MAINE
DEPARTMENT OF TRANSPORTATION

February 2023	OpenRoads Designer CONNECT Configuration for Consultants

ADMINSTRATOR'S GUIDE

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ADDITIONAL INFORMATION

For general information outside the scope of this document please visit the MaineDOT website: https://www.maine.gov/mdot/

For Consultant information from qualifications to design specification please visit this webpage: https://www.maine.gov/mdot/cpo/

Please visit the MaineDOT CADD Support website for the follow information and more:

- MaineDOT CADD standards
- Version of CADD software MaineDOT currently uses
- How to contact MaineDOT CADD Support
- MaineDOT's specification for required electronic (computer) data
- MaineDOT CADD Manuals and Documentation

https://www.maine.gov/mdot/caddsupport/

OVERVIEW

This document covers the setup of the MaineDOT OpenRoads Designer (ORD) CADD environment for a local standalone installation. It will explain how to install the MaineDOT ORD environment on the "C:" drive along with a local project folder and give a brief explanation of MaineDOT's ORD project folder organization.

After following these instructions a folder containing all the necessary standalone MaineDOT ORD CADD environment will be created here:

C:\MEDOT

Within the root folder will be three subfolders:

Name	Date modified	Type
BRMAINT	1/26/2023 9:29 AM	File folder
ORD	1/26/2023 9:33 AM	File folder
WIN	1/26/2023 12:40 PM	File folder

C:\MEDOT\BRMAINT

This is to be used for creating and storing project data for Bridge Maintenance projects. Currently this folder will be used very rarely by consultants.

C:\MEDOT\ORD

The ORD CAD environment specific to MaineDOT will be stored here (ex: resource, configuration, and data files), more details to follow.

C:\MEDOT\WIN

Most consultants will be using this folder to create and store their project data. This folder is meant to be used by nearly all of disciplines in MaineDOT Project Development group. The disciplines using this folder include:

> Bridge
> Construction
> Environmental
> Geotechnical
> Highway
> Multimodal
> ROW
> Survey
> Traffic
> Utilities

Note: These locations are customizable in the hands of someone experienced with Bentley CAD configurations.

MAINEDOT ORD CONFIGURATION DIRECTORY STRUCTURE

The ORD folder contains all the files specific to MaineDOT CAD Standards for ORD. These files are intended to function alongside a genuine existing installation of OpenRoads, it cannot work without one.

C:\MEDOT\ORD

Name	Date modified	Type
Configuration	1/26/2023 9:31 AM	File folder
Documentation	1/26/2023 9:31 AM	File folder
Startup	1/26/2023 10:37 AM	File folder

The contents of the three folders are as follows:

- **Configuration** – This folder contains the Organization, Organization-Civil, WorkSpace, and WorkSet configuration and resource files that have the MaineDOT standards. This follows the default Bentley configuration setup.

  This Configuration folder is the folder referenced by the **_USTN_CUSTOM_CONFIGURATION** variable.

- **Documentation** – Stores related Configuration and Workflow documentation files.

- **Startup** – This folder contains the startup configuration files needed by the applications to access the configuration and display the WorkSpaces and WorkSets in ORD's startup Work Page:

OpenRoads Designer CE

WorkSpace	WorkSet		Role
MaineDOT ▾	zz_MaineDOT_WorkSet_Temp... ▾		Bridge ▾

Recent Files
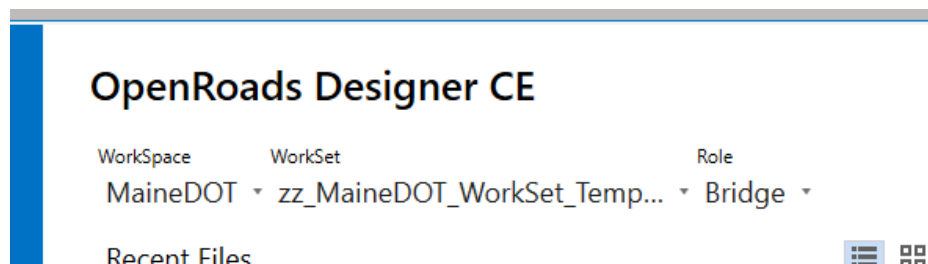
CONFIGURATION

C:\MEDOT\ORD\Configuration

Name	Date modified	Type
Organization	8/12/2022 4:05 PM	File folder
Organization-Civil	8/12/2022 2:17 PM	File folder
WorkSpaces	8/12/2022 2:07 PM	File folder

The **Configuration** folder and sub folder structure is set up to replicate the default Bentley ORD Configuration folder structure found under **C:\ProgramData\Bentley\OpenRoads Designer CE 10.10\Configuration**. Keeping in line with this Bentley standard reduces the number of variable redefinitions that are required and is an industry standard practice.

ORGANIZATION

C:\MEDOT\ORD\Configuration\Organization

Name	Date modified	Type
Building	6/29/2021 9:38 AM	File folder
Cell	6/29/2021 9:38 AM	File folder
Civil	6/29/2021 9:38 AM	File folder
Data	6/29/2021 9:38 AM	File folder
Dgnlib	8/12/2022 3:45 PM	File folder
Macros	6/29/2021 9:38 AM	File folder
Materials	8/12/2022 10:05 AM	File folder
Mdlapps	6/29/2021 9:38 AM	File folder
NPR	8/12/2022 10:05 AM	File folder
Plant	6/29/2021 9:38 AM	File folder
Pltcfg	8/12/2022 3:46 PM	File folder
Seed	6/29/2021 9:38 AM	File folder
Spc	6/29/2021 9:38 AM	File folder
Structural	6/29/2021 9:38 AM	File folder
Symb	6/29/2021 9:38 AM	File folder
Tables	8/12/2022 10:05 AM	File folder
standards.cfg	8/12/2022 4:09 PM	Bentley MicroStati...

This **Organization** folder is referenced by the **_USTN_ORGANIZATION** variable. It replaces the SITE folder (_USTN_SITE) from the V8i release. Organization resources are loaded automatically when either ORD or MicroStation are launched. The **standards.cfg** file is included automatically when the product is launched.

ORGANIZATION-CIVIL

C:\MEDOT\ORD\Configuration\Organization-Civil

Name	Date modified	Type
MaineDOT	8/2/2022 4:00 PM	File folder
MaineDOT.cfg	8/3/2022 10:10 AM	Bentley MicroStati...

The **Organization-Civil** folder contains the ORD standard resources (dgnlibs, cell libs, fonts, line styles, etc.) along with an accompanying configuration file that loads these resources. These same resources and configuration file can be used by MicroStation as well as ORD, MicroStation will ignore the Civil specific definitions and resources used by ORD. OpenBridge Modeler (or OBM) will also load resources from this location. The configuration file will test the calling application and load additional resources when in OBM.

WORKSPACES

C:\MEDOT\ORD\Configuration\WorkSpaces

Name	Date modified	Type
MaineDOT	8/2/2022 3:51 PM	File folder
MaineDOT - Bridge Maintenance	8/16/2022 12:20 PM	File folder
MaineDOT - Bridge Maintenance.cfg	8/17/2022 12:43 PM	Bentley MicroStati...
MaineDOT.cfg	8/3/2022 10:09 AM	Bentley MicroStati...

There will be two WorkSpaces available when launching the standard MaineDOT ORD application:

- **MaineDOT** = Intended to be used by disciplines in the MaineDOT Project Development group.
- **MaineDOT – Bridge Maintenance** = Intended to be used strictly by the MaineDOT Bridge Maintenance group.

ROLES

CURRENTLY THE ROLES FEATURE DOESN'T WORK SO DISREGARD THIS SECTION FOR NOW.

ORD\Configuration\WorkSpaces MaineDOT\Roles

Name	Date modified	Type
Bridge.cfg	5/5/2022 10:24 AM	Bentley MicroStati...
Construction.cfg	5/5/2022 10:25 AM	Bentley MicroStati...
Environmental.cfg	8/19/2022 1:55 PM	Bentley MicroStati...
Geotech.cfg	5/5/2022 10:23 AM	Bentley MicroStati...
Highway.cfg	5/5/2022 11:06 AM	Bentley MicroStati...
Multimodal.cfg	8/19/2022 1:56 PM	Bentley MicroStati...
Right of Way.cfg	8/19/2022 1:56 PM	Bentley MicroStati...
Survey.cfg	8/19/2022 12:54 PM	Bentley MicroStati...
Traffic.cfg	5/5/2022 10:22 AM	Bentley MicroStati...
Utilities.cfg	5/5/2022 10:18 AM	Bentley MicroStati...

There is a Role configuration for each workgroup at MaineDOT. Currently only the **Survey** role is being implemented. Choosing the Survey role configuration sets a different default seed dgn file and directs the WorkSets folder to a local **C:\WIN** instead of the standard **Y:\WIN**.

The **MaineDOT** WorkSpace has the following root folder that contains all of the individual projects' data (WorkSets), as long as the MaineDOT configuration hasn't been modified. This is the WorkSpace to be used by disciplines in the MaineDOT Project Development group.

