CONNECTICUT DEPARTMENT OF TRANSPORTATION

DIGITAL DESIGN ENVIRONMENT GUIDE

CONNECT EDITION

Volume 1 - Getting Started

Published Date: December 11, 2025

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Section 1 - Introduction

1.1 Preface

1.1.1 Goals

The CTDOT Digital Design Environment (DDE) is a toolkit that allows for the creation, modification, and exchange of high-value digital and electronic engineering data. The information and resources contained in the DDE have been developed for use with CTDOT's foundational CAD platforms including OpenX products: OpenRoads Designer, OpenBridge Modeler, OpenRail Designer and OpenBuildings Designer by Bentley Systems, Inc.

The goals of this DDE Guide are:

- To provide an environment that will enable users of all skill levels to produce engineering drawings and documents in accordance with CTDOT standards.
- To maintain interoperability and collaboration with Consultant Engineers and State Design staff.
- To provide one storage location for all project planning, design and construction digital and electronic data.
- To create high-value digital and electronic data that maintains its attributions well into the future and can be used in an interactive decision system.
- To meet the Governor's Executive Order No. 3, "All state agencies in the executive branch and all higher education agencies and institutions shall post all bids, requests for proposals and all resulting contracts and agreements on the State Contracting Portal and shall, with the assistance of the Department of Administrative Services and the Department of Information Technology as needed, develop the infrastructure and capability to electronically communicate with the State Contracting Portal."
- To publish contracts in a common, portable document format (PDF).

An important term which is becoming more popular within many states' DOTs is **High Value Data (HVD)**. HVD is digital and electronic data created as a byproduct of the design process. It includes information contained in both 2D and 3D models that can be used during the construction phase of the project for terrain queries, optional GPS-driven earth moving equipment and in the life cycle maintenance of a designed transportation facility. Coming full circle, these files can also be used for any rehabilitation or modification of the existing project in the future. Previously, CTDOT has only supplied paper contract drawings and specifications to the Contractor and Construction Inspectors. With CTDOT's project container electronic file storage approach, this data is now in place and searchable for future queries. HVD can be used in Business Information Modeling (BIM) and Geographical Information Systems (GIS).

1.1.2 Purpose

The intent of this guide is to define uniform procedures as well as to explain the structure of CTDOT's DDE. This guide will identify standard resource files, configurations and CAD functions used in the creation, management and publishing of digital and electronic engineering data.

This guide does not replace the need for other references and training. Additional publications and training may be needed for further clarification of CAD procedures and functions. This guide is not intended to prevent or limit individual initiatives and engineering judgment used in project design and development. Rather, it is meant to document standard digital design procedures in practice at CTDOT.

Users of this guide include Designers, Planners, Surveyors and CAD Managers that work at or with CTDOT staff. The information provided in this guide is subject to revision as updates are made to the software and methodology in accordance with CTDOT DDE policies.

1.1.3 About The Guide

This Guide is designed for use in Live instructor-led training, and for OnDemand selfstudy. This guide will introduce CTDOT users and consultants to Bentley OpenX products. This guide assumes users have had previous training on, and a working knowledge of OpenRoads Designer, OpenBridge Modeler, OpenRail Designer or OpenBuildings Designer. If users have not had training on these software applications, visit the Bentley's LEARNserver Website.

This guide has been divided into volumes, consisting of information and/or exercises.

Volume 1 - Getting Started
Volume 2 - Working with Existing Data
Volume 3 - OpenRoads Designer Survey
Volume 4 - OpenRoads Designer Roadway Modeling
Volume 5 - OpenRoads Designer Drainage and Utility Modeling
Volume 6 - OpenRoads Designer Traffic Engineering Base Modeling.
Volume 7 – OpenRoads Designer Roadway Illumination Base Modeling
Volume 8 - OpenRoads Designer Landscape Base Modeling
Volume 9 - OpenRoads Designer Boundary Survey
Volume 10 - OpenRoads Designer Site Layout
Volume 11 - OpenBridge Modeler
Volume 12 - Other Applications (OpenBuildings, OpenRail, GuideSign, AutoTurn)
Volume 13 - Contract Plans Production
Volume 14 - Printing and Publishing
Volume 15 - Miscellaneous Workflows
Volume 16 - Appendix

1.1.4 Terms

- the term "design file" refers to OpenX applications (OpenRoads, OpenBridge, OpenRail, and OpenBuildings) .dgn file that are built on base MicroStation.
- the terms "directory, subdirectory, folder and subfolder" will be used interchangeably in the text.
- The terms "Left-click", "Click", "Select" and "Data Point" are used interchangeably to represent pressing the **left mouse button**. The terms "Right-click" and "Reset" are also used interchangeably to represent pressing the **right mouse button**. If your mouse buttons are assigned differently, such as for left-handed use, you will need to adjust accordingly.
- Hyperlinks are in blue underlined letters
- **Bold Blue** indicates a tool or selection button
- ***Green Bold Italics*** indicates a path or input

1.2 Help and Support

1.2.1 CTDOT Resources

1.2.1.1 CAD Support Ticket

CTDOT employees and consultants can use this form to request Digital Design Environment support from the AEC team:

CAD Support Ticket

CTDOT employees will need to email DOT.Helpdesk@ct.gov for:

- Software installs and licensing
- Accounting access
- New user accounts
- Hard drive or monitor issues
- Network file backups and permissions

1.2.1.2 AEC CAD Support Staff

The AEC CAD Unit is responsible for the development and maintenance of CTDOT's DDE.

- Mathew Calkins Mathew.Calkins@ct.gov
- Elaine Richard Elaine.Richard@ct.gov
- John Rinaldi John.Rinaldi@ct.gov
- Yash Manandhar Yash.Manandhar@ct.gov
- Tushar Gaddi Tushar.Gaddi@ct.gov
- Kendall Opfer Kendall.Opfer@ct.gov
- Michael H. Antonio Michael.Antonio@ct.gov

1.2.1.3 CTDOT DDE Website and YouTube Page

Access the CTDOT CONNECT DDE website and DDE Guide can be found on multiple CTDOT web pages.

Digital Project Solutions - AEC Main Page

or

Home > Business > Resources > Consultant Resources Scroll down to Digital Project Solutions - AEC Main Page

On the "**DIGITAL PROJECT SOLUTIONS**" Web page find the link under CAD/BIM CONNECT Digital Design Environment .

CTDOT DDE training videos can be found here:

CTDOT Digital Project Solutions Training Hub - YouTube

1.2.1.4 CTDOT CAD Training Enrollment

CTDOT staff should use this form to enroll new employees into the CAD Training Program or to revise an enrollment of an existing user. Revisions will need to be submitted when employees are promoted or move to a different unit.

CAD Training Enrollment

1.2.2 Bentley Resources

This guide is not intended to be the sole source of information for the CONNECT Edition user; there are various resources available through Bentley.

1. Bentley Support Portal - Customer Service
2. **Help Command:** CONNECT Edition software has extensive online help available through Help in the File menu

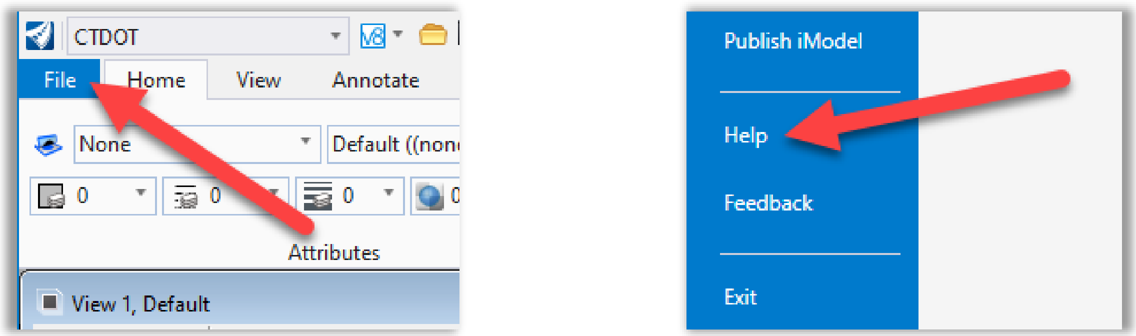


Figure 1 - OpenX Products Help Menu

3. Bentley Learning website.
4. **Phone Assistance:** Users can call Bentley directly at: 1-800-236-8539 (1-800-BENTLEY)

1.2.2.1 *Bentley Sign in*

A Bentley Select ID is automatically created with your State email address. Your Bentley ID login name is the same as your State email address (Firstname.Lastname@ct.gov). Due to Single Sign On, you may not be required to create a password.

Consultant engineers must purchase their own subscription.

Bentley Select ID's allow you to access Bentley Online training, Bentley Community Boards, licensing and other support resources.

1. To log in the first time to Bentley, go to Bentley Cloud Services.
2. Enter your state email address. Click on "***Use another account***" if there is another email address present.

3. You are also able to sign into the CONNECTION Client located in the System tray. Open the System tray on the taskbar. Right click on CONNECTION Client icon. Select Open. Login using your state email address and your password.

Figure 2 - CONNECTION Client System tray

1.2.2.2 My Services in the CONNECTION Center

1. On the CONNECTION Client select **CONNECT Center...**

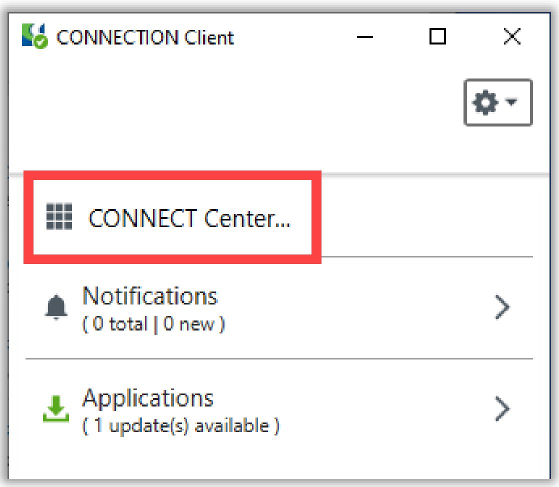


Figure 3 - CONNECT Center Waffle

2. Select the **Services** icon, groups of icons will pop up. One by one select the icons listed below and explore what they have to offer.

   Bentley Communities - Use this site's search function to find how-to tips, Bentley product support, best practices, opinions and advice from peers and Bentley subject matter experts. Gain insight and get answers to a wide range of topics related to Bentley products.

   New Case - Service Requests can be created through the Bentley's Support Portal. Select the ***New Case > Technical Support*** icons to create a new Request.

   Learn - Choose from live virtual classrooms or on-demand courses.

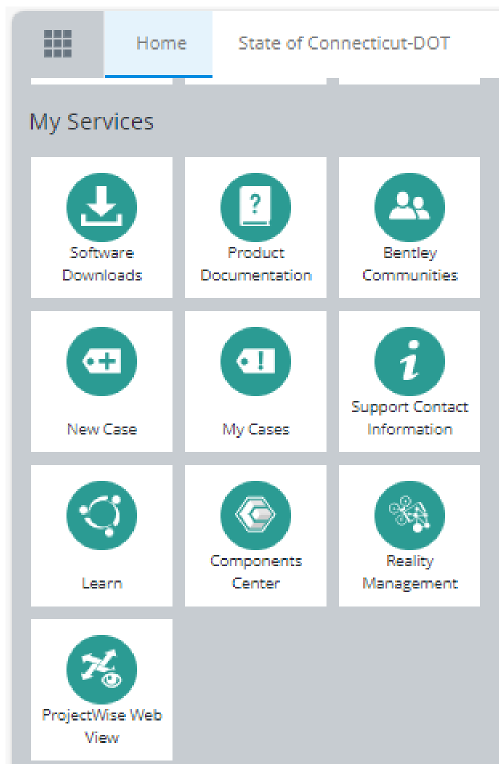


Figure 4 - CONNECTION Center My Services

1.2.2.3 Bentley LEARN Online Training

After you have Bentley account, browse to https://learning.bentley.com and Sign in with your credentials. After signing in you will be connected to the Bentley LEARN.

The Bentley LEARN is the service offered by Bentley to all Connecticut DOT CAD users.

Based on your discipline AEC applications will set you up with a specific learning path on Bentley LEARN (***My Courses & Learning Plans***).

This path can be utilized as reference or as refreshers for Bentley Connect Software's. Select the ***Learning Plan*** then select Course to ***Play***. Each course may have ***dataset*** which can be downloaded for the training.

Note: *A Learning Plan has been established for you. If you do not see any assigned the. Direct links are provided below in this document.*

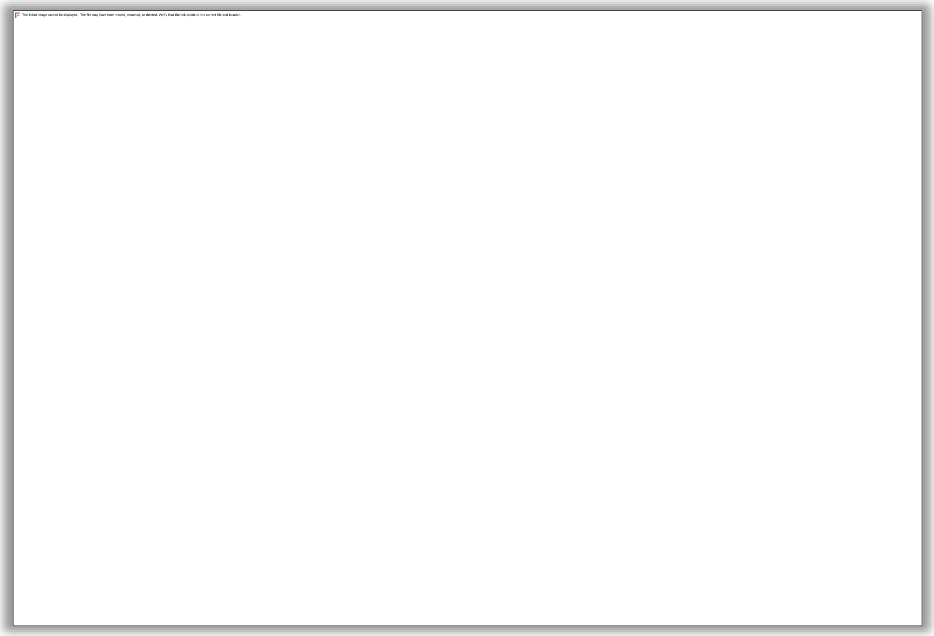


Figure 5 - Bentley Learn Server Play Video

Users can update their profile under ***My Profile*** and check activities under ***My Activities***.

Figure 6 - Bentley Learn Server May Courses and Learning Paths

Users can also search for Learning Plan or Courses on demand themselves according to ***Preferred Type*** and ***Preferred Brand***, then clicking on "***Search***" icon. Choose the desired training from the list and then you can ***Enroll*** to that training.

After Enrolling and before getting started with the Modules you will need to download and install the Dataset on your C drive.

Figure 7 - Bentley Learn Server Search

Figure 8 - Bentley Learn Server Popular Software

Figure 9 - Bentley Learn Server Enroll in Course

1.2.2.4 Direct Links to Training

Direct Links to a few Learning Plans
(You can use these links to get enrolled if you are not already)

For Everyone

Drawing Essentials for Civil Solutions or MicroStation for New Users
3D Modeling in MicroStation CONNECT Edition

For Highway Design

00 - Roadway Design Modeling – Fundamentals
01 - Roadway Design & Modeling - Intermediate
09 - Drainage Modeling
10 - Drainage Hydraulics

For Bridge Design

Introduction to OpenBridge Designer/OpenBridge Modeler

For Surveyors

12 - Survey

1.2.3 Training Program Overview

The Connecticut Department of Transportation (CTDOT) offers a comprehensive Training Program designed to support both CTDOT employees and external consultants. This program is available in two formats:

- **Live Instructor**-Led Sessions for CTDOT employees
- **Self-Paced** Training Modules for staff seeking a refresher or for consultant use

Training Content

The training program includes a combination of:

- Bentley courses, and
- Custom CTDOT-developed courses

AEC is actively working to expand the number of custom CTDOT training modules and gradually phase out many of the existing Bentley training components.

Integration with DDE Guide

Training workflows are integrated into multiple volumes of the Digital Design Environment (DDE) Guide. Each volume contains step-by-step instructions and references to relevant training content.

Accessing Training Datasets

The datasets required for training exercises are available for download via the **CTDOT DDE SharePoint Site**. Instructions for accessing and downloading these datasets are located at the end of each corresponding DDE Guide volume.

DOT CTDOT_DDE - Training Datasets

Note: *Not all volumes in this guide include datasets. Some are written in general terms and are intended to be used alongside your project files.*

Please use this link to browse through the Course Listing.

1.3 Model-Centric Design

CTDOT is standardizing on producing model-centric designs. This will allow for increased productivity and adherence to FHWA Every Day Counts (EDC) Innovations and Building Information Modeling for Infrastructure also known as BIM for Infrastructure or BIMFi.

Industry trends across the world using BIMFi include:

- 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. CONNECT Edition products will 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, also known as Electronic Engineering Data (EED), can be consumed further downstream during Design Reviews then to Construction, Asset Management and Maintenance.

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 Base Models.

Base Models will:	**Base Models will not have:**
• be geospatial • contain cells, shapes, and lines that represent the physical design elements • include Item Type information on cells, shapes and lines.	• Border Cells • call outs • notes • tables • dimensions

Each Model Type is represented by a different Icon on the Models Dialog Box.

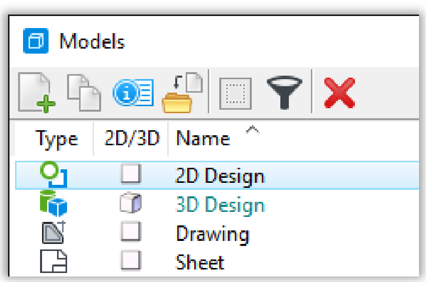


Figure 10 - Model Types

The two other types of models will be used in downstream processes as described in **VOLUME 13 - CONTRACT PLANS PRODUCTION**

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

Section 2 - DDE Set Up

2.1 CTDOT Employee Sync

This workflow will instruct CTDOT Employees on how to set up the CTDOT CONNECT DDE for use with OpenRoads Designer, OpenBridge Modeler, and OpenBuildings Designer within the Compass/SharePoint environment.
Users will sync from both their personal location and the State of Connecticut Enterprise location.
After syncing two icons will appear in Windows Explorer:

- The blue cloud labeled **OneDrive - State of Connecticut** (OneDrive **-** <Tenant>) contains files and folders synced from the user's personal OneDrive on the State of Connecticut Office 365 Tenant. No one can see or access these files unless the user specifically shares them with others.

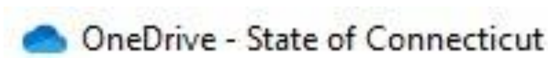


Figure 11 - OneDrive Icon

- The blue building labeled **State of Connecticut** contains data synced from the tenant outside of the user's personal space. This includes COMPASS projects and other SharePoint sites. Access is given through site permissions set up by the SharePoint site admin.

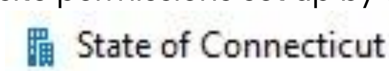


Figure 12 - Enterprise Icon

Before beginning the workflow, please ensure one of the needed CONNECT Edition applications have been installed. The CTDOT CONNECT DDE is configured to work with:

- OpenRoads Designer® (ORD)
- OpenBridge Designer® (OBM)
- OpenBuildings Designer® (OBD)

All products contain the functionality of MicroStation CONNECT Edition along with added specific design capabilities. CTDOT will not support the use of plain MicroStation CONNECT Edition with our standard configuration files as only OpenRoads Designer, OpenBridge Modeler, OpenRail Designer and OpenBuildings Designer align with the BIM functionality needed to move design data through its lifecycle.

Based on your unit, you will need one of the above applications installed. If the needed applications are not installed, you will need to contact the DOT Help Desk via email at DOT.Helpdesk@ct.gov.

2.1.1 Syncing the SharePoint DDE

1. Before attempting to sync make sure you are signed into One Drive. This is especially important to remember if your computer just got reimaged or when you receive a new device.
   Note: *If you fail to do this your synced path to the State of Connecticut will end up with the wrong.*
   NO C:\Users\UserName\~~OneDrive~~\State of Connecticut\...
   Yes C:\Users\UserName\State of Connecticut\...
2. This instructional video will demonstrate how to sync the SharePoint DDE.

Figure 13 - Video Syncing the SharePoint DDE

The CTDOT SharePoint DDE site and be accessed by click here: [DOT CTDOT_DDE - CONNECT - All Documents]()

2. Verify Install, open **File Explorer** and verify the State of Connecticut\DOT CTDOT_DDE – CONNECT location is now synced.
   - Open File Explorer and click in the path bar. If you see this in file Explorer, you are good to go:
     C:\Users\UserName\State of Connecticut\...

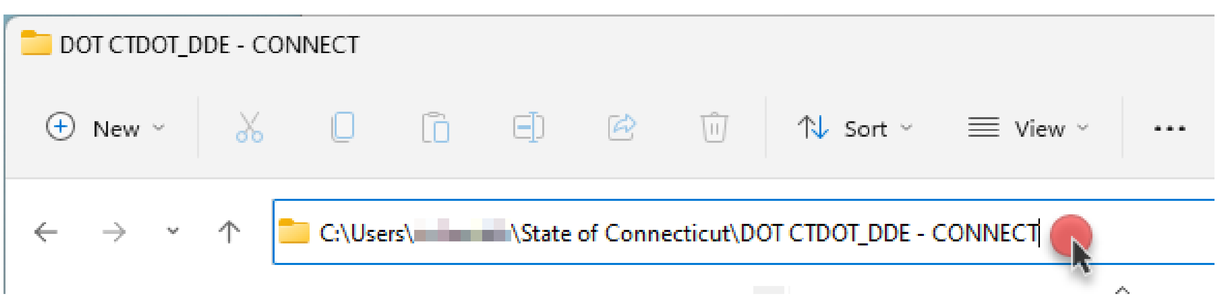


Figure 14 – State of Connecticut OneDrive

   - If you see this, you did not make sure Step 1 was completed:

C:\Users\UserName\~~**OneDrive**~~\State of Connecticut\...

You will need to unlink your PC from One Drive and start over.

a) Right click on **OneDrive** icon at the bottom of your screen

b) Click on **Settings**

c) Click on **Account > Unlink this PC**

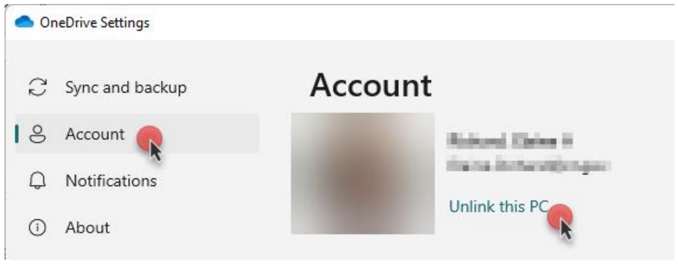


Figure 15 – Unlink OneDrive form PC

d) Click **Yes for all**

e) While unlinked and signed out, delete the synced OneDrive folders

f) Now sign back in to OneDrive and re-sync the workspace

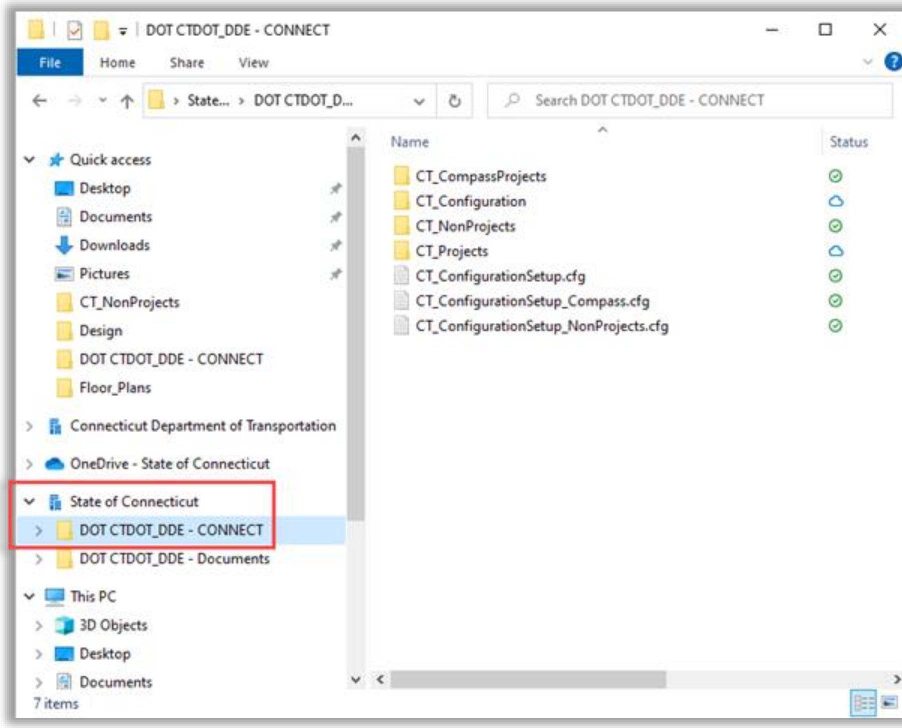


Figure 16 - CTDOT DDE Location

2.1.2 Requesting a CAD Project in COMPASS

1. In File Explorer browse to:

   …State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_CompassProjects

   Search for your project number. If you do not see your project's corresponding *.cfg file, you will need to request one via this procedure.

2. Project Engineers will need to request a CAD setup for new projects stored in COMPASS using the link below. This will enable AEC Applications to properly configure the COMPASS Project's Design Folder and Discipline Subfolders.
   New CAD Workset Request - CAD Support Portal - Jira Service Management

3. AEC Applications will set up the WorkSet and the CTDOT Property Fields with the information initially provided in the request.
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)

   The CTDOT Property Fields can be updated by anyone working on the project at any time as needed. On the Splash Screen before opening a DGN file select **Properties > Advanced Properties**. In the **Edit WorkSet** dialog box update the ***CTDOT Property Fields*** as required. The Contract Border Cell Title Block placed in Sheets Models are linked to these Property Fields.

