

Version 3.1

May 2018

CONNECTICUT DEPARTMENT OF TRANSPORTATION

Architectural, Engineering and Construction Applications

A Step-by-Step Instructional Guide for Installing the

CTDOT Digital Design Environment

Computer-Aided Design and Drafting Standards for Consultants and CTDOT Employees

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Connecticut Department of Transportation

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INTRODUCTION

The Connecticut Department of Transportation (CTDOT) has standardized on Bentley Systems Inc. for Computer-Aided Design and Drafting (CADD) software. CTDOT has established CADD standards in the form of a customized workspace to be used with Bentley products; specifically, *MicroStation* and *InRoads*. These CTDOT CADD standards are referred to as the Digital Design Environment (DDE) and are made available to consultants doing business with CTDOT as well as the general public. Further information about the DDE, in addition to who is required to use it, can be found at CTDOT - SELECTseries DDE.

Once Bentley software is locally installed, it can be configured to use the customized resources, tools, and interfaces of the DDE, which can be stored either locally or on a network. This guide provides step-by-step instructions on how to download, install, and configure *MicroStation*, *InRoads*, and the DDE.

This version of the DDE is for use with *MicroStation V8i SELECTseries versions 3 and 4,* and *InRoads V8i SELECTseries 2.* It is <u>not</u> configured to work with *InRoads V8i SELECTseries 3* (aka *OpenRoads*) or any subsequent versions of the software. CTDOT will soon transition to the Bentley *ProjectWise* document management environment for all CADD. This future environment will consist of standard units, managed workspaces, and current versions of *MicroStation CONNECT* and *OpenRoads Designer.* Once the transition is complete, the workspace referred to in this guide will no longer be updated and will remain available on the web for legacy projects only.

Installation instructions and screenshots in this guide (actual or illustrative) are from the aforementioned Bentley products and were installed on the Microsoft *Windows 7* operating system.

GUIDE FORMAT

This guide is broken down into "STEPS," which are apparent in the Table of Contents, to help expedite the setup process as being sort of a "quick start" for the user. The guide also includes informational "bubbles," which are not critical but may be helpful in further understanding the setup processes.

TRADEMARKS

MicroStation and *InRoads* are registered trademarks of Bentley Systems, Incorporated. Other trade names, computer protocols, and file formats mentioned in this guide are the trademarks of their respective owners. In no event will the appearance of any graphic, description of a graphic, picture, screen display, or any other method of conveying meaning be considered to impair the rights of the respective owners.

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Section 1 Download and Install Bentley Software

CTDOT Recommended Versions:

CTDOT has developed, tested, and implemented the DDE CADD standards based upon the following software versions:

- Bentley InRoads Suite V8i (SELECTseries 2) Version 08.11.07.615
- MicroStation V8i (SELECTseries 3) Version 08.11.09.459 [minimal]
- MicroStation V8i (SELECTseries 4) Version 08.11.09.829 [preferred]*
- Prerequisites for Bentley Desktop Applications Version 08.11.07.03

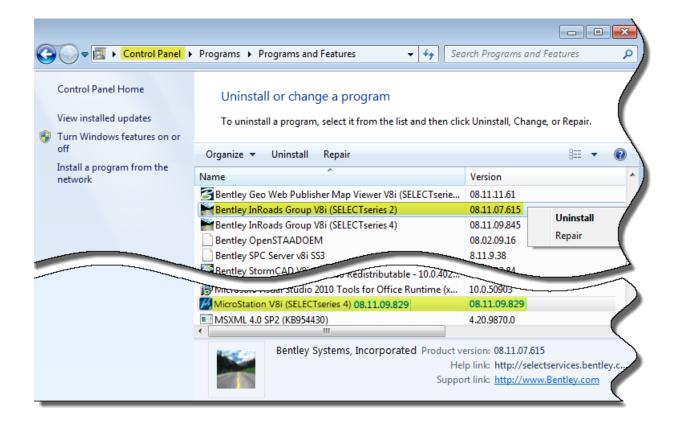
STEP 1. Remove Older Installs

If less than adequate versions of *MicroStation* or *InRoads* have been installed on the personal computer (PC,) they must first be uninstalled before upgrading to the CTDOT recommended versions.

*NOTE: The *InRoads* download in section in <u>STEP 5</u> includes the recommended minimal version of *MicroStation V8i* - 08.11.09.459 (SELECTseries 3.) CTDOT requires <u>at least</u> this V8i version to run *InRoads*; however, version 08.11.09.829 (SELECTseries 4) is preferred which will be a separate download.

- Review the currently installed programs through the Control Panel and remove any outdated versions:
 - From the Windows Start button on the taskbar, choose Start > Control Panel > Programs and Features (see the following image)
 - 2. Right-click any versions that need to be removed, one at a time, and click Uninstall
 - 3. Follow the prompts to complete

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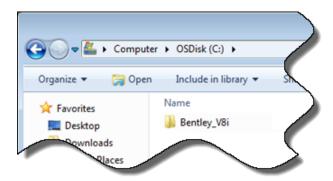


STEP 2. Create C:\Bentley_V8i

Program Location:

CTDOT uses a custom folder, **C:\Bentley_V8i**, for installed Bentley programs rather than the program defaults due to user permissions. We need only create this one folder at this point. Additionally, a **BentleyDownloads** folder will automatically be created during the extraction and install processes. This is covered in detail in the sections that follow.

Create a folder on the root directory of the C drive named Bentley_V8i:



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STEP 3. Sign Into SELECT Services

 Use an internet browser and a pre-assigned Bentley SELECT ID to sign into https://www.bentley.com/en/support:

Bentley SELECT Services:

Bentley SELECT subscribers are entitled to administrative resources and support services. These services include a personal portal where software downloads may be accessed.

Bentley SELECT ID passwords are provided by your SELECT services administrator. For <u>CTDOT employees</u>, SELECT services administrators are:

- Samantha Scharpf samantha.scharpf@ct.gov
- Elaine Richard <u>elaine.richard@ct.gov</u>



STEP 4. Navigate To Personal Portal

 Ensure that SUPPORT is the active webpage, then click GO TO CONNECTION CENTER:

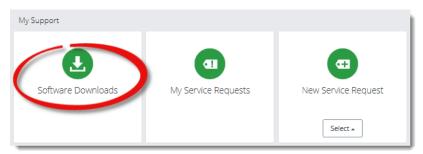


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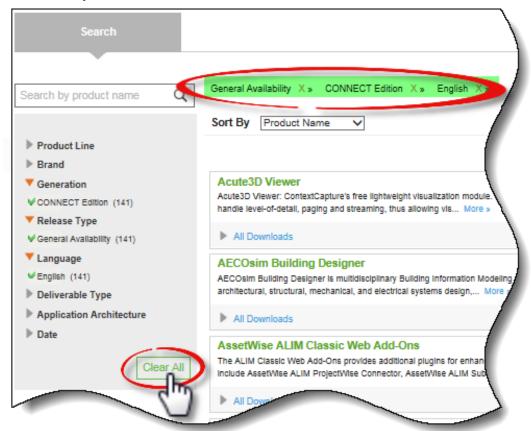
STEP 5. Select Required Downloads

InRoads SS2 is the required download. It includes *Prerequisites* and *MicroStation SS3*. Steps to download the optional *MicroStation SS4* immediately follow these instructions.

