

ODOTcadd Standards for MicroStation/GEOPAK V8i (SELECTseries 4)

General Information

Thank you for downloading and installing the ODOTcadd Standards for MicroStation/GEOPAK V8i (SELECTseries 4).

These standards are continuously improved and subject to change with future updates. At the time of the October, 2015 CADD Standards release ODOT is in the process of migrating to the following software versions:

- 🕒 MicroStation V8i (SELECTseries 4) 08.11.09.829
- 🕒 PowerGEOPAK V8i (SELECTseries 4) 08.11.09.878

This document provides general information to install the ODOTcadd standards and configure them for use in a typical ODOT installation. External consultants may need to adapt the configuration to suit their specific configuration needs. An understanding of MicroStation configuration is assumed before reading this document.

The ODOTcadd standards include many of ODOT's previous V8istd CADD Standards for MicroStation and GEOPAK with additional newly developed standards for Bentley's OpenRoads technology; however, there are some new changes that are not backwards compatible with previous releases of ODOT's CADD Standards and existing projects. **ODOT recommends completing existing projects using the previously published V8istd CADD Standards.** New projects started after January 16, 2015 with MicroStation and GEOPAK (SELECTseries 4) should be started using the new ODOTcadd Standards.

The following changes have been implemented with the ODOTcadd Standards which are not backwards compatible with the legacy ODOT ODOTstd\V8istd CADD Standards:

- 🕒 All of the plan sheet borders contained in ODOT_Sheets.cel have been changed to use MicroStation Tag elements in place of Data Entry Regions. This was done to provide future compatibility with ProjectWise. The Data Entry Regions have been removed from the title block portion of all of the cells. The new cells are not compatible with the old sheet numbering and cross referencing applications. New MicroStation Visual Basic Applications have been developed to use the Tag elements for sheet numbering and cross referencing.
- 🕒 The project folder structure has been modified. New applications have been developed for project creation and design file creation.
- 🕒 Standard design file names have been modified to insert an underscore character between the PID number and the two character file type code.
- 🕒 The two character file type code has been changed for bridge design file names for consistency.

Questions and suggestions for improvements to the ODOTcadd Standards should be addressed to the ODOT CADD Services team using the following form on the ODOT website:

http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Support/Pages/ServiceRequest.aspx

Installation

Software Versions

The following software versions were used for the preparation of this document:

- 🕒 Windows 7 Enterprise, Service Pack 1
- 🕒 MicroStation V8i (SELECTseries 4) 08.11.09.829
- 🕒 PowerGEOPAK V8i (SELECTseries 4) 08.11.09.878

GEOPAK (SELECTseries 4)

At the end of 2014 Bentley released GEOPAK (SELECTseries 4) version 08.11.09.789. This version of GEOPAK was initially planned as a maintenance release update to GEOPAK SS3; however, format changes to the Civil data have necessitated that Bentley treat this as a new software version. When a design file containing GEOPAK SS3 Civil data (OpenRoads data) is opened with SS4 it must be updated to the new format. Once updated, the data is not backwards compatible with GEOPAK SS3.

GEOPAK SS4 is installed on top of MicroStation SS3 and cannot be simultaneously installed with GEOPAK SS3. You can simultaneously install GEOPAK SS2 and GEOPAK SS4 on top of MicroStation SS3.

Software Installation

For a typical ODOT installation, Bentley software is installed in the default location.

ODOT CADD Standards Installation

The ODOTcadd Standards can be installed on a network drive, or on a local drive for a lap-top configuration. For a typical ODOT installation, the ODOTcadd standards are installed on a network drive in the following location:

I:\ODOTcadd

Configuration Files and Folders

Configuration Overview

The ODOTcadd configuration represents a significant change in the way ODOT's configuration variables are defined.

- 🕒 ODOT will use a Site Configuration file to define site specific variables that are universally defined for all projects.
- 🕒 MicroStation Project Configuration Files (.pcf) will be used to define project specific variables that are unique to each project.
- 🕒 ODOT users will access MicroStation or PowerGEOPAK via desktop shortcuts. Separate shortcuts are defined to access MicroStation or PowerGEOPAK using either the new ODOTcadd Standards or the old V8iSTD standards.

ODOTcadd Configuration Files

The configuration files listed below are used with the ODOTcadd standards.

- 🕒 `\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_network.cfg`
`\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_local.cfg`

The redirect file is used to set various custom configuration variables for the ODOTcadd standards. These variables define the paths where ODOT specific data is located. The following variables are defined:

ODOT_ROOT

This variable is defined to specify the root folder location for the `\ODOTcadd` folder.