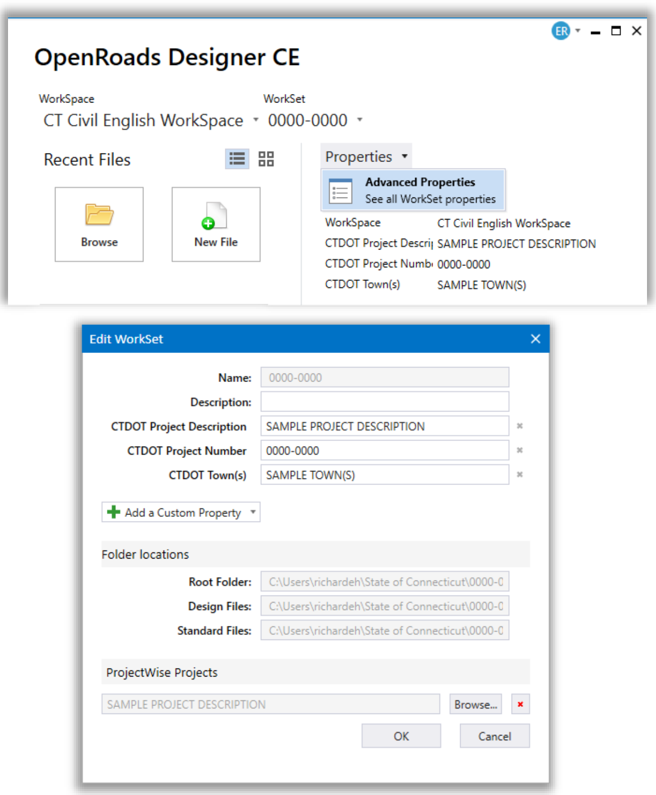


Figure 17 - CTDOT DDE WorkSet Properties

2.1.3 Syncing a COMPASS Project

1. Follow the link below to view an instructional video on how to sync a COMPASS Project.

Figure 18 - Syncing a COMPASS Project

3. Verify Install, Open **File Explorer** and verify the needed Project is Synced under ***State of Connecticut\XXXX-XXXX*** **- Design**

2.1.4 Creating a Non-Projects CAD Work Area

1. The video above also includes instructions on how to sync a Non-Project working Area. Go to time 1:25.
2. Verify Install
   Open File Explorer and you will now see the ***OneDrive - State of Connecticut*** is now synced.
   C:\Users\username\OneDrive - State of Connecticut\CAD_NonProjects\Design
   You can store DGN files and work under the Design folder or browse out to any other synced SharePoint site. For non-project work Reference files should all be in the same folder.

2.1.5 CAD Accounting – Application Launcher

Figure 19 - CAD Accounting Icon

The CTDOT Accounting application is a launcher used to access OpenRoads, OpenBridge and OpenBuildings CONNECT Edition products. This application is only for CTDOT employees. Command line variables point to SharePoint folders for each application to ensure proper configuration for internal use. A database of active project coding numbers is maintained by CORE and displayed in the launcher.

The user is required to select the appropriate **Account number** (CORE number) and **Run Program**. The **Start** button launches your chosen Bentley product and starts a timer that records the elapsed time you spend within the selected application. Every month, the recorded times are compiled across all CAD users for a given project. The associated projects are then journal vouchered for the elapsed time multiplied by the CAD Rate.

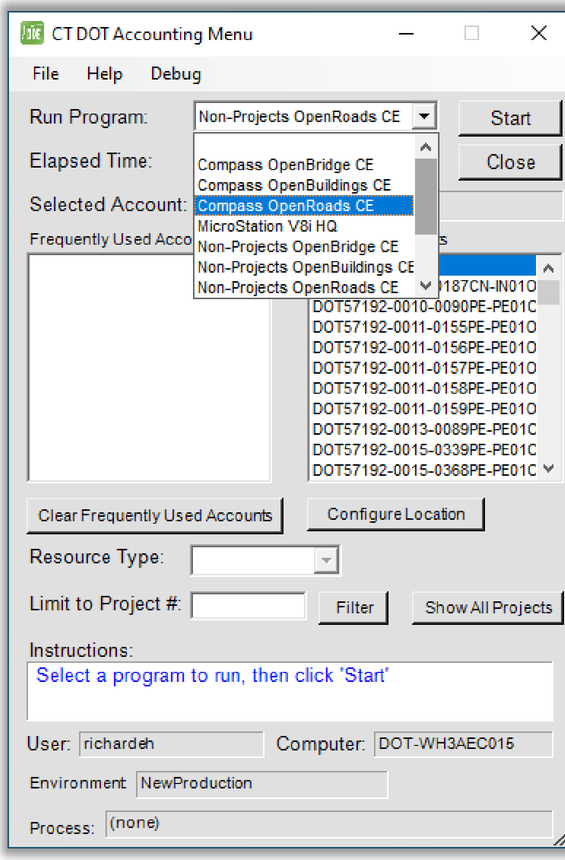


Figure 20 - CAD Accounting Menu

The CAD Rate is a cost per hour for using software applications supported by AEC Applications**.** This rate is derived annually by the total expenditures to support all applications mentioned in the CTDOT's Accounting Process. The expenditures are then divided by the total hours spent working on projects for that year. The CAD Rate may be adjusted for any additional expenditures or revenues, including:

- Software Licensing
- Software Maintenance
- Personal Services
- Software Support
- Training
- Hardware
- Plotting
- Others

2.2 Consultant Sync

This workflow will instruct Consultants/CTDOT Partners on how to set up the CTDOT CONNECT DDE in order to use OpenRoads Designer, OpenBridge Design/Modeler, OpenRail Designer, and OpenBuildings Designer within the SharePoint/COMPASS Environment. This is the first option outside parties can utilize to access the CTDOT DDE. If they are unable or do not wish to Sync to the DDE SharePoint site they can use the install method 2.3 Consultant Install.

Users will sync from both their personal location and the State of Connecticut Enterprise location.
After syncing two icons will appear in Windows Explorer:

The blue building labeled **State of Connecticut** contains data synced from the tenant outside of the user's personal space. This includes COMPASS projects and other SharePoint sites. Access is given through site permissions set up by the SharePoint site admin.

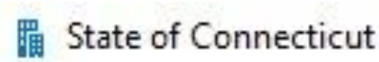


Figure 21 - Enterprise Icon

Before continuing, please ensure one of the relevant CONNECT Edition applications have been installed. The CTDOT CONNECT DDE is configured to work with:

- OpenRoads Designer®
- OpenBridge Modeler® or OpenBridge Designer®
- OpenRail Designer®
- OpenBuildings Designer®

All products contain the functionality of MicroStation CONNECT Edition along with added specific design capabilities. Note that OpenBridge Modeler is the CAD component of OpenBridge Designer. CTDOT does not support the use of plain MicroStation CONNECT Edition with our standard configuration files as only OpenRoads Designer, OpenBridge Modeler, OpenRail Designer, and OpenBuildings Designer align with the BIM functionality needed to move design data through its lifecycle.

2.2.1 Video - Syncing the SharePoint Digital Design Environment

This video describes how to obtain access to CTCOT's DDE SharePoint site, how to sync the site and how to set up custom Icons.

Figure 22 - Video Syncing the SharePoint Digital Design Environment

2.2.2 Obtaining Access to SharePoint

Companies must first be whitelisted in CTDOT's SharePoint/COMPASS environment to sync project documents and the CAD workspace. Users can check with mathew.calkins@ct.gov to check if their company is already added to the approved list.
To obtain access to CTDOT's SharePoint/COMPASS Environment:

1. For initial login instructions visit: Getting Started with SharePoint for Consultants.
2. The company's firm will need to fill out this form and submit their GUID to CTDOT. This only needs to be done once per firm: **GUID Submission Form**.
3. After a company is added to the whitelist, CAD users must request to have their MFA removed. Syncing will not be possible until MFA is disabled. Each employee will need to fill out this form: **MFA Access Package**.
4. To gain access to a specific project in COMPASS, users need to request access from the Project Manager on the project.
5. For initial login instructions visit: **Getting Started with SharePoint for Consultants**.
6. More information regarding COMPASS can be found here: DOT COMPASS Knowledge Center - Home.

2.2.3 Syncing the SharePoint DDE

1. Browse to the State of Connecticut SharePoint site **DOT CTDOT_DDE > CONNECT** or use this link [DOT CTDOT_DDE - CONNECT - All Documents]
2. On the top bar, select **Sync**.
3. Select **Open**. You will be asked to set up a new OneDrive area. Follow the prompts to sign in again and continue clicking through the messages.

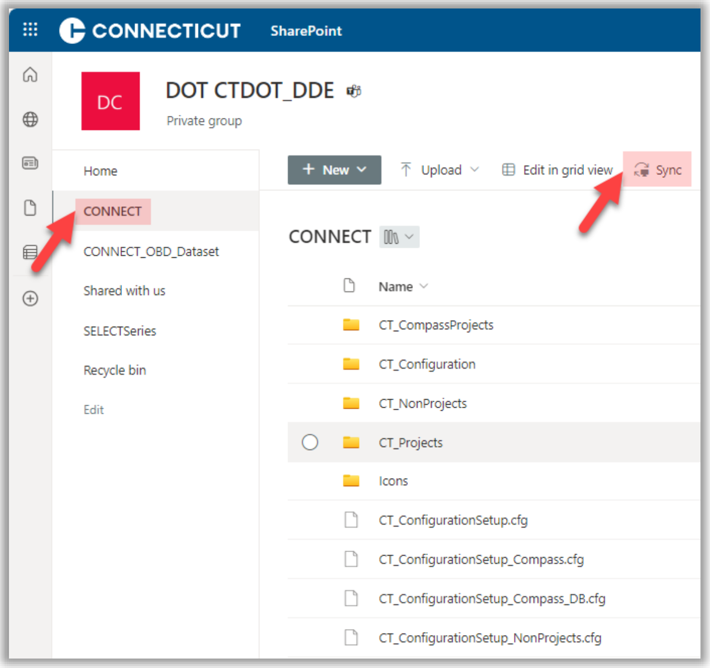


Figure 23 - DDE SharePoint Page

4. OpenBuildings users will also need to sync an additional folder on the CTDOT_DDE SharePoint page. In the left side menu, click on **CONNECT_OBD_Dataset** and then select the **Sync** icon.

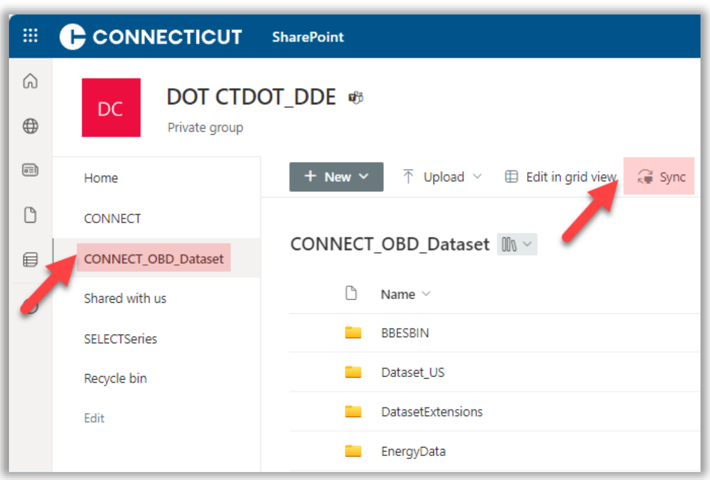


Figure 24 - CONNECT SharePoint Page

5. Open File Explorer and verify the State of Connecticut DOT CTDOT_DDE – CONNECT folder is now syncing with your machine. Changes you make will be reflected in the SharePoint server and vice-versa. This ensures your CAD WorkSpace is always up to date with the latest CTDOT standards and configurations.

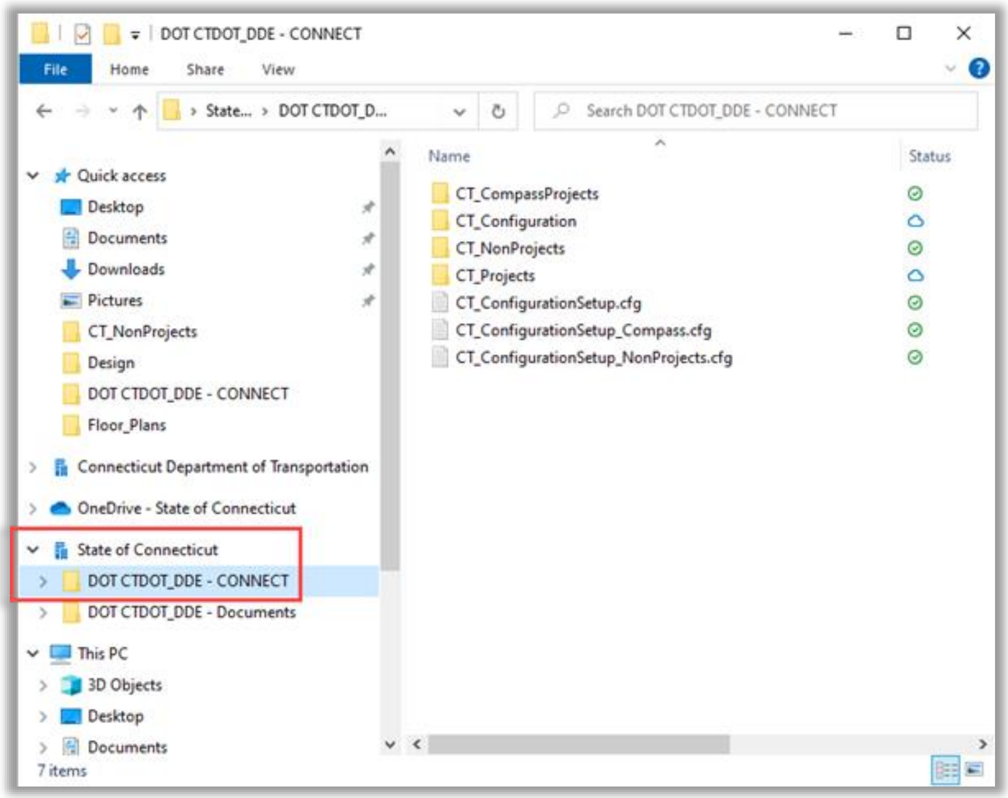


Figure 25 - DDE File Menu Synced DDE

2.2.4 Requesting a CAD Project in COMPASS

1. In File Explorer browse to:

   …State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_CompassProjects

   Search for your project number. If you do not see your project's corresponding *.cfg file, you will need to request one via this procedure.

2. Project Engineers will need to request a CAD setup for new projects stored in COMPASS using the link below. This will enable AEC Applications to properly configure the COMPASS Project's Design Folder and Discipline Subfolders.

   [New CAD Workset Request - CAD Support Portal - Jira Service Management]

3. AEC Applications will set up the WorkSet and the CTDOT Property Fields with the information initially provided in the request.
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)

   The CTDOT Property Fields can be updated by anyone working on the project at any time as needed. On the Splash Screen before opening a DGN file select **Properties > Advanced Properties**. In the **Edit WorkSet** dialog box update the ***CTDOT Property Fields*** as required. The Contract Border Cell Title Block placed in Sheets Models are linked to these Property Fields.

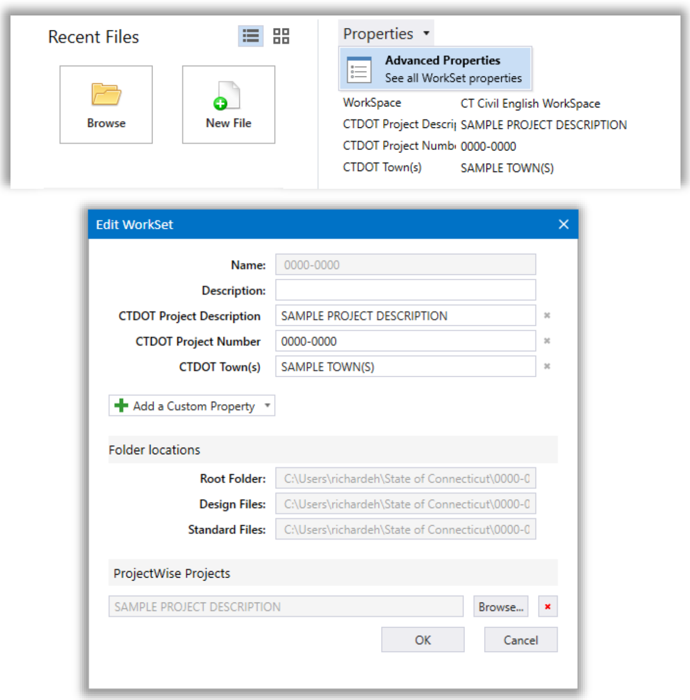


Figure 26 - CTDOT DDE WorkSet Properties

2.2.5 Syncing a COMPASS Project

CAD files shall be stored in O365 and COMPASS and worked on through the OneDrive App.

1. Access COMPASS.
2. Search the desired project and navigate to the Project Dashboard. In the left side menu, click on **Design**.

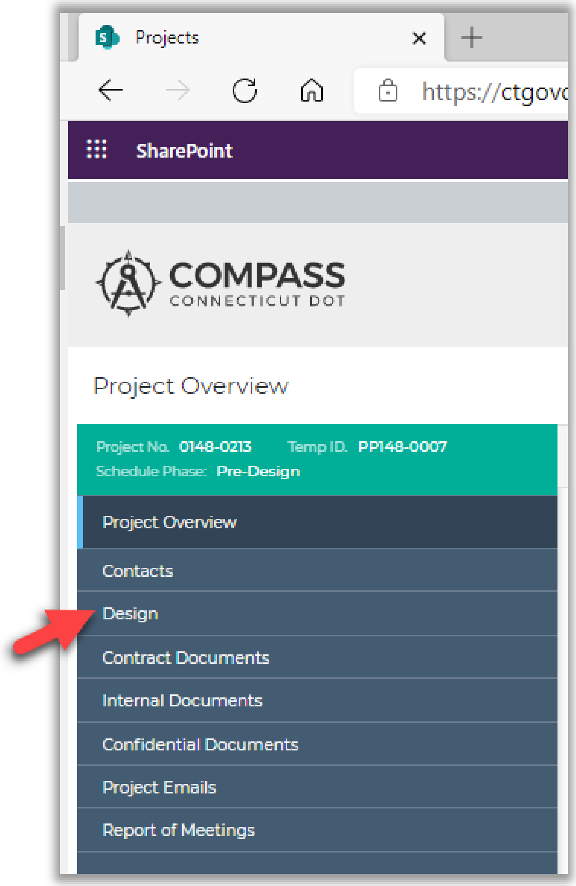


Figure 27 - WorkSet Design Folder

3. On the **Design** page click **Sync**.

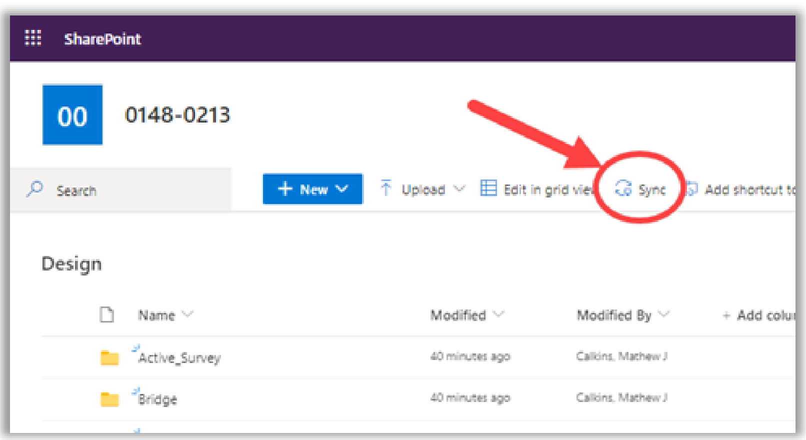


Figure 28 - Sync WorkSet Folder

2.2.6 Creating Custom Icons for launching Applications

1. Create copies of the installed CONNECT products' shortcuts on the Desktop. Rename them with a ***CT_*** prefix.
2. Right click the copied icons and choose **Properties**.

   Edit the Target line to include the bolded text (command line arguments) shown below. The beginning section contains the program's install location and should not be changed. If your Bentley products are installed somewhere other than the default location, the path may appear differently than the below examples.

   OpenRoads Designer
   "C:\Program Files\Bentley\OpenRoads Designer CONNECT Edition\OpenRoadsDesigner\OpenRoadsDesigner.exe" ***"-wc%USERPROFILE%|State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_ConfigurationSetup_Compass.cfg"***

   OpenBridge Designer
   "C:\Program Files\Bentley\OpenBridge Designer CONNECT Edition\OpenBridgeDesigner\OpenBridgeDesigner.exe" ***OBM_PARAMS="-wc%USERPROFILE%|State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_ConfigurationSetup_Compass.cfg"***

   OpenBridge Modeler
   "C:\Program Files\Bentley\OpenBridge Designer CONNECT Edition\OpenBridgeDesigner\OpenBridgeDesigner.exe" ***"-wc%USERPROFILE%|State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_ConfigurationSetup_Compass.cfg"***

   OpenBuildings Designer
   "C:\Program Files\Bentley\OpenBuildings CONNECT Edition\OpenBuildingsDesigner\OpenBuildingsDesigner.exe" ***"-wc%USERPROFILE%|State of Connecticut|DOT CTDOT_DDE - CONNECT|CT_ConfigurationSetup_Compass.cfg"***
3. Click **Apply** and **OK**.

2.3 Consultant Install

This module is intended for consultant engineers, municipalities and any other private parties to set up the CTDOT CONNECT DDE. This is the second option outside parties can utilize if they are unable or do not wish to Sync to the DDE SharePoint site 0 Consultant Sync This module is **not intended** for CTDOT staff at Newington HQ or district offices, as the DDE has already been set up on SharePoint.

Before continuing, please ensure one of the relevant CONNECT Edition applications have been installed. The CTDOT CONNECT DDE is configured to work with:

- OpenRoads Designer®
- OpenBridge Modeler® or OpenBridge Designer®
- OpenRail Designer®
- OpenBuildings Designer®

All products contain the functionality of MicroStation CONNECT Edition in addition to relevant design capabilities for each product. Note that OpenBridge Modeler is the CAD component of OpenBridge Designer. CTDOT will not support the use of plain MicroStation CONNECT Edition with our standard configuration files as only OpenRoads Designer, OpenBridge Modeler, OpenRain Designer, and OpenBuildings Designer align with BIM functionality needed to move design data through its lifecycle.

2.3.1 DDE Download and Install

CTDOT provides a **Zip file** for download located on the CONNECT Edition DDE Website. The Zip file contains Configuration files/folders as well as a CTDOT template WorkSet (Project) Container. Before installing it's imperative to determine the locations in which you will be storing the **CT CONNECT DDE Configurations** and the **CTDOT Project folders (WorkSets)**. Step through the following to install the CTDOT CONNECT DDE:

1. Download/Copy **CT_CONNECT_DDE.Zip** from the CTDOT CONNECT DDE website to the Desktop.

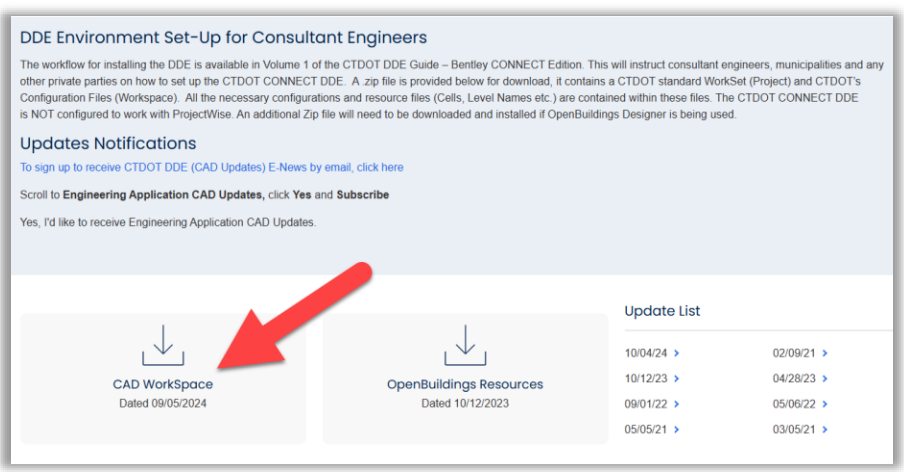


Figure 29 - Download DDE

2. Right click on the copied zip folder Icon and choose **Extract All...**Browse to the destination that will house the CT CONNECT DDE Configurations (this can be either a local folder or network drive/folder) and click the **Extract** button.