C:\MEDOT\WIN

The template WorkSet to be used in the **MaineDOT** WorkSpace is **zz_MaineDOT_WorkSet_Template**.
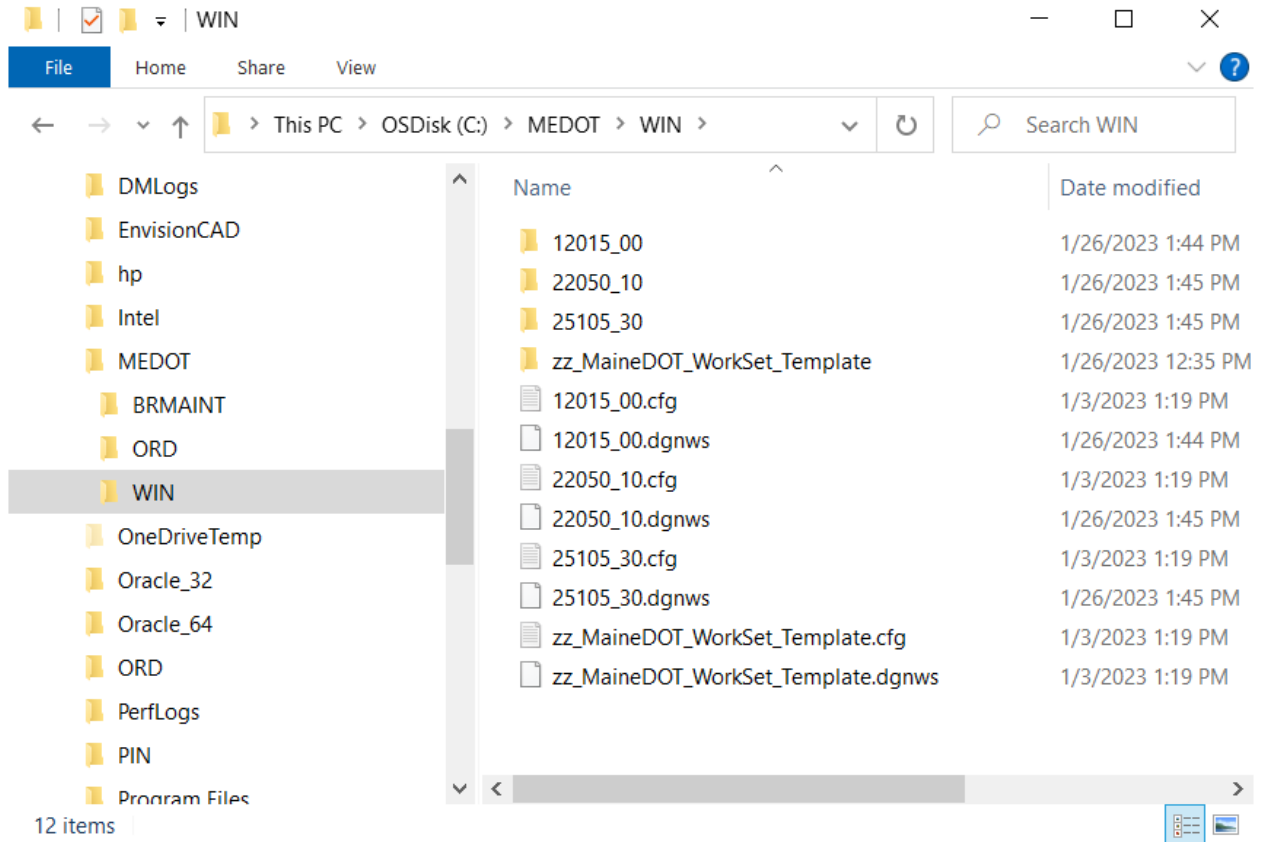
The **MaineDOT – Bridge Maintenance** WorkSpace is intended to be used **only** by users which are doing work for MaineDOT Bridge Maintenance group, in the foreseeable future this WorkSpace will be used very rarely.

Using an unmodified MaineDOT configuration of the **MaineDOT – Bridge Maintenance** WorkSpace will save it's associated WorkSets here by default:

C:\MEDOT\BRMAINT

The template WorkSet to be used in the **MaineDOT – Bridge Maintenance** WorkSpace is **zz_MaineDOT-BridgeMaint_WorkSet_Template**
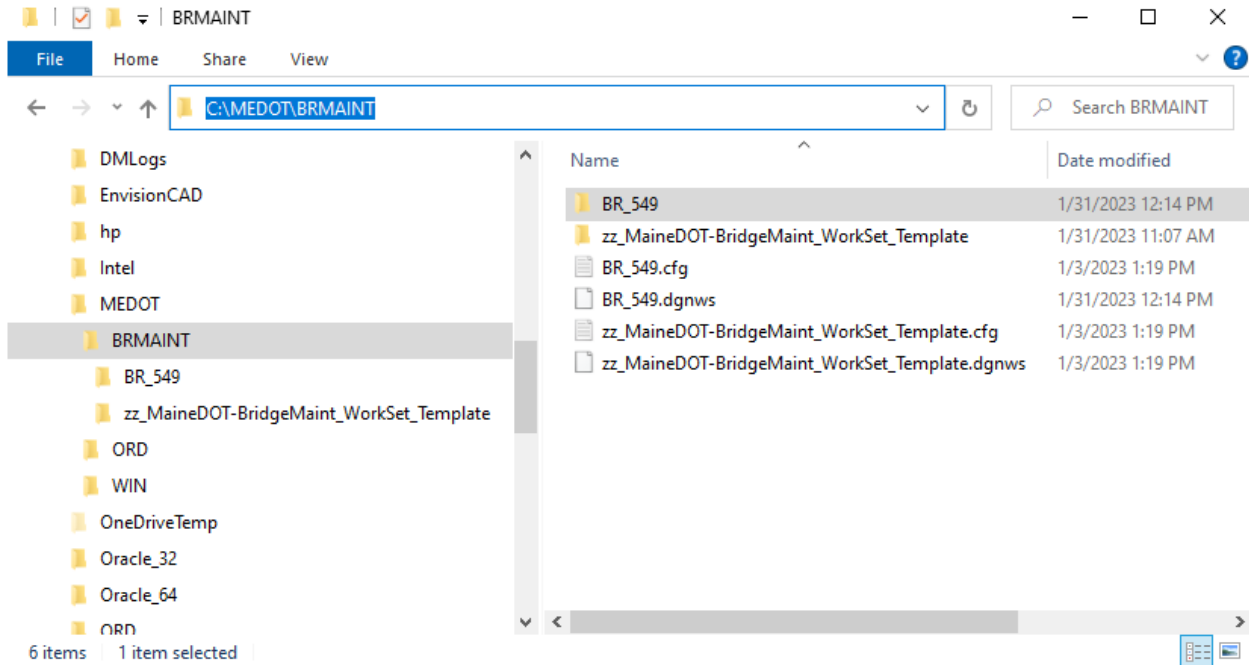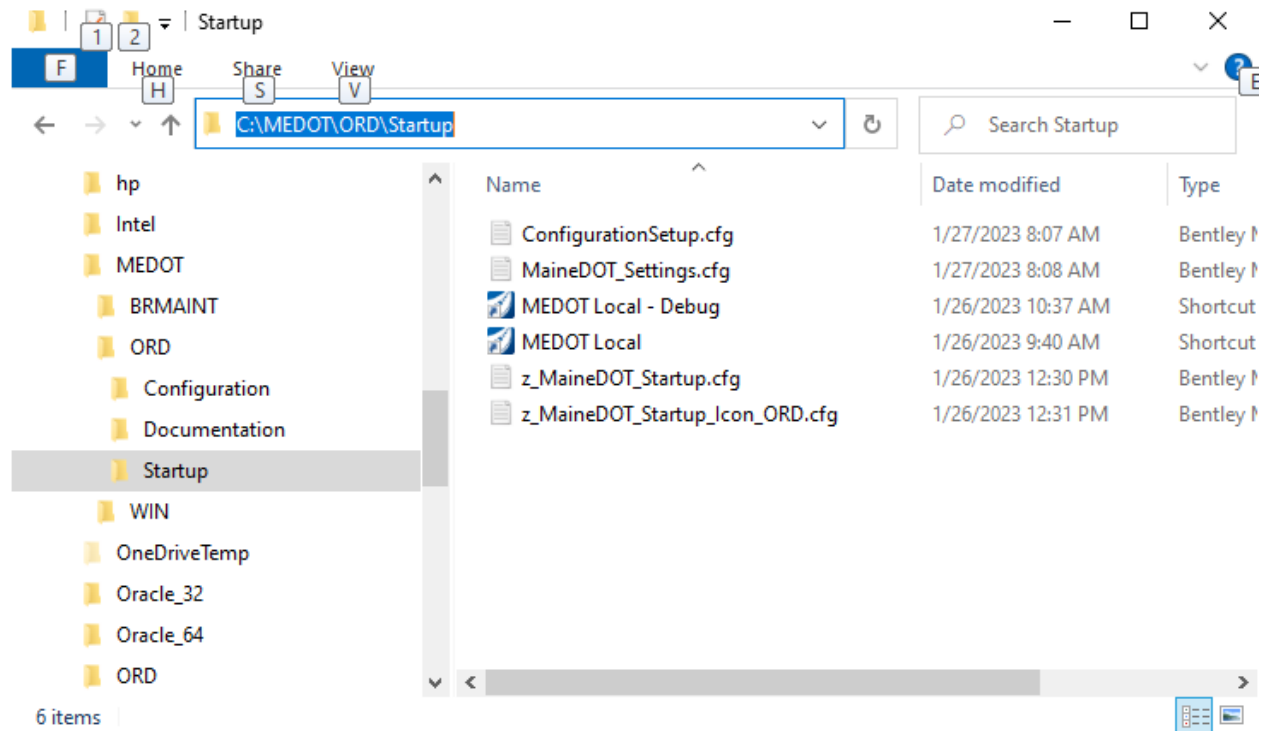
C:\MEDOT\ORD\Startup

The **Startup** folder contains the files to launch OpenRoads Designer with the MaineDOT environment. These files allow for different methods to launch ORD to give MaineDOT and their consultants flexibility in their installations.

- **Desktop shortcut**
  To launch ORD using this startup method the user simply copies the **MEDOT Local** shortcut to their Windows desktop. The shortcut references the ***z_MaineDOT_Startup_Icon_ORD.cfg*** file to load the required configuration files. Users must launch ORD using this shortcut every time to access the MaineDOT configuration.

