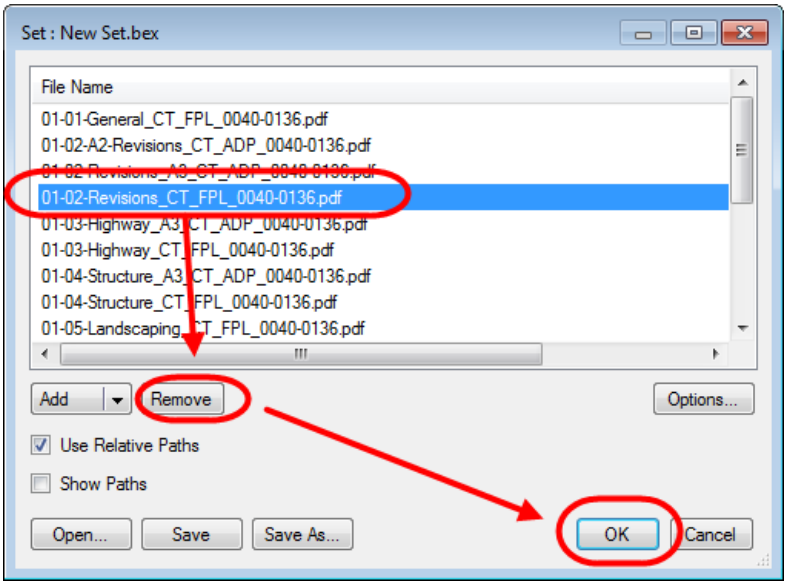


6.15.5 Deleting a File from the Set

Note: Steps 1-5 of Appendix A must be followed to create and use the Set File feature in Bluebeam.

1. Double click on the set file from the synced folders on your computer.

2. Next click on the Set Icon. Then select the file to remove from the set and click delete:



7. Digital Signatures for Contract and Other Engineering Documents

The following contract documents must be digitally signed when submitted to the Department in accordance with the following section:

- Contract Plans – FDP, Addendum, Change Orders
- Engineering Reports
    - Hydraulic Report
    - Scour Report
    - Floodway Report
    - Final Drainage Reports
    - Bridge Inspection Reports
    - Bridge Load Ratings
    - Task 110
    - Task 220
    - Underground Storage Tank System Closure Reports
- Working Drawings for Permanent and Temporary Structures – Plans and Calculations

This manual refers to digital signatures in two ways: certifying signatures and signing signatures. The Engineer of Record or document signer will always digitally sign using a visible certifying signature. If multiple signatures are required per document, the second signer or sub-engineers shall always digitally sign using a visible signing signature after the primary signer or engineer has applied his certifying signature. Certifying signatures allow controlled changes, to the now certified document. These controlled changes include allowing PDF digital comments, and the application of additional signatures. Signing signatures should always be accompanied by a note listing the sheets the signer is responsible for within a subset.

To digitally secure a PDF document, the signer(s) applies a digital signature(s) to only the first sheet of the document, regardless of the number of pages the document contains. This digital signature secures the entire document.

A graphic image of the signer's signature must be created, and shall be used for the following purposes:

- It shall be attached to the digital signature and displayed when the digital signature is applied.
- It shall be placed as a watermark on all contract plan sheets a particular engineer of record is responsible for (digitally signing for).
- It shall be placed on the first sheet by the preparer and checker of an engineering report.
- The watermark shall be placed on all contract plan sheets and all plan sheets contained in a working drawing submittal.

A digital ID must be purchased to apply a digital signature. Digital ID's must meet the special provisions of Adobe's Certified Document Services (CDS) or Adobe Approved Trusted List (AATL). The necessary hardware and software needed to apply the required digital signatures may be purchased from the vendor list provided at the following website: http://www.adobe.com/security/partners_cds.html, additional information on Adobe's CDS is also available at this website.

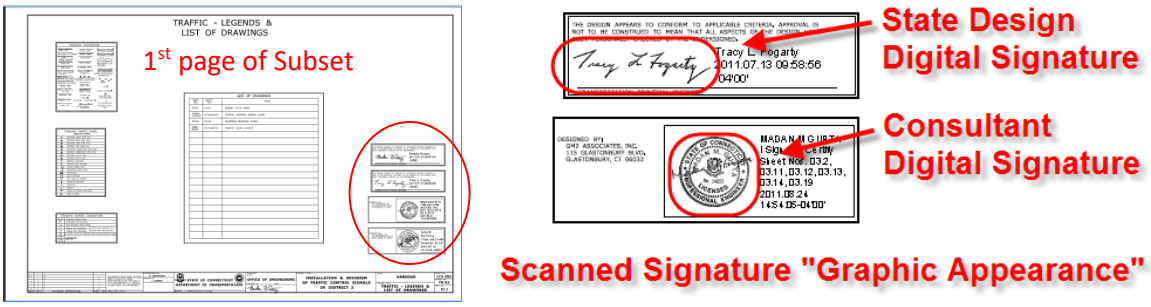
Before digitally signing any document, Bluebeam must be set up as detailed in Appendix A.

7.1. Graphic Image of Signature

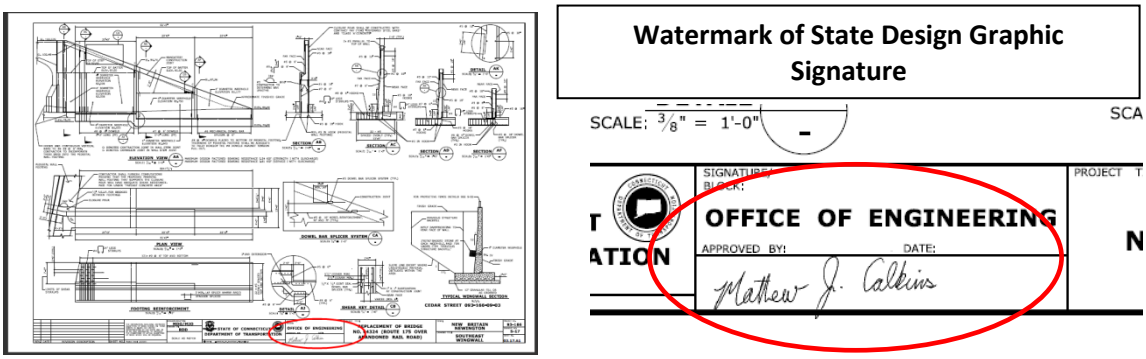
7.1.1 Contract Plans

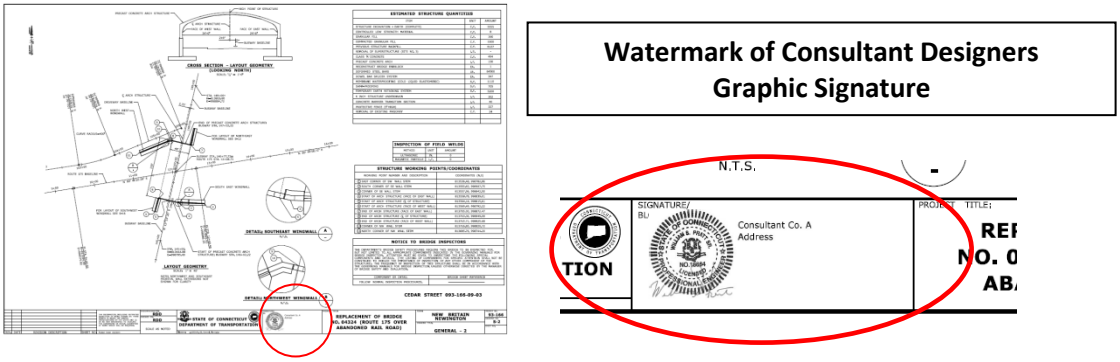
The following figures display an example of both a state designer and a consultant designer's digital signatures, and their accompanying graphic image(s) of their signature(s). See Section 7.2. for instructions on how to create a graphic image.

The consultant engineer's graphic image must contain his companies name and address, his signature, his Professional Engineers stamp, or his Professional Architecture Stamp. The state employee's graphic image must contain only his signature. See Below.



In addition to a digital signature being placed on the first sheet of any contract plan, working drawing plans, and working drawing calculations, CTDOT also requires that all subsequent pages be watermarked with a copy of the engineer of records graphic signature before they are digitally signed. Watermarks containing these signatures are applied using Bluebeam and are always placed in the border of contract plans and working drawings for permanent structures. This is to prove validation of a digital document if printed.

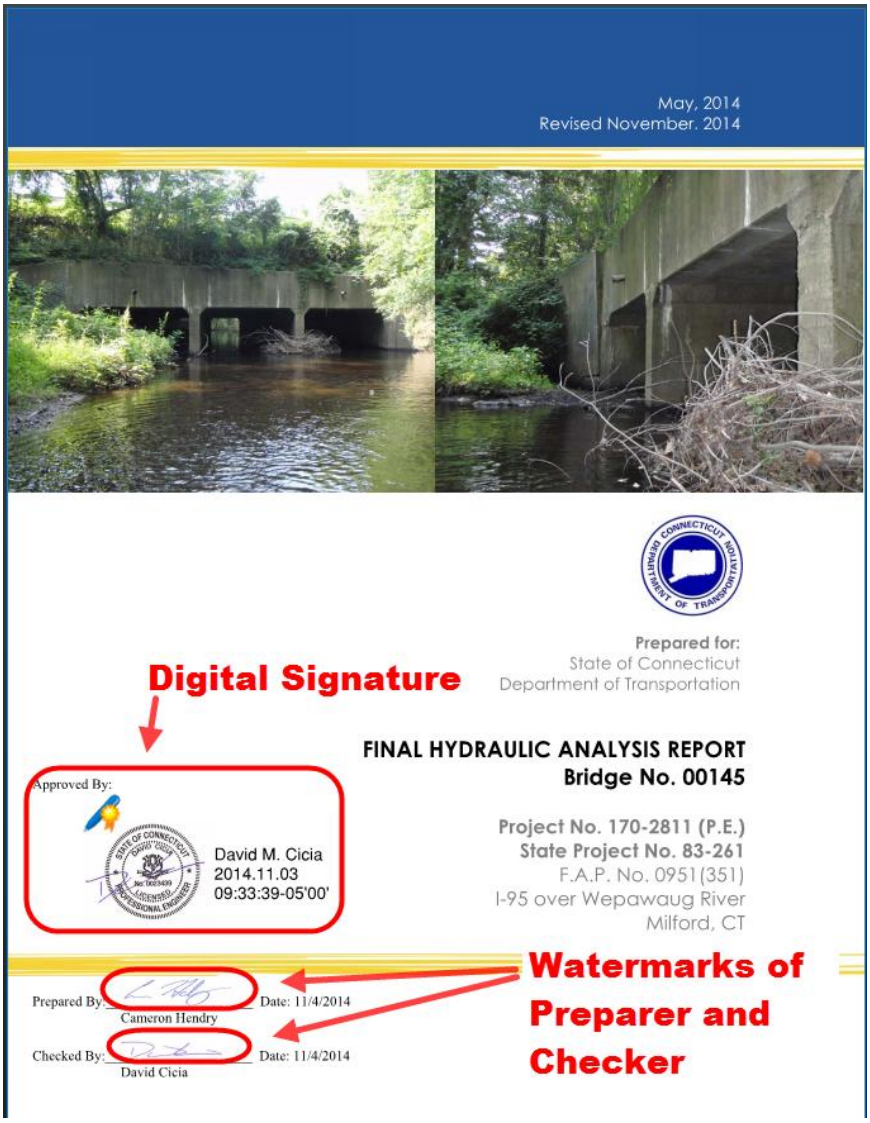




7.1.2 Engineering Reports

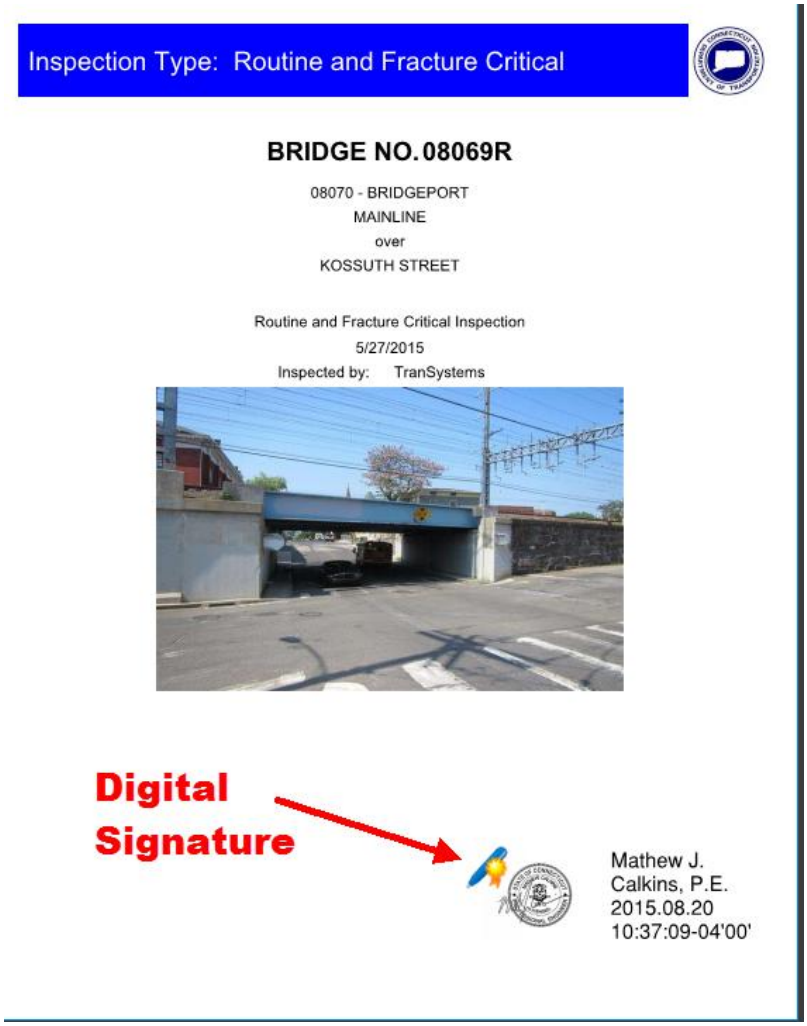
Hydraulic, Scour, Floodway, and Final Drainage Reports

The following shows the watermarks that need to be placed on the first sheet of a Hydraulic, Scour, Floodway, or Final Drainage Report by the Preparer and the Checker and the digital signature of the Approved Hydraulic Engineer. The digital signature must include the graphic image of the signer's PE stamp and signature as shown below, Section 7.2. for instructions on how to create a graphic image. These reports shall be digitally signed in accordance with Section 7.6.7



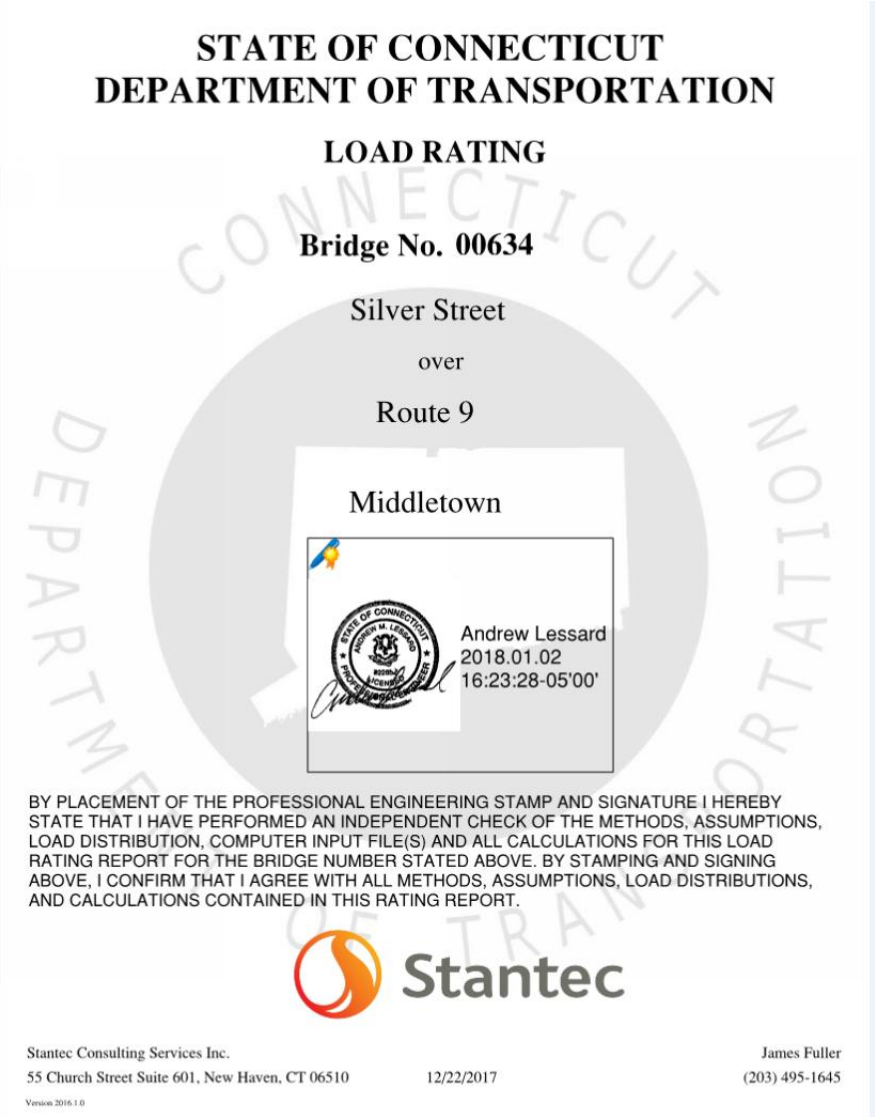
Bridge Inspection Reports

The following shows how Bridge Inspection reports are to be digitally signed in the bottom right-hand corner of the report. The digital signature must include the graphic image of the signer's PE stamp and signature as shown below, Section 7.2. for instructions on how to create a graphic image. These reports shall be digitally signed in accordance with Section 7.6.7



Bridge Load Ratings

The following shows how Bridge Load Ratings are to be digitally signed. The digital signature must include the graphic image of the signer's PE stamp and signature as shown below, Section 7.2. for instructions on how to create a graphic image. The load ratings shall be digitally signed in accordance with Section 7.6.1



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

LOAD RATING

Bridge No. 00634

Silver Street

over

Route 9

Middletown

Andrew Lessard
2018.01.02
16:23:28-05'00'

BY PLACEMENT OF THE PROFESSIONAL ENGINEERING STAMP AND SIGNATURE I HEREBY STATE THAT I HAVE PERFORMED AN INDEPENDENT CHECK OF THE METHODS, ASSUMPTIONS, LOAD DISTRIBUTION, COMPUTER INPUT FILE(S) AND ALL CALCULATIONS FOR THIS LOAD RATING REPORT FOR THE BRIDGE NUMBER STATED ABOVE. BY STAMPING AND SIGNING ABOVE, I CONFIRM THAT I AGREE WITH ALL METHODS, ASSUMPTIONS, LOAD DISTRIBUTIONS, AND CALCULATIONS CONTAINED IN THIS RATING REPORT.

Stantec

Stantec Consulting Services Inc.
55 Church Street Suite 601, New Haven, CT 06510
12/22/2017
James Fuller
(203) 495-1645

Version 2016.1.0

Environmental Compliance Reports

The digital signature for the Task 110, Task 220, and Underground Storage Tank System Closure Reports must include a graphic image of the Professional engineer's signature or a graphic image of the signer's signature where applicable, see Section 7.2. for instructions on how to create a graphic image. These reports shall be digitally signed in accordance with Section 7.6.7

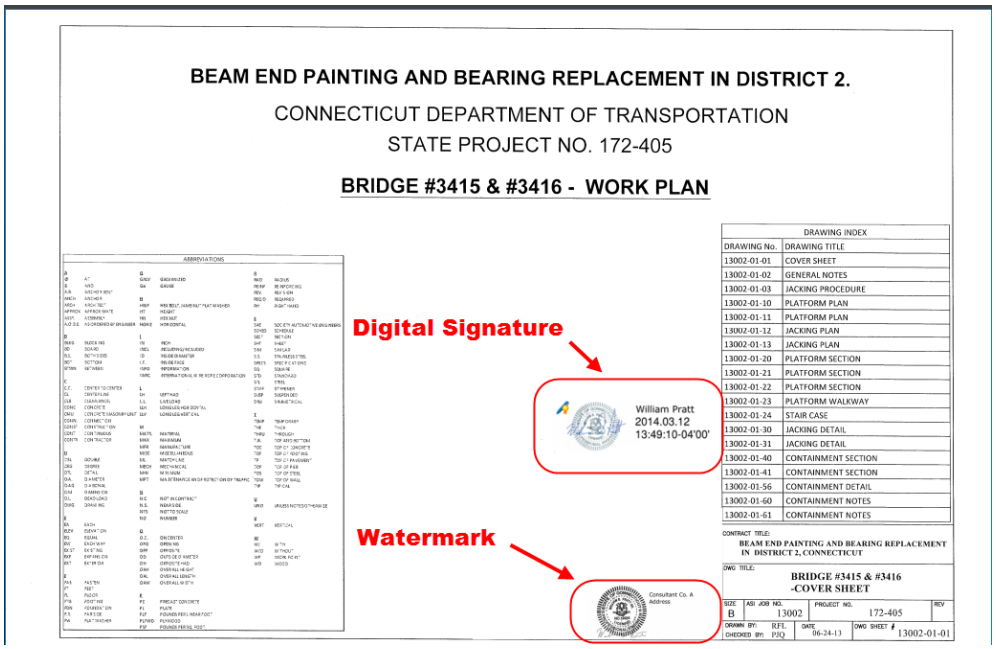
7.1.3 Working Drawings

Working Drawings for Permanent and Temporary Structures

The following shows the digital signature and Professional Engineering watermark requirements for the engineer who prepares the working drawing submittal. These types of submittals shall be digitally signed. Note: Working Drawing for Temporary Structures only require that the first sheet in the submittal be digitally signed, watermarks are not necessary. See Creating Graphic Image of Signature for instructions on how to create a graphic image.

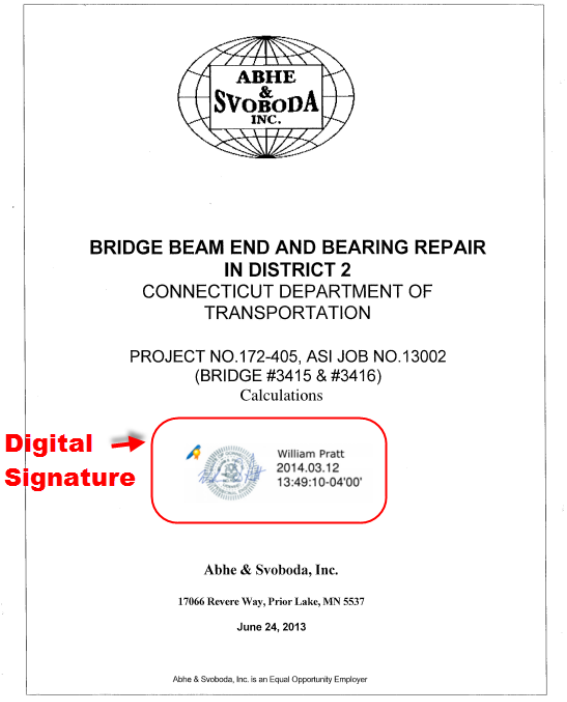
Working Drawing Plans

The first plan sheet in the submittal shall have a digital signature and a watermark placed on it as shown below. All other sheets will only have the watermark. A place in the border of the plan sheets shall have a spot for this watermark.



Working Drawing Calculations

The first sheet of the calculations shall have a digital signature as shown below:



7.1.4 Other Documents

Documents that do not require to be signed by a Professional Engineer shall have a graphic image of the signer's signature attached to their digital signature. See Creating Graphic Image of Signature for instructions on how to create a graphic image.

7.2. Creating Graphic Image of Signature

7.2.1 In House CTDOT or Non-Professional Engineering Signature:

The graphic signature will be used by CTDOT employees and signers that are not signing as a Professional Engineer.

CTDOT graphic signatures shall be created as follows:

1. Signer must sign a blank piece of paper.
2. Scan this signature.
3. Crop the image so that the image is approximately 300 pixels wide by 100 pixels high.
4. Save the images, in PDF to an area on your PC.

7.2.2 For Consultant Staff PE Stamp:

Consultant Engineers shall create two different graphic signature images: one that shall accompany their digital signatures and a different one that shall be placed as a watermark on all the plan sheets the engineer is signing for.

This section shows an example of a Professional Engineer preparing their graphic image of their signature; Architect's shall follow this section when they are preparing their digital signature.

Graphic Appearance Attached to Digital Signature

The graphic signature that accompanies the digital signature only needs to include the designer's signature and P.E. Stamp., and shall be created as follows:

1. Stamp and sign a blank piece of paper.
2. Scan this signature.
3. Crop the image to approximately 250 pixels wide by 250 pixels high.
4. Save the image, in PDF to an area on your PC or server, where you can easily access it for later use in the signature set-up procedure.

Graphic Appearance used as a Watermark

In addition to the designer's signature and P.E. Stamp, the graphic signature that is placed as a watermark shall also include the designer's company name and address, and shall be created as follows:

1. On blank paper – Print company name and address.
2. Place P.E. stamp next to company name and address.
3. Sign P.E. Stamp.
4. Scan the image created in steps 1 thru 3 above.
5. Crop the image to approximately 500 pixels wide by 250 pixels high.
6. Save the image, in PDF to an area on your PC or server, where you can easily access it for later use in the watermarking procedure.

Consultant Co. A
Address

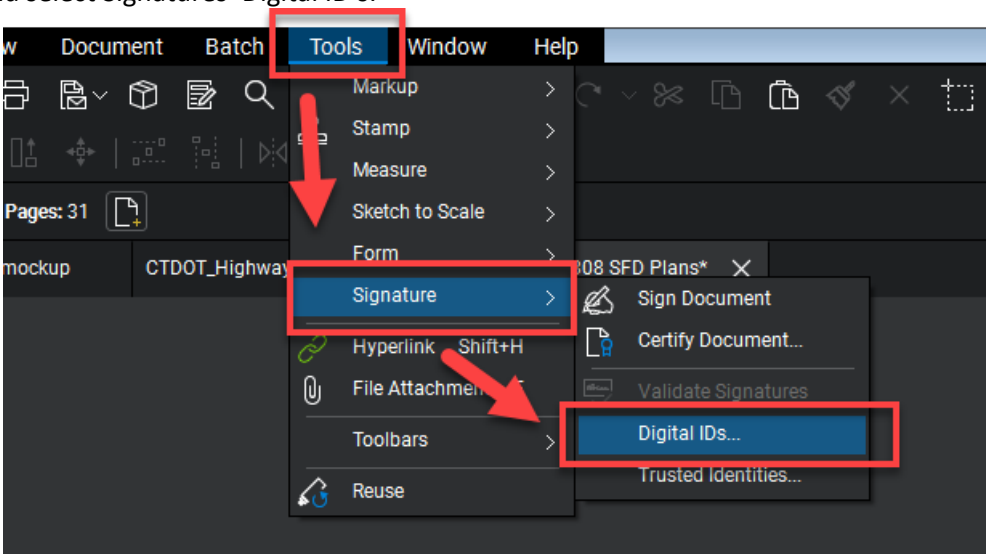
Once the graphic images have been properly created and saved, the digital signature appearance preferences must be set as follows:

7.3. Setting Digital Signature Appearance Preferences

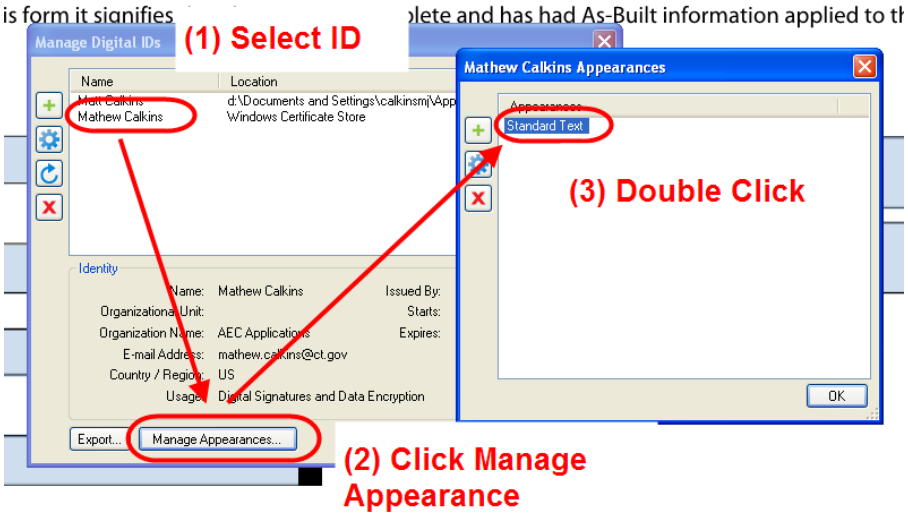
Once the graphic signatures are created the digital signature appearance settings must be defined as follows:

Bluebeam Digital Appearance

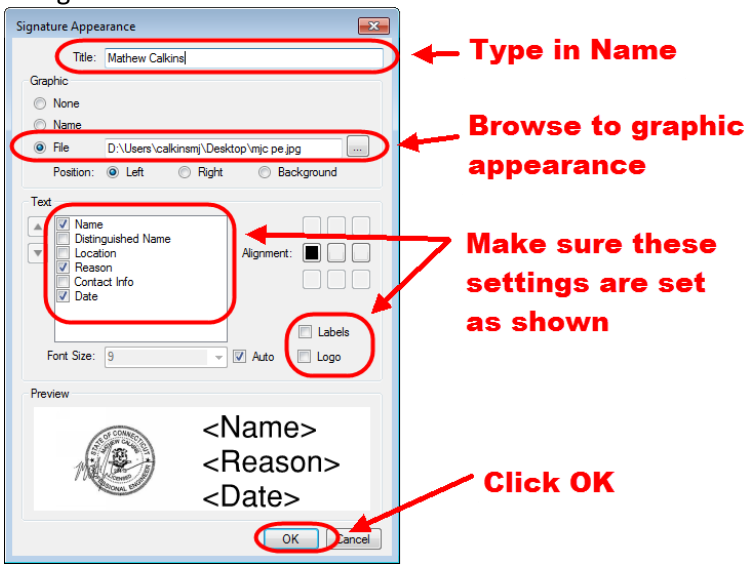
1. Make sure your CDS USB token is inserted into the computer then in Bluebeam go to the Document tab and select Signatures>Digital ID's:



2. Next click on your ID and click Manage Appearances:



3. Next follow the figure below:



4. Now the digital appearance will be saved and can be used to digitally sign.

7.4. Watermarking Plans with Graphic Image of Signature

The Engineer of Record (Principal Engineers for State Design), for each discipline, shall place a copy of their graphic signature as a watermark on each sheet of each discipline subset, or working drawing submittal (Plans and Calculations) that they are responsible for. For Engineering Reports the preparer and checker of the report shall place a copy of their graphic signature as a watermark **only on the cover** of the report.

Bluebeam - Watermarking Plans with Graphic Image of Signature (CTDOT and Consultant Designed)

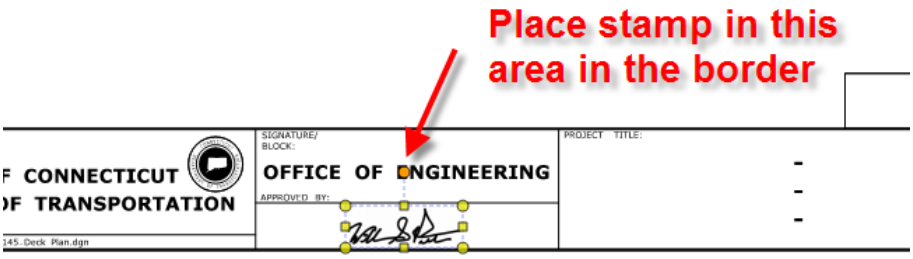
There are two ways to apply watermarks using Bluebeam, see below for options 1 and 2. The following shows an example of a CTDOT signature, but the procedure is the same for a consultant when they are placing their PE stamp in the border or on the first sheet of an engineering report.

Watermarking Workflow:

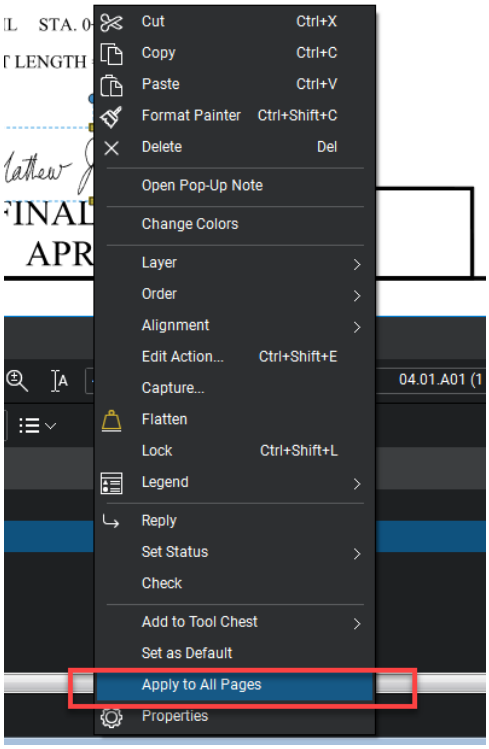
Option 1

1. The watermark in Bluebeam is placed using the stamp function. First go to the Markup tab and select Stamp and then choose your stamp. If your Principal's or PE stamp is not in the list follow Appendix A. If your stamp is in the list go to step 2.

2. Next place the stamp in the border on the first sheet.



3. Next, right click on the stamp and select "Apply to all pages". If you are watermarking an engineering report, you do not need to apply to all pages.



If more than one group must watermark this subset, browse to the pages the other group is responsible for and delete the watermark. Then they can come in a place their watermark on these sheets.

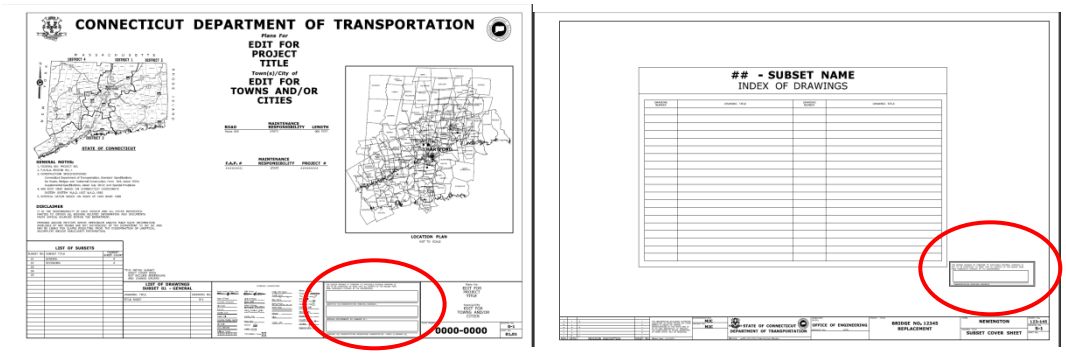
Flatten Markups

4. After the watermarks have been placed, the watermarks must be "flattened" to the PDF document. Go to Document>Flatten Markups. Use the default settings and click OK.
1. After the watermarks have been placed on the subset, the watermarks must be "flattened" to the PDF document. Go to Document>Flatten Markups. Use the default settings and click OK.

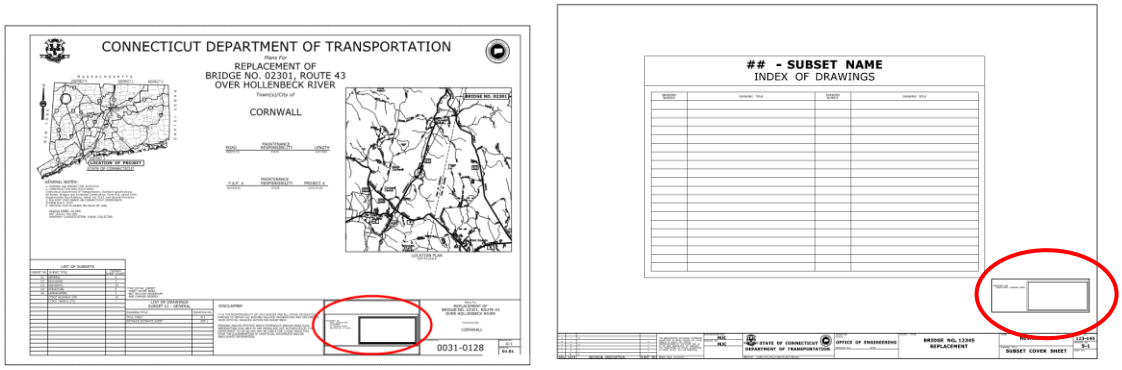
7.5. Digital Signature Fields

Contract Plans

Digital signature fields are form fields created using Bluebeam and are used to house the digital signatures. Digital Signature form fields shall be placed within the form field place holders. The form field place holders are cells that are placed in the Bentley Software file on the title sheet and the subset cover sheets and, on any Addendum, or Change Order Subset. The figure below shows a CTDOT designed project with the form field place holders (circled) on the title sheet and the discipline subset cover sheet.



The figure below shows a consultant designed project's title sheet and discipline subset cover sheet with their form field place holders.



Place holders determine the location and size of the digital signature form field.

Form field place holding cell library: CT_Digital_Sigs.zip

The digital signature place holder and form fields shall be created on the first page of each discipline subset for each required digital signature.

Note: All signature form fields need to be created for both certifying and signing signatures before any digital signatures is applied to the document.

Contractor Submittals

Contractor submittals will not be required to have a digital signature place holder.

Engineering Reports

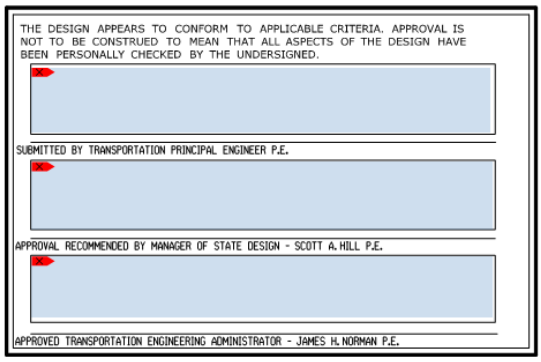
Engineering reports will not be required to have a digital signature place holder.

7.5.1 Bluebeam - Creating Digital Signature Form Fields

The following example shows how to place the (3) digital signature form fields on the 01-General title sheet of a CTDOT designed project. For a discipline subset or a consultant designed 01-General title sheet, only one digital signature form field needs to be placed.

1. To place signature fields, click X.

2. Next place three signature fields in the appropriate location and hit save as shown below:



7.6. Applying Digital Signatures

This section describes how to apply digital signatures for contract plans, engineering reports, working drawing plans, and working drawing calculations.

Contract Plans

Contract plan discipline subsets 01-General and 02-Revisions and the Highway and Traffic Standard drawing subsets have unique requirements as described in the following sections.

CTDOT projects shall have their discipline subsets digitally signed after they have been uploaded into COMPASS because the Principal Engineer will be looking in COMPASS to digitally sign documents.

Discipline subsets designed by a single engineer shall be digitally signed, by the engineer of record, using a single visible **certifying** signature, applied to the signature form field located on the first page of each subset.

Discipline subsets designed by multiple engineers shall first be digitally signed by the Engineer of Record who is responsible for the most sheets in the subsets. This engineer will apply a visible **certifying** signature in the topmost form field. The next Engineer of Record shall apply their **signing** signatures in the subsequent form fields. This Engineer shall also include a reason, when applying their digital signatures, listing the pages they are responsible for.

Digital signatures must be applied to digital signature form fields, previously.

Engineering Reports

Engineering Reports shall be digitally signed, by the Engineer of Record using a **certifying.**

7.6.1 Applying Digital Signatures to 01_General Subset (FDP and Addendum Subsets)

CTDOT DESIGNED PROJECTS:
The following procedure applies to both the 01_General subset at FDP and any 01_General_A# subset.

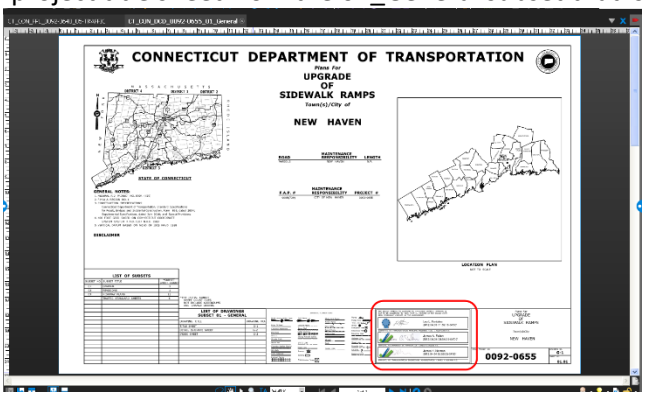
The project title sheet of the 01_General subset shall first be digitally signed by the lead discipline's Principal Engineer, using a **certifying signature**. The Principal Engineer should make sure that all three digital signature form fields (blue boxes in the signature block) are placed before signing, as these forms cannot be added after the document is digitally certified. After processing has approved the 01_general subset for Advertising, the Manager, and the Transportation Engineering Administrator shall digitally sign the same sheet directly below the principal's signature, using a **signing signature** while the plans are in the **Manager and Engineer Admin. Sign** state.

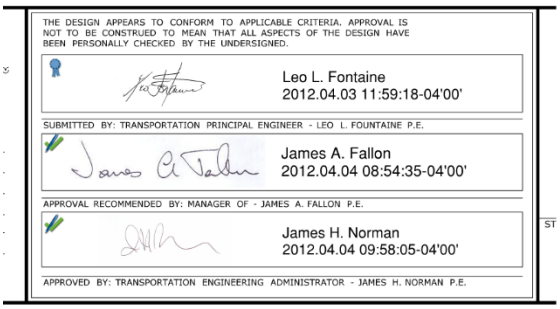
Processing shall notify the lead designer when the 01-General subset is placed in the **Manager and Engineer Admin. Sign** state. The lead designer shall then coordinate the digital signing by the Manager and Engineering Administrator of the 01_General subset. When both signatures are applied to the plans, the lead designer shall then notify processing that the 01-General subset has been signed.

See Section 7.7 Applying Digital Signature Workflows

Note: When digitally signing the 01_General subset all signers shall leave the reason code blank.

The following image shows a typical project title sheet from the 01_General subset that is digitally signed:

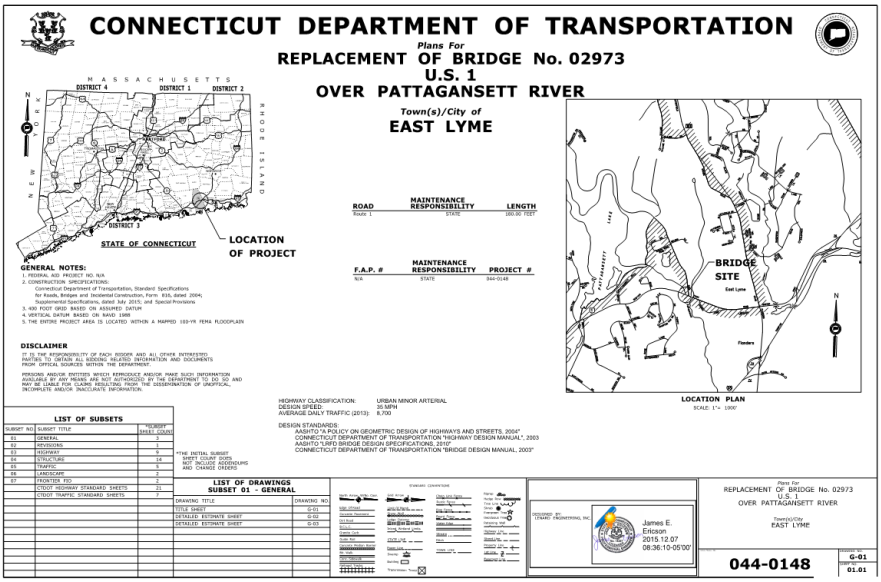




CONSULTANT DESIGNED PROJECTS:

The project title sheet of the 01_General subset shall be digitally signed by the lead consultant, using a certifying signature.

See Section 7.7 Applying Digital Signature Workflows



When more than one consultant works on a CTDOT digital project the project manager (prime consultant) shall apply a visible certifying signature to the first page of the 01_General subset. By applying this signature, the prime consultant is accepting responsibility for the entire set of digital contract plans. However, the individual subsets shall be signed by the corresponding firms.

Note: When applying certifying or signing signatures leave the reason code blank.

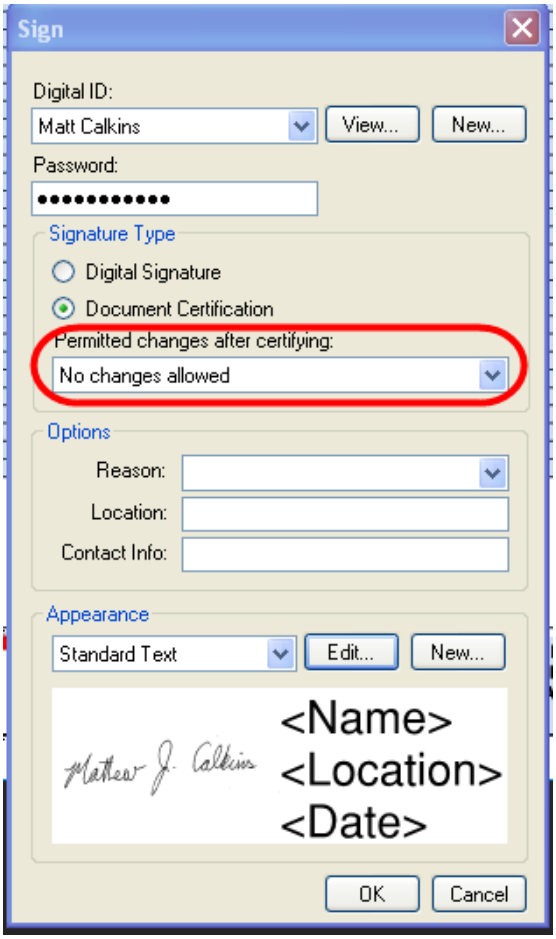
7.6.2 Applying a Digital Signatures to 02_Revisions Subset

This section applies to both CTDOT designed projects and Consultant designed projects. The figures contained in this section show a CTDOT signature, but the workflows are the same.

This subset does not need to be signed at FDP. This subset must be signed when the sheet is filled out for an Addendum or design-initiated change order, whichever comes first.

The first index of revision sheet(s) located in the 02_Revisions subset shall be digitally signed by the lead designer, using a certifying signature.

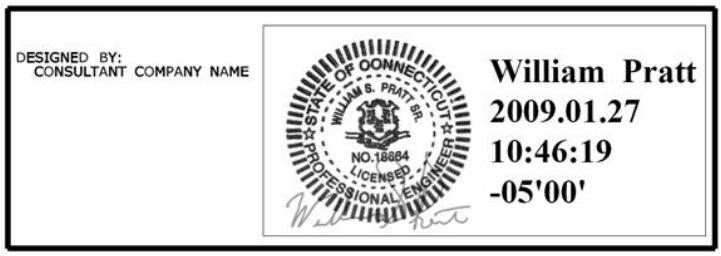
1. The lead designer shall apply a **certifying signature** as described in Section 7.7 Applying Digital Signature Workflows with the following **EXCEPTION**: **t**he option “No Changes Allowed” must be selected to eliminate unauthorized changes after certifying the document. See the figure below:



7.6.3 All Other Discipline Subsets - Single Signature

This section applies to both CTDOT designed projects and Consultant designed projects. The figures contained in this section show a consultant signature, but the workflow is the same.

Each discipline subset shall be digitally signed with a visible certifying signature, by ONLY the responsible design engineer. As shown below.



7.6.4 Standard Drawing Subsets – Single Signature

This section applies to both CTDOT designed projects and Consultant designed projects. The figures contained in this section show a consultant signature, but the workflow is the same.

Only the standard drawing subset index sheets, Highways and Traffic Standard Drawings, need to be digitally signed with a visible certifying signature, by the responsible design engineer that submits the subset to COMPASS. For example, in the case where the Traffic unit is submitting a Highway standards subset, the

Traffic Principal Engineer is responsible for digitally signing the index sheets, not the Highway Principal Engineer.

7.6.5 All Other Discipline Subsets – Multi-Signatures

This section applies to both CTDOT designed projects and Consultant designed projects. The figures contained in this section show a consultant signature, but the workflow is the same for CTDOT designed projects.

Multiple signatures per a single subset are required where two or more disciplines/firms are responsible for one subset.

The lead designer that is responsible for most of the pages within a discipline subset shall digitally sign the subset using a certifying signature and leave the reason code blank.
Once certified by the subset lead, the remaining designers(s) shall digitally sign the same subset using a signing signature and complete the reason code with a note stating which pages, contained in this subset, that they are responsible for. See table 2-1 below:

Designer	Certify or Sign	Responsible Sheet Numbers	Reason Code
Lead Designer	Certify		
Sub-Designer 1	Sign	03.78 Thru 03.88	I am Signing for Sheet Nos. 03.78 thru 03.88
Sub-Designer 2 – etc.	Sign	03.88 Thru 03.98	I am Signing for Sheet Nos. 03.88 thru 03.98

7.6.6 Working Drawings

Working drawing submittals shall be digitally certified in accordance with Single Signatures Visible Digital Signature using a Certifying signature, of this manual.

7.6.7 Engineering Reports

Engineering Reports shall be digitally signed, by the applicable person using a **certifying.** See Single Signatures for instructions on how to apply a certifying signature to an engineering report. If a report needs to be digitally signed by more than one person, the first person must apply a certifying signature as shown in Single Signatures and any subsequent signature will be a signing signature as shown in Single Signatures.

7.6.8 Bridge Load Ratings

Load Ratings shall be digitally signed, by the applicable person using a certifying signature with the No Changes Allowed option selected as shown below:

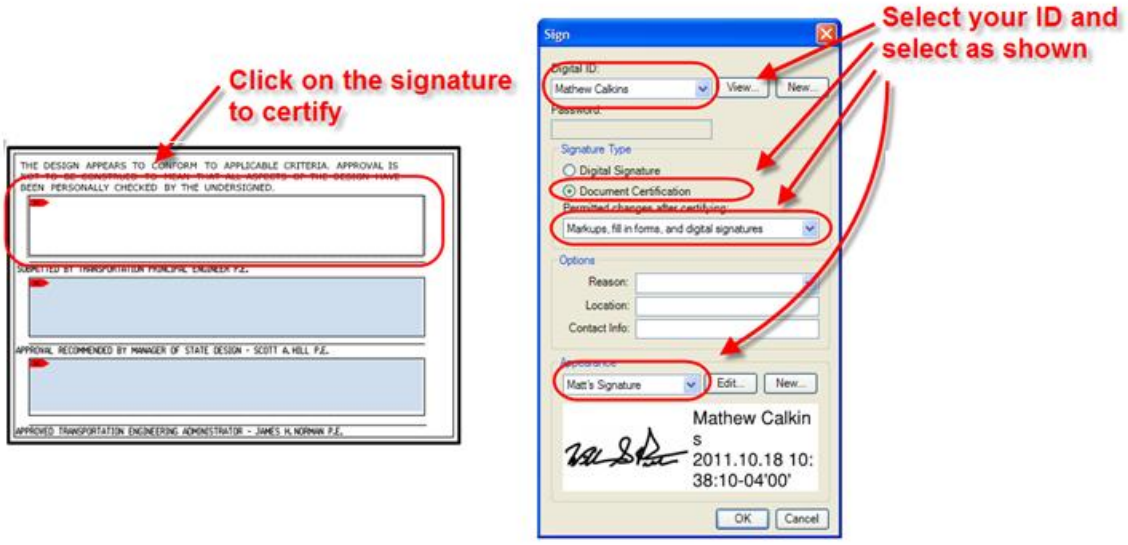
7.7. Applying Digital Signature Workflows

This section applies to both CTDOT designed projects and Consultant designed projects. See also Signing and Editing PDFs in Office 365 for instructions and related troubleshooting tips. If a signature is required by the Chief Engineer, Assistant Chief Engineer, Engineering Administrator or Construction Administrator on project documents, please see Management Signatures in COMPASS for guidance on how to assign the review in COMPASS.

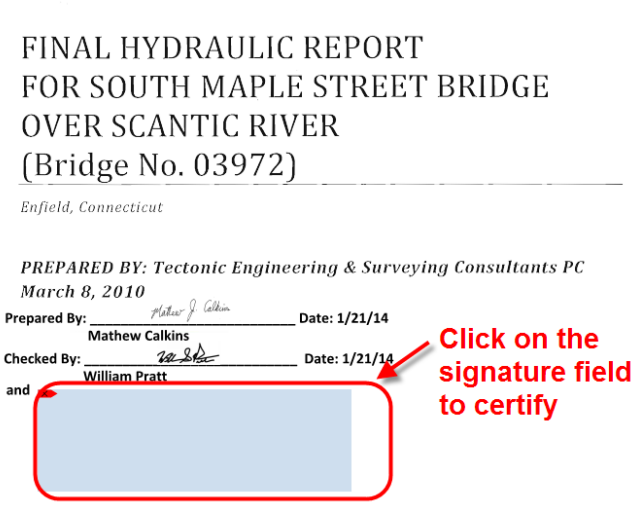
Certifying Signature:

1. Left click on the signature field and then update the settings as shown below. Examples below are for a CTDOT designed project's title sheet and the first sheet of an Engineering Report:

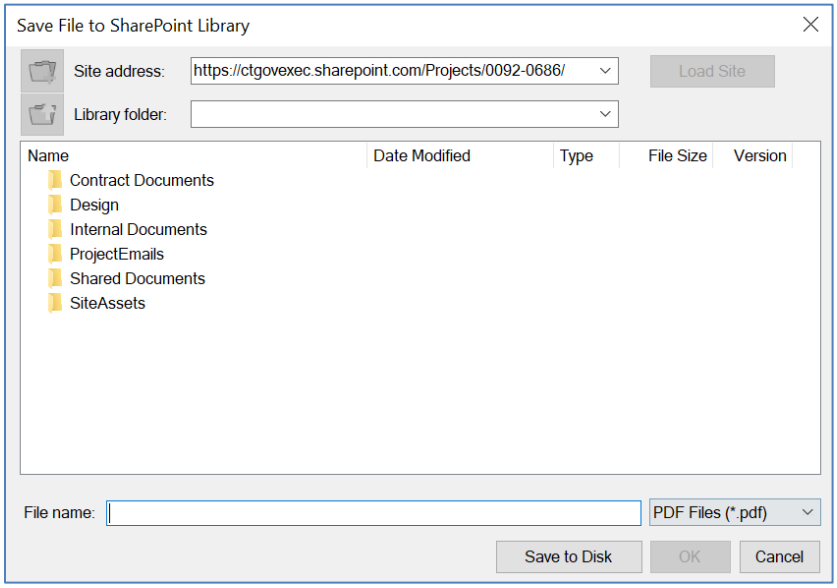
Discipline Subsets



Engineering Reports or Documents that Require (1) Digital Signature



2. Next, for documents located in COMPASS or SharePoint, save to the appropriate SharePoint Library as shown below:

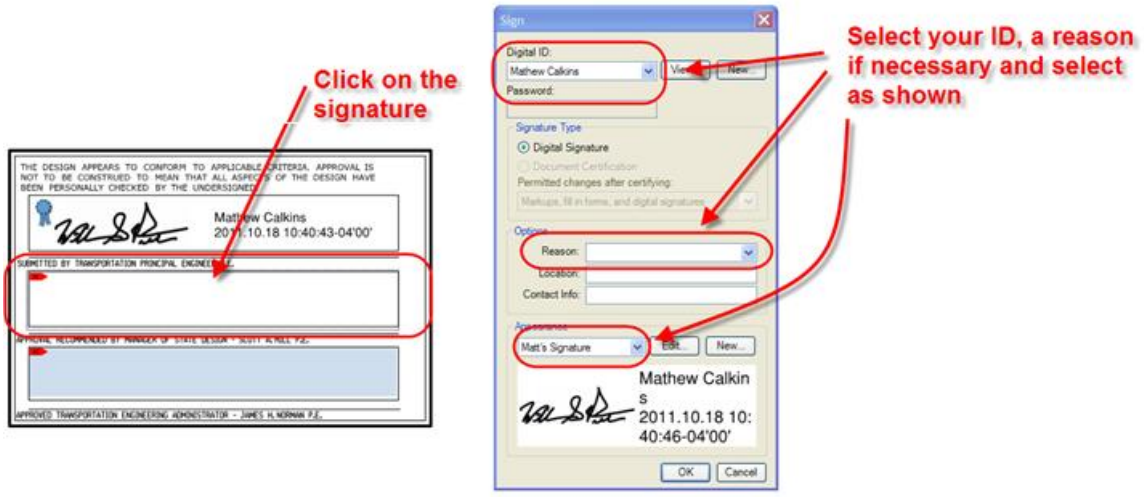


3. Then select yes to create a new version of the file in COMPASS or SharePoint.

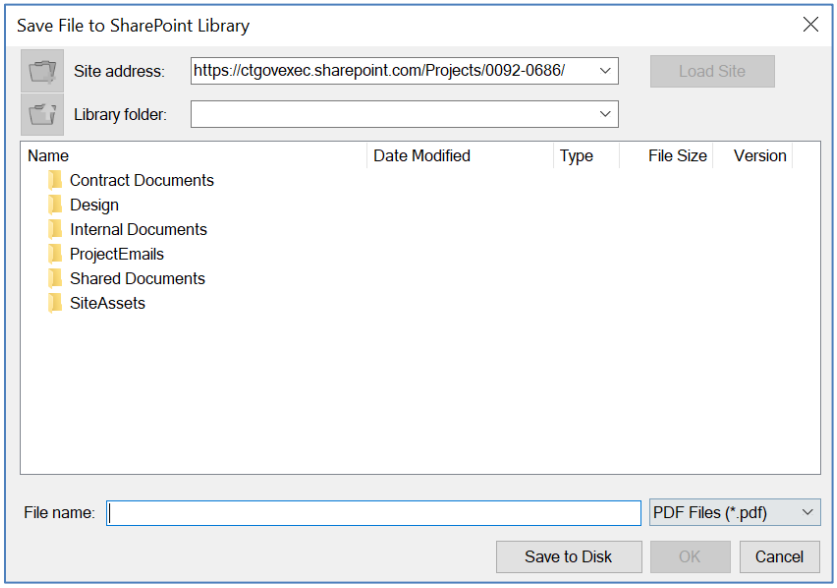
Digital Signing Signature:

Once the prime engineer applies his certifying signature the additional signing signatures can be applied by the sub-consultants as follows:

1. Left click on the signature field and then update the settings as shown below:



2. Next, for documents located in COMPASS or SharePoint, save to the appropriate SharePoint Library as shown below:



3. Then select yes to create a new version of the file in COMPASS SharePoint.

8. Submitting Documents to CTDOT

The S&T application can be used for Ball in Court (BIC) tracking of any document workflow in COMPASS. Examples of typical workflows are provided in this section.

8.1. Correspondence and Memoranda in COMPASS

Please see COMPASS Knowledge Center - Correspondence and Memoranda in COMPASS for a sample workflow for generating, reviewing and distributing project memoranda using the COMPASS Submittals/Transmittals (S&T) application.