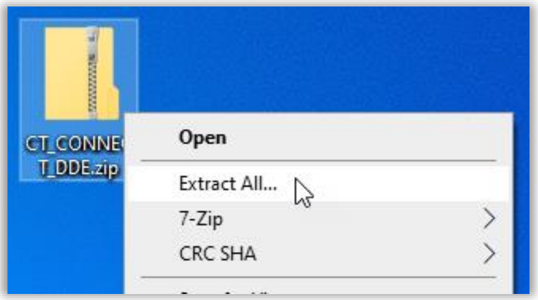
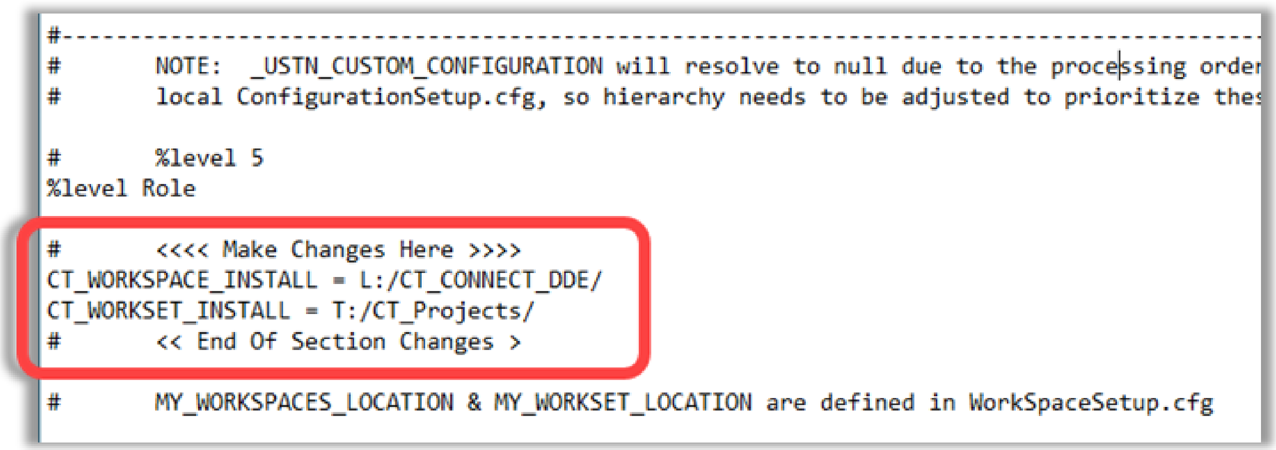


Figure 30 – CTDOT DDE Zip File extraction

3. Determine the location where your project data will be stored. It may be kept in the original extracted location or moved out.If required, move the **CT_Projects** folder out from the **CT_CONNECT_DDE** folder into a different location.
4. Double click **CT_ConfigurationSetup.cfg** to open it using a text editor.
5. Edit both the **CT_WORKSPACE_INSTALL** path (CT_CONNECT_DDE) and **CT_WORKSET_INSTALL** path.
   Example:
   CT_WORKSPACE_INSTALL = L:/CT_CONNECT_DDE/
   CT_WORKSET_INSTALL = T:/CT_Projects/
6. Choose **File> Save** and **Close** or **Exit**.



```
#-----------------------------------------------------------------------------------------
#       NOTE:  _USTN_CUSTOM_CONFIGURATION will resolve to null due to the processing order
#       local ConfigurationSetup.cfg, so hierarchy needs to be adjusted to prioritize the

#       %level 5
%level Role

#       <<<< Make Changes Here >>>>
CT_WORKSPACE_INSTALL = L:/CT_CONNECT_DDE/
CT_WORKSET_INSTALL = T:/CT_Projects/
#       << End Of Section Changes >

#       MY_WORKSPACES_LOCATION & MY_WORKSET_LOCATION are defined in WorkSpaceSetup.cfg
```

Figure 31 - CT_ConfigurationSetup.cfg

7. Create a desktop **copy** of the installed CONNECT products' shortcuts to edit.Rename it with a ***CT_*** prefix.

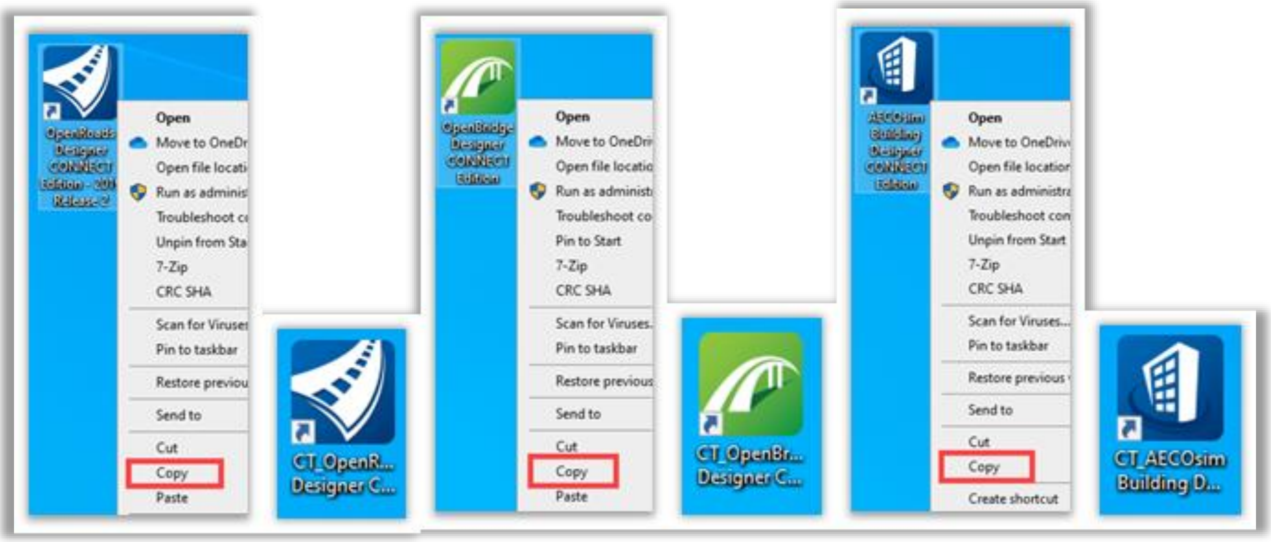


Figure 32 - Copying Icons

8. Right click the copied Icons to choose **Properties**.

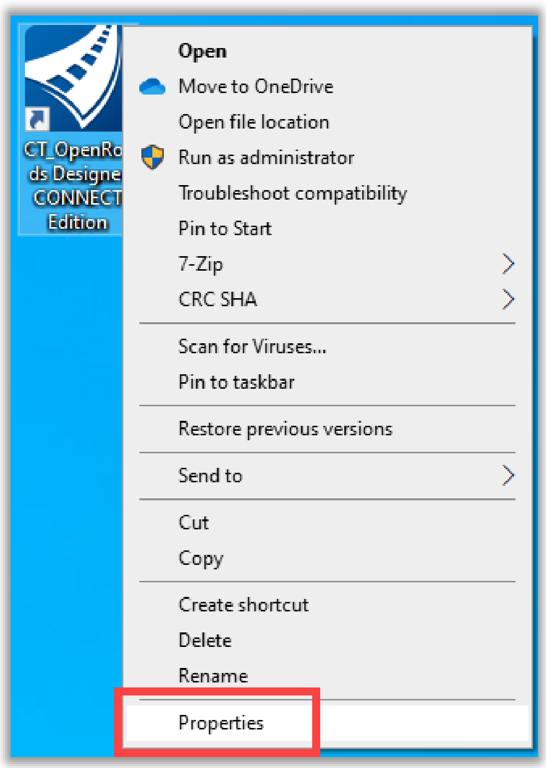


Figure 33 - Icon Properties

9. Edit the Target line by appending a command line argument as shown below. Also edit the ***WorkSpace install drive letter (and path if necessary)*** to the correct location of CT_ConfigurationSetup.cfg. **Note:** The Program installed location in the front section

(ending in exe) should not be changed and maybe different than what is shown below if your program is installed in a different location.

OpenRoads Designer
"C:\Program Files\Bentley\OpenRoads Designer CONNECT Edition\OpenRoadsDesigner\OpenRoadsDesigner.exe" -wc***L:****CT_ConfigurationSetup.cfg*

OpenBridge Designer
"C:\Program Files\Bentley\OpenBridge Designer CONNECT Edition\OpenBridgeDesigner\OpenBridgeDesigner.exe" OBM_PARAMS="-wc***L:****CT_ConfigurationSetup.cfg"*

OpenBridge Modeler
"C:\Program Files\Bentley\OpenBridge Designer CONNECT Edition\OpenBridgeDesigner\OpenBridgeDesigner.exe" -wc***L:****CT_ConfigurationSetup.cfg*

OpenBuildings Designer
"C:\Program Files\Bentley\OpenBuildings CONNECT Edition\OpenBuildingsDesigner\OpenBuildingsDesigner.exe" -wc***L:****CT_ConfigurationSetup.cfg*

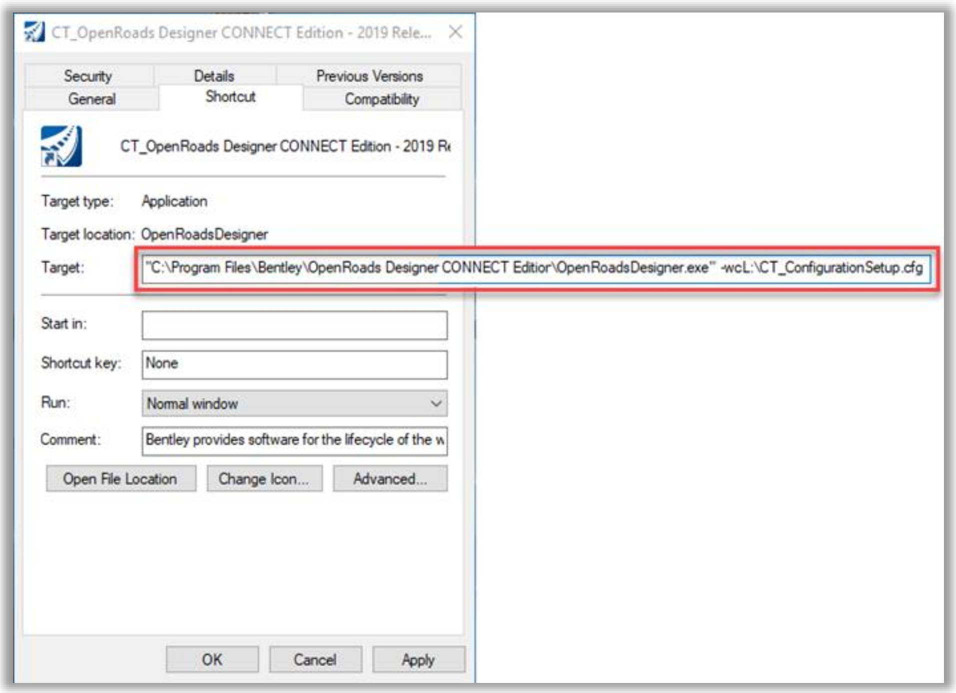


Figure 34 - Modify Icon Target

10. Click **Apply** and **OK**.
11. Share/Email your configured target line to your companies' end users so that they may set up their own desktop Icon as well.

2.3.2 Installing the OpenBuildings Designer Dataset

This Module will need to be completed for anyone using OpenBuildings Designer. The procedure below will not be needed for use with OpenRoads or OpenBridge.

1. Browse to CTDOT CONNECT DDE Website.
2. Click on the **OpenBuildings Designer Dataset** link. A Zip file will be downloaded to your downloads folder.

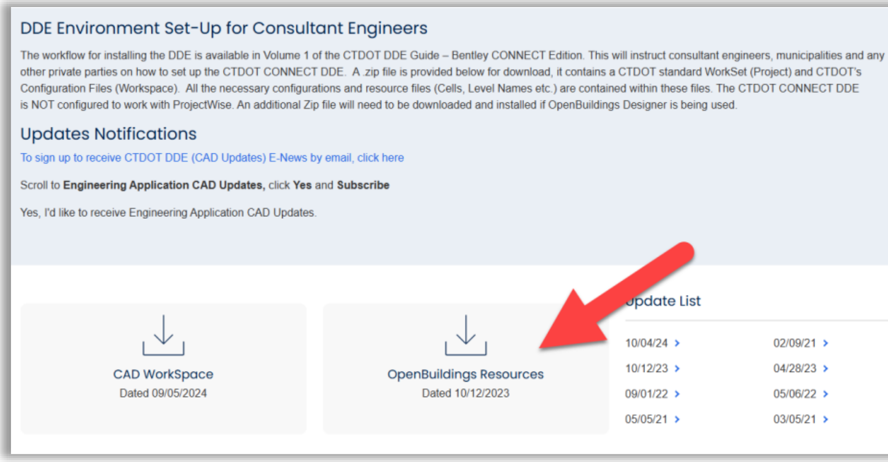


Figure 35 - Download OpenBuildings DataSet

3. Un-Zip it to the C Drive. ***C:\CT_OpenBuildingsDesigner_Dataset***

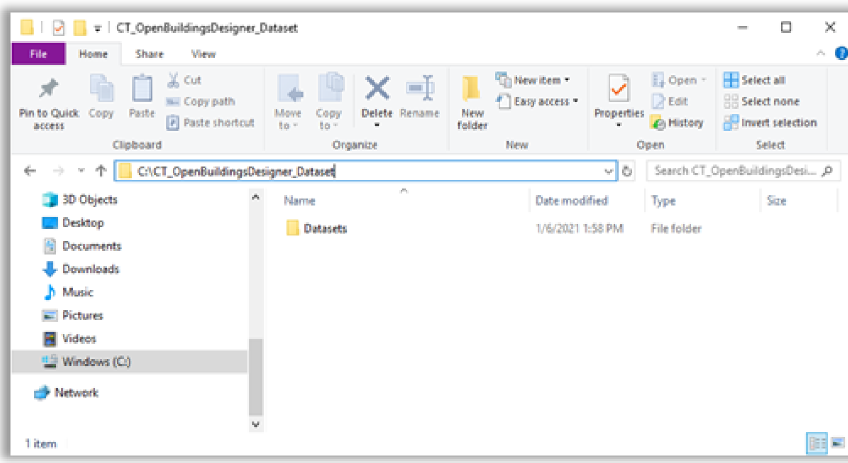


Figure 36 - File Explorer C Drive

Note: *To Update the files delete the **CT_OpenBuildingsDesigner_Dataset** folder on your C Drive and repeat steps 1 -3.*

2.3.3 Creating a WorkSet

Use these steps to create a WorkSet for:

- OpenRoads Designer
- OpenRail Designer
- OpenBridge Modeler
- OpenBuldings designer

1. To create Project Containers (WorkSets) double click the **CTDOT icon** to first launch ORD or OBD.

2. For the WorkSpace select the **CT_WorkSpace**

3. For the WorkSet, choose **Create WorkSet**

4. Create a new WorkSet by entering the CTDOT Project Number for the Name and choose **CT_Workset** from the Template drop down.

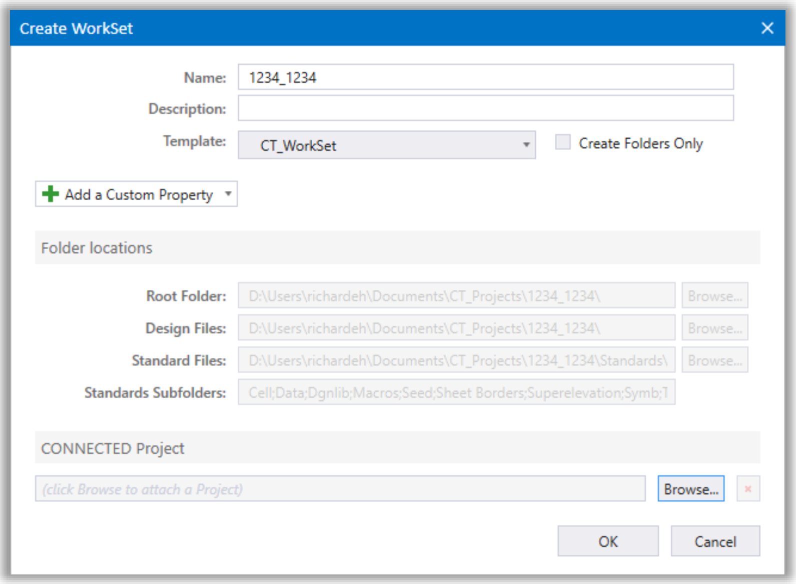


Figure 37 - WorkSet Creation

5. On the Splash Screen before opening a DGN file select **Properties > Advanced Properties**. In the **Edit WorkSet** dialog box update the ***CTDOT Property Fields*** as required. The Contract Border Cell Title Block placed in Sheet Models are linked to these Property Fields. This is what will appear in the Contract Sheet Title Block so use all CAPITALS.
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)

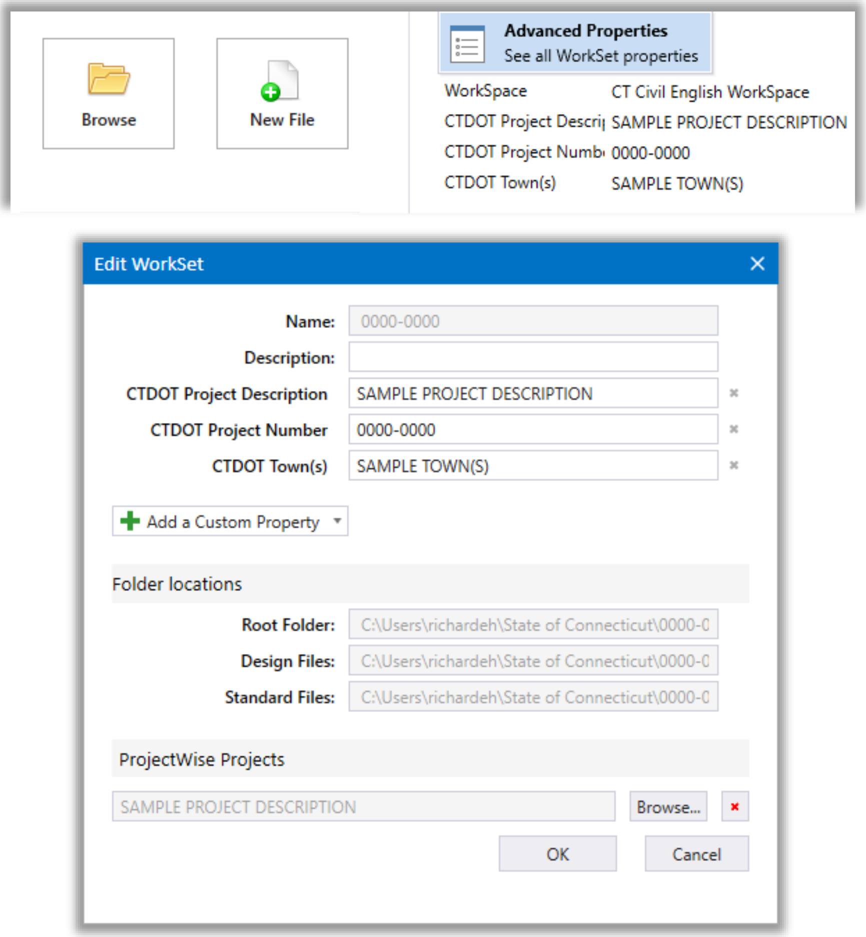


Figure 38 - CTDOT DDE WorkSet Properties

2.3.4 Creating a WorkSet Using Open Bridge Designer

This section is only applicable if OpenBridge Modeler (OBM) is to be used exclusively. In order to use OBM, an OpenBridge Designer file (*.obdx) must first be selected or created.

1. Double click the **CTDOT icon** to launch OpenBridge Designer.
2. Click **New File**, include the project number in the file name (example ***1234_1234_Temp.obdx***) and save it to your desktop.

Figure 39 - OpenBridge New Template File

3. Back on the Launcher create a new standalone group by clicking on the **yellow folder with the green plus sign**. Name it ***Temp***.
4. Ensure that **Standalone** has been selected (not BIM Workflow). Select the Standalone Group: **Temp** to expose the **OpenBridge Modeler icon** and click it.

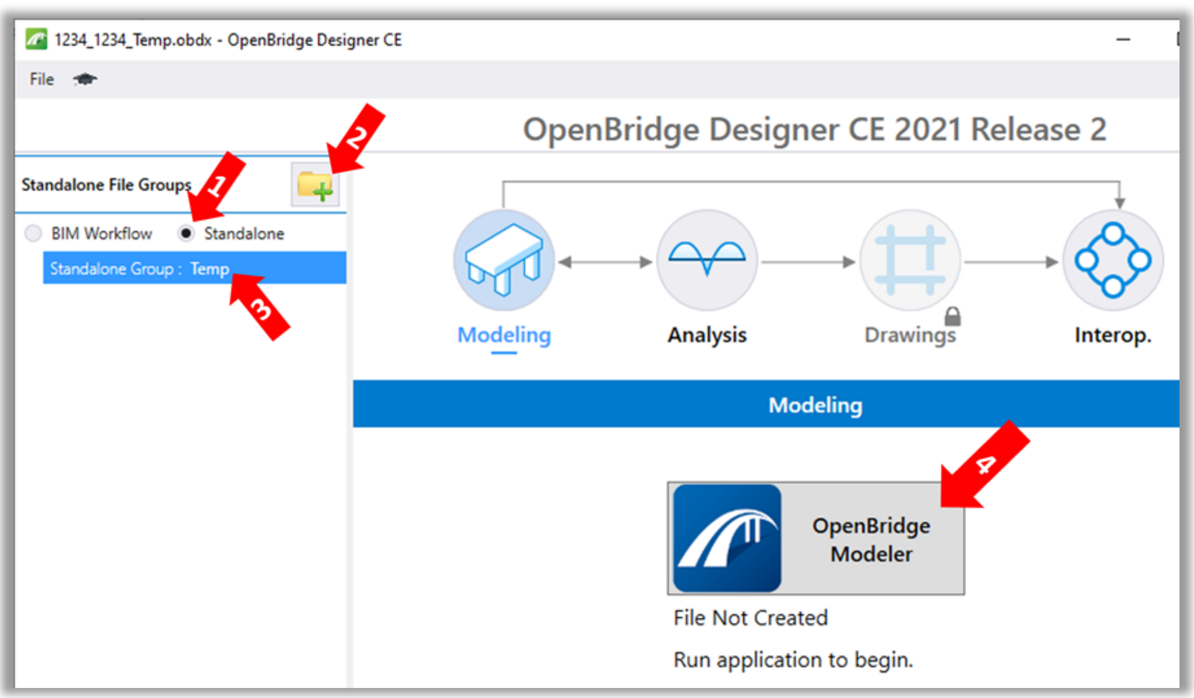


Figure 40 - Open OpenBridge Modeler

5. From the splash screen, ensure that the **CT_WorkSpace** has been selected and choose **Create a WorkSet**.

6. Create a new WorkSet by entering the CTDOT Project Number for the Name and choose **CT_Workset** from the Template drop down.

7. On the Splash Screen before opening a DGN file select **Properties > Advanced Properties**. In the **Edit WorkSet** dialog box update the ***CTDOT Property Fields*** as required. The Contract Border Cell Title Block placed in Sheet Models are linked to these Property Fields. This is what will appear in the Contract Sheet Title Block so use all CAPITALS.
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)

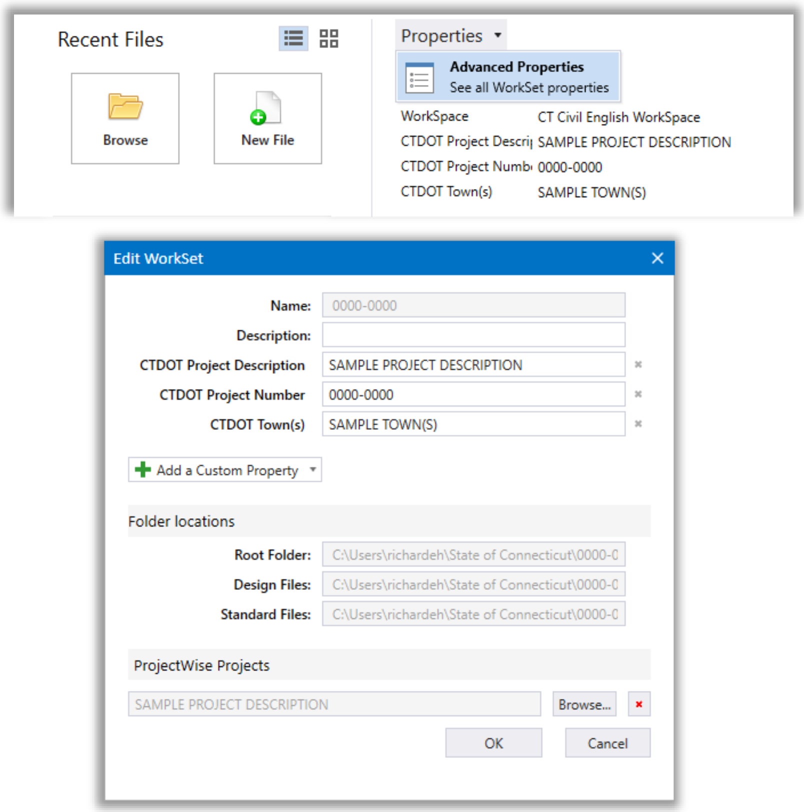


Figure 41 - CTDOT DDE WorkSet Properties

8. Now that the WorkSet has been created, exit OBM.

2.3.5 Updating WorkSet Properties

New WorkSet properties have been established for use with the Contract Border Title Block that suspends the need to connect up to projects in Bentley Cloud Services. Consultants will no longer need to browse to ~~**"Associate Project To Workset"**~~ when creating a new WorkSet.

New projects and newly placed Borders will now read custom CTDOT Fields. Existing WorkSets created before the CTDOT Custom property fields were put into place can be manually added.

1. On the Splash Screen before opening a DGN file select the WorkSet to update. Next select **Properties > Advanced Properties**.
2. In the **Edit WorkSet** dialog box click on **Add a Custom Property** and copy and paste the following text and create three new properties.
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)
3. Update the ***CTDOT Property Fields*** as required. The Contract Border Cell Title Block placed in Sheet Models are linked to these Property Fields. This is what will appear in the Contract Sheet Title Block so use all CAPITALS. This will update the WorkSet's DGNWS file that was established when the WorkSet was originally created.

These properties can be updated at any time and the new Title Block will read in the updated info. Title Blocks requiring an update using Border Cells placed before the new properties were put into place should be deleted and a new Border Cell should be placed.

2.3.6 Creating Custom Icons for launching Applications

1. Create a desktop **copy** of the installed CONNECT products' shortcuts to edit.Rename it with a ***CT_*** prefix.

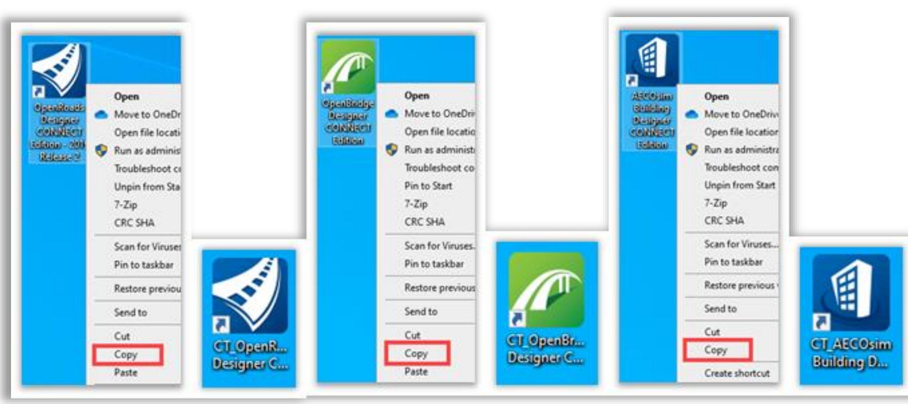


Figure 42 - Copying Icons

2. Right click the copied Icon to choose **Properties**.

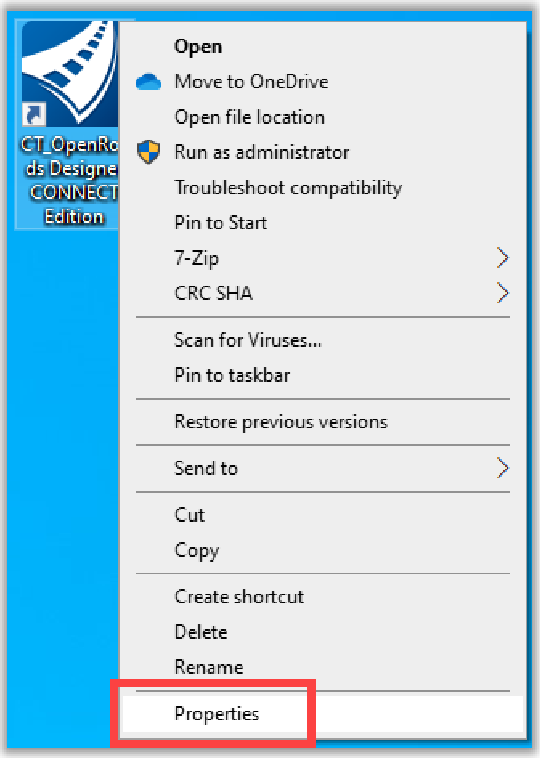


Figure 43 – Icon Properties

3. Edit the Target line by appending a command line argument as shown below. Also edit the WorkSpace install drive letter (and path if necessary) to the correct location of CT_ConfigurationSetup.cfg.