- **Automatic load from ConfigurationSetup.cfg**
  The ***ConfigurationSetup.cfg*** file is a modified version of the default *C:\ProgramData\Bentley\OpenRoads Designer CE 10.10\Configuration\ConfigurationSetup.cfg* file. Replacing the file delivered with ORD with this modified file will allow users to launch ORD without the need for a custom Windows shortcut. Most users should have write access to this folder, so no special administrator access to the computer should be required for users to copy the file into place.

- **Automatic load from z_MaineDOT_startup.cfg**
  The ***z_Maine_Startup.cfg*** file can be copied to the ORD config/system folder so that no special shortcut is needed to load the configuration, similar to the ConfigurationSetup.cfg file. The difference here is that this file is copied to the product folder under C:\Program Files and required administrator access to copy the file into place.

Each of the starting options include the **MaineDOT_Settings.cfg** file to load the configuration.

INSTALLATION

The master configuration folder **MEDOT** contains these subfolders:

- **BRMAINT** – Bridge Maintenance WorkSets
- **ORD** – MaineDOT ORD environment
- **WIN** – MaineDOT Project Development group WorkSets

The master folder **MEDOT** can be moved from it default location **C:\MEDOT** to another folder or drive or a combination thereof. Likewise the two folders BRMAINT and ORD can be moved to another folder or drive or combination thereof, independently or together. This can be achieved by modifying paths within the configuration. These paths are saved in variables within the configuration files, the files with the extension **cfg**.

The configuration by default is set up to work with this address **C:\MEDOT** but can be installed in any location; local, network, or cloud. If you move the **MEDOT** folder away from this default location you need to edit paths within the applicable configuration files that live in the **ORD\Startup** folder.
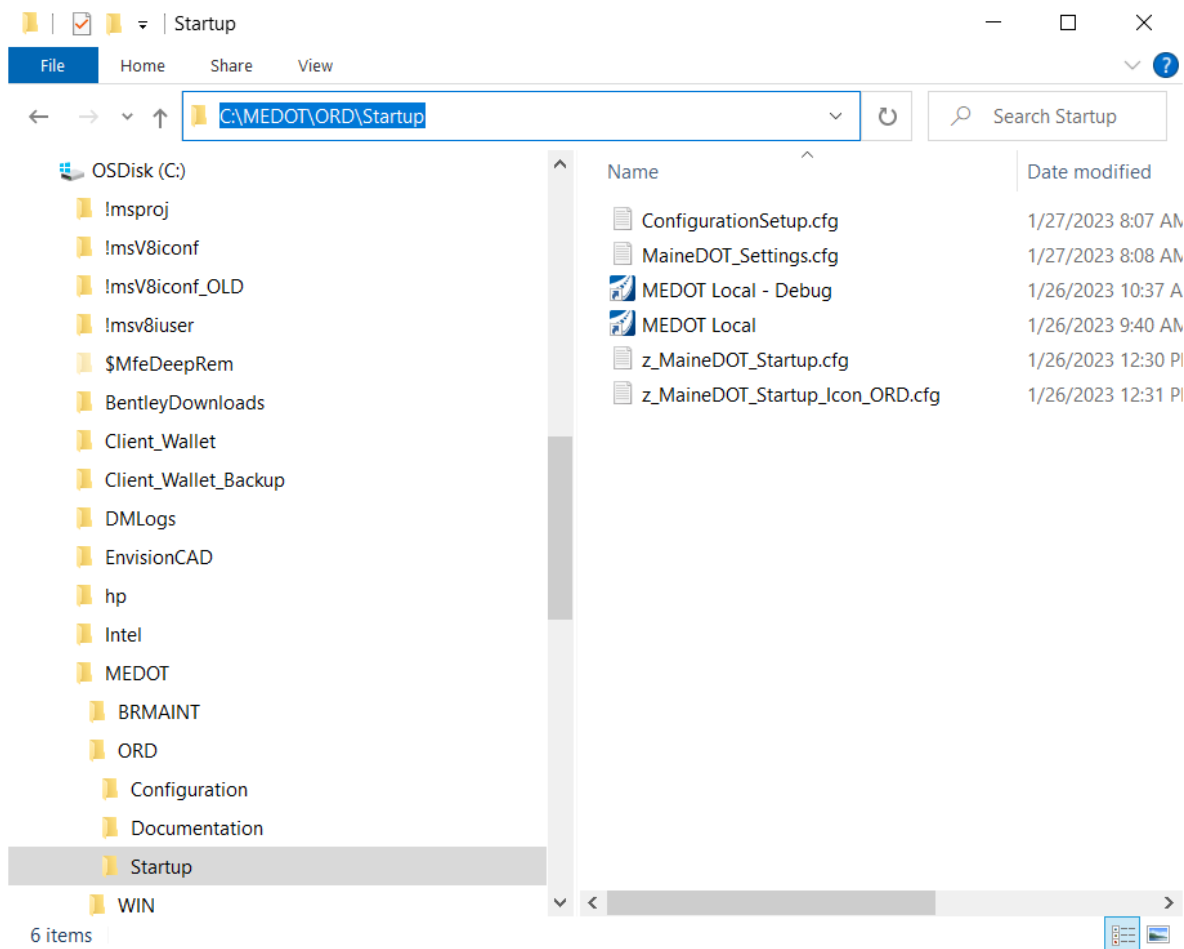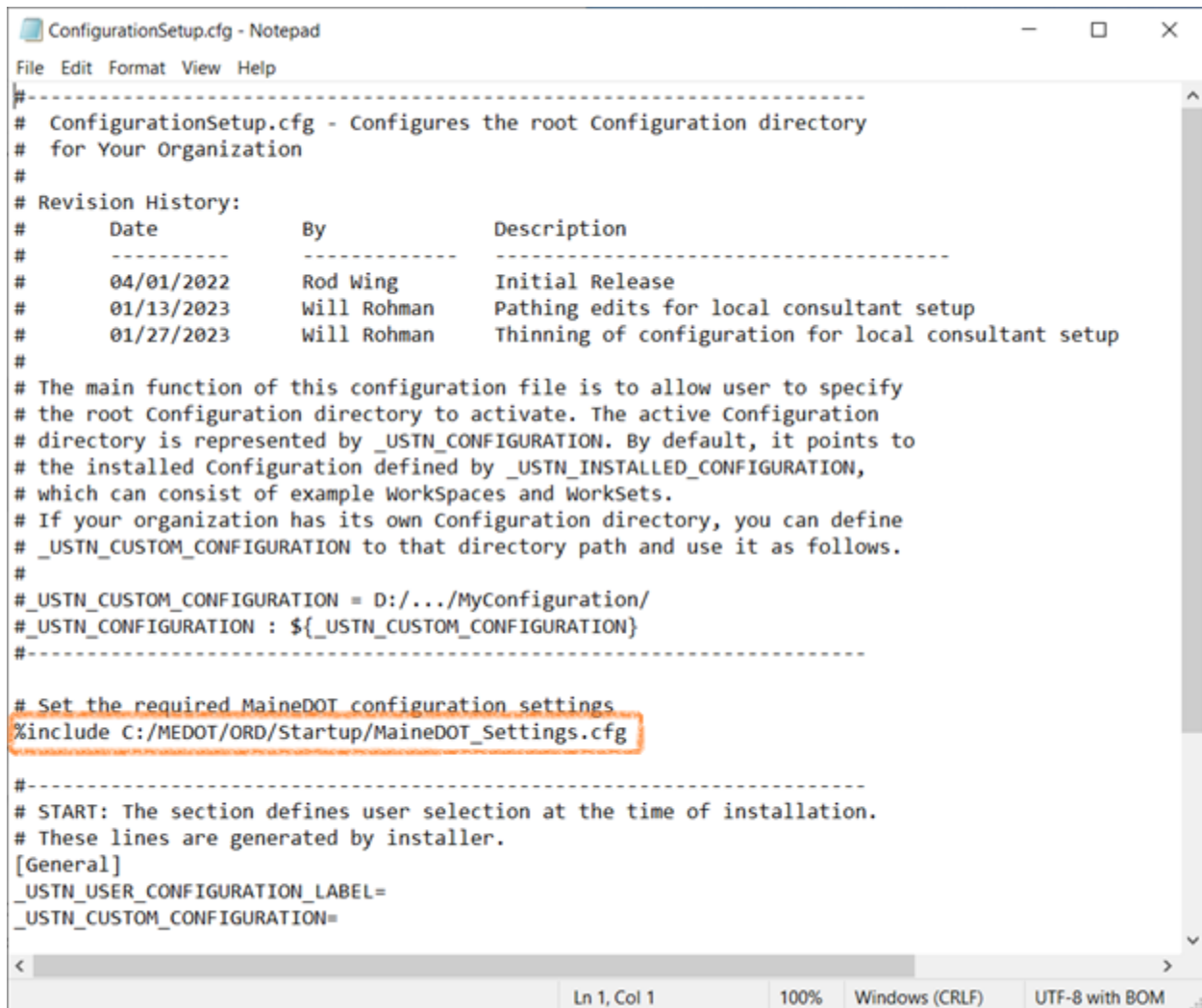
If you change the default location of the MaineDOT's master MEDOT folder location. One of the paths that you need to edit is in an **%include** statement that's loads the **MaineDOT_Settings.cfg** file. This **%include** statement can be found in these **cfg** files:

- **ConfigurationSetup.cfg**
- **z_MaineDOT_Startup.cfg**
- **z_MaineDOT_Startup_Icon_ORD.cfg**

- Also you need to change the Target field of the **MEDOT Local** shortcut to reflect the change of the path to the **z_MaineDOT_Startup_Icon_ORD.cfg** file.