1. Click **Software Downloads** for *InRoads*:



2. Clear any default search criteria:



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3. Begin by typing "InRoads" into the search field. Select "InRoads (Bentley InRoads Suite V8i)" from the resulting suggestions:



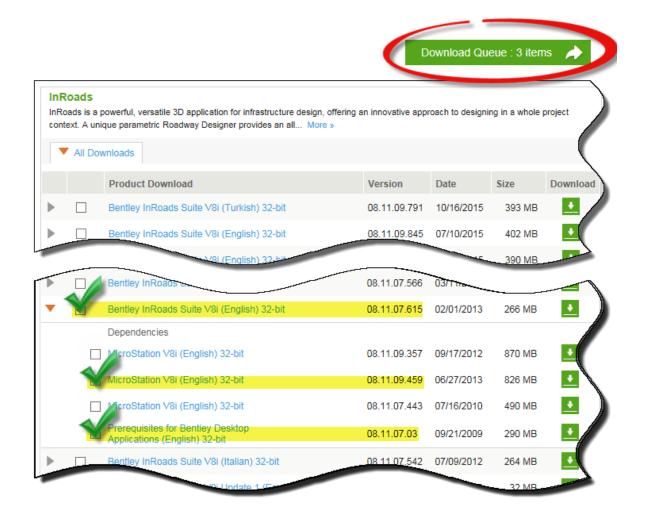
4. Expand All Downloads to view the results list:



- 5. InRoads SELECTseries 2
 - a. Select Bentley InRoads Suite V8i (English) 32-bit version 08.11.07.615
 - b. Expand the download tree to show dependencies
 - c. Select only the recommended dependencies as shown:
 - MicroStation V8i (English) 32-bit version 08.11.09.459*
 - Prerequisites for Bentley Desktop Applications (English) 32-bit version 08.11.07.03:

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^{*}see also STEP 5 #7 for an alternative version of MicroStation



6. Download

- a. Click the "**Download Queue**" as shown in the top of the previous image to list the three desired items.
- b. Select each item, one at a time, to download as shown below



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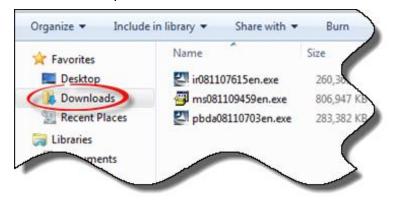
c. Read and Accept the legal terms if prompted



d. Save each file when prompted:



e. Saved files should default to the current user **Downloads** location when completed:

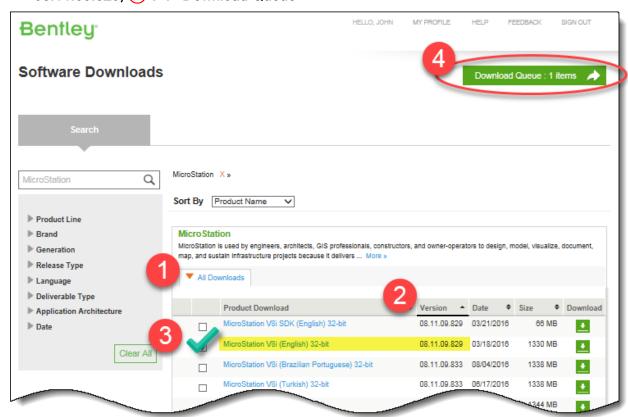


- 7. OPTIONAL If so desired, select the alternate preferred version of *MicroStation* to download. **Clear** any default search criteria (as shown above in <u>STEP 5</u> #2)
- 8. Begin by typing "Microstation V8" into the search field and select MicroStation (MicroStation V8i)

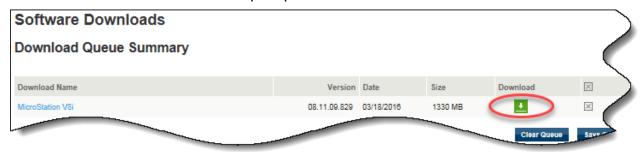


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9. 1 Expand All Downloads, 2 sort by Version, 3 select MicroStation V8i version 08.11.09.829, 4 click Download Queue:



10. Click the **Download Queue** when prompted and then the **Download** item as shown:



11. Refer to the previous section to complete the action.

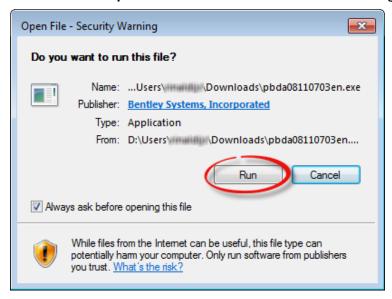
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STEP 6. Extract and Install Prerequisites

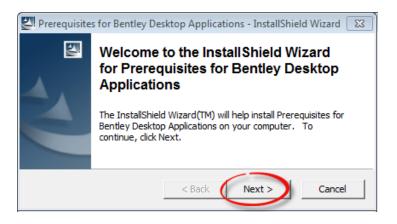
Extraction and Installation:

Files can be extracted and installed at the same time or at a later time. The first option is recommended and used in the following example. Files MUST be installed in the following order:

- 1. Prerequisites pbda08110703en.exe
- 2. MicroStation ms081109459en.exe
- 3. InRoads ir081107615en.exe
- 1. Browse to the saved Bentley files in the **Downloads** folder.
- 2. Double click **pbda08110703en.exe** and click **Run** to begin extraction:

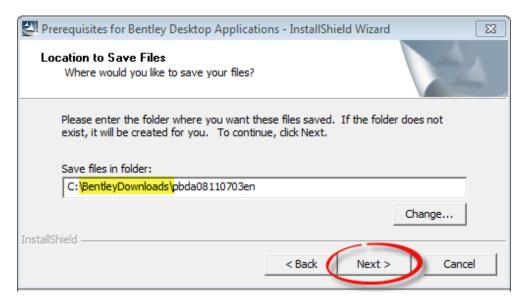


3. Click **Next** to continue installing prerequisites:

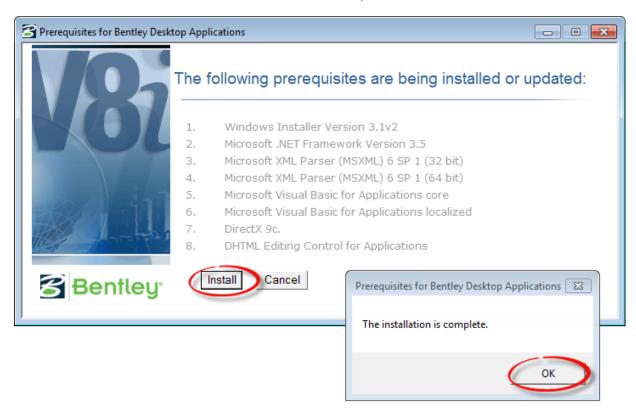


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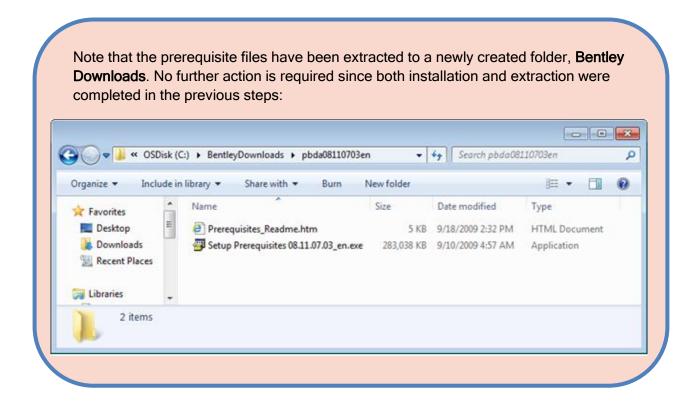
 Keep C:\BentleyDownloads as the default location. A pbda08110703en folder is created for the extracted files. Select Next:



5. Select **Install** and then **OK** when installation is complete:

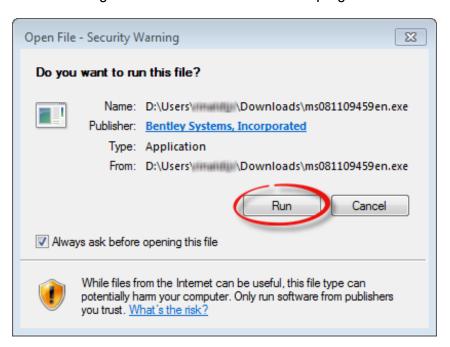


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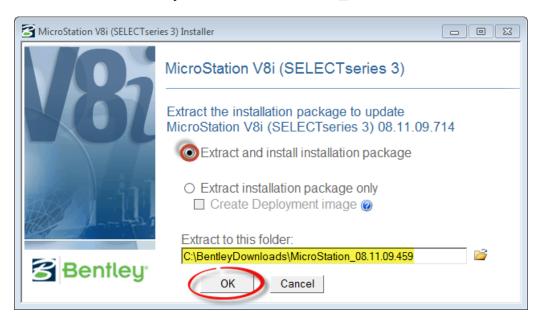
STEP 7. Extract and Install MicroStation

1. Browse to the local **Downloads** folder again. Double click **ms081109459en.exe** and click **Run** to begin extraction of the *MicroStation* program files:

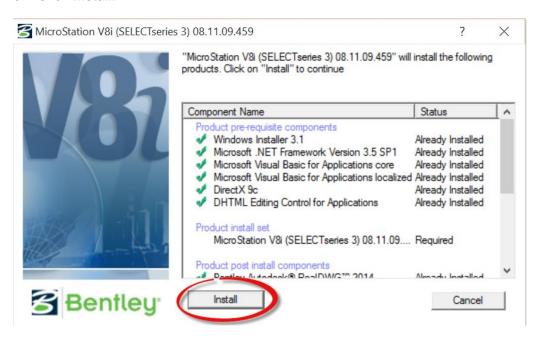


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2. Select Extract and install installation package. Keep the default folder location for extracts as C:\BentleyDownloads\MicroStation_081109459 and click OK:

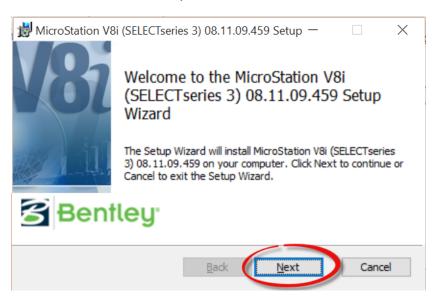


3. Click Install:

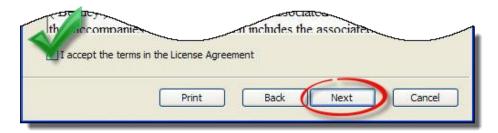


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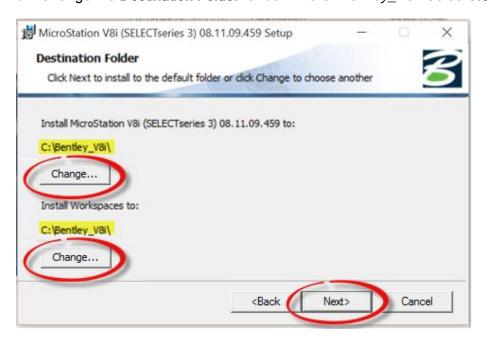
4. Click Next on the Setup Wizard:



5. Carefully read the End User License Agreement. Select the terms and click Next:

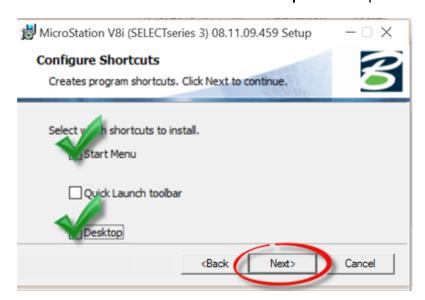


6. Change the **Destination Folder** for both... to *C:\Bentley_V8i*. Select **Next**:

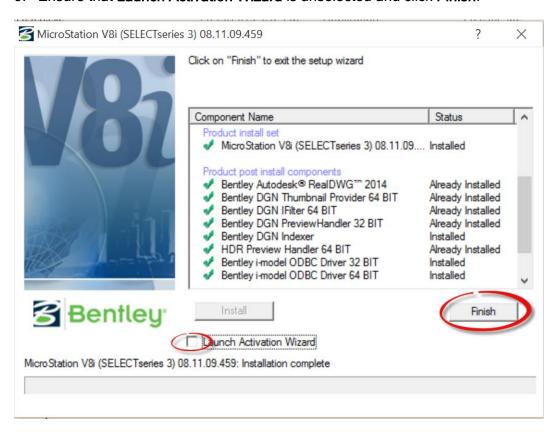


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7. Select both the Start Menu and Desktop shortcut options. Click Next:



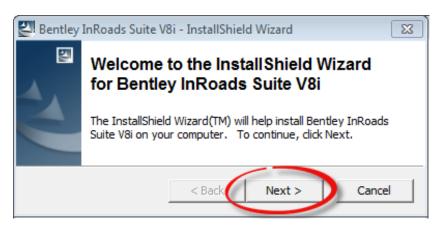
- 8. Select the **Typical** Setup Type when prompted and then **Install** to complete setup.
- 9. Ensure that Launch Activation Wizard is unselected and click Finish:



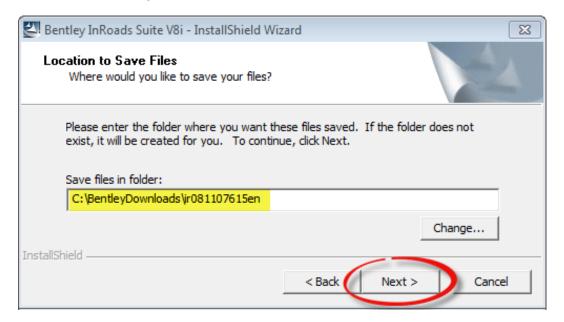
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STEP 8. Extract and Install InRoads

- 1. Browse to the downloads folder, Double-click **ir081107615en.exe** to begin extraction.
- ClickNext in the InstallShield Wizard to begin:



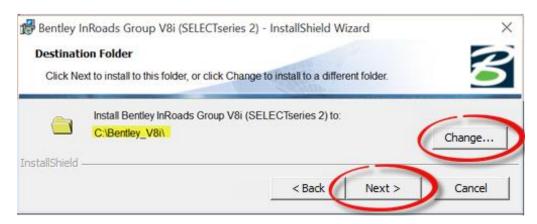
- 3. Keep the default location as C:\BentleyDownloads\ir081107615en.
- 4. Click **Next** to begin file extraction:



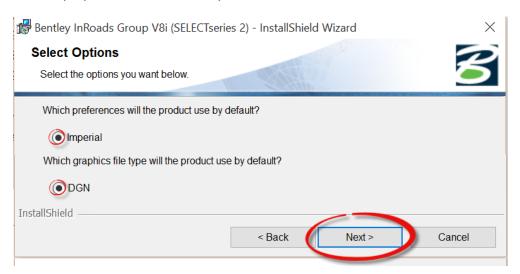
- 5. Click **Next** in the InstallShield Wizard to install *InRoads*.
- 6. Carefully read the End User License Agreement. Select the terms and click Next.

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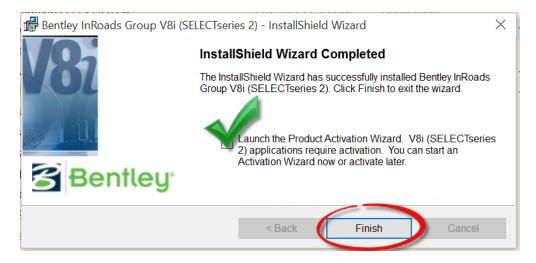
7. Change the **Destination Folder** to **C:\Bentley_V8i**. Click **Next**:



8. Keep options defaults as Imperial and DGN and click Next:



- 9. Click **Install** to begin program installation when prompted.
- 10. Select Launch the Product Activation Wizard. Click Finish. [Note that the Wizard can also be launched at a later time if desired]



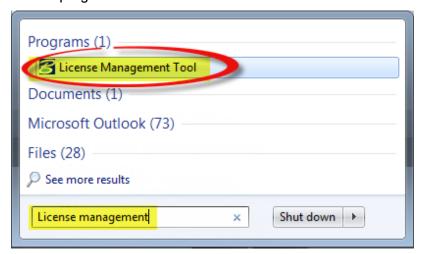
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STEP 9. Run License Management Tool

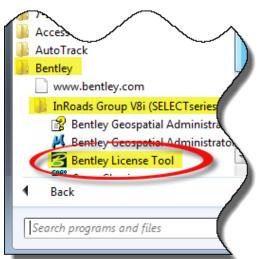
Product Activation Wizard:

The Product Activation Wizard is where the Site Activation Key will be entered for software licensing.

- 1. If the **Product Activation Wizard** has already been launched, skip to **STEP 10** to activate.
- 2. If the **Product Activation Wizard** has not been launched, first run the **License Management Tool**. There are three ways to run it:
 - A. From the **Start** menu, begin typing **License management** into the search field to find the program. Click it:

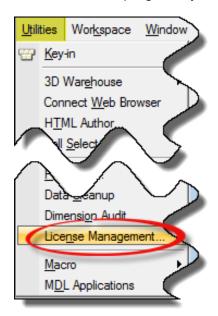


B. Alternately, choose All Programs > Bentley > InRoads Group V8i > Bentley License Tool:

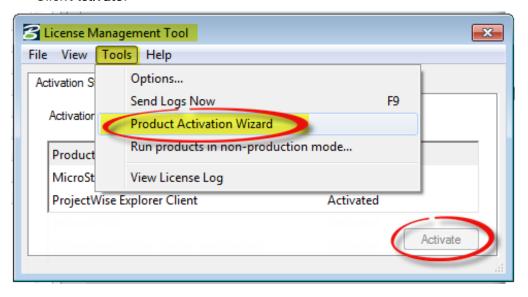


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C. Lastly, the **License Management Tool** can also be launched from within the *MicroStation* program by choosing **Utilities** > **License Management**:



3. From the License Management Tool, choose Tools > Product Activation Wizard and Click Activate:



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STEP 10. Activate Bentley Products

Bentley Site Activation Keys are provided through company or department SELECTservices Administrators; however, a 30-day trial period is allowed to use the software without a license.

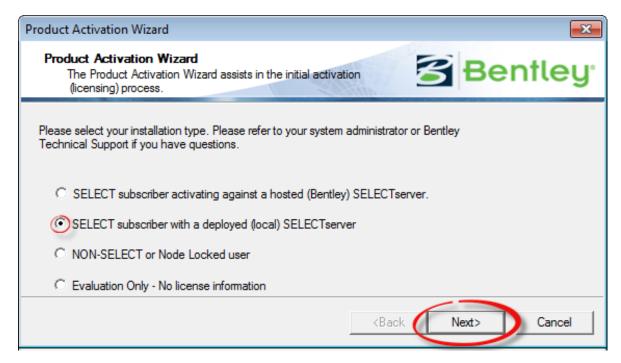
A. CTDOT Consultants:

CTDOT consultants should follow instructions provided by their company's Bentley SELECTservices Administrator.