OpenRoads Designer
"C:\Program Files\Bentley\OpenRoads Designer CONNECT Edition\OpenRoadsDesigner\OpenRoadsDesigner.exe" ***-wcL:\CT_ConfigurationSetup.cfg***

OpenBridge Designer/OpenBridge Modeler
"C:\Program Files\Bentley\OpenBridge Designer CONNECT Edition\OpenBridgeDesigner\OpenBridgeDesigner.exe" OBM_PARAMS="-***wcL:\CT_ConfigurationSetup.cfg"***

OpenBuildings Designer
"C:\Program Files\Bentley\OpenBuildings CONNECT Edition\OpenBuildingsDesigner\OpenBuildingsDesigner.exe" ***-wcL:\CT_ConfigurationSetup.cfg***

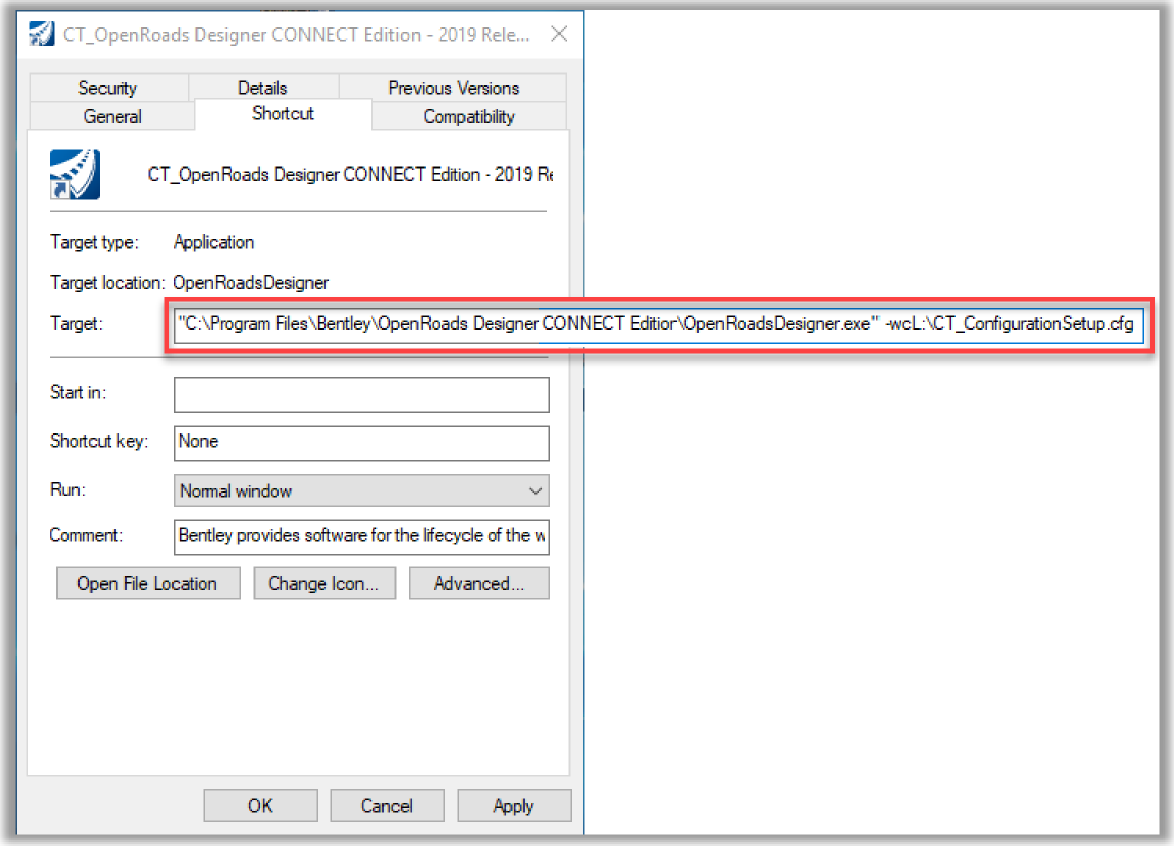


Figure 44 – Modify Icon Target

4. Click **Apply** and **OK**.

2.3.7 Updating The Master Bid Item List

The master bid item list can be found on CTDOT's Contract Development Webpage. Both the Excel Files and PDF files are periodically updated on this website: Contract Development

Item Types in CAD uses a lookup table to find Pay Items. AEC Applications will update CTDOT's CONNECT Configuration files in SharePoint so that the Item Types will link to Contract Development's updated data. Consultants that have downloaded the workspace from the CTDOT - CONNECT DDE website will need to manually replace this data as Contract Development updates their website.

The Following step are for consultants not using CTDOT's SharePoint Workspace, in-house designers and consultants using CTDOT's SharePoint Workspace will not need to do this.

1. In File Explorer, browse to ***CT_CONNECT_DDE|CT_Configuration|Organization|Item Types|Lookup TableAsset_Lookup_All.xlsx***. Open and delete the **itemavg_eng** tab.
2. Go to Contract Development, under Master Bid Item Lists, click on the **English Excel** File.
3. Open the downloaded excel file and copy **Sheet 1** tab to ***Lookup TableAsset_Lookup_All.xlsx***.
4. Rename Sheet 1 tab to **itemavg_eng**.
5. Delete **Row 1**

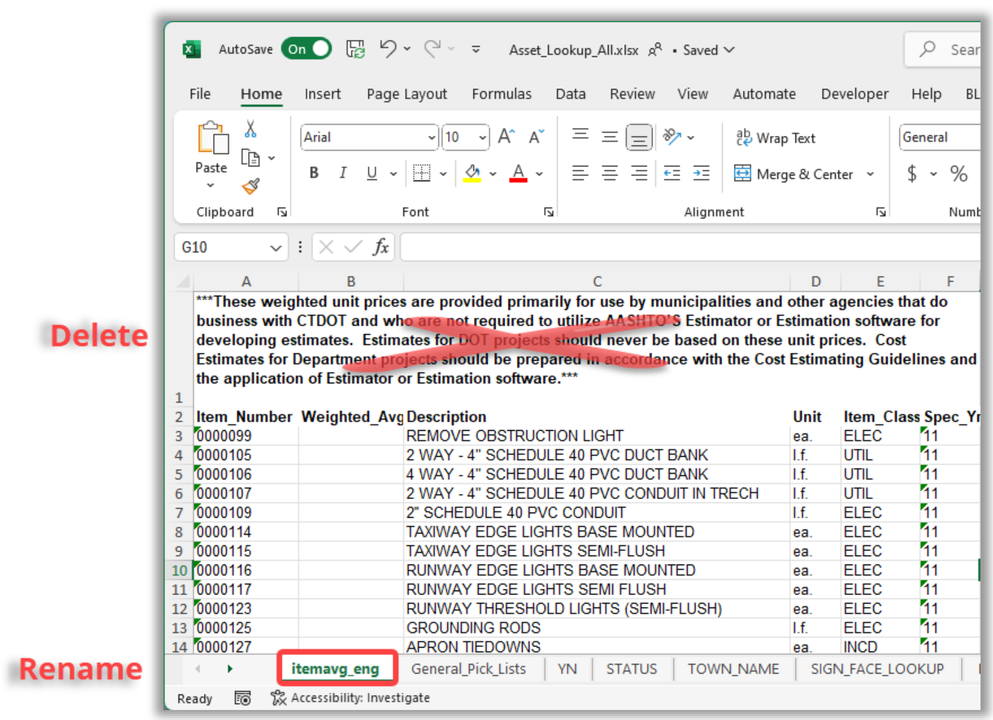


Figure 45 – Excel File Replace Master Pay Item Tab

4. Verify Row 1 has the headers and Cell A1 reads ***Item_Number***.

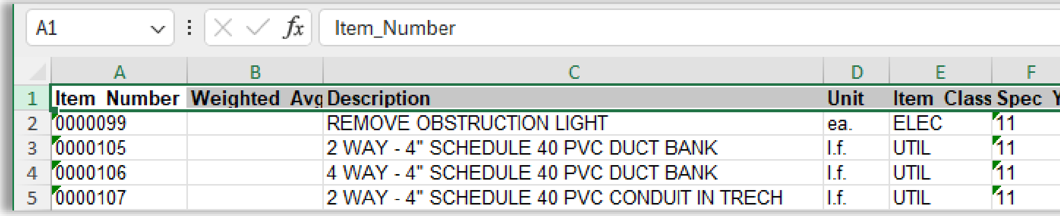


Figure 46 - Excel File edit Item Number Column

5. Edit **G1** to read ***Search*** and merge/copy columns ***Item_Number (A)*** and ***Description (C)*** into the new column.
   a. In ***G2*** enter: ***=A2&" "&C2***
   b. Copy this formula to all Rows
   c. Select ***Column G*** <Right Click> **Copy**
   d. Select ***Column G*** again <Right Click> **Paste Values** to wipe out the formula's

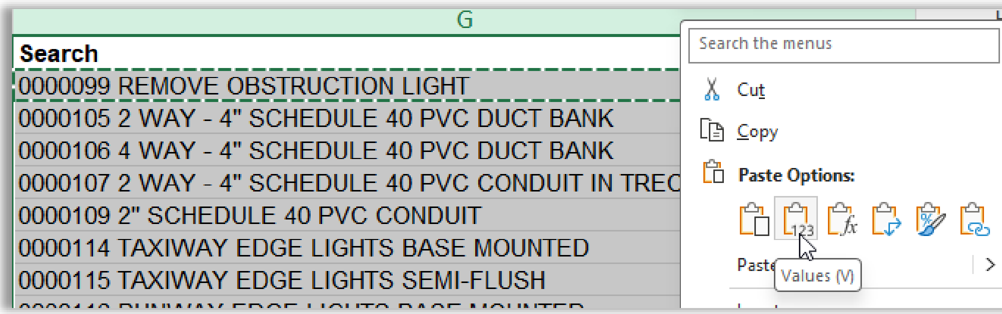


Figure 47 – Paste Values only

6. Verify that the last item in the list is ***N/A*** in the following columns.
   - Item_Number
   - Description
   - Unit
   - Search

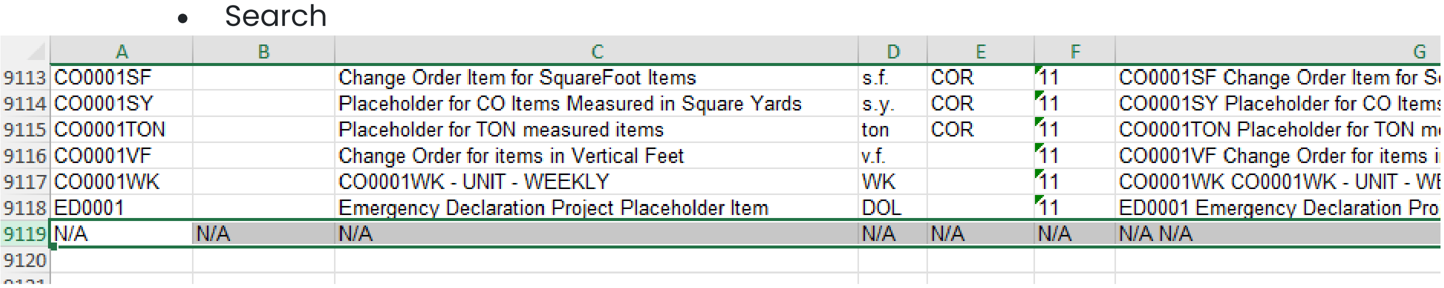


Figure 48 – Excel file add an N/A Row

7. **Save** and close both of the Excel files.

2.3.8 Updating the DDE

This Module is for users/consultants that have manually installed the DDE. CTDOT Employees that are connected to the Network do not need to update the DDE as this is done by AEC Applications.

Sign up for E-News Alerts

CTDOT E-News Alerts will notify users when an update to the DDE has been posted.

1. Click here to subscribe to receive updates from the Connecticut Department of Transportation
2. Enter your ***Name*** and ***Email***. Continue to the middle section and check off all the updates you would like to receive. For DDE updates be sure to check off ***Yes, I'd like to receive Engineering Application CAD Updates***.
3. Scroll to the bottom and click the **Subscribe** button.

Figure 49 - CTDOT E-New Alert Sign up

Download Zip

1. Browse to the posted Zip and download it. [CTDOT CONNECT DDE Website]

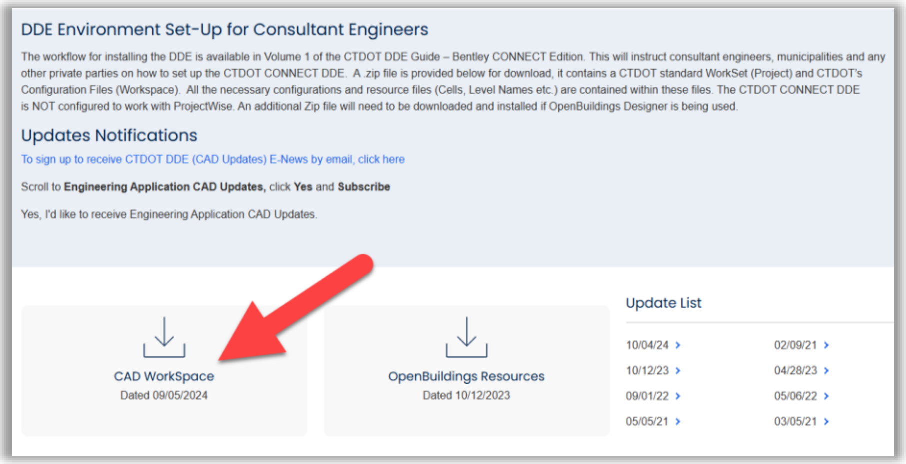


Figure 50 - Download DDE

2. Double click on the Zip file to see the folders.
3. Browse to ***…CT_CONNECT_DDE.zip\|CT_CONNECT_DDE***
4. Select the **CT_Configuration** folder and copy to replace the previous install.

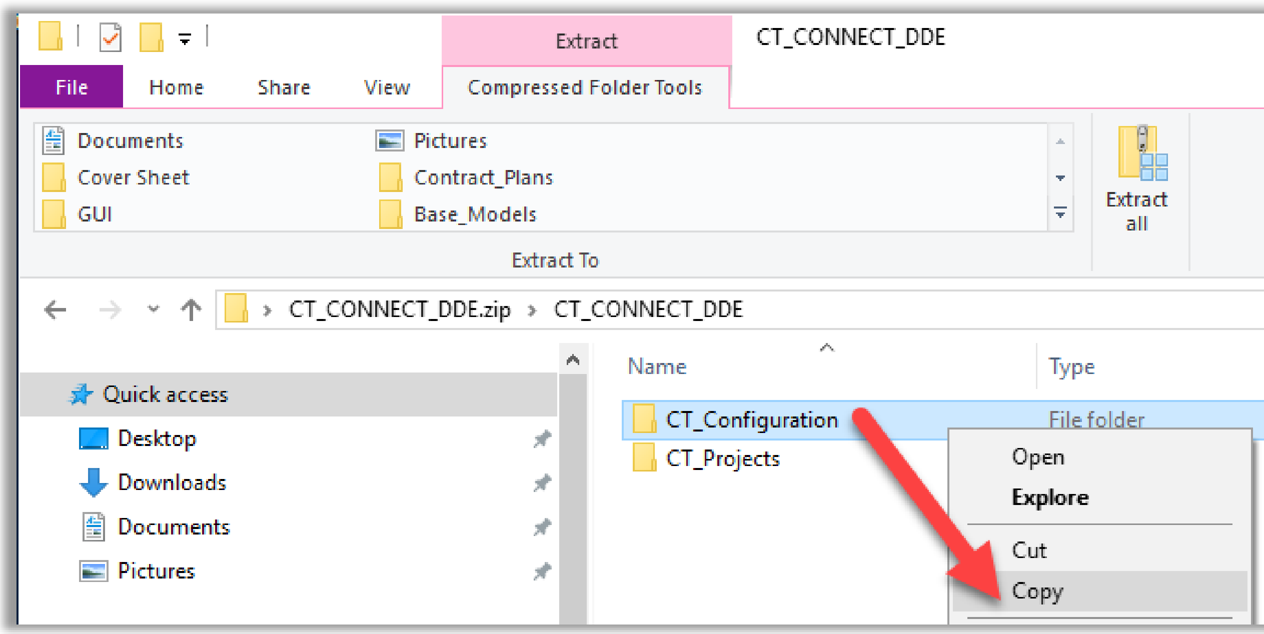


Figure 51 - File Explorer Copy Configuration

5. Double click on the **CT_Projects** folder. Select the ***CT_Workset*** (CTDOT's Template WorkSet) folder and ***corresponding files***, right click and select **Copy**. Paste and replace in the installed location.

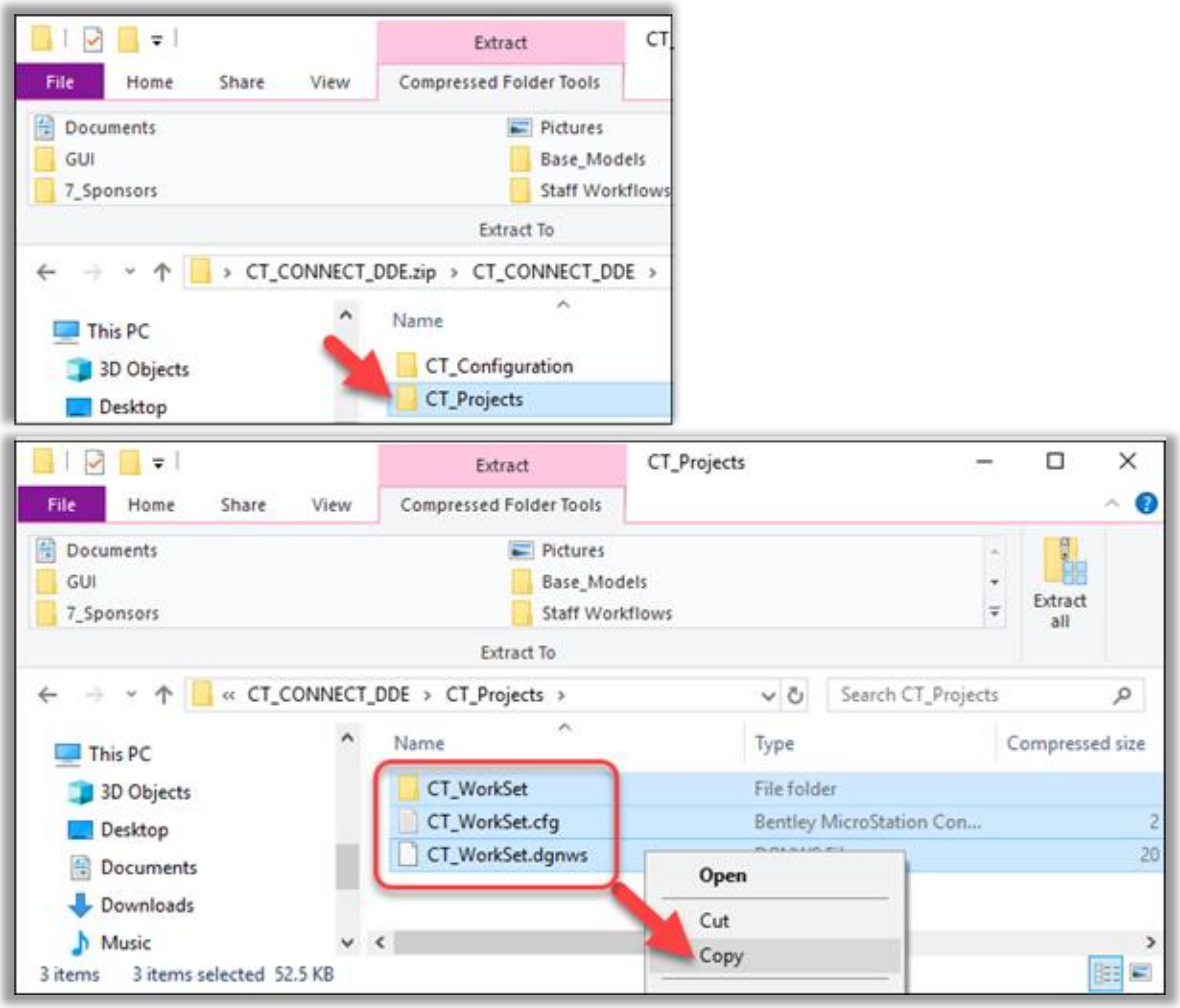


Figure 52 - File Explorer Update Workspace Template

Section 3 – Beginning a Work Session

3.1 Accessing the Application

Before attempting to open or create DGN files users should make sure one of the scenarios in Section 2 of this Volume has been completed.

1. Log on to the CONNECTION Client.
   Bentley Connect licensing requires users to log into their Bentley account to secure a software license. CTDOT users should log in using your CTDOT email address and Bentley password.If you do not see the dialog box, select the ^ icon on the bottom Windows Screen. Click on the Connection Client Icon and select **Open**.

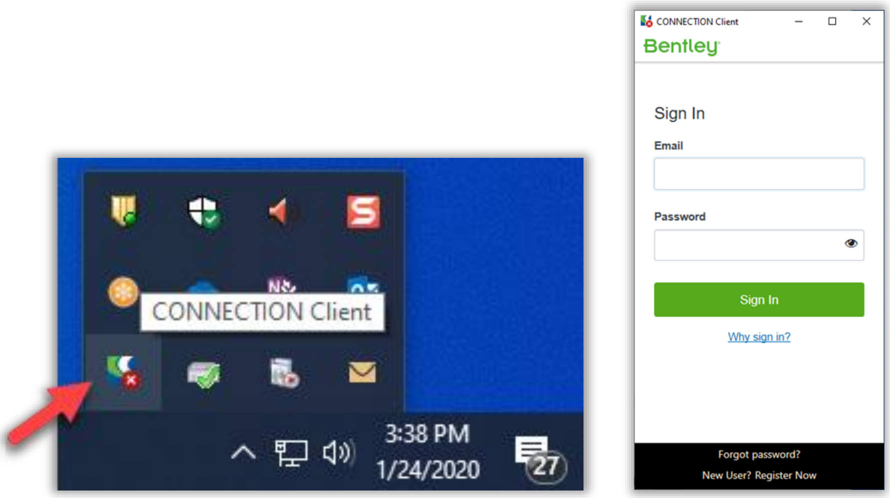


Figure 53 - CONNECTION Client System tray

2. Launch the Application.
   - **Consultants**
     Start the software
     via an appropriate CTDOT DDE icon and skip to step 5.

Figure 54 - ORD Icon

   - **CTDOT employees**
     On your desktop double click on the **CAD Accounting Icon**.

Figure 55 - CAD Accounting Icon

3. For this current version of the Accounting Menu, the following will appear on the first use of the menu.
    a. Find your **Windows User at Work** user log in name from dropdown list and select it.
    b. If it is not in the list enter it in the blank field below the drop-down list. Un-sure of your user log in name, open **File Explorer *D:|Users|…*** and find your name. If the Username is rejected, then:
        - non-DOT employee, and you have permission from that user, please select that ***existing username*** from the dropdown list to use as proxy.
        - DOT employee, please contact dot.helpdesk@ct.gov to add your name to the CAD Accounting PC name table.
    d. Find your **Computer Name at Work** from dropdown list and select it.
        - If it is not in the list enter it in the blank field below the drop-down list. Un-sure of your computer name go to your Desktop and double click on the WorkStation Information Icon. Make note of the ***Computer Name:***
        - If the Computer Name is rejected, then:
            - the computer is a non-DOT one, or one not on the DOT network, please select an ***existing computer name*** from the dropdown list to use as proxy.
            - the computer is a DOT PC, please contact [Desktop Support]() to add the PC to the CAD Accounting PC name table.
    e. Back on the Configure Windows User and Computer Name dialog box click **Save**.

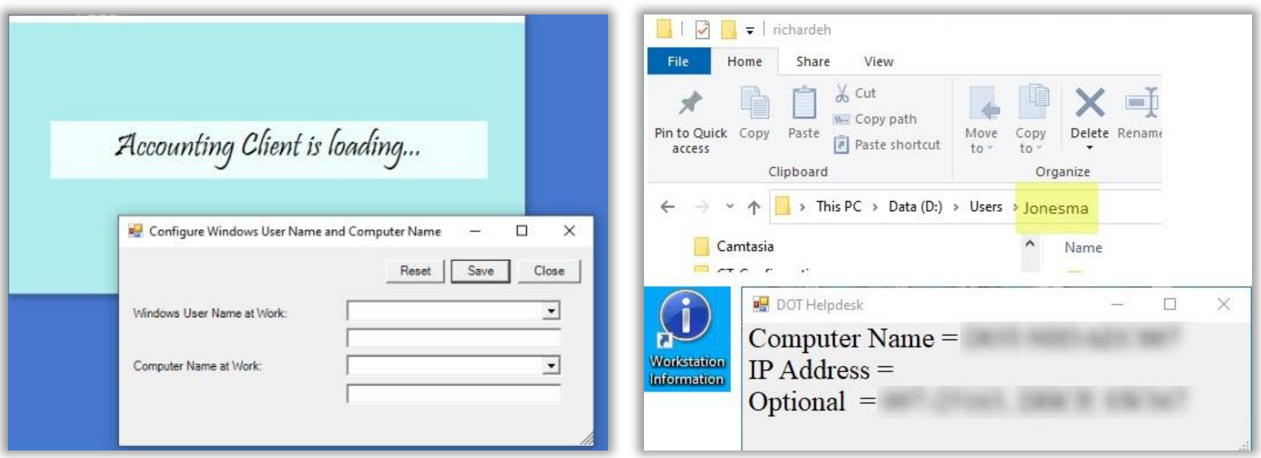


Figure 56 – CAD Accounting Initial Setup

4. On the CT DOT Accounting Menu there will be several applications to pick.

   The following will default to the synced COMPASS\Design Project location and the Synced State of Connecticut DDE SharePoint Workspace

   - ***Compass OpenBridge CE***
   - ***Compass OpenBuildings CE***
   - ***Compass OpenRoads CE***

   The following will default to your personal synced State of Connecticut OneDrive location and the Synced State of Connecticut DDE SharePoint Workspace

   - ***Non-Projects OpenBridge CE***
   - ***Non-Projects OpenBuildings CE***
   - ***Non-Projects OpenRoads CE***

   In the ***Run Program*** field select the needed program, the ***Available Account*** (funding source) and ***Resource Type***. Click on the **Start** button to load the program.