8.2. Correspondence to Contractor

Please see COMPASS Knowledge Center - Correspondence to Contractor in COMPASS for a sample workflow for sending correspondence to Construction Contractors using the COMPASS Submittals/Transmittals (S&T) application.

8.3. Request for Work

Please see COMPASS Knowledge Center - Request for Work for a sample workflow for sending and responding to a Request for Work using the COMPASS Submittals/Transmittals (S&T) application.

8.4. PS&E Milestone Reviews in COMPASS

Please see COMPASS Knowledge Center - PS&E Milestone Reviews in COMPASS for a sample workflow for conducting a PS&E Milestone Review using the COMPASS Submittals/Transmittals (S&T) application.

8.5. FDP Workflow in COMPASS

Please see COMPASS Knowledge Center - FDP Workflow in COMPASS for how to complete an FDP workflow in COMPASS.

8.6. Stakeholder Submittals in COMPASS

Please see COMPASS Knowledge Center - Stakeholder Submittals in COMPASS for a sample workflow of stakeholder submittals in COMPASS.

8.7. Document Distribution in COMPASS

Please see COMPASS Knowledge Center - Document Distribution in COMPASS.

8.8. PDF Checker

Please see COMPASS Knowledge Center - PDF Checker in COMPASS.

8.9. S&T File and Document Grid Management

Please see COMPASS Knowledge Center - S&T File Management - Rename and Move Files and S&T Document Grid Management for details.

8.10. Reopen Complete Submittal / Transmittal Envelope

Please see COMPASS Knowledge Center - Reopen Complete Submittal/Transmittal Envelope for how to reopen completed Submittal / Transmittal Envelope.

9. Contract Plan and Special Provision Revisions (Addenda and Design Initiated Change Order)

9.1. Addenda

Contract plans that are revised or added due to addenda shall be submitted in digitally signed PDF discipline subsets containing only the changed sheets. The sheets being revised or deleted shall not be included in the Addenda submittal. The first sheet of each addendum subsets shall be digitally signed in a digital signature place holder, that is placed in Bentley Software. Addendum subsets DO NOT need an index of drawings sheet. Once digitally signed, the addendum subsets shall be submitted to CTDOT using COMPASS, as described in Addendum Plans in COMPASS.

Addenda sheets from different subsets cannot be combined and submitted as one subset, they must be submitted per their respected subsets.

The addenda subset shall have the same COMPASS label as the original final plan subset with the addition of (_A##) added to the end, where the ## equals the addenda number. See example below:

COMPASS FILE NAMES

Original Discipline Subset:	**04-Traffic**
Addenda Discipline Subset:	**04-Traffic_A01**
2nd Addenda	**04-Traffic_A02**
6th Addenda	**04-Traffic_A06**

The contract sheets (previously submitted final plans or earlier addenda plans), being revised by addenda shall NOT be modified except; the Engineer of Record shall place addenda stamp on the affected sheets. This addenda stamp crosses out the entire sheet with a red X and adds the following note: "THIS SHEET REPLACED BY ADDENDUM NO."Y"; where "Y" equals the addendum number. This stamp is placed over digital signatures; therefore, removal of the signatures is not required prior to placing the addenda stamp.

WARNING – When placing the stamps, removing the digital signature is not allowed.

The Index of Revisions Sheet(s) located in the 02-Revisions subset(s) shall be managed by the project manager for all addenda. A new subset must be updated for each addendum.

A watermark of the signer's signature; signature only for (CTDOT), or PE Stamp for (Consultants) shall be placed on all added or revised sheets.

9.1.1 Revised Plans - Addenda

Bentley Software Processes

For revised sheets the drawing numbers shall not be modified.

The areas on the sheet that are being revised shall be **clouded** and a numbered triangle shall be placed somewhere on the line of the cloud. A like numbered triangle shall be placed in the revision block of the changed sheet, accompanied by a description of the revision itself. The revision number is specific to a particular sheet and increases in consecutive order per revision and per addenda. If a sheet is changed for the first time under Addendum #2 then the sheets revision number is 1 since this is the first change. If the next

time it is changed again is under Addendum #5 the revision number becomes 2 since this is the second change to the sheet.

Note: If there are a lot of changes to a sheet and it is not possible to cloud all the changes in a clear manner, do not void out the existing sheet and create a new sheet. In these instances, the designer shall place a cloud just inside the border of the revised addendum sheet.

Note: When preparing an Addendum that will change quantities on a project that includes a "Detailed Estimate Sheet", never revise the "Detailed Estimate Sheet." A "Detailed Estimate Sheet" is never included in an addendum. Also, the "Quantities" box shown on the General Plan sheet for any structure is never to be revised.

Bluebeam Processes

A note shall be placed, in the bottom right-hand side of the border, on the replacement sheets stating, "ADDENDUM NO. "Y", where "Y" equals the addenda number. This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual.

Sheet numbers for revised plans shall be as follows:
Original Final Plan Sheet.

Original:	02.25
Addenda 1:	02.25.A1

Previous Addenda Sheet.

Original:	02.25.A2
Addenda 4:	02.25.A4

If a sheet requires further revisions by a subsequent addendum, the addendum shall be prepared, as detailed above. The previously revised sheet shall now be stamped using Bluebeam after addendum approval, see Section 7.4.

9.1.2 New Sheets - Addenda

Bentley Software Processes

Changes that require a new sheet(s) to be added to a discipline subset shall be formatted in one of two ways, as follows:

1. If the new sheet does not have to be placed in a specific location within the discipline subset, the new sheet shall be placed last, and numbered sequentially from the last sheet of the discipline subset. The total number of sheets noted on the project plans and discipline subsets stays the same. The revision block on the added sheet, shall not be filled out.

2. If the designer determines that the new sheet must go in a specific location within the discipline subset, the new sheet number shall be the number of the previous sheet followed by (-1. A#), where # is the Addendum Number. For example, if the new sheet must be placed in a discipline subset right after sheet 02.57, the new sheet shall be numbered 02.57-1. A1, if an additional sheet needs to be added, in this case it would be 02.57-2.A1. The total number of sheets noted on the project plans stays the same.

When adding a new sheet, a new drawing number is also required. As with the sheet number the drawing number of the new sheet shall be the drawing number of the previous sheet plus a dash and the sheet count. For example, if the new drawing must be placed in the project plans right after drawing number S-5, the drawing number shall be S-5-1.

Bluebeam Processes

A note shall be placed on the new sheet stating, "NEW SHEET ADDED BY ADDENDUM NO."Y", where "Y" equals the addendum number. This note shall be placed in the bottom right-hand side of the border. This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual.

Added sheet numbers, inserted NOT added to the end of Subset, shall be as follows:

Original Final Plan Sheet;

Original: 04.31
Addenda 3: 04.31-1.A3

Previous Addenda - Added Sheet.

Original: 03.24.A1
Addenda 4: 03.24-1.A4

Previous Addenda - Revised Sheet.

Original: 05.14-1.A1
Addenda 2: 05.14-1.A2

Previous Addenda - Added Sheet.

Original: 05.14-1.A1
Addenda 2: 05.14-2.A2

If adding sheets to the end of a subset, the new sheet number shall be a continuation of the previous sheet number plus .A#, where # equals the addenda number.

Original Final Plan Sheet:

Original Last Sheet: 04.31
Addenda 3: 04.32.A3

9.1.3 Adding New Subset – Addenda

The new subset shall be submitted by an Addendum and be prepared the same way as an FDP discipline subset, with the addition of an A# in the sheet numbers and a note shall be placed, in the bottom right-hand side of the border, on the sheets stating, “NEW SHEET ADDED BY ADDENDUM NO. “Y”, where “Y” equals the addenda number. This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual. The label attribute on the new subset shall contain a “_A##”. The first sheet of a new subset

to the contract will be a subset cover sheet and contain an index of drawings. Also, the DO NOT update the project title sheet in the General subset to show the addition of new subsets to the project.

9.1.4 Voiding Sheets

Sheets submitted within final design plan subsets and addenda subsets shall NOT be deleted; but shall voided by the engineer of record with an addenda stamp, using Bluebeam. This addenda stamp crosses out the entire sheet with a red X and adds the following note: "VOIDED BY ADDENDUM NO.”Y"; where "Y" equals the addendum number.

9.1.5 Addenda Special Provisions

Contract Special provisions that are revised or added due to addenda shall be submitted digitally.

9.1.6 Addendum CTDOT Standard Drawing Subsets

The designer shall prepare an addendum to a CTDOT Standard Drawing subset in accordance with the following.

The Addendum for a standard subset shall only include the added sheets, do not include all the standards for the project.

When uploading to COMPASS, add an “A##” to the end of the label attribute.

Update the 02-Revision subset to record this change.

9.2. Design Initiated Change Order (DICO)

Design Initiated Change Orders (DICO) are change order requests in which the designer alters the original contract by:

- A revision to an existing plan sheet(s) or specification(s)
- The addition of a new plan sheet(s) or specification(s)
- The deletion of an existing plan sheet(s) or specification(s)

The creation and management of DICO’s shall be as specified in this section.

Contract plans changed or added due to DICO’s shall be submitted in a digitally signed PDF discipline subset(s) containing only the added or changed sheets. The sheets being revised or deleted shall not be included in the Change Order submittal. The first sheet of each DICO subset shall be digitally signed in a digital signature place holder, that is placed in Bentley Software as described in Section 5 of this manual, DO NOT ADD a cover sheet. Once digitally signed the DICO subset(s) shall be submitted to the CTDOT using COMPASS.

The contract sheets (previously submitted final plans, addenda plans, or DICO plans), being revised by DICO shall NOT be modified except when the Engineer of record places a DICO stamp on the revised sheets. This digital DICO stamp crosses out the entire sheet with a red X and adds the following note: “THIS SHEET REPLACED BY DESIGN INITIATED CHANGE ORDER NO. “Y” where “Y” equals the Design Initiated Change Order number. This stamp is placed over digital signatures.

Warning: When placing the stamps, removing the digital signature is not allowed.

The Index of Revision Sheet(s) located in the 02-Revisions subset shall be updated by the project manager for all DICOs. A new 02-Revisions subset shall be submitted for each DICO.

A watermark of the signer's signature; signature only for CTDOT-designed plans; or PE Stamp for Consultant-designed plans shall be placed on all DICO sheets.

9.2.1 Revised Sheets – DICO

9.2.1.1 Bentley Software Processes

The areas on the sheet that are being revised shall encircled by a cloud and a numbered triangle shall be placed somewhere on the line of the cloud. A like-numbered triangle shall be placed in the revision block of the changed sheet, accompanied by a description of the revision itself. The revision number is specific to a particular sheet and is specific to the number of times a sheet is changed, including addenda changes. It starts with one and increases by one for each revision or change to the sheet. If a sheet is changed for the first time under DICO #5 then the sheets revision number is 1 since this is the first change. If the next time it is changed again is under DICO #7 the revision number becomes 2 since this is the second change to the sheet.

Details shown on the original sheet, but are no longer required, shall not be deleted but shall only be crossed out with an "X" on the revised sheet. Engineering judgment must be used to produce clear and concise information for the contractor.

If the number of changes to the sheet cannot be clouded in a clear and concise manner, the existing sheet should be voided. The new sheet is considered a revised sheet and not a new sheet to the contract and should follow section 9.2.1.2 for numbering.

9.2.1.2 Bluebeam Processes

A note shall be placed in the bottom right-hand side of the border of the replacement sheets stating, "DESIGN INITIATED CHANGE ORDER NO. "Y" where "Y" equals the Design Initiated Change Order number. This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual.

Sheet numbers for revised plans shall be as follows:

Description	**Sheet No.**
Original Final Plan Sheet	02.25
DICO 1	02.25.**C1**
Previous Addenda Sheet	02.25.A2
DICO 4	02.25.**C4**
Previous DICO 2 Sheet	02.25.C2
DICO 4	02.25.**C4**

Drawing numbers shall not be modified on revised sheets.

Approval blocks on all new sheets shall be watermarked with a signature (CTDOT) or PE Stamp (Consultant) and the first sheet of the subset shall be digitally signed.

9.2.2 New Sheets – DICO

9.2.2.1 Bentley Software Processes

Changes that require new sheet(s) to be added to a discipline subset shall be formatted in one of two ways, as follows:

1. If the new sheet does not have to be placed in a specific location within a discipline subset, the new sheet shall just be added to the end and numbered sequentially from the previous last sheet of the discipline subset. The total number of sheets noted on the project plans and discipline subsets stays the same.

2. If the designer determines that the new sheet belongs in a specific location within a discipline subset, the new sheet number shall be the number of the sheet it most closely relates to followed by (-1.C#). For example, if the new drawing should reside in the 03-Highway discipline subset right after sheet 03.57 but before sheet 03.58, the new sheet shall be numbered 03.57-1.C#.

   When adding a new sheet, a new drawing number is also required. The drawing number of the new sheet shall be the drawing number of the sheet it most closely relates to followed by (-#). For example, if the new drawing must be placed in the project plans right after drawing number HWY-10, the drawing number shall be HWY-10-1.

9.2.2.2 Bluebeam Processes

A note shall be placed on the new sheet stating, "NEW SHEET ADDED BY DESIGN INITIATED CHANGE ORDER NO. "Y". This note shall be placed in the bottom right-hand side of the border. This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual.

Added sheet numbers shall be as follows:

Description	**Sheet No.**
Original Final Plan Sheet	04.31
DICO 3	04.31**-1.C3**
Previous Addenda Sheet – Added Sheet	03.24.A1
DICO 4	03.24**-1.C4**
Previous DICO – Revised Sheet	02.45.C1
DICO 2	02.45.**C2**
Previous Addenda – Added Sheet	05.14-1A1
DICO 2	05.14**-2.C2**
Previous DICO – Added Sheet	02.45-1.C1
DICO 2	02.45**-2.C2**

If adding sheets to the end of a subset, the new sheet number shall be a continuation of the previous sheet number plus C#, where # equals the Design Initiated Change Order Request number.

Description	**Sheet No.**
Original Final Plan Sheet	04.5
DICO 1	04.6.**C4**

9.2.3 New Subset Required – DICO

New subsets shall be submitted by DICO and prepared the same way as an FDP discipline subset except with the addition of a C# in the sheet numbers and a note placed, in the bottom left-hand side of the border, on the replacement sheets stating "NEW SHEET ADDED BY DESIGN INITATED CHANGE ORDER NO. "Y". This note is a stamp in the CTDOT Miscellaneous tools in the Bluebeam tool chest that needs to be added and edited. If you do not have these tools in the tool chest you can find them in Appendix A of this manual. first sheet of a new subset will be a subset cover sheet containing an index of drawings contained in that specific subset.

9.2.4 Voiding Sheets

Contract sheets are never deleted. Sheets submitted within final design plan subsets, addenda subsets, or design-initiated change order subsets that are no longer needed shall NOT be deleted, but shall be voided by the engineer of record, with a DICO stamp. The voided stamp crosses out the entire sheet with a red X and adds the following note: "VOIDED BY DESIGN INITATED CHANGE ORDER NO. "Y" where "Y" equals the Design Initiated Change Order number.

9.2.5 DICO Special Provisions

Special provisions shall be created in accordance with the Contract Special Provisions.

9.2.6 DICO Memorandum from Design to Construction

A DICO Memorandum from the Designer to Construction shall be prepared for all change orders. This memorandum shall not include any digitally signed DICO plans and / or DICO specifications. The memorandum shall include the following:

- A detailed description and justifications of the changes requested.
- Identify the funding source, if known.
- A listing of each new, revised, replaced and / or voided plan sheet(s).
- A listing of each new, revised replaced and / or voided special provision(s).
- A list of the changes in the estimated quantities for the project (increase, decrease). The list should also include any item that is new to the project or any item that is deleted because of the revised work. Item numbers of items already in the project should be provided. Item numbers for items that are not currently in the contract should be provided if known.
- The estimated increase in cost or credit associated with the change order request.

9.2.7 DICO CTDOT Standard Sheet Subsets

The designer shall prepare a DICO to a CTDOT Standard Drawing subset in accordance with the following.

The DICO for a standard subset shall only include the added sheets, do not include all the standards for the project. Only include the added sheets and check off only those sheets on the index sheets.

When uploading to COMPASS add a "C##" to the end of the label attribute.

Update the 02-Revision Subset to record this change.

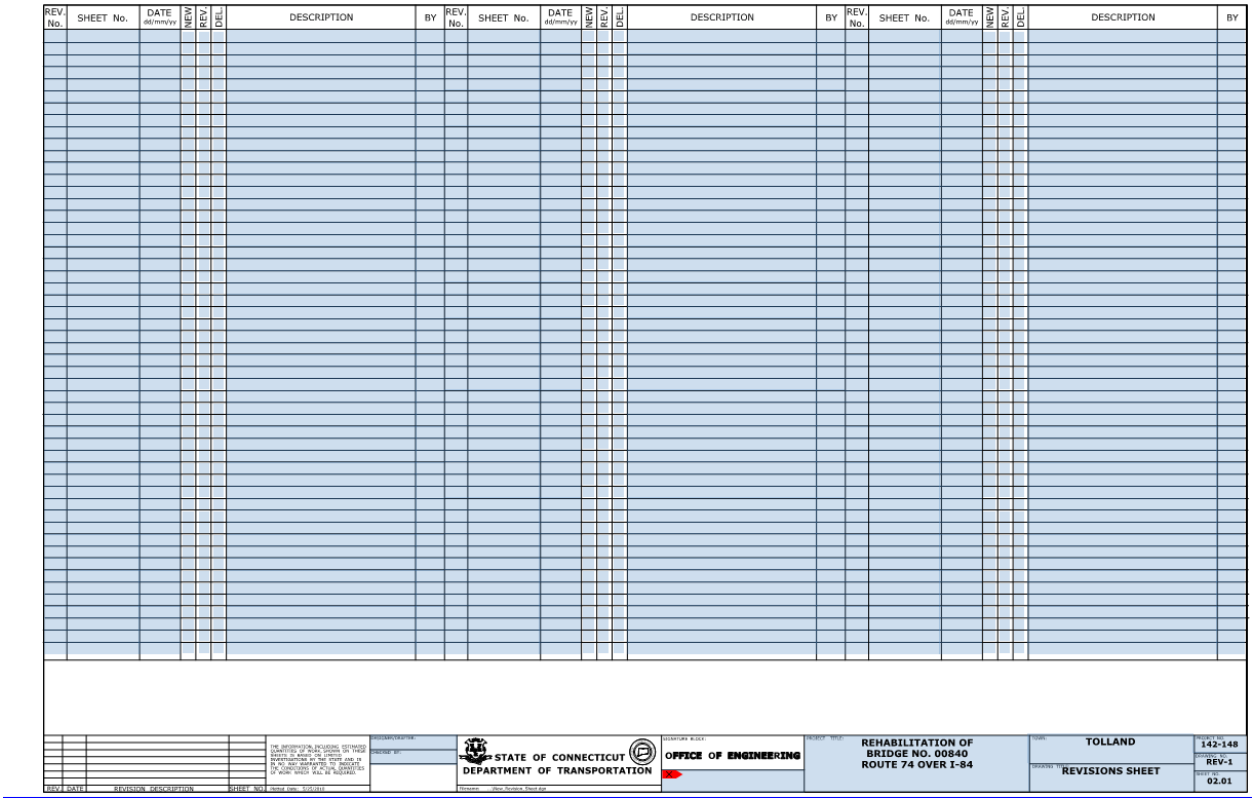
9.2.8 Design Initiated Change Order - Workflow in COMPASS

Please see Design Initiated Change Orders in COMPASS for a sample workflow for sending Design Initiated Change Orders using the COMPASS Submittals/Transmittals (S&T) application.

9.3. 02-Revisions Subset

The project manager is responsible for managing this subset.

Each project has a 02-Revisions subset, and this subset only contains the "Index of Revisions Sheet(s)". These revision sheets are used for tracking all sheet changes due to addenda (ADP) and Design Initiated Change Order (DICO) with respect to the entire project. The 02-Revisions subset starts out as an un-signed blank place holder in the project. This file has seed file in our CAD worksapce. When an addendum or DICO is required an 02-Revisions file shall be created in CAD following this process: The figure below is an example of a blank 02-Revisions subset:



ADDENDA:
When the project requires an Addendum, the Project Manager must record these changes on a **NEW** 02-Revisions_A## subset, where A## equals the Addendum ##. New 02-Revisions subsets shall contain all previous Addendum information. For example, Addendum 4 shall include all changes made from Addendums 1, 2, 3 and 4.

Note: A New 02-Revisions subset is required for each addendum because there are times when multiple addendums are being submitted to contract processing for the same project. An example of this is if Addendum 1 and Addendum 2 are submitted to processing at the same time, two addendum revision sheets must be submitted.

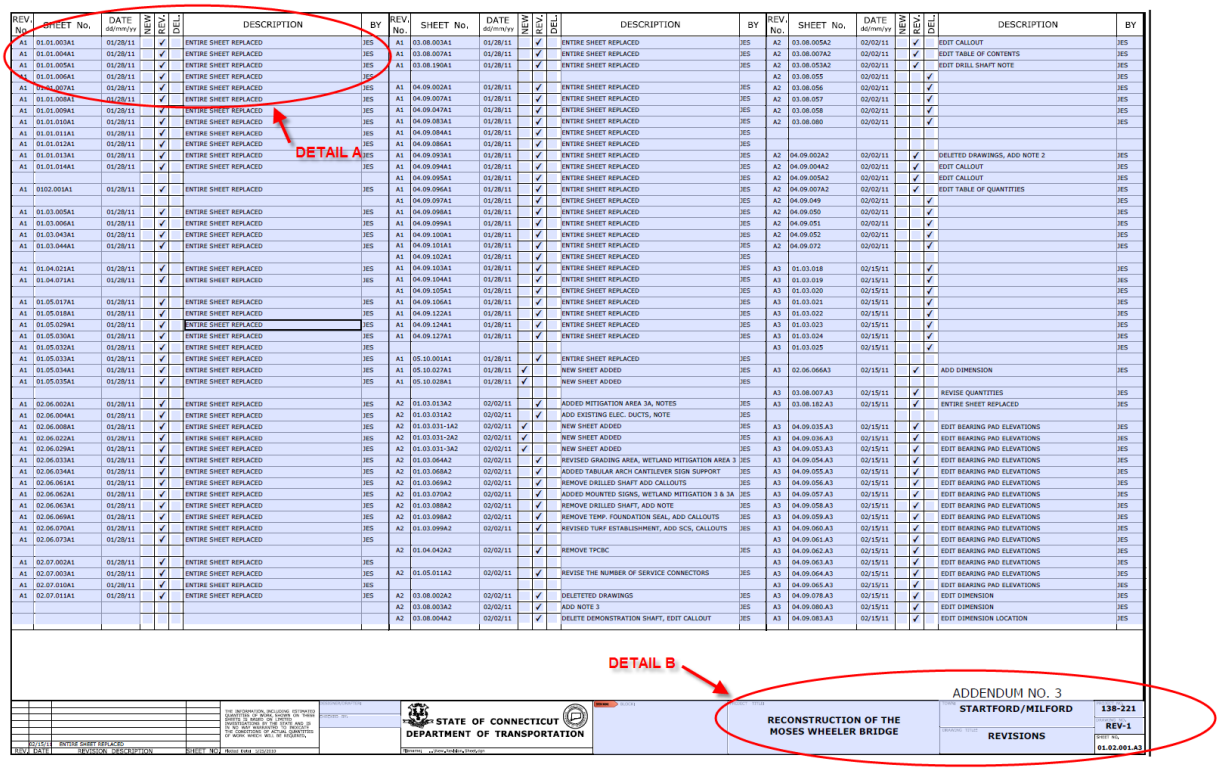
9.3.1 Design Initiated Change Order

When a project requires a Design Initiated Change Order (DICO), the following process shall be followed:

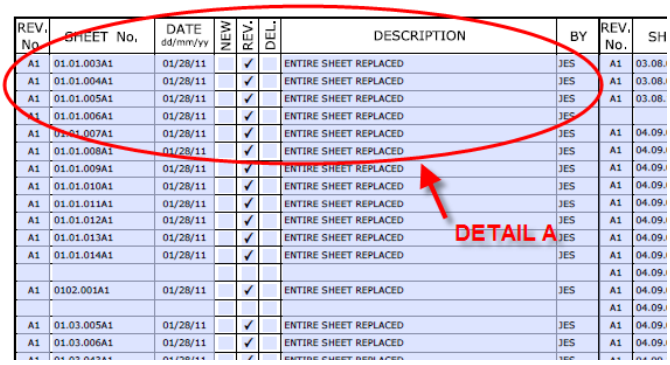
For each DICO, the Project Manager shall create a new 02-Revisions subset. The 02-Revision subset shall always contain all previous Addendum information and the new DICO information. For example, when DICO

#1 is prepared, the 02-Revisions subset shall include all Addendum information as well as the changes made for DICO #1.

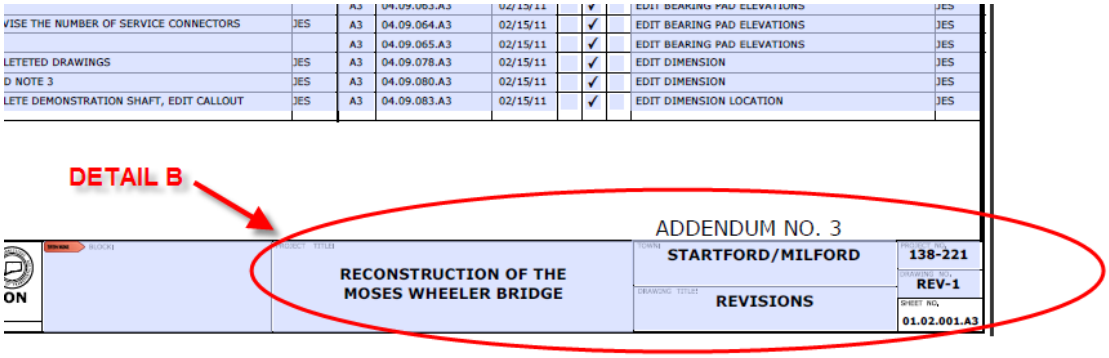
The following figures are an example of the "Index of Revisions Sheet(s)" completed up to Addendum #3:



Detail A from figure 1 shows the information typed in for a change to the contract plans. The project designer inputs the Addendum or DICO number, the sheet number, the date, a description of the change, the person who made the change, and checks the appropriate box for: new sheet added, revised sheet or deleted sheet.



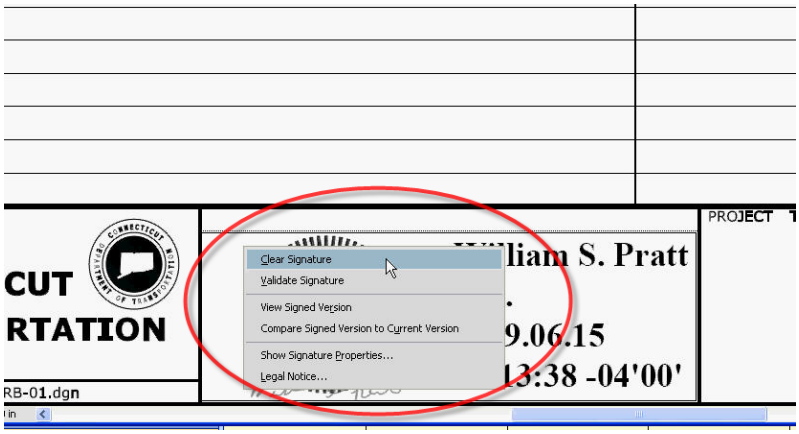
Detail B shows the title block information.



9.3.2 02_Revisions Subset Workflow - Addenda

Each time an addendum is issued, the "Index of Revisions sheet" must be updated by the Project Manager as follows:

1. The user will checkout the 02-Revisions subset from COMPASS.
2. With your digital signature USB key inserted within the USB, right click on the Signature Box, and select Clear Signature as shown below, this is the first Addendum this step can be skipped since the subset will not have a signature on it:



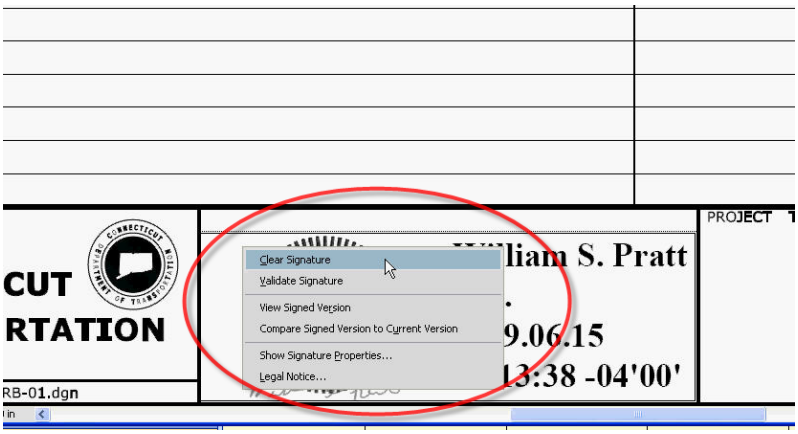
3. Enter the information into form fields as described.
4. Add note "ADDENDUM NO. Y" in the bottom right-hand corner of the sheet above the title block, where Y = the Addendum number.
5. Add new revision sheet each time previous sheet becomes full. Add note "NEW SHEET ADDED BY ADDENDUM NO. "Y", where "Y" equals the addenda number.
6. When finished sign using a certifying signature.
7. Check the document into COMPASS to save the changes.

9.3.3 02_Revisions Subset Workflow - DICO

The following workflow shall be used by the Project Manager for recording DICOs to the 02-Revisions subset. In this workflow the user edits the subset in COMPASS, they do not have to export the document out and submit a new subset:

1. Check out the 02-Revisions subset from COMPASS. See Checking Out Documents to Bluebeam for instructions.

2. With your digital signature USB key inserted within the USB, right click on the Signature Box, and select Clear Signature as shown below, this is the first Addendum this step can be skipped since the subset will not have a signature on it:



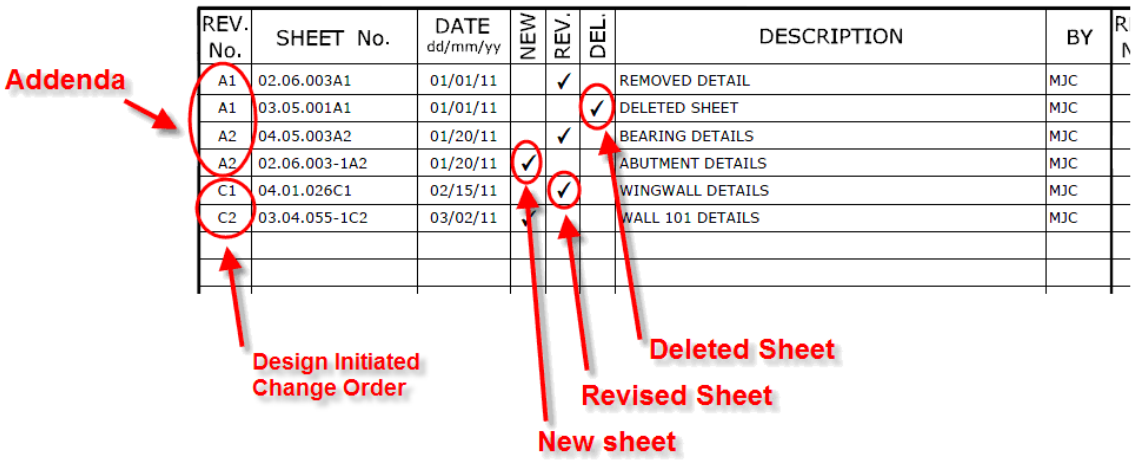
3. Enter the information into form fields.
4. Edit the note above the title block with “DESIGN INITIATED CHANGE ORDER NO. Y ”
5. If a new revisions sheet is added, add the note above the title block with “NEW SHEET ADDED BY DESIGN INITIATED CHANGE ORDER NO. Y”
6. Resign the 02-Revision subset.

9.3.4 Adding a New Revisions Sheet to the 02_Revisions Subset

1. Download a new “Index of Revisions sheet.”
2. Insert the new sheet into the existing 02-Revisions subset pdf. Update the title block information and update the sheet accordingly.

9.3.5 Filling Out Revision Index Sheet

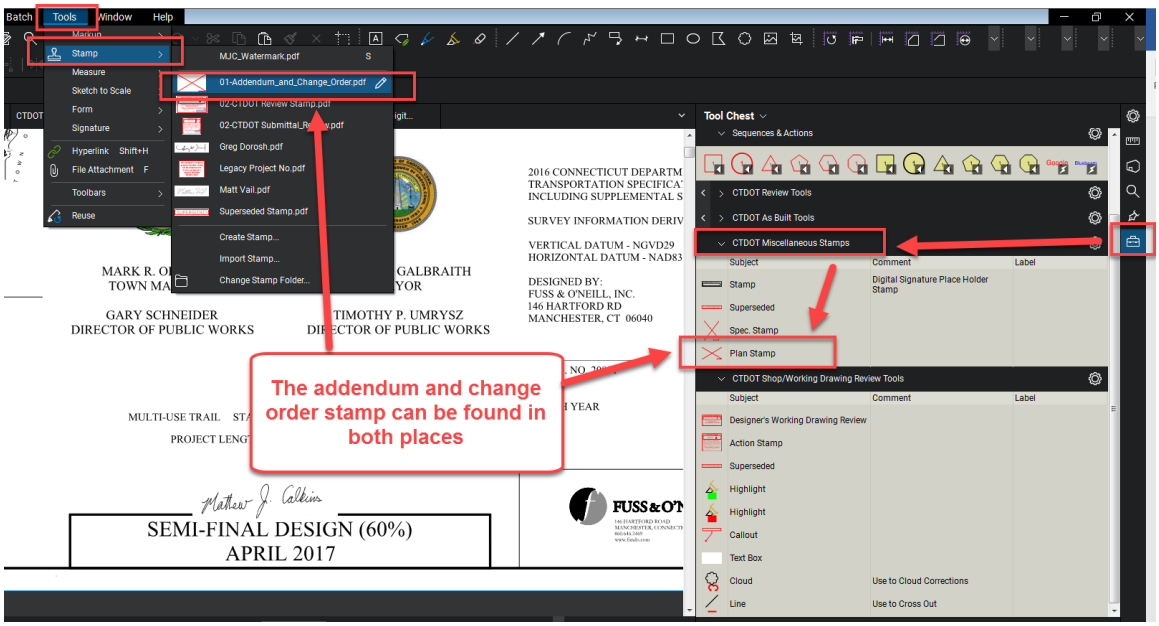
To fill out a form field simply click on the box and begin typing. The first column is the Addendum or Design Initiated Change Order. The second column is the revised or new sheet number. The third column is the date, followed by a brief description that is like the description on the actual sheet being revised. Finally click in the appropriate check box per row to describe the action taken, new sheet, revised sheet, or sheet deleted. Note: The Engineer is not required to input changes numerically by Sheet No. If another changed sheet is added to an Addendum in the eleventh hour, it can be placed at the bottom of the list on the “Index of Revisions Subset”.



REV. No.	SHEET No.	DATE dd/mm/yy	NEW	REV.	DEL.	DESCRIPTION	BY
A1	02.06.003A1	01/01/11		✓		REMOVED DETAIL	MJC
A1	03.05.001A1	01/01/11			✓	DELETED SHEET	MJC
A2	04.05.003A2	01/20/11		✓		BEARING DETAILS	MJC
A2	02.06.003-1A2	01/20/11	✓			ABUTMENT DETAILS	MJC
C1	04.01.026C1	02/15/11		✓		WINGWALL DETAILS	MJC
C2	03.04.055-1C2	03/02/11	✓			WALL 101 DETAILS	MJC

9.4. Placing Stamps on Affected Sheets – Revised, or Deleted Sheets

A digital stamp that crosses out the entire sheet shall be placed on digital contract sheets that are affected by Addenda or Design Initiated Change Order. The stamp shall be placed using Bluebeam's Stamp tools and can be found in the tool chest under the miscellaneous stamps or in Markup>Stamps as shown below:

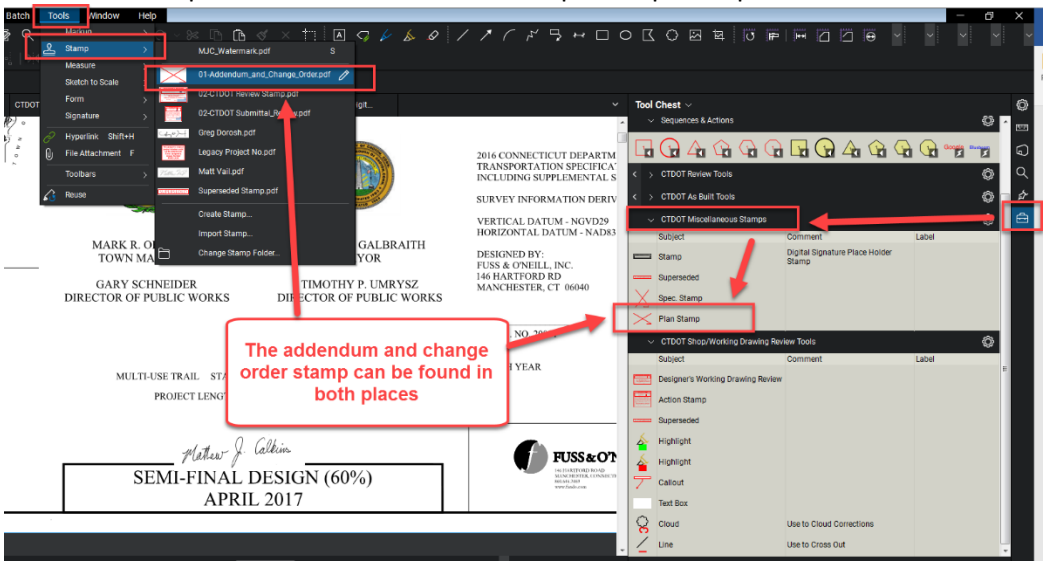


If you do not have the stamp in the tool chest you need to download the CTDOT Bluebeam User Profile as shown in Appendix A. If you do not have the stamp in the Markups>Stamp area, see Appendix A – Bluebeam Stamps.

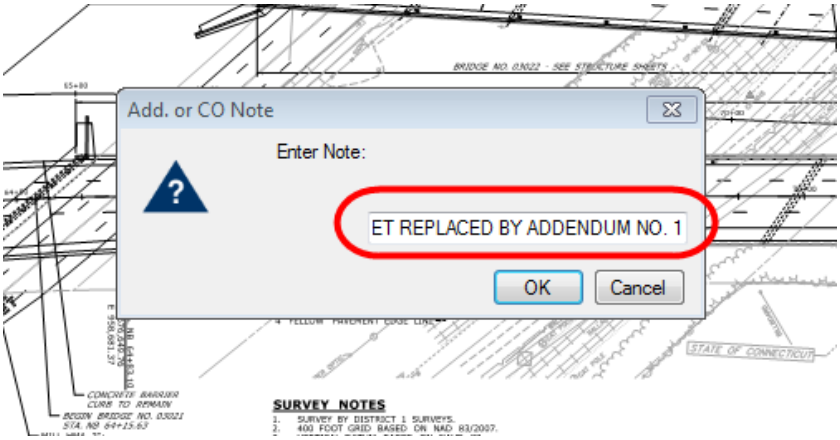
WARNING – When placing the stamps, removing the digital signature is not allowed. The table below lists the notes that shall be used for addenda, construction order requests, and as built notes. These notes should be used in conjunction with the cross-out stamp.

The following shows how to apply the stamp to the sheet that needs to be crossed out for an Addendum or Change Order.

1. Select the stamp from the Tool chest or Markup>Stamps and place it:

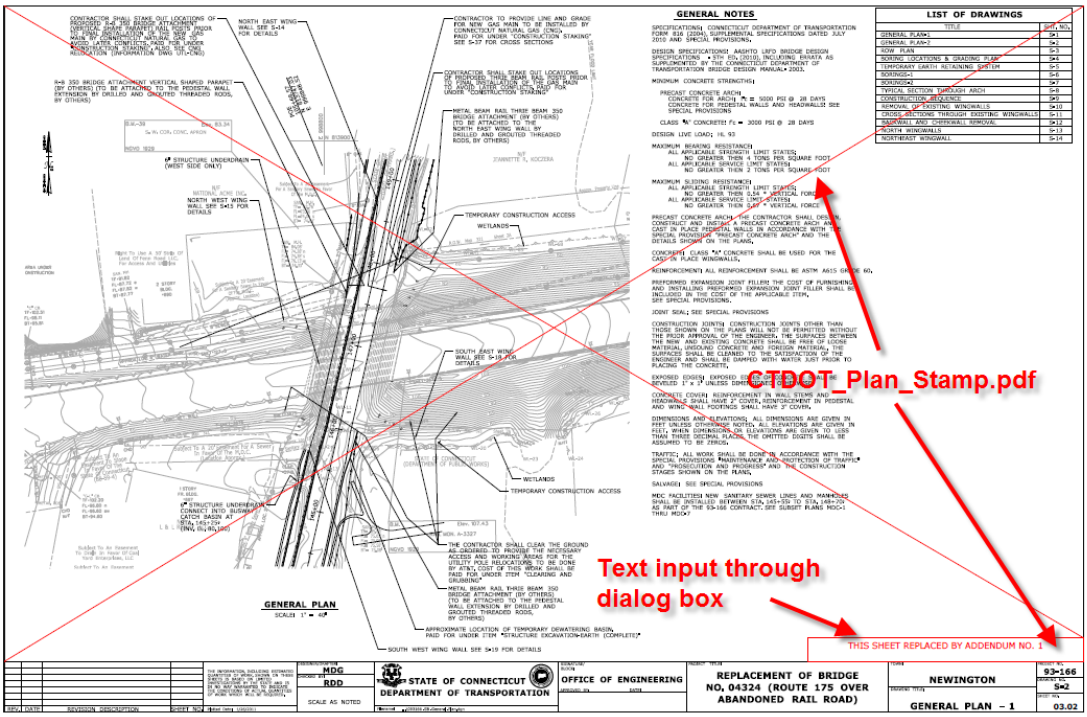


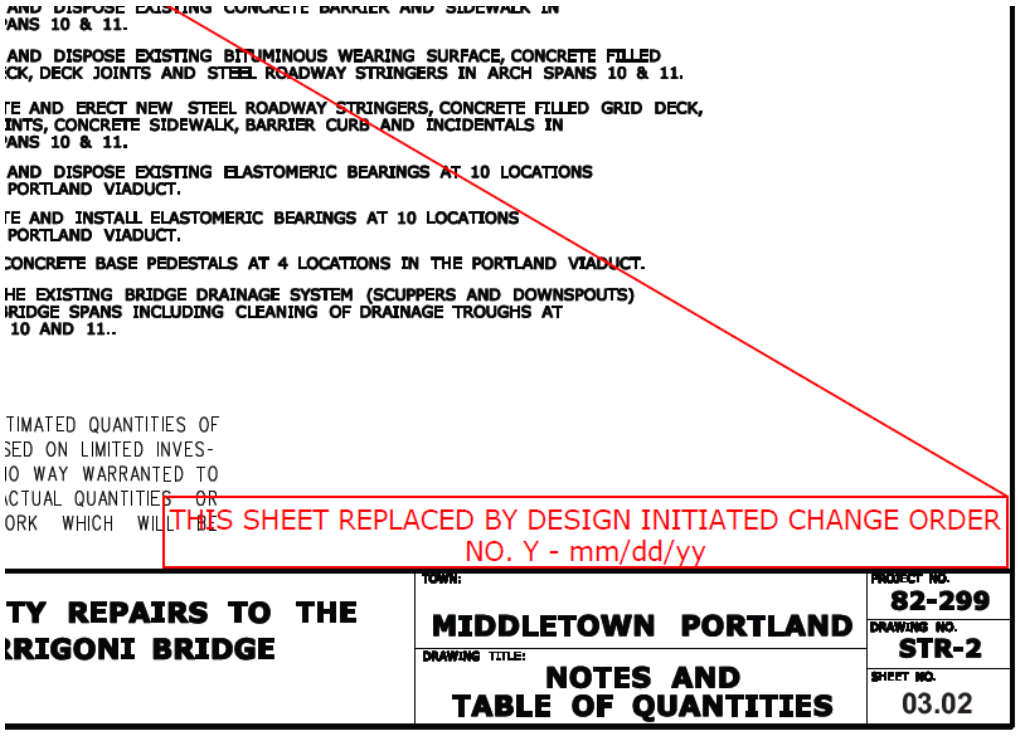
2. After the stamp is placed a box will pop up. Enter the applicable note from the table below in **all caps** as shown below:



Addendum Notes	Description of Use
THIS SHEET REPLACED BY ADDENDUM NO. Y	The revised sheet is considered to replace, in total, the original sheet.
VOIDED BY ADDENDUM NO. Y	Sheet is voided by Addendum.
Design Initiated Change Order Notes	**Description of Use**
THIS SHEET REPLACED BY DESIGN INITIATED CHANGE ORDER NO. Y – mm/dd/yy	Used for revisions to existing sheets. Changes must be noted only on the revised sheet.
VOIDED BY DESIGN INITIATED CHANGE ORDER NO. Y – mm/dd/yy	Use this for voiding of existing sheets.

3. The following shows a completed stamp.


CTDOT_Plan_Stamp.pdf
Text input through dialog box
THIS SHEET REPLACED BY ADDENDUM NO. 1
GENERAL NOTES
LIST OF DRAWINGS
GENERAL PLAN
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
OFFICE OF ENGINEERING
REPLACEMENT OF BRIDGE NO. 04324 (ROUTE 175 OVER ABANDONED RAIL ROAD)
NEWINGTON
GENERAL PLAN – 1
93-166
S-2
03.02


AND DISPOSE EXISTING BITUMINOUS WEARING SURFACE, CONCRETE FILLED
CK, DECK JOINTS AND STEEL ROADWAY STRINGERS IN ARCH SPANS 10 & 11.
E AND ERECT NEW STEEL ROADWAY STRINGERS, CONCRETE FILLED GRID DECK,
INTS, CONCRETE SIDEWALK, BARRIER CURB AND INCIDENTALS IN
ANS 10 & 11.
AND DISPOSE EXISTING ELASTOMERIC BEARINGS AT 10 LOCATIONS
PORTLAND VIADUCT.
E AND INSTALL ELASTOMERIC BEARINGS AT 10 LOCATIONS
PORTLAND VIADUCT.
CONCRETE BASE PEDESTALS AT 4 LOCATIONS IN THE PORTLAND VIADUCT.
HE EXISTING BRIDGE DRAINAGE SYSTEM (SCUPPERS AND DOWNSPOUTS)
RIDGE SPANS INCLUDING CLEANING OF DRAINAGE TROUGHS AT
10 AND 11..
TIMATED QUANTITIES OF
SED ON LIMITED INVES-
IO WAY WARRANTED TO
CTUAL QUANTITIES OR
ORK WHICH WILL BE
THIS SHEET REPLACED BY DESIGN INITIATED CHANGE ORDER NO. Y - mm/dd/yy
TY REPAIRS TO THE
RIGONI BRIDGE
TOWN:
MIDDLETOWN PORTLAND
DRAWING TITLE:
NOTES AND TABLE OF QUANTITIES
PROJECT NO.
82-299
DRAWING NO.
STR-2
SHEET NO.
03.02

10. As-Built Comments - Final Plans

As stated in the CTDOT's Construction Manual chapter 1-314 "As-Built Drawings and Final Revisions of Plans (As-Builts)", it is the responsibility of either the Contracting Engineers (Consultant Inspectors) or State Forces (Office of Construction) to perform final as-built revisions of Contract Plans. As-Built revisions shall be recorded in accordance with Chapter 1-314 of the Construction Manual, amended as follows:

> Final as-built revisions will be applied to the digitally signed PDF plans as a digital comment, using Adobe or Bluebeam's commenting tools. Digital comments are placed over the top of the digital signature and its security; therefore, the original content of the PDF plans can never be altered. Because as-built comments are digital and placed over the top of the plans they are easily recognizable, searchable, and may be turned off if necessary.
>
> As-built comments shall be applied to the latest sheet, whether it's the original, addenda, or construction order plans, located in COMPASS within the project's 100_Contract Plans folder.
>
> If additional As-Built information has been created, (information that cannot be placed on the digitally signed contract plans), these sheets shall be combined by subset number and uploaded into the 100_Contract Plans folder in COMPASS.
>
> CAD drawings may be updated, at the discretion of each design office, to reflect any addenda, change orders, and as-built revisions for use in the future; however, the original digitally signed as-built PDF plans shall not be replaced and shall be the PDF set for permanent records.

10.1. As-Built Revisions (Digital Comments) Workflow

Two methods for applying as-built revisions to the digital PDF plans are provided in the following sections.

The first method, Post Construction, district staff shall record as-built revisions on their record set (paper copies) during construction. Once construction is completed these revisions shall then be applied as comments to the digital PDF.

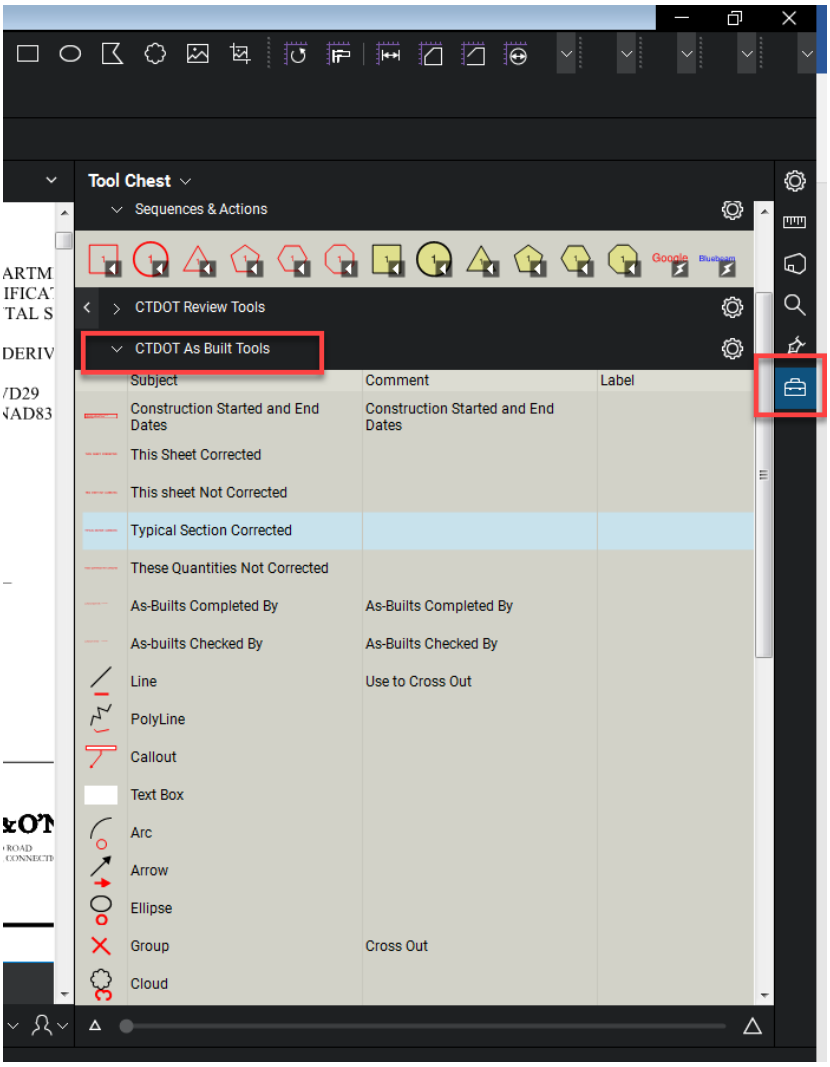
The second method, Active As-Built, district staff shall record as-built revisions on their record set (paper copies) and shall apply them as comment to the final set of digital PDF plans on an intermittent bases, during construction. By using this method as-built information becomes available to all parties that have access to COMPASS during the construction process, improving communication and transparency.

10.1.1 Post Construction As-Built

As-Built Workflow		
Step	**Personnel**	**Task**
1	Chief Inspector	Notify the Contracting Engineer or Designated District Staff that As-Builts can be applied to the Contract Plans.
2	Contracting Engineer or District Staff	Apply As-Built revisions to the Contract Plans in accordance with Section 8.3
3	Contracting Engineer or District Staff	Notify all applicable personnel list in the Section 8.4.2 that the As-Builts have been completed for this project.

10.2. As-Built Markup of Contract Plans

All as-built information will be placed using a few basic Bluebeam commenting tools. These tools include text tools, line and arrow tools, and stamp tools (all other tools will still be available under the main toolbar). These tools will be in the right-hand panel under "CTDOT As Built Tools" toolbox when the CTDOT As-Builts Profile is selected (see CTDOT Bluebeam Profile):



10.3. Applying As-Built Comments to Contract Plans

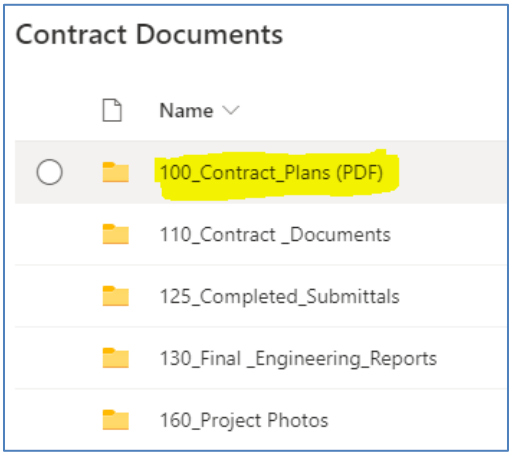
10.3.1 Before Using Bluebeam for As-Builts

All CTDOT users are required to complete the steps in Appendix A prior to applying as-built revisions. By completing these steps as-built revisions will be standardized across all CTDOT users. These steps only need to be completed the first-time using Bluebeam or when the user logs into a new computer.

- Perform the initial login steps for Bluebeam. Initial Log In to Bluebeam
- Download the CTDOT Bluebeam profile. Download CTDOT Bluebeam Profile
- The user must have access to the COMPASS project. All DOT users automatically have access. Consultants must be invited per project. See COMPASS Project Site Permissions.

10.3.2 Opening the Contract Plans from COMPASS

The contract plans are in the Contract Documents → 100_Contract_Plans (PDF) folder of the COMPASS project site.



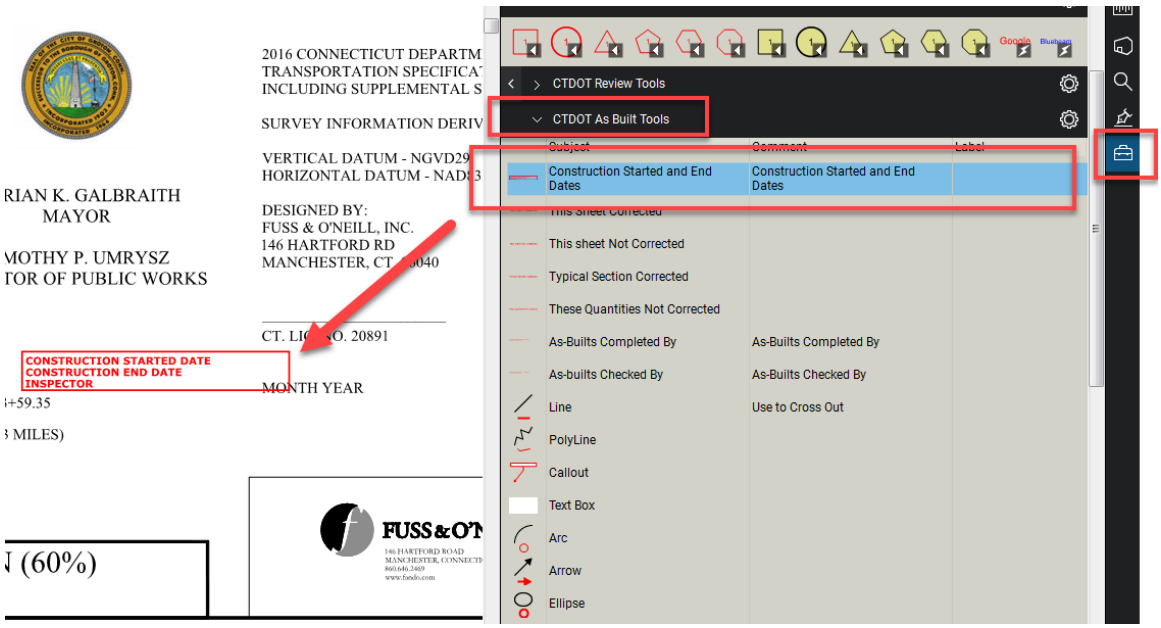
1. Log-in to the appropriate COMPASS project site using Microsoft Edge.
2. Browse to Contract Documents → 100_Contract_Plans (PDF).
3. Click on the document to open. See Checking Out Documents to Bluebeam for instructions on how to check-out and check-in the document.

10.3.3 Applying Digital As-Built Stamps

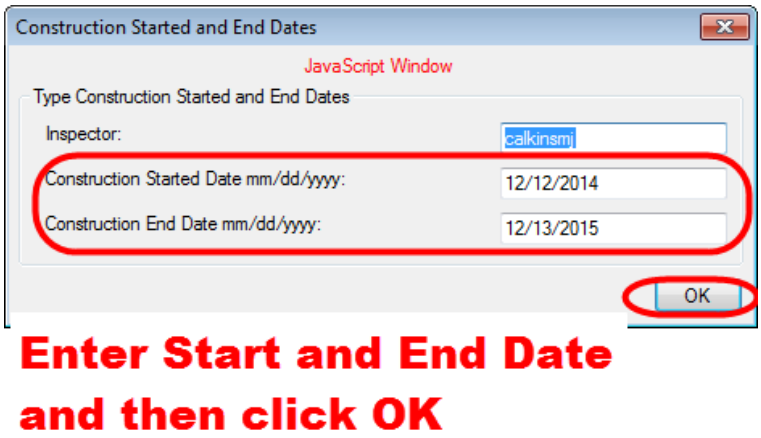
10.3.3.1 Construction Started & Completed Dates

The construction started and complete date stamps must be applied to the PDF title sheet, located in the 01_General subset, as stated below:

1. Select the "**Construction Started and End Dates**": stamp from the "CTDOT As Built Tools" toolbox and place it at a conspicuous location on the title sheet:



2. Enter Start and end and click OK as shown below:



Below is an example of the placed stamp:

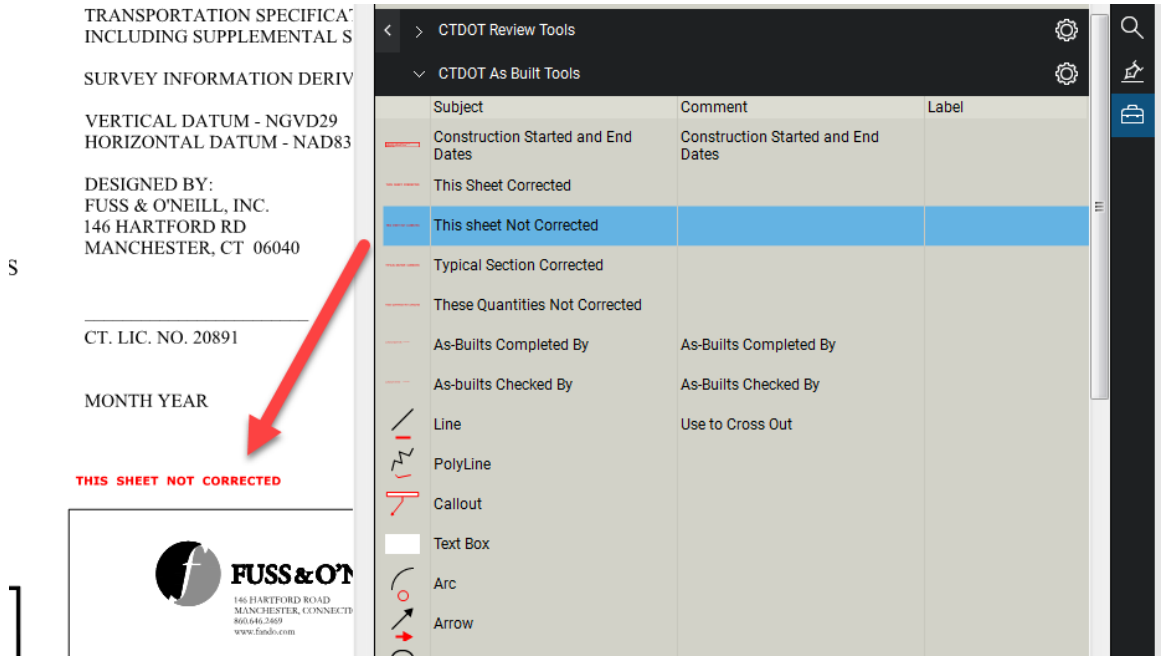
10.3.3.2 This Sheet Not Corrected Stamp

This stamp must be placed on all PDF sheets that do not contain as-built revisions. Detail Estimate Sheets must never be revised; therefore, they always receive this stamp.