If you change the default location of the **WIN** and or **BRMAINT** folders you need to change the path to these folders as stated in the **MaineDOT_Settings.cfg** file.
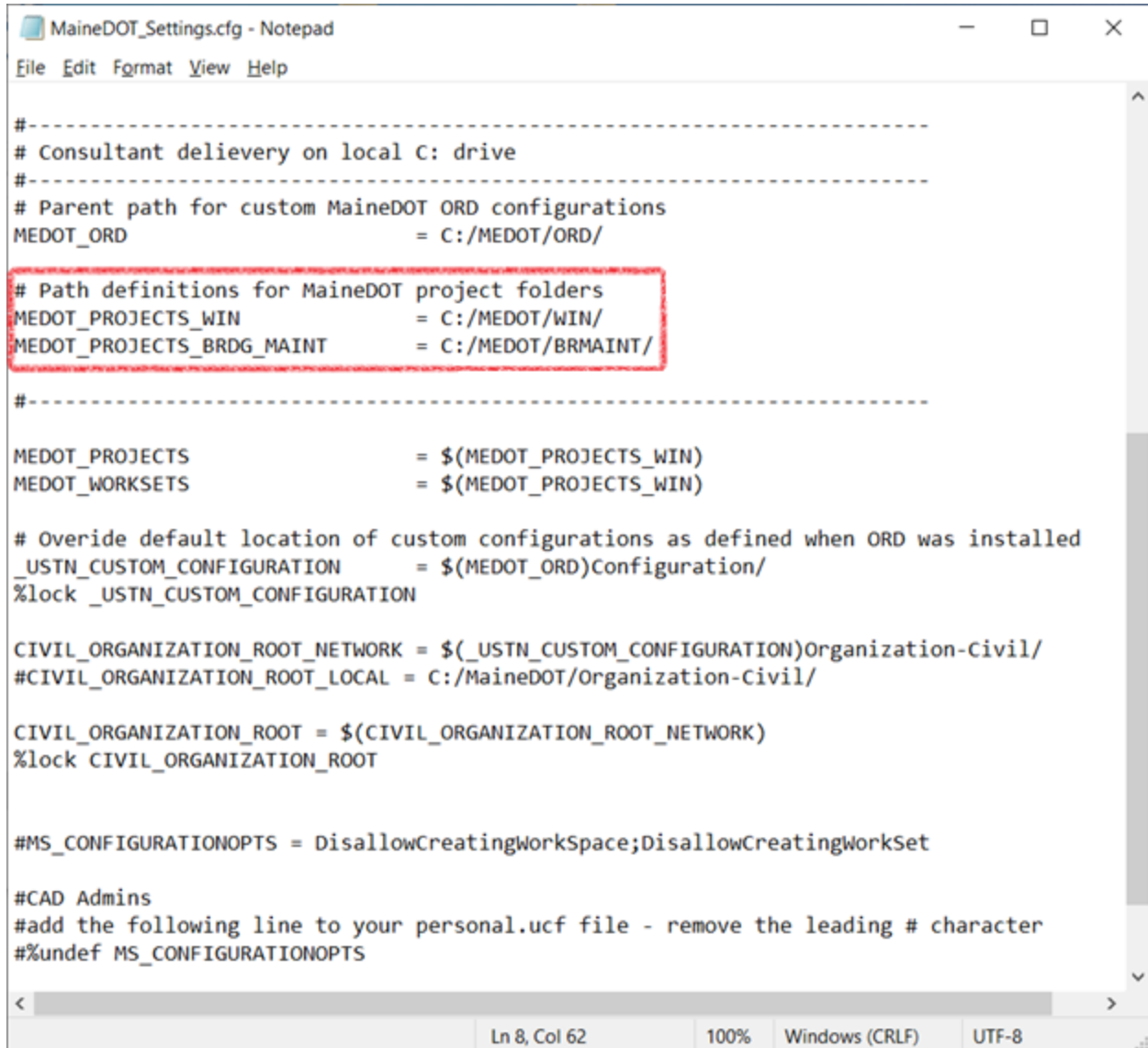

ConfigurationSetup.cfg:

Here in the **ConfigurationSetup.cfg** you edit the highlighted **%include** statement to match the change you made to the location of the **MEDOT** folder. For changing the **MEDOT** folder location from the default setup this is the only edit necessary to this file.

MaineDOT_Settings:

If you are moving the location of the **MEDOT\ORD** directory you don't need to edit this cfg file, it is the other configuration files that need editing.

If you are changing the default location of the **WIN** and or **BRMAINT** folders (which contain the WorkSets) you need to change the path to these folders in this configuration file (see the paths in the 'red' box)

z_MaineDOT_Startup.cfg:

```
z_MaineDOT_Startup.cfg - Notepad                                    —    □    ✕
File  Edit  Format  View  Help
#-------------------------------------------------------------------------------
# Filename: z_MaineDOT_Startup.cfg
#
# Developed by: Rod Wing - EnvisionCAD
#               (Under contract to Maine DOT)
#
# Description:
# Loads the main MaineDOT settings configuartion file.
#
# This file is loaded by the custom MaineDOT ORD shortcut (icon)
#
# Revision History:
#       Date            By                  Description
#       ----------      --------------      ------------------------------------
#       04/01/2022      Rod Wing                Initial Release
#       12/22/2022      Rod Wing                Changed the path from ORD
#       01/03/2023      Will Rohman             Changed path to local Shar
#       01/13/2023      Will Rohman             Pathing edits for local co
#-------------------------------------------------------------------------------

%include C:/MEDOT/ORD/Startup/MaineDOT_Settings.cfg


                         Ln 1, Col 1        100%   Windows (CRLF)    UTF-8
```

Here in the **z_MaineDOT_Startup.cfg** you edit the highlighted **%include** statement to match the change you made to the location of the **MEDOT** folder. For changing the **MEDOT** folder location from the default setup this is the only edit necessary to this file.

z_MaineDOT_Startup_Icon_ORD.cfg:

Here in the **z_MaineDOT_Startup.cfg** you edit the highlighted **%include** statement to match the change you made to the location of the **MEDOT** folder. For changing the **MEDOT** folder location from the default setup this is the only edit necessary to this file.

MEDOT Local shortcut:

Here in the **MEDOT Local** shortcut you edit the 'blue' highlighted Target Field to reflect the change you made to the location of the **MEDOT** folder. For changing the **MEDOT** folder location from the default setup this is the only edit necessary to this file.
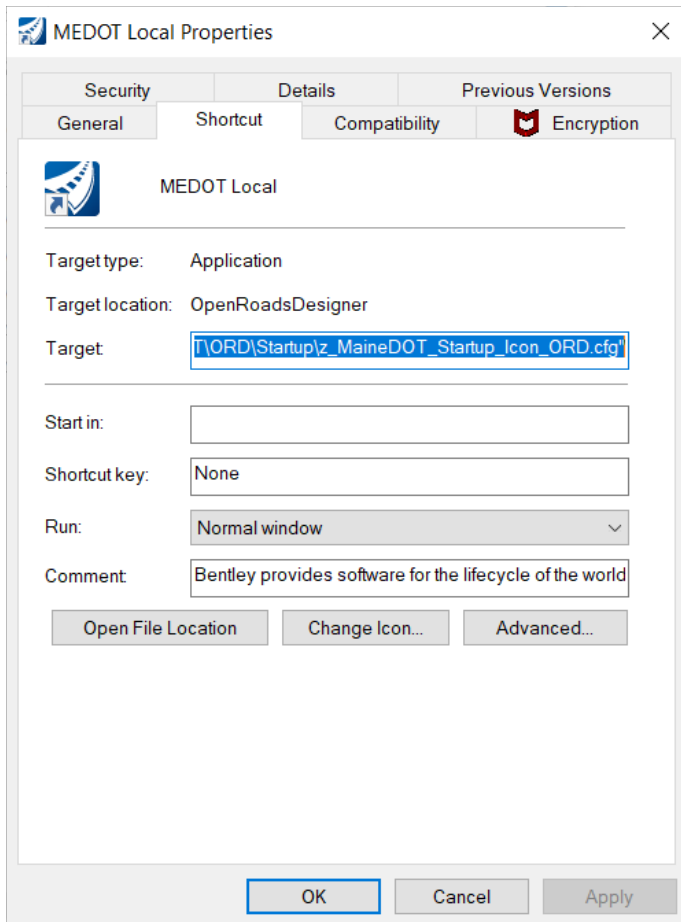
The default Target Field is:

```
"C:\Program Files\Bentley\OpenRoads Designer CE
10.10\OpenRoadsDesigner\OpenRoadsDesigner.exe" –
wc"C:\MEDOT\ORD\Startup\z_MaineDOT_Startup_Icon_ORD.cfg"
```

The highlighted portion of the default pathing above is the section that needs to be edited to reflect what changes you have made to the folder and file locations.

Once these startup configuration files have been modified to reflect your installation locations you have completed the installation.