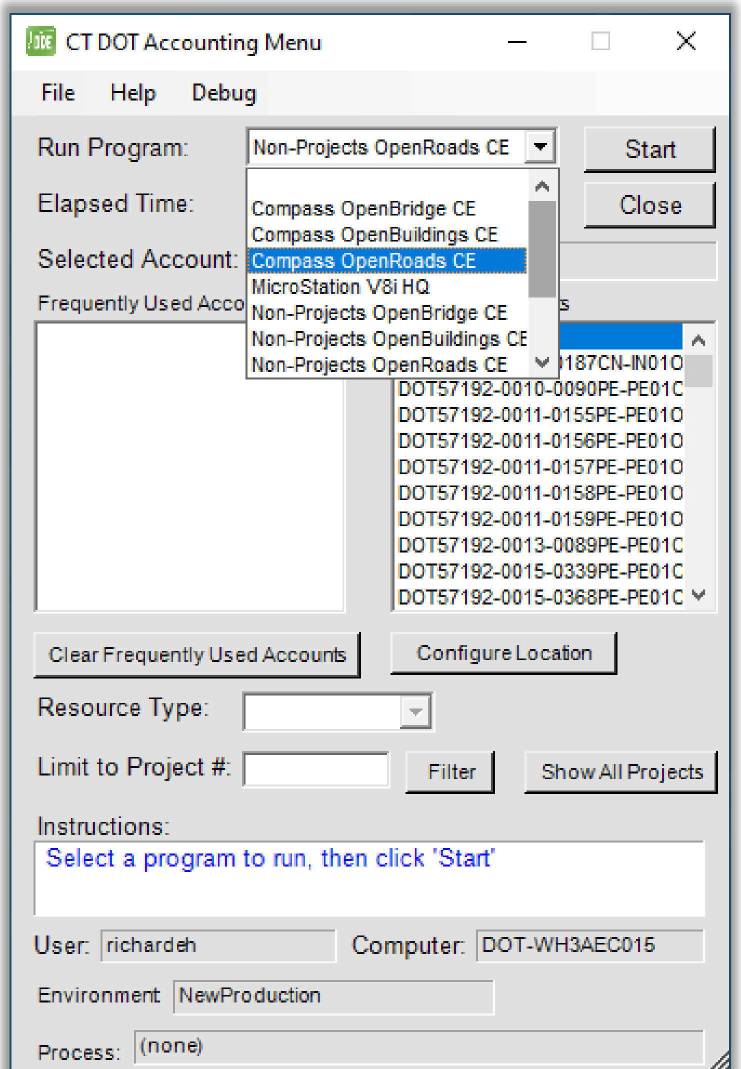


Figure 57 - CAD Accounting dialog box

5. After launching the program, the following will appear.
   For – OpenRoads Designer, OpenRail Designer and OpenBridge Modeler, OpenBuildings Designer a Welcome Screen. Users will continue to Step 6.

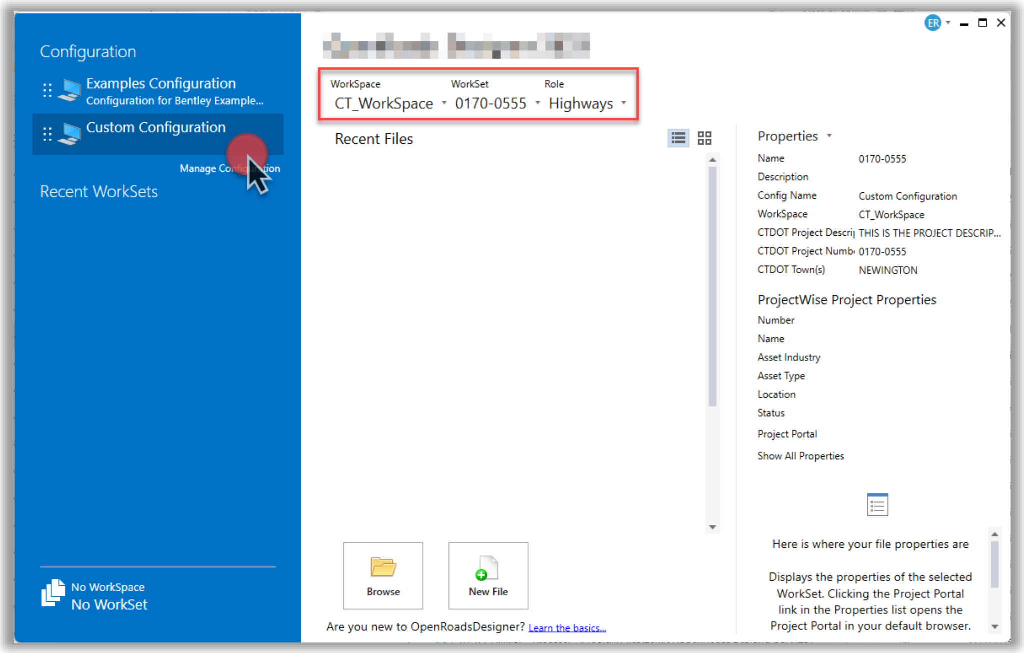


Figure 58 – OpenX Splash Screen

For - OpenBridge Designer
A home dialog box for ***OpenBridge Designer*** will open. Users will need to complete a. and b. below before moving on to Step 6.

a. On the OpenBridge Designer Home dialog box select **New** to create a new OBDX file in the Bridge subfolder within the WorkSet. This file can also be stored locally on your C or D drive. Name the file with your initials and project number (example: ***EHR_1234_1234_CAD_Only.obdx***). This file will only be accessed by one user, everyone working on the project should have their own.

   Note: *If performing analytics using LEAP Bridge Steel, Leap Bridge Concrete or RM bridge create a separate OBDX file in* the Bridge subfolder within the WorkSet; *using the Project Number in the naming convention (example:* ***1234_1234_Analytics.obdx****). This file should only be selected when users plan to do analytics, the project team should coordinate its usage as only one person should be accessing it at a time.*

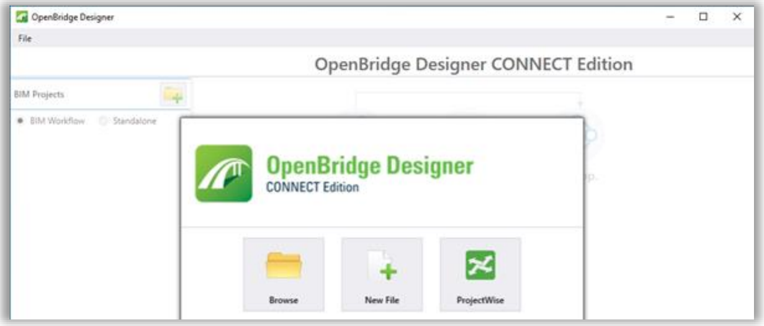


Figure 59 - OpenBridge Designer Launcher

b. On the left side menu unsure that **Standalone** has been selected (not BIM Workflow). Select or create a New Group to expose the **OpenBridge Modeler icon.** On the left menu make sure you a have the ***Group*** selected **not a DGN file**. After selecting the ***Group*** click on the **OpenBridge Modeler** icon.

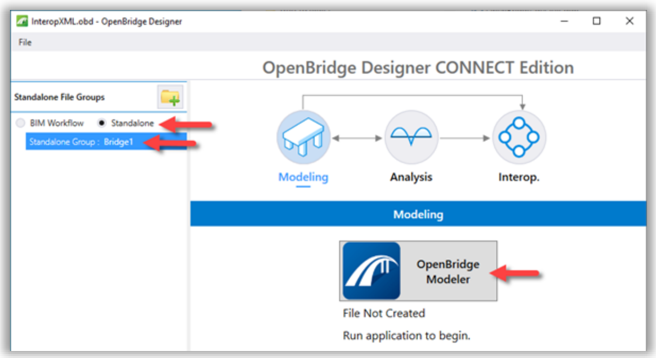


Figure 60 - OenBridge Modeler Launcher

Note: *Additional applications are available by clicking on the* ***Analysis*** *or the* ***Interop.*** *buttons. Instructions on how to use these applications are not part of the CTDOT CONNECT DDE, visit Bentley's website for further instructions.*

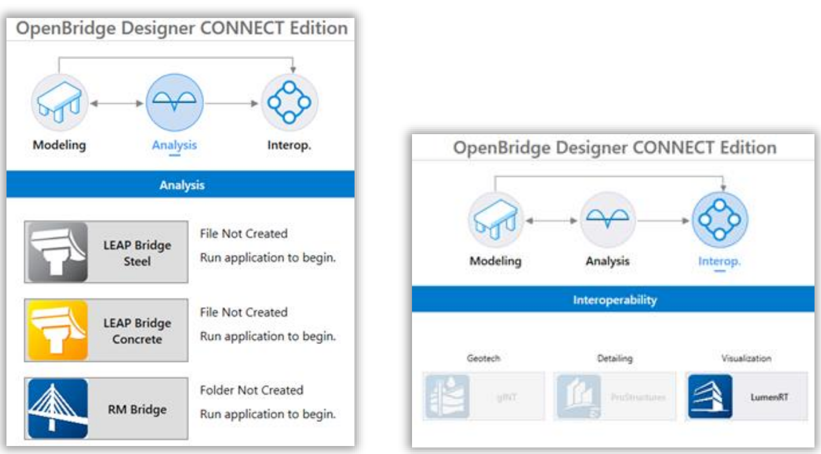


Figure 61 - OpenBridge Designer Applications

6. Ensure you are using the **Custom Configuration** and **CT_WorkSpace**, then select the relevant **WorkSet** and **Role**. The example below shows the options available in OpenRoads Designer. The other applications will look similar. The WorkSets listed correspond to project numbers and will be the same for all products.

   Note: *If you do not see the Project Number listed, please request a Compass/CAD Setup using this link* *[New CAD Project Request]*

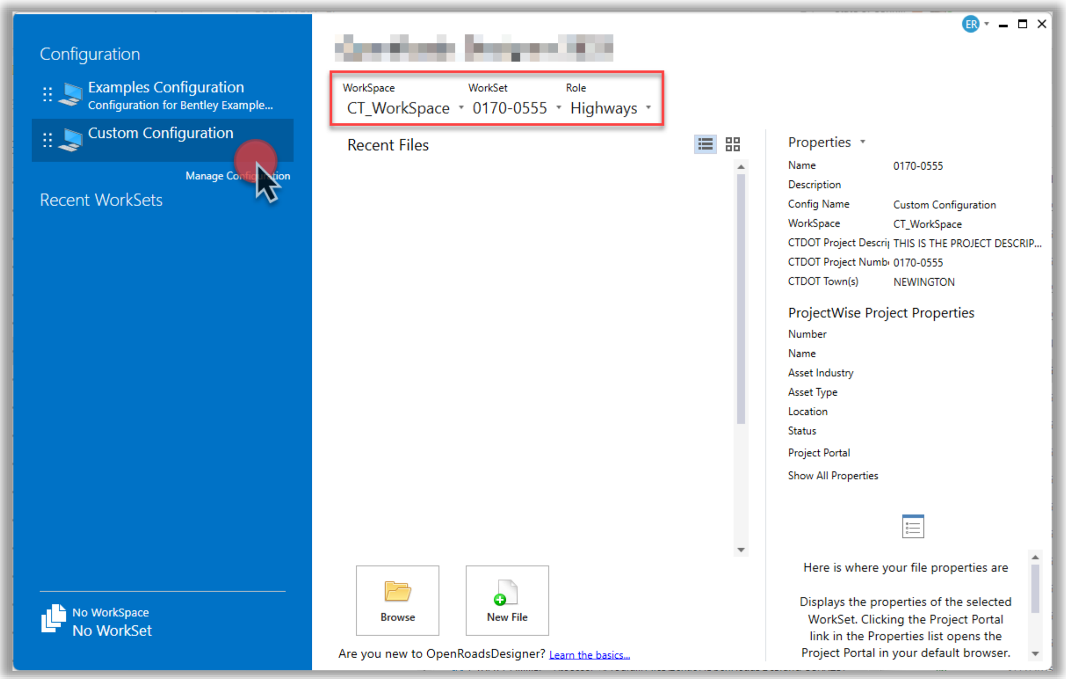


Figure 62 - OpenX Splash Screen

From this dialog box you can browse to open an **existing file,** create a **New File** or edit the **WorkSet Properties**.

Warning: Do not copy DGN files created with V8i SELECTseries or InRoads SS2, SS3, SS4, or SS10 to the new CTDOT CONNECT Project/WorkSet folders.

7. On the right select **Properties > Advanced Properties**. Assure the CTDOT Properties are correct and edit as necessary. Click **OK** to accept.

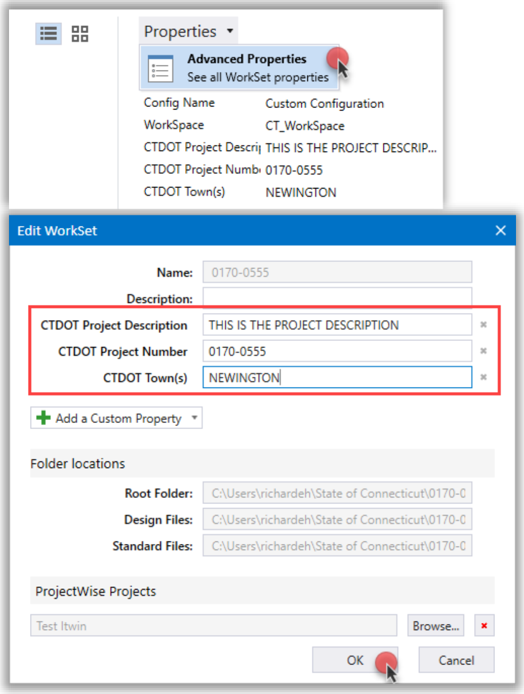


Figure 63 – CTDOT Custom Project Properties

8. Back on the welcome screen select the **New File** icon to create a new file.

   In the New dialog box, browse to the proper discipline folder and enter the proper file name in the ***File name:*** field using "***DisciplineDesignator_Project_Number_Description***.dgn"

   Highway Example: HW_CB_0170_0555_Corridor_Route123.dgn

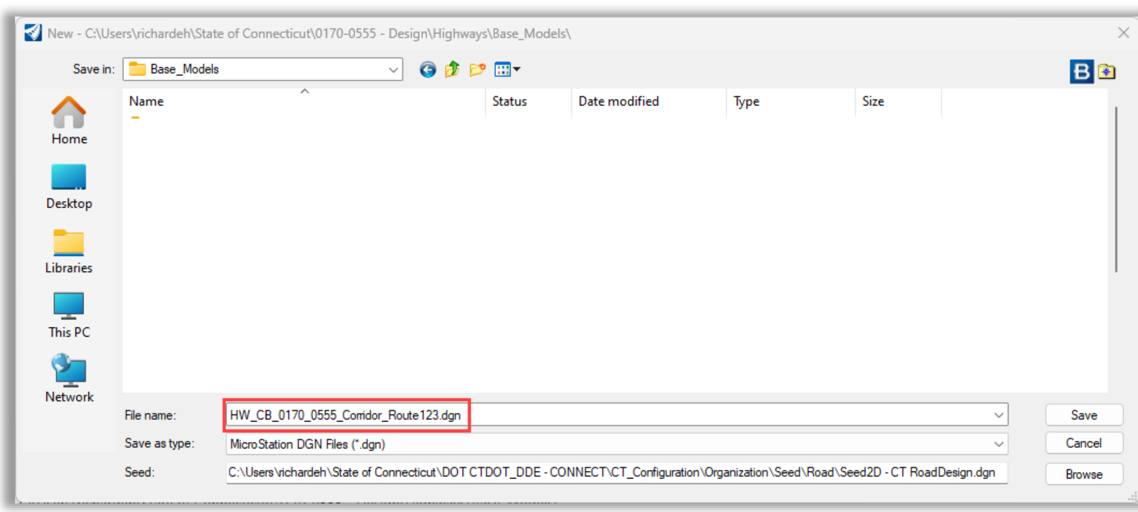


Figure 64 - New DGN File Name

9. On the New dialog box click the **Browse** button to select the proper seed file. See below for each application's seed file locations.

   OpenRoads Designer:
   …CT_Configuration|Organization|Seed|Road

   OpenBridge Modeler:
   …CT_Configuration|Organization|Seed|Bridge

   OpenBuildings Designer:
   …CT_Configuration|Organization|Seed|Buildings

   Notes about Seed files:
   - *It's important to select the appropriate seed file when creating new files. Seed files define important settings such working units, geographical coordinate systems and other important settings. Seed files help bring consistency to a project. When a .dgn file is created, a seed file is identified as a template for the new .dgn file.*
   - *CTDOT provides both 2D and 3D seed files to be used on projects. The new .dgn file is a copy of the seed file containing the same settings and properties as that of the "seed".*
   - *More on Seed files and geographical coordinate systems can be found in Volume 2.*

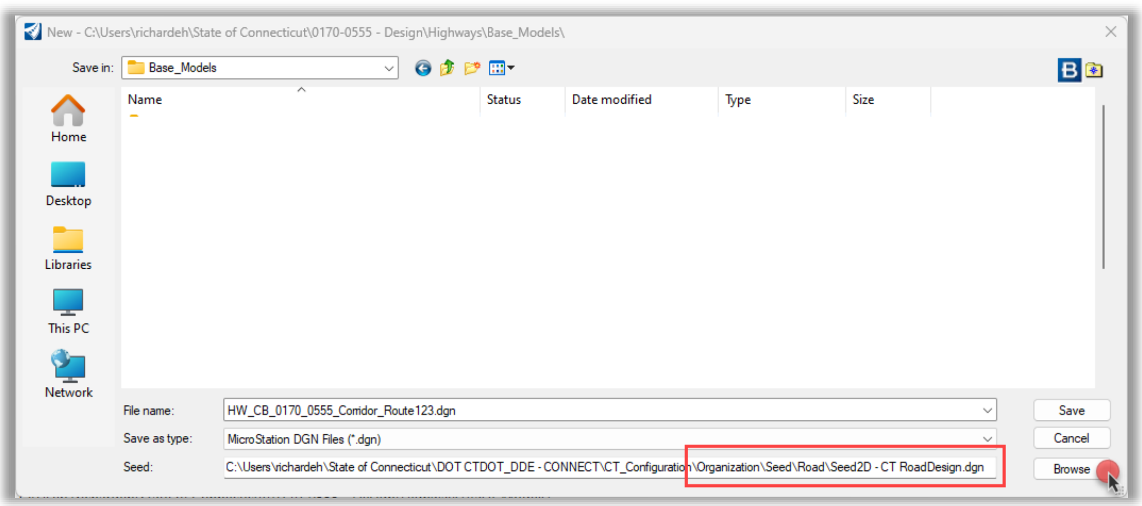


Figure 65 – Browse to select the seed file

10. Select **Save** and the new DGN file will open,

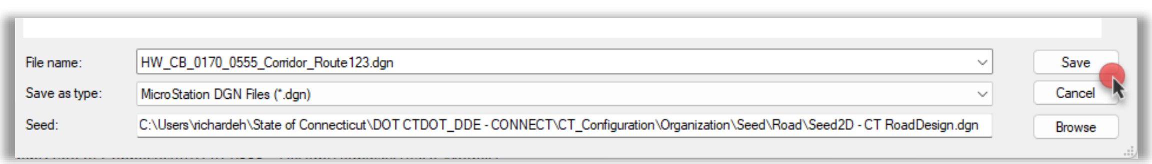


Figure 66 - Save New File

11. After the DGN file is created open File Explorer and browse to the file, **right click** and select **View online**.

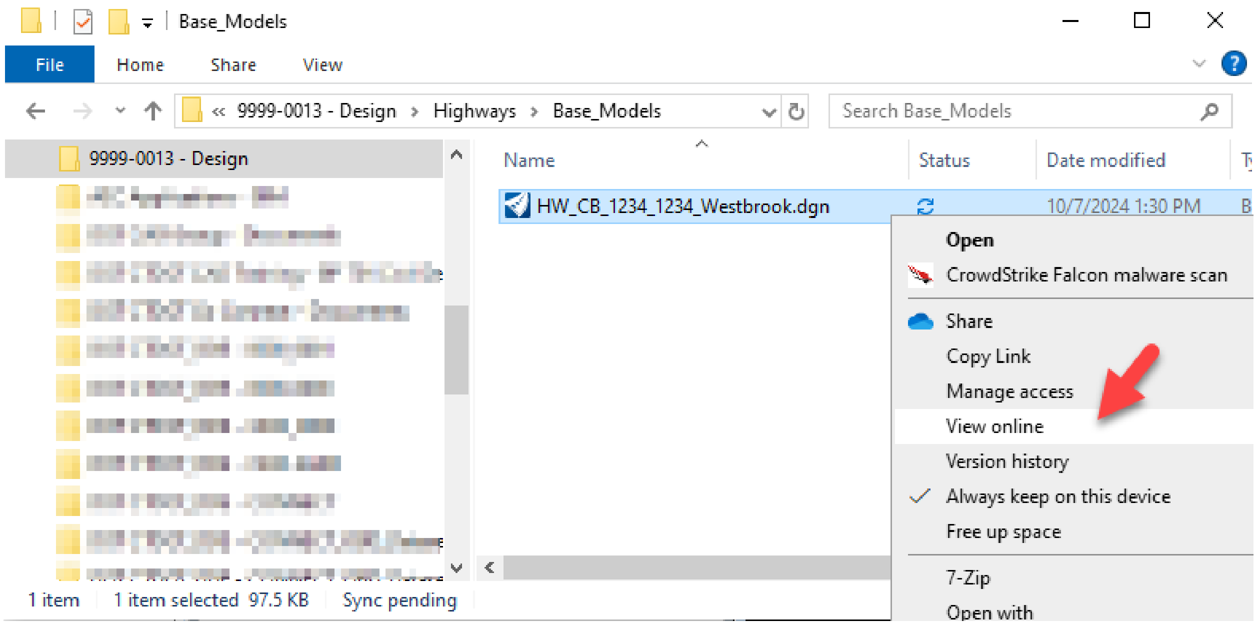


Figure 67 - File Explorer View online tool

12. The Projects SharePoint site will open, sort by **Date**, click on the **three dots**, select ***More > Check Out***

   Note: *When you are done working on the DGN file, exit the program and go back to the SharePoint Site and* ***Check In*** *the file.*

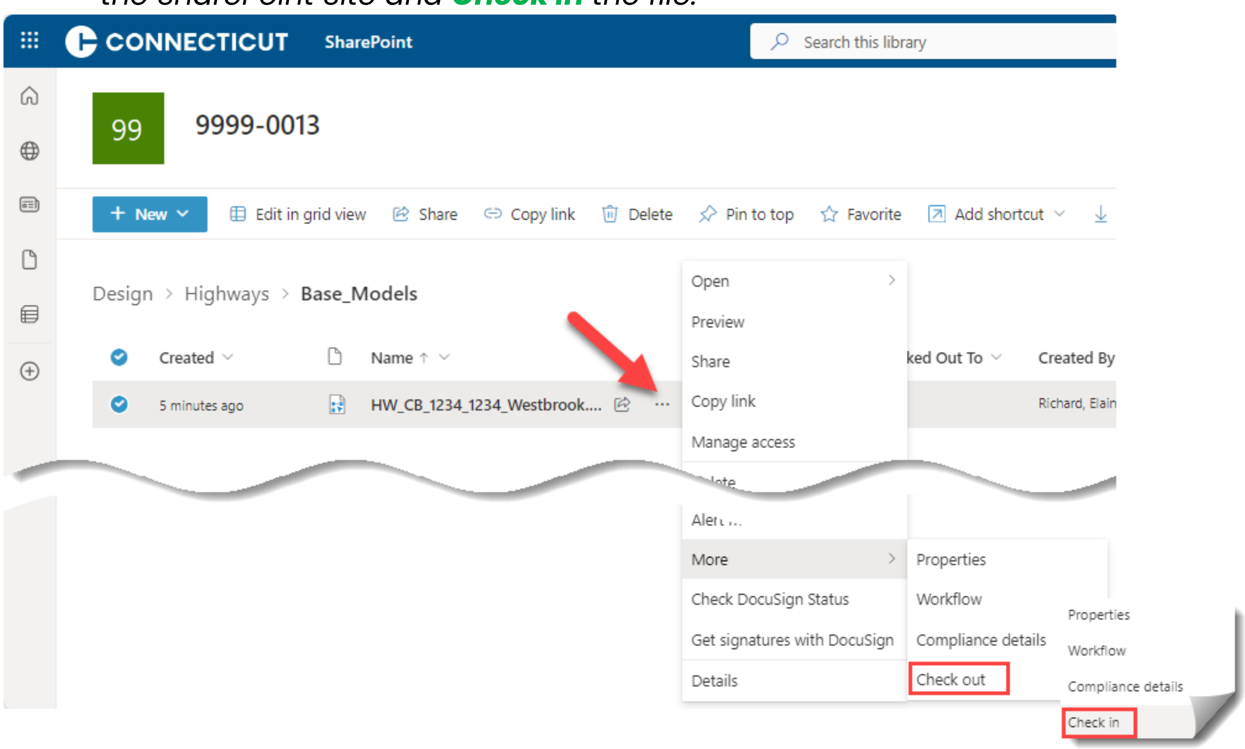


Figure 68 - SharePoint Check out

3.2 Model Types

OpenRoads Designer and OpenBridge Modeler utilizes three different types of models: Design, Drawing and Sheet.

- **Design (Base Models):** Consists of design geometry, can be 2D or 3D, and contains the elements that represent what is built, drawn at full scale (1:1), these types of models will be considered Base Models for the CTDOT CONNECT DDE. This model has a default black background.
- **Drawing:** This type of model is used to apply annotation. It stores a subset of a 2D or 3D design model or design composition. It is always 2D and has a default grey background.
- **Sheet:** This model is for plotting purposes only. It serves as an electronic drawing sheet and is used to define printed output, ready for printing or publishing. The sheet model includes a boundary, sheet information, and additional sheet annotation. All mapping and design features that have coordinate location values associated with them shall maintain those coordinate values within the CAD files. It is always 2D and has a default black background.

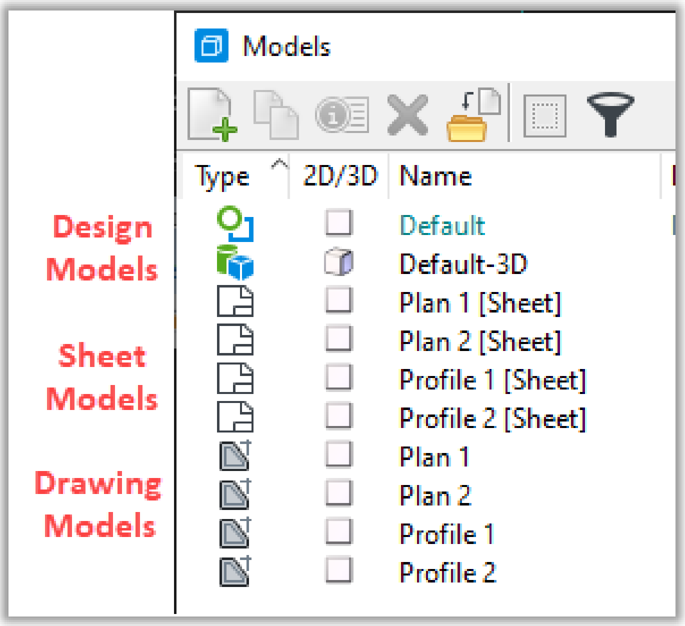


Figure 69 - Model Types

Base Models

CTDOT uses various base model design files to store plan, profile, and corridor modeling information in real world dimensions. These files are then referenced into drawing models and contract sheet design files to produce the plan sheets for the project.