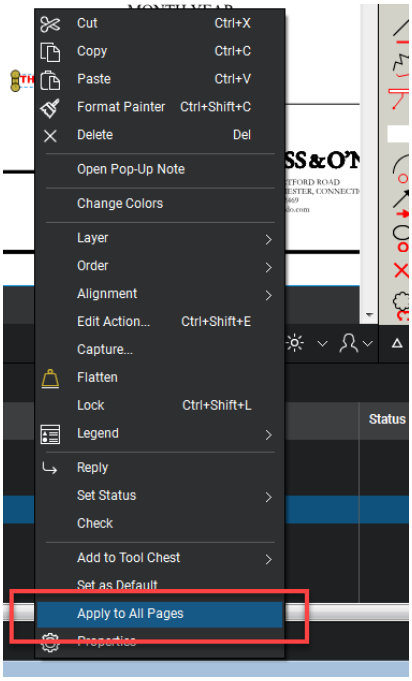
1. To place the "THIS SHEET NOT CORRECTED" stamp on an individual PDF sheet, select that stamp from the CTDOT As Built Tools toolbox and place it in the lower right-hand corner of the sheet, by clicking once.

If most of the sheets do not contain as-built revisions it is easier to apply this note to every sheet included in plan set, including the as-built revised sheets, and then go back and remove it from the sheets that were corrected.

1. To place the "THIS SHEET NOT CORRECTED" stamp on the entire plan set, select that stamp from the CTDOT As Built Tools toolbox and place it in the lower right-hand corner of the first sheet in the plan set:



2. Right click on the stamp that was placed and select “Apply to All Pages”:



This will place the “**THIS SHEET NOT CORRECTED”** stamp on every plan sheet within the pdf set.

NOTE: You must go back and replace this note on the sheets that contain as-built revisions with the appropriate stamp.

10.3.3.3 This Sheet Corrected

This stamp must be applied to all PDF sheets that contain as-built revisions.

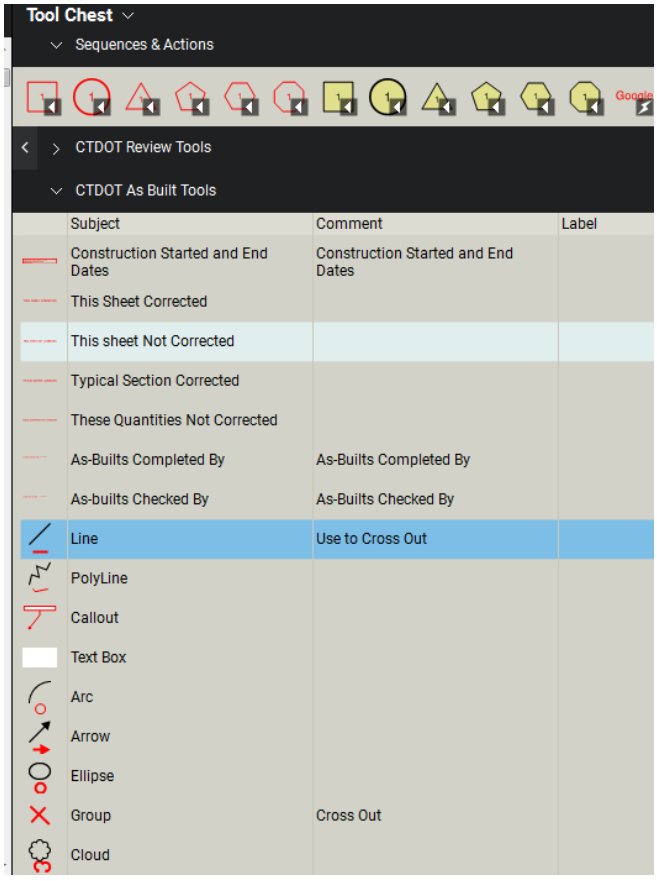
1. To place the “THIS SHEET CORRECTED” stamp on an individual PDF sheet, select that stamp from the CTDOT As-Built Tools toolbox and place it in the lower right-hand corner of the sheet, by clicking once.

If most of the sheets contain as-built revisions it is easier to apply this note to every sheet included in plan set, including sheets that do not contain as-built revisions, and then go back and replace it, with the appropriate stamp, on the sheets that were not corrected.

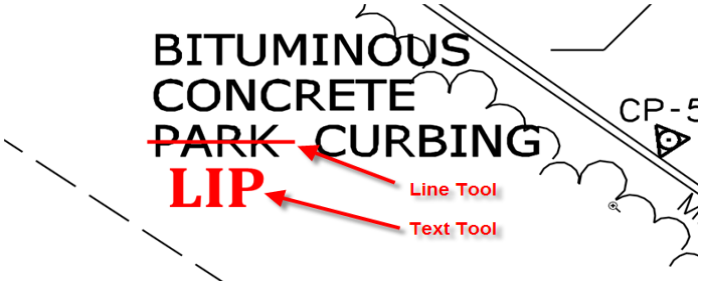
1. To place the “THIS SHEET CORRECTED” stamp on the entire plan set, select that stamp from the CTDOT As Built Tools toolbox and place it in the lower right-hand corner of the first sheet in the plan set:
2. **NOTE: You must go back and replace this note on the sheets that do not contain as-built revisions with the “THIS SHEET NOT CORRECTED” stamp.**

10.3.4 Applying Digital As-Built Notes

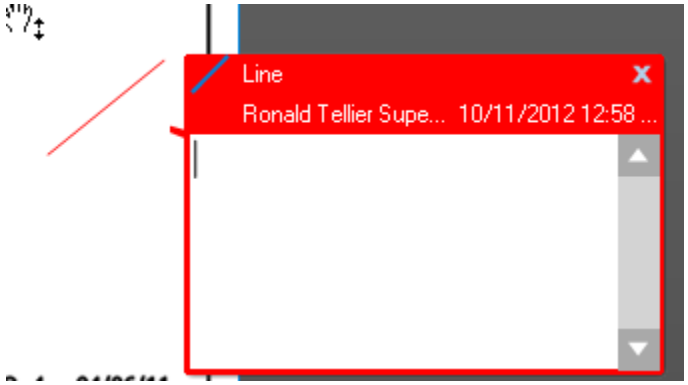
To place an as-built revision, simply select any of the provided tools located within the as-built toolbox shown below and apply it to the document that is being as-built.



In the following example, the Line tool was used to cross out the existing text and the Text Box tool was used to add text:



Do not add a note to a comment by double clicking on the comment. For example, if a line was placed the user could double click on the line and add notes to it:



If notes are added this way they do not print.

10.3.4.1 Digital As-Built Stamps and Notes Using ADOBE

The following stamp files need to be downloaded to the user's computer and placed in this folder: C:\Documents and Settings\User\Application Data\Adobe\Acrobat\8.0\Stamps\. This could be either C:\ or D:\ Drive depending on your computer. With the "User" folder being the current user's login Username. If Acrobat version 9 is being used, replace 8.0 with 9.0 in the previous sentence if version 10 is used replace with 10.

Stamp Files

As-Built stamps.pdf

As-Built notes shall be placed on the plans using the Adobe commenting tools in the following format:

1. Text Font shall be Cambria 16, and the color Red.
2. All line work shall be line width 2 and the color Red.

10.3.5 Additional As-Built Information

Additional As-Built Information that cannot be applied to the contract plans can be uploaded to COMPASS for future use. This information shall be uploaded to COMPASS in accordance with the following:

1. Combine the additional As-Built information into (1) PDF for each discipline subset. For example, if the 03-Highway and the 04-Structures set had additional As-Built information, 2 separate PDFs would need to be uploaded to COMPASS.
2. After the additional As-Built information is combined into their respective files they will need to be uploaded to the Contract Documents → 100_Contract_Plans (PDF) folder in COMPASS.

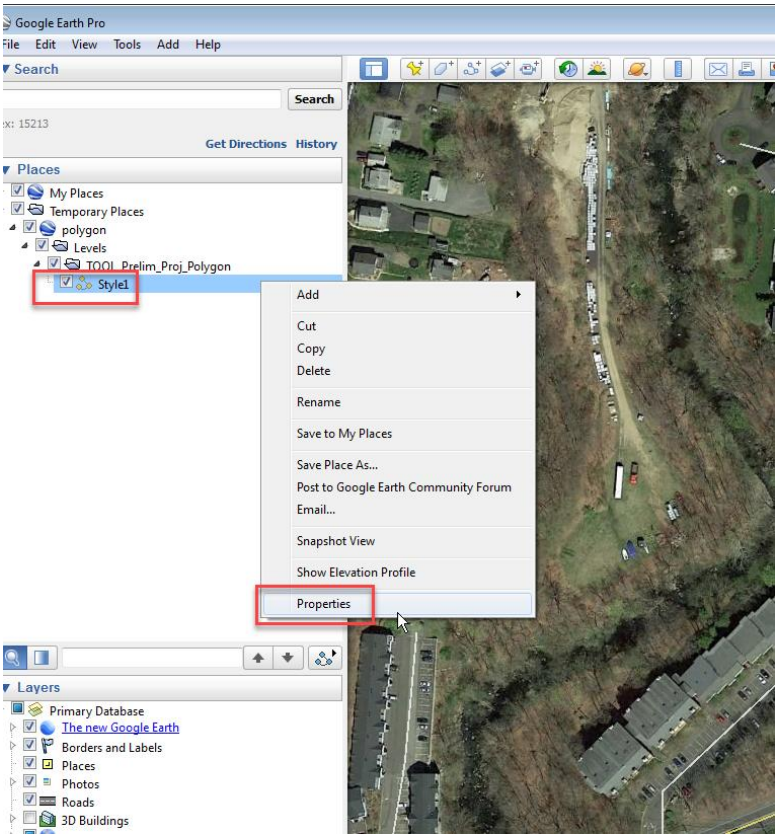
10.3.6 Construction Completion Project Polygon

If the project limits were changed in construction, the project polygon KML file shall be updated. The following shows how to do this.

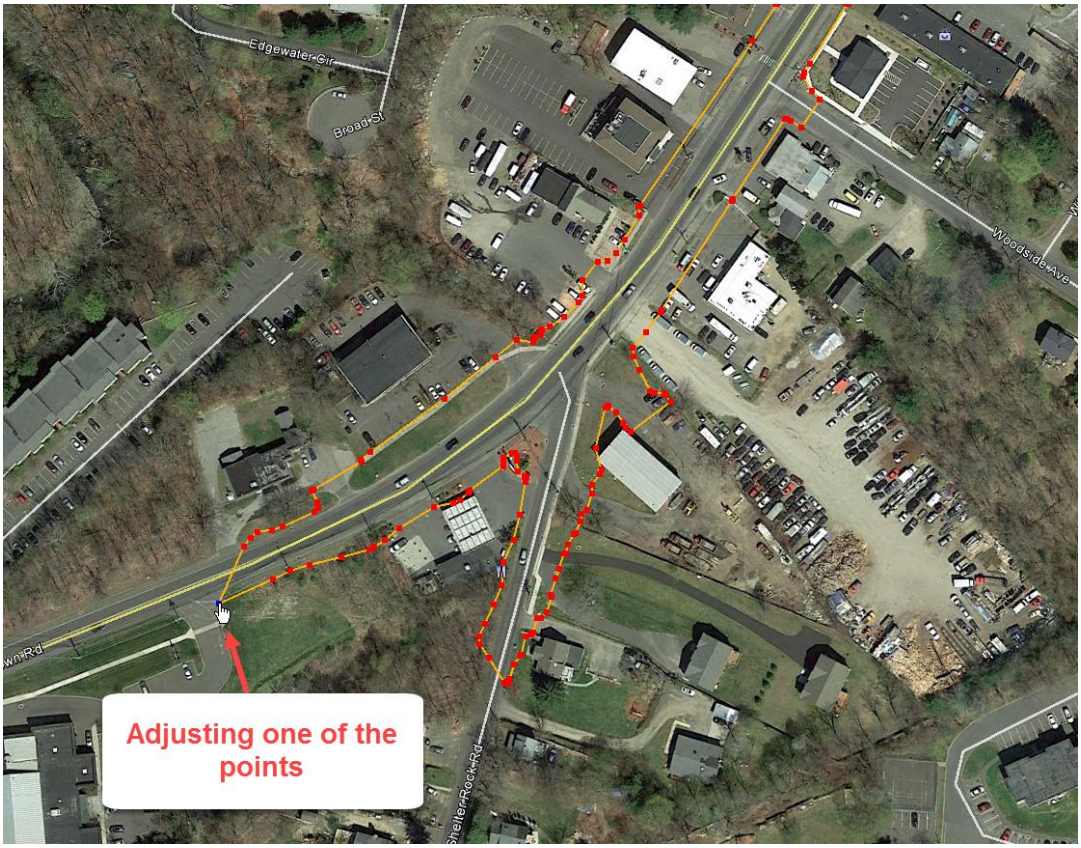
1. Browse to the Internal Documents → 170_Row Files folder in COMPASS and double click on the FDP Boundary.

2. Open the file with Google Earth. It may say KML like below.

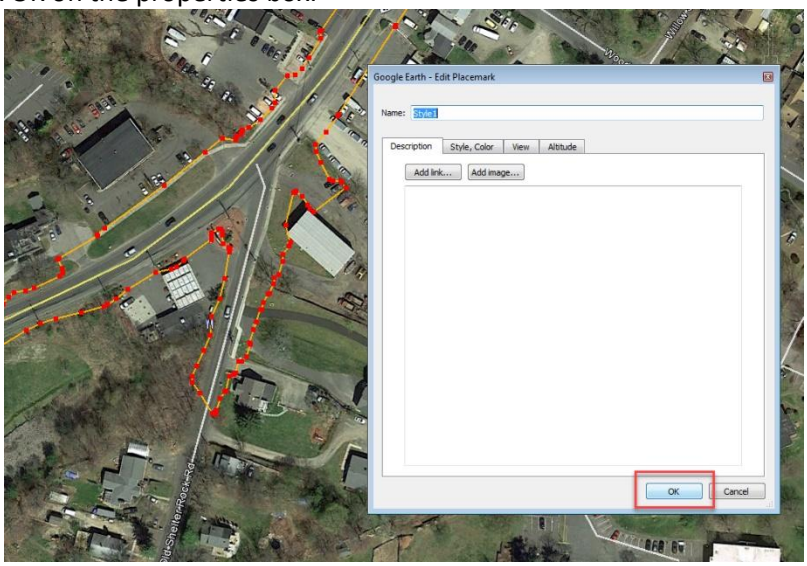
3. After the polygon opens, right click on Style 1, and select properties. This will allow you to edit the polygon.



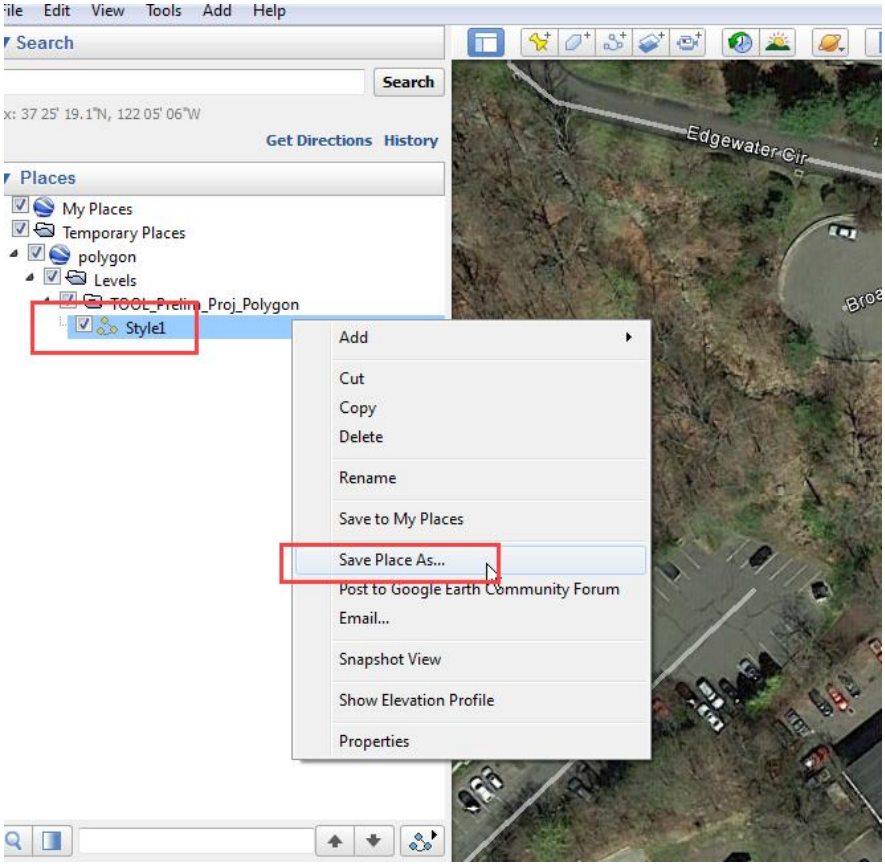
4. Then adjust the polygon as necessary by dragging the red points.



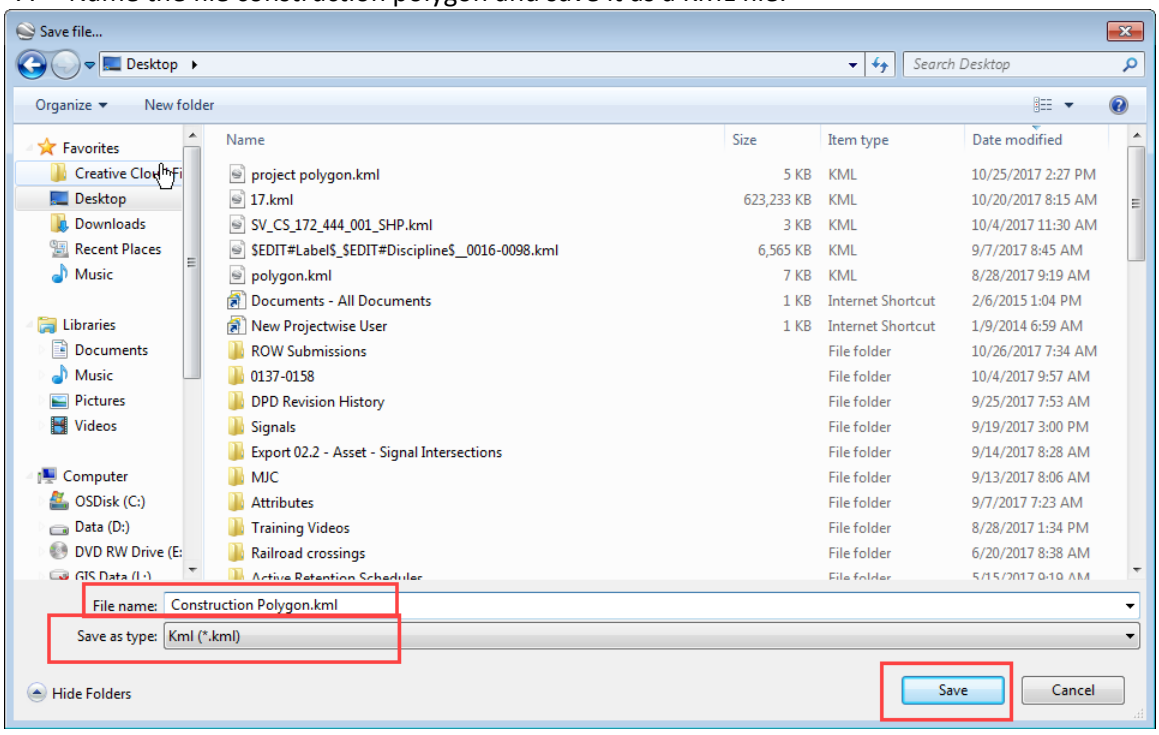
5. Then click OK on the properties box.



6. Then right click on Style 1 and select Save Place As



7. Name the file construction polygon and save it as a KML file:



8. Then upload this file into the Internal Documents → 170_ROW Files folder in COMPASS and name the file Construction.

10.4. Notifications

10.4.1 Notifying Department Personnel

When the As-Built information is completed and ready for permanent storage, create a ticket in the COMPASS Support Desk providing the following information:

- Project Number
- Note that As-Built information is complete and ready for permanent storage.

After the ticket to the COMPASS Support Desk is verified complete, the person responsible for the as-built revisions shall notify the appropriate Department personnel via a memorandum. Prepare a memo and route it via the S&T application, assigning all necessary parties as reviewers. Reviewers shall click complete in the submittal reviewers section to confirm receipt.

- Lead Designer
- Chief Inspector
- Central Surveys
- ROW
- Central Construction
- Bridge Maintenance (if a structure is on the project)

11. Contractor Submittals

11.1. COMPASS Submittal/Transmittal Application

This section establishes the requirements for the submittal and processing of Contractor Submissions using COMPASS's Submittal/Transmittal Application (S&T).
Please see COMPASS Knowledge Center - COMPASS Submittal/Transmittal Application for details.

11.2. Setting up the S&T Application

This section provides directions on how to provide access to project staff, how to complete the Approval Matrix, and how to invite the Contractor.
Please see COMPASS Knowledge Center - Contractor Submittals: Setting up the S&T Application for details.

11.3. How to Process a Contractor Submittal

Once the Contractor delivers a submittal, the submittal owner is responsible for establishing and starting the Department's BIC internal review workflow. Submittal owners establish who needs to review the Submittal, initiate a Bluebeam Studio Session (optional), set due dates in conformance with any contractual obligations, and respond to the Contractor with the Department's disposition.
Please see COMPASS Knowledge Center - How to Process a Contractor Submittal for details.

11.3.1 Shop & Working Drawings and Product Data Submittals

The three types of Contractor submittals identified below are covered in this manual. Although they are covered in this manual, they are each being precisely defined in your project Contract specifications. The following 'shorthand' descriptions are provided for instructional purposes but are not the controlling definitions.

Shop Drawings supplement the information in the contract documents (e.g., plans and specifications) and include details, diagrams, etc.

Working Drawings portray the design of an engineered feature required by the Contract that was not designed by the Department's Designer. Working Drawings and supporting information are prepared and stamped by a Professional Engineer serving as the Contractor's designer.

Product Data (Catalog Cut) is product information developed and made available by manufacturers, such as product specifications, diagrams, installation instructions, etc.

IMPORTANT - Although, contractors submit other types of submittals to the Department for review, only the workflows for the three submittal types are covered by this manual. Please see other office manuals and directives as necessary.

11.3.2 Summary of Processes and Roles

Please see COMPASS Knowledge Center - Summary of Processes and Roles for details.

11.3.3 Landscape Design Unit Submittals

Overview
To improve the accuracy and turnaround time of landscape related Contractor submittals, Landscape Design Unit Submittal Templates, and the COMPASS submittal type 'Landscape Submittals' have been created. Fillable

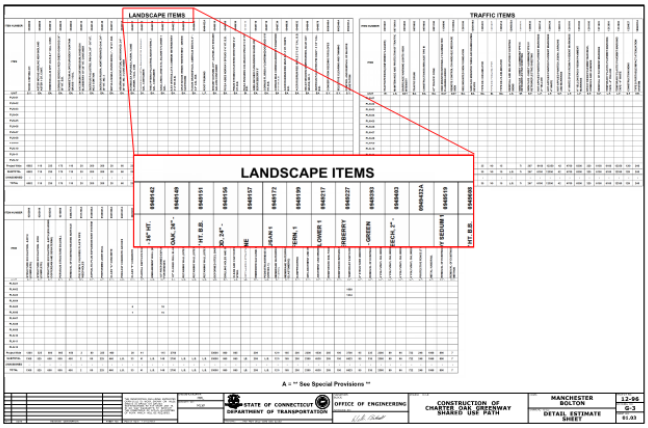
Landscape Design Unit Submittal Template forms can be found in the Appendix of the COMPASS Contractor's User Manual.

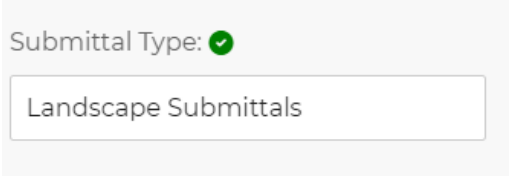
Note: Only items listed under 'Landscape Items' on the Contract's Detailed Estimate Sheet shall utilize the Landscape Design Unit Submittal Templates and be submitted as a 'Landscape Submittals' submittal type.

The following Landscape Design Unit Submittal Templates are available for Contractor use:

1. Plant Material
2. RFC – Landscape Plan Plant Material Substitution Request
3. Supplemental Landscape Item
4. Landscape Seeding
5. Mulch

All Landscape Design Unit Submittals shall be uploaded to COMPASS using the submittal type 'Landscape Submittals' except for any requests for change (RFC – Landscape Plan Plant Material Substitution Request) which shall be uploaded as an 'RFC' submittal type.





Filling Out the Landscape Design Unit Submittal Templates

All Landscape Submittals

Each Landscape Submittal will begin with general information about the project and the Contractor(s) and should be filled out as shown in the example below:

1. **Plant Material Submittal Template**

All plant material items may be included in a single submittal for the project, or in a single submittal for each planting season. Information in the Plant Material Submittal Template includes the Landscape Plan Plant Material Source of Supply, as well as all other materials required by the pay item as specified by the contract specifications.

If the Contractor is unable to source any of the plant items, an RFC - Landscape Plan Plant Material Substitution Request Submittal Template shall be submitted and approved prior to this submittal.

The Plant Material Submittal Template includes the following sections:

A. Landscape Plan Plant Material Cover Sheet
B. Tree Stakes
C. Planting Soil
D. Fertilizer
E. Landscape Plan Plant Material Source of Supply

A. Landscape Plan Plant Material Cover Sheet

The cover sheet contains general information about the project and Contractor(s), and an affidavit which should be completed by the Contractor. The rest of the form will be used by the Department to track the status of the multi-page submittal.

B. Tree Stakes

Provide a written description of the materials to be used for tree staking and the intended installation method. A copy of the manufacturer's installation instructions may supplement a written description of the installation method. The products manufacturer, supplier, and number of trees to be staked shall also be provided. Trees under 2" caliper require a minimum of two stakes each, and trees larger than 2" in caliper require a minimum of three stakes each, unless otherwise specified in the contract.

C. Planting Soil

Provide the manufacturer, supplier, and quantity of compost and peat moss to be used in the creation of the planting soil for the installation of plant material within the submittal. Also attach a certified test report for the compost.

D. Fertilizer

Provide the grade of fertilizer to be used, and provide the Guaranteed Analysis of the product, or attach a copy of the product label clearly showing such information. Also provide the fertilizer manufacturer, supplier, and the quantity to be used in association with the plant material within the submittal.

E. Landscape Plan Plant Material Source of Supply

The Contractor shall complete one sheet for each plant material supplier being used, and on each sheet shall specify:

- Supplier information: name, address, a contact representative for the supplier, and their phone number
- Attached copies of the supplier's Certificate of Inspection issued by federal or state authorities which attest to the plant material's freedom from diseases and insect infestations.
- Item number, description, sixe, and quantity of the items being sourced from that supplier.

2. RFC – Landscape Plan Plant Material Substitution Request

Use this template for any plant materials in which the plant species in the contract is unable to be sourced or the contractor is requesting a substitution for any other reason. One submittal template must be filled out each item being requested for substitution.

All Landscape Plan Plant Material Substitution Request Submittals shall be uploaded to COMPASS under the submittal type 'RFC'.
The information provided on each Landscape Plan Plant Material Substitution Request Submittal Template shall include:

- Original Contract item information: Provide the item number, description, plant size, and quantity of the original contract item that is being requested for substitution.
- Reason for the request for substitution: If the item was found to be unavailable in the region, check the corresponding box. If requesting the substitution for any other reason, check the second box and provide an explanation for the request.
- Attempted sources: Identify A minimum of 3 sources/vendors which were unable to supply the original contract item.
- Proposed Substitution: Identify any proposed plant species for the substitution (optional)
- Identify any changes in cost for the substituted item.

3. Supplemental Landscape Item Submittal Template

Provide the general information about the project and Contractor(s) and complete the affidavit attesting to the items' conformance to the contract specifications. Also provide the item number, name, and the quantity if applicable. Provide any other information required by the specification in the space provided or attach additional sheets.

4. **Landscape Seeding Submittal Template**

Provide the general information about the project and Contractor(s) and complete the affidavit attesting to the items' conformance to the contract specifications. Provide the item number, name, and the quantity of the seed mixture to be used. Also provide an attachment from the supplier stating the seed mixture components and their purity rate by percent of mass, germination rate, and origin of each species in the mix. Include any other information required by the specification as attachments.

5. Mulch Submittal Template

Provide the mulch type/name, particle size, and color. Also provide the manufacturer, supplier, and quantity to be used in association with the plant material within the submittal.

11.3.4 Facilities Submittals

1. For Section 1.20 Facilities projects, please see Appendix F for the Submittal Transmittal Form. The Contractor shall attach the Submittal Transmittal Form to the beginning of each PDF submittal. The form will be used for the Contractor to digitally certify that "Having reviewed this submittal, I certify that it is complete, accurate, coordinated in all aspects of the item being submitted and conforms to the requirements of the Contract in all respects, including all Federal requirements such as the 'Buy America Act (BAA)' and the 'Build America, Buy America (BABA) Act,' except as otherwise noted."

2. The Contractor shall follow recommended **Naming Conventions** and the following additional recommendations for Section 1.20 Facilities Submittals:

    a. File Name:

Project Number [####-####] Submittal Number [###] Facilities Submittal Type (one only) [##] [Description]

Example:

0034-0350 001 SD Concrete Pads

i. Project Number: 8-digit project number.
ii. Submittal Number: chronological submittal number created by the Contractor starting at 001.
iii. Section 1.20 Facilities Submittal Types:
    1. Shop Drawing - Facilities (SD)
    2. Product Data Sheet – Facilities (PD)
    3. Product Sample (PS)
    4. Coordination Drawing (CD)
    5. Working Drawing (WD)
    6. Facilities Submittal – **DO NOT USE**
    7. Quality Assurance Submittals (QA)
    8. Operation and Maintenance Manuals (OM)
    9. Spare Parts Transmittal (SP)
    10. Warranties (WA)
iv. Description: Brief description of submittal content.

b. Submittal Name:

Same as File Name except remove Project Number.

Example:

001 SD Concrete Pads

3. Subsequent Resubmittals:
    a. File Name remains the same.
    b. Submittal Name shall remain the same and shall include revision number (e.g., R1, R2, etc.) to name the resubmittal chronologically, after the Submittal Number.

Example:

001R1 SD Concrete Pads

11.4. Bluebeam

11.4.1 Checking Out Documents to Bluebeam

All COMPASS S&T envelopes include a Bluebeam Revu plug-in option for PDF files. Users can press this button to trigger a Bluebeam / SharePoint integration. The user must have Bluebeam Revu on one's device to use this feature. The feature is available on any supported browser (e.g., Edge, Chrome, etc.) This integration can be used in COMPASS for a single reviewer who prefers not to start a new Bluebeam Studio Session, or for whom a Bluebeam Studio Session will not meet the business need.

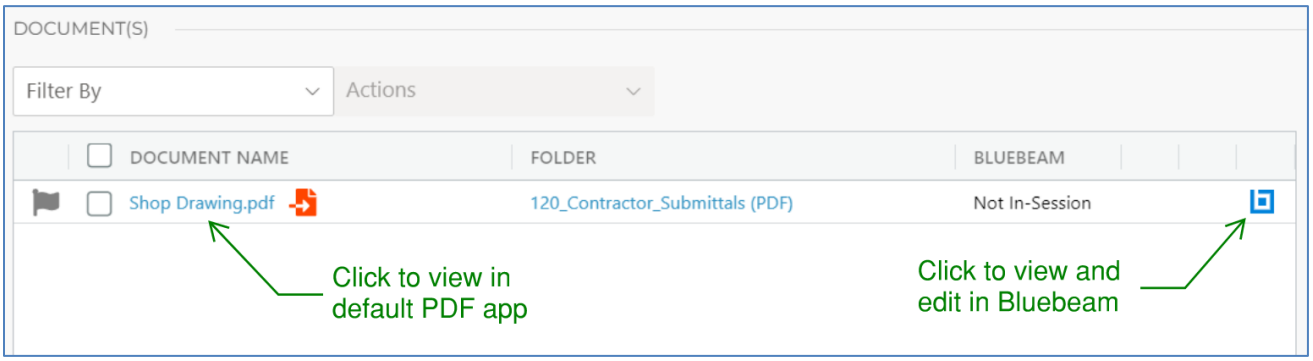
- The submittal owner is the sole reviewer and prefers not to start a Bluebeam Studio Session.

- The submittal owner needs to scrub / modify review comments applied during a Bluebeam Studio Session.
- A digital signature is required (not feasible in Bluebeam Studio Sessions per Bluebeam).

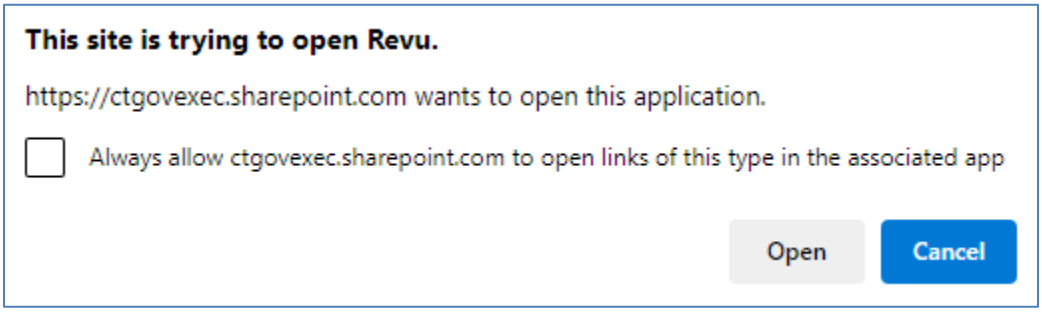
The checking out process should **not** be attempted while a Bluebeam Studio Session is open.

To initiate the Bluebeam / SharePoint integration from a COMPASS S&T envelope:

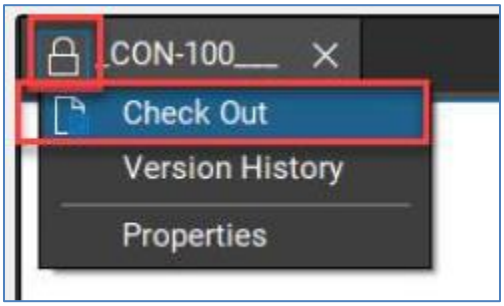
1. Press the Bluebeam Revu icon associated with the PDF document to check out.



2. Press Open if a SharePoint / Bluebeam request window appears.



3. Once the file is open in Revu, click the lock symbol to checkout and edit the document.



For more details on the Bluebeam / SharePoint integration, and instructions on how to use the integration outside of COMPASS S&T envelopes, please see Signing and Editing PDFs in Office 365 (sharepoint.com).

After checking a document back into COMPASS, previous versions of the document are automatically preserved by COMPASS's Version History feature.

Once the review is complete, the submittal owner needs to take final action to communicate with the Contractor. If no further is action required by the Contractor, the submittal owner should press Complete in COMPASS to end the submittal workflow and a notification email will be sent automatically. If further action is required, the submittal Owner should press Revise and Resubmit.

11.4.2 Start Bluebeam Studio Session

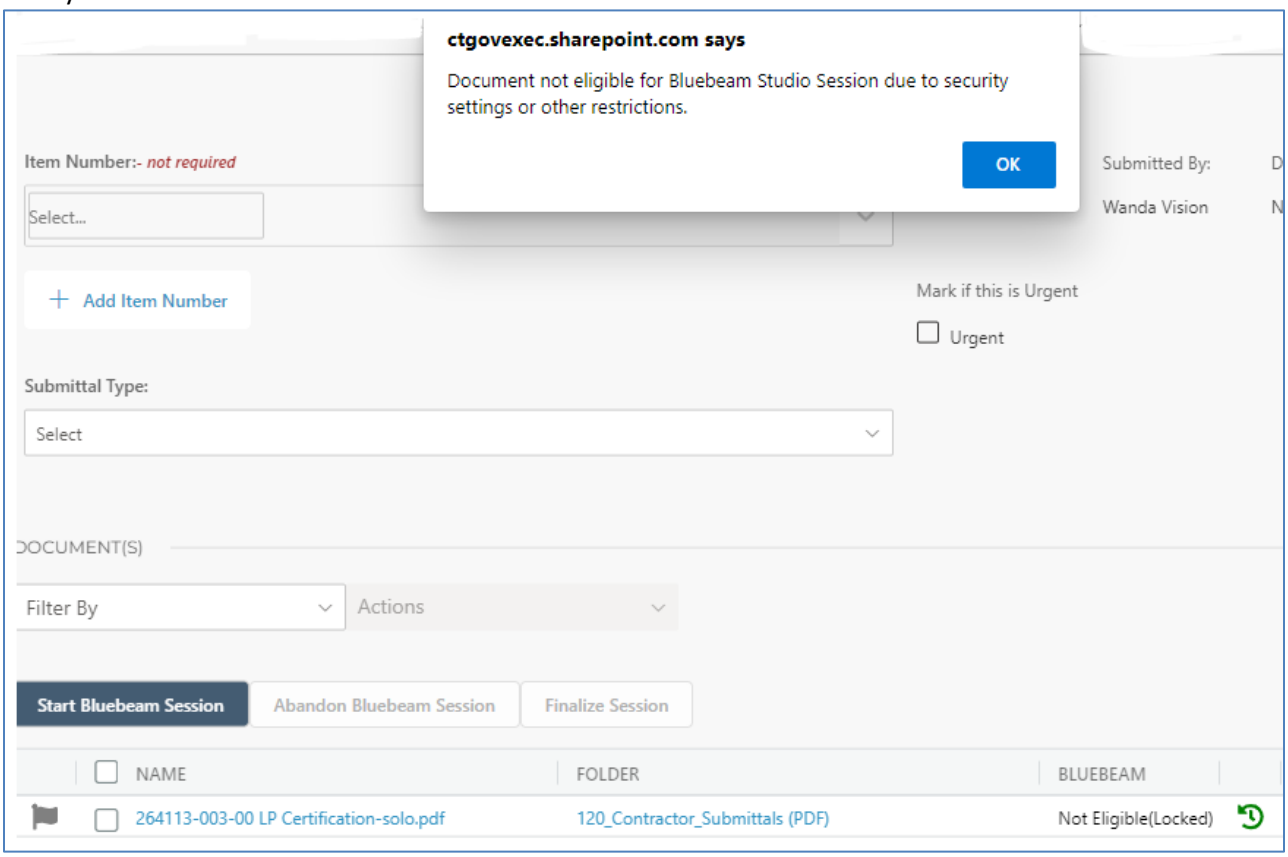
Bluebeam Studio Sessions allow multiple individuals to participate in a collaborative review of submittal documents.

To start or finalize a Bluebeam Studio Session in COMPASS, a Bluebeam Prime license is required. A Bluebeam Prime license is **not** required to participate in the review; only to start or finalize the Bluebeam Studio Session. To acquire an account for new DOT staff or consultant staff, create a ticket with the COMPASS Support Desk.

It is the submittal owner's responsibility to start and finalize the Bluebeam Studio Session and establish the review.

When the Start Bluebeam Session button is clicked, all PDF documents in the submittal envelope will automatically be put into a single Bluebeam Studio Session. There is no need to check boxes to choose individual documents. The document links will convert to route directly to the Bluebeam Studio Session.

Note: If a PDF document is a PDF/A, or has other restricted security settings restricting editing, it will not be included in the Bluebeam Studio Session. In the Bluebeam status column of the document grid, it will display as "Not Eligible (Locked)." If the Start Bluebeam Session button is pressed, a message will display noting the security restriction.



For information only: When a Bluebeam Studio Session is started in COMPASS, the PDF documents are automatically checked out of the document library in the name of the user who started the Bluebeam Studio Session. These checkouts are automatically discarded when the Bluebeam Studio Session is finalized. **Users should not take any action on this automated check-in/check-out process.**

11.4.3 Finalize Bluebeam Studio Session

The submittal owner is responsible for finalizing the Bluebeam Studio Session at the appropriate time in the review workflow. When a Bluebeam Studio Session is finalized, the new document version is automatically saved in COMPASS, with the author displaying as app@sharepoint. Previous versions are preserved through the COMPASS Version History feature.

If extra documents are added directly to the Bluebeam Studio Session, but were not in the original submittal envelope, **those documents will not save back to COMPASS.**

When the submittal owner determines that a Bluebeam Studio Session is complete, the owner should push the Finalize Bluebeam Session button in COMPASS. ***IMPORTANT: Users should not finalize the Bluebeam Studio Session directly within Bluebeam.***

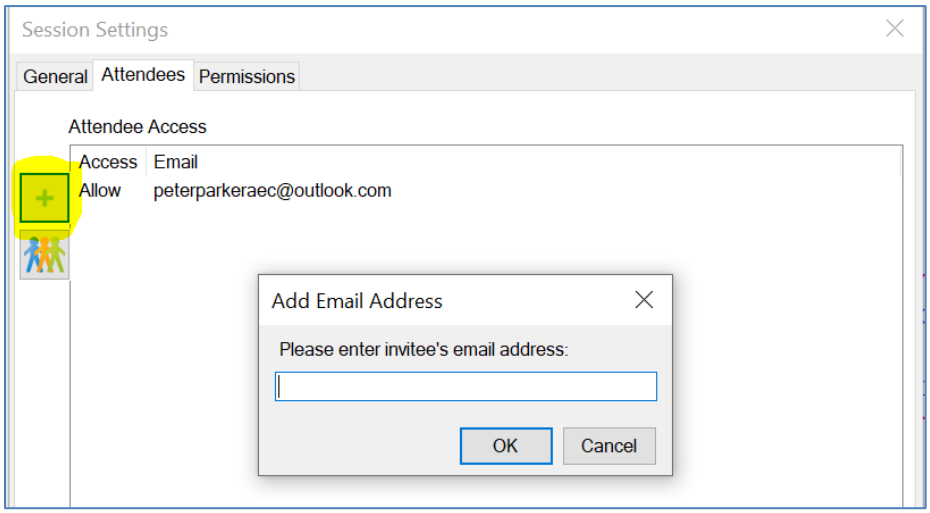
11.4.4 Reconcile Bluebeam Studio Session Comments

During a Bluebeam Studio Session, comments may be added to the submittal documents that are confidential to CTDOT personnel or consultants and not appropriate to send to the Contractor. There are two means by which the submittal owner can reconcile Bluebeam Studio Session comments.

- **Option A:** Use the Checking Out Documents to Bluebeam technique to reconcile comments and scrub the document as needed before it is returned to the Contractor.

- **Option B:** Modify other users' comments within the Bluebeam Studio Session, using Bluebeam's guidance: How to deny a Session participant and reassign markup ownership.

For Option B, if the email address of the attendee(s) whose comments that need to be modified is not showing on the Attendees tab (see Bluebeam instructions, step 1), press the green plus sign to add those email address(es) to the list (example below), then proceed with the instructions provided in the above link from Bluebeam.



Once all the review for a submittal is complete, the submittal owner needs to take final action to communicate with the Contractor. If no further action is required by the Contractor, the submittal owner should press Complete in COMPASS to end the submittal workflow; a notification email will be sent to the Contractor automatically.

If further action is required on the submittal documents, the submittal owner should press Revise and Resubmit and provide comments to the Contractor.

These two processes cannot proceed if any Bluebeam Studio Sessions are still open. In such a case, COMPASS will block the process and provide a notification message: "There are x documents in a Bluebeam Studio Session still open. Please finalize and close the open Bluebeam Studio Session before proceeding with this action."

11.4.4.1 Commenting

IMPORTANT - All comments and stamps must be digital and must be applied directly onto the submittal documents. Prior to commenting you must import the CTDOT Bluebeam Profile, see Appendix A. Once completed you are ready to comment. The user shall also ensure that standard Department settings are made. Consultant stamps can be found in Appendix D.

Reviewers may print the digital review documents to paper and mark them up, however, when done, all paper markups must be transferred from paper to the digital documents. See Reviewing. If a unit cannot print their own paper copies, they should contact MaryAnn Cass by emailing Jackie.Rivera@ct.gov. In the email include the project number and attached documents that need to be printed and include the address of where they are to be mailed.

All comments associated with a review must be applied to the digital documents, such as telephone or email comments.

The goal is to provide clarity and to eliminate confusion. Be sure to use engineering judgment to determine the most appropriate location for placing comments in a document.

General comments may be placed on the first sheet of the document using the note markup tool in Bluebeam. This process is detailed in Reviewing.

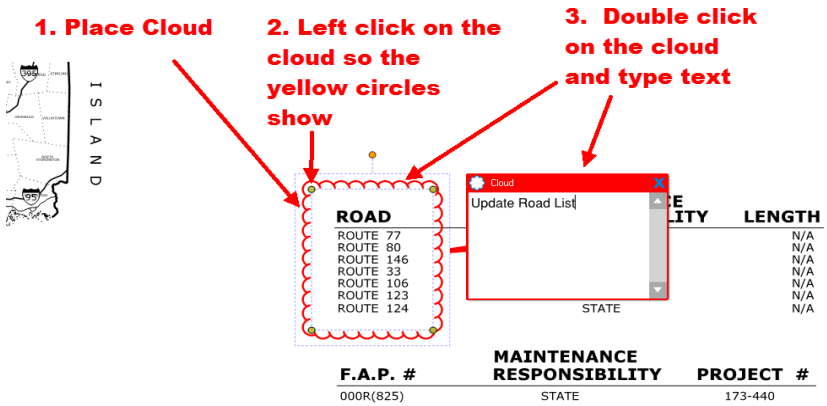
If a reviewer refuses to participate in the digital review, please contact AEC Applications.

11.4.4.2 Best Practice – Applying Comments

There are two basic commenting tools in Bluebeam: Text Tools and Non-Text Tools (line, arrow, cloud, rectangle, etc.).

Text/notes can be attached to each type. Text tools already have a note attached; all you need to do is start typing.

Non-text tools also have a note attached to them, but you need to double click on it to launch the attached note box. The text note box must be closed after the comment is made by clicking on the X in the top right corner of the note. The example below shows a note being attached to the cloud tool the correct way:



11.4.4.3 Review Stamps

Review stamps are used for intra-Department (including Department consultant Designers) coordination. They are applied by the reviewer to communicate information to the submittal Owner and the Department.

An example of use is that each Department Designer(s) must apply a review stamp when requested by a Construction District to review Working Drawings.

Review stamps have the following meanings:

- ***Reviewed, No Comments*** means the Department's Designer has reviewed the submittal and takes no exception.
- ***Reviewed with Comments*** means the Department's Designer has reviewed the submittal and has provided comments. When used on Working Drawings the reviewer shall provide a Bluebeam note that identifies the reviewer's recommended disposition, i.e., Exceptions as Noted, Revise and Resubmit or Reject.

11.4.4.4 Action Stamps

The Department uses action stamps (and if appropriate, comments) to notify the Contractor of the Department's disposition.

Action stamps must be placed on each sheet of all working drawing, shop drawing and Product Data submittals. They shall also be placed on the cover of any other supporting, multi-page PDF documents such as computations.

The precise meanings of action stamps are defined by the contact control of work specifications. The following are paraphrased definitions:

- ***No Exceptions Noted*** means the Department's reviewer has not observed anything in the submittal different from what is called for by the Contract requirements and the Contractor may proceed, provided that any manufacturer's warranty called for by the Contract can be fulfilled.

- ***Exceptions as Noted*** means the considerations or changes noted by the Department's reviewer are required and, after reviewing required changes, the Contractor notifies the Department's reviewer if the changes violate a Contract provision or lessen any warranties. The Contractor may proceed with the work covered in in the submittal.

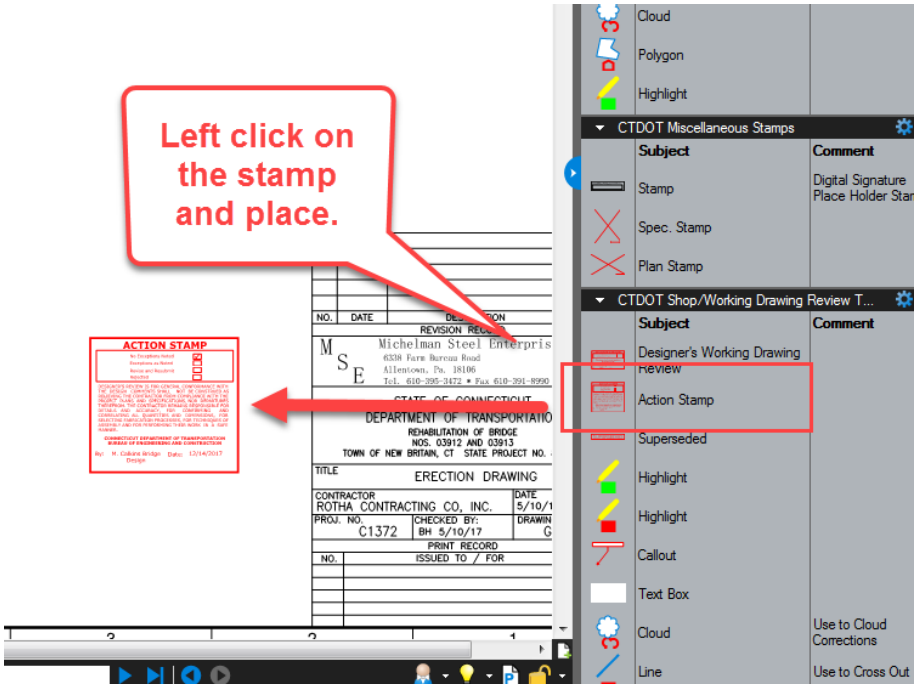
- ***Revise and Resubmit*** means the Department's reviewer has identified and noted statements or features that appear different from what the Contract requires. The Contractor is required to revise the submittal(s), based on the reviewer's comments, and resubmit for another review. The Department may take such additional time (typically 20 days) to review resubmissions.

- ***Rejected*** means the Department's reviewer has identified and noted one or more statements or features that are different from what the Contract requires. The Contractor is required to revise the submittal, based on the reviewer's comments, and resubmit for another review. The Department may take such additional time (typically 20 days) to review resubmissions.

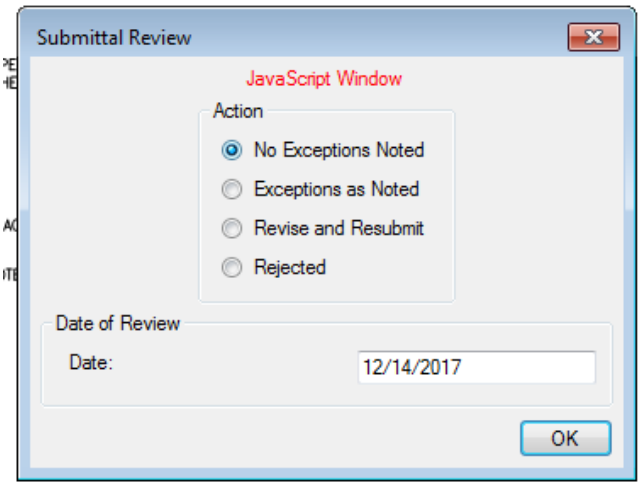
11.4.4.5 Applying Review Stamps

Submittal Review Stamp

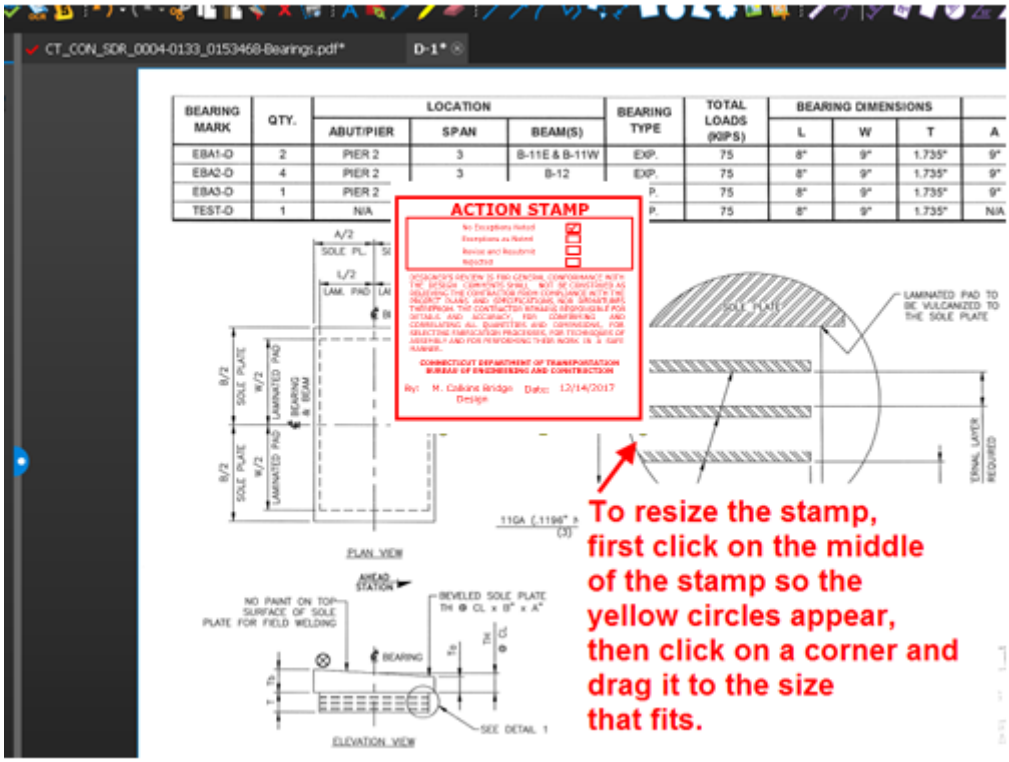
1. For CTDOT employees the submittal review stamp is in the tool chest in Bluebeam and should be placed on an open area of the drawing. For Consultants Appendix D must be followed before their stamp is in the tool chest.
2. To place the stamp, left click on the stamp in the tool chest and then place it. All shop drawing sheets must be stamped with the action stamp. Product data sheets only need to have the first sheet stamped.



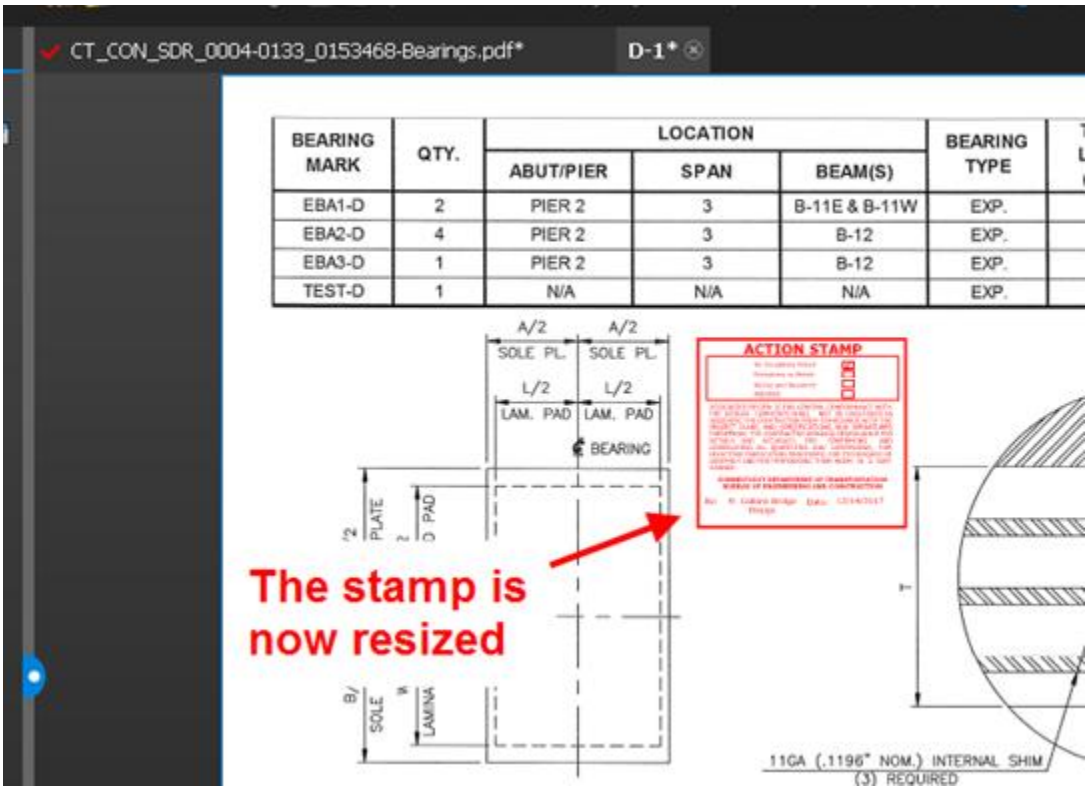
3. Next select the appropriate option from the java script window and click OK.