B. CTDOT Employees Only:

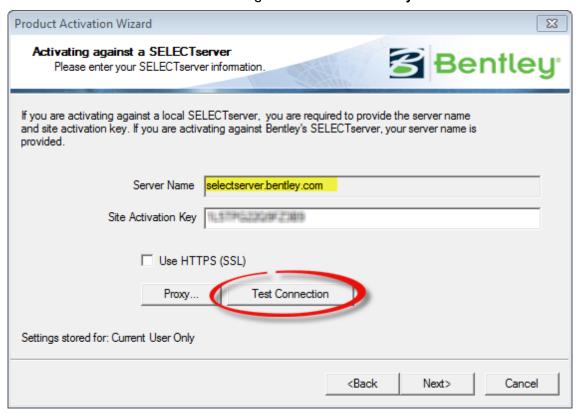
CTDOT employees who have a Bentley Select ID but not a Site Activation Key, should provide their Bentley Select ID in an email request to a CTDOT SELECTservices Administrator (see STEP 3).

 CTDOT Employees using a home use environment should select SELECT subscriber with a deployed (local) SELECT server:

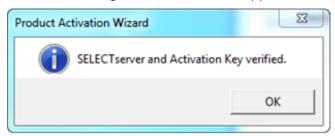


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2. DO NOT use the default Server Name. Enter **selectserver-home.bentley.com** into the **Server Name** field and then an assigned **Site Activation Key**. Click **Test Connection**:



3. The following verification should appear:

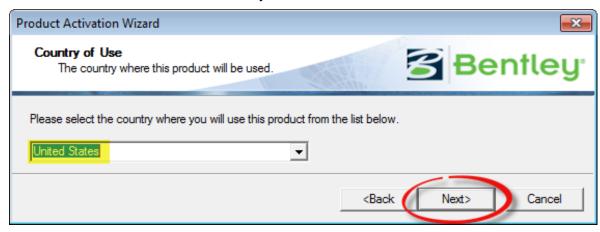


If not, ensure that the Server Name and Activation Key were correctly entered. If the following message continues to appear, contact a SELECTservices Administrator.

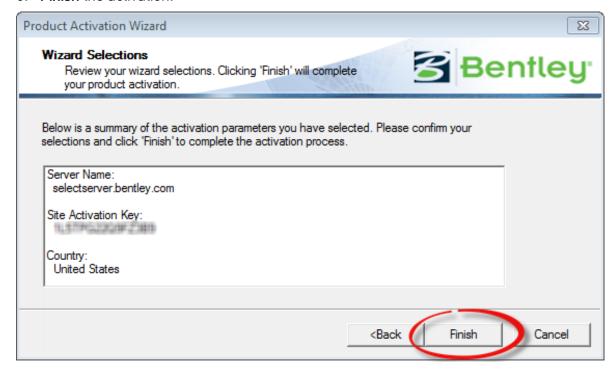


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- 4. From the Product Activation Wizard dialog box, click Next to continue
- 5. Select **United States** for the Country of use and click **Next**:



6. Finish the activation:



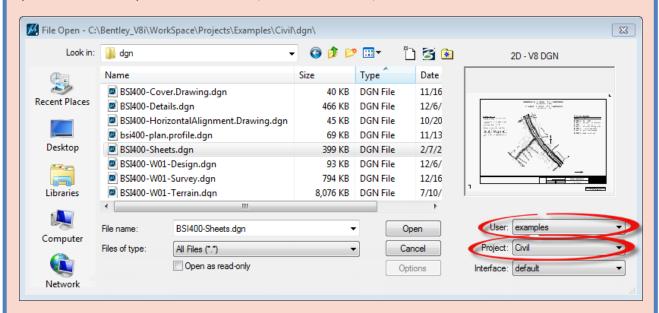
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Section 2 Access Delivered Bentley Products

MicroStation and *InRoads* are ready to use delivered/"out of the box"; however, CTDOT projects and workspace resources will be available only when customization is complete. Continue below to begin using the delivered Bentley products, or skip to <u>Section 3 CTDOT Digital Design Environment</u> to download and install the DDE.

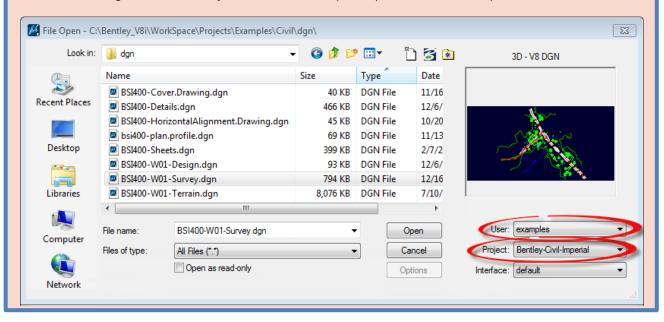
To access *MicroStation*, choose:

Start > All Programs > Bentley > MicroStation V8i (SELECT series 3) > MicroStation V8i (SELECT series 3) [or MicroStation (SELECT series 4) if STEP 5 #7 was followed]



To access InRoads, choose:

Start > All Programs > Bentley > InRoads Group V8i (SELECT series 2) > InRoads Suite.



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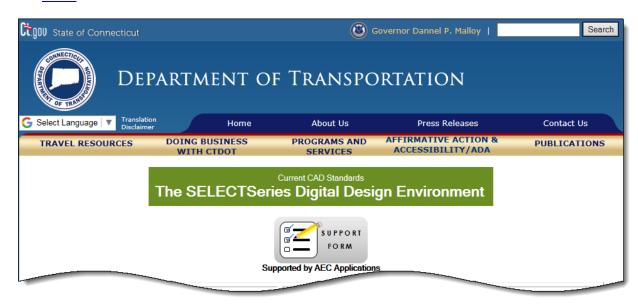
Section 3 Download and Install the CTDOT DDE

CTDOT Home Page:

The <u>CTDOT - SELECTseries DDE</u> is available through the <u>Connecticut Department of Transportation website</u>. It can be found under: <u>Doing Business With CONNDOT > Engineering Resources > CTDOT - SELECTseries DDE</u>. There are two important downloads under <u>Design Environment Set-Up</u>: the first is this document which you are reading, and the second is the most current DDE in a compressed format (*.zip).

STEP 11. Download the DDE Zip File

Using an internet browser, browse to the DDE resources at: <u>CTDOT - SELECTseries</u>
 DDE



2. Find the **Download** icon and click to begin the DDE download:



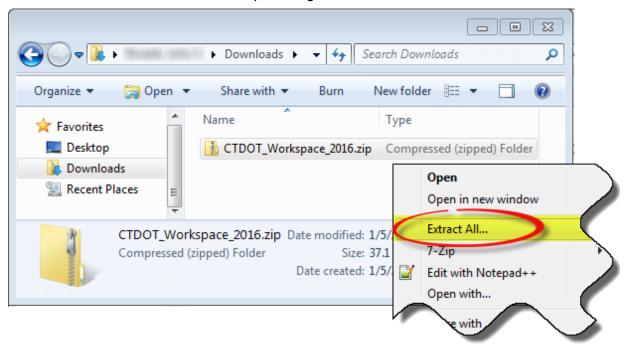
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STEP 12. Extract File Contents

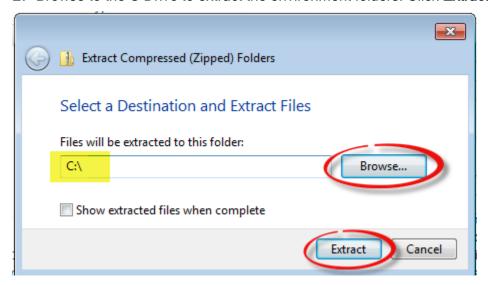
Extraction and Installation:

The DDE can be set up either locally or as networked environment. The default location and following example is based on the "C" drive. It can be changed to a different location either now or later.