Several base model files may be used depending on the project complexity.

- The CTDOT CAD Standards allow for multiple base model design files for each unique discipline (survey, illumination, landscape, highway, drainage, signals, pavement marking, signs etc.).
- Base models can be further broken up based on project needs by site or area to allow for multiple people in the same discipline to work on the project. For large projects it is recommended to store each alignment in a separate design file. This "federated" approach will allow multiple designers to work on different alignments simultaneously. If multiple geometry base models are used a "collector" design file should be created. This file is an empty design file with a reference attachment for each geometry base model. This allows users of the project to easily access all the geometry for the project by attaching the collector file as a reference with a nest depth value of 1.

Note: As graphic elements are drawn in each base model design file, these graphics are displayed in the "collector" file, according to the setting of the configuration variable MS_REF_NEWLEVELDISPLAY. This variable is defined as follows: MS_REF_NEWLEVELDISPLAY = 1. With this setting, as new elements are drawn in the various federated base models, the graphics is automatically displayed in the "Collector" file. In some cases, this behavior is desirable as it allows new and information to be automatically displayed on any plan sheets that reference one or more of the federated base models. Other users may find this behavior frustrating as the level for any new graphics must be manually turned off for each reference attachment. The default variable definition can be overwritten when a reference file is attached by setting the New Level Display parameter to a value of Never, as shown below.

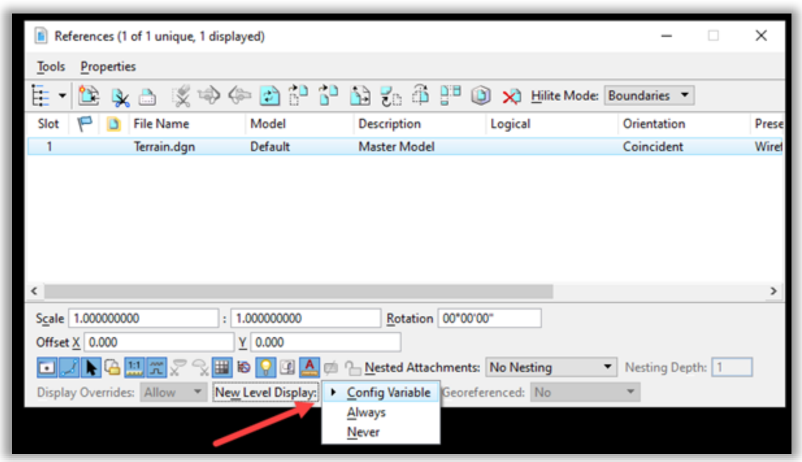


Figure 70 - Reference Level Display Setting

ORD creates a 3D model from your 2D design, storing the civil data in the DGN files. These DGN files will be required for projects that typically include earthwork.

Examples of 3D project types include:

- New Roadways
- Widening
- Bridge replacements
- Interchange reconstruction
- Roundabouts
- Turn lanes
- Passing lanes

3D model files may not be required for projects that do not propose earthwork/grading operations.

Examples of such project types include:

- Lighting
- Bridge Rehabilitation without approach grading and paving
- Resurfacing without significant grading operations
- Landscaping
- Signal upgrades
- Signing/striping upgrades
- Noise walls

Drawing Models

In the CONNECT Edition we will be creating a model type called the Drawing Model. This is not a new concept to, but it has not been used in previous CTDOT workflows.

The Drawing model is an intermediate stage between the 3D Design and the printable Sheet Model. They will be used it in the Drawing Composition workflow to centralize annotations that need to be shared across multiple sheets. Users are locked from being able to place Geometry or Modeling Features in a Drawing Model. The following message will appear.

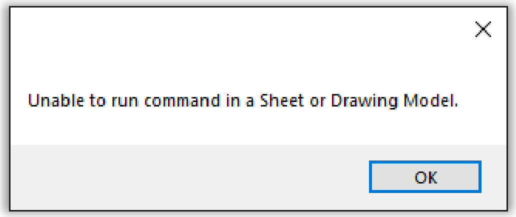


Figure 71 – Error Message

Drawing Model Rules:

- References the Base Model and it cuts up using a Named boundary
- Contain Annotation (Call outs) and Dimensions
- Are geospatial
- Automatically gets created when using the Place Named Boundary tools.

The creation of Drawing Models can be automated by utilizing the Place Named Boundary Tools. More information on creating Drawing Models can be found in Volume 13.

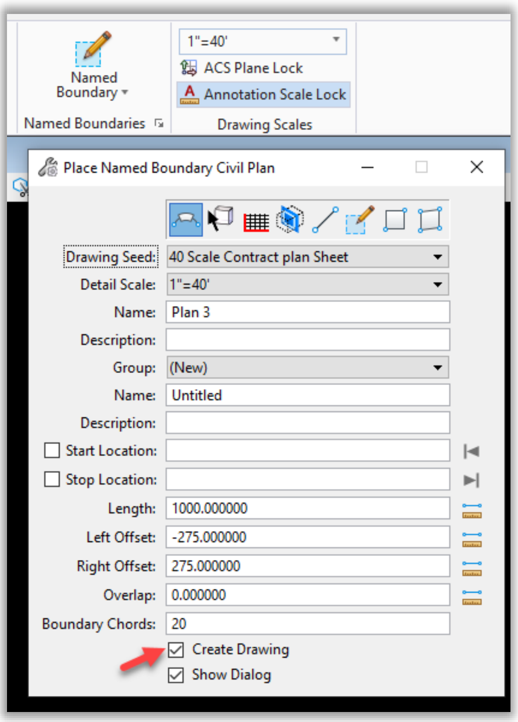


Figure 72 - Sheet Creation Tools

Sheet Models

Creating a Sheet model for printing as a drawing, typically involves working with the following components:

- Referencing Base and Drawing models.
- Saved views — Used to set up views required for the drawing.
- Border Cell Placement — Contains the border graphics and title block for plotted output.

There is no hard and fast rule about how to create Sheet models, or how to display your drawing information from your design or drawing models. Commonly, either of two methods are used, one that scales the border to enclose the design, or the other that scales the design to fit the border.

With both methods, for 3D work in particular, it is a good idea to have separate design models (base models), drawing models and sheet models. This lets you keep the purely drawing information, such as text and dimensioning, separate from the design information. Doing this reduces the likelihood of conflicts where others, for example, wish to reference the same design model for use in a drawing of a different scale.

Creating Sheet Models automates the creation of drawing sheets for the printing of your designs. This process is similar to how the manual draftsperson works. Where it differs, however, is that instead of redrawing the model's geometry for each view, like the manual system requires, you simply attach views of the design model as references.

In other words, you attach as references views of your design geometry for each plan, elevation, section, and so on. The power of this system is that any changes made to the design model is then reflected immediately in each affected view of the drawings.

The creation of Sheet Models can be automated by utilizing the Place Named Boundary Tools. More information on creating Sheet models can be found in Volume 13.

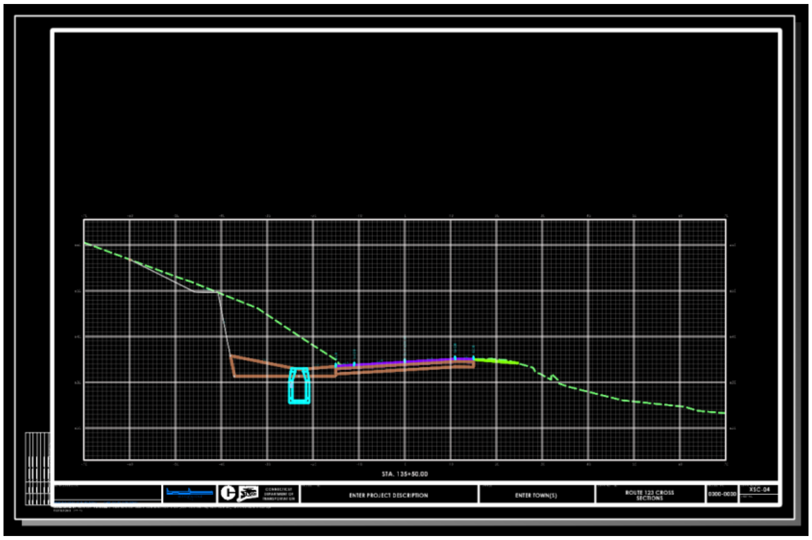


Figure 73 - Sheet Model DGN with Border

3.3 The Interface

3.3.1 The Ribbon

The main section of the interface is the Ribbon toolbar located at the top of the screen. The Ribbon toolbar is your primary access to tools.

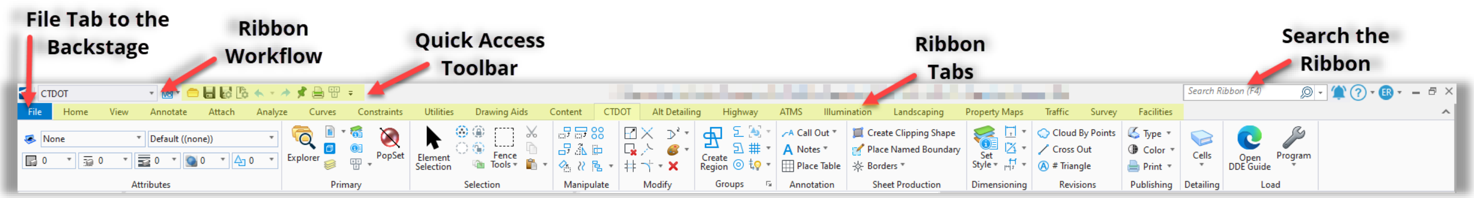


Figure 74 - OpenX Ribbon

- The Ribbon functions in a similar manner to the Ribbon found in MicroSoft Office Products. Tools can be accessed by a variety of Ribbons and are arranged by Workflows, which are selected from a pull-down in the upper left corner of the software.
- The Ribbon tools displayed are dependent on the Workflow selected. For example selecting the OpenRoads Modeling Workflow will present a new set of tools.

3.3.2 The Search box

- Key in ***Place Line*** in the Search field. Notice the results of the ribbon search are displayed in a dialog below the Search Ribbon field.
- Hover over Place Line. The search results expand, showing where the tool is located in the ribbons:
    - If you click on one of these “Breadcrumbs”, the Ribbon will update to the appropriate Workflow and Tab.
    - If you click on the tool, it opens the tool without changing the Ribbon.

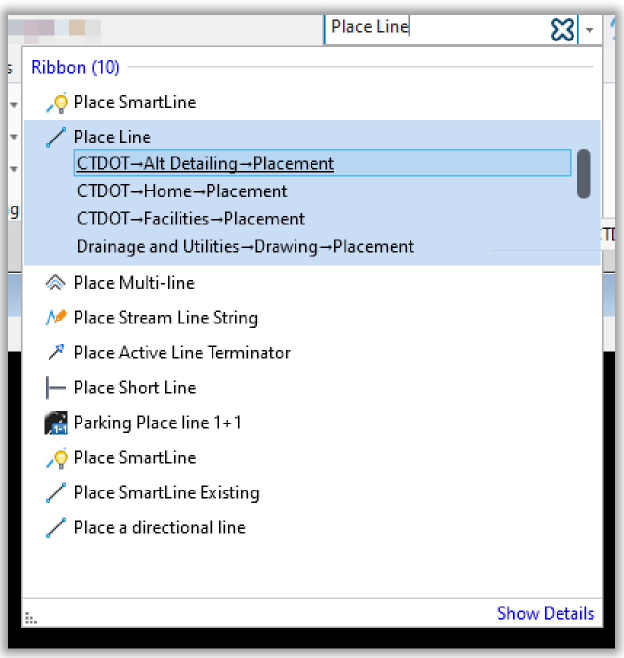


Figure 75 - Search Tools

3.3.3 The Quick Access toolbar

Figure 76 – Quick Access Toolbar

To the right of the Workflow list in the title bar, the Quick Access Toolbar contains common tools (Left to Right):

- Old toolboxes for a MicroStation V8i look and feel – CTDOT does not suggest to use this.
- Open is used to open a file.
- Save is used to save the file. Design File changes are automatically written to the file on the hard drive or server after every action. You generally do not need to manually Save or set a periodic Autosave. This is typically only used when working with other file formats such as: .dwg, .dxf, etc.
- Save Settings is used to save "non-data" settings, such as view window positions, level display status, and other interface customizations (like column order in lists).
- Compress Options are used to adjust settings for compressing a file. Compressing a DGN file reduces its size and clears the undo buffer.
- Undo will undo a previous action or command.
- Redo will redo a previous action or command.
- Set Mark allows you to set a milestone to Undo to. When you're about to try something "experimental", set a mark, and when you're through "experimenting" you can go to the Quick Access Toolbar and click Undo to Mark.
- Print is used to print the file.
- Key-in opens a dialog that allows for user input to browse, construct, and enter key-ins.
- Customize Quick Access ToolBar is used to add or remove tools from the Quick Access Toolbar.

3.3.4 Workflows

OpenX tools can be accessed a variety of ways, including the familiar Ribbon interface. Ribbons are arranged by Workflows, which are selected from a pull-down in the upper left corner of the software. Each product will have its own list of workflows.

Example - OpenRoads Designer comes with these Workflows.

- OpenRoads Modeling
- OpenRoads Plans Production
- Survey
- Geotechnical
- Reality Modeling
- Drawing
- Drainage and Utilities

The **CTDOT** workflow has been added to all products, it is a custom workflow supplied with the CTDOT CONNECT DDE.

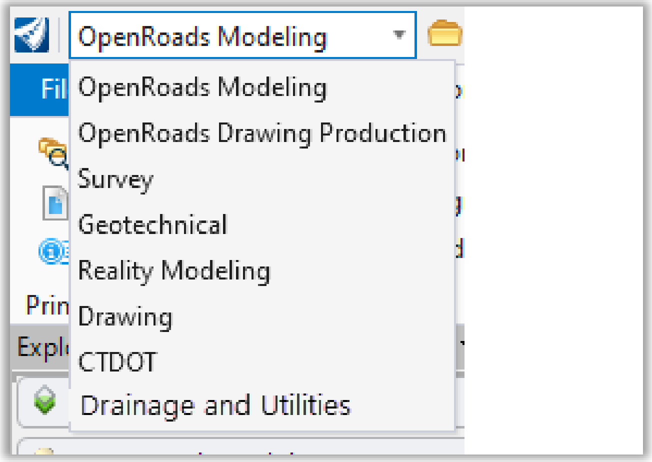


Figure 77 – CTDOT Workflow

3.3.5 Setting Up the Interface

1. On the Ribbon **Home** Tab > **Primary** grouping select the **Explorer** button. The dialog may be docked (collapsed) on the side of the interface. It can be dragged, docked, undocked, pinned and unpinned.

2. To dock the dialog, drag it by the title bar to a "docking glyph". Pin or un-pin as desired. The Explorer dialog is used extensively, you want it readily available. Experiment to find the balance between ease of access and taking up screen space.

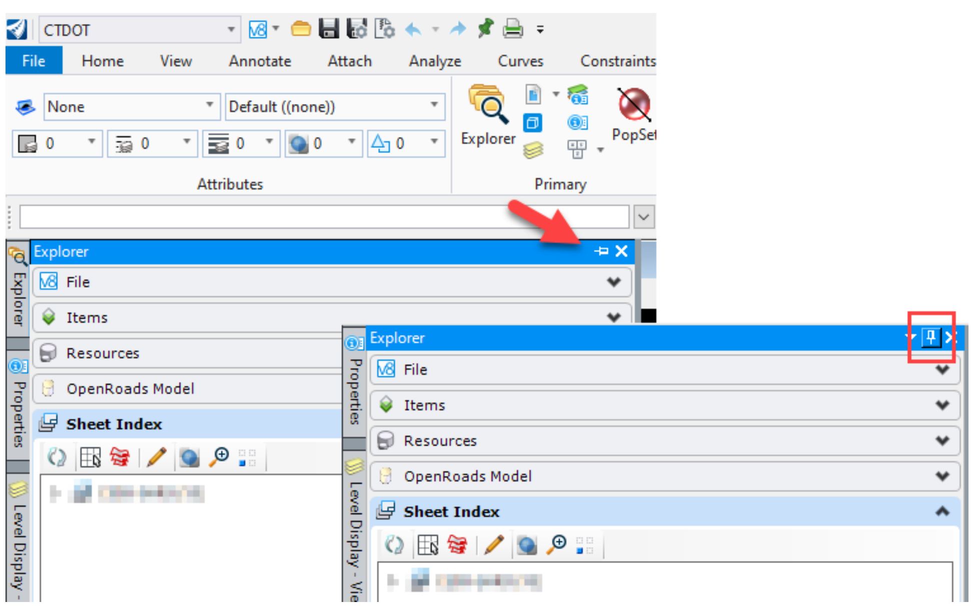


Figure 78 - Pin Menu

3. If you do not see everything you need to select **Back Stage File > Settings > User > Explorer Settings** and adjust as needed.

4. Once you find a setting that you like, you can click the Save **Settings command**.

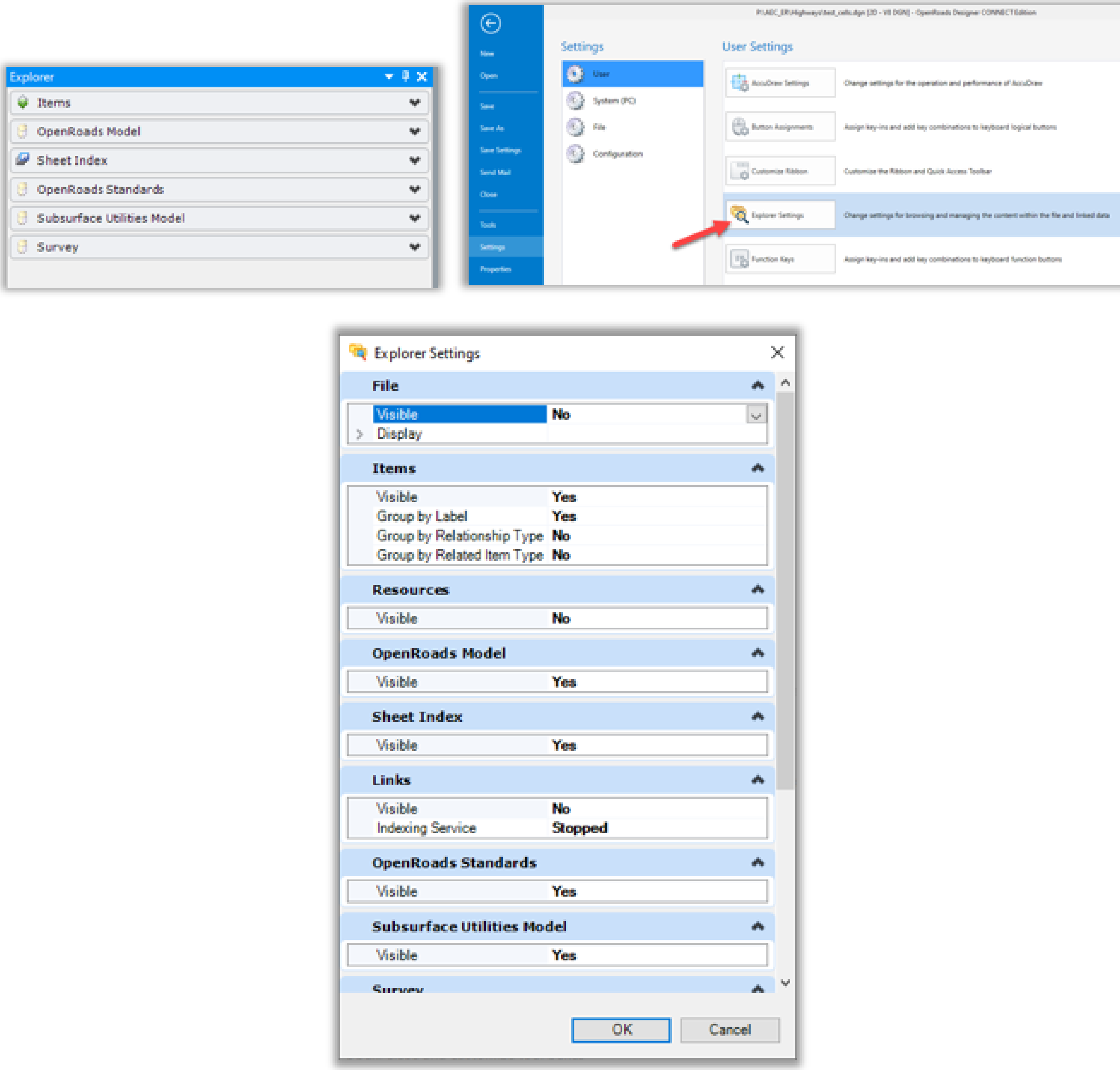


Figure 79 - Explorer Menu Options

5. On the Ribbon **Home** Tab > **Primary** grouping select the **Properties** button. To turn on the Properties Dialog box select the **Properties** button on the ribbon. This dialog may be docked (collapsed) on the side of the interface. It can be dragged, docked, undocked, pinned and unpinned.

6. To dock the dialog, drag it by the title bar to a “docking glyph”. The Properties dialog is used extensively, you want it readily available. Experiment to find the balance between ease of access and taking up screen space.

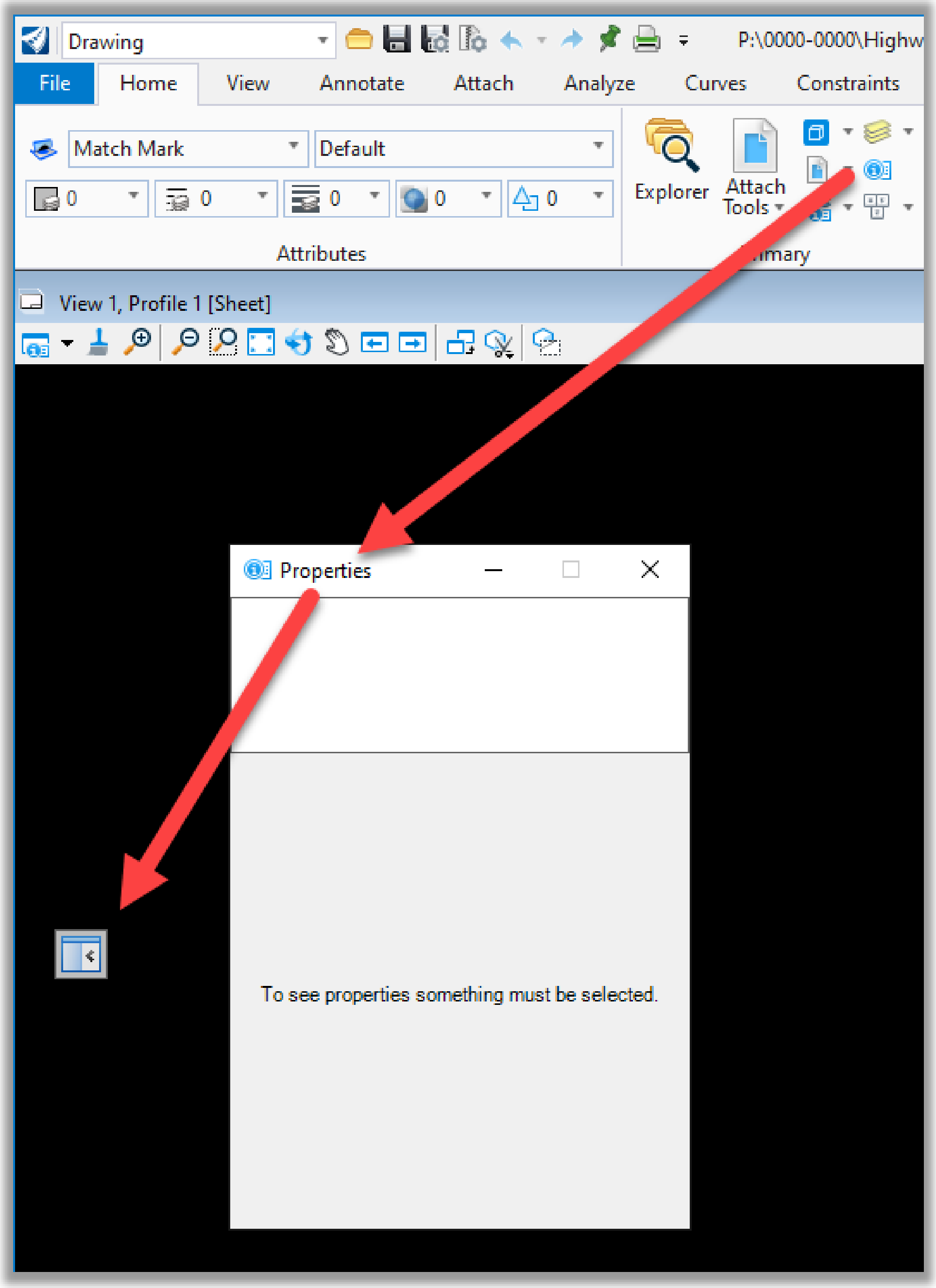


Figure 80 - Properties dialog box

7. Once you find a setting that you like, you can click the **Save Settings**.

3.3.6 Using PopSet

This section covers the various uses and settings of PopSet. When activated, any floating dialog box can be moved to your cursor's location with the keyboard shortcut **CTRL+Space**. This is especially useful when working with multiple displays, where dialog boxes can become cumbersome. PopSet can be found under the CTDOT Workflow in the CTDOT Tab.

1. To begin, ensure PopSet is **disabled** (red dot with a slash through it) as pictured below

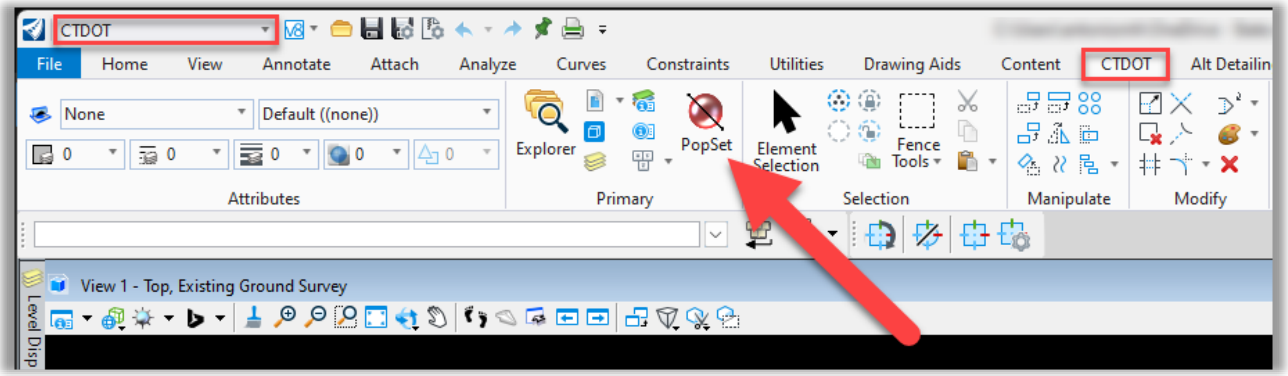


Figure 81 - PopSet ribbon location

2. Key in ***PopSet Settings*** into the **Search Ribbon** field at the top-right of the program. Ensure none of the options here are checked, then close the window.