4. If the stamp is too big and is covering part of the drawing, resize the stamp by dragging a corner as shown below:

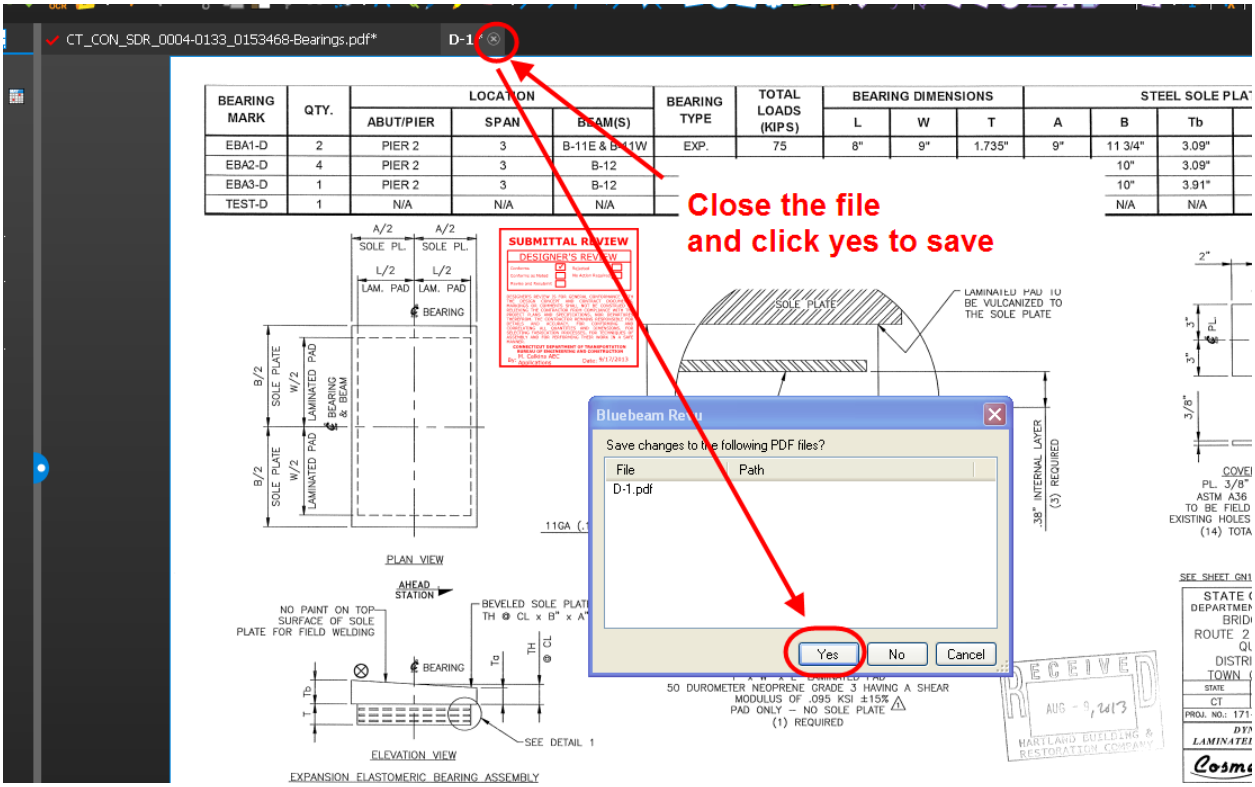


The stamp is now resized as shown below:



BEARING MARK	QTY.	LOCATION			BEARING TYPE
		ABUT/PIER	SPAN	BEAM(S)	
EBA1-D	2	PIER 2	3	B-11E & B-11W	EXP.
EBA2-D	4	PIER 2	3	B-12	EXP.
EBA3-D	1	PIER 2	3	B-12	EXP.
TEST-D	1	N/A	N/A	N/A	EXP.

5. After the review is completed, close the file, and click yes to save.

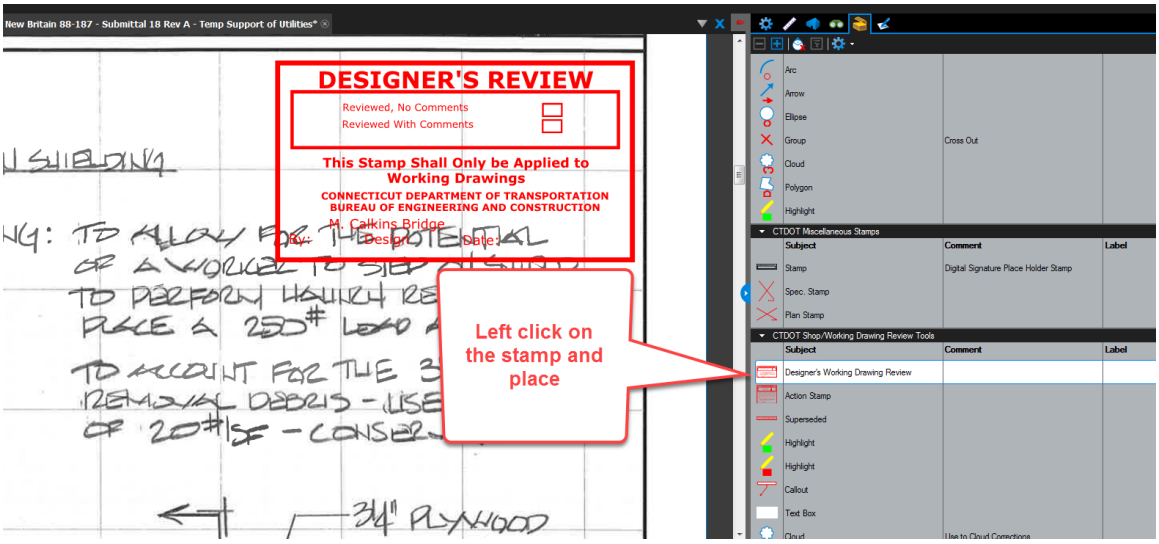


6. Repeat the review process for each drawing/document in the submittal.
7. Close Bluebeam when complete. If the document is in a Bluebeam Studio Session, the stamps will save automatically. If the document is being modified by using the check-out to SharePoint feature, ensure the document is properly checked back into COMPASS.

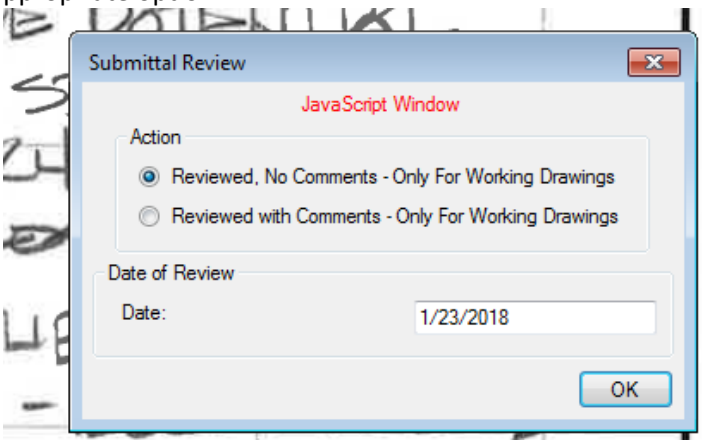
Designer's Review Stamp

The designer shall place a Designer's Review stamp on the working drawing submittal. The action stamp will be placed by District Construction.

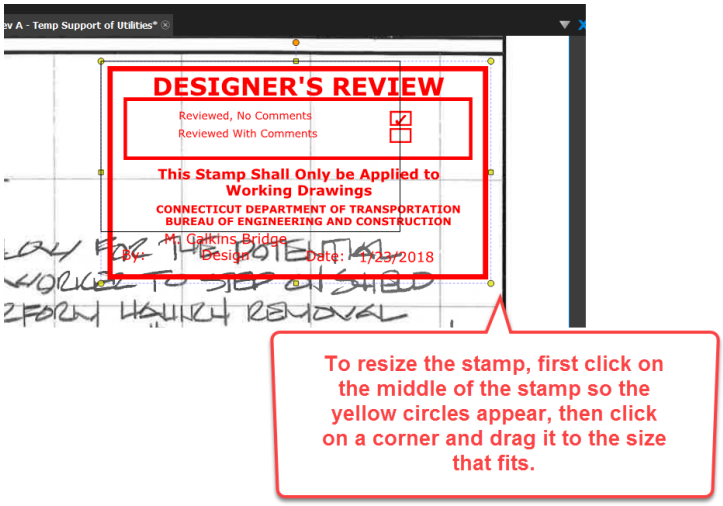
1. To place the Reviewed stamp, left click on the stamp in the tool chest and then place it. All working drawing plan sheets shall be stamped with the reviewed stamp. Calculations and supporting documents only need to have the first sheet stamped with the reviewed stamp.



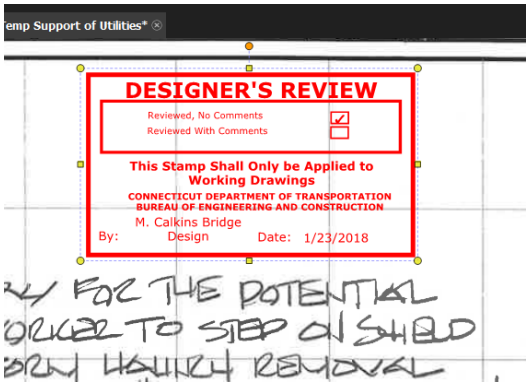
2. Then select the appropriate option.



3. If the stamp is too big and is covering part of the drawing, resize the stamp by dragging a corner as shown below:



The stamp is now resized as shown below:

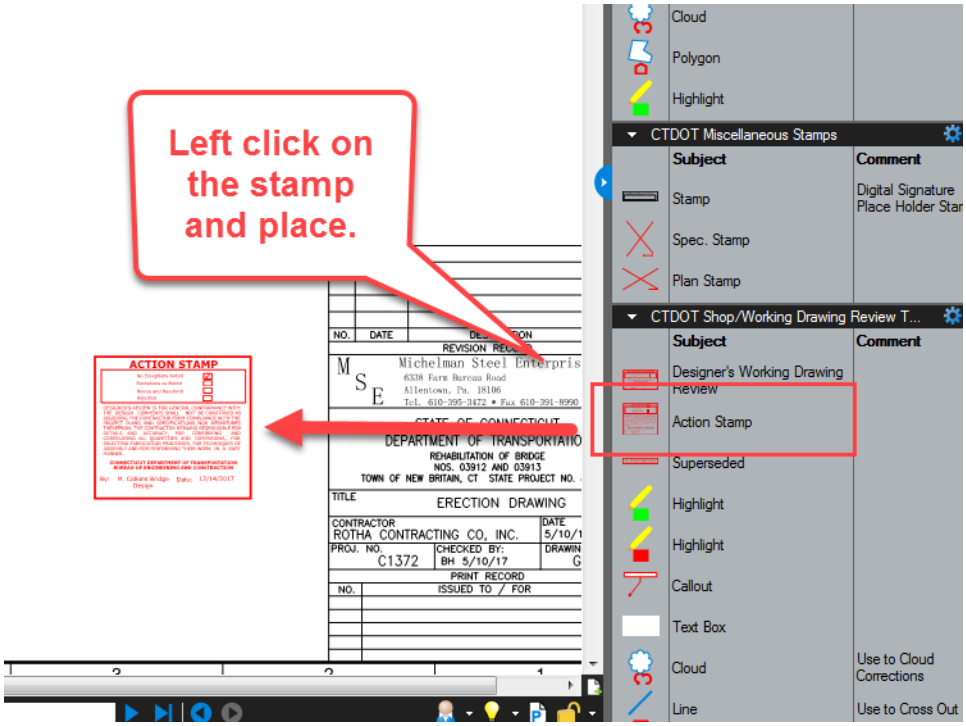


4. Close Bluebeam when complete. If the document is in a Bluebeam Studio Session, the stamps will save automatically. If the document is being modified by using the check-out to SharePoint feature, ensure the document is properly checked back into COMPASS.

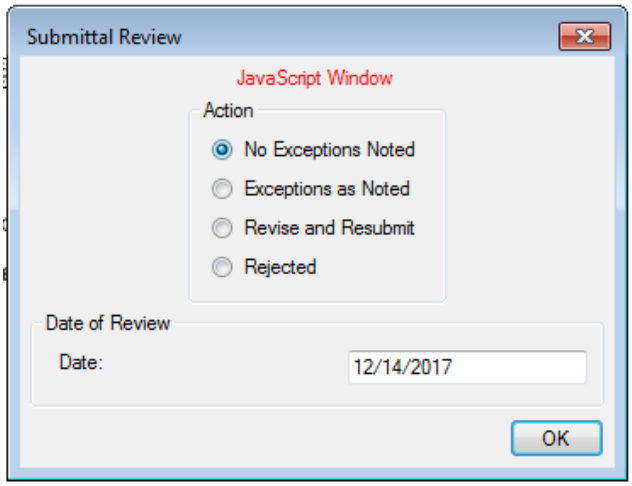
District Construction Review

After the designer has reviewed the working drawing submittal, District Construction should do the following:

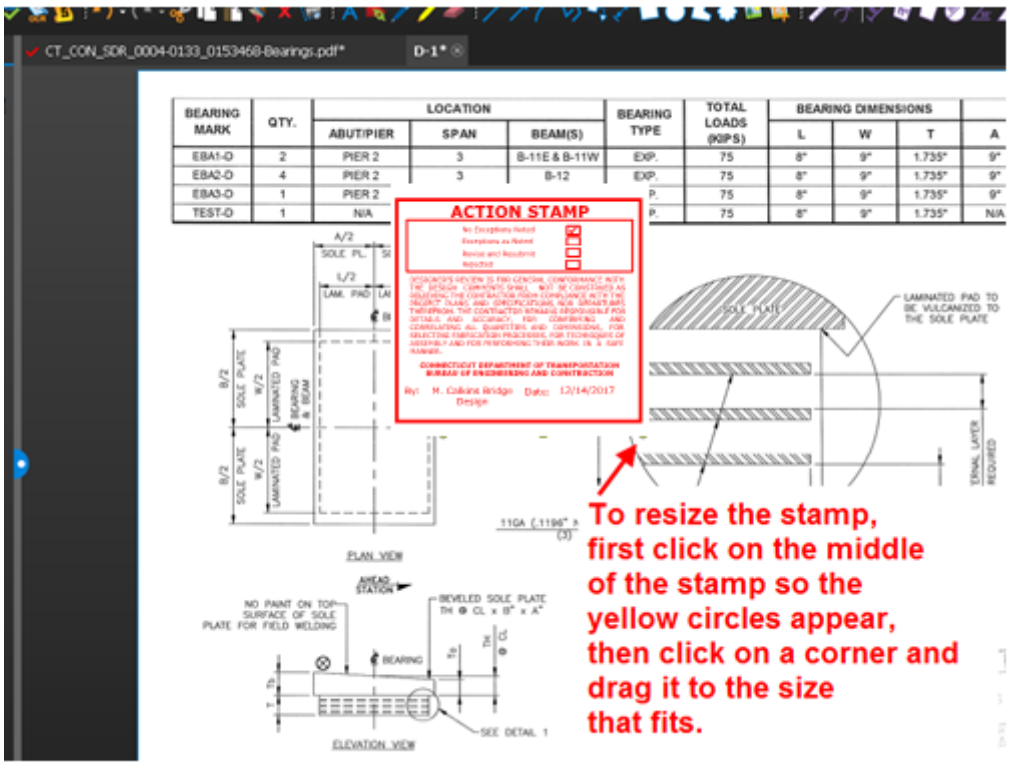
1. Review the designer's comments and update the comments on the drawings/documents as necessary. District has the final say on what comments the Contractor should be able to see.
2. Stamp each working drawing sheet with the action stamp; stamp the first page of any calculations or supporting documents with the action stamp.
3. Prepare the documents to provide CTDOT's response back to the Contractor.
4. Open the file from COMPASS.
5. To place the action stamp, left click on the stamp in the tool chest and then place it. Each plan sheet in a working drawing submittal shall be stamped. For calculations and supporting documents in a working drawing submittal, only the first sheet of those files needs to be stamped.



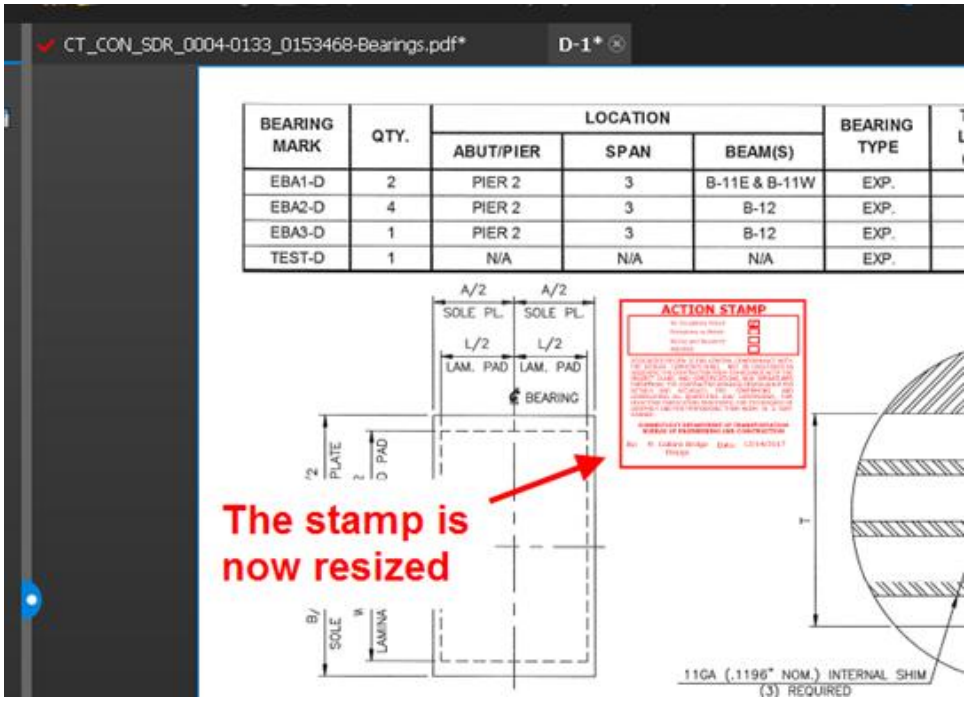
6. Next select the appropriate option from the java script window and click OK.



7. If the stamp is too big and is covering part of the drawing, resize the stamp by dragging a corner as shown below:



The stamp is now resized as shown below:



8. Close Bluebeam when complete. If the document is in a Bluebeam Studio Session, the stamps will save automatically. If the document is being modified by using the check-out to SharePoint feature, ensure the document is properly checked back into COMPASS.
9. Repeat the review process for each document in the submittal.

11.4.4.6 Completing the Review – Advancing the Submittal

Once the review is complete there are two options available to move forward.

- Further action is required by the Contractor – Revise and Resubmit
  - One or more pages of the submittal documents have received a Revise and Resubmit Action Stamp or Rejected Action Stamp.
  - During this process, the submittal owner may provide supplemental comments in the comment pop-up window, but the comprehensive comments should always be on the submittal documents.
  - Once the reviewers have all completed the review and it has been identified that further action is required by the Contractor, the submittal owner must click the Revise and Resubmit button. This will change the review status displayed in the S&T table from In Review to Revise and Resubmit.

- No further action is required by the Contractor – Complete
  - All Action Stamps are either No Exceptions, or Exceptions as Noted
  - Once the reviewers have all completed the review and it has been identified that no further action is required by the Contractor, the submittal owner shall click the Complete button. This will change the review status from, In Review to Complete.

11.5. Revise and Resubmit

Please see COMPASS Knowledge Center - Contractor Submittals - Review Status for details.

11.6. Complete

Please see COMPASS Knowledge Center - Contractor Submittals - Review Status for details.

11.7. Draft

Please see COMPASS Knowledge Center - Contractor Submittals - Review Status for details.

11.8. Send Back to Owner

Please see COMPASS Knowledge Center - Contractor Submittals - Review Status for details.

11.9. Adding Attachments to a Submittal

Please see COMPASS Knowledge Center - Contractor Submittals: Adding Attachments to a Submittal for details.

11.10. Reopen Complete Submittal / Transmittal Envelope

Please see COMPASS Knowledge Center - Reopen Complete Submittal/Transmittal Envelope for how to reopen completed Submittal / Transmittal Envelope.

11.11. Delete a Submittal

Please see COMPASS Knowledge Center - Contractor Submittals: Delete a Submittal for details.

11.12. Revising and Replacing a File

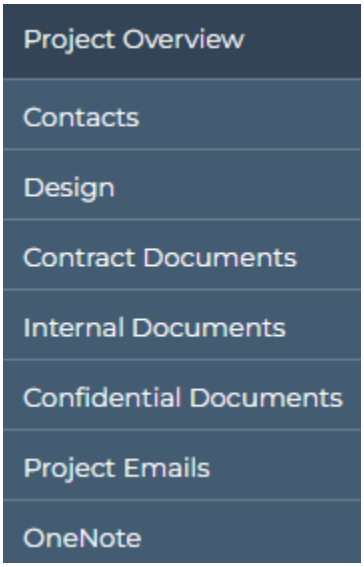
Please see COMPASS Knowledge Center - Contractor Submittals: Revising and Replacing a File for details.

11.13. Comments

Please see COMPASS Knowledge Center - Contractor Submittals: Comments/Log for details.

11.14. Document Storage

There are four SharePoint libraries attached to each project in COMPASS: Design, Contract Documents, Internal Documents and Confidential Documents. See Project Folder Structure and Required Documents for Capital Projects for more details. To access a document library, navigate to the Project Dashboard, Details or Submittals/Transmittals page of the selected project.



By default, all Contractor submittals are saved to the Internal Documents library, in the folder named 120_Contractor_Submittals (PDF). Once a contractor submittal is marked complete, it automatically relocates to the Contract Documents → 125_Completed_Submittals folder (except for Payrolls).

11.14.1 Document Storage Securities

See COMPASS Permissions Model (sharepoint.com) for design library and folder permissions.

Additional resources:

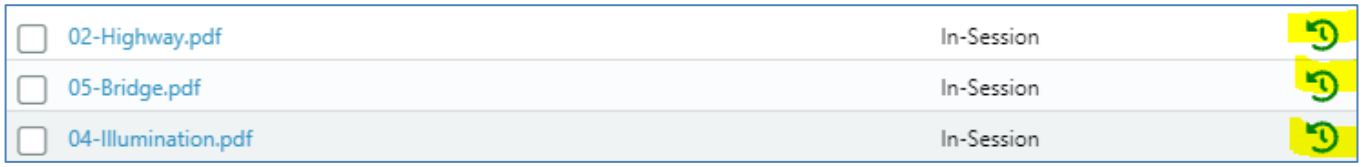
- Share SharePoint files or folders (microsoft.com)
- See who a file is shared with in OneDrive or SharePoint (microsoft.com)

11.14.2 Version History

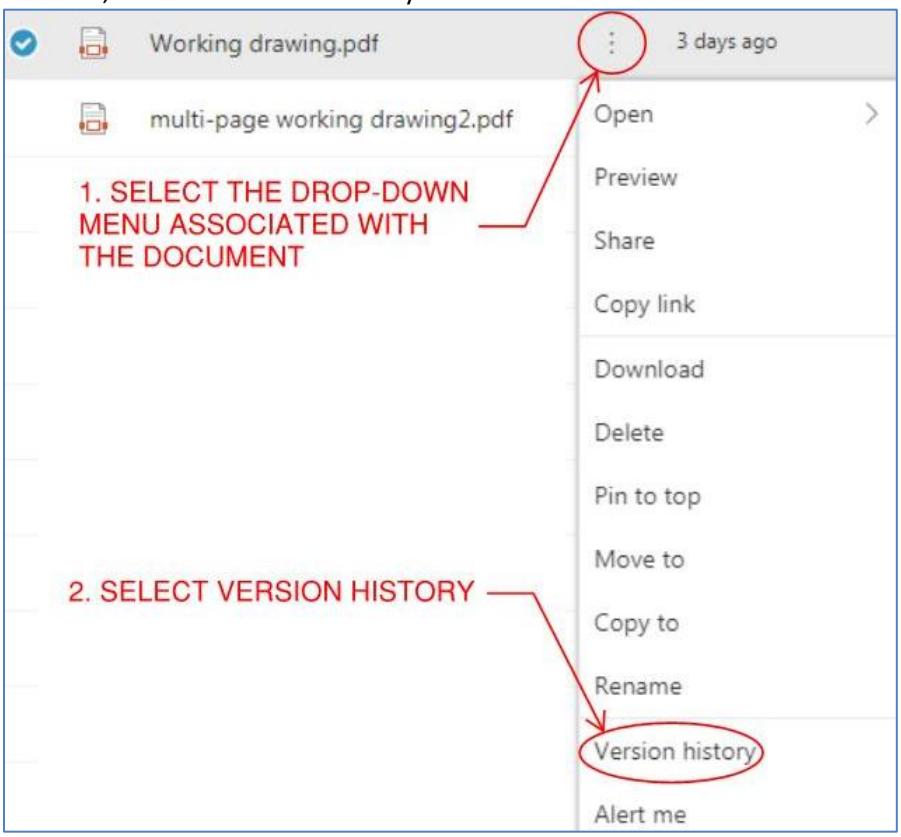
COMPASS includes automated Version History. Every version of each individual document is automatically saved in COMPASS. This includes the original document as submitted, versions saved from Bluebeam Studio Sessions, versions saved from checking out to SharePoint and replacement files submitted in response to a Revise and Resubmit.

Version history can be accessed in two ways.

1. In the submittal envelope, select the green version history icon:



2. Navigate to the appropriate folder. Before a submittal is marked complete, the documents are stored in the Internal Documents → 120_Contractor_Submittals (PDF) folder. Once marked complete, contractor submittals – except for Payrolls – can be found in the Contract Documents → 125_Completed_Submittals folder.
    a. Navigate to the document.
    b. Click the ellipses (three dots) to show the drop-down menu associated with the preferred document, then click Version history.



    c. The document version history shows in a new window. All versions of the document are listed with their associated version number, date, and author. Click on any version's hyperlink to view the version. When a file has been saved back from a finalized Bluebeam Studio Session, it presents as Modified By app@sharepoint.com.

11.15. S&T File and Document Grid Management

Please see S&T File Management - Rename and Move Files and S&T Document Grid Management for details.

12. Digital Review and Commenting

12.1. Introduction

A digital review is when a document is reviewed in its native digital format or as a digital copy of the original paper document. Any required markups are placed directly on the document using a computer with software designed for managing digital reviews. The documents can also be printed from the review session and the paper copy marked up; however, those markups must get transferred back to the digital copy. See Submitting Documents to CTDOT for details on how to perform a digital review in COMPASS.

Advantages of a Digital Review Compared to Conventional Paper Review

1. Higher Transparency – Increased Collaboration.
2. Digital markups are searchable and sortable, by comment, author, etc.
3. Real time collaboration review process improves turnaround time and quality of the review.
4. Real time feedback allows easier handling of large amounts of data.
5. Reduces the time required to compile and resolve comments.
6. Eliminates document mailing time.
7. Reduces document printing.
8. Eliminates shipping cost.
9. Easily store a permanent digital record on the cloud.
10. Overall reduction in review time.

Types of Reviews:

This manual may be used as a guide to perform a digital document review on any digital document. Below is a list of examples of the types of documents that may be reviewed:

- Preliminary Design Plans
- Structure Type Studies
- Semi-Final Plans
- Final Plans for Review
- Special provisions
- Engineering Reports

Review Process:

To help participants of a digital review more easily track the digital review process it has been split up into six Phases as listed below:

- Phase 1 – Preparation of the Digital Documents
- Phase 2 – Set Up Digital Review
- Phase 3 – Invite Attendees to Review
- Phase 4 – Digital Review
- Phase 5 – Ending the Digital Review
- Phase 6 – Resolve Comments

Each phase and its required steps will be discussed later in detail.

Digital Comments:

In this review process, all comments must be applied to the documents in the review session.

All comments associated with a design submission should be applied to the digital documents. Telephone of email comments must be applied to the correct digital document by the staff member who received them. Be sure to use engineering judgment to determine the most appropriate location for the comments in the

document. General project comments can be placed on the first sheet of the document using the note markup tool in Bluebeam. If any outside entities (railroads or utilities) will not participate in the digital review, their comments with your responses should be attached to the final record copy. **It is not necessary to transpose these comments individually as all comments can be attached at one time.**

12.2. Prerequisites

All CTDOT digital review participants are required to complete the steps provided in Appendix A prior to organizing or joining a review session. Completing these steps will standardize the Bluebeam format across all CTDOT digital reviews.

12.3. Phase 1 – Digital Document Preparation

12.3.1 Organization

Below are the guidelines by which the review documents should be organized:

Preliminary Contract Document Reviews – PD, SF, FPFR, etc.

1. **Plans -** Must be in discipline subsets. The review Organizer is responsible for assigning each Author a subset number.
2. **Special provisions –** Each discipline shall combine all their special provisions into one (1) PDF document. Each discipline's special provisions will remain separate throughout the review session; they will not be combined with the other discipline's special provisions.
3. **Other Documents –** Shall be individual PDF documents.

Other Reviews

1. The only requirement for the organization of other types of reviews is that the documents must be in PDF format.

12.3.2 Preparation and Format

Authors shall prepare their digital documents in accordance with the following guidelines:
Preliminary Contract Document Reviews – PD, SF, FPFR, etc.

1. Plans:
    a. Must be in PDF format.
    b. Plans must be in discipline subsets.
    c. Plans must be sized 34" x 22"
    d. Do not need watermarks, sheet numbers or to be digitally signed.
2. Special provisions:
    a. Each discipline shall combine all their special provisions for review into one (1) PDF document.
    b. Sized 8.5" x 11"
3. Other Documents:
    a. Must be in PDF Format

Other Reviews

1. Documents:
    a. Must be in PDF Format

12.4. Phase 2 – Set Up Digital Review

Please see PS&E Milestone Reviews in COMPASS for information on how to set up a digital review in COMPASS.

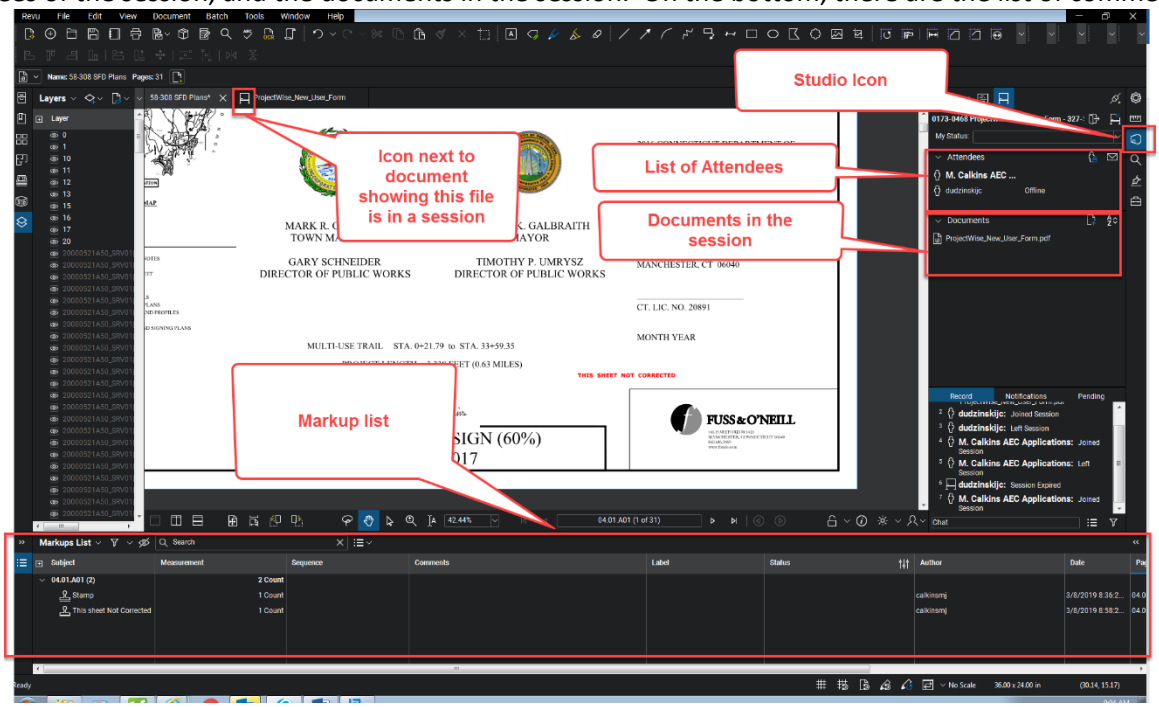
12.5. Phase 3 – Invite Attendees to Review

Please see PS&E Milestone Reviews in COMPASS for information on how to invite attendees to the digital review in COMPASS.

12.6. Phase 4 – Digital Review

12.6.1 Review Session Layout

Below is the typical layout in the review session. On the right tab, there are the tool chest for commenting, the attendees of the session, and the documents in the session. On the bottom, there are the list of comments.



All comments that are made get saved instantly to the Bluebeam review session; these do not need to be manually saved. Each user can only delete their own comments and can leave and rejoin as many times as they want if the review session has not been closed. The review session will be closed by the Organizer in accordance with the date on the review memo.

12.6.2 Reviewing

All CTDOT digital review participants are required to complete the steps provided in Appendix A prior to organizing or joining a review session.

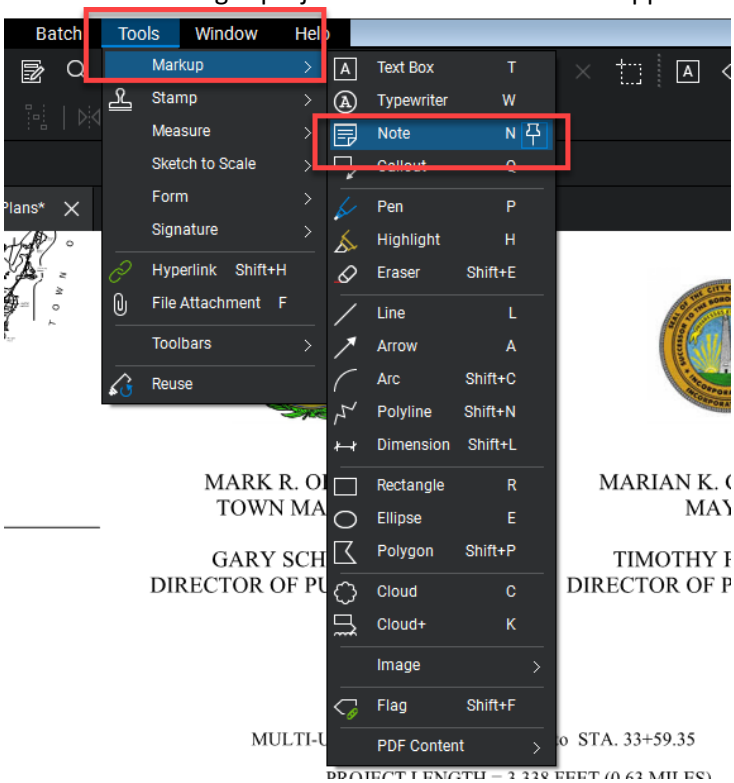
This section shows the procedures for reviewing and commenting on documents in a digital review.

In the case of preliminary contract plan reviews, the original digital documents, with comments, will become the final record.

All comments associated with a design submission should be applied to the digital documents, including any email or phone call comments. These types of comments must be applied, by the staff member who received

the email or phone call, to the correct digital document, use engineering judgment to determine the most appropriate location.

General Project wide comments can be placed on the first sheet of the document using the note markup tool in Bluebeam as shown below: Using the note tool you can copy and paste text from any source such as an email or a Word document. This allows larger project wide comments to be applied to the plans.



Note about Commenting in a Review Session and Supervisor Approvals

In most cases, the unit that reviews a document has an internal approval process whereby the supervisor finalizes the comments from staff members. The workflow described in this Chapter does not specify or dictate an approval process within each unit; rather, it outlines the review procedures once the review comments have been compiled from each unit. Therefore, it is important that only the reviewing unit's final comments be added to the review session. Once the session ends, the comments made in a review session will be considered final.

The following shows a few options for a supervisor approval procedure, but the digital review process is flexible for any procedure a reviewing unit develops. The only restriction is the final comments must be placed on the digital documents located in the review session before the review session ends:

1. A lower-level employee can join the session and comment on the documents in the review session. Then the supervisor can join the session and filter out their subordinates' comments for their review. If there is an issue with a comment the supervisor will have to direct the lower-level employee to fix that comment. If there are not any issues with the lower-level employee's comments, then nothing must be fixed. After the supervisor review, a lower-level employee will join the session and fix the applicable comments.

2. A lower-level employee can join the review session and save a copy of the review documents to their computer. Then they can markup the documents offline and have their supervisor approve those

comments. After the supervisor approves the comments, those comments can then be imported into the documents in the review session.

3. A lower-level employee can join the session and print the documents in that review session. Then they can markup the prints and have their supervisor approve the comments. After the approval, a lower-level employee can transfer the comments to the digital documents in the review session. In section 10.1 of this manual there is a list of advantages to this digital review process. With this option, advantages 3 and 4 are eliminated due to the comments made offline.

Notes about Outside Entities that will not Participate in a Digital Review

If an outside entity such as a railroad or utility company will not participate in a digital review it is still important to add their comments to the final record document in COMPASS. It is encouraged to have these entities participate in the digital review and AEC Applications is available to provide support and technical assistance in these efforts.

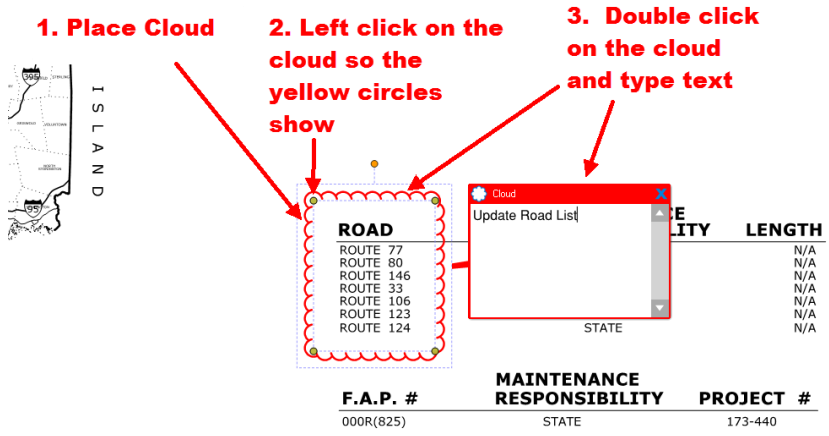
The following details how the comments from a non-participating entity and your responses to those comments shall be attached to the final record document in COMPASS:

1. Create a PDF document that includes the non-participating outside entity's comments and your responses to those comments.
2. Then add the pages from that document to the end of the final record document in COMPASS.

MUST READ BEFORE PLACING COMMENTS

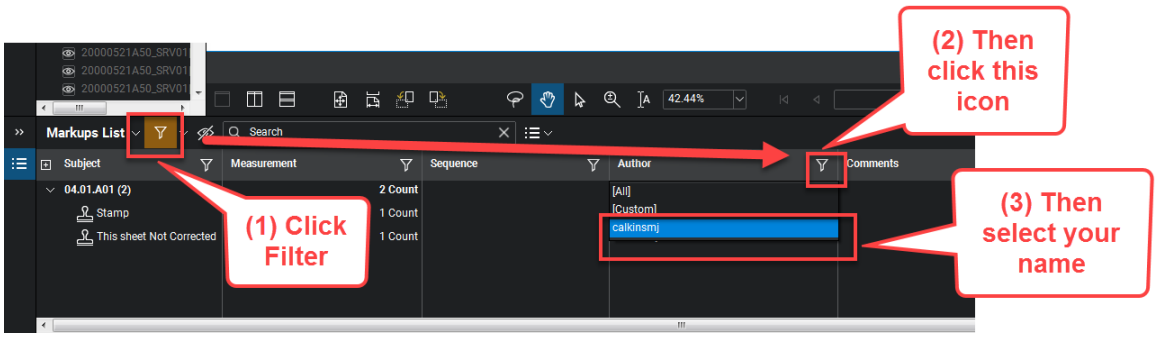
The following shows best practice for applying text notes in a review session.

There are two basic commenting tools in Bluebeam: Text Tools and Non-Text Tools (line, arrow, cloud, rectangle, etc.). Each type can have a note attached to them. The text tools already have a note when you type text, but the non-text tools can also have a note attached to them. To attach a text note to a non-text tool, place the comment and then double click on that markup. Then you can type in your note. **The text note box must be closed after the comment is made by clicking on the X in the top right corner of the note.** The example below shows a note being attached to the cloud tool the correct way:

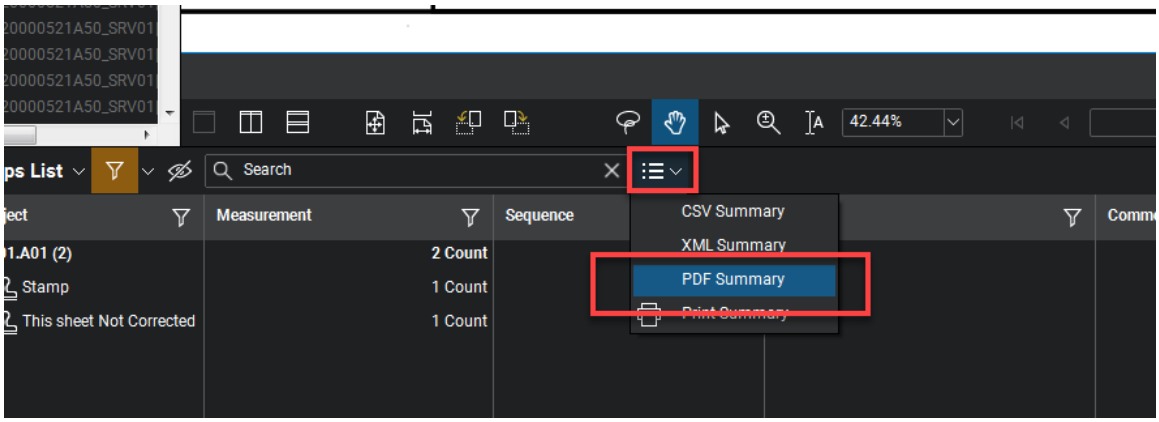


General Project wide comments can be placed on the first sheet of the document using the note markup tool located in the tool chest. Text can be copied and pasted into the note tool as necessary.

1. Create a review comment report of your comments. First filter out the comments so only your comments are displayed as shown below:



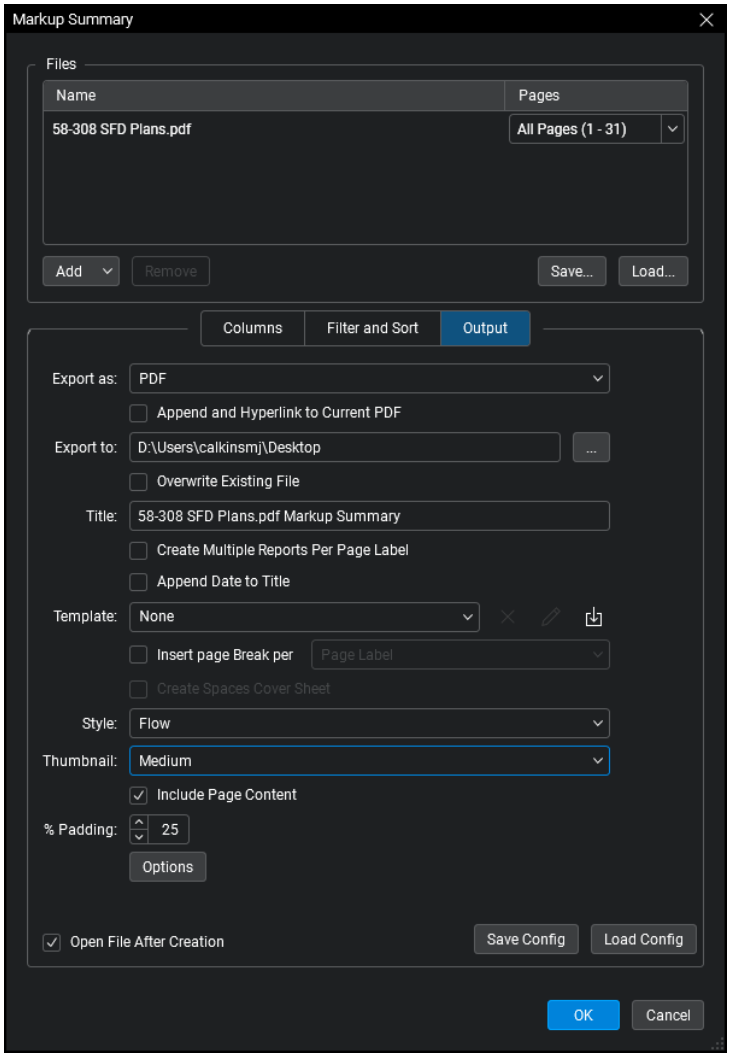
2. Now that the comments are filtered by your name create a comment report as shown below:



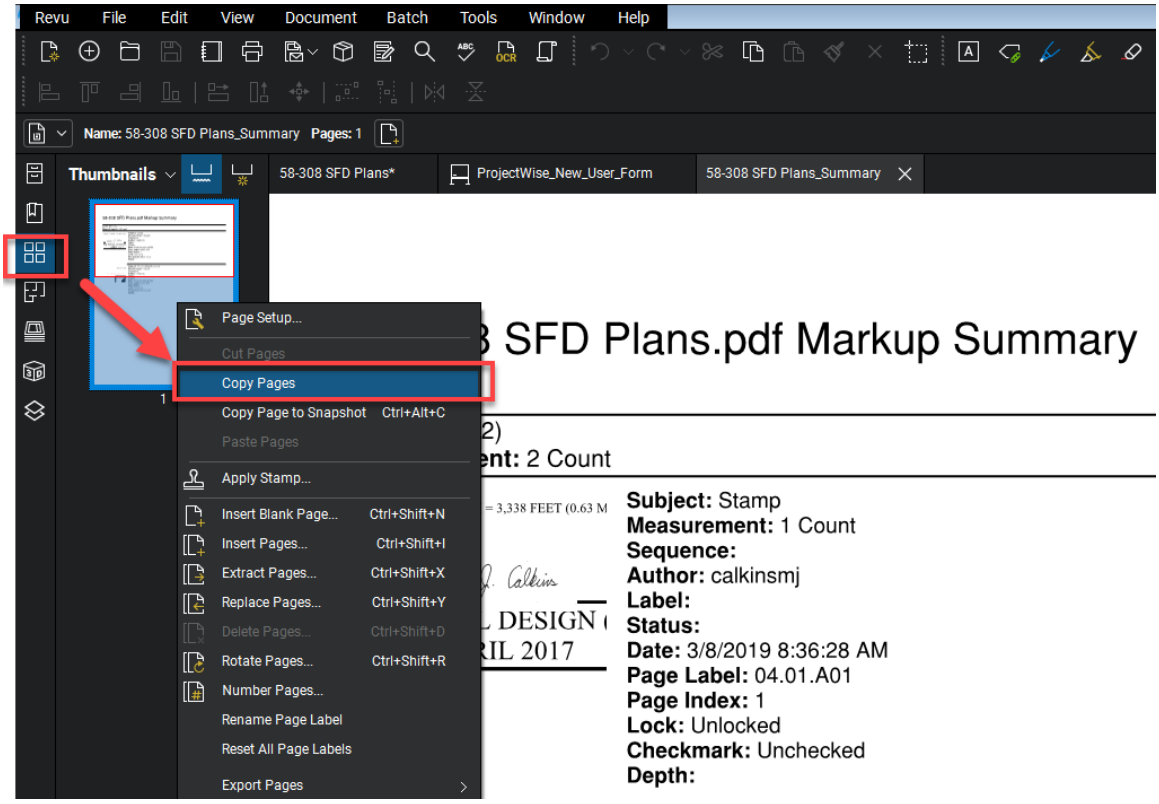
Next type in a title for the comment report that includes Project No, what review it is plus the word "Comments", and what document this comment report is for. See below for an example:

Project ####-#### Semi Final Review Comments 03-Highways

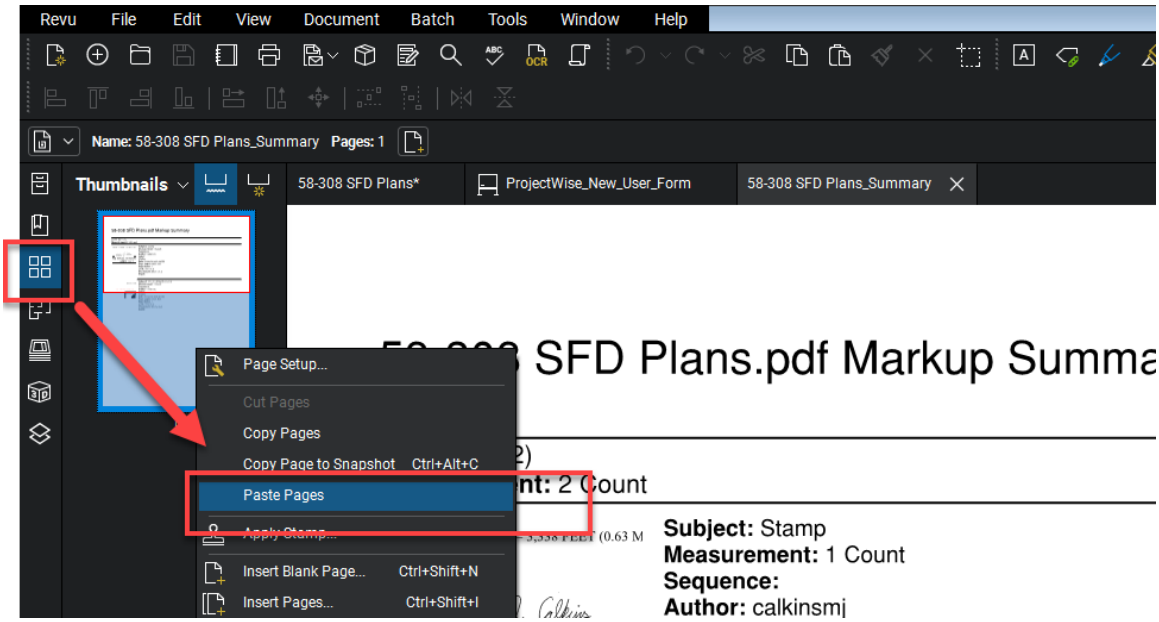
Make sure all the settings are set as shown below and click OK:



3. The comment report will now be created and opened in Bluebeam, leave the comment report open in Bluebeam. We will be copying this report into the comment report memo.
4. Next save the following review comment memo to your computer: Review Comment Memo.
5. Open the memo and fill in the correct information.
6. Then copy all the pages from the comment report as shown below:



7. Then paste the pages into the memo as shown below:



8. Save the memo and process this memo as your unit requires.

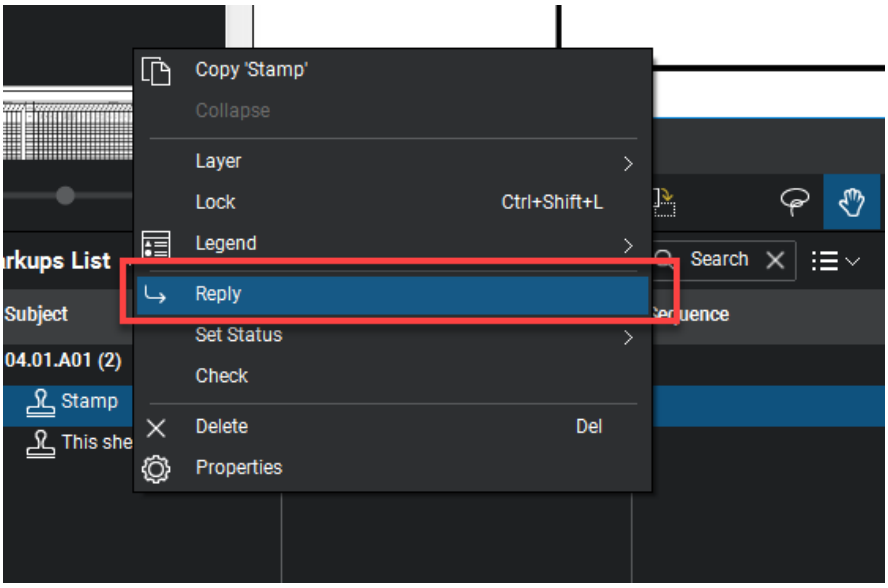
12.7. Phase 5 – Ending the Digital Review

Please see PS&E Milestone Reviews in COMPASS for information on how to end the digital review in COMPASS.

12.8. Phase 6 – Resolve Comments

All comments on the review documents shall be resolved by the Document Author directly on the digital PDF review documents using Bluebeam. The following shows the steps for resolving comments.

1. Open your document(s) from COMPASS.
2. Next select a comment in the comment list and right click. The select Reply.



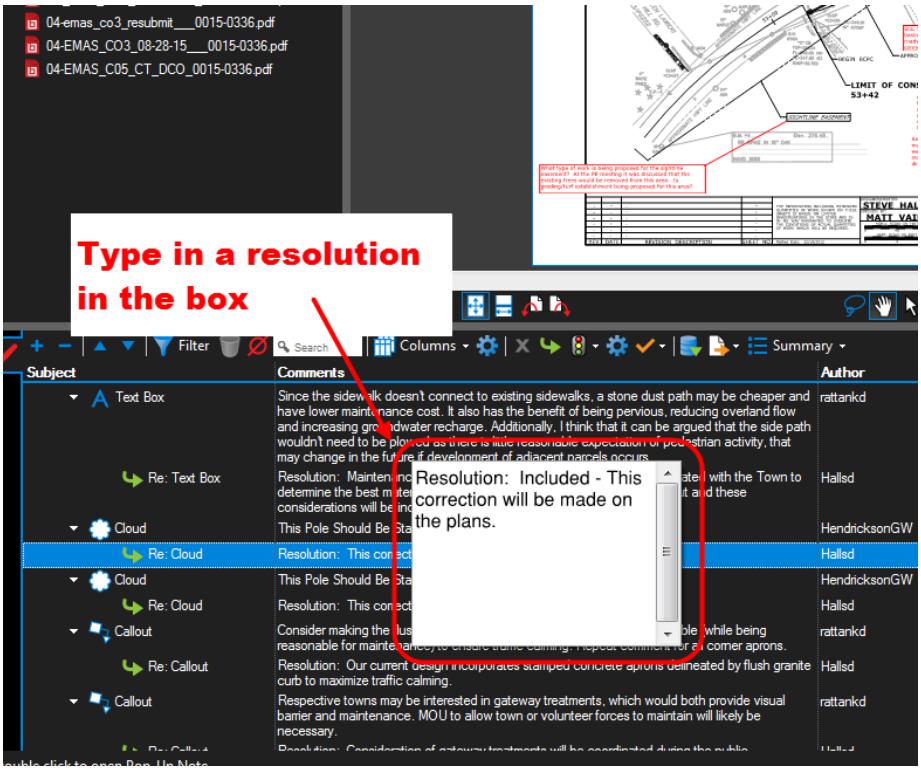
3. In the box that pops up, type in a final resolution in the following format:

Note: For plan sheets, include “Change Plans” or “No Change to Plans” where necessary.

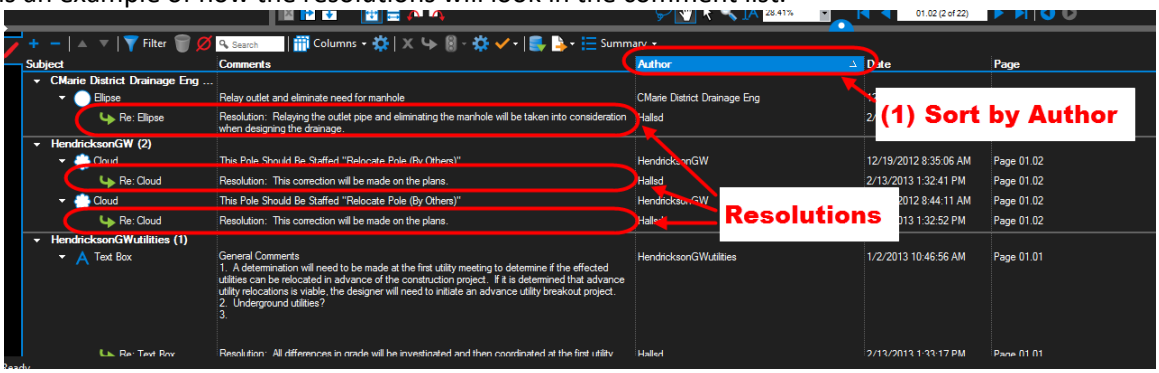
Resolution – Type in resolution...No Change to Plans

The resolutions applied to the plans shall be the final resolution decided by the Document Author’s unit. There shall only be one resolution for each comment.

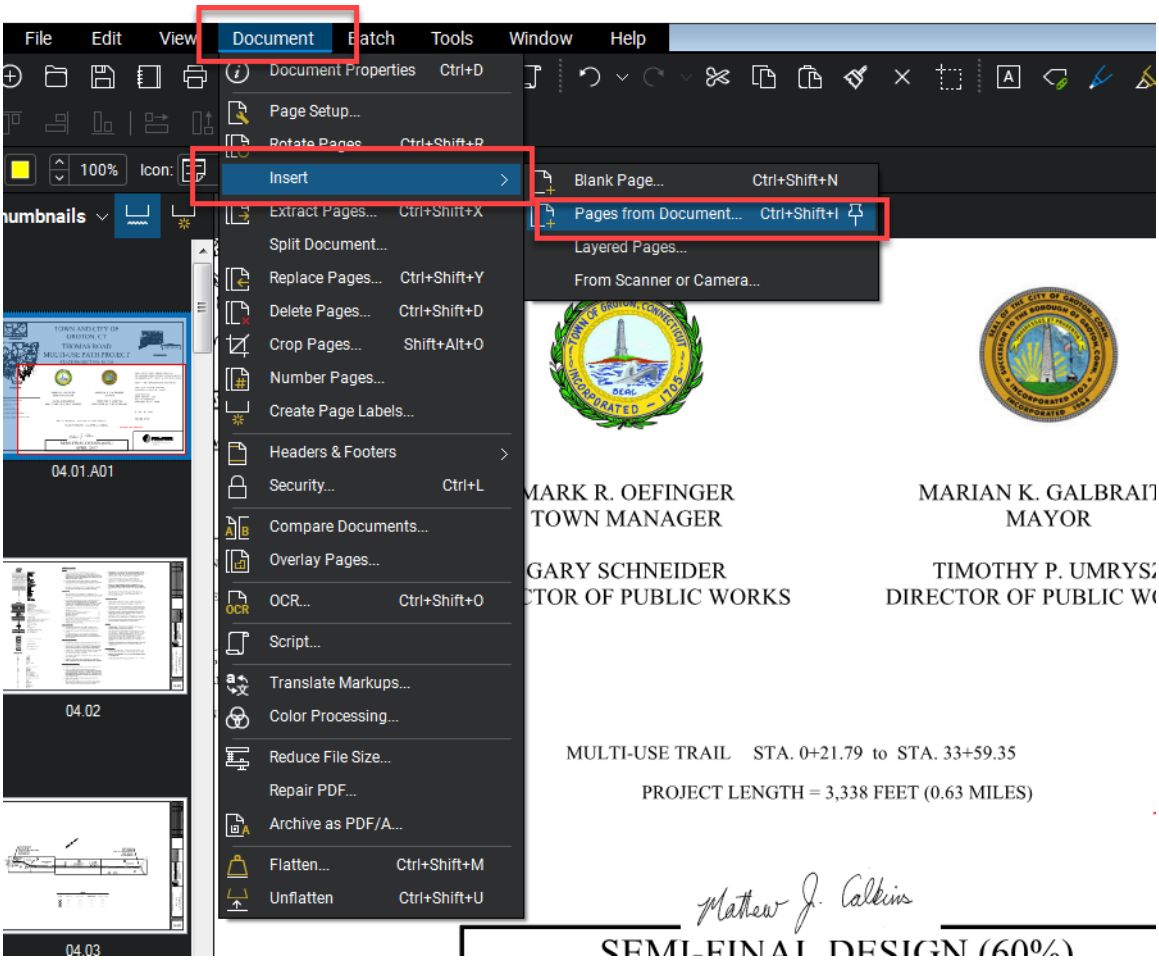
Below is an example of a resolution:



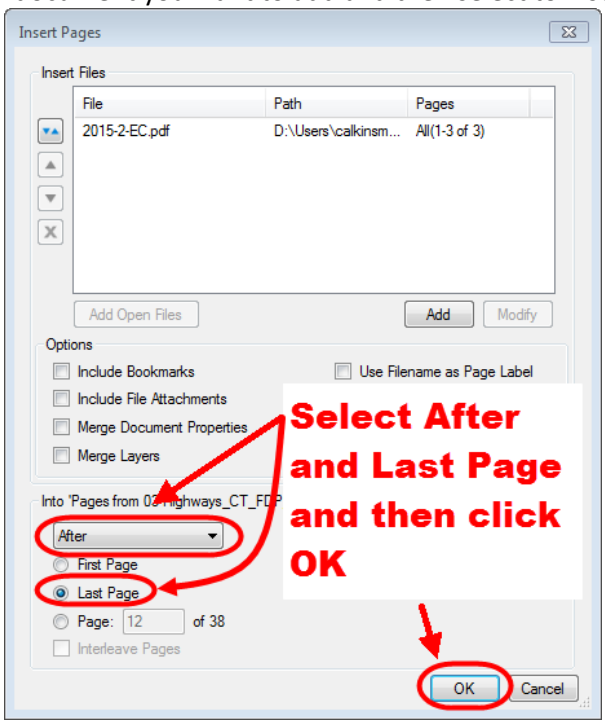
Below is an example of how the resolutions will look in the comment list.