WORKSPACES

WorkSpaces further customize the MaineDOT ORD environment to suit the user, currently there are only three:

- MaineDOT
- MaineDOT - Bridge Maintenance
- MaineDOT Training

MaineDOT

The **MaineDOT** WorkSpace is intended to be used by users which are doing work for MaineDOT Project Development. This would include almost all disciplines and CAD users producing deliverables for MaineDOT Project Development.
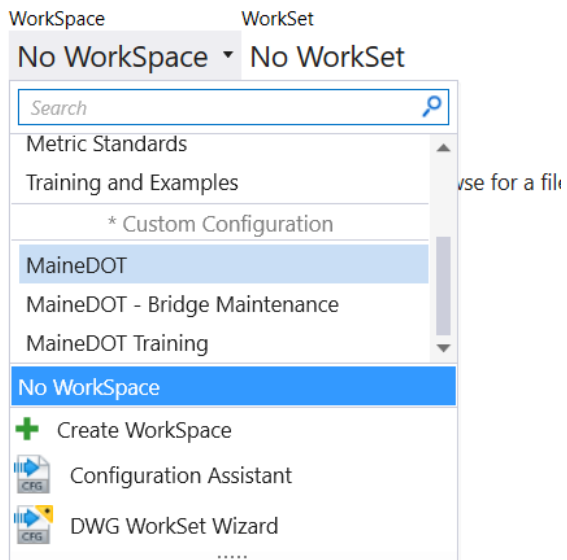
Using an unmodified MaineDOT configuration of the **MaineDOT** WorkSpace will save it's associated WorkSets here by default:

C:\MEDOT\WIN
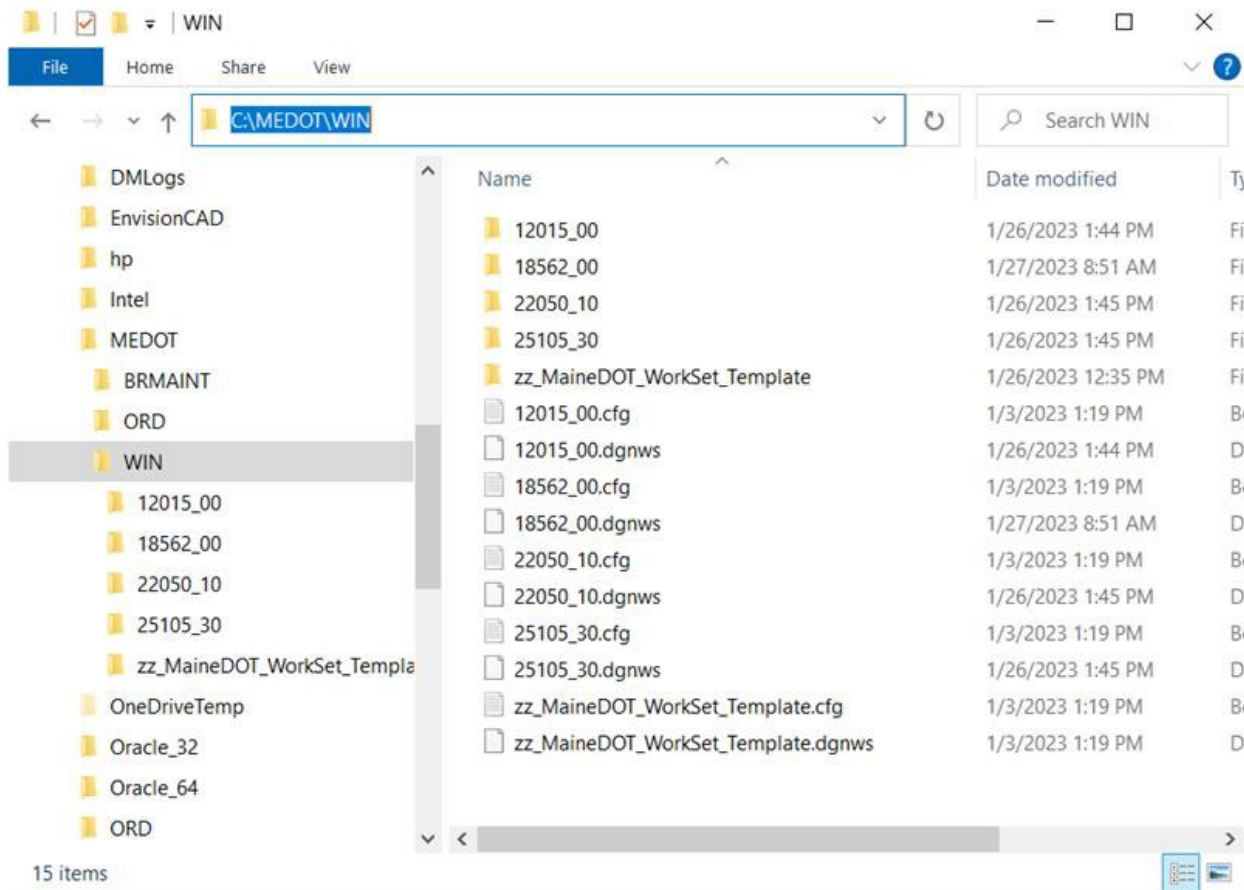
When creating a new WorkSet for this WorkSpace please use the template named:

 **zz_MaineDOT_WorkSet_Template**

This contains the correct ORD resource files and project folder structure used by MaineDOT as described previously. Further details and explanation of the folders and files intended use and what they should contain can be found in the accompanying xlsx file "MaineDOT_FileNamingFolderStructure".

The former V8i project folder structure has been revamped to best accommodate ORD workings and streamline MaineDOT folder organization. The new ORD WIN project folder structure is similar to the old V8i structure, the major exceptions being:

- The name of the folder that houses all the project folders is now "WIN" as opposed to "PIN".
- The WIN number folder and the discipline folders are no longer separated by a folder named with two digits (ex: "00"). But rather the former two digit designation is now applied to the name of the WIN project folder.
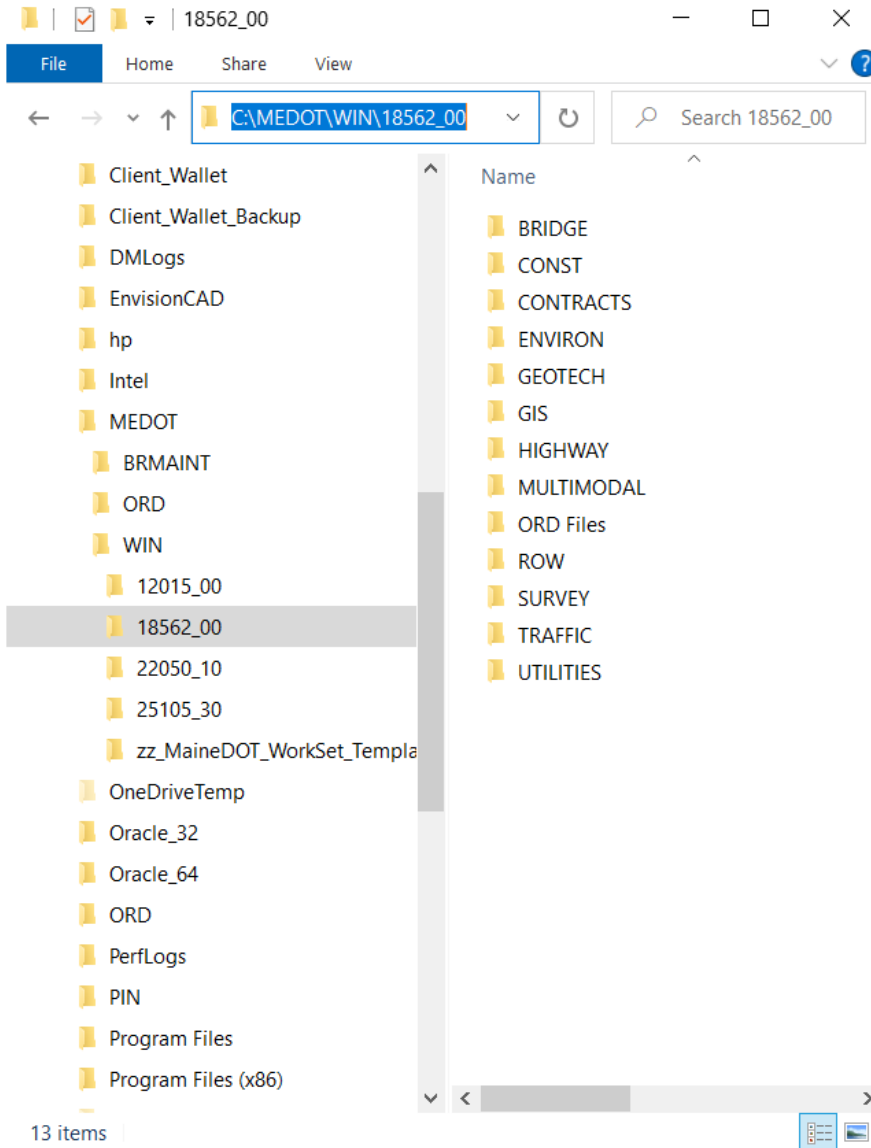
For example a typical V8i WIN folder structure would look something like this:

\PIN\18562\00
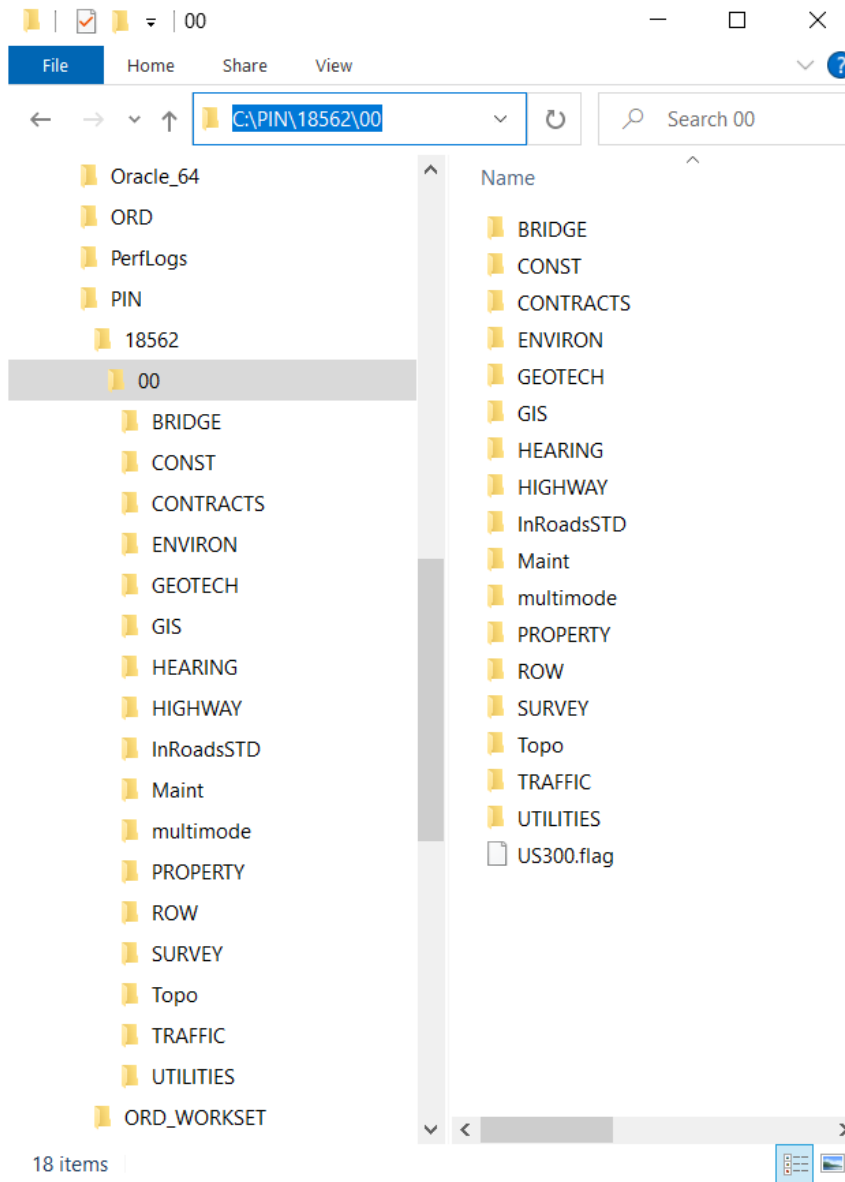
Now in ORD this same project folder will be named **18562_00** with "_" (underscore) separating the WIN number from the two digit designation, so the folder structure looks like this:

\WIN\18562_00

The folder that once contained the V8i CADD data specific to the project which was named **InRoadsSTD** has been rename to **ORD files** for ORD. This ORD files folder contains seed files and a copy of MaineDOT's Road Modeler template library.
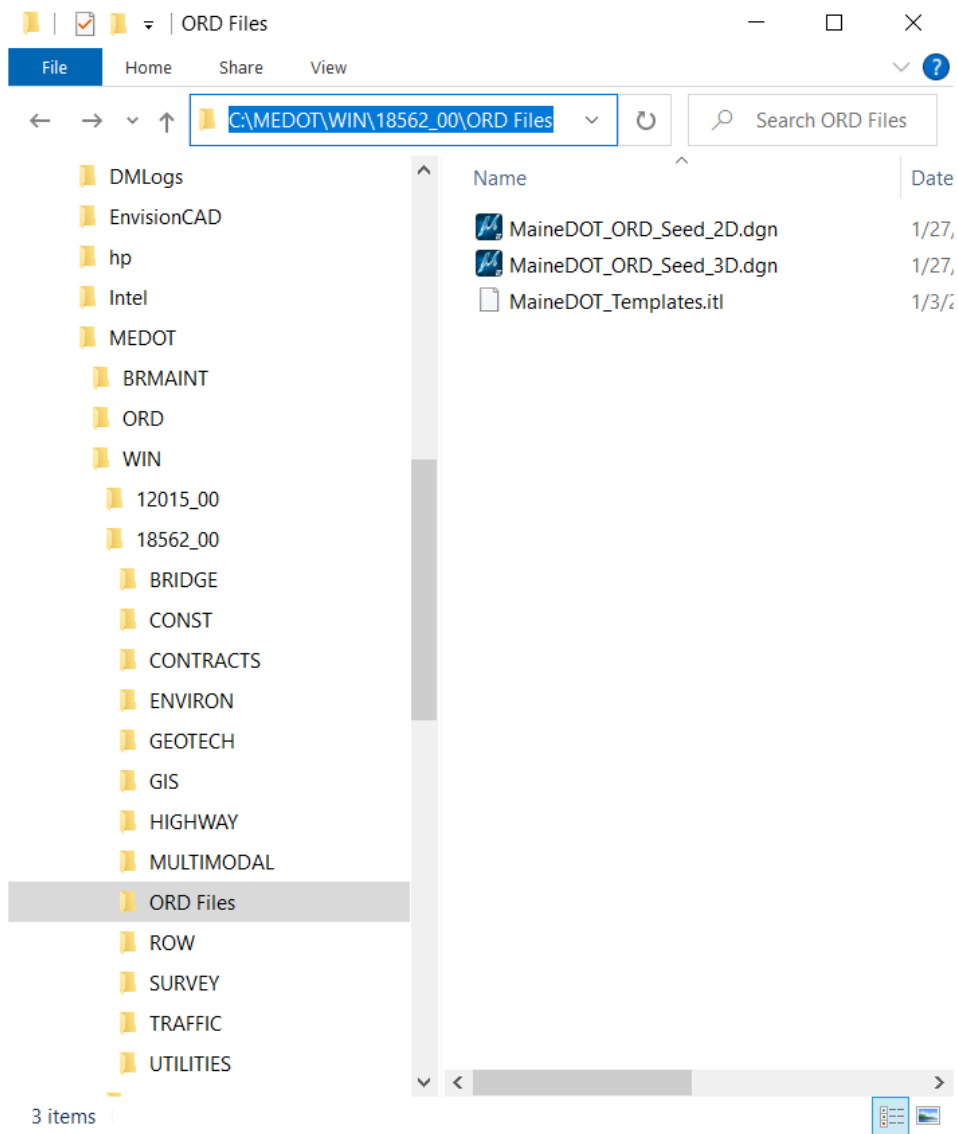

Back in the V8i Project Folder structure there was also a folder named **MSTA** that was an intermediary folder between the discipline's folder, and the CAD files created by the discipline. All of these folders have been removed. For example in V8i the path to survey CAD files would have looked like this:
\18562\00\SURVEY\MSTA now in ORD this path becomes this **\18562_00\SURVEY**.
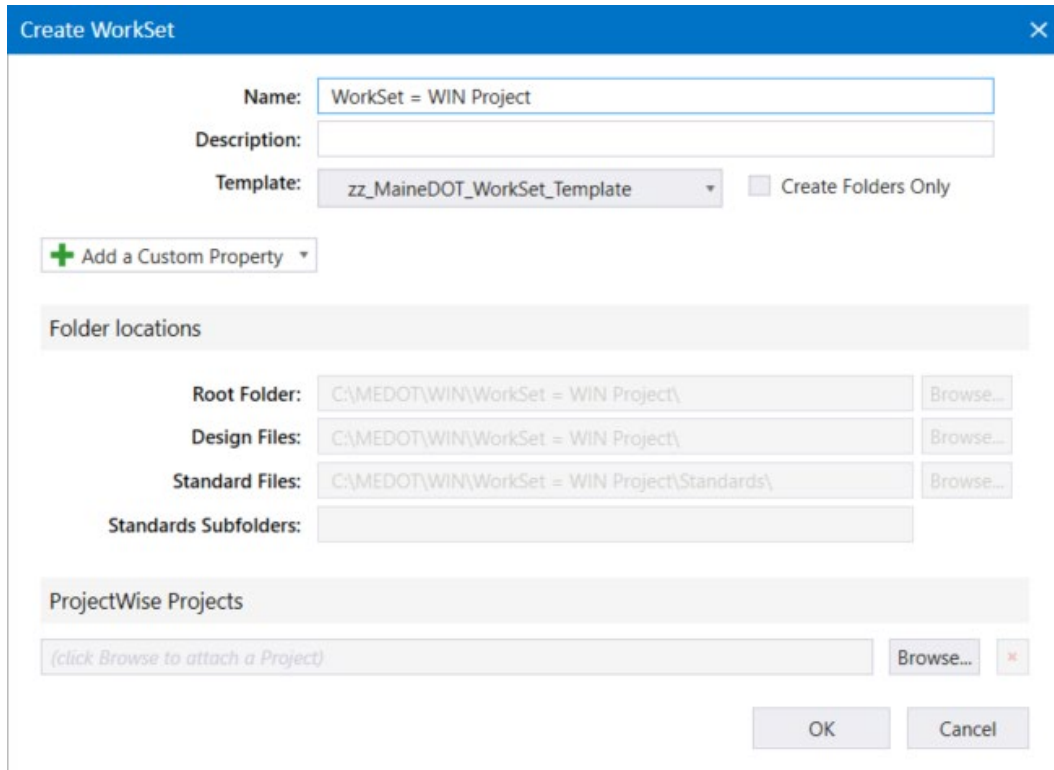
Discipline Folders

Every discipline that could contribute CAD data and files to a project has a folder provided for them within the WIN project folder. The intent is to have ONLY CAD files directly underneath the disciplines' folders and all non-CAD materials somewhere else, another location or if necessary in a subfolder of a disciplines' folder.