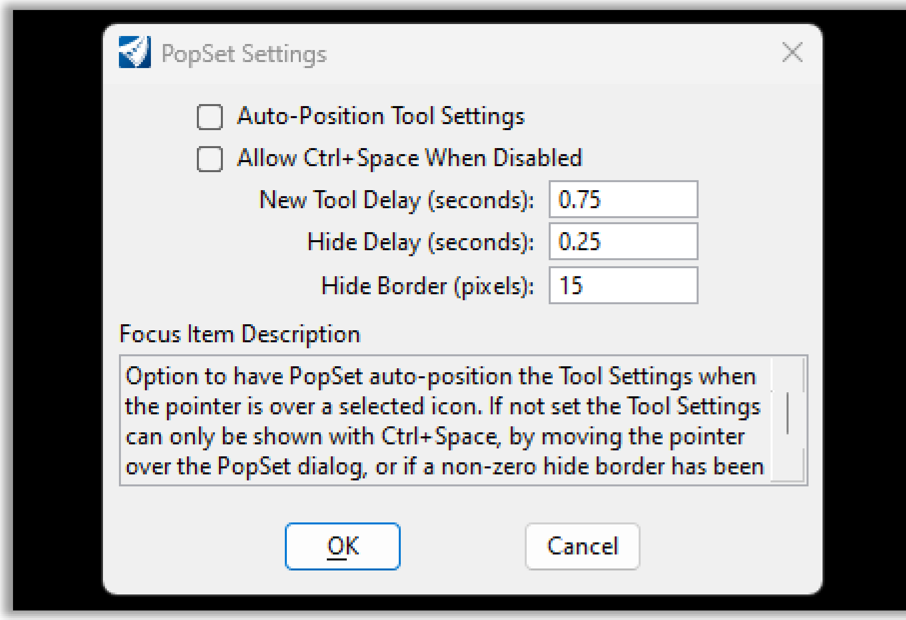


Figure 82 - PopSet Settings

PopSet is completely disabled in this configuration, so tool settings dialog boxes will function as normal: they will appear when a tool is selected and remain on the screen as long as you do not switch tools. Inputting **CTRL+Space** on your keyboard will not have any effect on the program in this state.

3. Click on **PopSet** from the Ribbon, enabling it. The icon will change to reflect this Green with no slash though it.

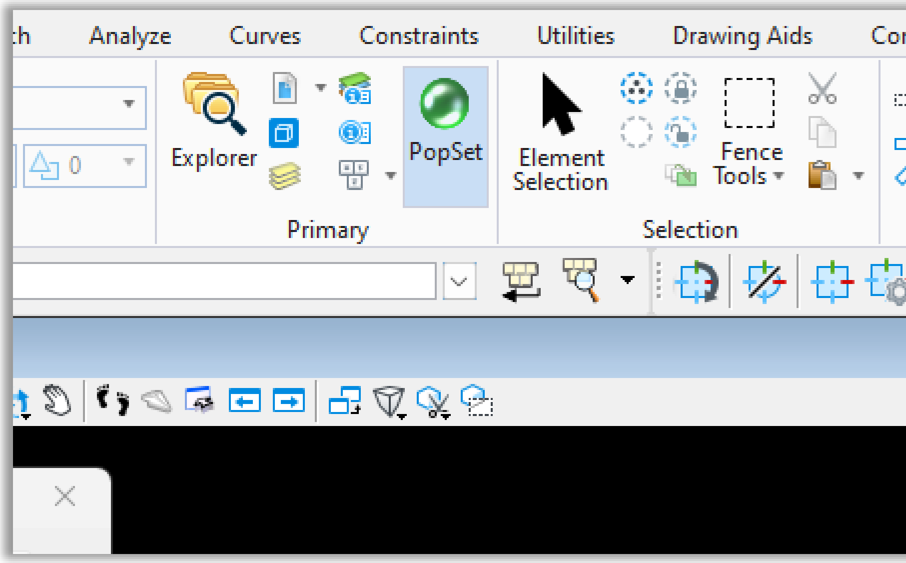


Figure 83 - PopSet Enabled

With PopSet enabled this way, you can now press **CTRL+Space** to bring the active tool settings dialog box to your cursor's location.

4. Returning to PopSet Settings, check the second box labeled ***Allow CTRL+Space When Disabled*** and click **OK**.

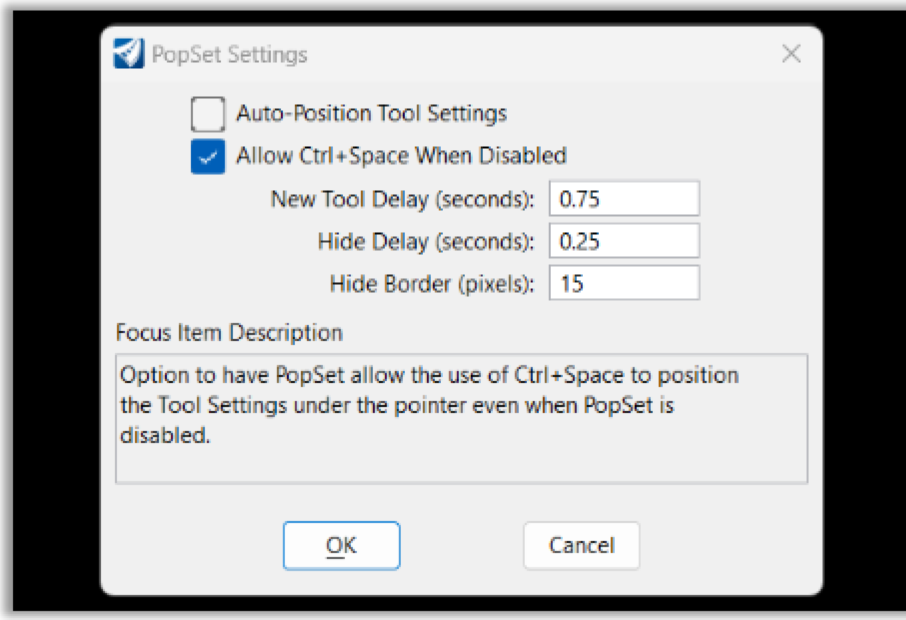


Figure 84 - PopSet Settings

5. Return to the ribbon and toggle PopSet to **off.**

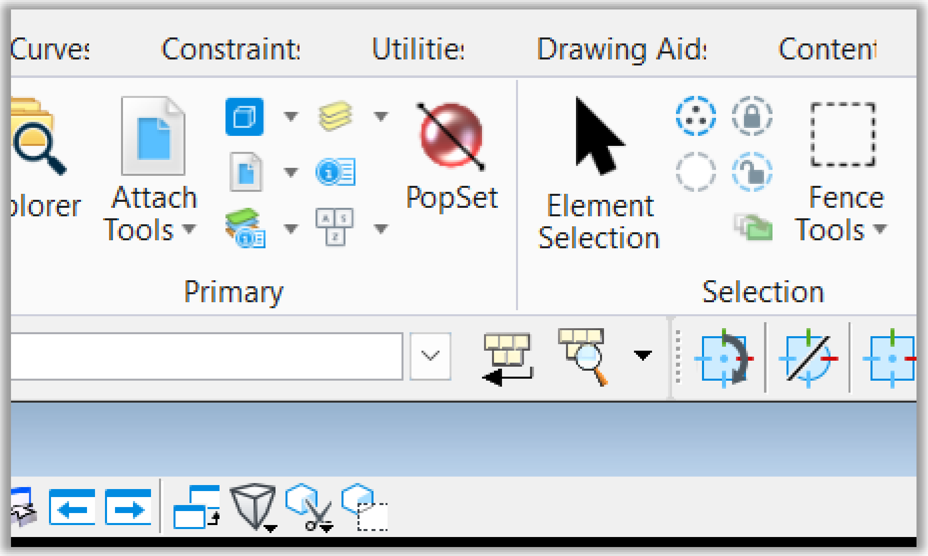


Figure 85 - PopSet Disabled

Note: *CTRL+Space will continue to work even though PopSet is not active. While "Allow CTRL+Space When Disabled" is checked in PopSet Settings, Bentley programs will function as though PopSet is permanently enabled, regardless of its status.*

6. Return to PopSet Settings, unchecking the second box and checking the first box labeled ***Auto-Position Tool Settings***.

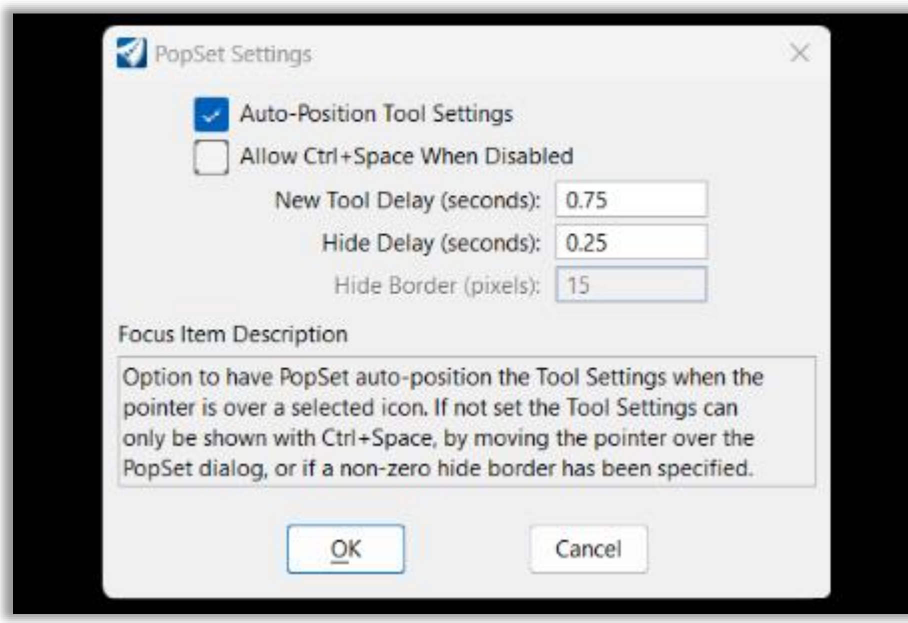


Figure 86 - PopSet Settings

Tool settings dialog boxes will now fade away when your cursor navigates away from them, potentially saving screen real estate. **CTRL+Space** can still be used to temporarily call up the dialog box at your cursor's location, but it will fade again once the cursor hovers off.

It is recommended to **enable Allow CTRL+Space When Disabled** and to leave **Auto-Position Tool Settings unchecked**. This configuration provides the added functionality of always finding your dialog box regardless of PopSet status, while avoiding accidental loss of a tool dialog when moving one's cursor.

3.3.7 Help Contents

1. Review the BackStage and Help Contents.
   - Open the **BackStage** by selecting the **File** tab. Notice the familiar options on this screen such New, Open, Save, Save Settings, Settings, Help, etc. While some of these "File" tools are available from the Quick Access Toolbar, the bulk of the File capabilities are here.
2. In the BackStage, select **Help.** These are the available Help Resources.

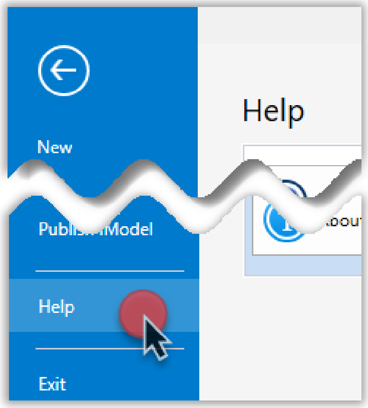
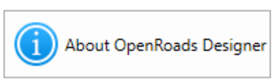


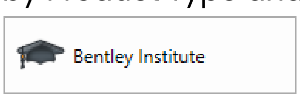
Figure 87 - Help Center

- If you need to know what version of software you are running, click on the **About** button.

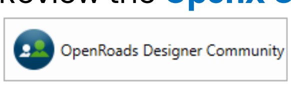


- Select and review **Help Contents**. Help Contents is a link to live online Help

- Select **Bentley Institute**. Your browser will open to the Bentley LEARN page. We encourage you to visit this site for additional training content. Training can be found by Product Type and is organized into Learning Paths.



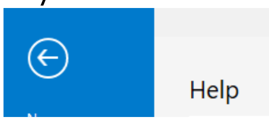
- Review the **OpenX Communities**.



  - This will take you to the main page where you can see links to training and support topics.
  - Bentley Communities provide product and discipline-based wiki's, forums, and interactive opportunities for solutions. User questions are posted and answered in

a short time frame. Bentley Colleagues and users provide a broad range of solutions to common questions. Videos and white papers are prevalent. Because material can be posted much more quickly than through the LEARNserver, it is a great resource for new and experienced users.

- Click the **arrow in the upper left corner** to return to the main interface. Tip: The <ESC> key can be used to navigate back to the main interface as well.



3.3.8 Design File Settings

Review Working Units.

1. Access the BackStage by clicking on the **File** tab.
2. Select **Settings > File > Design File Settings**.
3. Select the ***Working Units*** category. This will display the Linear Units and the Advanced Settings. These values maybe different that what appear in the example images for different OpenX product.
    - Observe that Format is set as MU. This displays the Master Unit value which is set to US Survey Feet with an accuracy readout of 3 decimal places.
    - The Labels shown do not affect measurements, but may be used with coordinate readout, labeling and dimensioning.
    - The Advanced Settings define the real world units of resolution. In this case US Survey Foot.

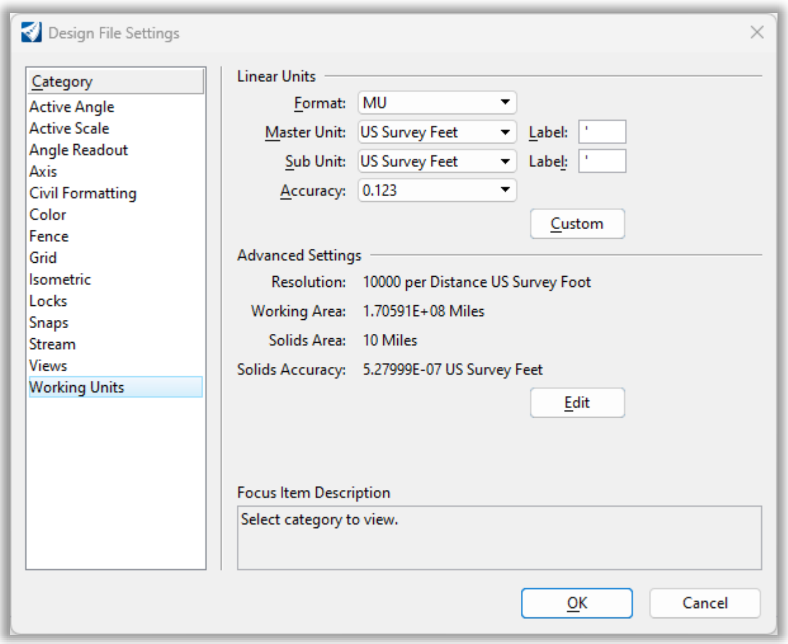


Figure 88 - Design File Settings

3.3.9 User Settings - Button Assignments

User settings allow you to control the operation of the software without affecting other team members settings. One of the more common User Settings adjusted are the Button Assignments. In this section, you will learn how to change the Button Assignments.

Sometimes it's necessary to change the functionality of the mouse buttons. The default button mappings were designed assuming you have a two button mouse. Some users have a three button mouse so a common change users like to make is to map the middle button to function as the tentative snap button (we will talk about snaps later in the course).

To change tentative to the middle button do the following:

1. In the BackStage navigate to **Settings > User** and select **Button Assignments**.

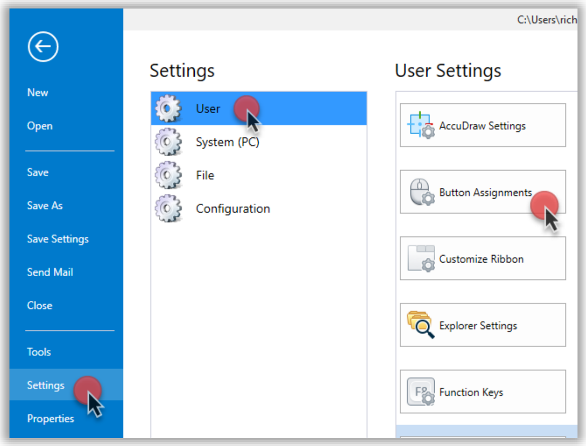


Figure 89 - Button Assignments

2. Select Remap Buttons.

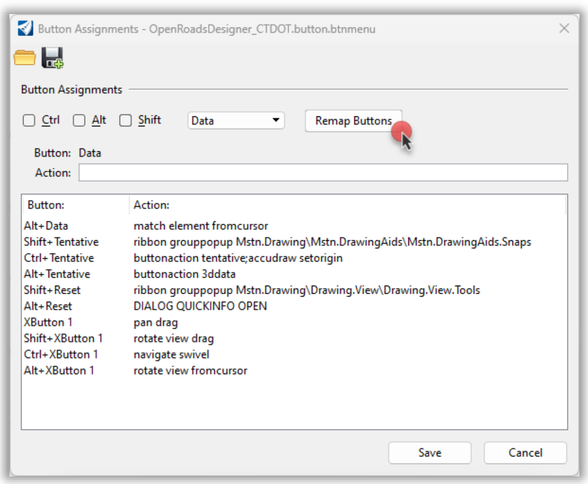


Figure 90 - Remap Buttons

3. In the Button Mappings dialog, select ***Tentative*** and then move your cursor to ***the Button Definition Area***.

4. Press the **middle mouse button**. Now the middle mouse button will be used for Tentative functions such as snapping to elements.

5. Click **OK** to close the Button Mappings dialog.

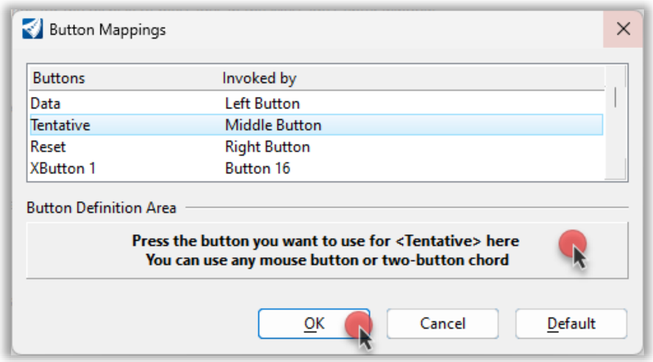


Figure 91 - Button Mappings

6. Click **Save** to save the changes. ***Note:*** *If you need to wipe out your User Preferences this will need to be reset.*

7. Click the arrow in the upper left corner to return to the main interface.

Section 4 – Maintaining the DDE and UPF

4.1 Managing User Preferences

4.1.1 Viewing User Preferences

What are User Preference Files?

CONNECT Applications store user settings in several preference files. These files contain information such as user settings in the Preferences dialog box, your button assignments, the location of opened toolboxes, key-in history and much more.

1. On the bottom of your (Windows) screen select the **Folder** Icon.

2. On the View tab select **Options.**

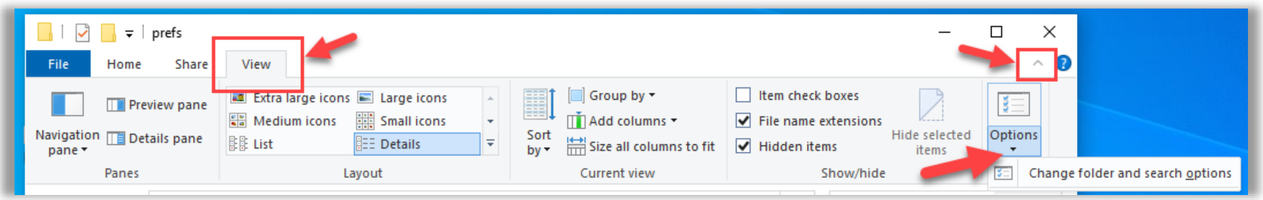


Figure 92 - File Explorer View Options

3. On the folder Options dialog box select the **View** Tab.
   Show Hidden files, folders and drives should be toggled on.
   Hide extensions for known type should be off.

4. Click **Apply to all Folders**, **OK** and **Cancel**.

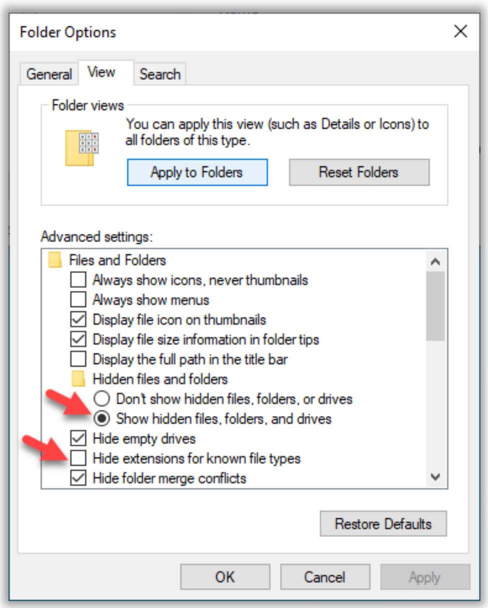


Figure 93 - File Explorer Folder Options

5. Browse to one of the following locations and explore the files and folders. *Please note: Most CTDOT Computers will point to the **C Drive**, but older desktops may still point to the **D Drive** location. Consultants should search for their installed Windows user location as this could vary from how internal CTDOT Computers are configured.*

   C:\Users\YourName\AppData\Local\Bentley\Open…

   Warning:

   - *When OpenRoads Designer, OpenBridge Modeler or OpenBuildings Designer Application is upgraded users will need to wipe out all their old User Preference folders and files. If users try to use older files they will most definitely run into issues.*
   - *User Preference folders and files occasionally become corrupt. This can happen after a crash or for no apparent reason dialog boxes are missing, example Tool Settings Dialog box. They appear open under the Window List but are not visible on the screen. When this happens, it is necessary to delete all your user preferences files and folders.*

4.1.2 Deleting User Preferences

Say OpenRoads, OpenBridge, OpenRail, or OpenBuilding is behaving strangely. For example, Toolboxes aren't where you left them, views won't tile, cannot access certain tools, getting error messages, the application is locking up… These all could be indications that your User Preference Files are corrupt.

Why do these files tend to get corrupted?

- The applications write to these files every time you open or move a tool window, or when you change any other setting that is kept in the UPF or programed though an XML. These files are dynamic and will grow in size as your preferences change; in some instances when the files become too large, they may become unstable or even corrupt.
- Corruption may occur from running two or more copies of the same application at once. Each copy is writing to the same local user preference folders. They can get out of sync with each other and end up corrupting the files.
- If you were prematurely booted out and did not get the opportunity to exit properly.

How can I diagnose the problem?

The user preference files are some of the most important files the applications depend on to run correctly; that is why these files are always a suspect when one of the applications fails to work as expected or fails unexplainably. The list of problems possibly caused by a corrupted user preference files are too extensive to list, but fortunately these problems are fairly easy to diagnose and easy to fix.

- If a specific problem is experienced simultaneously by several different people, it is **MOST LIKELY NOT** caused by your personal user preference files (each login ID has a separate local user preference storage area). If anyone's user preference files are corrupt and causing a problem, it is not likely this exact problem will be experienced simultaneously by other users.
- If the problem is experienced in only one particular DGN file but not in other files, it is **MOST LIKELY NOT** due to bad user preference files. The user preference files control the behavior of application regardless of the file being accessed; therefore, problems evident in only a single file usually indicate a problem with that particular DGN file. If the same problem occurs in multiple DGN files opened by a single user, this is a likely indication of user preference file corruption.
- If the problem is experienced by the same person on more than one computer, it is **MOST LIKELY NOT** caused by corrupted user preference files. User preference files reside on the local hard drive and will not be carried over to another machine.
- If the problem is experienced by only one person, on a single computer, regardless of the file being accessed, then this is **MOST LIKEY** caused by a corrupt user preference file.

How can I fix the problem?

It is important to know that a User Preference Files (UPFs) cannot be fixed; if they get corrupt you will need to wipe them out and create new ones from the files provided with the software installation. The UPF problem can be fixed but the UPFs themselves cannot be recovered. It is a good idea to keep a log of settings you regularly change when you get new UPFs.

To create a new User Preference Files, follow the steps below:

1. Exit OpenRoads, OpenBridge or OpenBuilding - The User Preference Files are accessed each time the application is started so to remove them you will need to be out of each program.
2. Browse to the location of the application you are having issues with. *Please note: Most CTDOT Computers will point to the **C Drive**, but older desktops may still point to the **D Drive** location. Consultants should search for their installed Windows user location as this could vary from how internal CTDOT Computers are configured.*

   C:\Users\YourName\AppData\Local\Bentley\Open...
3. Delete all of the files and folders under the specific program folder.
4. Restart the application - All of these needed files will automatically get recreated when you open the program.

5. If the problem is gone, the old user preference files were at fault. If the problem is not gone, it was not caused by the old User Preference Files. Fill out the AEC Support Form and remember to mention that you have already tried recreating the User Preference Files and it did not help.

4.2 Updating from DGN Libraries

DGN Libraries are sometimes upgraded when new versions of the CT DDE are released.

- Styles, Element Templates, Item Types, and Parametric Cells
- Item Type Pick lists
- Feature Definitions (for OpenRoads and OpenBridge only)

When you use a Style, Element Template, Item Type, or Parametric Cell from a DGN library, it is copied to your open DGN file and is given the same name. The following indicators allows you to compare the local resource to the DGN library resource with the same name, to see if the contents of the DGN library have changed, to see if the local resource is out of sync with the DGN library resource, and to selectively apply updates to the local resource.

The following are indicators of the sync status.

 local style, matches library

 local style, different from library

 local style

 These resources can be updated using the **Update from Library** icon located in their corresponding dialog box.

 **Update from Library** uses this icon for Parametric Cells.

4.2.1 Styles

This exercise uses Text Styles to practice Updating from Library, these same procedures can be used throughout the applications for example Dimension Styles, Levels and Element Templates.

1. In the DGN file's search field type in ***Text Styles*** and select the results.
2. On the Text Styles dialog box right click on the **CTDOT_080_Center** and select **Save**. On the **General** tab click on **Bold** and click on the **Save** Icon, notice the indicator update to ***local style, different from library***.