ODOT_STD

This variable defines the path to the `\ODOTcadd\Standards` folder

ODOT_LOCAL

This variable can be used to define the location where site specific CADD Standards are located such as plot configuration files.

ODOT_USER

This variable defines the path to the user preference files (.upf)

ODOT_PROJECT

This variable defines the path to the MicroStation project configuration files (.pcf)

ODOT_TEMP

This variable defines the path for temporary resources

`z_ODOT_Redirect_local.cfg` is used for installations where the ODOTcadd folder will be housed in the root directory of the local computers `C:\` drive.

`z_ODOT_Redirect_network.cfg` is used for installations where the ODOTcadd folder will be housed on a network drive.

The redirect file calls `\ODOTcadd\Standards\config\Standards\ODOT_Site_V8iSS3.cfg`

- 🕒 **\ODOTcadd\standards\config\Standards\ODOT_Site.cfg**
 This site configuration file is used to define the configuration variables for ODOT’s MicroStation V8i (SELECTseries 3) CADD standards.
- 🕒 **\ODOTcadd\standards\config\Standards\ODOTcadd_User\prefs\dfltuser.cfg**
 This file tells MicroStation what UCF file to use on initial startup. The default is **ODOTcadd.ucf**.
- 🕒 **\ODOTcadd\standards\config\Standards\ODOTcadd_User\prefs\ODOTcadd.ucf**
 This UCF file is the default user configuration file for use with ODOTcadd. This file can be used to define any user specific configuration variables for MicroStation or GEOPAK.

Set-up Steps for MicroStation SS4 with the GEOPAK Suite SS4 with the ODOTcadd Standards

The following steps are for a typical ODOT installation of MicroStation V8i SS4 with the GEOPAK Suite SS4. These steps are performed after completing the product installation and ODOTcadd installation.

- 🕒 Copy:
`..\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_network.cfg`
 Or
`..\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_local.cfg`
 To:
`C:\ProgramData\Bentley\MicroStation V8i (SELECTseries)\Workspace\Standards`

Note: It may be necessary to edit the redirect file to use the correct drive letters for your installation.

- 🕒 Copy the following folder and all its contents:
`..\ODOTcadd\Standards\config\Standards\ODOTcadd_User`
 To:
 The location specified by the variable **ODOT_USER**, which is defined in the configuration file **z_ODOT_redirect_network.cfg** or **z_ODOT_redirect_local.cfg**.
- 🕒 Create the four sub-folders shown below in the folder specified by the variable **ODOT_TEMP** (typically C:\Temp for an ODOT installation as shown below)

 - C:\Temp\rsc
 - C:\Temp\scr
 - C:\Temp\sketchupimage
 - C:\Temp\tmp

Set-up Steps for PowerGEOPAK SS4 with the ODOTcadd Standards

The following steps are for a typical PowerGEOPAK SS4 installation.

- 📌 Copy:
`..\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_network.cfg`
Or
`..\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_local.cfg`
To:
`C:\ProgramData\Bentley\PowerGEOPAK V8i (SELECTseries 3)\WorkSpace\Standards`

Note: It may be necessary to edit the redirect file to use the correct drive letters for your installation.

- 📌 Copy the following folder and all its contents:
`..\ODOTcadd\Standards\config\Standards\ODOTcadd_User`
To:
The location specified by the variable **ODOT_USER**, which is defined in the configuration file **z_ODOT_redirect_network.cfg** or **z_ODOT_redirect_local.cfg**.
- 📌 Create the four sub-folders shown below in the folder specified by the variable **ODOT_TEMP** (typically C:\Temp for an ODOT installation as shown below)

C:\Temp\rsc
C:\Temp\scr
C:\Temp\sketchupimage
C:\Temp\tmp

Accessing MicroStation/GEOPAK SS3 with the ODOTcadd Configuration

Opening MicroStation SS4 or PowerGEOPAK SS4 with the ODOTcadd Standards

It is no longer possible to open MicroStation with the ODOTcadd Standards by double-clicking the file name in Windows Explorer. MicroStation must be opened from a shortcut with the variable **ODOTcadd** defined as detailed below:

- The following desktop shortcuts are available in the ODOTcadd Standards:

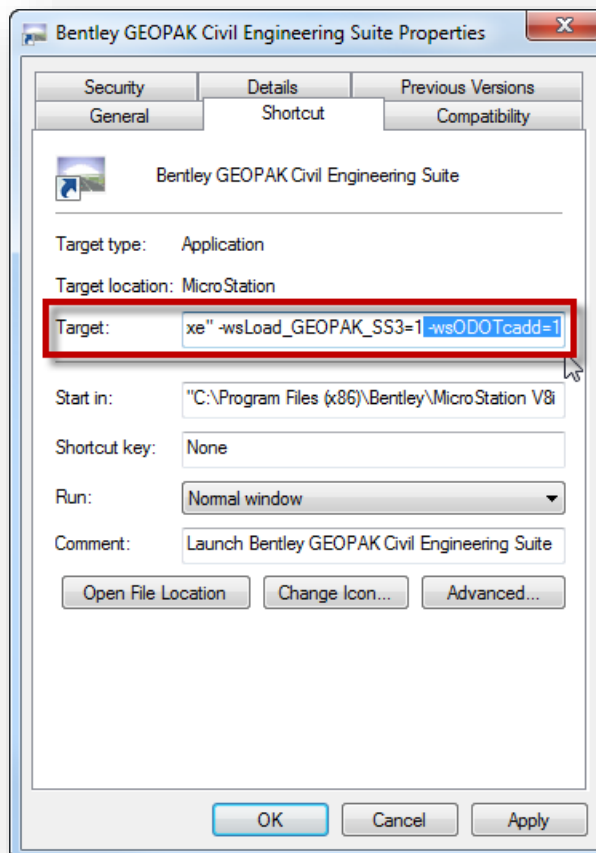
```

..\ODOTcadd\Standards\config\shortcuts\ODOTcadd GEOPAK SS4
..\ODOTcadd\Standards\config\shortcuts\ODOTcadd MicroStation SS4
..\ODOTcadd\Standards\config\shortcuts\ODOTcadd Power GEOPAK SS4
    
```

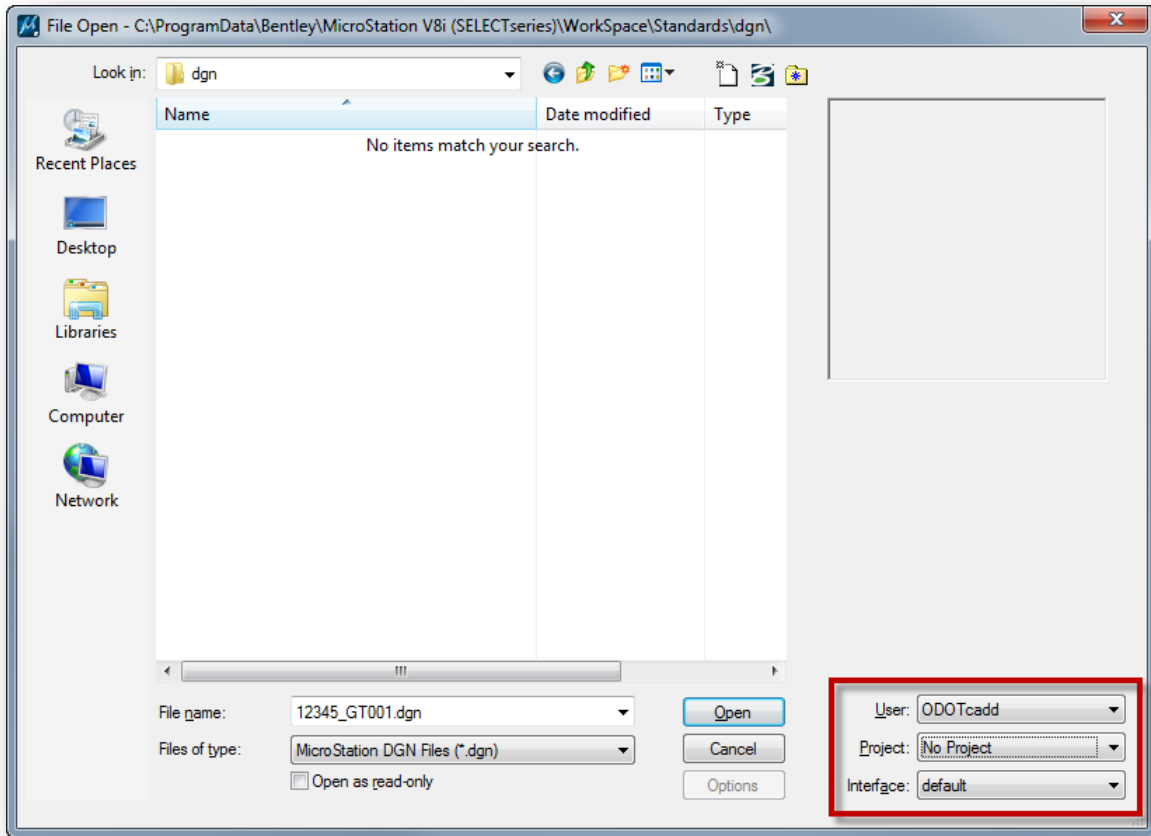
Copy the appropriate shortcut(s) for your installation from the folder listed above to your desktop.