The discipline folders within a WIN project folder have similar folder structure and function. They are all intended to contain only CAD files and sub-folders that further organize the CAD materials as necessary.
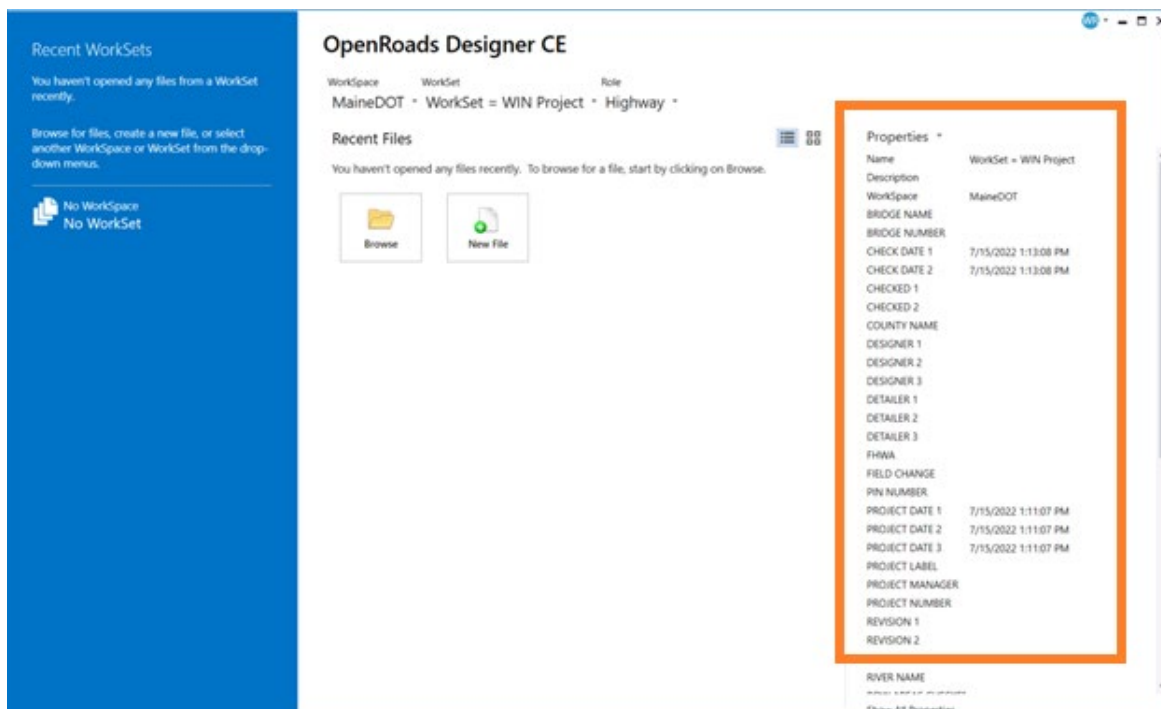
For example here is a Survey folder it contains only dgns and other CAD files are saved in the other sub-folders.
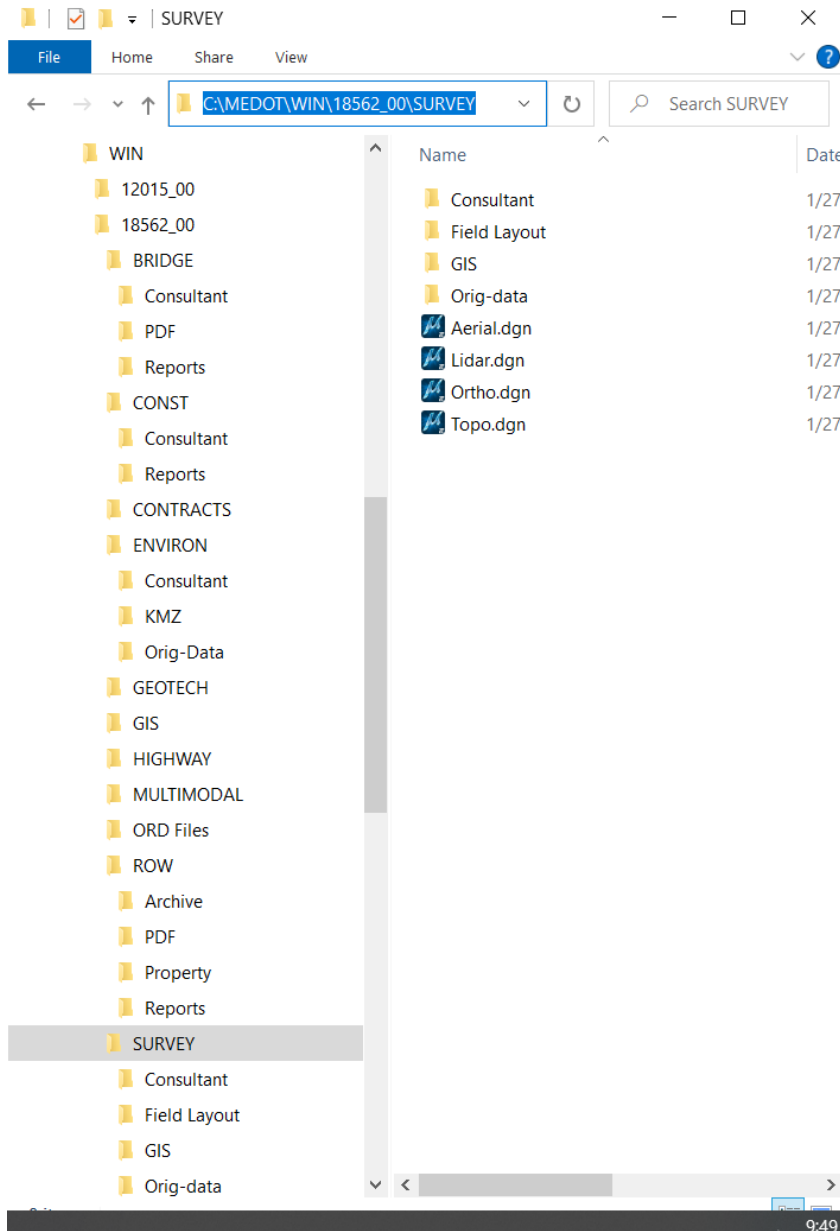
Additional information and details about MaineDOT's folder structure and an explanation of what data is to be stored in the individual dgn files can be found in the accompanying xlsx file "MaineDOT_FileNamingFolderStructure".
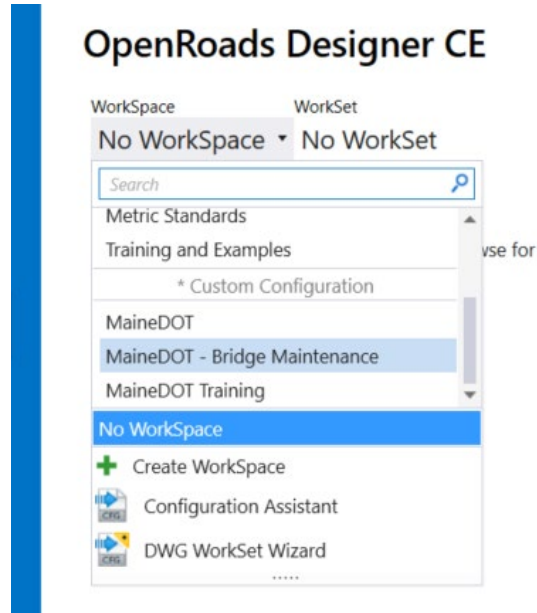

Once the new WorkSet is created you fill out the custom properties (in orange box) which will then be used to propagate the sheet boarders of your future plan set.

The **MaineDOT – Bridge Maintenance** WorkSpace is intended to be used **only** by users which are doing work for MaineDOT Bridge Maintenance group, in the foreseeable future this WorkSpace will be used very rarely.

Using an unmodified MaineDOT configuration of the **MaineDOT – Bridge Maintenance** WorkSpace will save it's associated WorkSets here by default:

C:\MEDOT\BRMAINT

24
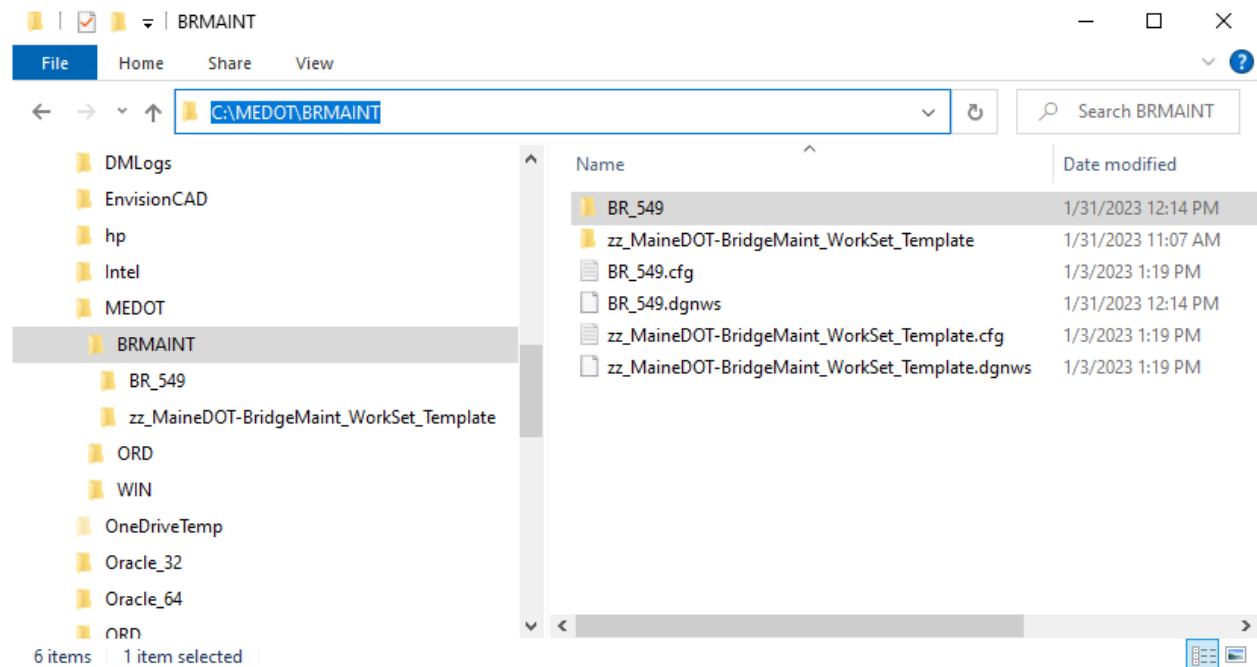
When creating a new WorkSet for this WorkSpace please use the template named:

zz_MaineDOT-BridgeMaint_WorkSet_Template

The MaineDOT – Bridge Maintenance WorkSpace, contains the ORD resource files and ORD project folder structure used by MaineDOT as described previously. Further details and explanation of the folders and files intended use and what they should contain can be found in the accompanying xlsx file "MaineDOT_FileNamingFolderStructure".