4. Next attach a PDF document that includes any non-participating entities comments with your responses to the review document. This should be done by adding that PDF document to the end of the review document as shown below:



5. Browse out to the PDF document you want to add and then select to insert after the last page:



6. When all the resolutions have been applied, make sure to save the documents and check them back into COMPASS.
7. Notify the Review Organizer that you have completed your resolutions by clicking the gray complete button next to your name in COMPASS.
8. Send out Completion of Review Memo to all the personnel associated with the review session indicating that the review session is over, and all comments have been resolved on the documents in COMPASS. Link to: Completion of Design Review Memo

13. COMPASS Project Schedule

An Engineering working group evaluated several scheduling software options to support the mission statement. Microsoft Project was selected because it offers the following features and advantages:

- Accommodates any number of milestones and tasks (i.e., easily scalable),
- Graphically displays series and parallel tasks,
- Provides baseline and tracking Gantt charts,
- Displays the critical path,
- Ability to link notes and documents, and
- Interfaces with Outlook, Excel, SharePoint, and other Microsoft products.

Microsoft Project shall be used to develop design phase schedules meeting the following minimum requirements:

1. Includes all the activities identified by the *Minimum Requirement Schedule Template*; more detailed templates and project-specific schedules are encouraged,
2. Baseline schedule,
3. Task Indicator columns are used to link applicable instructional and reference documents,
4. Explanations for changes in task durations are added as task notes,
5. Tracking View/Gantt chart functions are used,
6. Task-level progress is tracked regularly,
7. Files are stored in COMPASS as indicated by the Digital Project Development Manual, and
8. Microsoft Project files are maintained and current, with projected schedules in accord with the obligation plan.

Base templates were developed by a committee that included Engineering Management and Subject Matter Experts (SMEs) from each engineering discipline. The Office of Engineering SMEs are as follows:

- *Bridge Design* – Kevin Blasi and David Gruttadauria
- *Consultant Bridge Design* – Derick Lessard and Marc Byrnes
- *Highway Design* – Scott Bushee, Jordan Pike, and Vitalij Staroverov
- *Consultant Design State Roads* – Nilesh Patel and Meredith Andrews
- *Traffic Projects Design* – Barry Schilling and Michael Chachakis
- *Traffic Studies* & Safety – Erika Lindeberg, Daniel Veronesi and Colin Baummer
- *Facilities Design* – Eric Feldblum and Jesse Benson

The SMEs are responsible for developing and maintaining division specific project templates and corresponding task libraries in Office 365. They shall be the first point of contact regarding discipline specific template and guidance document inquiries and maintenance.

For questions, suggestions and issues pertaining to Microsoft Project and the Scheduling Directive, please contact Bruce Bourgoin (Bruce.Bourgoin@ct.gov) or John Dudzinski (John.Dudzinski@ct.gov)

The table below details the minimum tasks included in the template:

Task Name
Project XXXX-XXXX
Project Initiation
• Prepare and Submit PPI
• Prepare and Approve RPM
• Secure Funding/Authorization

Preliminary Design
• Survey
• NEPA/CEPA
• Develop PD through Design Approval
• Design Approval
Final Design
• Prepare Semi-Final Design Submission
• Prepare Final Design Submission
ROW Coordination
• Prepare and Submit Final Accepted Property Maps
• Acquire Properties
Permit Acquisition Process
• Permit A
○ Prepare and Submit Permits to Regulatory Authority
○ Regulatory Authority Review and Issuance of Permit
• Permit B
○ Prepare and Submit Permits to Regulatory Authority
○ Regulatory Authority Review and Issuance of Permit
• Permit C
○ Prepare and Submit Permits to Regulatory Authority
○ Regulatory Authority Review and Issuance of Permit
FDP
DCD
ADV

13.1. Getting Started

All Microsoft Project schedules are now stored in Project Online, or Project Web App (PWA), which is referred to as COMPASS (DOT PWA).

13.1.1 Check your License and Access Permissions

COMPASS users may access the Microsoft Project Summary Report for insight into any MS Project schedule, Gantt charts and critical path. No license is required to view this report.

Project Managers and any individuals who will be actively maintaining an MS Project schedule must have a Microsoft Project license.

To check if you have a license, check My Account Subscriptions for *Project Plan 3 for GCC*.

To request a *Project Plan 3 for GCC* license:

Contact the CTDOT HelpDesk at DOT.Helpdesk@ct.gov.

To request access to COMPASS (DOT PWA):

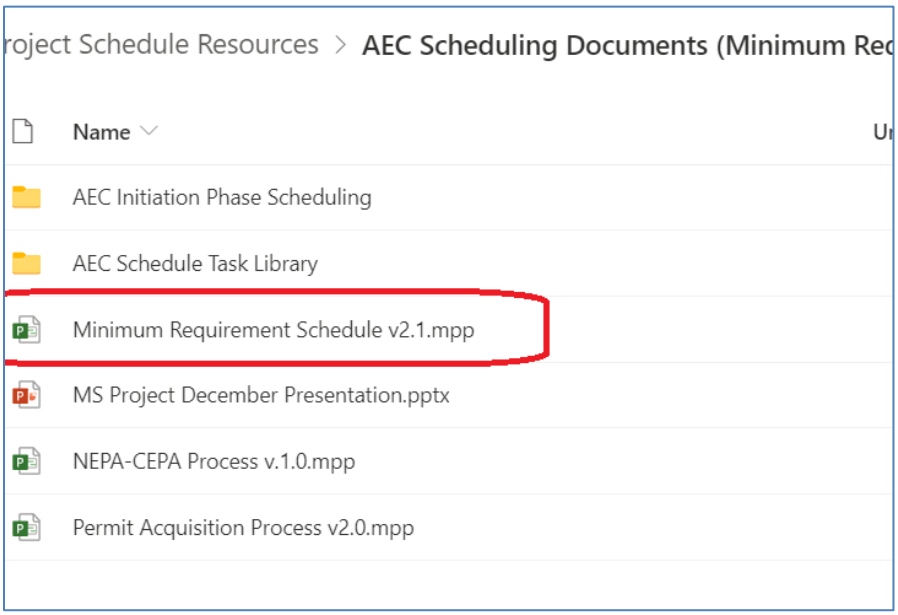
Create a ticket with COMPASS Support | Microsoft Project.

13.1.2 Create a New Schedule

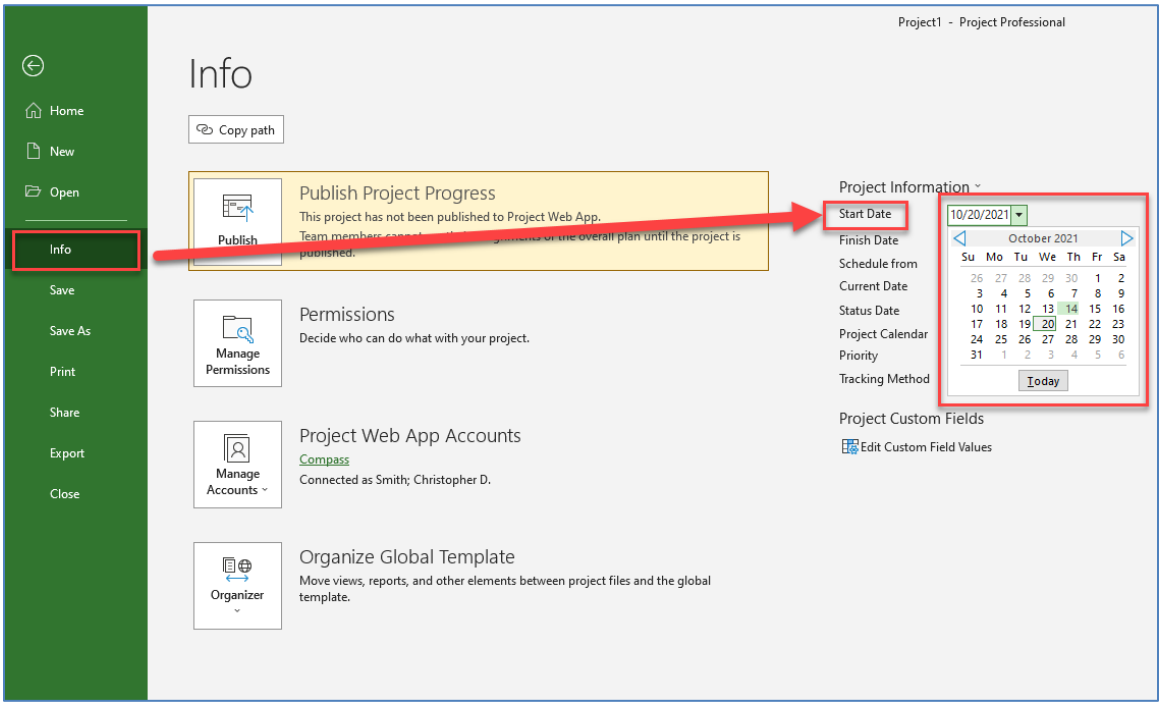
The following steps show how to set-up a Microsoft Project file:

1. Navigate to the Project Schedule Resources folder on the Engineering Administrator SharePoint site.

2. Select the applicable Scheduling Documents folder. The minimum requirement schedule template is stored in the AEC Scheduling Documents (Minimum Req) folder.



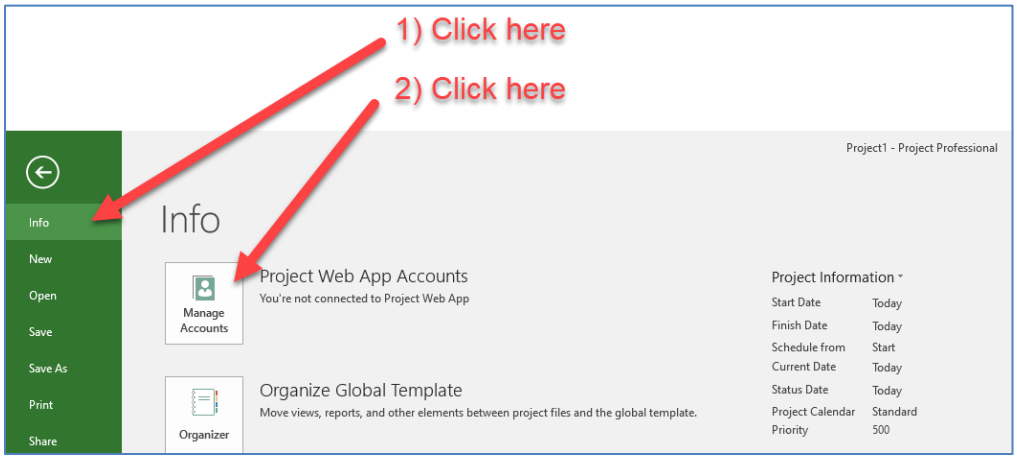
3. Locate the desired schedule, save the file locally and prepare MS Project schedule.
4. Next open the project file.
5. Set the project start date by selecting the **File** menu > select **Info,** then select the date as shown below:



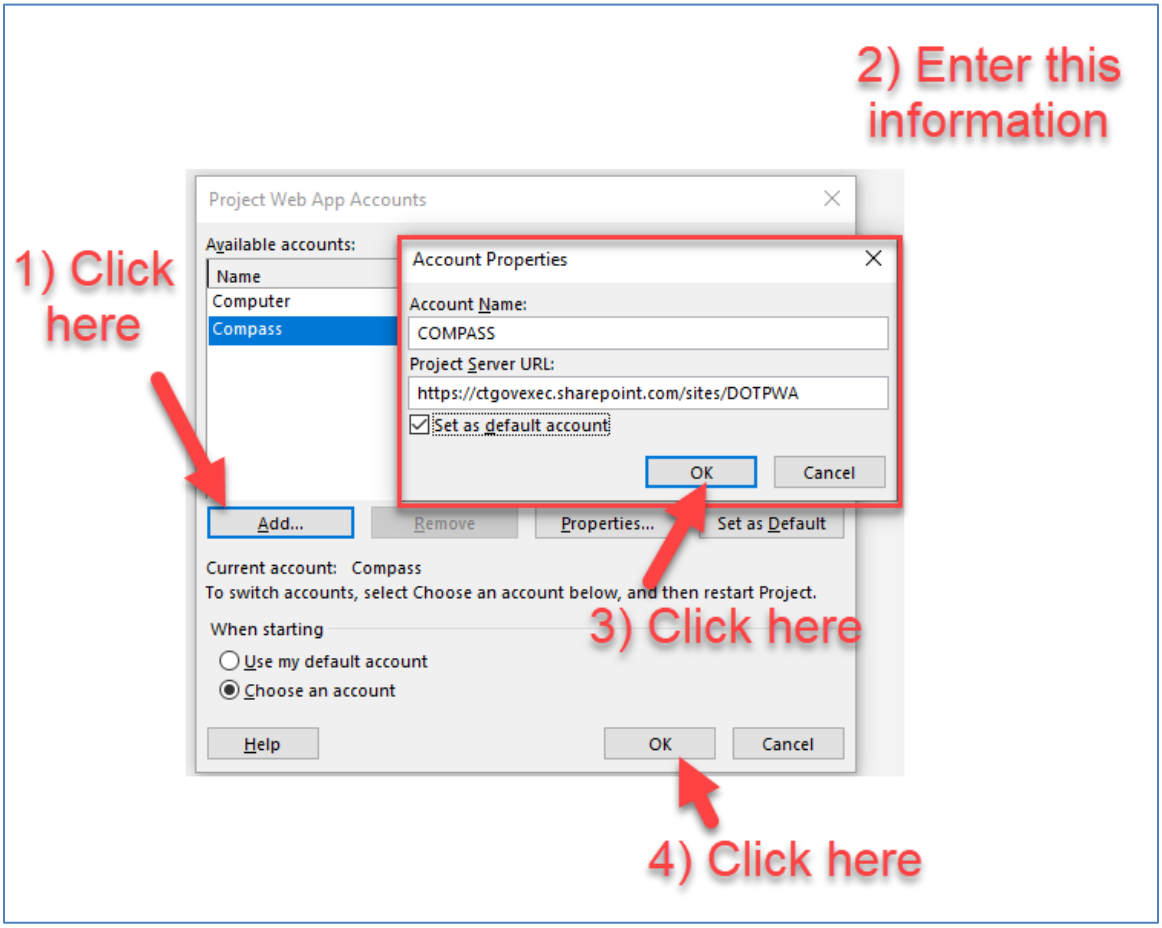
13.1.3 Connect to COMPASS (DOT PWA)

To interact directly with schedules stored in COMPASS (DOT PWA) via the MS Project Professional Desktop Application, set-up the configuration as follows:

1. Open the Microsoft Project Professional desktop application.
2. Click the **File** menu at the top of the screen (open your project if you don't see **File** menu).
3. Press **Info > Manage Accounts > Configure Accounts**



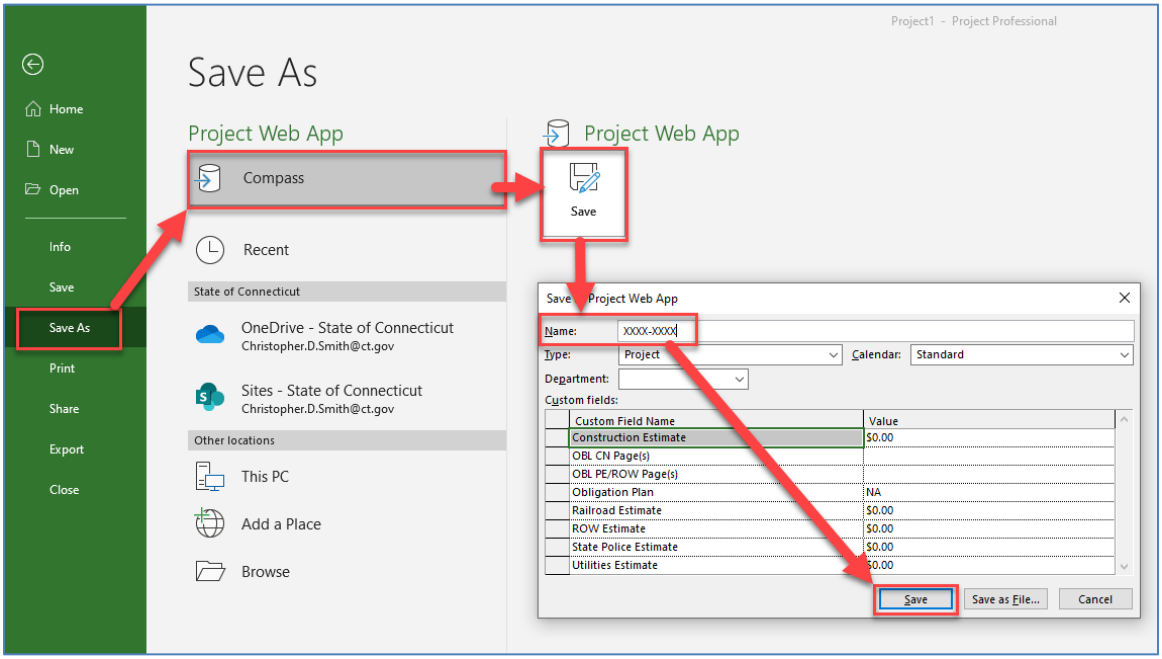
4. Click **Add**.
5. In the **Account Properties** window, enter the information provided below, then click **OK**.
   Account Name: COMPASS
   Project Server URL: https://ctgovexec.sharepoint.com/sites/DOTPWA
   Check the box: Set as default account.



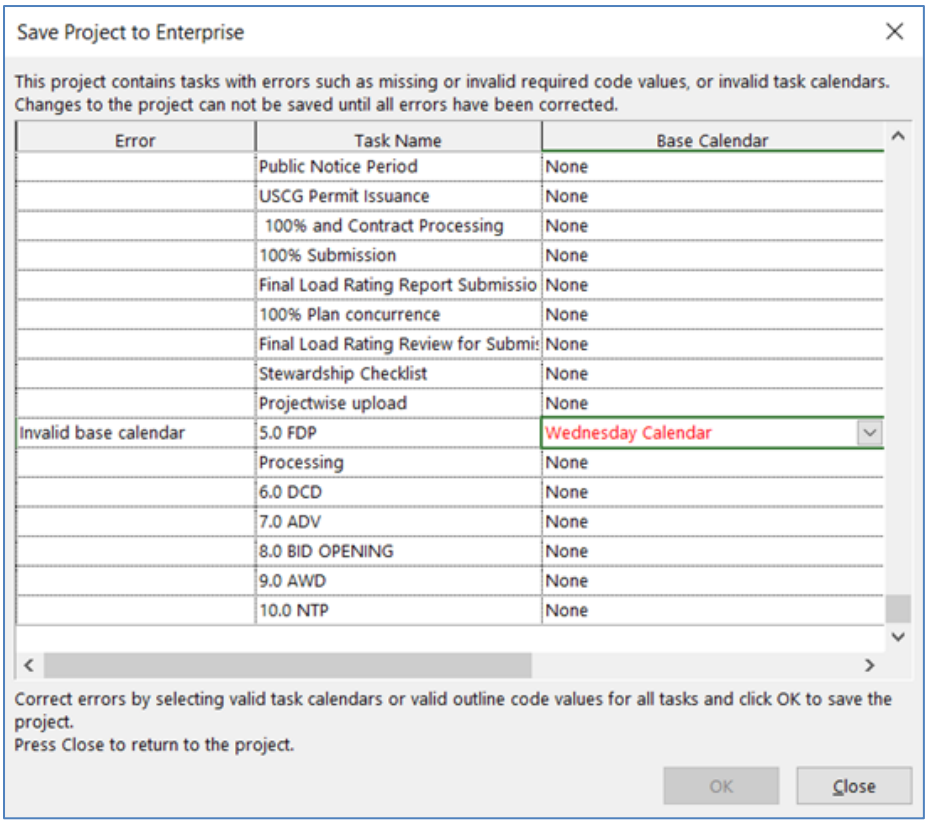
13.1.4 Save to COMPASS (DOT PWA)

When a new MS Project schedule is ready to be added to COMPASS (DOT PWA) follow the following steps:

1. **File > Save As > COMPASS**. (If missing refer to Section 13.1.3: Connect to COMPASS on page 133.)
2. **Save > Name the project schedule as the full 8-digit project number with hyphen exactly.** The name is how COMPASS and other systems reference the data from the schedule.

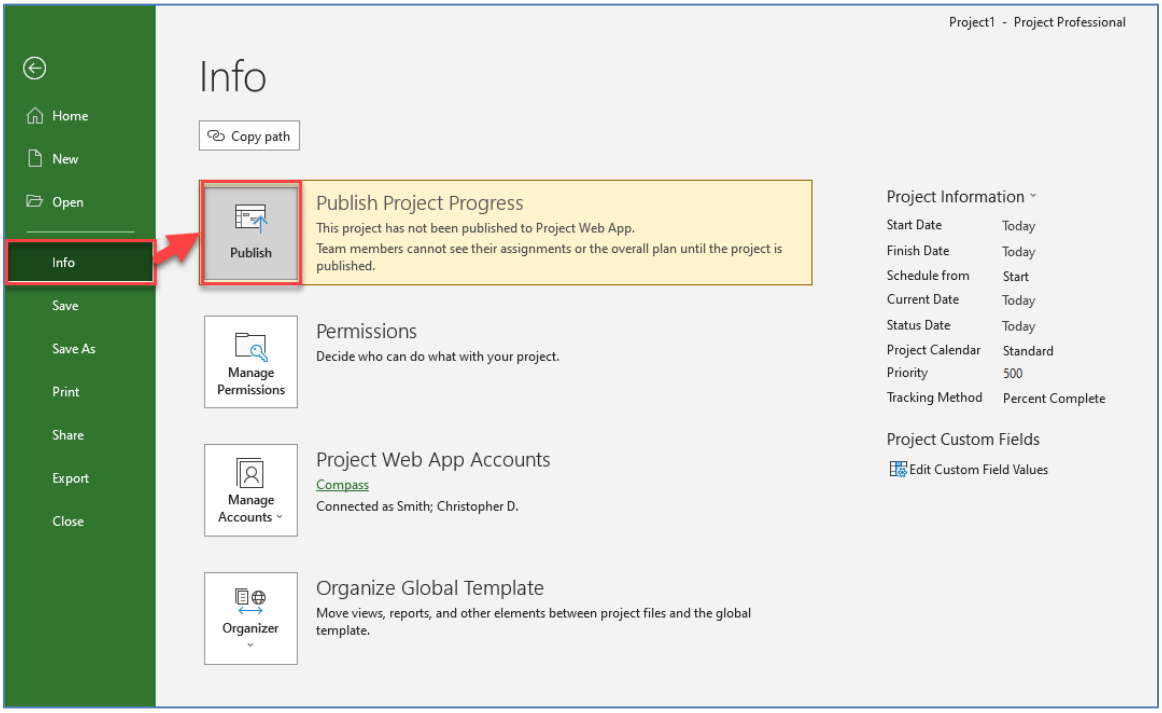


3. If applicable map the existing red custom calendars to their corresponding enterprise custom calendars in the cloud.



13.1.5 Publish to COMPASS (DOT PWA)

1. Once Saved, publish the schedule by **File > Info > Publish.**



Once the schedule is published with the correct name it will be automatically linked to the project's COMPASS pages.

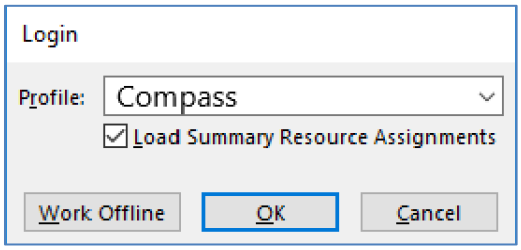
13.2. How to Access

This section will describe how to open and edit your COMPASS (DOT PWA) Project Schedules.

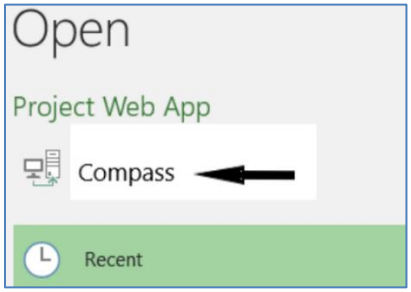
13.2.1 Desktop Application

Schedules can be opened to view or edit via the MS Project Professional desktop application:

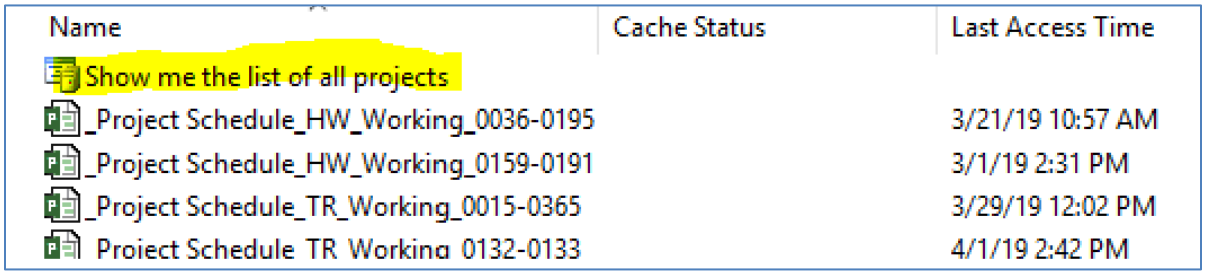
1. **Open** the Microsoft Project Professional desktop application.
2. Select the **COMPASS** profile; click OK.



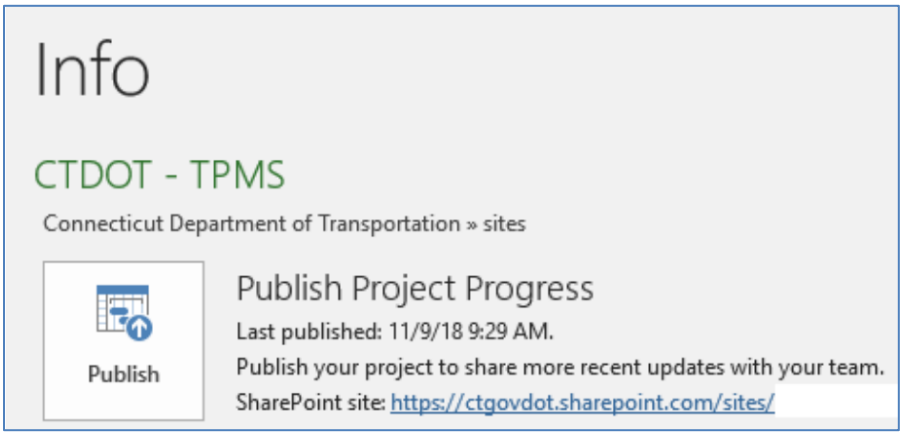
3. Select **Open Other Projects**.
4. Under Project Web App, select **COMPASS**.



5. Click **Browse** and select the desired project schedule from the list. (Note: If the Project schedule is not listed, click "Show me the list of all projects.")



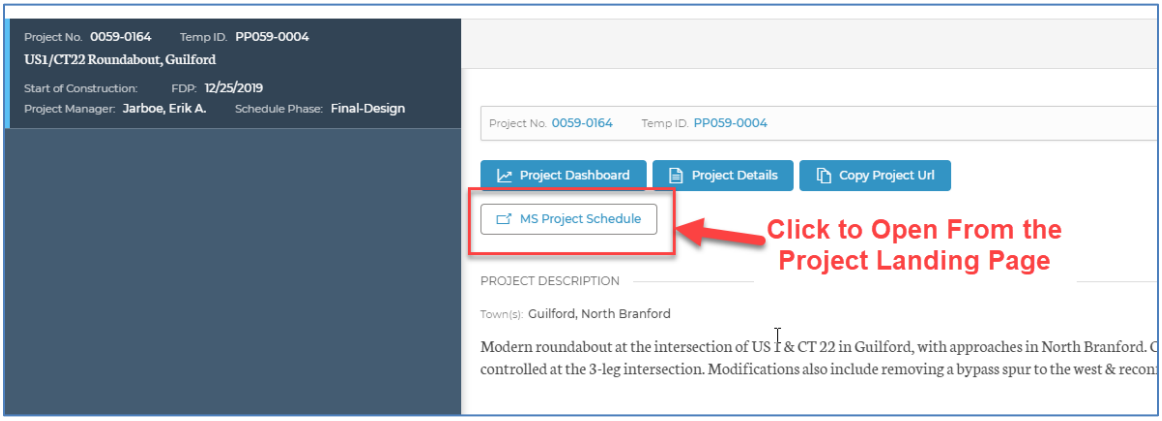
6. Then click **Open**.
7. After the edits are completed, **Save** the file.
8. Then publish the MS Project file back to COMPASS by clicking on **File > Info > Publish**.

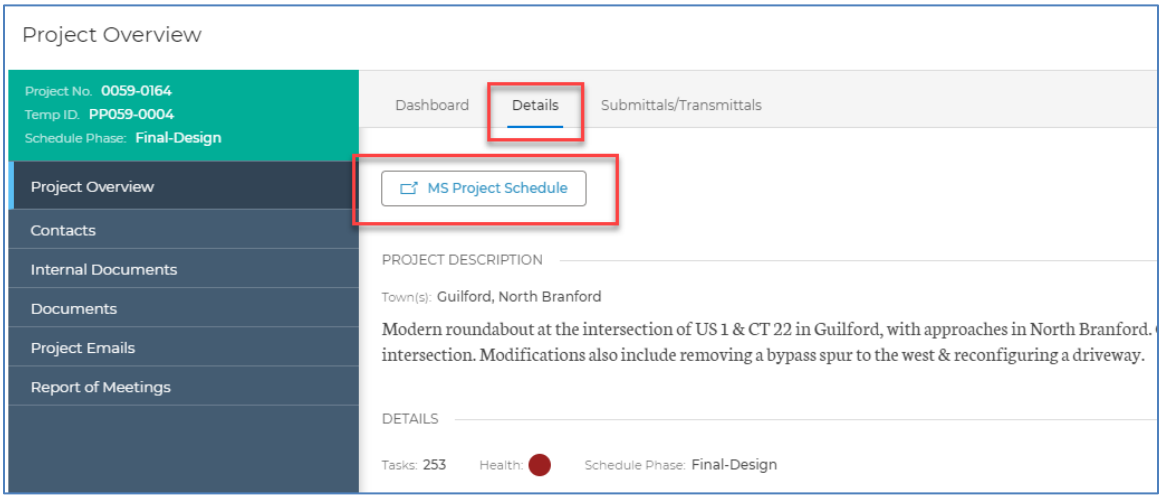


13.2.2 COMPASS Project Site

Schedules can be opened via COMPASS.

1. Navigate to the project's COMPASS site.
2. Click on the **MS Project Schedule** button on the landing page or on the Project details page.



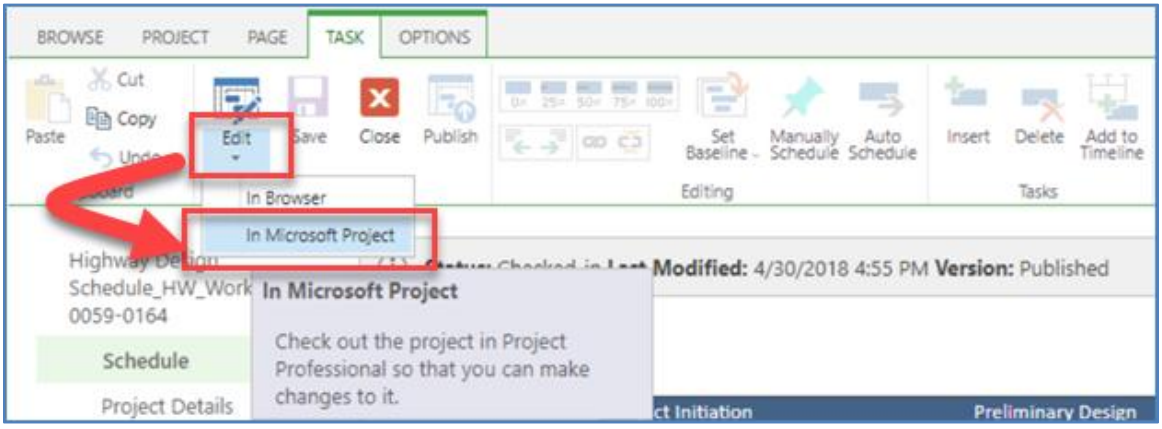


This will bring you to the COMPASS (DOT PWA) site.

3. Navigate to the **TASK** tab, click the down arrow on the **Edit** button where you'll have the option to edit **In Browser** or **In Microsoft Project**

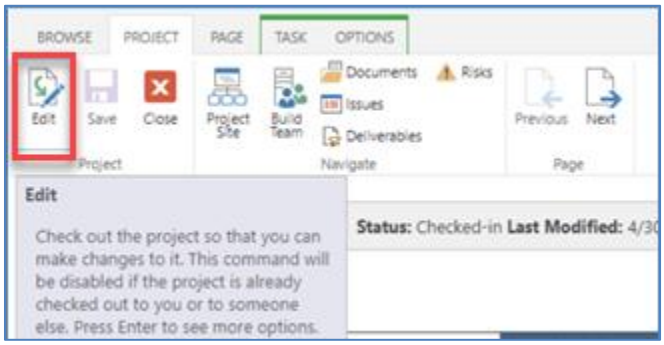
13.2.2.1 Desktop Editing

1. If you select **In Microsoft Project**. The schedule will then open in the Microsoft Project Professional desktop application.

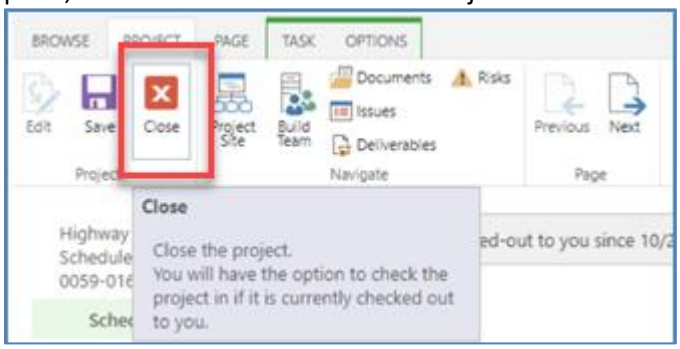


13.2.2.2 Browser Editing

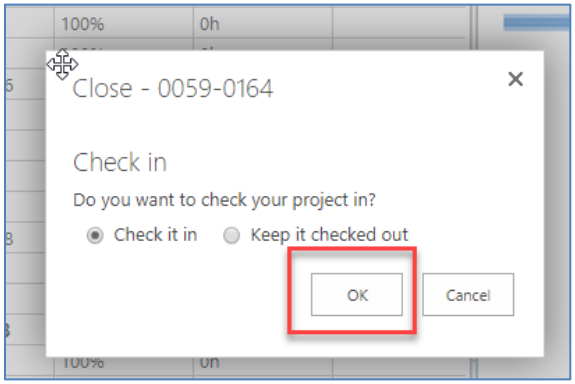
1. If you select **In Browser** or **Edit** on the Project Tab. The schedule will be checked out to you for incorporating edits as needed.



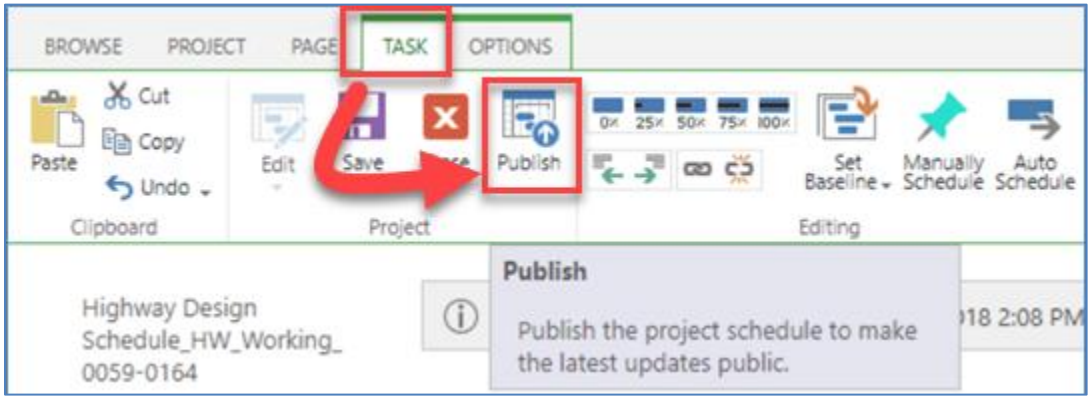
2. Once edits are complete, click the **Close** button on the Project tab.



3. Then click **Check it in** and press **OK**.



4. Press **Close** on the Project tab.
5. On the Task Tab click **Publish**. This saves and publishes the changes.

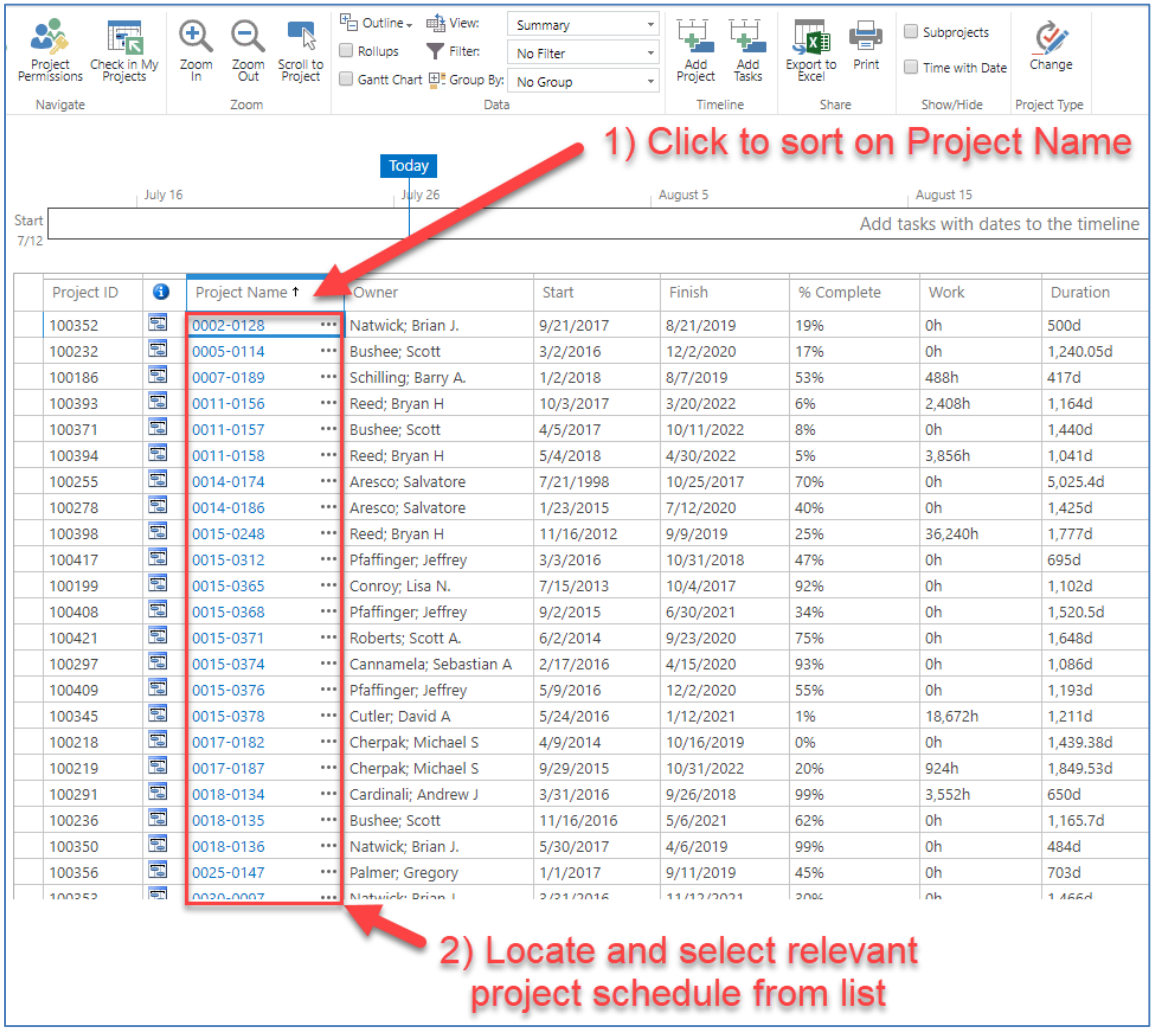


13.2.3 COMPASS (DOT PWA) Site

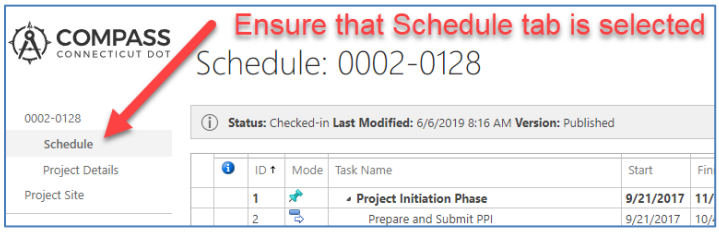
Users can also manage MS Project schedules directly through the Project Web App (PWA), rather than navigating through specific project site. This can be particularly useful for users who are maintaining schedules for multiple projects.

To open an MS Project file directly via the COMPASS (DOT PWA) site:

1. Navigate to https://ctgovexec.sharepoint.com/sites/DOTPWA.
2. Locate and select the relevant schedule by project number in the Project Name column.



3. To view and edit the MS Project schedule, ensure that the "Schedule" tab is selected.



13.3. Basic MS Project Function

This section presents the following schedule basic terminology and functions:

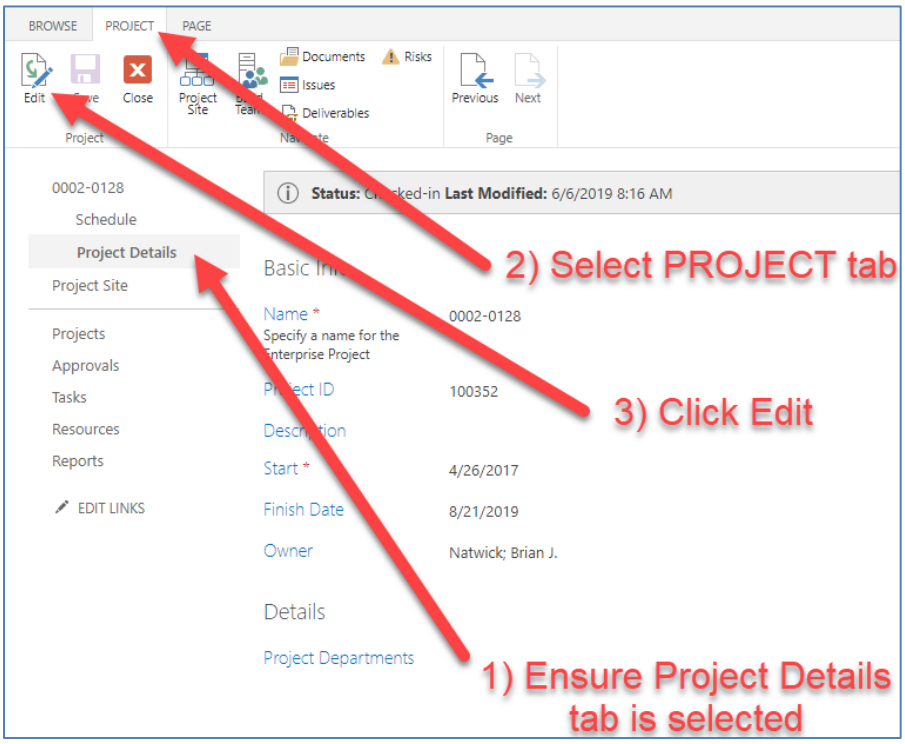
- Adding Notes and Hyperlinks
- Combining Multiple Projects

13.3.1 Reassigning MS Project Schedule Ownership

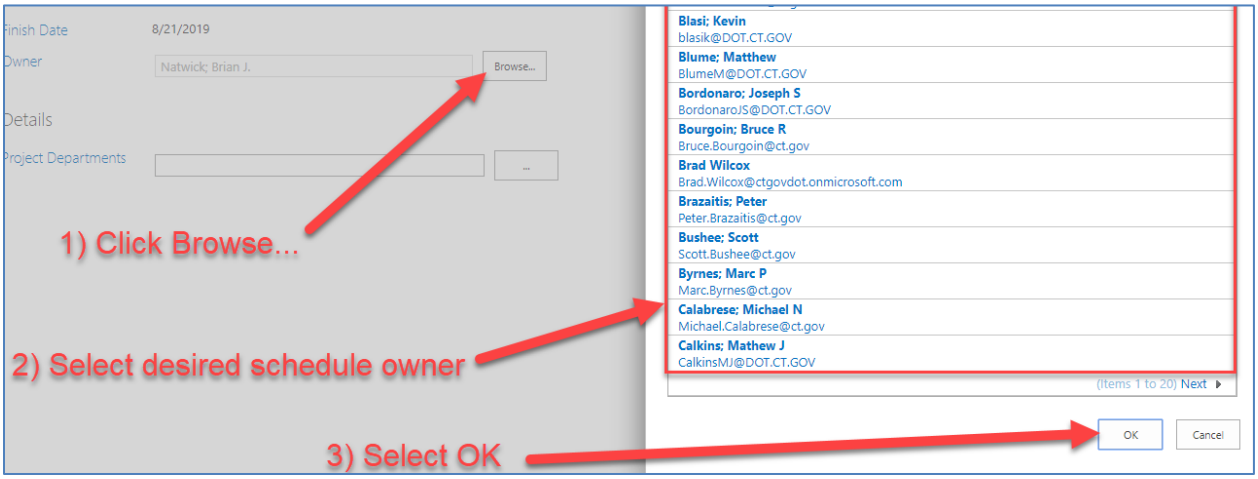
To edit an MS Project Schedule baseline (0-5), the user must be assigned as the "Owner" of the schedule. AEC assigns the correct Project Manager when a schedule is added to COMPASS. The current owner can reassign ownership if needed. If the current schedule owner is unable to perform this task, please create a ticket with COMPASS Support | Microsoft Project.

To reassign ownership of an MS Project schedule in COMPASS, the current owner can:

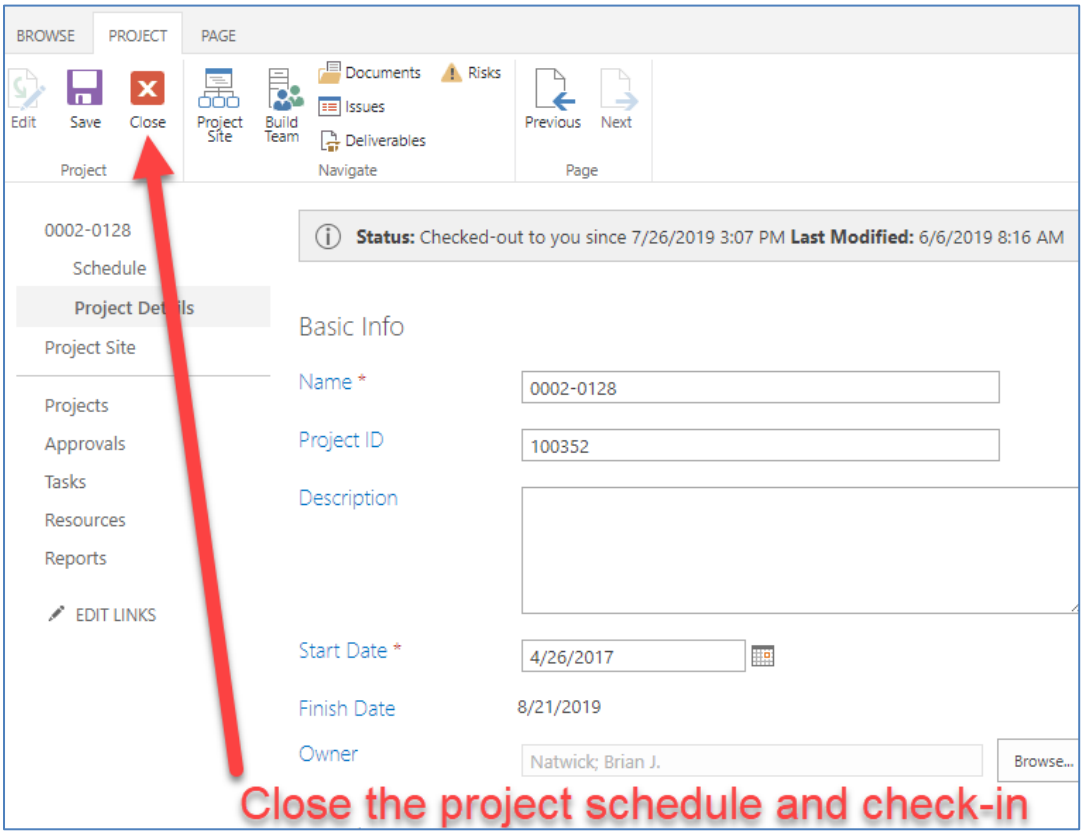
1. Open the relevant MS Project schedule as described in Section 13.2: How to Access on page 137.
2. Enter the Edit Project Details page.



3. Next to the Owner field, click Browse. Select the new schedule owner, then press OK.



4. Click close and check-in the MS Project schedule.



13.3.2 Adding Notes to a Task

As stated in the Directive: "Explanations for changes in task durations are added as task notes." Notes are reserved to clearly indicate when a specific Project Task duration is adjusted from the baseline. The note should be placed in the respective task's indicator column. The note should state:

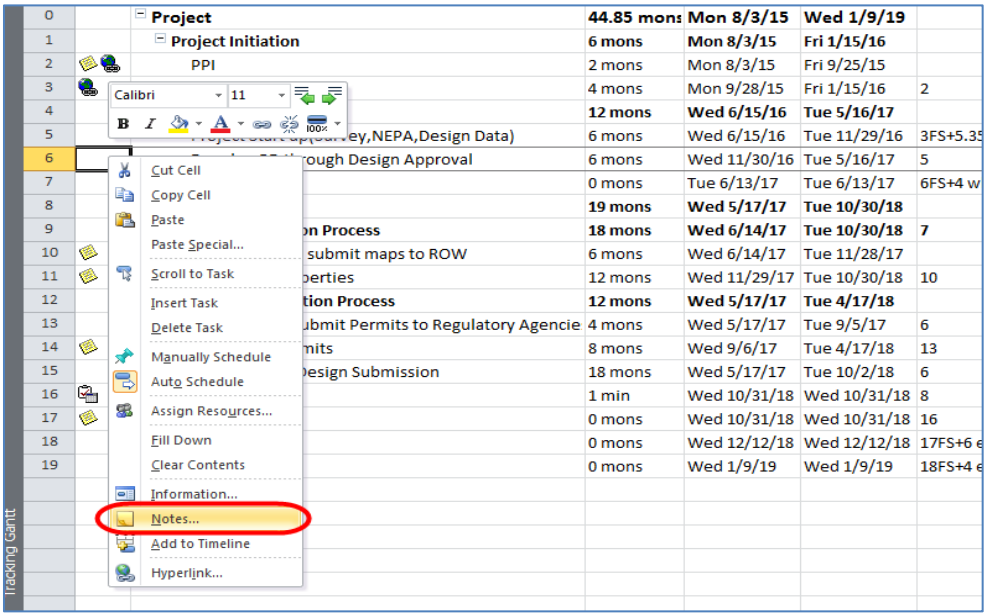
- The date of the entry,
- The person writing the note,
- Justification for the task duration adjustment and
- **Recommended**: Recipient Notification.

The Recipient Notification list is left up to the Project Managers discretion. The purpose is to outline a step where project team members who may be interested or are directly impacted by a duration change, are notified. Once a note is drafted and the duration is adjusted, it is recommended that a notification email be sent to the relevant recipients and that the correspondence is saved to the subject project's 140_Project Administration folder in COMPASS. The recipients may typically include:

- AEC's Project Management Unit –Bruce.Bourgoin@ct.gov or John.Dudzinski@ct.gov
- Finance, such as the Office of Capital Planning.
- Design Engineers within the Project Manager's division.
- The group involved with the duration change or the group affected by the change, if applicable. For example, if the 6-month estimated duration for a project survey needs to be pushed back, the respective survey supervisor who is involved with the task should be included as a recipient in the notification email.

The purpose of the recipient list is to improve communication between units and to harvest project data.

To add a note right click on a task and select **Notes…** as shown below:



Then type/insert your notes in the popup window.

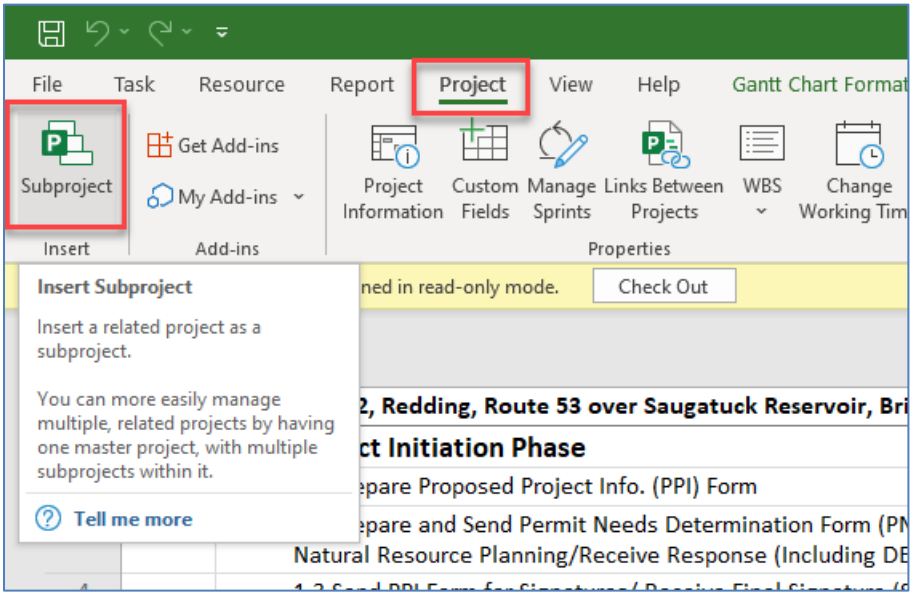
The other option to access the notes window is to double click on the task and in the **Task Information** window and click on the **Notes** tab.

13.3.3 Combining Multiple Projects

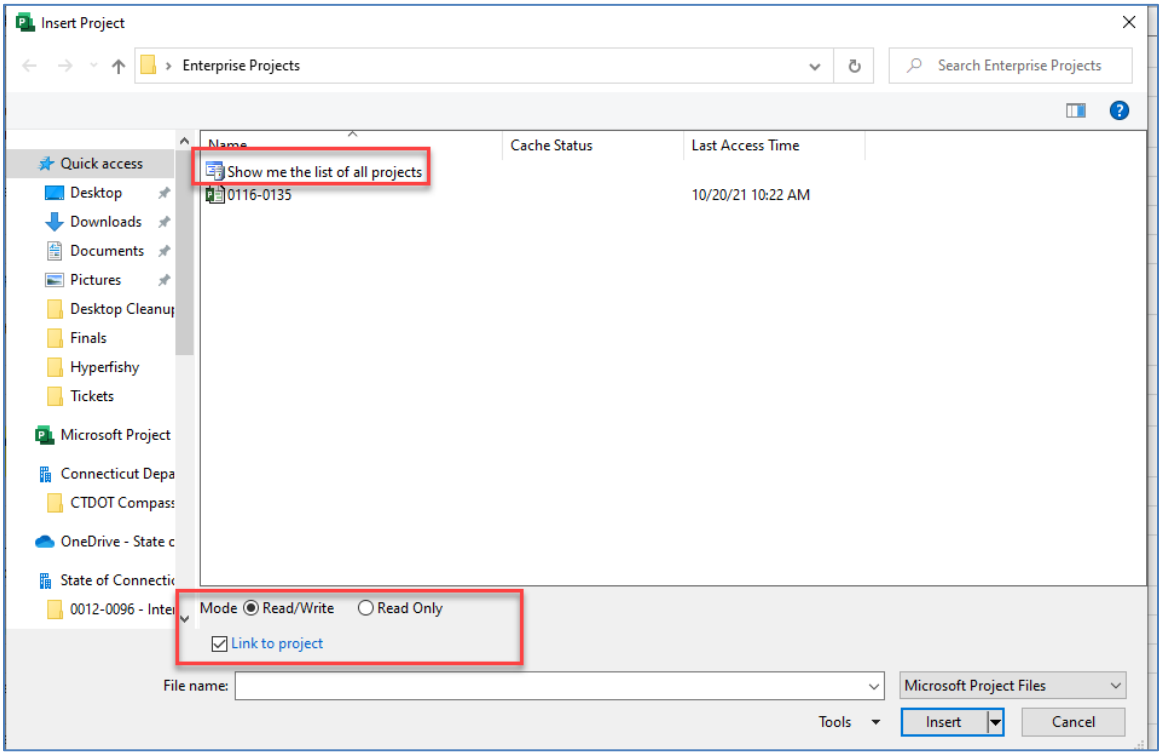
It is critical that project managers can combine project schedules to better manage several schedules from the same file. MS Project provides this ability through the **Subproject** combine function.

The following steps show how to combine Microsoft Project files:

1. Open a Master schedule from PWA into Project desktop application or create a new blank schedule and save and publish to PWA with a name of “Master Schedule_” either an organizational unit, responsible party, or relevant specific program, whatever the user feels is most descriptive.
2. On the Project tab, click Subproject under the Insert group.



3. Open the list of all projects and select the one you want. Configure the other options as you would like and click Insert.