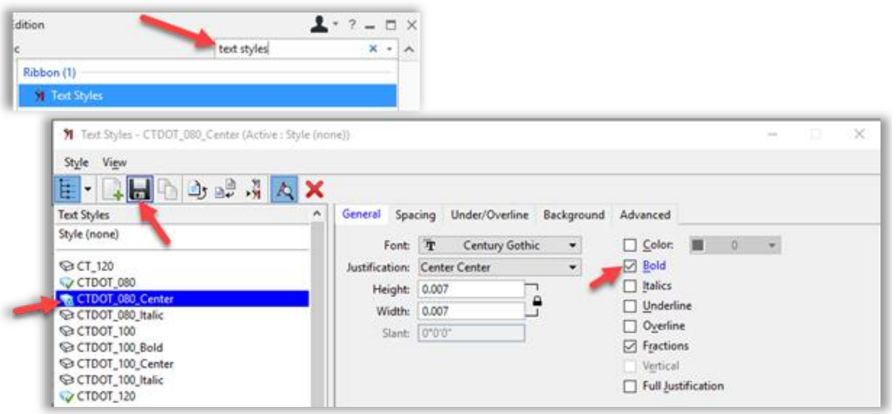


Figure 94 - Modify Text Styles

3. Select the **Update from Library icon** and notice the indicator go back to ***local style, matches library***.

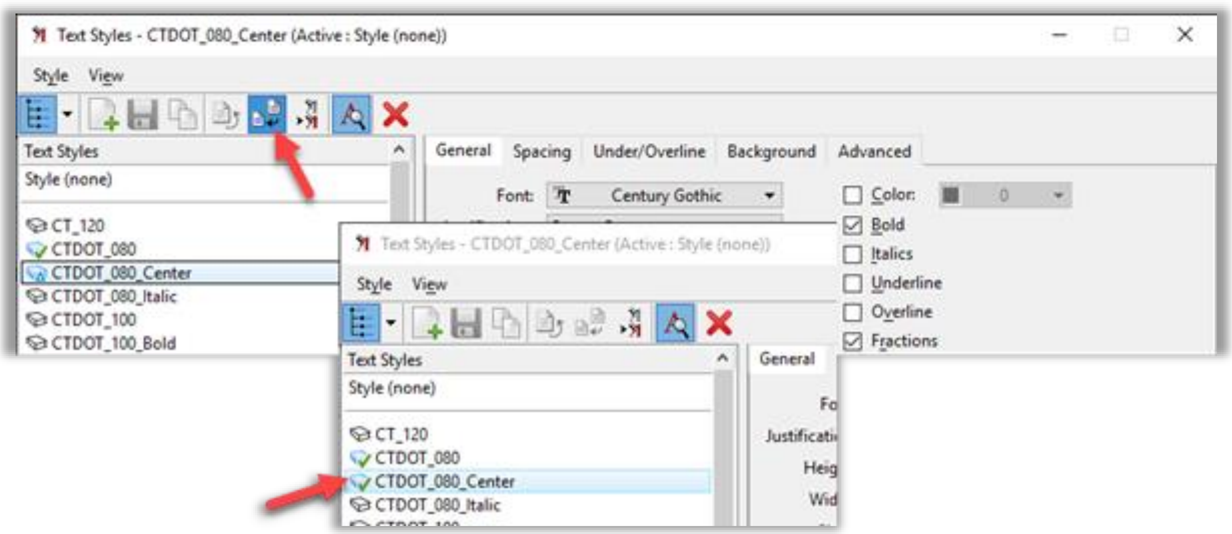


Figure 95 - Update Text Styles

4.2.2 Item Types

1. In the DGN file's search field type in ***Item Types*** and select the results.
2. In the Item Types dialog box select ***Libraries > Update From Library***

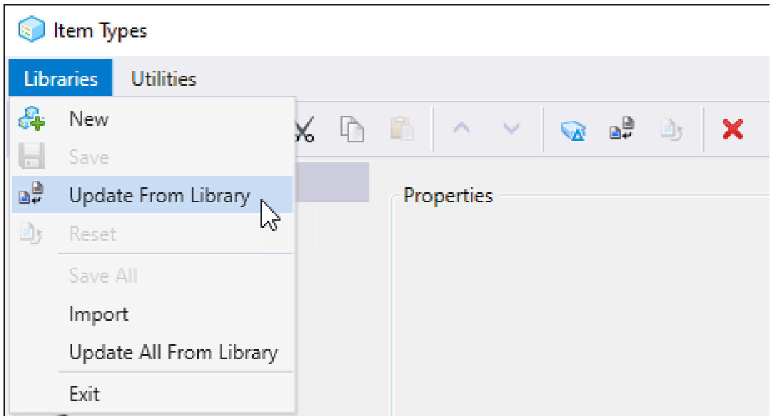


Figure - 96

Item Type Pick lists can also get out of sync. The status icon indicators are the same as shown above but there is no Update from Library Icon/tool available at this time (this tool will be available in a future release of the software). Updates can be made with this workaround:

3. In the DGN file's search field type in ***Pick List*** and select the results.
4. In the Pick List Manager right click and select **Delete**, then right click again and select **Activate**.

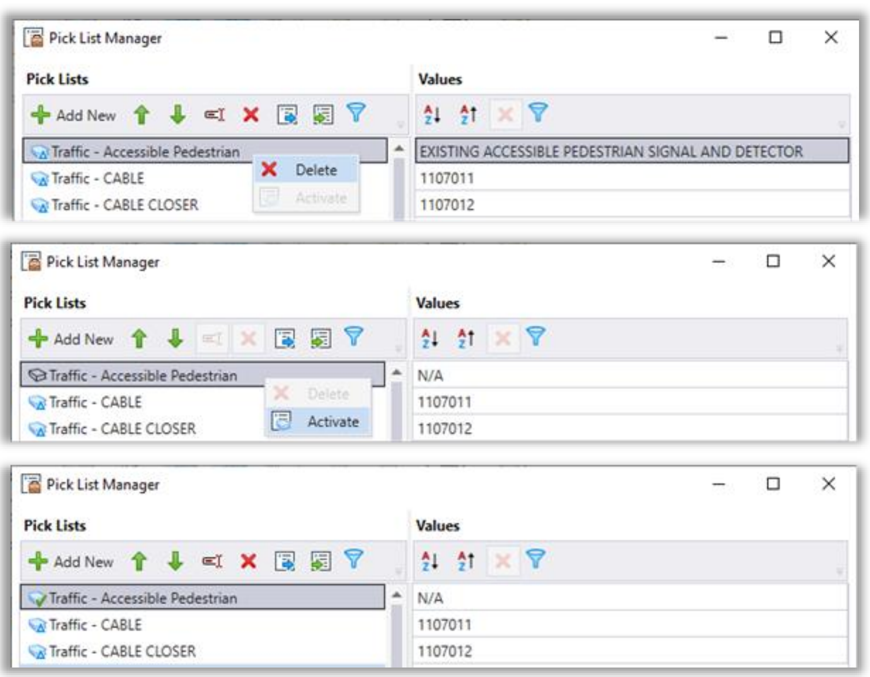


Figure 97 - Update Picklists

4.2.3 Feature Definitions

This section relates to options in OpenRoads, OpenRail and OpenBridge. There are two methods (Automatic and Manual) described in this section that you can use to update Feature Definitions.

4.2.3.1 Automatic All Push Method

This will also update Styles, Element Templates, and Item Types

1. In the DGN file's search field type in ***Explorer Settings*** and select the results.
2. In the Explorer Setting dialog box ensure that **OpenRoads Standards** or **OpenBridge Standards** is marked as ***Visible***.

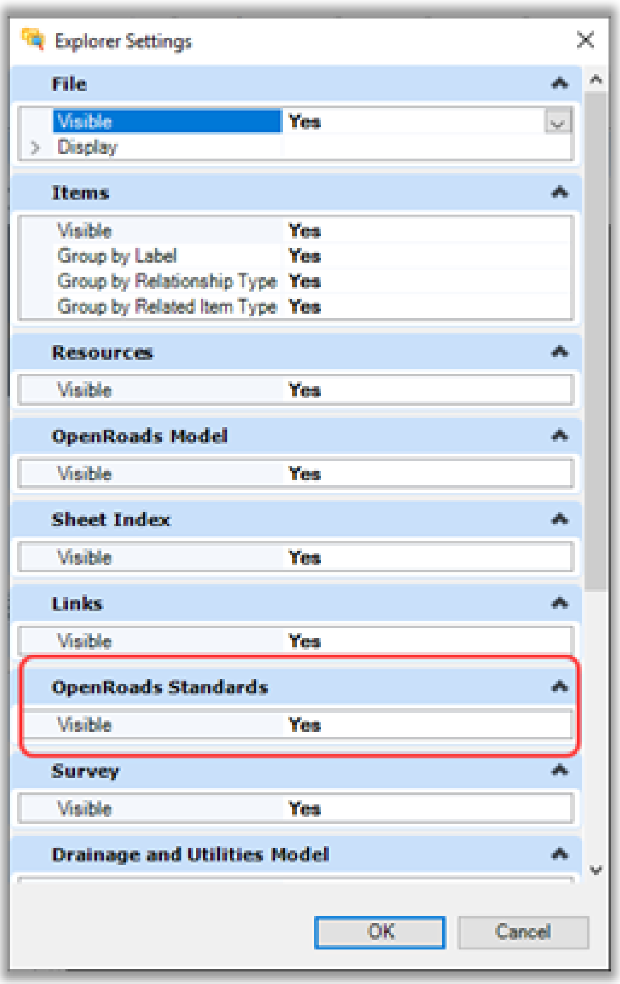


Figure 98 - Update Explorer Settings

3. In the DGN **Explorer** dialog box click on the **OpenRoads Standards** or **OpenBridge Standards** section. Under Standards right click on the file (not the Libraries) and select **Update From dgnlib**.

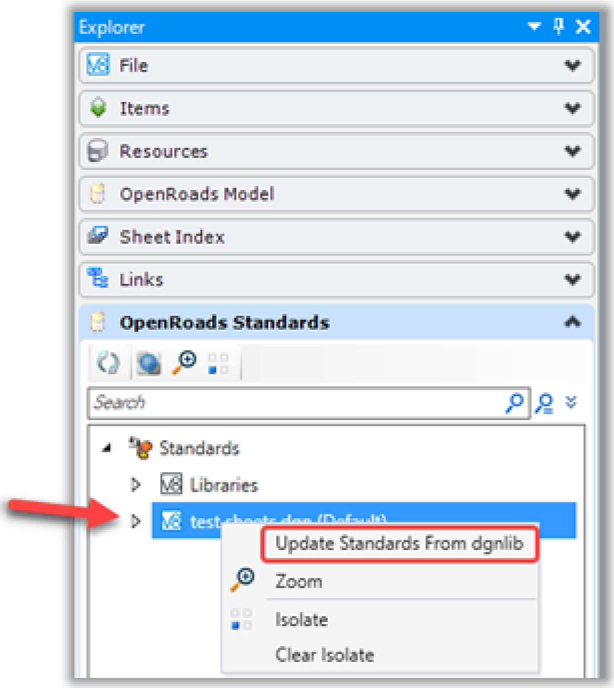


Figure 99 – Update Feature DGNLIB

4.2.3.2 Manual Method

This will only update the Feature Definition

View this video in Bentley Communities for a demonstration on the relationship between feature definitions in a DGNLIB and in the active DGN. It also provides examples of how to update feature definitions in the active file in the event the DGNLIB is revised.

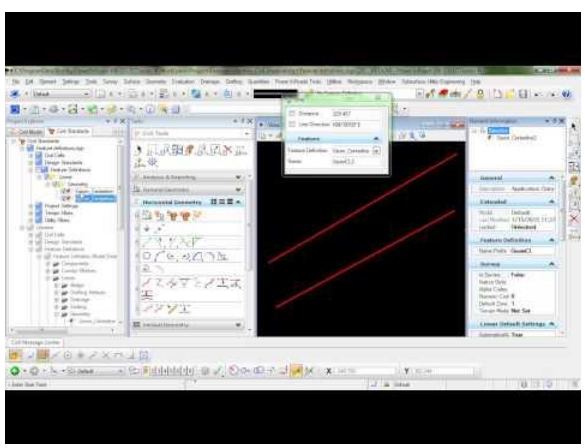


Figure 100 Video: Updating Feature Definitions from a Revised DGNLIB

4.3 Updating Bridge Templates

This Module is for OpenBridge Modeler users and should be completed as needed when new OpenBridge Designer/Modeler versions are released.
Bentley continually adds Bridge Templates with each version release of OpenBridge Designer/Modeler.CTDOT has the Bridge Templates stored in the Project (WorkSet location). This will allow Read\Write access to the Designers. It will be up to the designer to check their Project's Standards folder to update these files. Keep in mind designers may have modified some of these files so a careful review should be followed when deciding what files to update.

Files will be copied from
....CT_Configuration|Organization-Civil|_CT_Bridge Standards - Imperial|OpenBridge Modeler|Bridge Templates
to:
....0000-0000 - Design|Standards|Bridge Templates

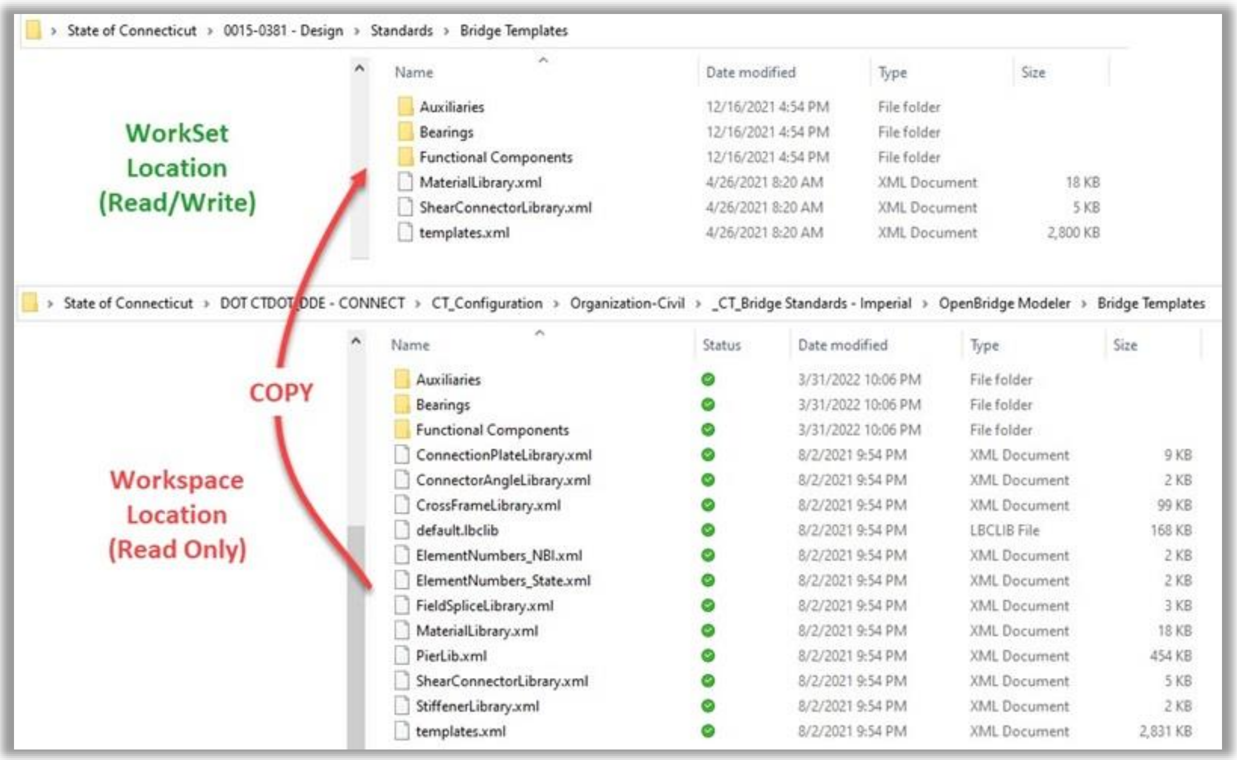


Figure 101 - Update Bridge Templates

4.4 Updating the Contract Sheet Title Block

The Contract Border Cell Title Block placed in Sheet Models are linked to the WorkSet Property Fields. This workflow will update WorkSet Property Fields that was established when the WorkSet was originally created. The information is stored the WorkSet's **1234_1234.DGNWS** file.

1. Open the CAD application.
   - **Consultants** - Start the software, via an appropriate CTDOT DDE icon.
   - **CTDOT employees** - On your desktop double click on the **Accounting Icon**.
2. On the Splash Screen before opening a DGN file select the WorkSet to update. Next select **Properties > Advanced Properties**.
3. In the **Edit WorkSet** dialog box edit the following fields as necessary, this is what will appear in the Contract Sheet Title Block so use all **CAPITALS**:
   - CTDOT Project Description
   - CTDOT Project Number
   - CTDOT Town(s)
4. Open the DGN file and check the sheet models. If the title block does not display the updated information use the tool **Update All Fields,** and the text will update to match. This can be done by typing the command in the upper right **Search** field or by selecting the **More** pull down on the **CTDOT** workflow, **Annotate** tab, **Text** section.

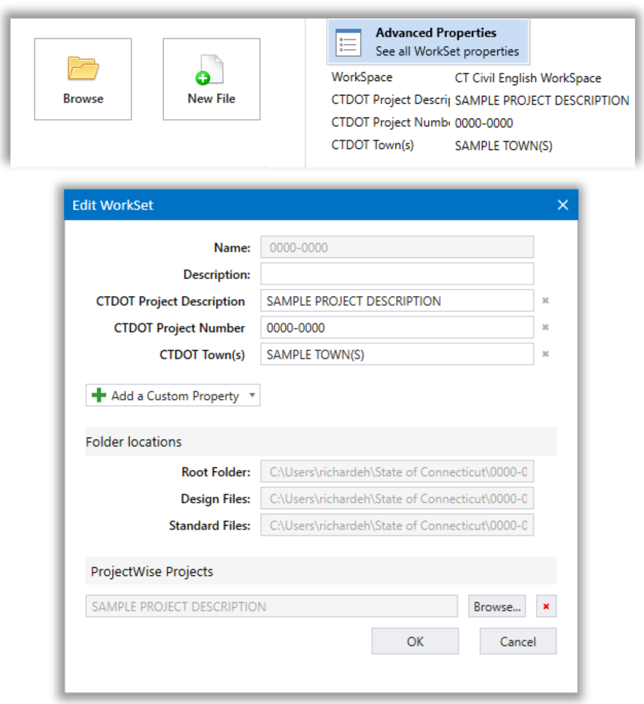


Figure 102 - CTDOT DDE WorkSet Properties

4.5 Updating the Border Cell

The Contract Border Cell has been updated with a new layout and new logos. There are two process that can be used to update the Sheet Models:

- Manual
- Batch

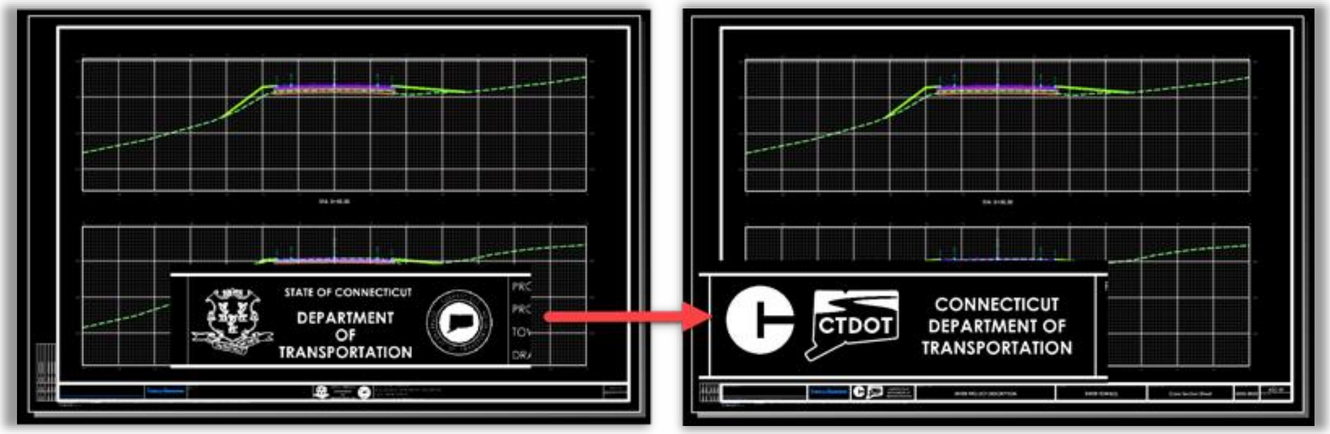


Figure 103 - Update Border Cell

Open the Design file that needs to be updated, before starting either process make sure the Annotation Scale Lock is off in all models.

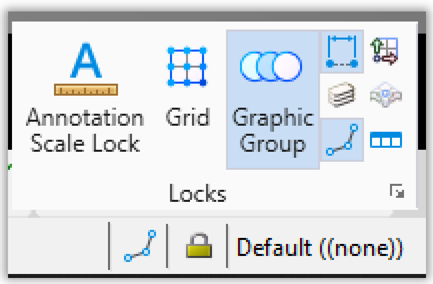


Figure 104 - Turn on Graphic Group

4.5.1 Manual Process

On the **CTDOT** tab in the **Sheet Production** section select **Borders > Replace with New Border**.

Set

- Method: **Replace**
- Mode: **Single**
- The **Use Active Cell** will be toggled **on** with the cell name ***B-Contract*** active.
- Annotation Scale will need to be **on**.

Follow the prompts to update the cell, when complete open the next model and repeat

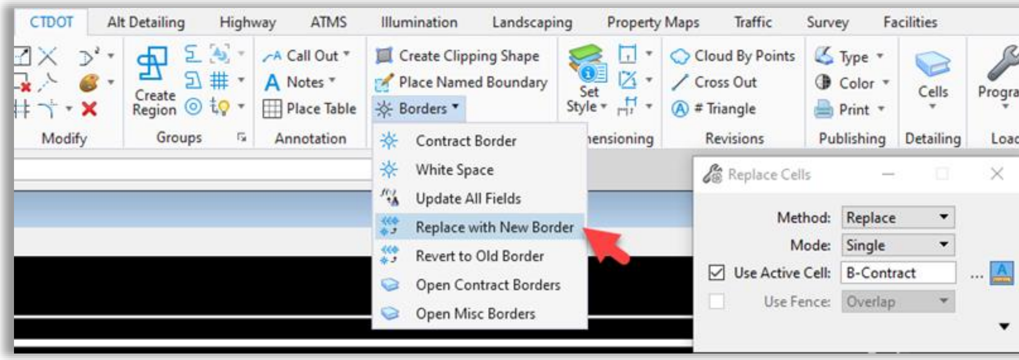


Figure 105 - Replace Cell Tool

4.5.2 Batch Process

1. Open the DGN file with Sheet Models requiring and updated border cell.
2. Open the **Models** dialog box.
3. Select the **Replace Cell** tool.
   Set
   - Method: **Update**
   - Mode: **Single**
   - **No** Active Cell:

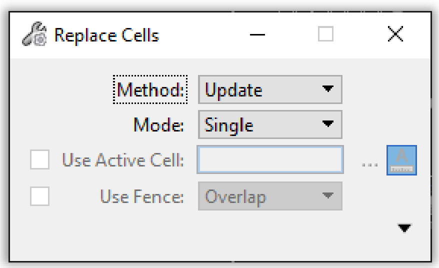


Figure 106 - Replace Cell dialog box

1. Click to **File > Tools > Batch Process**
2. Drag and drop the **Sheet Models** to the Batch Process, **Process Tasks** area.

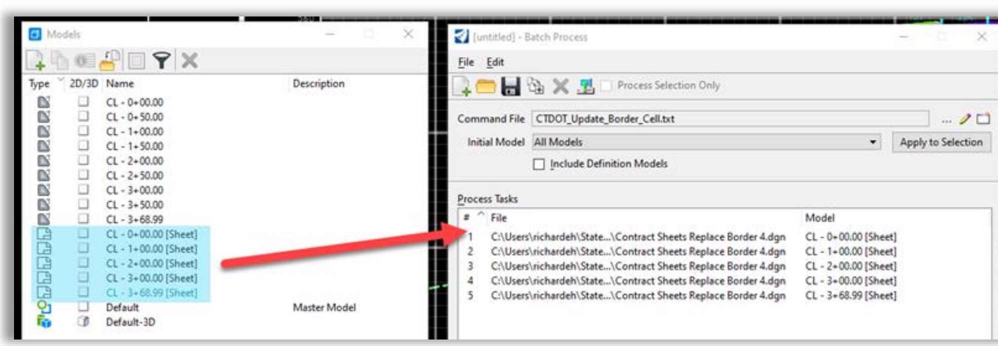


Figure 107 - Drag in Sheet Models to batch Process

4. Click on **...** to load the Command File.

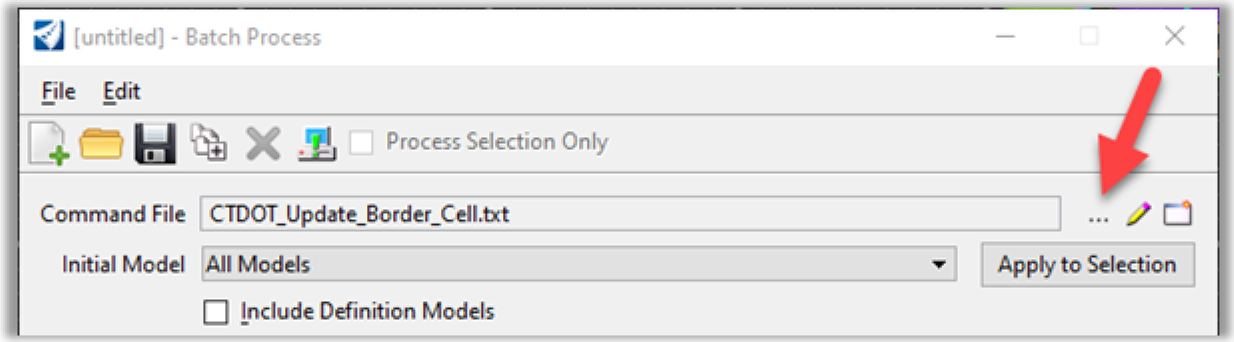


Figure 108 - Load Batch Command File

5. Browse to ***CT_Configuration|Organization|Macros|CTDOT_Update_Border_Cell.txt*** and select **Open**.
6. Select the **Process Batch Process Job** icon.

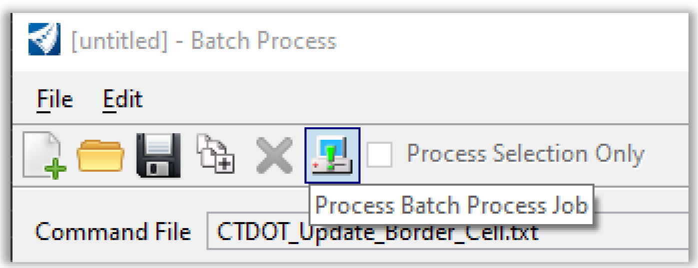


Figure 109 - Process Batch Process

7. The **Files to Process** dialog box will open select **Process** to execute the commands.