The former V8i project folder structure has been revamped to best accommodate ORD workings and streamline Bridge Maintenance folder organization. These new project folders will be saved under **BRMAINT**, their folder structure is very simple. The name of the Project folder is "**BR**" for "Bridge", underscore "**_**", then the Bridge Number say "**549**", so the Bridge Maintenance Project folder becomes "**BR_549**". The unmodified path to the Bridge Maintenance project folders is:

C:\MEDOT\BRMAINT

And the example project folder **BR_549** would have this directory:

C:\MEDOT\BRMAINT\BR_549

The Bridge Maintenance project folder currently contains no subfolders. Main reason being no other discipline would use this folder nor would other disciplines' files be reference in a Bridge Maintenance file. The only things contained in the Bridge Maintenance project folders are files relevant to the bridge the folder is named after.

Once the new WorkSet is created you fill out the custom properties (in orange box) which will then be used to propagate the sheet boarders of your future plan set.
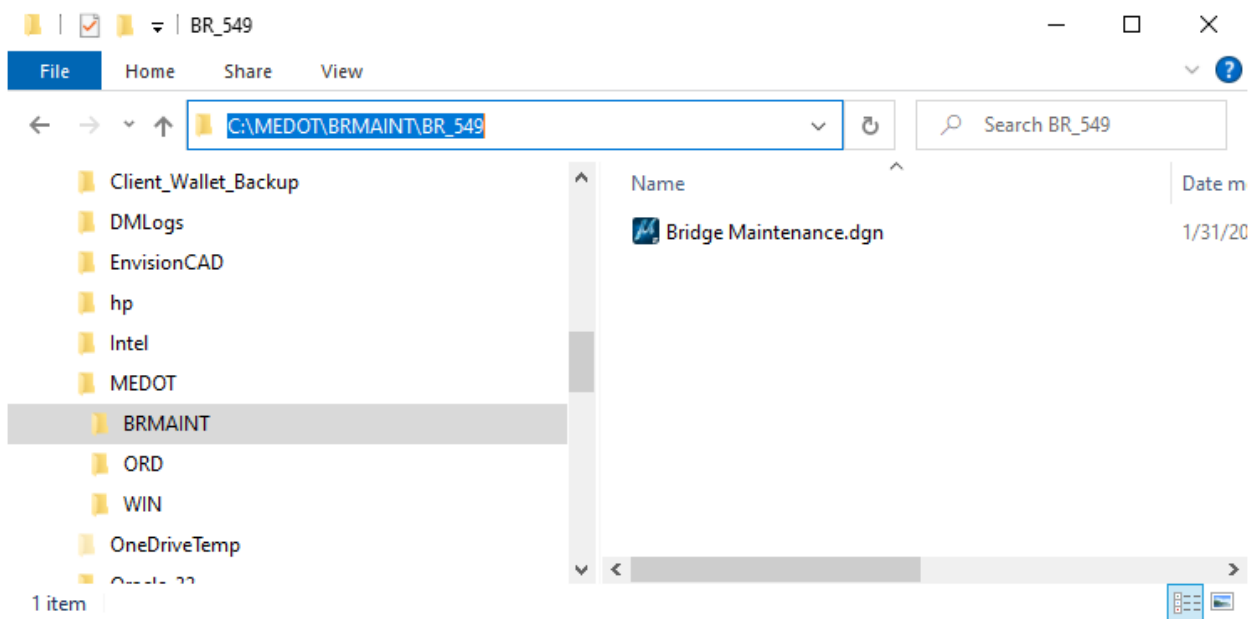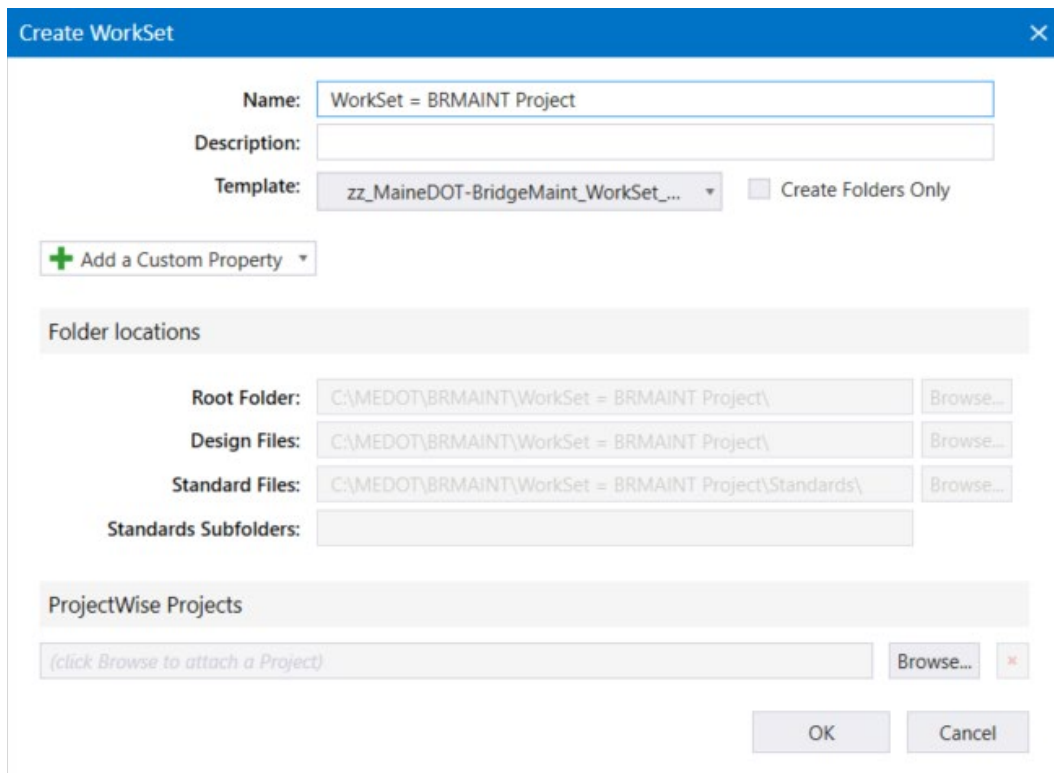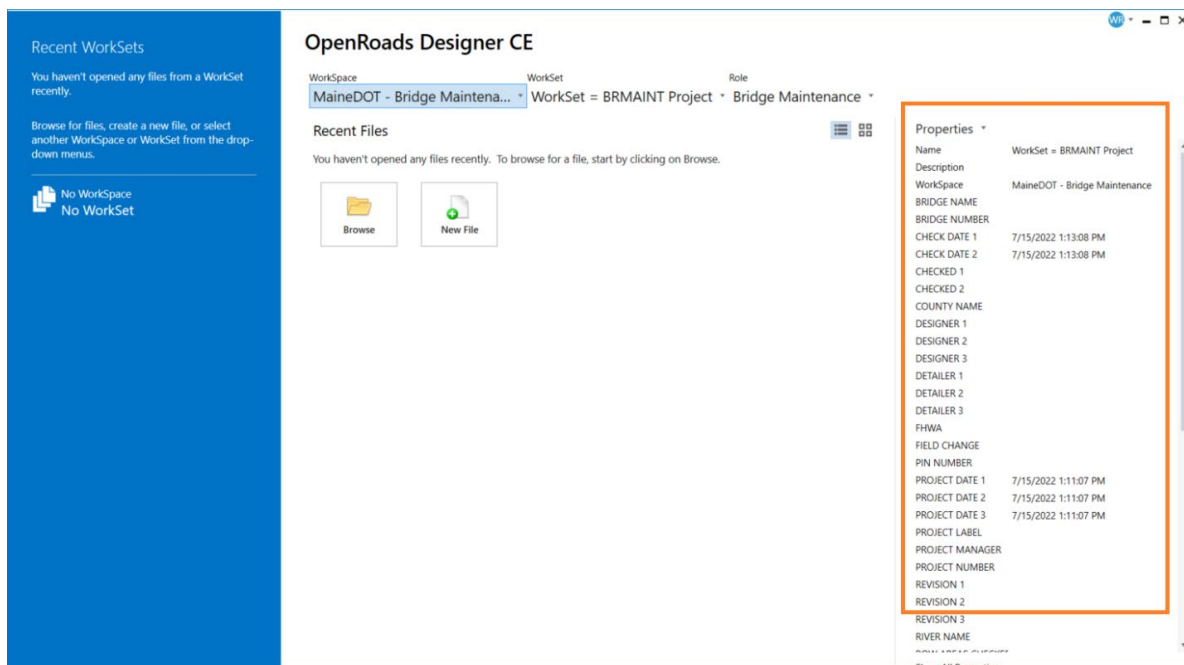
TO CONTACT MAINEDOT CADD SUPPORT

If you have any question or issues with the MaineDOT ORD CADD environment please visit the MaineDOT CADD Support website:

https://www.maine.gov/mdot/caddsupport/

There you will also find more information about:

- MaineDOT CADD standards
- Version of CADD software MaineDOT currently uses
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