4. Save and Publish the Master schedule.

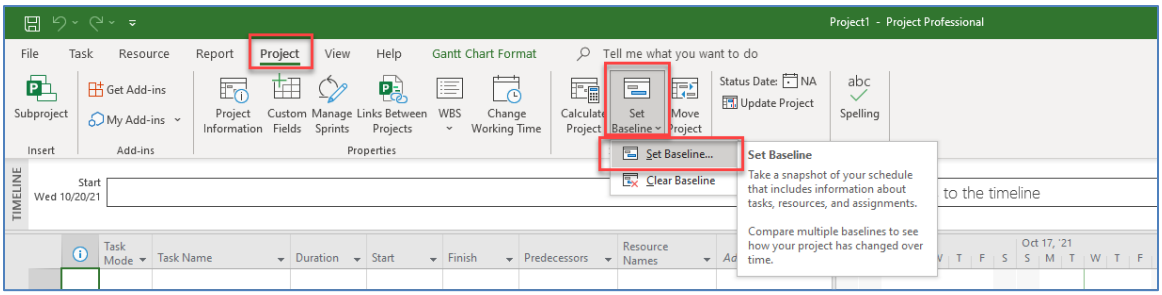
13.4. Tracking the Project

13.4.1 Baselining the Project

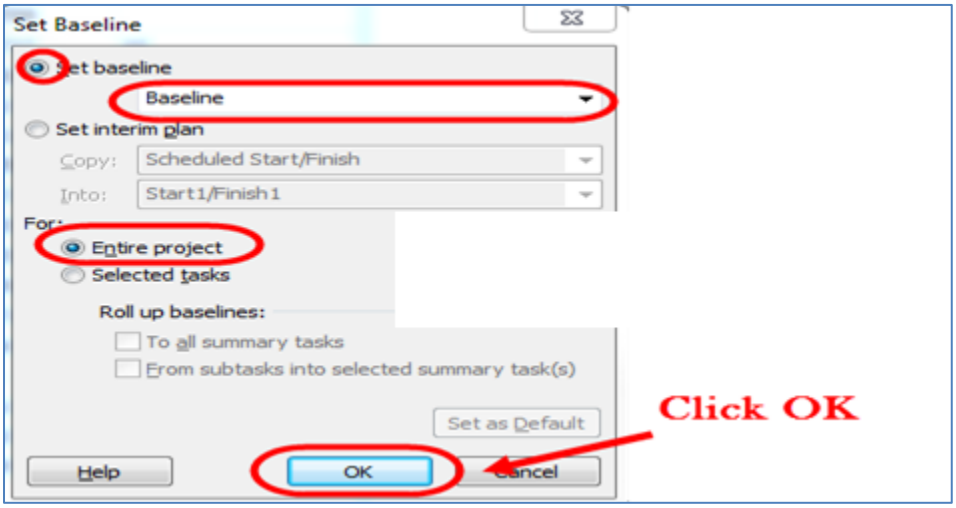
Each project file must have a baseline set at the start of Preliminary Design. The baseline is essentially a stamp of the schedule at the start of the Preliminary Design phase. The purpose of the baseline is to gage how much

a schedule varies from the initial baseline. Projects shall not be re-baselined unless there is a major scope change. Re-baselining requires Engineering Administrator approval.

1. To set the baseline, under the **Project** tab select set baseline and select **Set Baseline** from the dropdown as shown below.



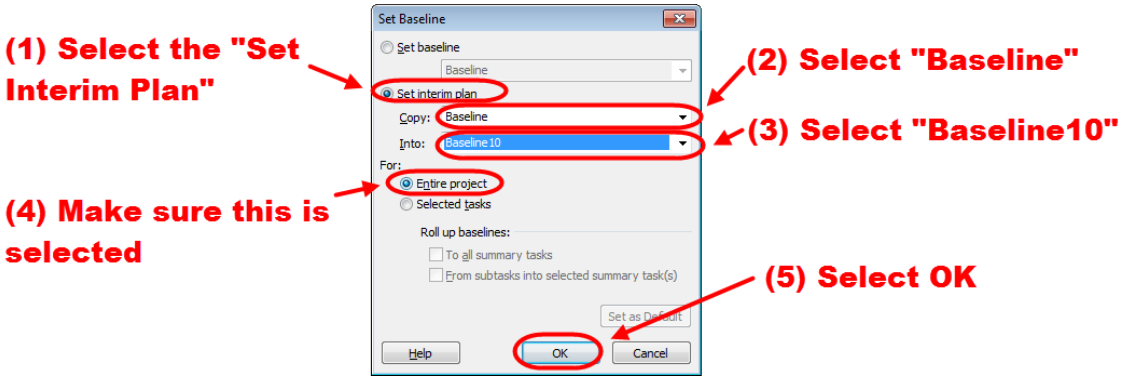
2. In the dialog box that pops ups, keep the default values, and click OK.



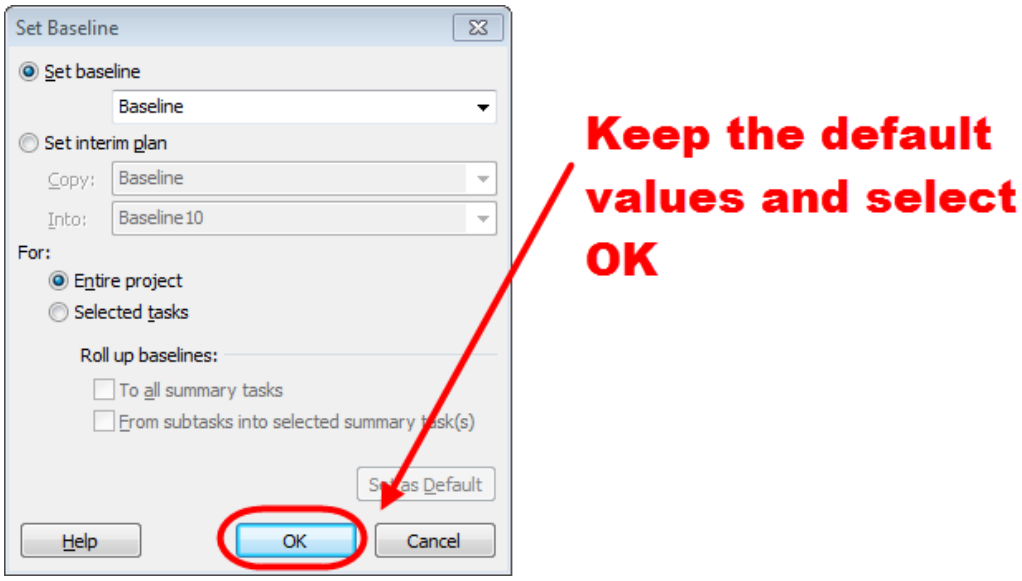
Re-Baselining

If **Re-baselining** is needed and is approved by the Engineering Administrator, the baseline will be set in accordance with the following:

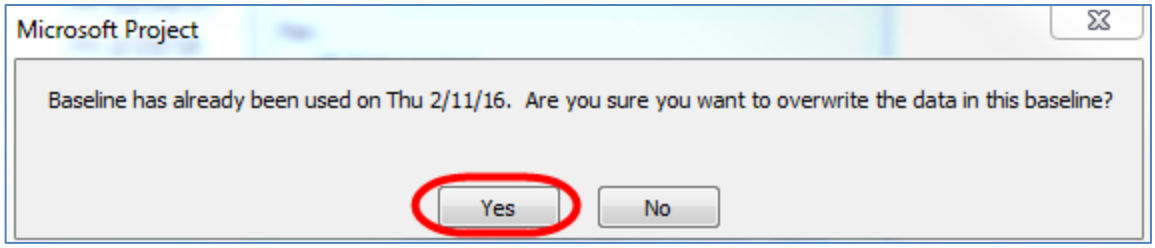
1. Go to **Projects** > **Set Baseline** > **Set Baseline.**
2. Then select **Set Interim plan**, select **Baseline** from the copy drop down button, then select **Baseline 10** for the into dropdown list.



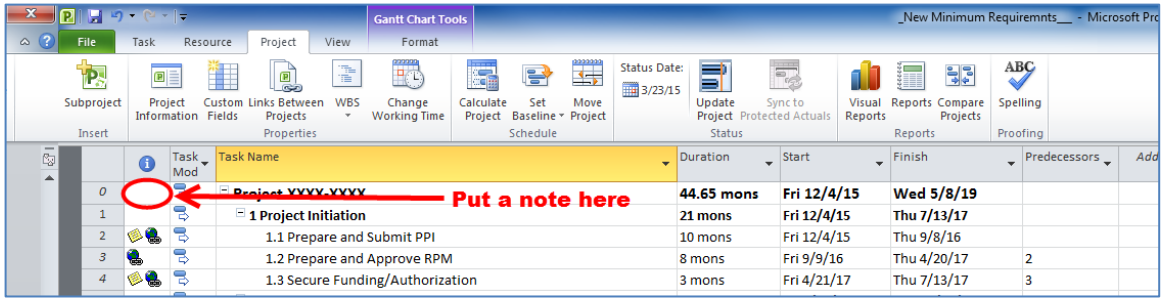
3. Next, go to **Project** > **Set Baseline**> **set Baseline**.
4. Then in the dialog box that pops up just click OK to save a new Baseline.



5. When a pop-up window asks you if you want to overwrite click yes



6. After the project has been re-baselined add a note to the top left Identifier cell located in the Project No. row. The note should include the details outlined in the Adding Notes section. The recipient list should include all parties affected by the base-line adjustment.

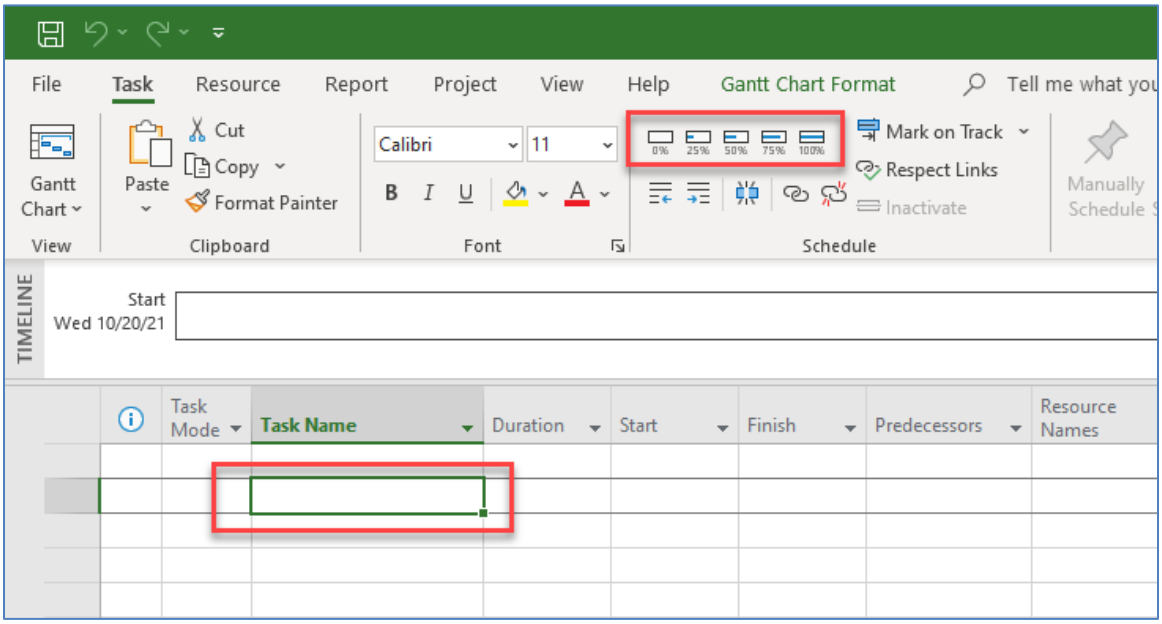


13.4.2 Recording Task Progress

The project manager will be required to record the project progress by keeping an up-to-date record of the % complete for each task in the project. This shall be recorded in 25% increments.

The following shows how to record the progress of a task:

1. Click on a task.
2. Then in the task menu select the appropriate % complete as shown below:



Important Note: When the task is completed, do not select 100% complete. You will need to type in the actual finish date for that task. If 100% complete is selected, Microsoft Project will calculate the actual finish date instead of recording the physical date the task was completed.

14. Electronic Engineering Data (EED)

14.1. Introduction

14.1.1 Purpose

The purpose of this section is to provide standards and guidelines for designers to promote consistent, uniform, and useable deliverables for use in the construction phase of CTDOT transportation projects. It is not the intent of this section to add unnecessary additional responsibilities to the designer, but rather to have the projects delivered in a consistent manner following the best practices and industry standards used in the today's CAD environment.
In all cases the EED will be issued as **"For Information Only"** purposes and the contract plans shall govern. **An EED Notice to Contractor** will be issued with each contract informing the potential users of this information as such.

14.1.2 Definition of EED

CTDOT is standardizing on producing model-centric designs. This allows for increased productivity and adherence to FHWA's Every Day Counts (EDC) Innovations and Building Information Modeling for Infrastructure (BIMFi). BIMFi integrates technologies and practices that use a data-centric approach to improve lifecycle delivery and management of highway assets. BIMFi centers on the idea that data is an asset and efficiencies can be gained with this data is accessible throughout the project life cycle.

Having the EED available during the construction phase of the projects allows for the following:

- Mobile Field Inspection and Data Collection
- AMG (Automated Machine Guidance)
- GPS Construction Layout
- eConstruction
- GIS and Asset Management

The **"I"** in BIMFi is one of the most important aspects of the technology. Bentley CONNECT Edition products allow designers to produce a product that retains the business data (the **"I"** in BIMFi) by assigning **Item Types** placed on CAD Graphics. This data can be consumed further downstream during Design Reviews then to Construction, Asset Management and Maintenance.

EED refers to the Computer Aided Design (CAD) files that were used to create the pdf contract plans.

These files include:

- 2D **geospatially** located CAD Design Models
- 3D **geospatially** located CAD Design Models
    - Corridor Models
    - Bridge Models
    - Site Models
    - Coordinate Geometry Models
    - Terrain Models
    - Storm Drainage Models (Structure and Pipe layout)

The department is in the piloting stage of including asset and pay item information tagged on CAD graphics, including, but not limited to, signal equipment, signs, guiderail, drainage, and Illumination. While this is not mandated as of now, it is direction the department will be moving to in the future.

In conjunction with an emerging project delivery method or technology initiative, the Department may provide bidders and contractors with CAD files of the Base Technical Concepts in conjunction with alternative contracting methods (e.g., Design-Build, Construction Manager/General Contractor, and Construction Manager at Risk).

14.1.3 Does Every Project Require a EED Submittal?

All **2D and 3D geospatially located graphical information placed using CAD** (MicroStation based applications such as OpenRoads Designer and OpenBridge Modeler) will require a EED Submittal.

14.1.4 What Information and files need to be Submitted?

The table below defines the Electronic Engineering Data (EED) file delivery requirements for different types of projects. **Note: Only DGN files needs to be submitted to the Department.**

2D Projects - No Earth Work		3D Projects – Includes Earth Work	
Structures/Bridges		**Structures/Bridges**	
Deck/Superstructure Replacement		Bridge Replacement W/Realignment of Approaches	
Restoration/Rehabilitation		Retaining Walls/Slope Stabilization	
Substructure/Superstructure Repairs		**Roadway**	
Roadside Safety Improvements		Intersection Realignment	
Concrete Barrier		Intersection Improvement	
Guiderail		Realignment	
Traffic		Widening	
Paint & Epoxy Pavement Markings		New Interchange	
Signal Installation/System Improvement		Operational Lane	
Signing		**Miscellaneous**	
Miscellaneous		Drainage – Major	
Drainage – Minor		Grade Crossing - Major	
Grade Crossing - Minor		Bicycle/Pedestrian Facility (Multiuse Trails)	
Landscaping		**Site Work**	
Illumination		Wetland Replacement/Restoration	
Noise Barriers		Hazardous Waste Removal	
Intelligent Trans Systems		Facility Construction	
EED Project Deliverables		**EED Project Deliverables**	
EED Delivery Manifest	**R**	EED Delivery Manifest	**R**
Master Model DGN File	**R**	Master Model DGN File	**R**
Existing Ground DGN File(s)	**D**	Existing Ground DGN File(s) - containing TOPO and Terrain Models	**R**
Proposed Design DGN File(s) – containing 2D Models	**R**	Proposed Design DGN File(s) – containing 2D and/or 3D Models	**R**
Proposed Coordinate Geometry DGN File(s)	**D**	Proposed Coordinate Geometry DGN File(s)	**G**
		Proposed Roadway Corridor DGN File(s)	**G**
		Proposed Terrain DGN File(s)	**G**
		Proposed 3D Storm Drainage DGN File(s)	**G**

R = Required **D** = Discretionary (required if used during design) G= Recommended, but not required.

14.2. DGN File Quality Control Requirements

CTDOT uses Bentley software products for all their computer aided design needs, with Bentley Software (.dgn format) being the foundation to all computer modeling. Therefore, it is critical that Bentley Software EED files be submitted to the CTDOT and conforms to the criteria outlined in this section. In many instances dgn files will contain multiple design models both 2D and 3D, and in some situations, they will only have one model. A Quality Control Checklist Sheet in included with the EED File Manifest, the items listed on this sheet shall be check for consistency.

All Design Models

- must be compatible with CTDOT's current CTDOT Digital Design Environment (DDE).
- must have graphical elements placed in real world modified state plane coordinates and be geospatially correct.
- must be free of all cross sections, profiles, construction lines for design purposes.
- must be free of annotation that should reside in the cut sheets.
- must have clean reference attachments, only needed reference files & no redundant references.
- are Design Models only (no Sheet Models or Drawing Models are required)
- that are 3D have lines and elements at the proper elevation (no spikes).

14.2.1 What is a Design Model

When producing model-centric designs it is extremely important that model types be used as intended. A **Design Model** Type will be used for all EED.

Design Models will:

- be geospatial
- contain cells, shapes, and lines that represent the physical design elements

Design Models will not have:

- border cells
- call outs and notes
- tables

The two other types of models will be used in downstream contract plan production processes and are not required to be submitted as part of the EED.

- Drawing Model — Contains annotations, dimensions, and callouts.
- Sheet Model — Contains a Border Cell, Sheet Boundary (plotting shape) and may also have annotations, dimensions, and callouts.

14.2.2 What does Geospatial Mean?

This information identifies the geographic position and characteristics of natural or proposed constructed elements, features and boundaries and how they are positioned related to the earth's surface.

14.3. DGN File Details

14.3.1 Master Model DGN File

The Master Model DGN file will have all the project's design and survey dgn files referenced in. Reference files may include but are not limited to:

- Corridor Models
- Bridge Models
- Site Models

- Coordinate Geometry Models
- Existing Terrain Models
- Proposed Terrain Models
- Survey TOPO
- Storm Drainage Models (Structure and Pipe Data)
- Illumination Models
- Traffic Models
- Landscape Models

14.3.2 Proposed Highway DGN Files

Roadway elements include any roadway features designed in CAD software as 2D geometry, 3D geometry, or a combination of both. These roadway model elements are created using the CTDOT's CAD workspace configuration. Items considered 2D geometry include 2D cells, alignments, lines, and polygons. Items considered 3D geometry include profiles, 3D break lines and surfaces created from corridor template designs, and 3D cells and line styles.

3D Models

OpenRoads Corridor Modeling tools are used to create design surfaces that represent a new roadway or other types of surfaces. The 3D model is then used to create cross sections, terrain models and generate corridor quantities. A corridor is created first in 2D by assigning a horizontal and vertical alignment to the corridor and then assigning a template to the corridor at a defined interval along the horizontal alignment. Once the template is assigned to the corridor a 3D model is created.
A template represents the transverse geometry or typical section along the corridor. Templates are made up of points and components and are stored in a template library. When a corridor is processed the template points create 3D linear features (edge of pavement, shoulder, curb, sidewalk, cut/fill lines etc.) along the corridor and the template components create the 3D material meshes (i.e. pavement, shoulder, curbing, sidewalk, side slope grading etc.) along the corridor.
3D Models can also be produces using the Apply Linear Template and Surface Template Tools.
The information in table below provides general standards for roadway corridor modeling for final design deliverables.

Situation	Minimum Modeling Requirement
Corridors	Template drops: 10 feet
Horizontal and Vertical Curves	Stroking tolerances (feet): Linear stroking = 10 Profile stroking = 0.07 Curve stroking = 0.07 **Note:** Template drops might occur too frequently depending on radii values. These tolerances may be modified at the discretion of the Engineer.
Critical Locations	Apply template drops to corridor region start/end, superelevation transitions, horizontal and vertical cardinal points, start/end of pavement tapers, start/end of side slope transitions, both sides of pedestrian accesses, and any additional key stations needed at the discretion of the Engineer.
Intersections	Apply template drops along curb returns between 2 and 5 feet, and where proposed pavement ties into existing conditions.

2D Models

All 2D features that are to be quantified shall be included in this file (i.e. guiderail, fences, etc.). Including but not limited to the graphical elements (areas, lines and cells) listed below:

- Patterned Riprap Channel Areas
- Patterned Riprap Slopes Areas
- Patterned Pavement Removal Areas
- Patterned Milling Areas
- Erosion control Matting for Channels Areas
- Erosion control Matting for Slopes Areas
- Processed Aggregate Areas
- Pavement for Railing Areas
- Sodding Areas
- Turf Establishment Areas
- Driveway Areas
- Cut limit
- Fill limit
- Fences
- Front face of landscape wall
- Precast Concrete Barrier Curb
- Sedimentation Control
- Cut Pavement
- Parking lot
- Guiderail - The smart line is to be offset from EOR so it can be graphically seen (Connecticut Standard Details for placement will supersede plan placement).

14.3.3 Existing Survey DGN Files

An OpenRoads Survey DGN files contains several models that each contain different types of information:

- Existing Digital Terrain
- Existing Ground TOPO
- Existing Annotation

There may be several existing survey files/models depending on the length of the project and the number of project site locations.

Existing Ground TOPO Models

All elements representing existing topography features shall be drawn according to the current CTDOT Survey standards. All fieldbook data shall be brought in using OpenRoads Survey. Other needed CAD graphics will be placed using the CTDOT Workflow on the CTDOT Survey Ribbon. This will ensure that all CAD graphics have the correct attributes (color, weight, line style, level). These Bentley Software file(s) may contain both 3D and 2D elements of the existing survey. 2D elements included but are not limited to ROW lines and control lines. 3D element includes tangible elements such as edges of pavement, shoulders, curbs, gutters, sidewalks and retaining walls.

Older V8i Files

Projects originally processed using InRoads V8i SS2 will utilize the OpenRoads Terrain Import tools. A DGN file with a 3D model will house the imported terrain data.

The separate TOPO dgn Ground files originally processed using InRoads V8i SS2 can be used as is.

14.3.4 Terrain Models

What is a Terrain Model?
A Terrain Model is a set of three-dimensional triangles mathematically computed from point data collected on the surface being modeled. Terrains are used to define highly irregular surfaces, particularly the surface of the earth, but can be generated for proposed surfaces.
Project model deliverables shall include both proposed and existing Terrains. Terrains are used to produce contours, display the existing ground lines in profile and cross sections, and in the calculation of cut and fill quantities.

Proposed Terrain Models

Proposed Terrain Models will need to be created and submitted for any surfaces used to generate the final contract plans. The **goal** is to provide a top surface(s) for the entire project and at minimum the surfaces should include the **roadway surface Curb to Curb**. These projects will also be the type which in most situations require the inclusion of Item 9.80 Construction Staking. Proposed Digital Terrain Models represent the project design as generated by CAD using the horizontal alignments, vertical alignments, templates, roadway definitions and surfaced editing tools.
A top surface for each corridor will need to be created representing at minimum the proposed finished grade **curb to curb** as a **goal** of the design data deliverables. All proposed surfaces shall be defined by a breakline density interval (frequency of cutting templates) of no more than five feet, and at every event location. In tightly constrained or critical drainage areas, or on the outside of sharp horizontal curves, the break line interval may need to be reduced to two feet or less.
Areas within the project limits that do not have a top surface Terrain should be indicated on the EED Delivery Manifest. Complex areas that were not modeled in 3D should also be indicated on the EED Delivery Manifest. This includes but not limited to Sidewalk Ramps and Driveways in which grading information can be found on Miscellaneous Details Sheets.
Terrain Models and 3D Meshes shall:

- have no irregular dips, spikes or voids.
- triangles do not cross obvious breaklines such as centerlines, edges of pavement, edges of shoulders, etc.
- have no vertical faces present
- no overlaps of breaklines or visual inconsistencies of features.

Existing Digital Terrain Models

Existing Digital Terrain Models represent existing ground conditions at the time that surveying data was collected. This original ground Terrain represents the undisturbed ground surface prior to construction. All new projects will use OpenRoads Survey to create existing terrain models.

14.3.5 Proposed Coordinate Geometry DGN Files

These files will contain models that include geometric line work such as Centerlines and proposed right of way lines. This file will also include right of way dimensions and centerline annotation.
Only final coordinate geometry alignments should be contained in these files, preliminary and alternate information has been removed. The coordinate geometry alignment names and descriptions should be intuitive.
The files shall:

- include all **Horizontal Alignments** for all roadway centerlines/baselines

- include all **Vertical Alignments** for all roadway centerlines/baselines
- include all **Special Alignments** used for drainage purposes, skewed driveways, or stage construction
- include only final alignments (do not include preliminary or alternates information).
- have intuitive alignments names and descriptions.

14.3.6 Proposed Drainage DGN Files

Dgn files created using OpenRoads Drainage and Utilities will contain both a 2D and a 3D Model. The 3D Model will automatically get populated as the Drainage Structures are placed in the 2D Model. All 3D solids should be placed at the proper elevations.
Modeling Criteria for Drainage Pipes and/or Pipe Underdrains

- 2D Model – 2D line
- 3D Model – 3D solid

Modeling Criteria for Drainage Pipe End Sections

- 2D Model – 2D Cell
- 3D Model – 3D solid

Modeling Criteria for Concrete Drainage Structures

- 2D Model – 2D Cell
- 3D Model – 3D solid

14.3.7 Proposed Structure/Bridge DGN Files

The lead structural designer shall submit either 2D models and/or a 3D models of the proposed structure(s). If OpenBridge was used to model a Structure in 3D to create the contract plans the 3D model will need to be submitted.
Models should include the following:

- Structure centerlines of bearings
- Structure centerlines of girders
- Elements shall be placed using CTDOT's customized Bentley Software tools.
- Components modeled using OpenBridge shall be Feature Model Elements.
- All elements shall be geospatially correct.
- All elements shall be placed at 1:1 scale.

14.3.8 Proposed Traffic DGN Files

All Traffic models created to house the proposed signal equipment, signing and pavement markings shall be provided. These models are primarily 2D and shall include all items that are to be quantified.

14.3.9 Proposed Miscellaneous Discipline DGN Files

These models could be but not limited to staging plans and or other disciplines not listed above. These models are primarily 2D and shall include all items that are to be quantified.

14.4. Submission Procedures

14.4.1 Submission Dates

All required EED documents shall be delivered:

- At FDP
- At award of Contract if files were modified by addenda
- After design-initiated change orders if files were modified.

14.4.2 EED Delivery Manifest & Quality Control Checklist

The EED delivery manifest & Quality Control Checklist must be delivered to the CTDOT with every EED submittal. A blank copy can be found by clicking on the following link: EED File Manifest. This form will include general project information; the datum used for the ground survey; file names and specific information about each EED file being submitted. The contact information for the lead designer and lead surveyor must also be provided. The lead will all also provide a link to the EED Delivery Manifest, and each unit will add their files to the list. A Quality Control Checklist Sheet in included, the items listed on this sheet shall be check for consistency.

14.4.3 COMPASS File Location

The lead discipline will create a Zip file and copy in the **DGN files.** The lead can copy in the other discipline files or give them the link to have them copy in the files themselves. The lead will all also provide a link to the EED Delivery Manifest, and each unit will add their files to the list. The Zip File will then be uploaded the proper Project COMPASS Site.
…Internal Documents\240_Contract_Development

14.4.4 EED Notice to Contractor (NTC)

The Notice to Contractor (EED Notice to Contractor) must be filled out by the lead designer with the correct project number in the last line of the notice. This NTC informs the Office of Construction and the contractors that the EED will be available, along with the contract plans, at advertisement. The NTC also states that all EED files are **for information only**. This will be submitted along with the specifications at FDP.

14.4.5 Converted Data

AEC Applications (Mobile Inspection Leads) will convert Bentley Software CAD files (dgn) as required. These conversions are necessary to be utilized in the GPS field equipment and automated machine guidance/control equipment. It will be AECs responsibility to zip all files, both native and converted, and upload to the 100_Contract_Plans (PDF) folder in COMPASS. Contracts will be notified so that the EED zip file can be posted along with the contract plans, specifications, and estimates on the State's contracting portal at advertisement. The converted data is being provided by CTDOT to ensure that inspectors and contractors are utilizing the same set of data.

14.4.6 Addendum and Design Initiated Change Orders

Changes to the EED that require edits to the CAD models shall be submitted along with the revised contract plans. A new zip file will be created containing the renamed updated files and uploaded to COMPASS. AEC will then be notified that the amended files are complete.

15. Project Location

A Project Polygon (geo-spatial boundary) shall be submitted to COMPASS at project milestones of DCD (Design Completion Date) and Construction Completion by the Lead Designer (or delegate). The DCD submission will replace a cursory project polygon created at project development by the project sponsor. The Construction Completion submission is required if the DCD polygon does not reflect the project's completed limits. The inspector shall obtain the DCD polygon and modify the limits to represent as-built conditions if required at construction completion.

The Project Polygons will be used in the Department's Project Web-GIS feature layer to identify spatial location, each section of State and Local Roads contained within the boundary for FHWA FMIS reporting, and BIM (Building Information Management) of roadway assets. The Project Polygon will also aid in the ROW (Right of Way) boundary mapping process.

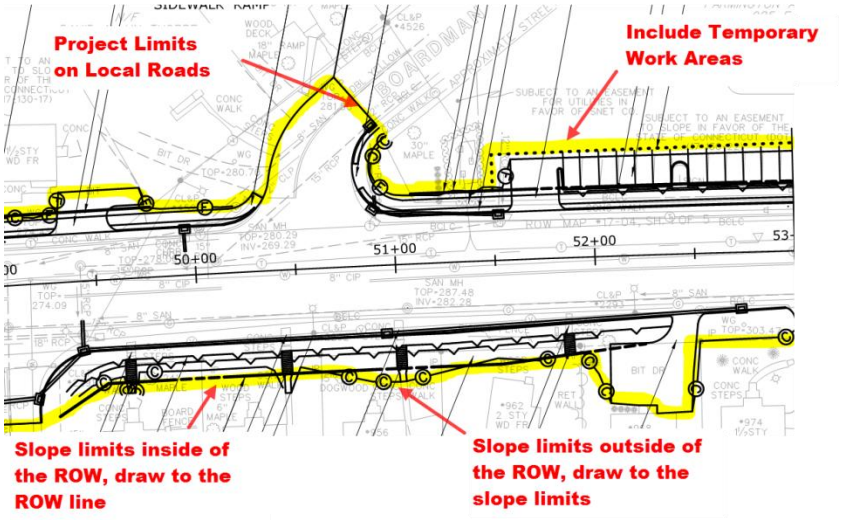
15.1. Project Polygon Requirements

Capital Projects that include Location Survey

Note: If a project has multiple sites, a project polygon KML file shall be created for each site.

Project Polygon Milestone Deliveries:

- DCD (Design Completion Date):
    - The Project Polygon shall include the entire project extents per site and include all existing and new project developed ROW boundaries and portions of local affected roads. The polygon shall be drawn up to and following the ROW lines, then it shall cross the roads at the project limits. The following figure shows a Design Approval Polygon. Note: The Polygon does not include slope limits. When Rights and/or Defined Easements extend beyond the ROW, these lines shall be followed. The polygon shall cross the roads at the project limits.



- Construction Completion:
    - The Lead Designer shall modify the limits to represent as-built conditions if required at construction completion. This will be performed in ATLAS 2.0 by editing the existing work area polygon or replacing it with an updated KML.

Project Polygons will be drawn in a CAD file then exported as a KML format. The CAD Workflow is available in the CTDOT DIGITAL DESIGN ENVIRONMENT GUIDE - Creating a Project Polygon.

KMLs shall be uploaded to ATLAS 2.0 by the Project Manager to reflect updated geometry. See Upload Shape for more information on uploading KMLs as geometry in ATLAS 2.0.

16. CT Asset Tracking & Location System (ATLAS)

Proposed projects and Capital Projects shall be spatially located in CTDOT databases. The CT Asset Tracking and Location System (ATLAS) is the Department's project location tool. ATLAS scans the located Project Work Area(s) to provide Project Managers and liaisons a comprehensive set of authoritative data that has been governed through the Department's Enterprise Geospatial Information (EGIS) and Transportation Enterprise Data (TED) groups.

This project location and scanning process, allows integration and then access to the Department's project management tool COMPASS (Office 365 SharePoint).

ATLAS Support Link – Use this link for any support or questions associated with ATLAS - ATLAS Support

16.1. Authentication and Permissions

ATLAS is an internal CTDOT application and is only accessible to CTDOT employees. Users must have credentials for the TED Portal to enable access to the application.

16.1.1 Permissions for Creating and Managing

Users who will be creating and managing projects will need specific permissions for full access. Complete the following to ensure editing permissions:

1. Request TED Portal credentials using this link - ATLAS Permissions
    a. User must be CTDOT Employee
    b. Mark **Yes – I'm creating projects for ATLAS** for Question 5 to join in a creator role.
    c. If unsure about credentials, use this link to check current status.
2. Request membership permissions in the ESRI "ATLAS" group.
    a. Use this link to access Application Request Form.
    b. Select "ATLAS 2.0" under the Application field.

Users must have a creator role and be a member of the ESRI ATLAS group to create and manage projects. However, any user who is successfully authenticated can use ATLAS to view projects and investigations.

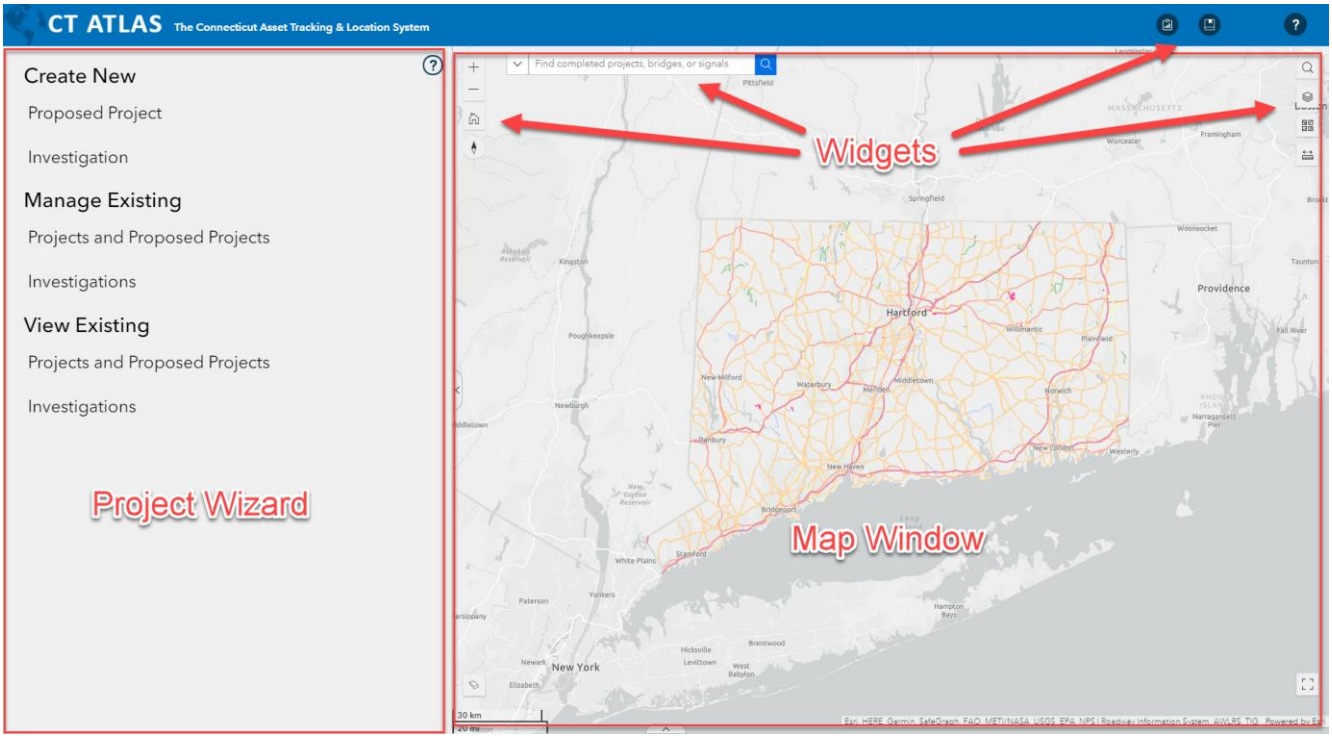
16.1.2 Logging into ATLAS

Complete the following to access ATLAS:

1. Open the web browser and navigate to the ATLAS homepage.
2. The user is prompted upon opening the webpage to enter TED Portal Credentials. Enter the credentials and click the button to authenticate against ArcGIS portal using single sign-on.
3. See ATLAS Web Help for more details.

16.2. Launching the Project Wizard

The ATLAS application is used to create new projects/proposed projects and manage existing projects/proposed projects. ATLAS is made up of two panels: the Project Wizard to the left and the Map window to the right. Within the Map are several useful widgets, including Search, Layer List, Measure, and Bookmarks. For more details on using these Map widgets, see the Web Map section of ATLAS Web Help.



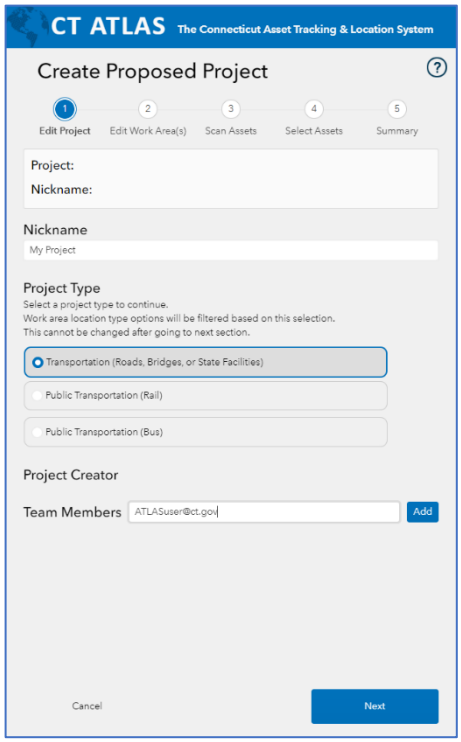
The Project Wizard is the interface for building Project Work Areas, scanning assets and informational layers, and creating the COMPASS site. Proposed Projects and Projects are created and managed using the Project Wizard. Complete the following to launch the Project Wizard:

1. Open a web browser and navigate to ATLAS. Sign in when prompted.
2. Select an option to open Project Wizard.
    a. To create a new Proposed Project, select **Create New Proposed Project**.
    b. To manage a proposed or existing project, select **Manage Existing Projects and Proposed Projects**.
3. If creating a new Proposed Project, Creating a Proposed Project
4. If managing an existing Project or Proposed Project, Managing an Existing Proposed Project or Project.

16.3. Creating a Proposed Project

The Project Wizard has five pages for facilitating work area creation and compiling of related authoritative data. After selecting **Create New Proposed Project**, the user is directed to the first page.

16.3.1 Project Wizard Page 1 – Edit Project



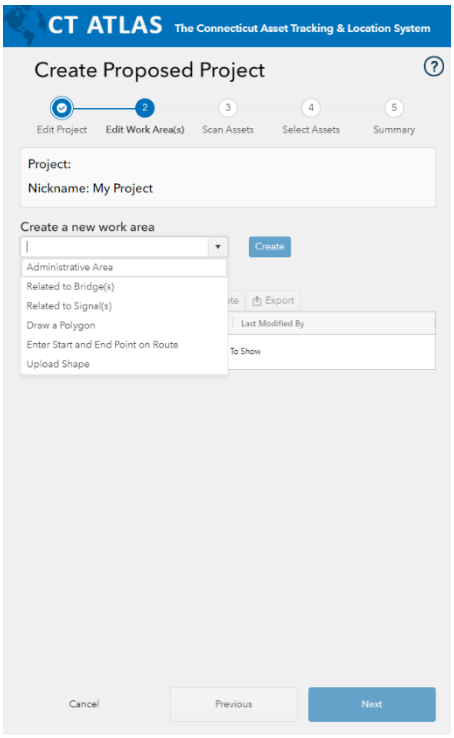
The first page of the Project Wizard collects general information about the new Proposed Project. Complete the following to finish Page 1.

1. Enter the Project Nickname (Optional). The project nickname is a convenient way for the user to refer to the proposed project.
2. Select the Project Type. The project type will inform the prefix for the proposed project number (PPN). See the table below for more information on PPN.
    a. If one of the Public Transportation project types is selected, the user can choose the specific branch or transit district from a list.
3. The user can add members to the project team by entering their email address in the Team Members box and clicking **Add**. Added Team Members should have ATLAS credentials to edit if necessary (See Section 16.1.2).
4. Click **Next** when ready.

Proposed Project Number Prefix	Meaning	Project Type
PP001- to PP169	Town IDs	Transportation (Roads, Bridges, or State Facilities)
PP170	Statewide	Transportation (Roads, Bridges, or State Facilities)
PP171 to PP174	Construction Districts	Transportation (Roads, Bridges, or State Facilities)
PP300 to PP330	Rail Branches	Public Transportation (Rail)
PP400 to PP478	Transit Districts	Public Transportation (Bus)

16.3.2 Project Wizard Page 2 – Edit Work Area(s)

The second page of the Project Wizard is used to define one or more work areas for a project. A project can consist of multiple work areas created with the methods outlined below. Additional details for each method can be found in the next section.



The table at the bottom of this Section for more detail on choosing creation methods.

Administrative Area – Project area will cover the State, or one or more Construction Districts. These projects may not have clearly defined work areas. Examples include sign and widespread safety projects. This method does not allow for asset or information scanning. In some cases, a project may initially be assigned an Administrative Area polygon, but then be located using Polygon or Route/Milepoint.

Related to Bridge(s) – Work area will consist of one or more bridge geometries. Examples include bridge and culvert repair projects. These project work area geometries will replicate the Bridge asset feature geometries. The asset feature geometries are a polygon developed from each bridge's deck area. This project location method should be used when bridges are undergoing work that will not require survey, staging (MPT) and adjacent assets like Pavement. This method is ideal for projects like substructure repairs, steel repairs and joint replacements. When the project requires a work area footprint that is different than the deck area, use "Draw Polygon" to indicate the work area. Please request support from AEC if more discussion is required.

Related to Traffic Signal(s) – Work area will consist of one or more signal geometries. These project work area geometries will replicate the Signal asset feature geometries. The asset feature geometries are a polygon developed from each signal defined control area polygon. This project location method should be used when signals are undergoing work that will not require survey, staging (MPT) and adjacent assets like Pavement. This method is ideal for projects like traffic signal upgrades, timing, rehabilitation, and preservation. Please request support from AEC if more discussion is required.

Draw a Polygon – Work areas will consist of a user-drawn polygon. The polygon may be used as representation of the project at its inception phase. When a project reaches Preliminary Design Approval, this inception polygon is to be replaced with a KML export from the design team (see ECD-2017-4 and Section 15 of this document).

Enter Start and End Points on Route – Work area(s) will consist of buffered area(s) of a selected route segment, between two designated mile-points. Example projects include Pavement Preservation and Pavement Marking projects.

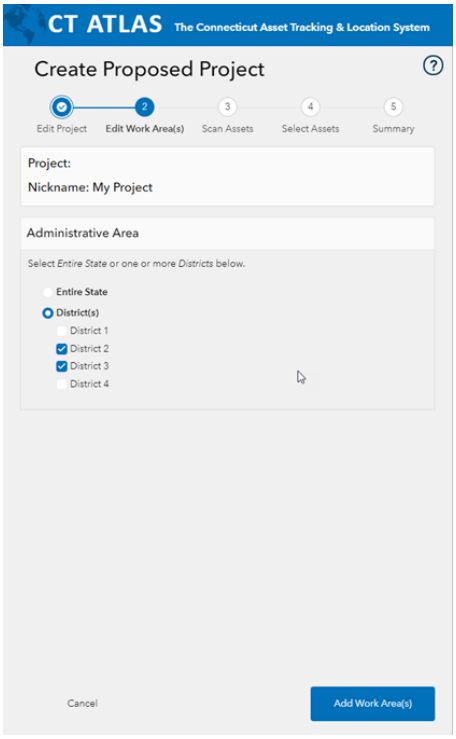
Recommended Work Area types by Project Type

For any project types not listed in this table – contact AEC through help form.

Administrative Area	Bridge Deck Area	Signal Control Area	Polygon	Polygon (cont'd)	Route Mile Segment Buffered
Traffic Safety Projects	Bridge Restoration/ Rehabilitation	Signal Installation	Bicycle/Pedestrian Facility (Multiuse Trails)	Facility Rehabilitation (Buildings)	All Roadside Barrier
Other	Bridge Substructure/ Superstructure Repairs	Signal System Improvement	Bridge Replacement w/Realignment of approaches	Grade Crossing-Minor Improvement	Fixed Objects Modification
			Drainage – Major	Landscaping	Intelligent Transportation System
			Facility Construction (Site Work)	Transit	Noise Barrier
			Hazardous Waste Removal	Utility Projects	Resurfacing by Contract
			Retaining Walls/ Slope Stabilization	Bridge Deck/ Superstructure Replacement	Paint and Epoxy Pavement Markings
			Wetland Replacement/ Restoration	Illumination	Signing
			Grade Crossing – Major Improvement	Widening – Major and Minor	Traffic Safety Projects
			Intersection Improvement – Minor	Realignment	
			Intersection Realignment	Operational Lane	
			New Interchange	Traffic Safety Projects	

16.3.2.1 Methods for Defining Work Areas

Select a method from the dropdown list and click **Create**. The steps for each method are listed below. Each header is linked to the web-based ATLAS User Manual for additional details.

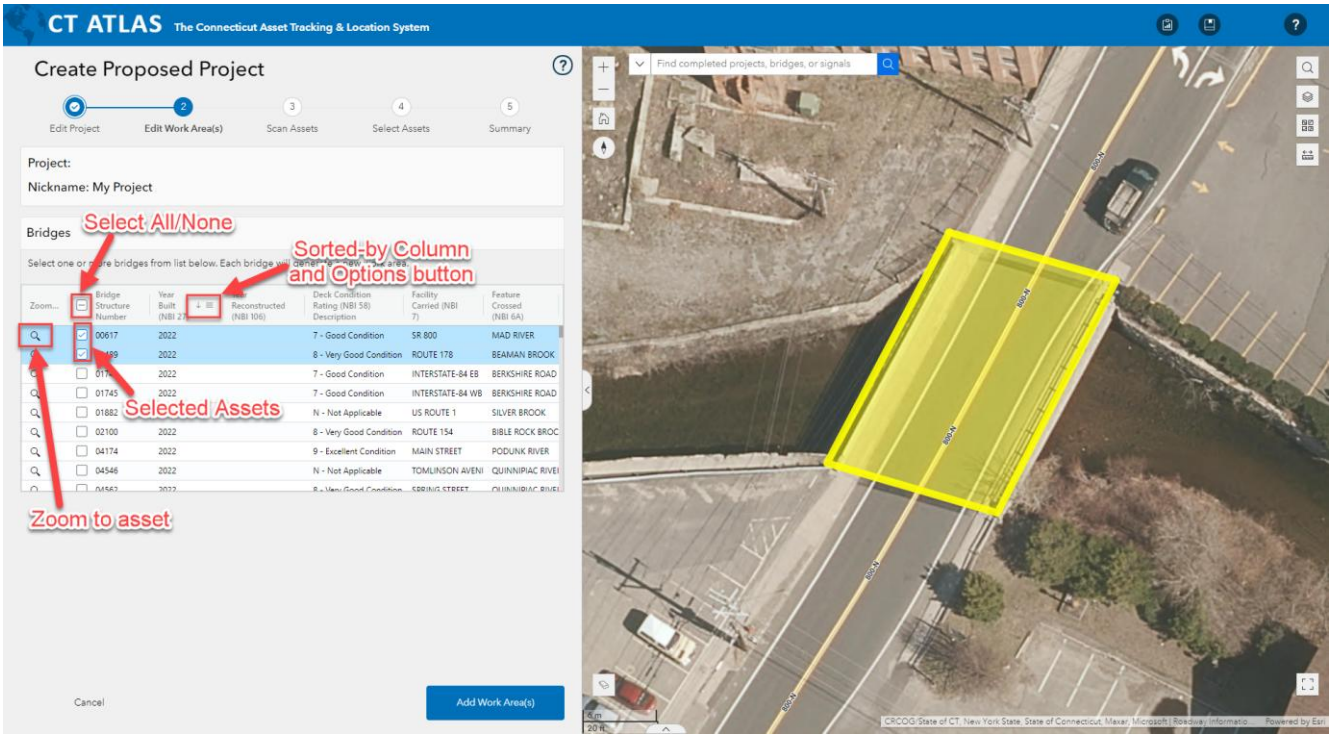


Administrative Area

1. Select **Administrative Area** from the work area list to create a state-wide or district-wide project.
    a. For district-wide projects, one or more districts can be selected for the project.
2. After selection, click **Add Work Area(s)**. These administrative areas are so large, Atlas is not programmed to scan them for assets contained within the work area.
3. After creating an Administrative Area project and selecting **Next**, the Project Wizard will skip Scanning and Selecting Assets, and go straight to Step 5.

Related to Bridge(s) or Related to Signal(s)

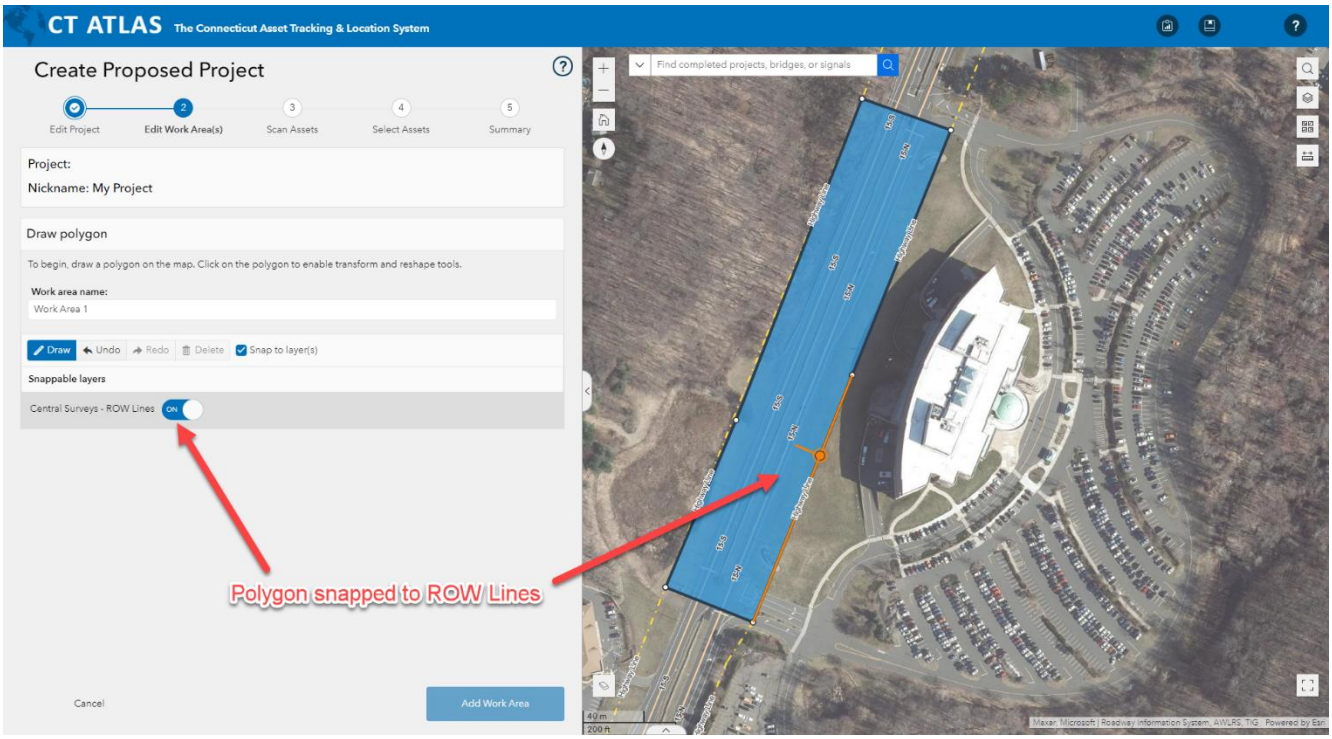
1. Select **Related to Bridge(s)** or **Related to Signal(s)** from the work area list to create one or more project work areas that are related to bridges or signal control areas. A separate work area polygon will be created for each asset chosen.
2. Select one or more assets from the list by selecting the checkbox.
3. There are various tools and capabilities in the asset list:
    a. The magnifying glass icon on the left zooms the map into the asset.
    b. Left clicking a column header will sort the list by that column.
    c. Selecting the three-bar **Options** button in a column header opens the filter tool. The list can be filtered by multiple fields.
    d. Selecting the checkbox in the header bar will select or deselect all items in the filtered list.
4. When all necessary bridges or signals are selected, click **Add Work Area(s)**.



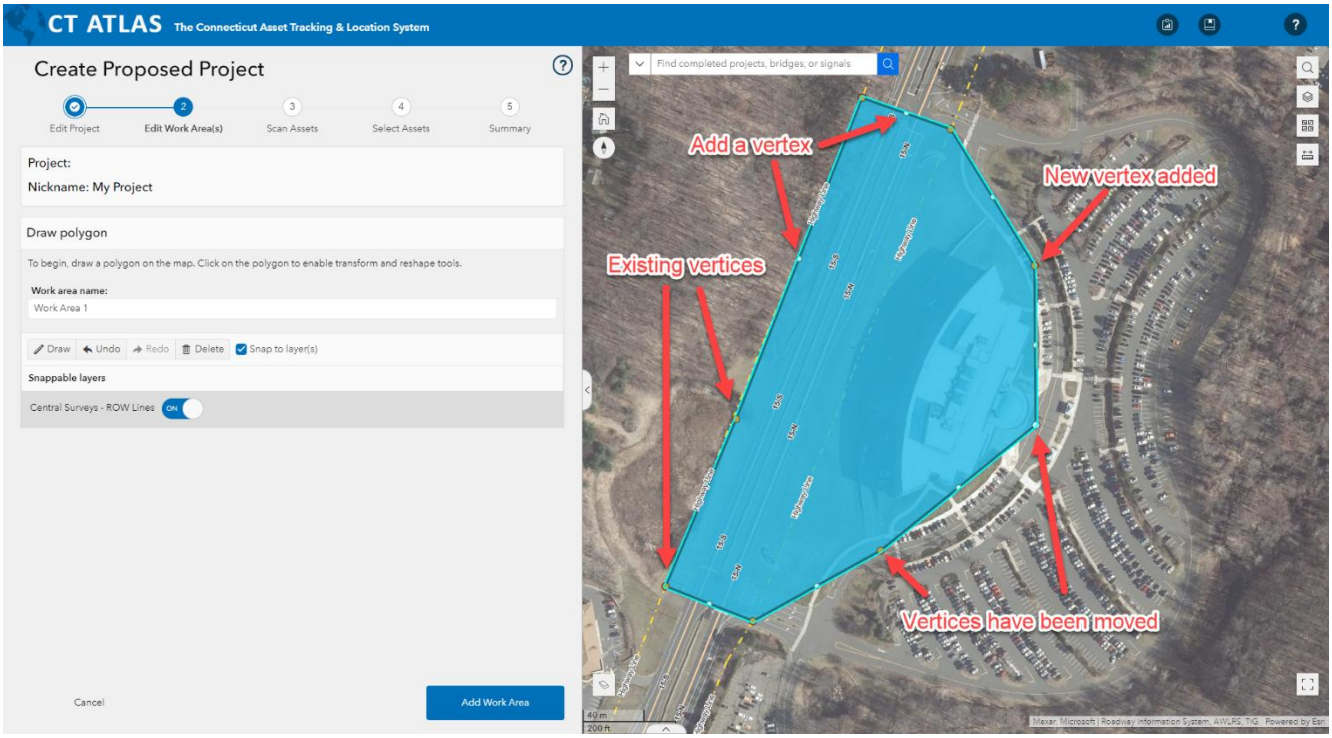
In this screenshot, the Asset list has been sorted by Year Built (NBI 27). Two bridges have been selected for the Work Areas. The Zoom button has been used to zoom to Bridge ID 00617.

Draw a Polygon

1. Select **Draw a Polygon** from the work area list to use the sketch tools to make a free-hand polygon drawing for the project work area. By default, the Draw button and Snap to “ROW Line” layer functionality is enabled.
2. Click on the map when **Draw** is enabled to begin drawing a polygon.
    a. While drawing, clicking **Undo** will incrementally revert to the previous states of the polygon. Clicking **Redo** will incrementally redo the states.
    b. When **Snap to layer(s)** is turned on, your pointer will jump—or snap—to edges, vertices, and other geometric elements when your pointer is near them and within a certain tolerance. A list of available layers for snapping will appear under the “Snappable layers” header. Each snappable layer can be toggled on or off.



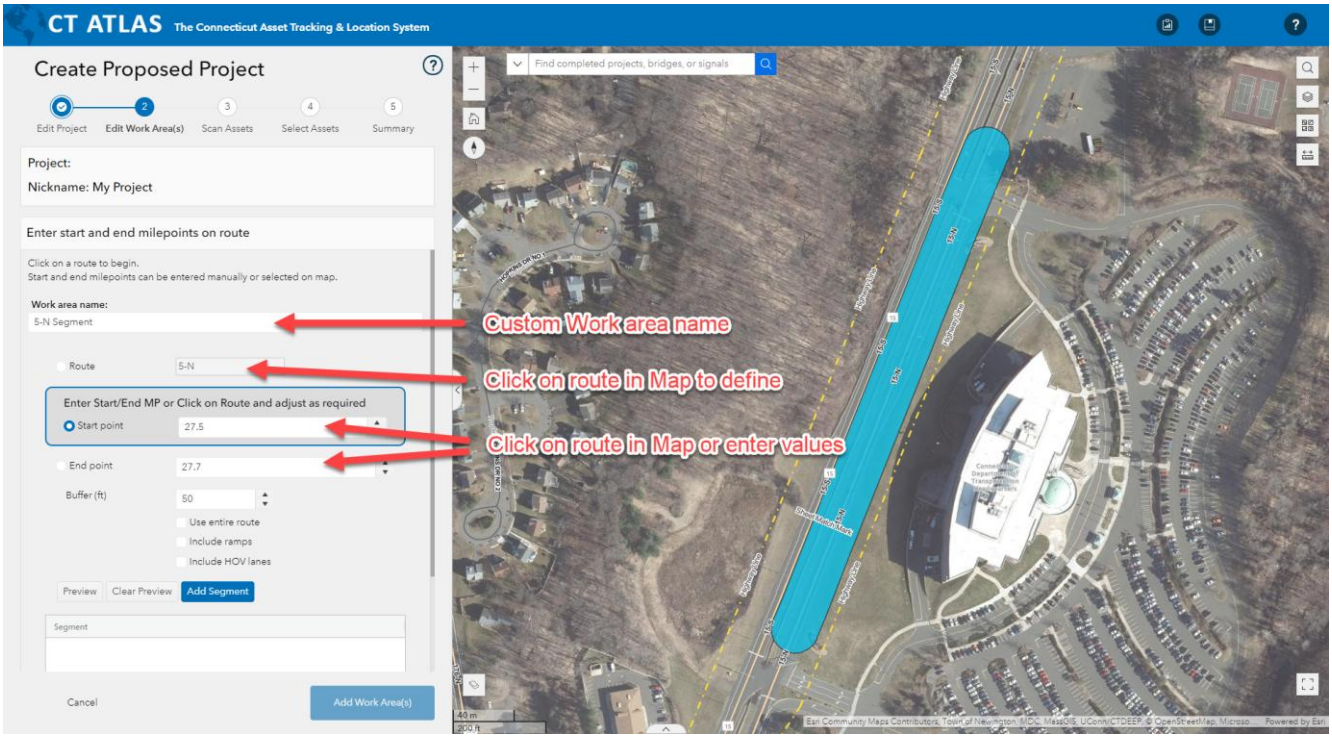
3. To complete a polygon, double-click during the draw process. After completing a work area, the **Delete** button will remove the polygon from the map.
4. Edit the work area name if desired.
5. If necessary, polygons can be edited after drawing and before selecting **Add Work Area**.
    a. Click on a completed polygon in the map. It will highlight in bright blue with an orange bounding box.
    b. Click the polygon again. The vertices are shaded orange and can now be adjusted. Additionally, new vertices can be created by selecting the white points halfway between vertices.