1. Browse to the downloaded DDE zip file. Right-click to Extract All.

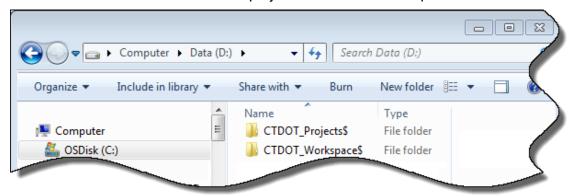


2. Browse to the C Drive to extract the environment folders. Click Extract:



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3. Two folders are created - one for projects and one for workspaces:

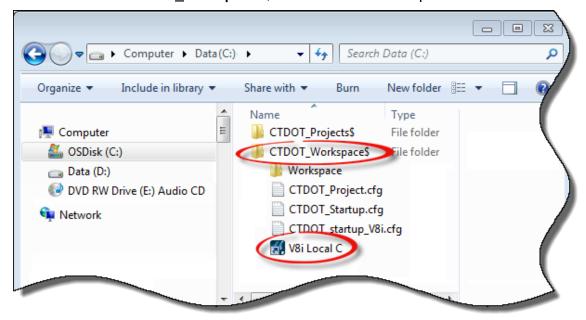


STEP 13. Assess DDE Locations

If *MicroStation* was installed under **C:\Bentley_V8i** and the DDE location will remain on **C:**, continue with <u>STEP 14</u>; otherwise, skip to <u>STEP 15</u> to set up a network environment.

STEP 14. Create Local Shortcut

1. Browse to C:\CTDOT_Workspaces\$ and locate the desktop shortcut:



2. Copy and paste the V8i local C shortcut to the desktop:



3. Skip to STEP 17 to create a new project.

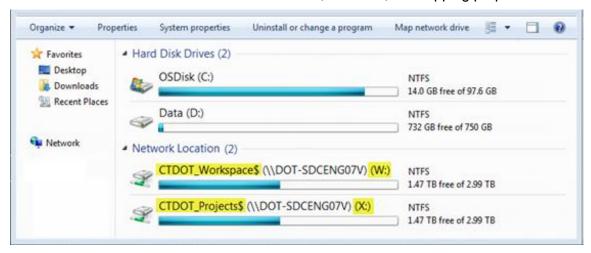
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STEP 15. Network Environment Setup

Network Environment:

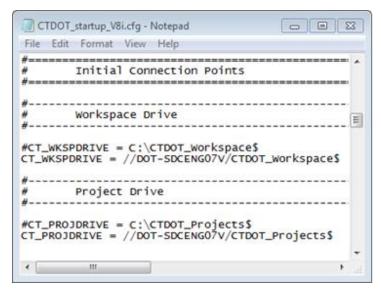
Network setup is typically done by a Network Administrator so that a server environment is accessible to all users. The DDE can also be installed on a drive other than the default, **C:**.

1. Move the two folders, CTDOT_Projects\$ and CTDOT_Workspace\$, to the server(s). These locations can be the same or different servers. The example shown below uses the same server but two different drive letters, W and X, for mapping purposes:



 From the CTDOT_ Workspace\$ folder, open CTDOT_startup_V8i.cfg using a text editor. Edit the Project and Workspace paths as shown. The example below uses //DOT-SDCENG07V/. This server name should be modified to your company's server name. Pay careful attention to spelling and save any changes that you've made.

Note: *MicroStation* does not process commented lines (#.) It is recommended that server names be used rather than network drive letters.

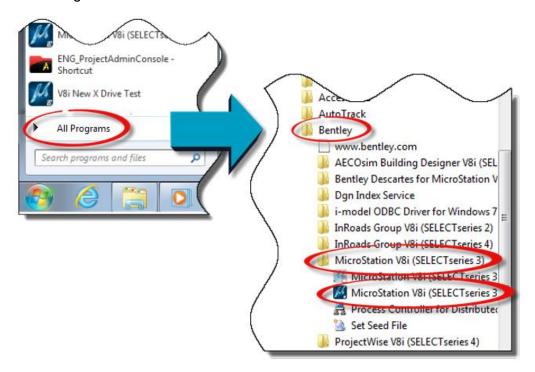


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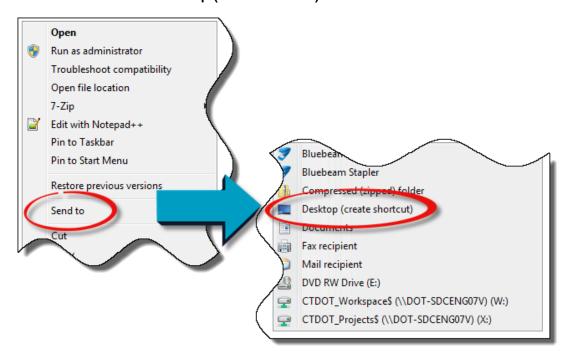
STEP 16. Create Network Shortcut

A desktop shortcut must be created and modified to access the networked DDE. The shortcut simply adds a command line argument to the *MicroStation* executable.

1. Through the Microsoft Start menu, choose All Programs > Bentley > MicroStation V8i and right-click MicroStation V8i:



2. Choose **Send to > Desktop (create shortcut)**:



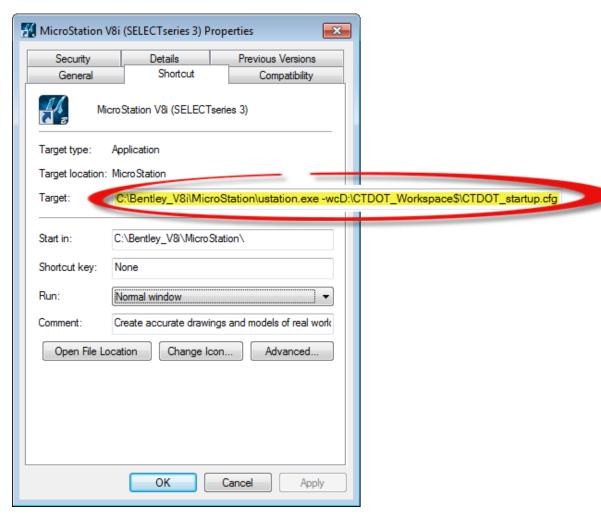
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3. View the desktop and locate the newly created *MicroStation* shortcut. Optional: rename to **V8i Network, D Drive, etc.**:



- Right-click the shortcut and click **Properties**. Append to the Target by copying and pasting the following text:
 - "-wc[Servername]:\CTDOT_Workspace\$\CTDOT_startup.cfg"

[Servername] must be changed to reflect the network or drive. The result should look similar to the following D drive example. Note the space after "exe":



5. Click **Apply** and then **OK**.

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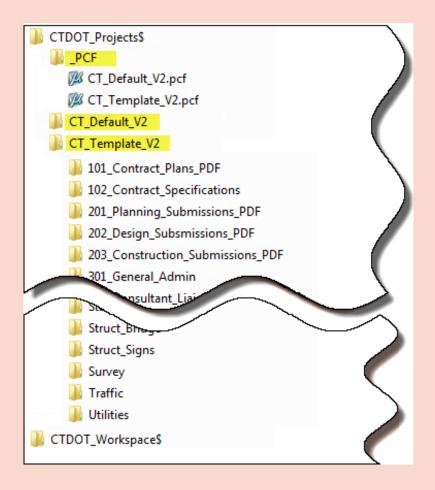
CTDOT Projects:

Project folders and configuration files (.pcf) are required for *MicroStation* and *InRoads* to properly load the DDE. Project folders are where all project-related information is to be stored. PCF files direct the CADD programs to these folders.

Project Defaults:

The CTDOT_Projects\$ folder contains three subfolders:

- PCF, for project configuration files
- CT_Default_V2, a default project to immediately use CADD if new projects have not yet been created
- CT_Template_V2, a template to be copied for all new project creation:



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STEP 17. Create New Project

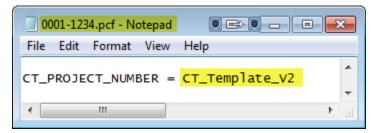
1. Browse to CTDOT_Projects\$. Copy and paste the CT_Template_V2 folder. Rename the copied folder to a valid project number such as 0001-1234.



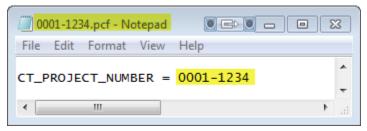
2. Browse to the **_PCF** subfolder. Copy and paste the **CT_Template_V2.pcf** file. Rename the copied PCF to the same project number as in the previous step. It is <u>important</u> that the names are identical.



- 3. Open the newly created pcf using a text editor such as Notepad.
- 4. Locate the line, CT_PROJECT_NUMBER = CT_Template_V2 as shown:



5. Edit the project number value so that it is the same name as in the two previous steps (folder and pcf): CT_PROJECT_NUMBER = 0001-1234:



6. Save and Exit the text file.

For each new project that you wish to create, repeat entire <u>STEP 17</u>. Each PCF must be renamed and edited to use a unique project/folder name.

Populate Project Folders:

At this time, project folders may be populated with existing *MicroStation* or *InRoads* files if so desired.

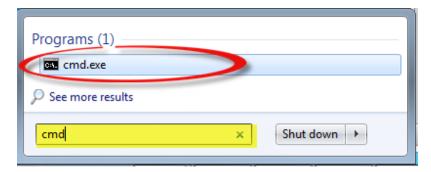
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STEP 18. Verify USERNAME

Initial MicroStation Setup:

MicroStation allows users to customize a personal workspace. The DDE takes advantage of this by using individual User Workspaces that are based on the current *Windows* environmental variable, **USERNAME**.

1. Verify your current Windows **USERNAME** by typing **cmd** into the **Start** menu search field. Click the resulting **cmd.exe** program.



2. At the command prompt, type **set** and press **<Enter>**:



3. Scroll toward the bottom of the results and make note of your *Windows* **USERNAME**:



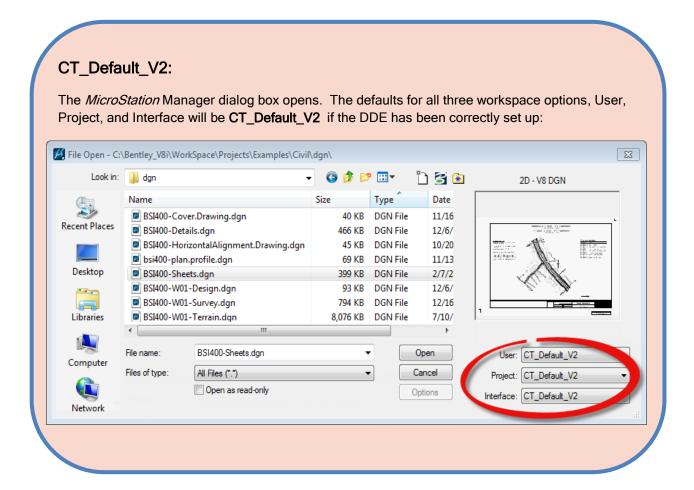
4. Exit **cmd.exe** using the "x" as shown above.

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STEP 19. Initialize MicroStation

Begin *MicroStation* by using the appropriate shortcut - either the local C:\ drive shortcut that was created in <u>STEP 13</u>, or the network shortcut from <u>STEP 16</u>:





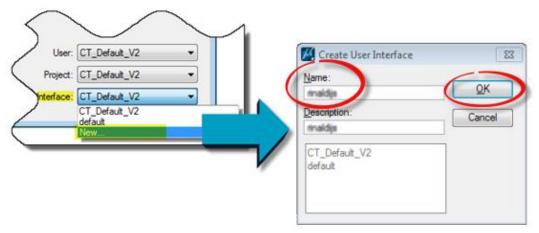
<u>Do not</u> enter a design file until new workspaces are created as described in the following section.