6. When the polygon(s) are complete, click **Add Work Area**.

Enter Start and End Point on Route

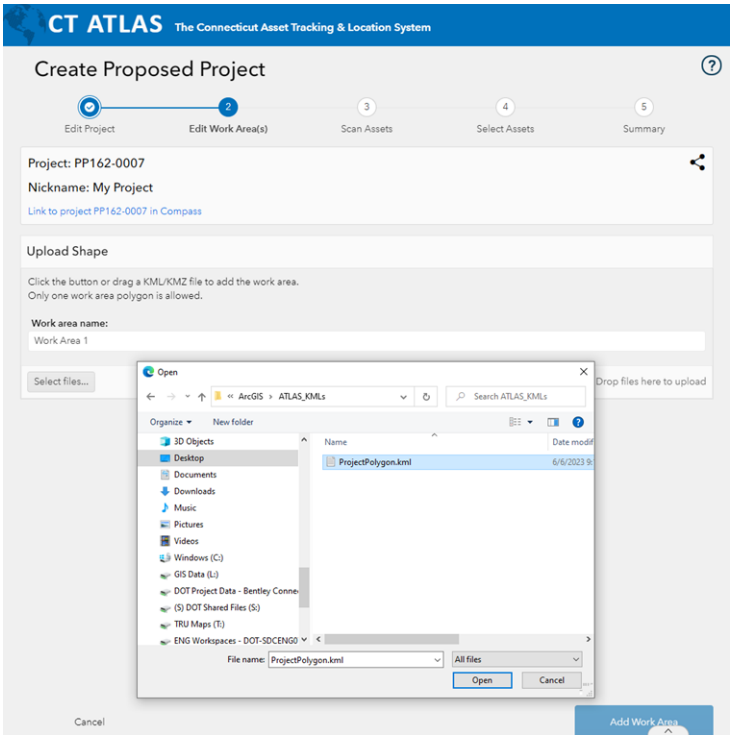
1. Select **Enter Start and End Point on Route** from the work area list to define a project work area based on a starting and ending mile-point on a route.
2. Zoom to the desired route and click on the route. The route will populate in the application.
3. Click on a start and end point on the map.
    a. Mileage numbers can also be input directly to the app in the **Start point** and **End point** boxes. Turning on the route or road mile point layers will help the user's orientation.
4. Define a buffer distance for the segment. The default buffer value increases with a lower Functional Class value. The value can be manually edited if necessary.
5. Select from additional options if necessary.
    a. **Use entire route** will select the entire route rather than a milepoint-defined segment.
    b. **Include ramps** will include ramps within the selected segment.
    c. **Include HOV Lanes** will include HOV lanes within the selected segment.
6. Click **Preview** to review the buffered segments. Each work area can be given a custom **Work area name** in the text box at the top.



7. Click **Add Segment** once the road segment is defined.
8. When the road segment is acceptable, click **Add Work Area** to create the project work area.
9. When adding additional noncontiguous segments, each segment should be in their own Work Area. Naming each Work Area with the segment name is recommended.

Upload Shape

1. Select **Upload Shape** from the work area list to upload a KML file that will define the project work area.
2. Click the **Select files…** button to browse for the KML file on your computer, or drag and drop the file on the Drop files control. The KML file will define one project work area, so it must contain only one polygon. See Section 15 for more details on creating KMLs.



3. Click **Add Work Area** to create the project work area.
4. When all work areas have been added, click **Next**.

16.3.3 Project Wizard Page 3 – Scan Assets

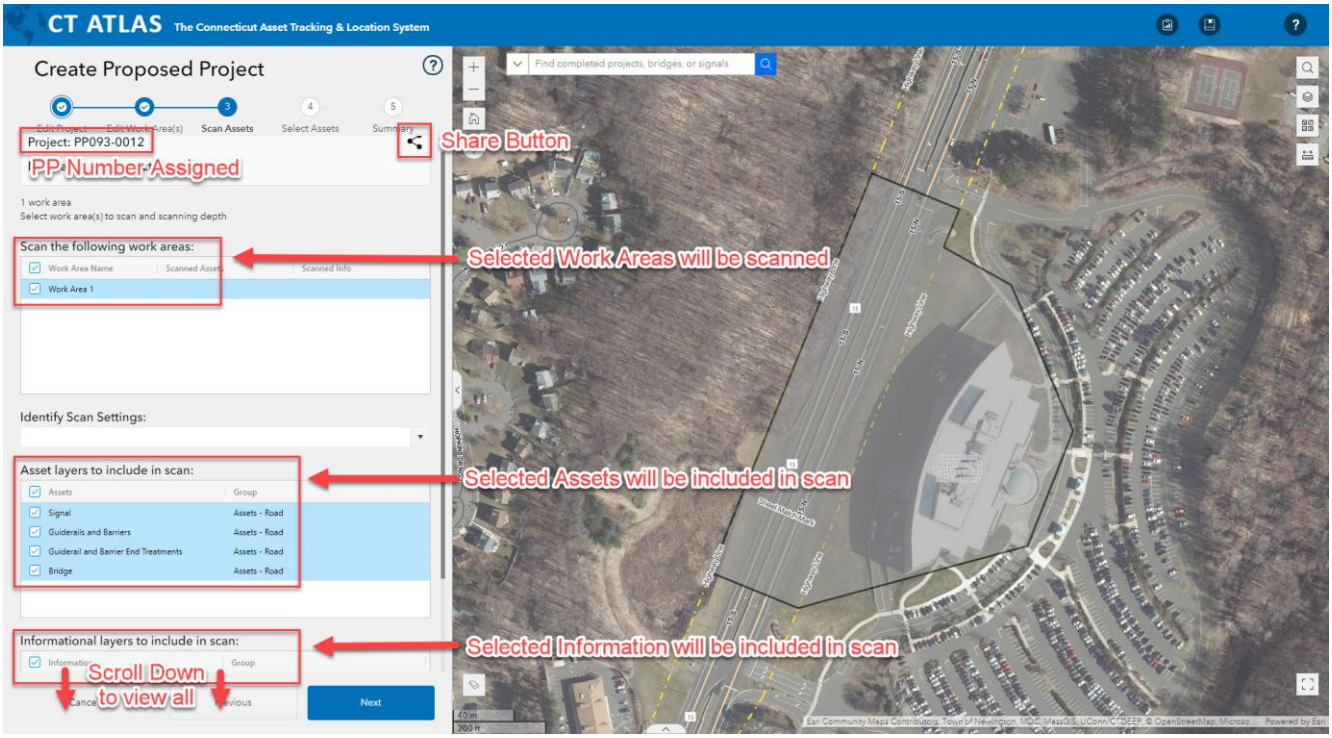
The third page of the Project Wizard is the Scan Assets Page. Work area(s) have been established and a PP number is listed at the top. There is also now a **Share** button at the top right of the Project Wizard. Clicking this will create a shareable link to the Project's ATLAS Page. User's receiving this link must have proper credentials to edit (See Section 16.1.2).

The Scan Assets Page allows the user to select which work areas should be scanned for assets and information. Any work area that has been scanned during a previous session will be unselected by default at the next session. If the user hits **Next**, the information from the original scan will be queried and reported. A new work area that hasn't yet been scanned will be selected by default for a scan.

To scan for assets, complete the following steps.

1. Under **Asset Layers to include in scan**, select the assets to include in the scan. By default, all asset and informational layers that are in the Atlas base map will be selected for scanning a new work area.
2. The **Identify Scan Settings** dropdown can be used to select one of the pre-defined scan settings*, which will scan a subset of layers for a particular project type. **This feature is under development*.
    a. See the Scan Assets and Information table at the bottom of this Section for more information on Scan Settings.
3. Layers to be scanned can always be checked on or off based on the needs of the project, even if a Scan Setting is selected.
4. Scroll down in the Project Wizard to view all selected Assets and Information. Ensure the desired layers are checked and select the **Next** button to advance. If you've selected work areas to scan, the scan will be performed when you click the **Next** button and you'll be shown a progress indicator while the scan process is running.

a. Clicking **Previous** will return the user to Step 2, where Work Areas can be added, edited, or removed.



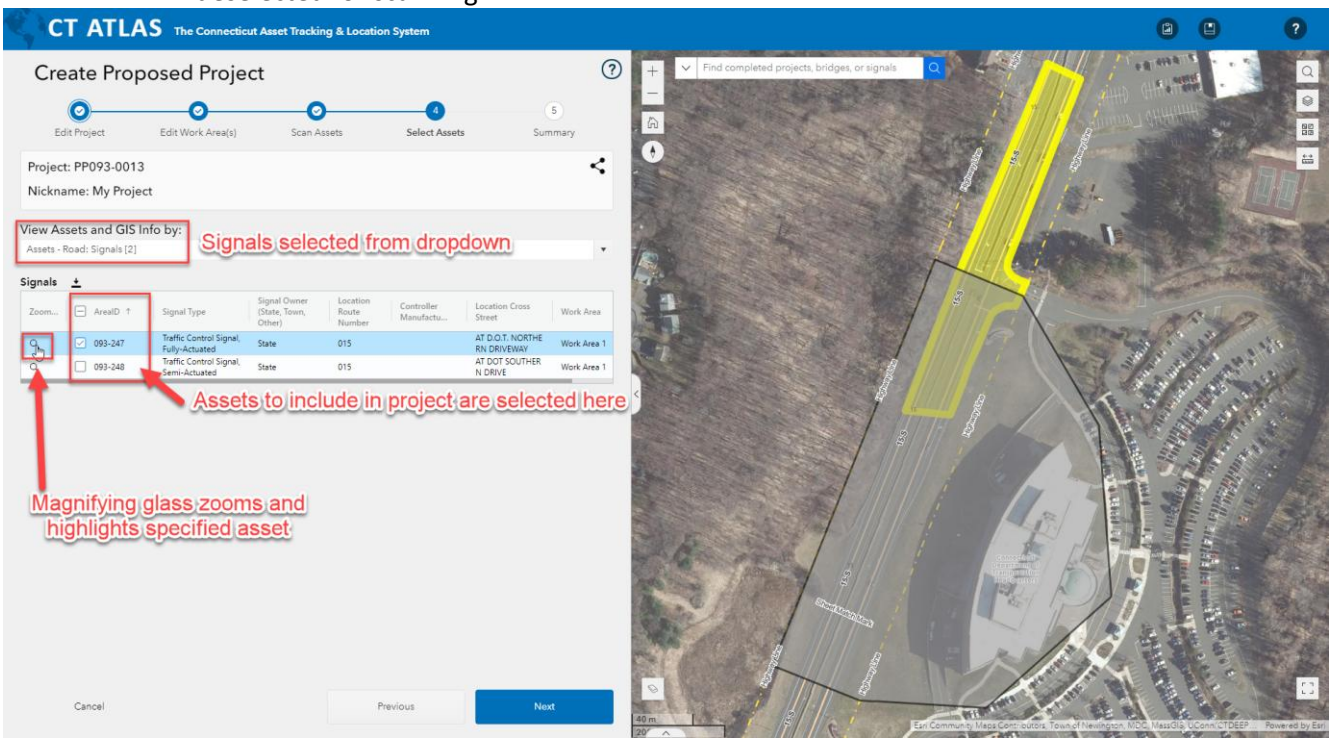
Scan Assets and Information (Templates are Under Construction)

	Group	Asset/Informational Layer	Engineering Base Setting	Template A	Template B	Template C	Template D
Assets	Assets - Road	Signals	X				
		Guiderails and Barriers	X				
		Guiderails and Barriers End Treatments	X				
		Bridges	X				
Information	Envir. Compliance Info	EPA Superfund NPL Sites	X				
		CTDEEP Impaired Rivers	X				
		CTDEEP Impaired Lakes	X				
		CTDEEP Impaired Estuaries	X				
		CTDEEP Groundwater Quality	X				
	Envir. Planning Info	Flood Hazard Areas	X				
		Flood Hazard Areas (No Digital Data)	X				
		EPA Sole Source Aquifers – SSA	X				
		CTDEEP Property	X				
		CTDEEP Natural Diversity Database Area	X				
		CTDEEP 2011 Protected Open Space View	X				
		CTDEEP 2011 Protected Open Space Phase 1	X				
		CT Coastal Management Boundary	X				
	Projects - Active	Proposed Project Work Areas – State/District	X				
		Proposed Project Work Areas – Local	X				
		Project Work Areas – Local/Active	X				
		Maintenance Resurfacing Active	X				
		LOTCIP	X				
	Projects - Completed	Maintenance Resurfacing Program Historic	X				
		Legacy Projects (Pre-2011)	X				
		LOTCIP Projects – Completed	X				
		Investigation Work Areas	X				
	ROW	ROW Property Management	X				
		ROW Acquisitions	X				
	Road Network	Traffic Monitoring Data – 85% Speed	X				
		Scenic Roads	X				
		OSTA – State Highway Speed Limits	X				
		OSTA – School Zone Speed Limits	X				
		OSTA – Local Road Speed Limits	X				

16.3.4 Project Wizard Page 4 – Select Assets

The fourth page of the Project Wizard is the Select Assets Page. This page allows the user to choose which of the scanned assets will be added to the project. Complete the following steps to select assets for a project.

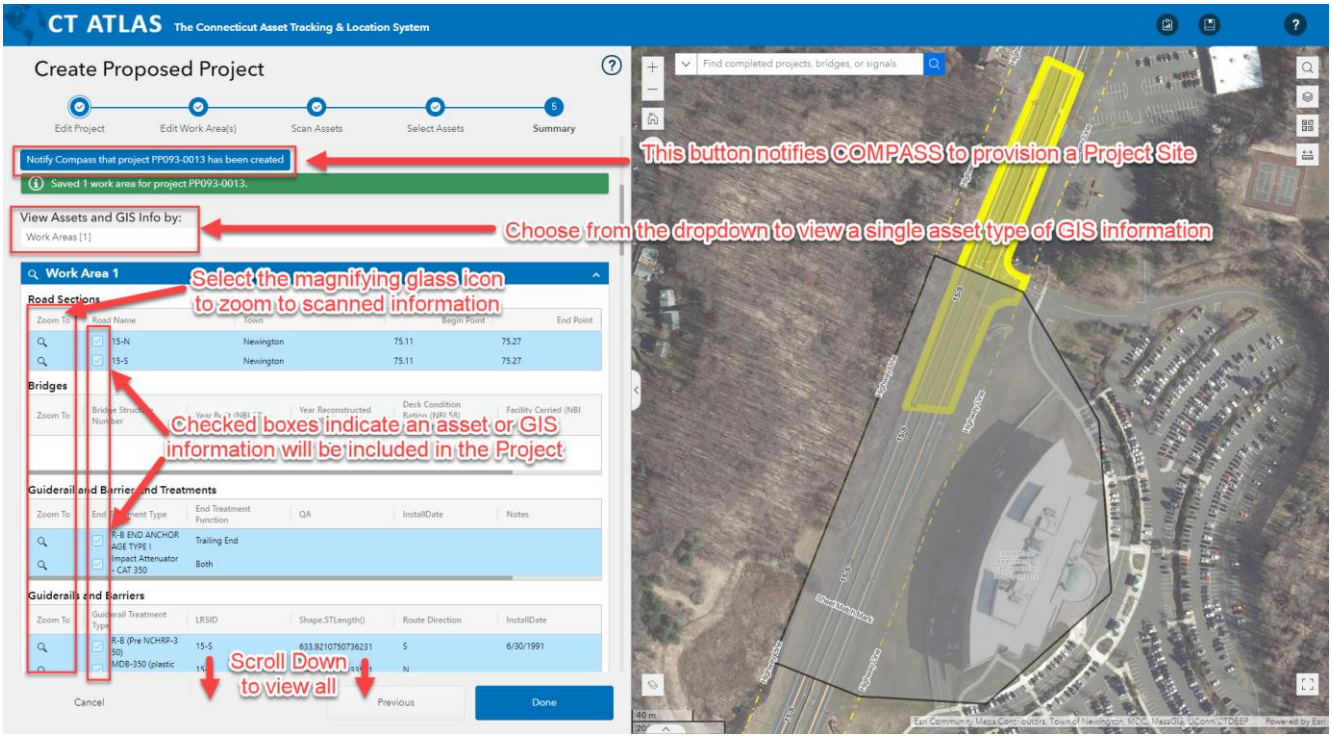
1. Choose how to view scanned assets.
    a. By default, all assets are listed under each scanned work area.
    b. Select an Asset Type from the **View Assets and GIS Info by** dropdown to view assets of a selected type for the entire project.
2. Select Assets to be added to the project and transported to COMPASS by checking their box.
    a. By default, state roads and all scanned assets will be selected for inclusion in the project.
        i. If the project also includes work on local roads, they can be selected here.
        ii. If Work Areas were built with the **Enter Start and End Point on Route** method, project may have routes selected that are not being worked on. Be sure to unselect any superfluous routes. Filtering can be used for quick results.
    b. Assets can be zoomed to using the magnifying glass icon.
    c. Fields can be sorted by left-clicking the column header.
    d. Fields can be filtered by hovering over the column header and selecting the options button on the right side.
3. When all required assets are selected, click **Next**.
    a. Clicking **Previous** will return the user to Step 3, where Asset and GIS layers can be selected or deselected for scanning.



16.3.5 Project Wizard Page 5 - Summary

The fifth page of the Project Wizard is the Summary Page. This page displays a summary of all the project information before providing an option to create a COMPASS site for the project.

1. Review the page to ensure all information is accurate.
    a. A summary of assets and GIS Info Layers returned from the project scan are displayed below the summarization. Assets that were included in the asset Selection step will appear with a read-only check box. Clicking on the magnify glass icon next to a record will zoom to it on the map.
    b. The **View Assets and GIS Info by:** dropdown allows the user to see all scanned assets or information of a selected type.
    c. When an asset is selected from the dropdown, a CSV of all scanned assets can be downloaded using the **Download** button.
    d. The COMPASS project link is available to navigate to the project site in COMPASS.
    e. Clicking **Notify Compass that project PPxxx-xxxx has been created** will send a message to the COMPASS to create/provision a COMPASS site for the proposed project.
        i. The provisioning of the project site can take up to an hour to complete.
        ii. Any changes to the asset selections in the ATLAS will automate a change to the COMPASS. For example, if a project requires adding a bridge, the bridge would be added to the project in ATLAS. COMPASS will see this change and update automatically. The same goes for removing a bridge—unselect the bridge in ATLAS, and it will likewise be removed in COMPASS.



2. Clicking **Previous** returns the user to Step 4, where scanned assets can be selected or deselected for inclusion in the project.
3. Clicking **Done** saves the Proposed Project in the ATLAS database and registers the selected assets as part of the Project. **Note clicking done does not create a COMPASS site. The user needs to click the Notify COMPASS... button shown in the image above.**

16.3.6 Submitting a Project to COMPASS

When the ATLAS Project Creation steps are complete and COMPASS has been notified of the new project, a COMPASS project site will be generated. Some initial steps are required for a new Project in COMPASS. See Section 3 for full detail.

Complete the following steps to submit a project to COMPASS. Detailed instructions are in Section 3.

1. Create a ticket with the COMPASS Support Desk (Section 3.1).
2. Populate the Project Staff on the COMPASS project site (Section 3.1).
3. Add Work Types and Work Codes to assets (Section 3.2).
4. Complete the Proposed Project Information (PPI) Form if necessary (Section 3.3).
    a. If the project does not have approved funding from the Financial Obligation Report (OBL), complete the PPI Form.
    b. If the project has approved funding from the OBL, a PPI form does not need to be completed.

16.4. Managing an Existing Proposed Project or Project

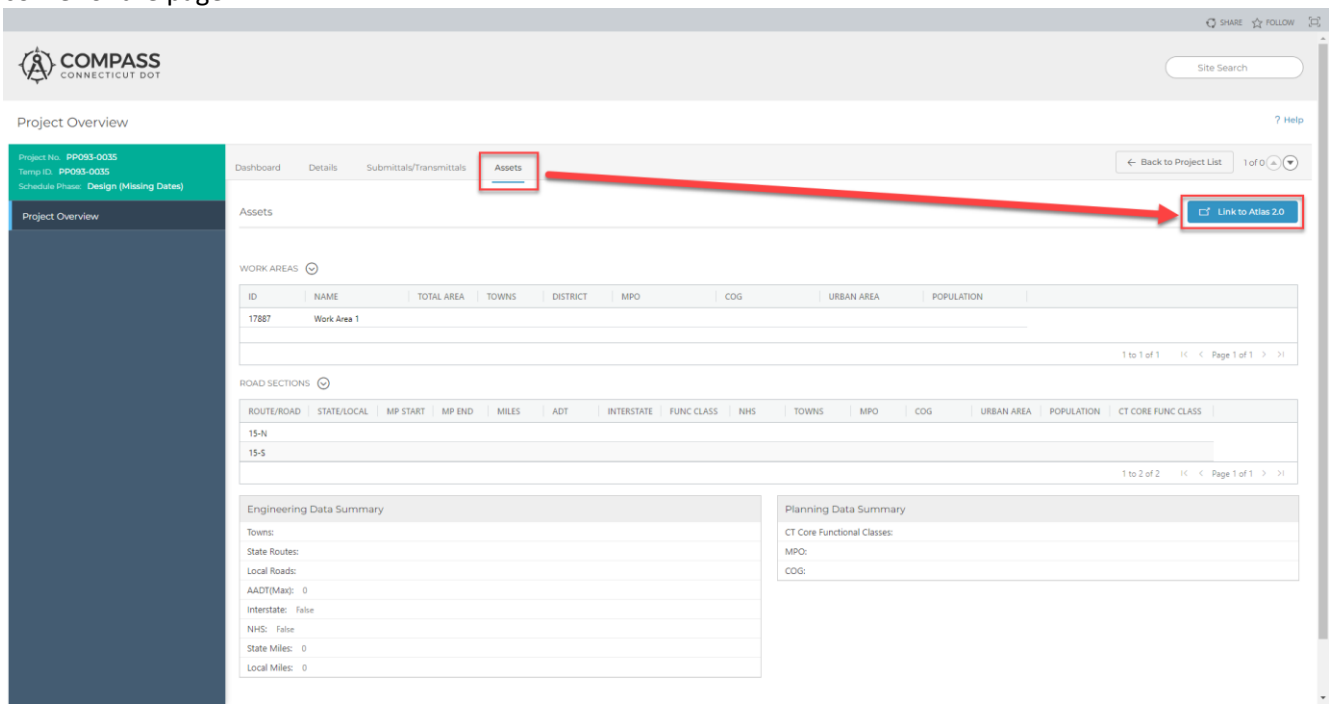
Throughout the lifespan of a project, ATLAS shall be used to manage and update geometry and/or assets. This section outlines moments in the project's lifetime where ATLAS shall be used.

In addition to its use in creating project work areas and completing initial asset scans for Projects and Proposed Projects, the Project Wizard also allows the user to update or modify the geo-spatial boundary of a project and add or remove assets. Projects or Proposed Projects may have their polygon edited and assets added/removed throughout the Project Development Process. For more information on when a project polygon may need to be edited or updated, see Section 15.

16.4.1 Accessing a Project for Management

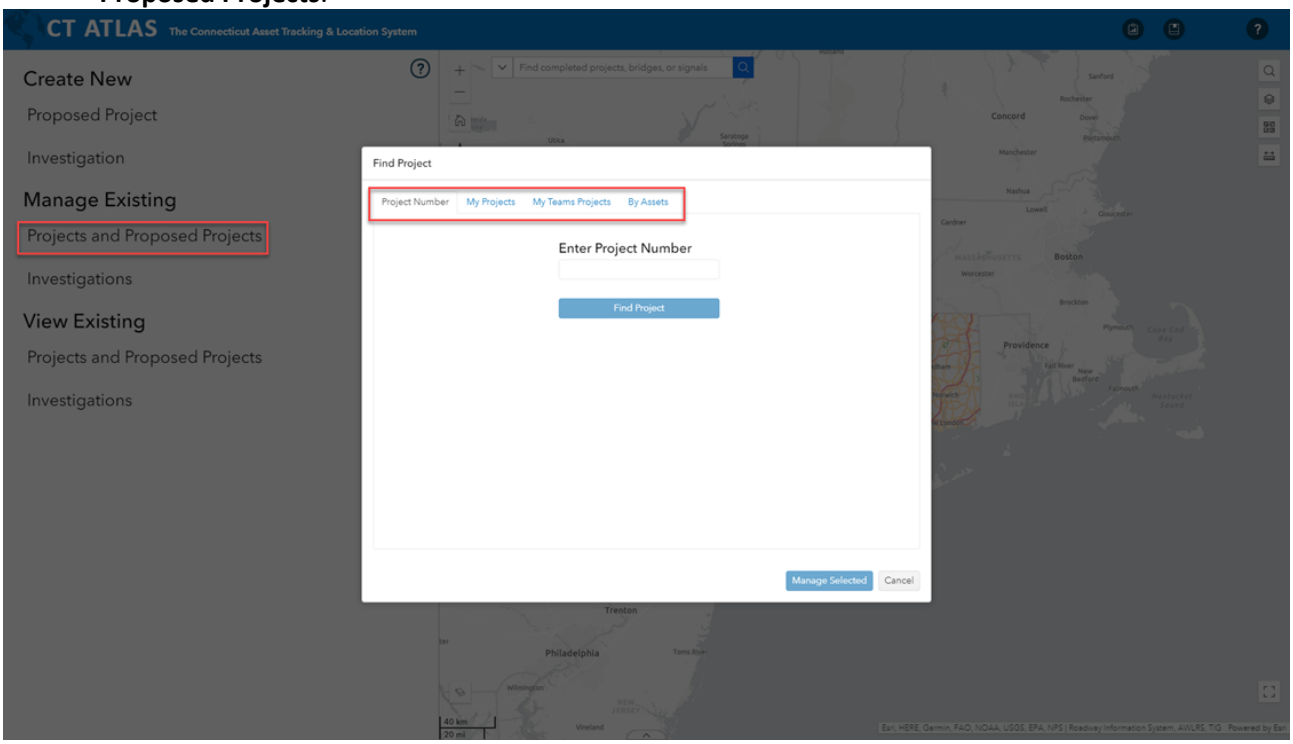
The ATLAS Project Page can be found with the ATLAS 2.0 link on the COMPASS Site or by using the **Find Project** Window options in ATLAS.

From a project's COMPASS page, navigate to the **Assets** tab. The ATLAS link can be found at the upper right corner of the page.



Existing projects can be found in ATLAS by selecting the Manage Existing: Projects and Proposed Projects option in the Project Wizard. The following outlines the process to access an existing project for management.

1. Open a web browser and navigate to ATLAS. Sign in when prompted (See Section 16.1.3).
2. The Project Wizard is located at the left of the page. Under "Manage Existing," select **Projects and Proposed Projects**.



Within the Find Project window, there are four options to find a project for management:

Project Number – This option allows the user to search for a Project in ATLAS by Project Proposed Project Number. Complete the steps below to find a project by Project Number.

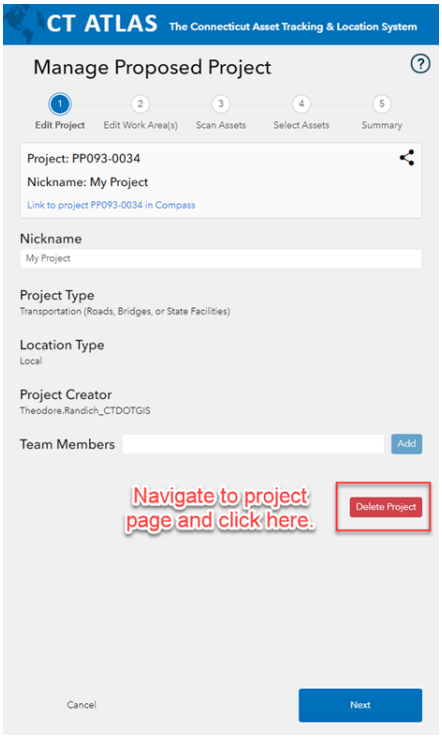
1. Enter a full or partial project number (or proposed project number) in the input box.
2. Click **Find Project** to display a list of projects matching the entered value.
3. Select the target project from the list and click **Manage Selected**.

My Projects – This option will display a full list of the user's projects and proposed projects. Results can be sorted by clicking the header bar for a column. Selecting the three-bar "options" button in the header provides the option to filter by a field. Click **Manage Selected** to continue.

My Teams Projects – This option will display a full list of the user's projects and projects that have been shared within the user's team. Results can be sorted or filtered using tools in the results table. Click **Manage Selected** to continue.

By Assets – This option allows the user to search for projects that overlap a specified asset. Complete the steps below to find a project by Asset ID.

1. Enter a Bridge or Signal ID number to display a list of projects that include the asset. Click **Find Projects**.
2. Use the sort or filter tools in the result table to further narrow the results.
3. Select the target project from the list and click **Manage Selected**.



16.4.2 Deleting a Project/Proposed Project in ATLAS

If a Project or Proposed Project has been cancelled in COMPASS (See Section 3.4), it also must be deleted in ATLAS. To delete a project in ATLAS, complete the following steps.

1. Navigate to the project page in ATLAS (See Section 16.3.1). The Project Wizard will open to Step 1: Edit Project.
2. Click the red **Delete Project** button. Confirm the selection.

Deleting a Project in ATLAS does not cancel the project in COMPASS or remove the project site page. Notify the COMPASS team to cancel or delete a project using this form - COMPASS Support.

16.4.3 Managing assets and geometry for an existing Project/Proposed Project

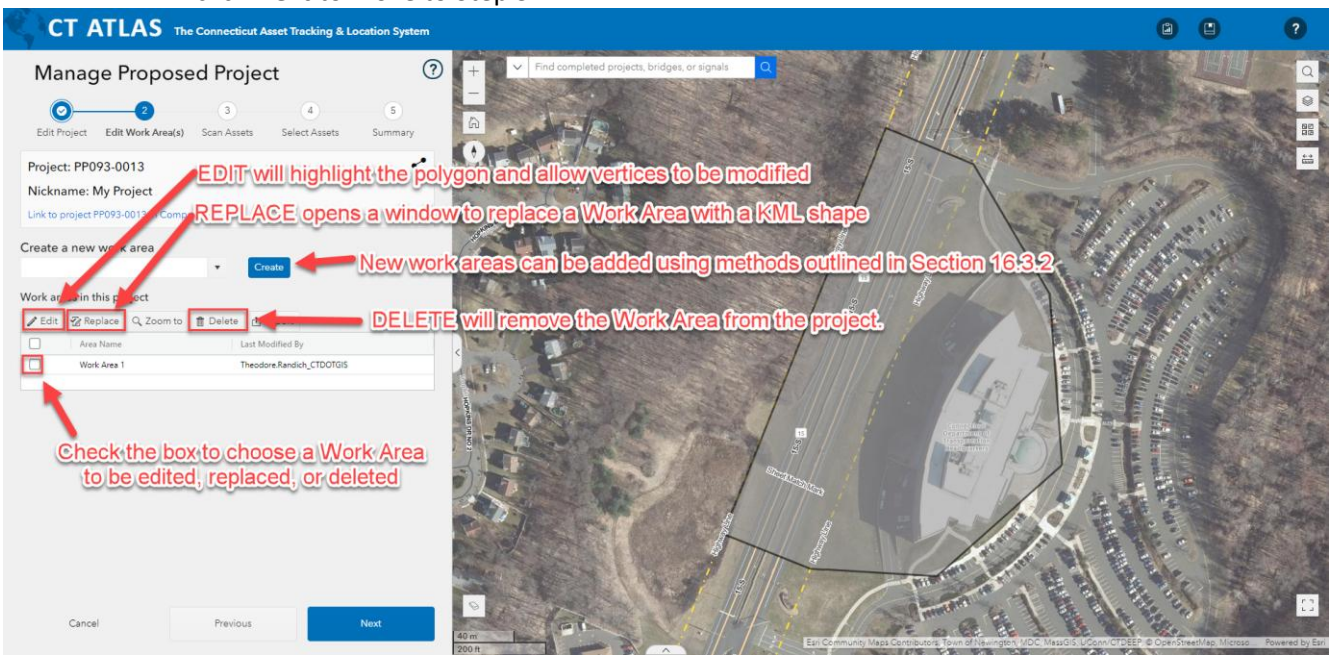
When creating a project in ATLAS, the Project Manager creates a spatial representation of the project by adding Work Areas. The Project Wizard scans these Work Areas for underlying assets that may be associated with work in the Project. The Project Manager selects some or all these scanned assets for inclusion in the project before adding Work Codes and Work Types in COMPASS (See Section 16.3.4).

There may be moments in the lifespan of the project where project limits change, and/or assets are added or removed. The Project Wizard in ATLAS is used to manage geometry and add or remove these assets to ensure the Assets tab in COMPASS reflects up-to-date information.

When managing an existing project, complete the following steps to adjust geometry, or add an asset or assets.

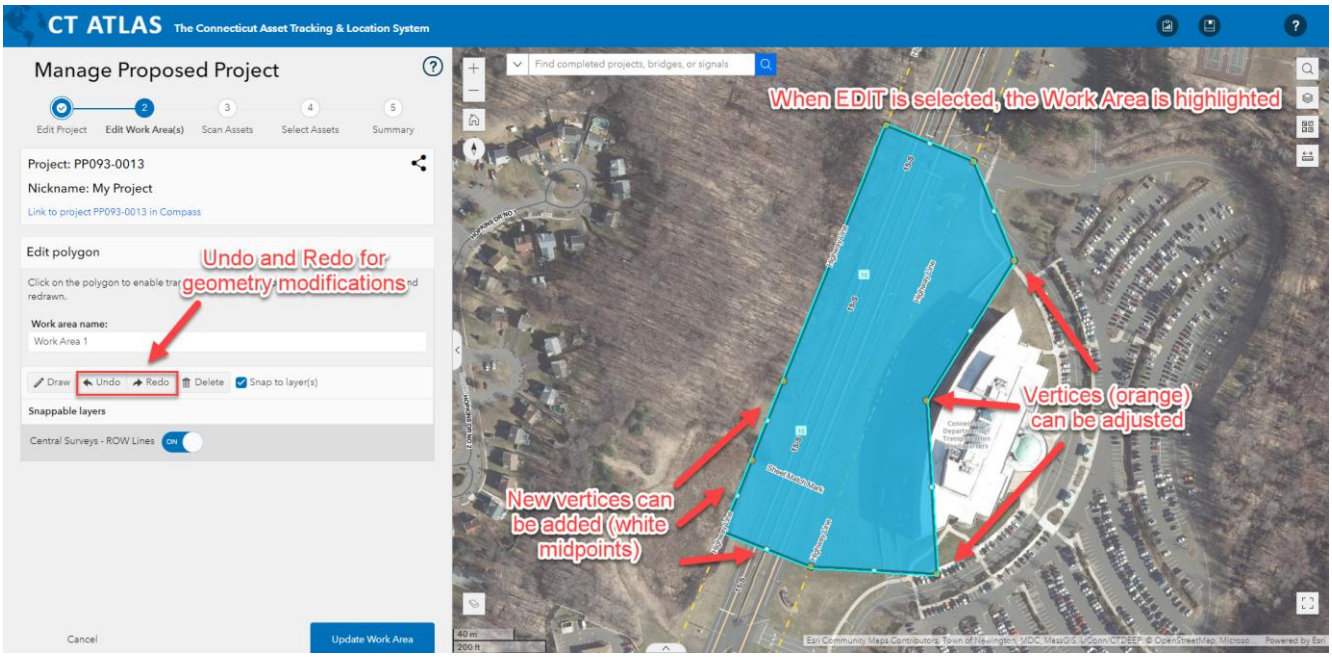
1. Navigate to the project page in ATLAS (See Section 16.4.1). The Project Wizard will open to Step 1.
    a. The Nickname and Team Members in the Edit Project page can be edited if necessary (See Section 16.3.1). This is also the page with the red **Delete** button (See Section 16.4.2).
2. Click **Next** to advance to Step 2 of the Project Wizard (See Section 16.3.2).

a. If the asset or assets to be added are contained within the existing Project Work Area limits, click **Next** to move to Step 3.



b. If the asset(s) to be added are not overlapped by the existing Project Work Area limits, create a new Work Area, or edit the existing Work Area using the Project Wizard. The desired asset(s) to be added must be overlapped by the project limits.

i. Work areas can be edited by checking the selection box, then clicking **Edit**. Clicking the highlighted polygon will enable the user to add or adjust vertices. When complete, click **Update Work Area**.



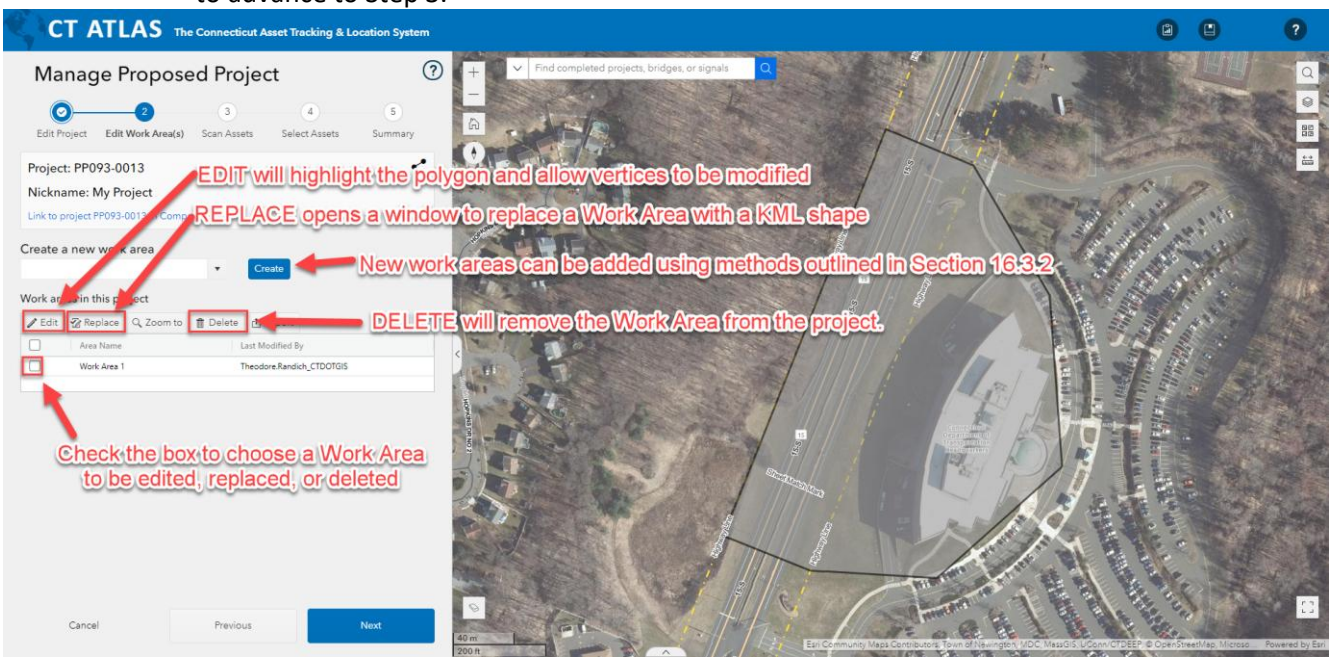
ii. If a KML file will be replacing previously drawn geometry for a Work Area, click **Replace** to upload the KML.

iii. A new work area can be created in the Project Wizard. Selecting **Related to Bridge(s)** or **Related to Signal(s)** allows the user to add polygons for specific assets. Other creation methods can also be employed, but the desired assets must overlap the final work area.
   1. Refer to Section 16.3.2 for full details on selecting a creation method.
   2. Refer to Section 16.3.2.1 for full details on creation methods.

3. When work areas are satisfactory, click **Next** to advance to Step 3 of the Project Wizard (See Section 16.3.3).
   a. In the top box, select work areas which will be scanned for assets.
      i. Newly created work areas are selected by default. Work areas that have been edited and updated will need to be selected manually, if a rescan is required.
   b. Select layers to be scanned. Asset layers must be selected to add new assets. Informational and GIS layers are optional and depend on the requirements of the project.
4. Click **Next** to advance to Step 4 of the Project Wizard (See Section 16.3.4).
   a. By default, state roads and all scanned assets will be selected for inclusion in the project. Ensure that the new assets to be added are selected for inclusion.
5. When assets are selected, click **Next** to advance to Step 5 of the Project Wizard (See Section 16.3.5).
   a. Review the selected assets from the scan and ensure all necessary assets have been added.
   b. To change selection, click Previous.
   c. If all desired assets are included, click **Done**.
6. Completing all five steps of the Project Wizard updates the project in ATLAS and COMPASS. The Project Manage must add Work Types and Work Codes for each asset in COMPASS (See Section 3.2).

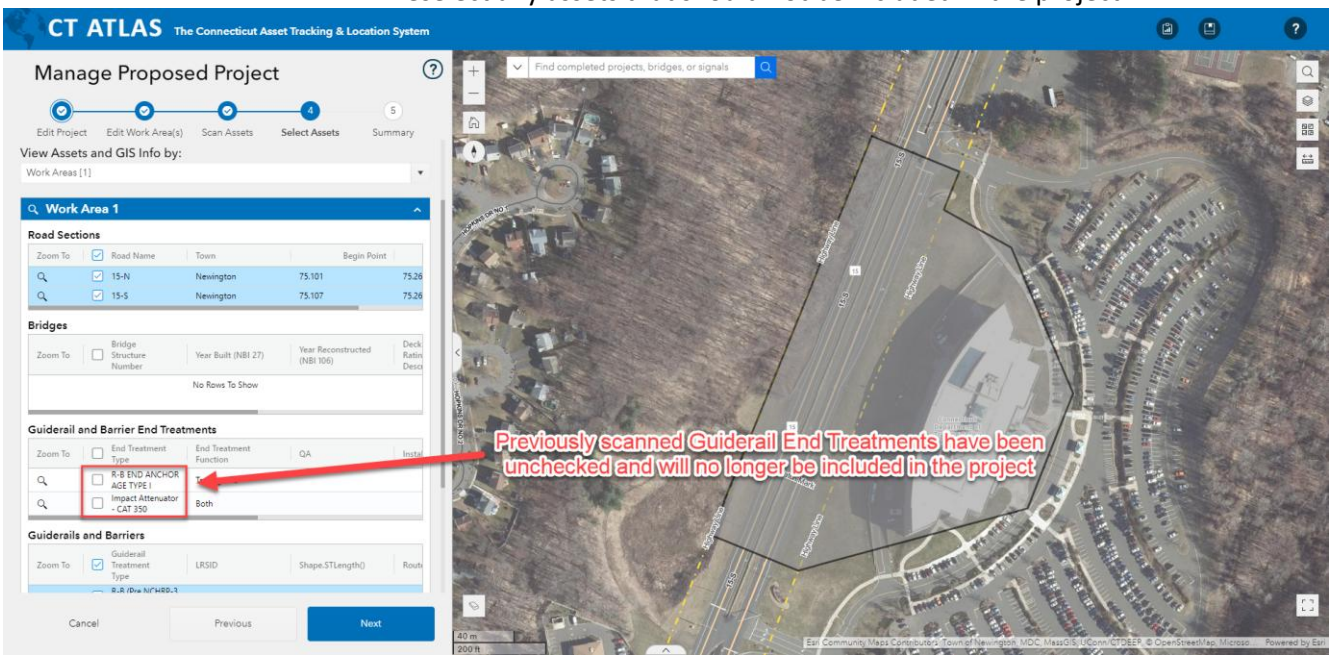
When managing an existing project, complete the following steps to remove assets.

1. Navigate to the project page in ATLAS (See Section 16.4.1). The Project Wizard will open to Step 1. The Nickname and Team Members in the Edit Project page can be edited if necessary (See Section 16.3.1).
2. Click **Next** to advance to Step 2 of the Project Wizard (See Section 16.3.2).
   a. If an asset (or assets) will be removed, but the Project Limits will remain unchanged, click **Next** to advance to Step 3.



b. If the work area has changed, it can be edited using the tools in the Project Wizard.
    i. Work areas can be edited by checking the selection box, then clicking **Edit**. Clicking the highlighted polygon will enable the user to add or adjust vertices. When complete, click **Update Work Area**.
        1. Refer to Section 16.3.2 for more details on editing geometry in ATLAS.
c. When complete, click **Update Work Area**.

3. When work areas are satisfactory, click **Next** to advance to Step 3 of the Project Wizard (See Section 16.3.3)
    a. In the top box, select work areas which will be scanned for assets.
    b. Select asset layers to be scanned.
4. Click Next to advance to Step 4 of the Project Wizard (See Section 16.3.4).
    a. By default, state roads and all scanned assets will be selected for inclusion in the project.
        i. If the Project Limits have changed to no longer overlap a targeted asset, the Project Wizard will not scan the asset.
        ii. If the Project Limits have not changed, assets can be unchecked and removed from the scan.
            1. By default, assets are displayed by Work Areas. They can be viewed by asset type using the dropdown at the top.
            2. Deselect any assets that should not be included in the project.



b. Click **Next** when all necessary assets are selected, and all extraneous assets have been deselected.

5. In Page 5 of the Project Wizard, the user can review assets selected for inclusion in the project (See Section 16.3.5).
    a. Ensure the list of assets included is accurate before clicking **Done**.
    b. To change selection, click **Previous**.
6. After clicking **Done**, the project will be updated in ATLAS and COMPASS. Assets removed in ATLAS will be reflected on the COMPASS site.

17. Rights of Way Management System (ROWMS) Work Request

User Guide

17.1. Overview and Purpose

Please see COMPASS Knowledge Center - ROWMS - Overview and Purpose details.

17.2. Accessing the ROW Work Request

Please see COMPASS Knowledge Center - ROWMS - Accessing the ROW Work Request for details.

17.3. Project Information

Please see COMPASS Knowledge Center - Completing a Work Request - Project Information for details.

17.4. Schedule of Owners (SoO)

Please see COMPASS Knowledge Center - Completing a Work Request - Schedule of Owners for details.

17.5. Shared Documents

Please see COMPASS Knowledge Center - Completing a Work Request - Shared Documents for details..

17.6. Project Work Assignments

Please see COMPASS Knowledge Center - Completing a Work Request - Project Work Assignments for details.

17.7. Submission

Please see COMPASS Knowledge Center - Completing a Work Request - Submission for details.

17.8. Work Request Status and Tracking

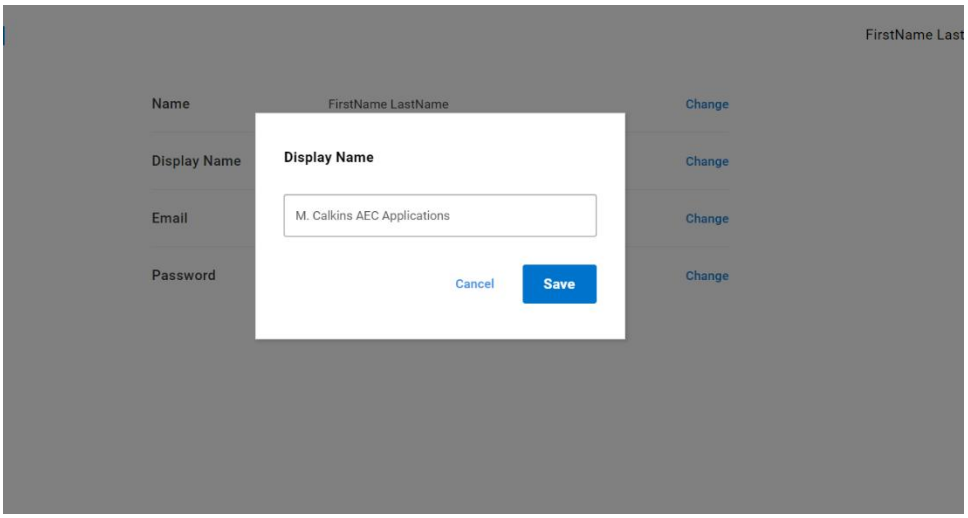
Please see COMPASS Knowledge Center - Work Request Status and Tracking for details.

Appendix A – Initial Bluebeam Settings

Initial Log into Bluebeam

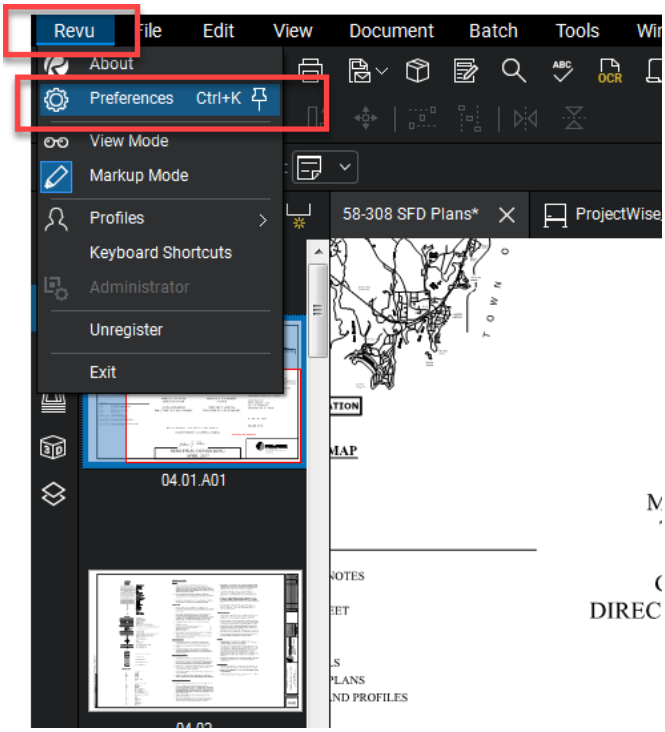
These steps only need to be completed the first-time using Bluebeam or when the user logs into a new computer.

1. Log into your Bluebeam account here: Bluebeam
2. Change your Display Name to include your first initial, last name, and unit name.

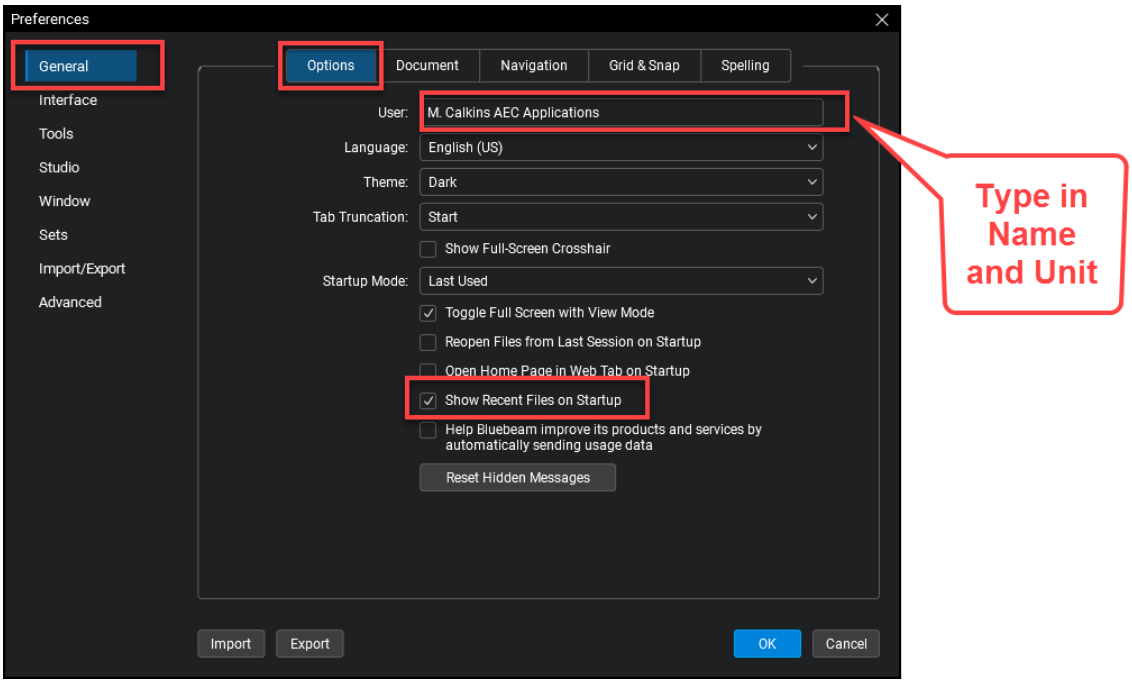


3. Open Bluebeam by selecting the desktop icon:

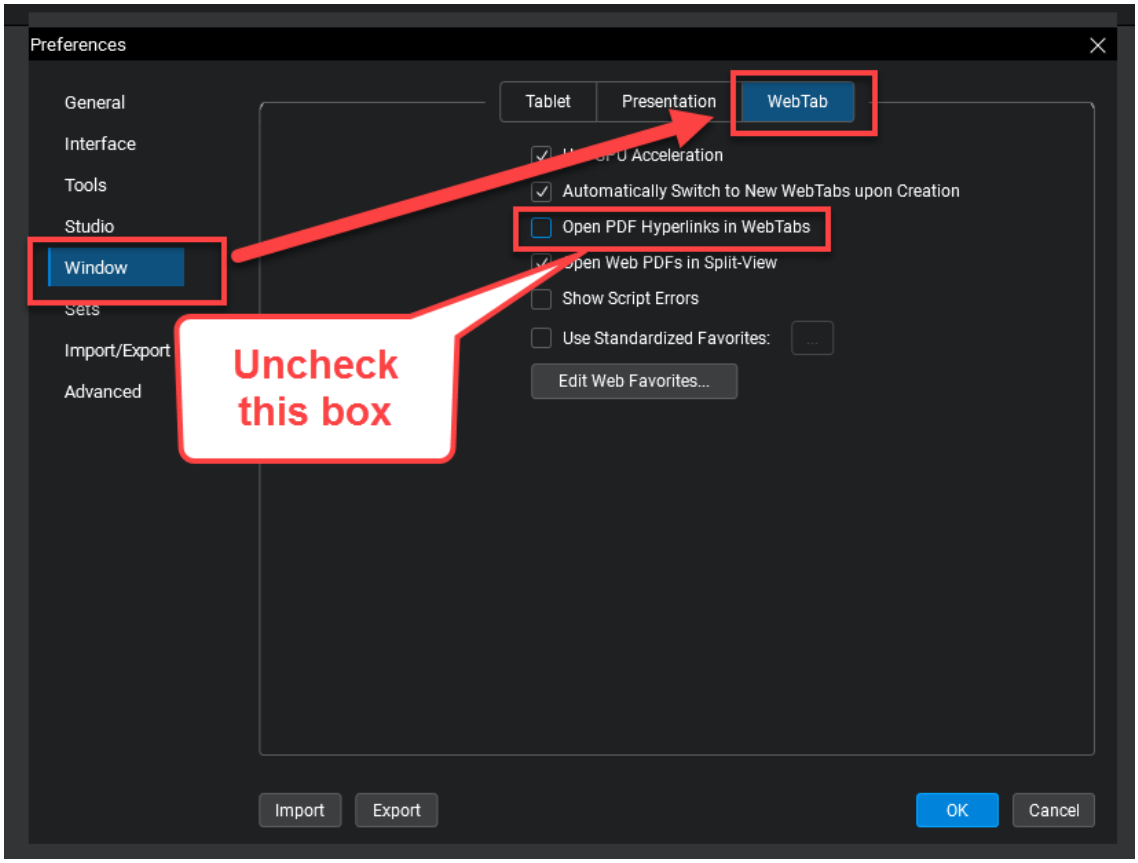
4. Then Open Bluebeam by double clicking on the shortcut.
5. Click on REVU in the top left-hand corner and click *Preferences* as shown below. If you cannot find the settings icon in the top right, go to the Edit menu, and select Preferences.



6. Set the General options first.

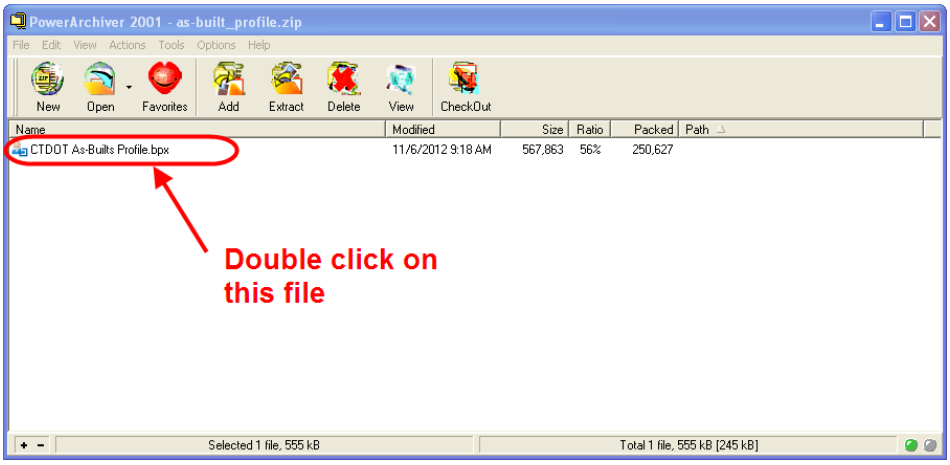


7. Next go to the Window option and select WebTab. Then uncheck the box below.



Downloading the CTDOT Bluebeam Profile

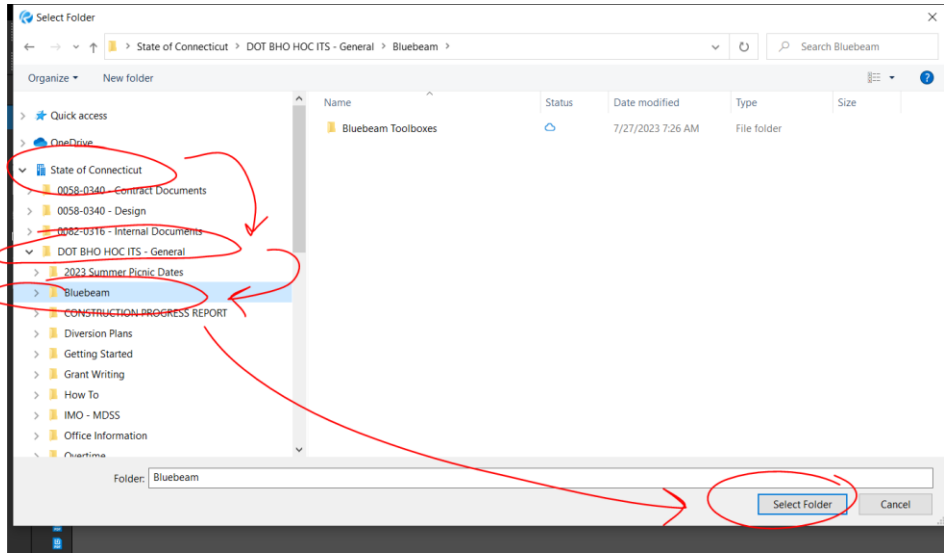
1. Download this file and save it to your desktop: CTDOT Bluebeam Profile
2. Double click on the profile in the zipped folder on your desktop.