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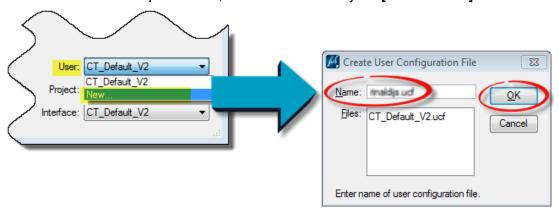
STEP 20. Create a New User Workspace

A new User and Interface need only be created once. Individual User workspace names <u>must</u> <u>exactly match</u> your Windows login as explained in <u>STEP 18.</u>

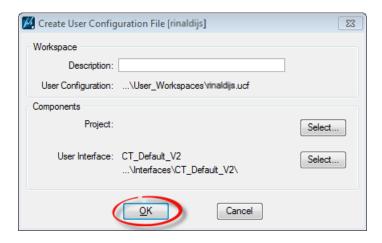
1. From the Interface drop-down list, select **New**. Enter your computer **[USERNAME]** (description is optional). Click **OK**:



2. From the User drop-down list, select **New**. Enter your **[USERNAME]**. Click **OK**:

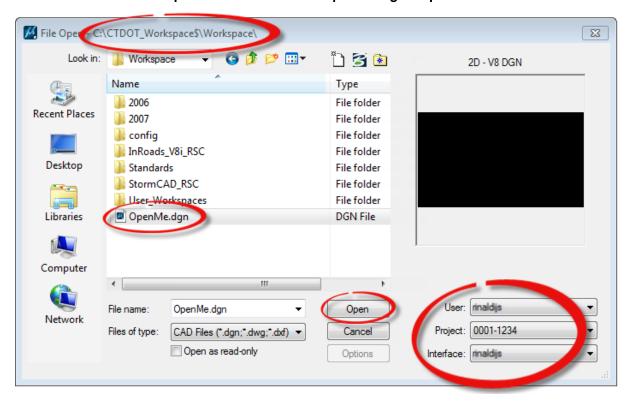


Description is optional. <u>Do not</u> select a project or interface yet. Click **OK**:



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3. From the Project drop-down list, select a Project that was created in <u>STEP 17.</u> Select your custom user Interface. A DGN file is provided for convenience to initially open: Browse to the **Workspace** folder and select **OpenMe.dgn**. **Open** the file.



4. <u>IMPORTANT:</u> Once in the design file, <u>DO NOT SAVE SETTINGS</u> and immediately exit *MicroStation*. Failure to do so will most likely result in corrupt user preferences.

STEP 21. Create C:\Plots Folder

Initial Publishing Setup:

To use the **CT Publishing** task for automated publishing, a temporary location to store newly created PDFs must first be created. This is a scratch directory for the printer drivers to write files to. File extensions must also be turned on for PDF publishing to function properly.

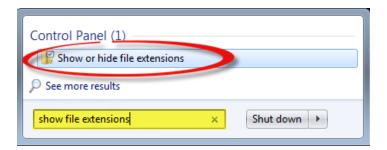
 Using Windows Explorer, create a C:\Plots folder. Create this on each C drive regardless of where the environment is installed:



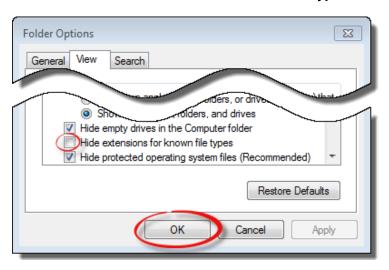
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STEP 22. Show File Extensions

1. Begin by typing **show file extensions** into the **Start** menu search field. Click the **Control Panel** result.



2. Ensure that **Hide extensions for known file types** is not selected. Click **OK**:



Setup is complete.

Continue with the next section to begin using *MicroStation* and/or *InRoads* and the DDE at any time.

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Section 4 Begin Using the DDE

STEP 23. Access MicroStation

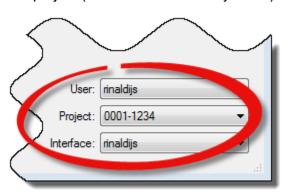
CADD Guides and Policies:

Detailed information on using the DDE within *MicroStation* and *InRoads*, including Menu items, Tasks, and Tools, can be found within the various guides under CTDOT Guides on the <u>CTDOT - SELECTseries DDE</u> page.

1. Use the appropriate desktop shortcut which was created in either <u>STEP 14</u> or <u>STEP 16</u> to access *MicroStation* and begin using the DDE.

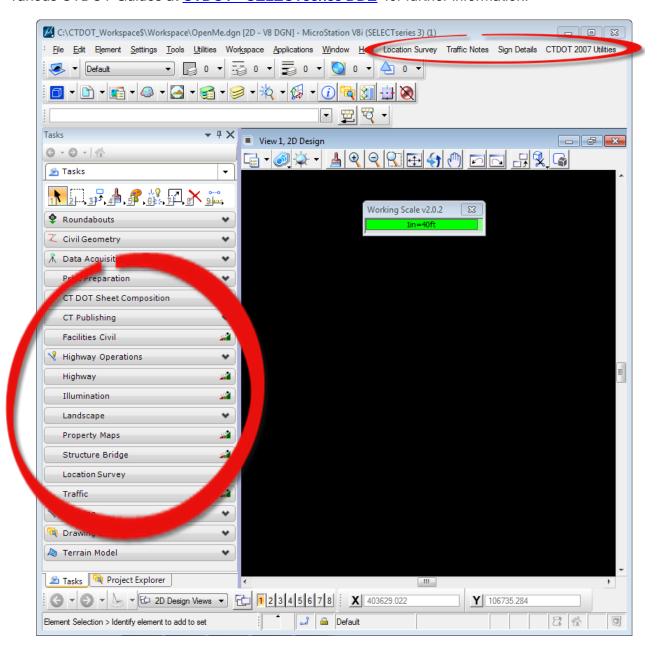


2. The **MicroStation Manager** should default to your personal workspace. <u>Always</u> choose a project (or a runtime error may occur):



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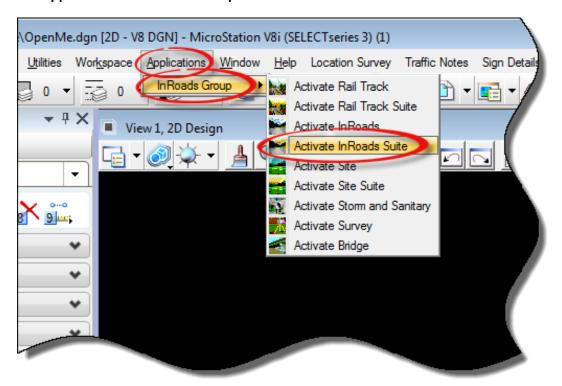
Custom CTDOT DDE **Tasks** and **Menu** items are available as shown. Please refer to the various CTDOT Guides at **CTDOT - SELECTseries DDE** for further information.

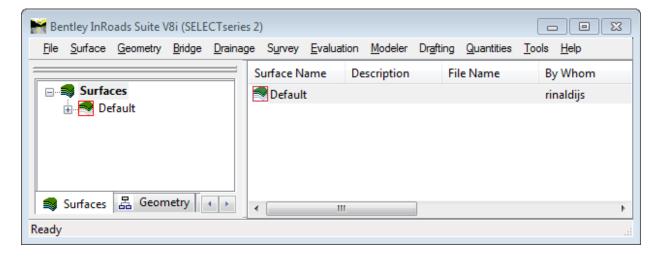


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STEP 24. Access InRoads

To access the *InRoads* application from the *MicroStation* main menu, choose:
 Applications > InRoads Group > Activate InRoads Suite.





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