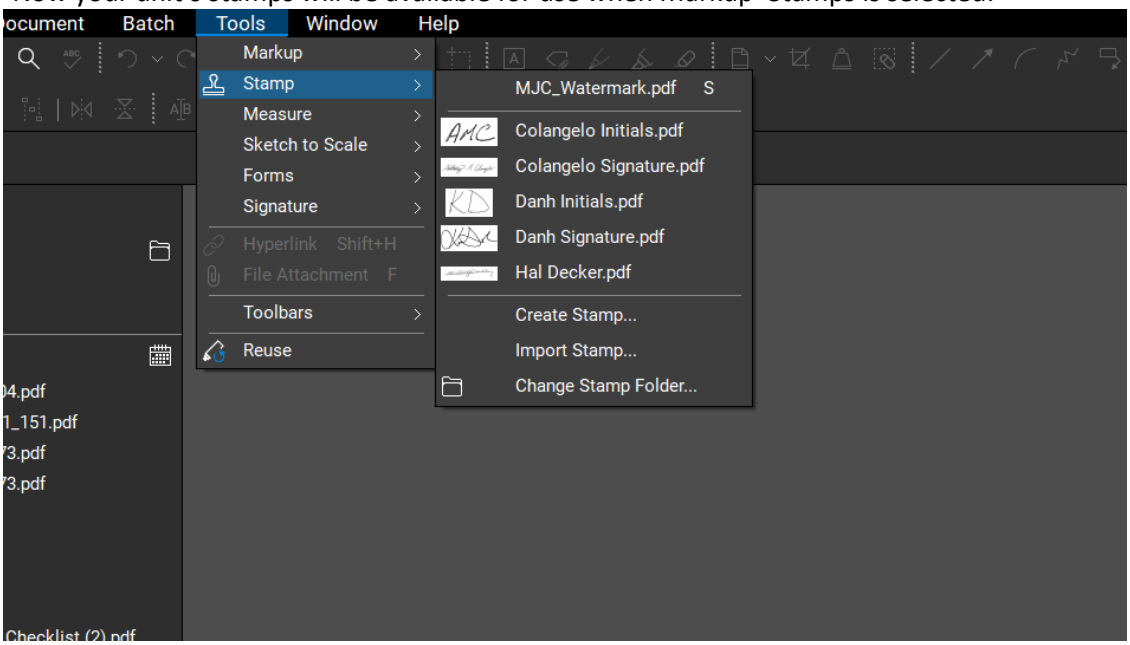
Bluebeam Stamps

The following steps are for CTDOT Engineering only. Stamps folders are stored on each discipline's SharePoint sites.

1. Go to your discipline's SharePoint Site and make sure you have the Bluebeam folder synced.
2. Select Markup>Stamp>Change Stamp folder as shown below:
3. Next browse out to Bluebeam folder that is synced from your discipline's SharePoint site. Below is an example of the Highway Operations SharePoint site that is synced.



4. Now your unit's stamps will be available for use when Markup>Stamps is selected:



Appendix B – Usability of PDF Documents

Usability of PDF Documents

This section contains information about viewing digital contract documents.

Structure of Digital Plans

Final Design Plans, Addendums, and Design Initiated Change Orders

The contract plans are split up into discipline subsets, which are multiple sheet PDF documents digitally signed by the Designer. Addendums and Change Orders are also submitted as discipline subset, with only the changed sheets. For example, an Addendum that affects the 03-Bridge Subset will require the submission of a 03-Bridge_A1 subset.

Digital Plans are in the 100_Contract_Plans folder in COMPASS.

As-Built's

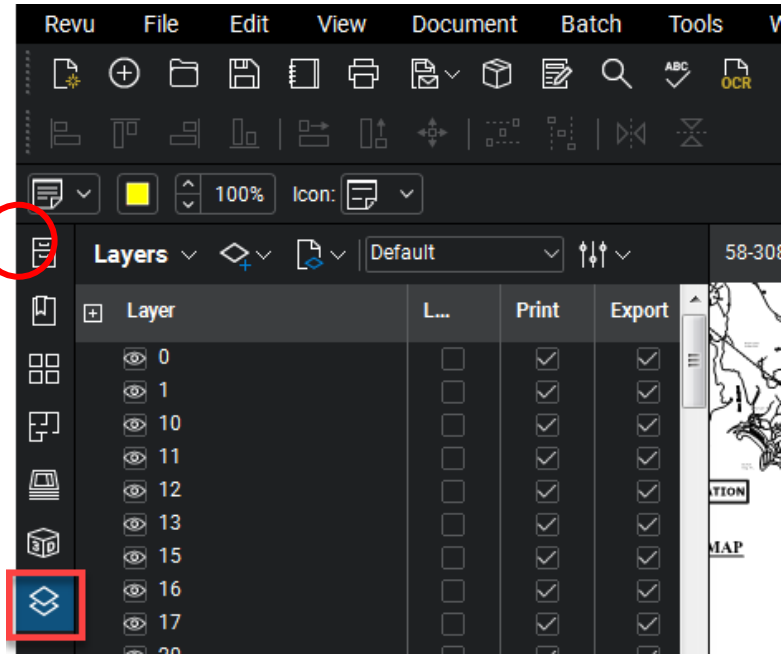
As-built's will be placed directly on the PDF Subsets using Bluebeam.

Functionality of PDF Digital Plans

The PDF digital plans have the following functions when the digital contract plans are created in accordance with this manual:
Turn levels on and off.
Search for all text on the documents.
PDF plans are measurable.

Digital Plan Levels

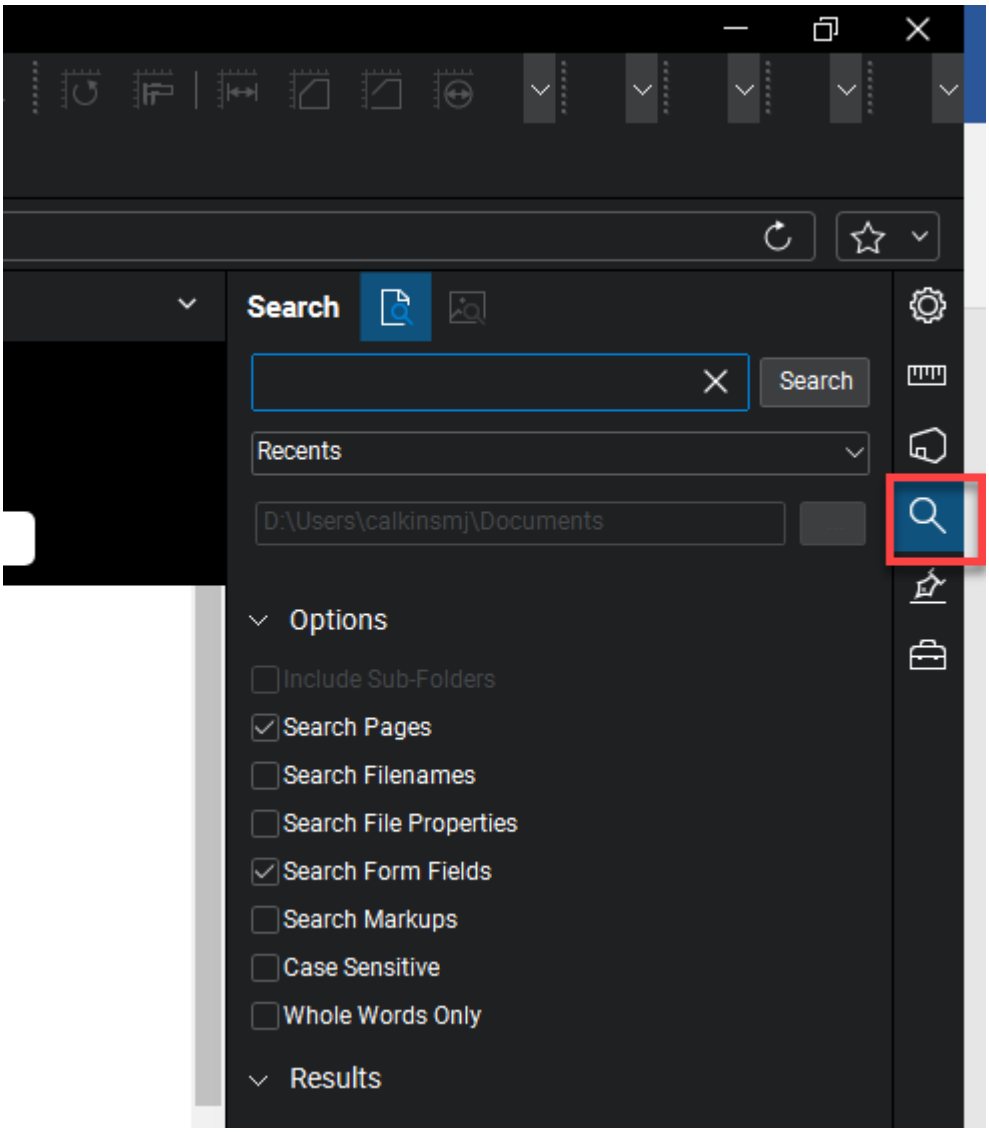
The plans can have their levels turned off and on. This can allow for easier viewing of the contract sheets. See below for turning levels on and off:



Searching Digital Plans

The plans can be searched for any text located on them. This can be useful if searching for a certain pay item.

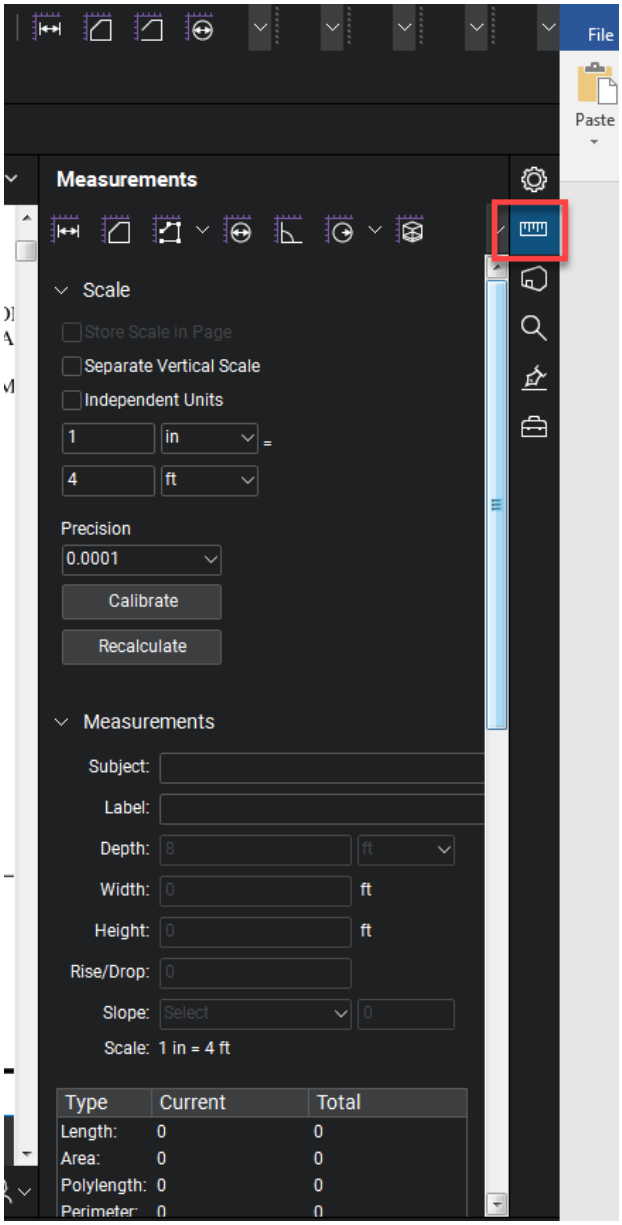
See below for searching the PDF Plans for text.



Measuring on the Digital Plans

The plans can be measured in PDF. This is helpful because a paper set does not need to be created for on desk measuring.

See below for measuring in PDF.



Digital Specification

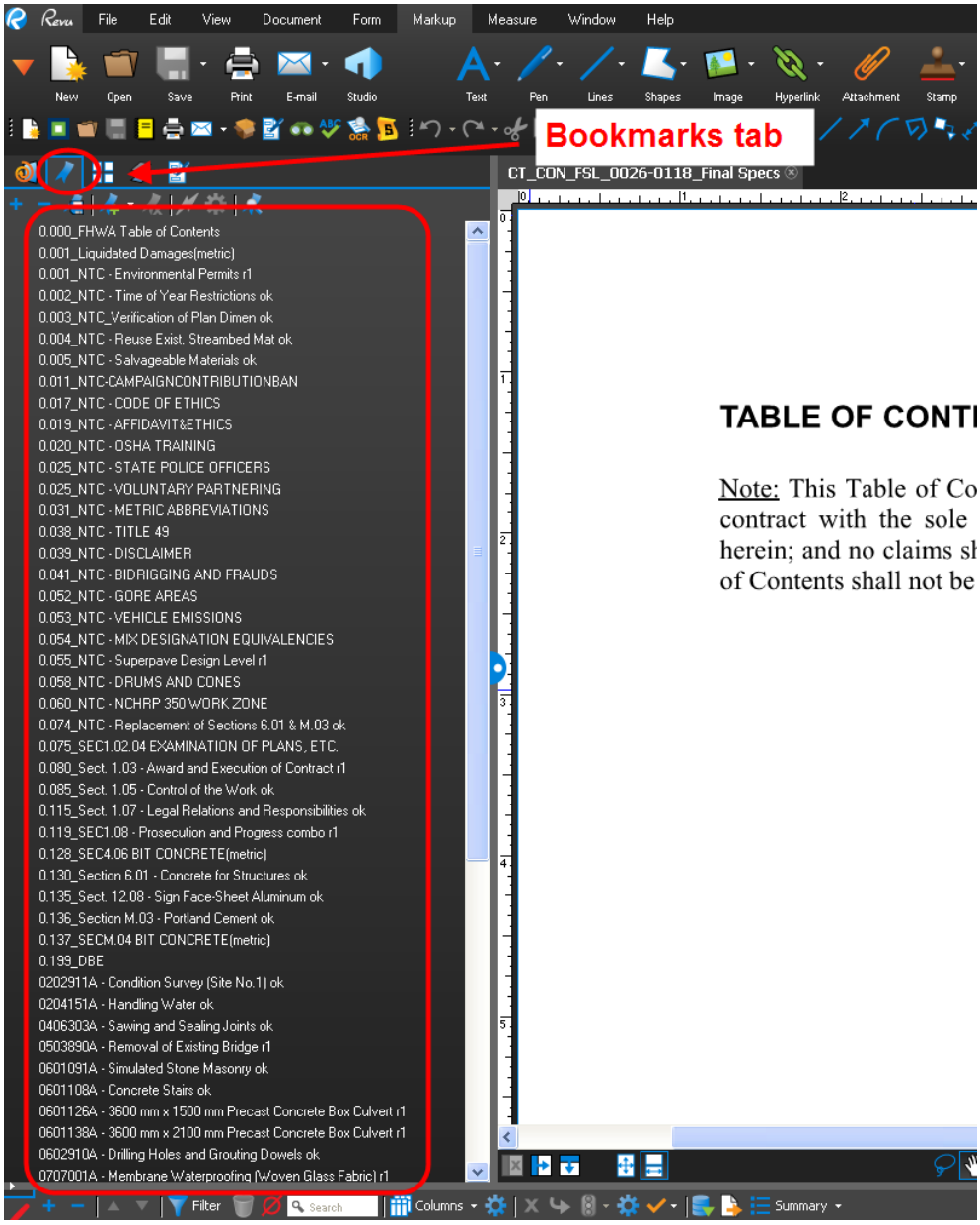
The FDP specification package will be one PDF document and located in the 110_Contract_Special provisions folder. This package includes all special provisions, Notice to Contractors, Wage information, etc.

The Addendum special provisions prepared in the same way as the FDP specification package and will also be in the 110_Contract Special provisions folder.

The Design Initiated Change Order special provisions will be contained in one PDF document located in the 110_Contract Special provisions folder when they are released to the Contractor.

Some useful features on the digital specification package are:

- Search for any text in the document, see Searching Digital Plans
- Bookmarks for each section in the specification package

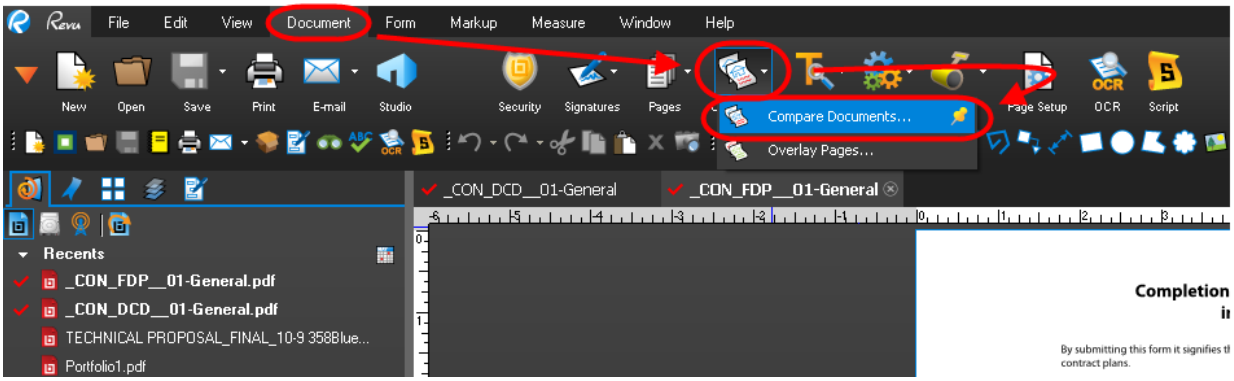


Document Compare Tools

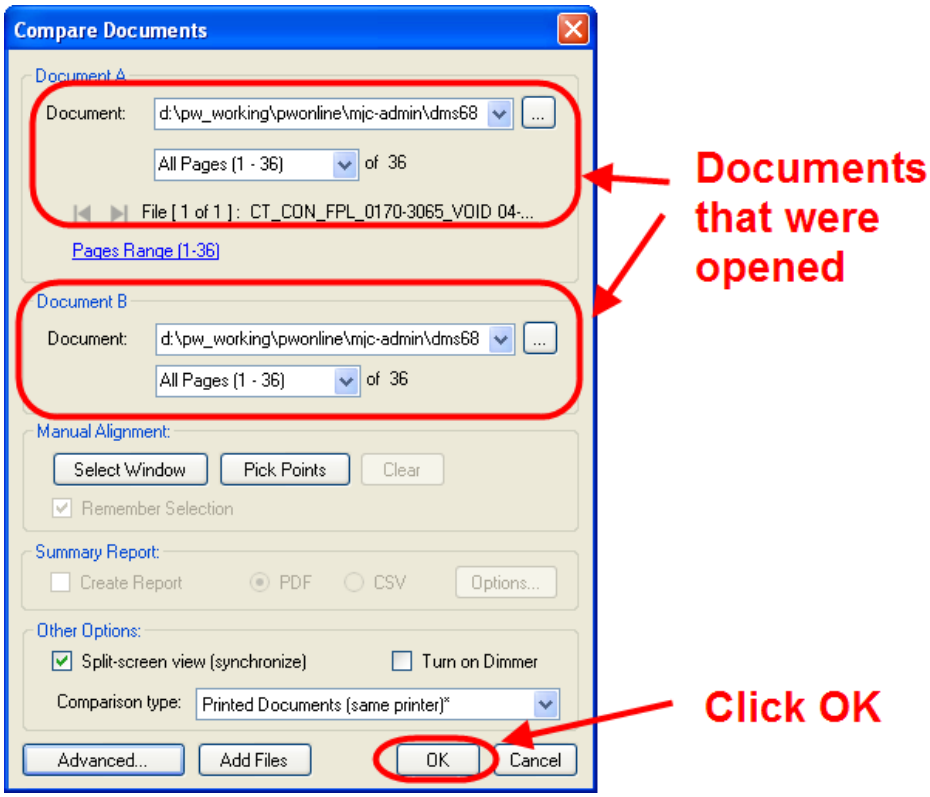
Bluebeam has the two tools for comparing documents: (1) Compare Documents and (2) Overlay Pages. Compare Documents will compare two documents and create a third document that clouds all the changes. Overlay pages will create a third document where the pages of document A will become one color and the pages of document will become another color. When the pages are overlaid, you will be able to see the changes from the difference in these two colors. Both tools can be used for single and multipage PDF documents. The following shows how to perform a document compare and how to use the overlay page tool.

Document Compare

1. Open the Revised document first and then open the original document that you want to compare from COMPASS.
2. Next go to Document>Comparison>Compare Documents as shown below:

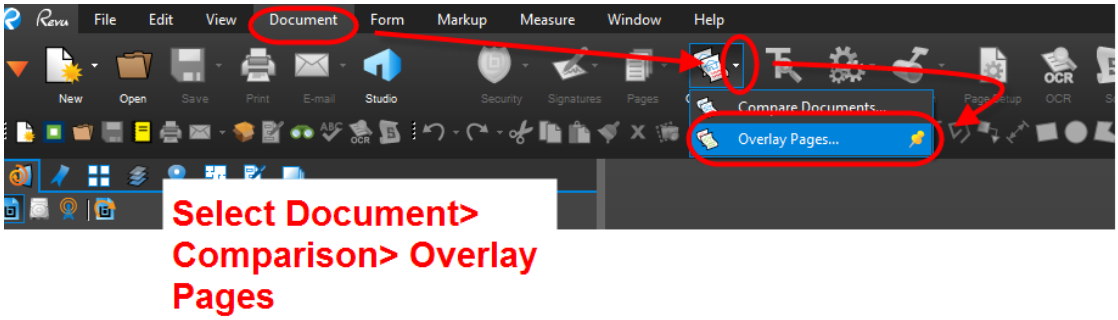


3. In the window that pops up you will notice the two documents that were just opened. Click OK to run the document compare as shown below:

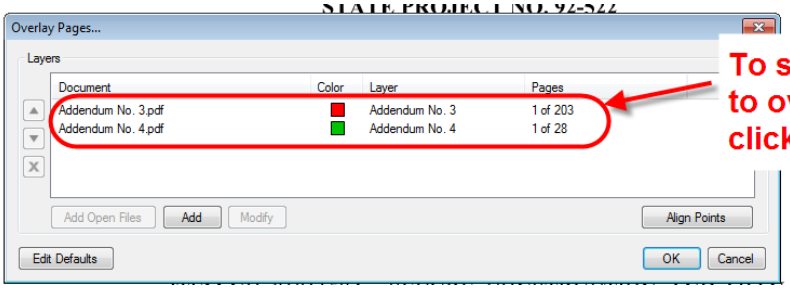


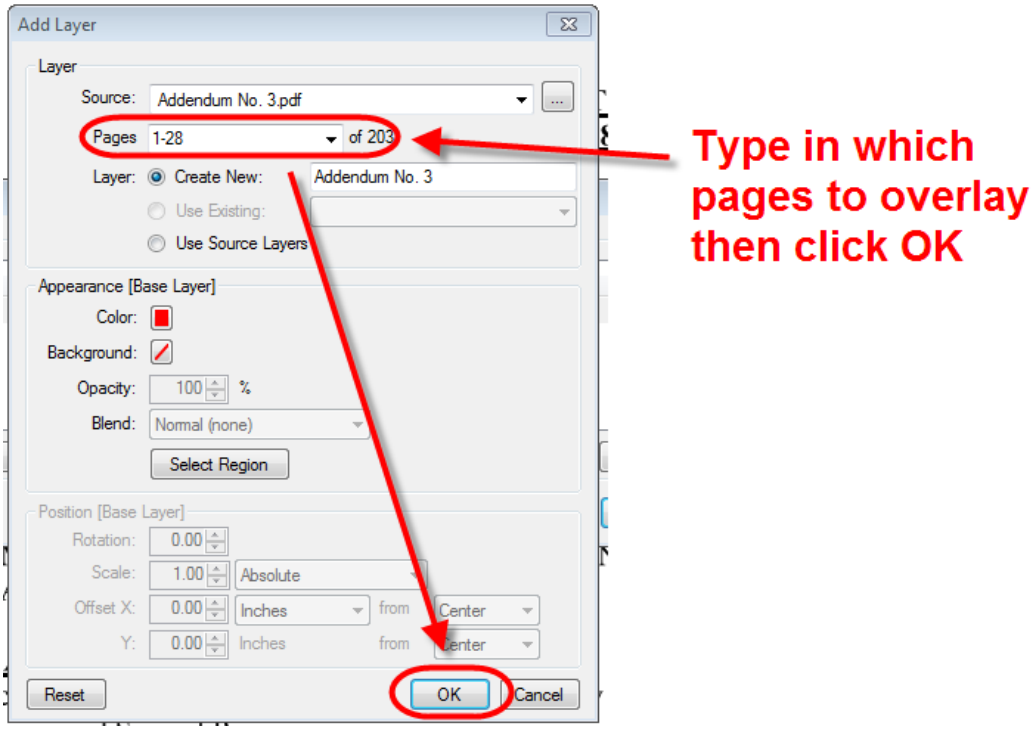
Overlay Pages

1. Open the Revised document first and then open the original document that you want to compare from COMPASS.
2. Next go to Document>Comparison>Overlay pages as shown below:



3. In the window that pops up you will need to select which pages of each document you want to overlay. To do this double click on a file, then in the window that pops up type the pages you want to overlay. The example below shows pages 1-28. Once you select the pages you want to overlay click OK.





Appendix C – Using the Set File

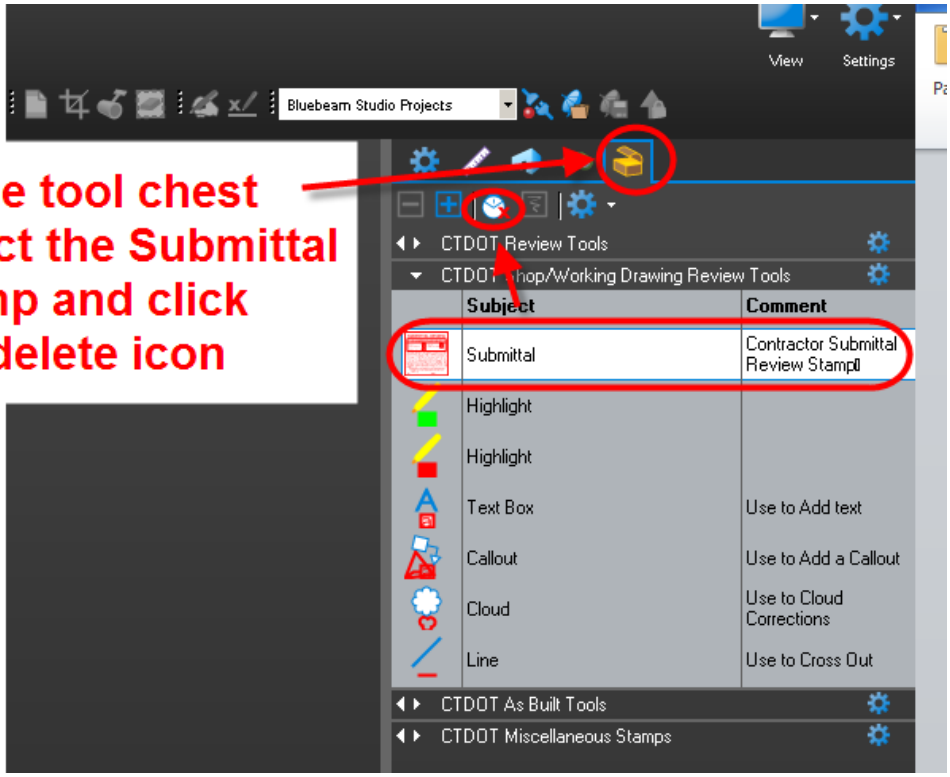
See the videos on the Bluebeam website for more information on Set Files in Bluebeam.

Sets | Bluebeam Technical Support

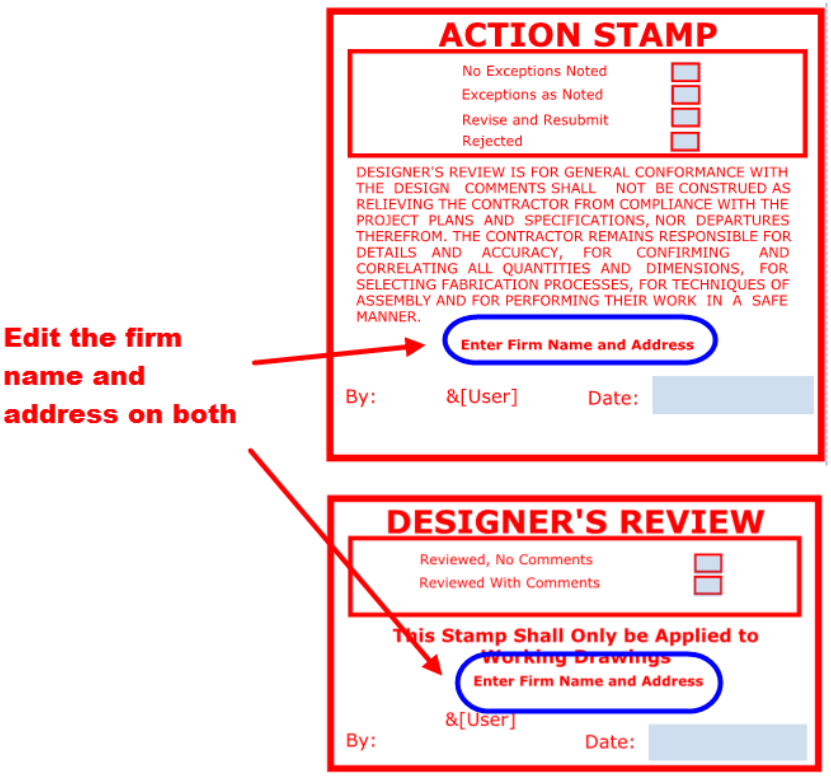
Appendix D – Consultant Submittal Review Stamps

Consultant Designers can import the Bluebeam User Profile using the following link. This profile imports all the commenting tools in the correct format.
Download the profile from this link: CTDOT Bluebeam User Profile. Just double click on the file located in the zip file and the profile will be imported.
After the profile is imported the following must be done.

1. Delete the Submittal Review stamp that is in the tool chest as shown below:

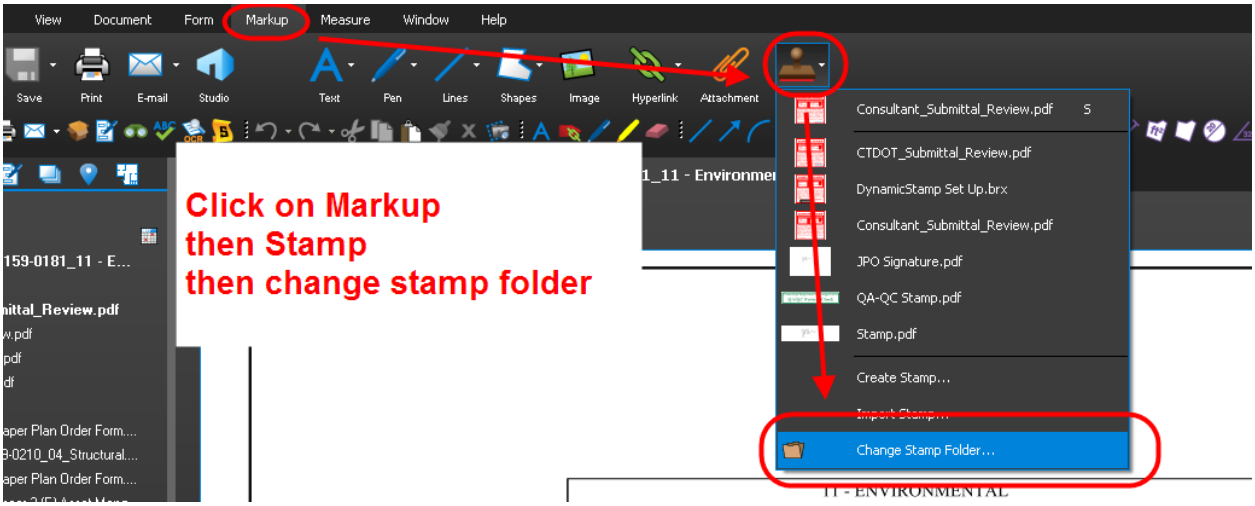


2. Next Consultant Designers will need to save the following stamps to their computer and edit it to add their company name and address. The following will show how to do that:
3. This file contains the Designer's Review stamp and Action Stamp. Save these stamp files to your computer in a folder somewhere called Bluebeam Stamps. Note: The stamp files will be a PDF- Consutlant Review Stamps
4. Open the stamp files using Bluebeam.
5. Update the Company Name and Address on both the Action stamp and the Designer's Review stamp as shown below:

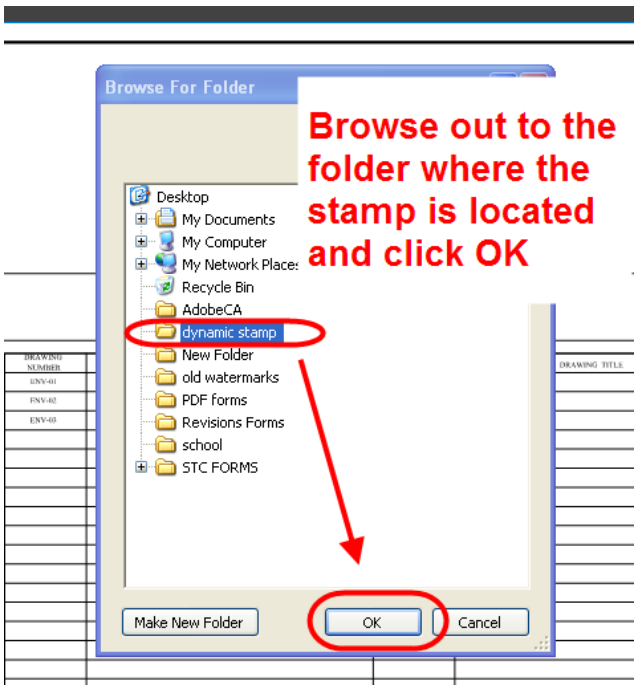


After the company name and address is updated, it should look like the following:

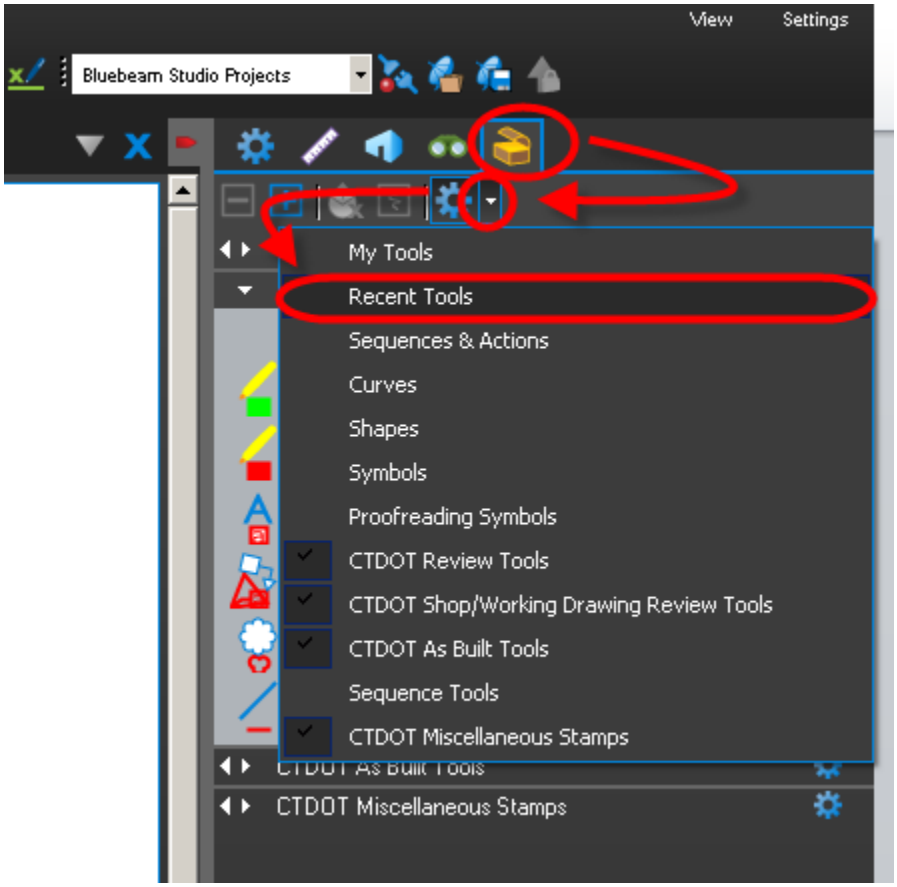
6. After the stamps have been updated click save.
7. Next go to Markup>Stamp> and Select Change Stamp Folder.



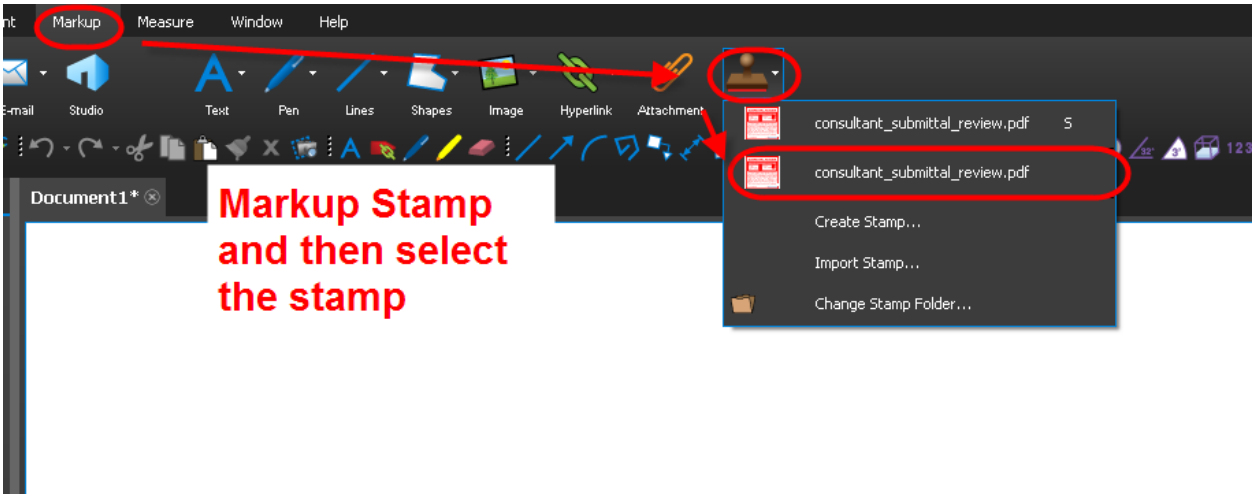
8. Browse out to where the stamps had been saved and click OK:



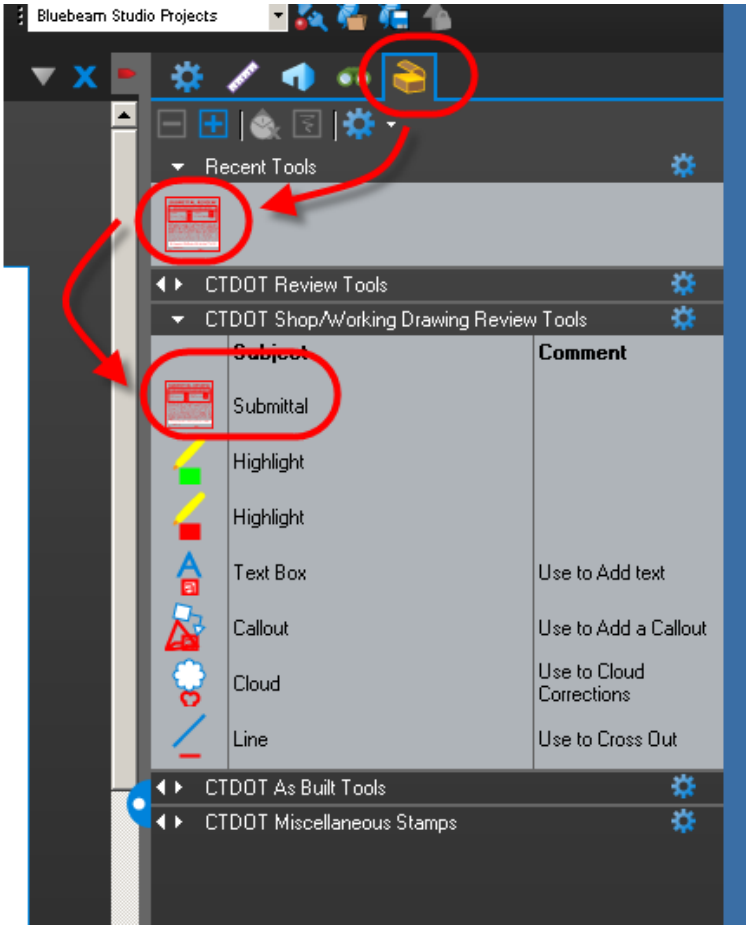
9. Now when you click on Markup>Stamp the stamps will be in the list.
10. Next go into the tool chest and open the “Recent tools” as shown below:



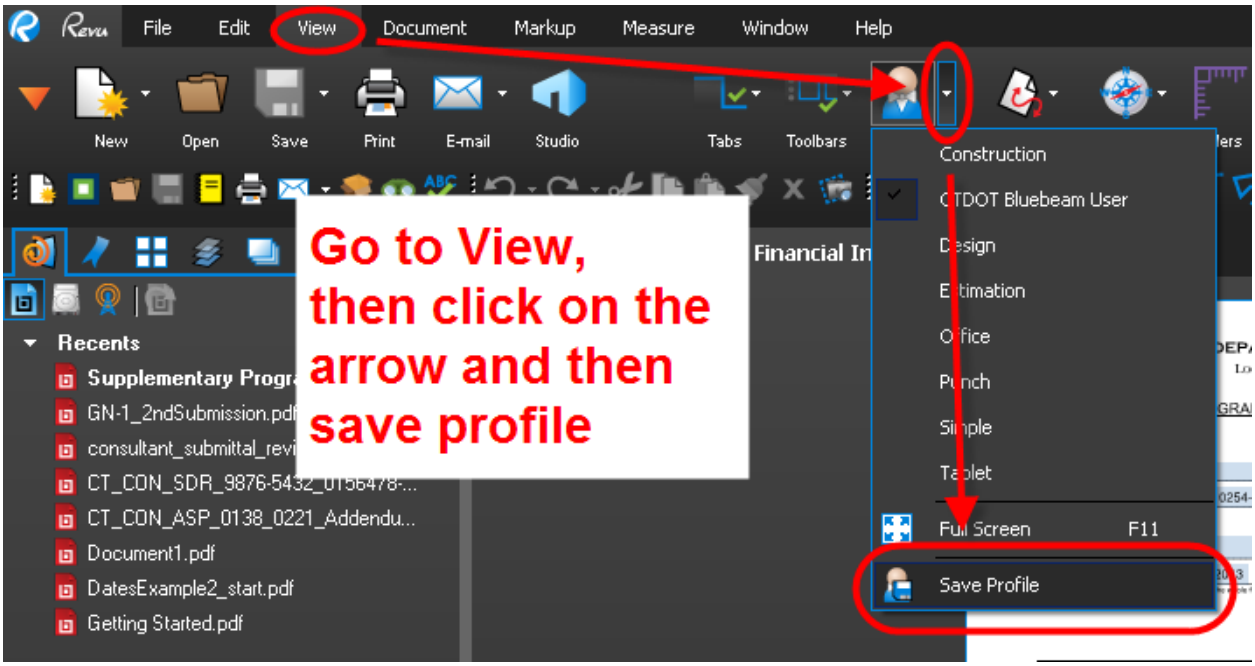
11. Now place the stamps on any PDF document by selecting it in Markup>Stamp as shown below:



12. After the stamps have been placed you will see them in the recent tools. Drag them from the recent tools into the CTDOT Shop/Working Drawing Review Tools as shown below:



13. Then Save Profile so the stamps will always be in the Tool Chest.



Appendix E – COMPASS Resources

COMPASS Training Resources

Please visit the DOT COMPASS Knowledge Center to access COMPASS resources, including:

- Compass Support Desk
- Training Videos
- FAQs
- Business Workflows
- Additional Resources

Business Processes

All project staff – including project managers, reviewers, designers, consultants, contractors, etc. – should monitor their COMPASS accounts daily to assess Ball-In-Court statuses and ensure there is no lag in reviewing and routing submittals.

Naming Conventions – Contractor Submittals

File names should not exceed **50 characters** in length. Characters include letters, numbers, symbols, and spaces. Submittal and file names should not contain any of the following restricted characters:

~ " # % & * : < > ? / \ { | }

All submittal names and file names should accurately describe the contents of the submittal.

Individual file document names created by contractors should be in the following format:

Project Number [####-####] Submittal Type [WD, SD, RFI ###, RFC ###, etc.] [Description]

Examples:

1234-5678 WD Access Platform
1234-5678 SD Exodermic Precast Panel
1234-5678 RFI 001 Structural Steel
1234-5678 Letter from Smith to Jones Winter Work

Preconstruction file names should accurately reflect the description of the file.

Examples:

1234-5678 Stormwater Permit
1234-5678 Design Approval
1234-5678 Calendar Day Chart

Revising Working Drawings & Shop Drawings

If the submittal owner returns a shop drawing submittal with different dispositions stamped on each sheet, the Submitter / Contractor shall revise individual sheets as needed. When the replacement document is ready to submit, the Submitter / Contractor shall combine into one file the approved sheets and replacement sheets.

Computer Requirements – Maximum File Size

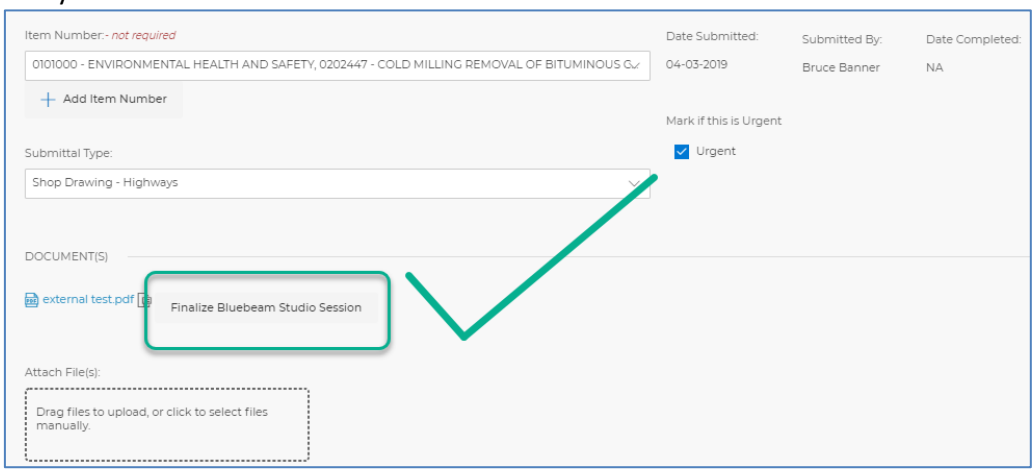
SharePoint has a maximum file size of 250 MB. This applies to individual file attachments and documents uploaded directly into the Internal Documents or Documents folders. If a document exceeds this maximum, the user can break it up into multiple documents contained within the same submittal.

COMPASS Troubleshooting

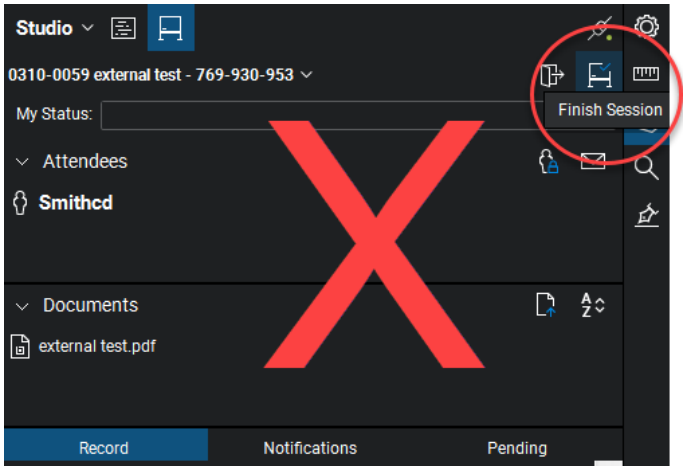
Bluebeam Studio Session Finalization Process

To maintain the Bluebeam integration with COMPASS, Studio Sessions should only be finalized via COMPASS as shown below and described in the Finalize Bluebeam Studio Session section. Bluebeam Studio Sessions should **not** be finalized directly inside the Bluebeam Studio Session.

YES:



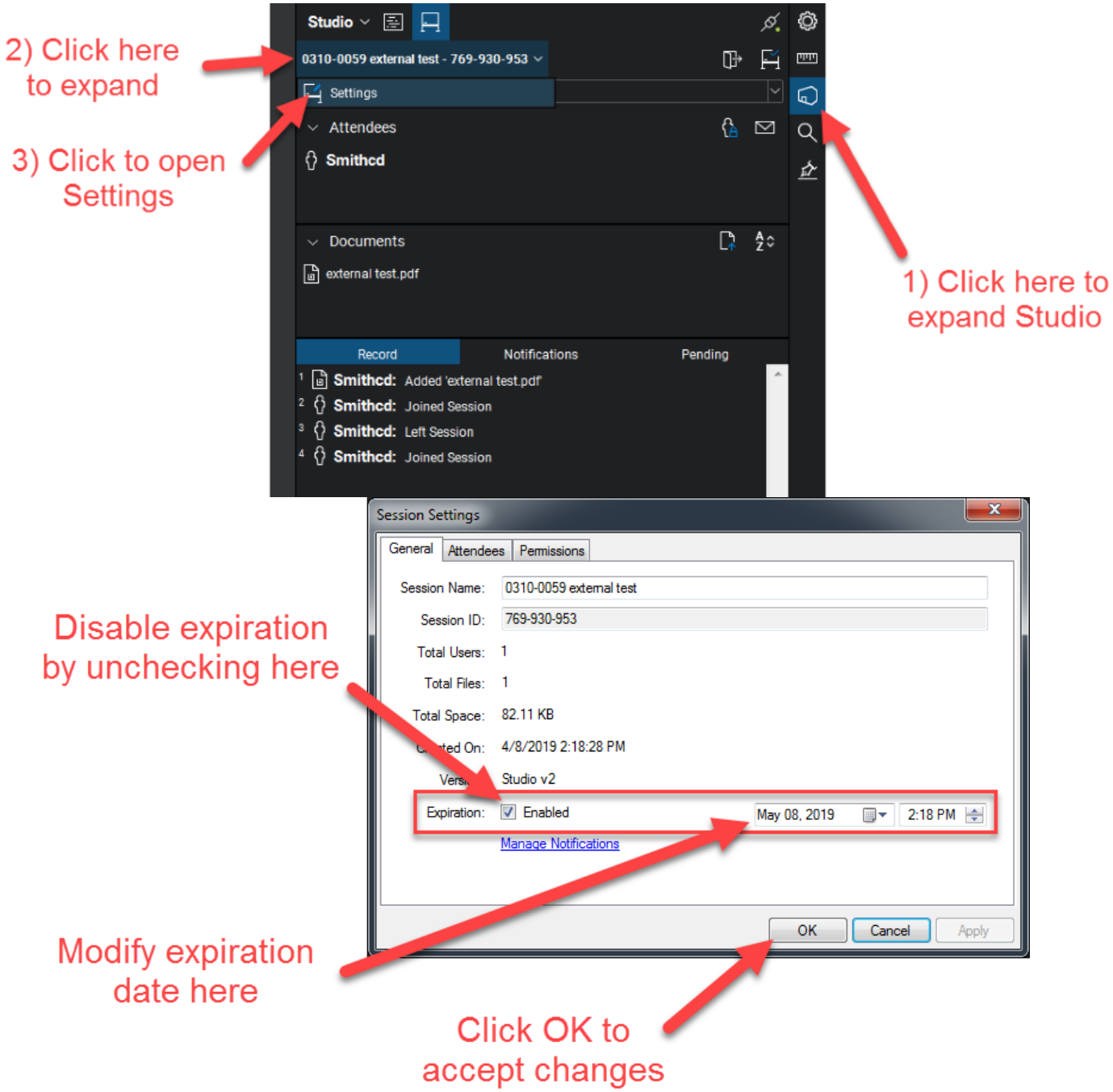
NO:



Bluebeam Studio Session Expiration Date

A Bluebeam Studio Session created through COMPASS is set to expire by default one month after its creation. If additional time is needed a user can either finalize the Session and launch a new one within COMPASS or extend the Session's expiration date.

To extend the Session's expiration date:

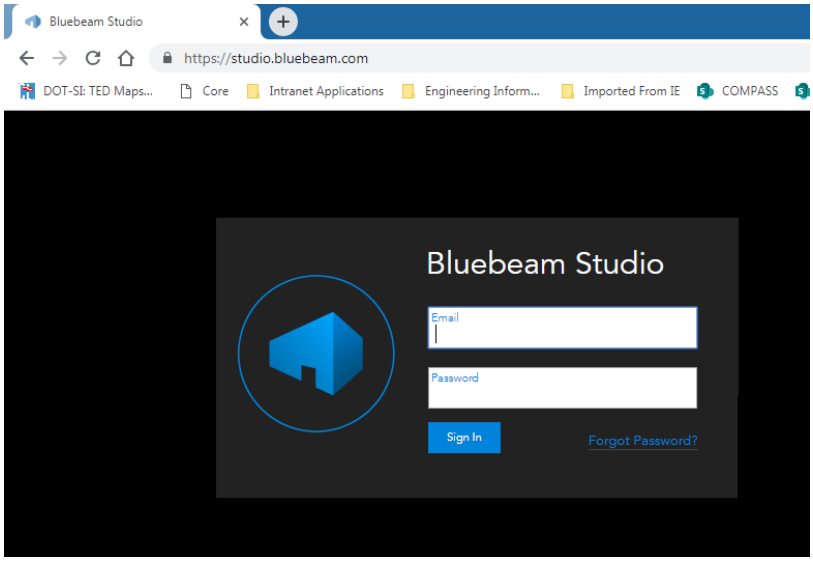


Restoring Archived Bluebeam Studio Session

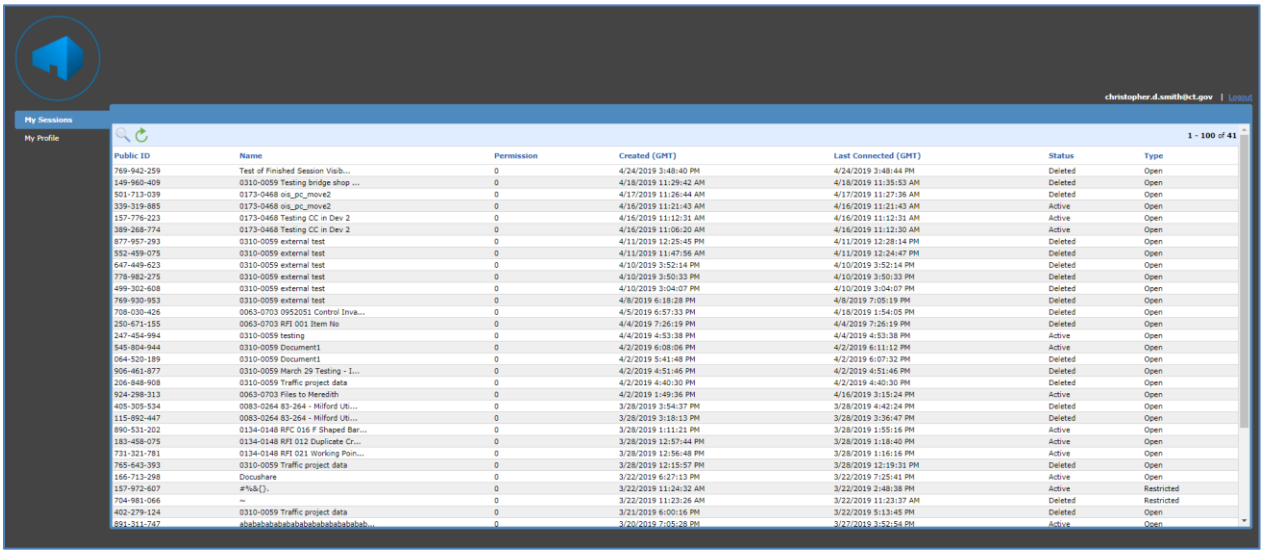
Only the user who started a Bluebeam Studio Session can restore the Session if it becomes archived. The below information is only applicable within 30 days of a Session being archived. Bluebeam fully purges Studio Sessions from its server that have been closed more than 30 days.

1) Hover of the document link in COMPASS to identify the Bluebeam Studio Session ID.

Navigate to https://studio.bluebeam.com and enter the Session host's log-in credentials.



2) Locate and click on the archived Studio Session.



3) Change the status to Active, then Update data.

Now the Session can be finalized inside COMPASS and the document in COMPASS will reflect any changes made in the Session.

Incorrect Owner

Q: I was incorrectly assigned Owner of a submittal. What should I do?
A: The two most common reasons a submittal is assigned improperly are that the project PM incorrectly completed the Approval Matrix, or the Submitter / Contractor selected the incorrect Submittal type in the Document Submittal page. If this occurs, do not Start the review session. First, check with the PM to ensure the Approval Matrix is properly set-up. If this is confirmed, press Revise and Resubmit and communicate with the Contractor to correct the Type selection.

Incorrect Information

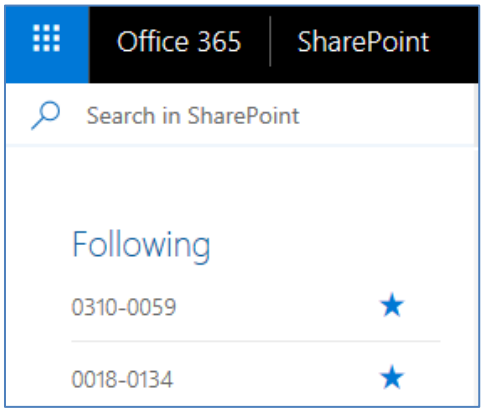
Q: Information in COMPASS is incorrect. How do I fix this data?
A: Alert the project PM to the incorrect information. Take screen shots if possible. Most of the data found in COMPASS (e.g., finances, schedules, ROW, etc.) is pulled from source locations such as CORE. The Staff names and Approval Matrix are manually inputted by the PM. If there are errors in the data, the PM needs to correct manually inputted information or request a correction in the data source from which COMPASS is pulling information.

Following Project Sites

To follow a COMPASS Submittal / Transmittal Pilot Project Site:

1. Navigate to the Submittal / Transmittal page of the given pilot project.
2. In the upper right-hand corner of the screen, click Follow.

3. When accessing the SharePoint Online dashboard, the project site will be listed in the Following section. Clicking on the project number will route the user directly to the pilot project S&T page.



Appendix F – References – CTDOT Bulletins and Directives

DOT Bureau of Engineering and Construction - Directives and Bulletins

If you work for an outside agency, please consult the links below to gain access:
Getting Started with SharePoint for Consultants
Getting Started with SharePoint for Municipalities and COGs

See Engineering and Construction Information Resources for additional information.

Appendix G – Submittal Transmittal Form for Facilities Projects

Please see next page for the Facilities Submittal Transmittal Form to be used by Construction Contractors. See COMPASS Contractor's User Manual for instructions provided to contractor.