Note: The **ODOTcadd MicroStation SS4** shortcut does not have the variable **Load_GEOPAK_SS4** defined and can be used to access MicroStation without consuming a GEOPAK license.

The **Target** value for these shortcuts has been appended with **-wsODOTcadd=1** as shown below.



When MicroStation is opened with the **ODOTcadd** variable defined, the **User** will default to **ODOTcadd** as shown below.

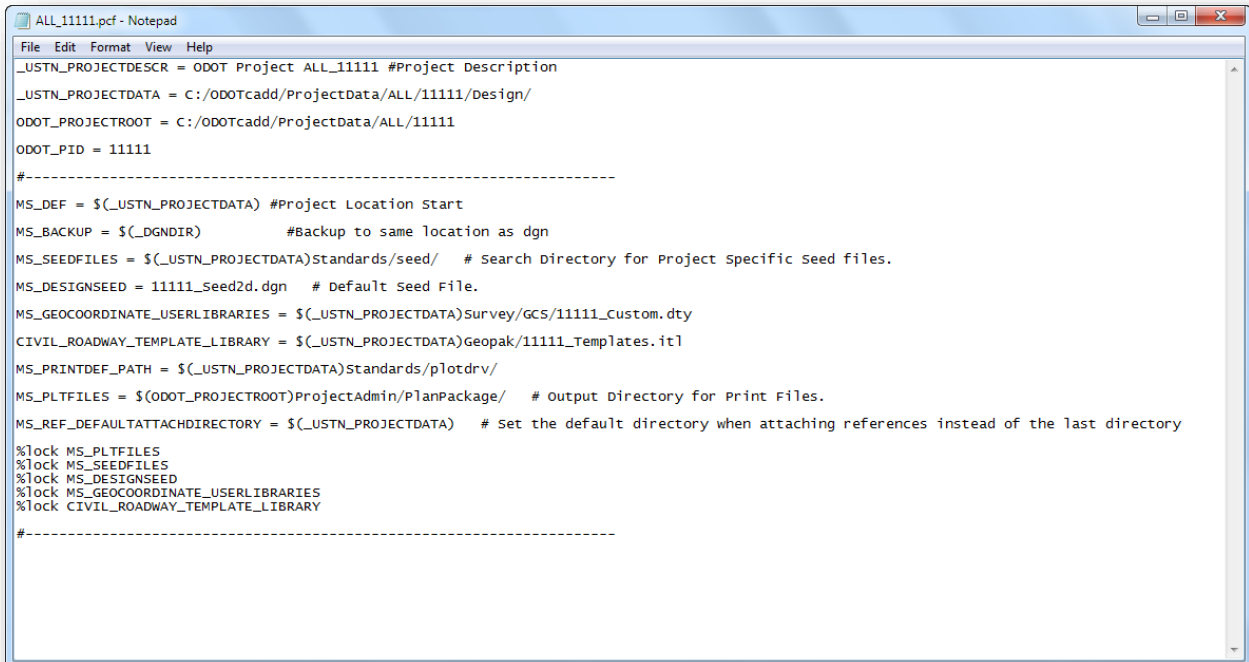


Project Configuration Files (.pcf)

ODOT will use MicroStation project configuration files (.pcf) to define variables that are specific to each project.

The **No Project** option can be used to work with projects that do not have a .pcf file defined.

An example of the typical PCF file contents is shown below.



```

ALL_11111.pcf - Notepad
File Edit Format View Help
_USTN_PROJECTDESCR = ODOT Project ALL_11111 #Project Description
_USTN_PROJECTDATA = C:/ODOTcadd/ProjectData/ALL/11111/Design/
ODOT_PROJECTROOT = C:/ODOTcadd/ProjectData/ALL/11111
ODOT_PID = 11111
#-----
MS_DEF = $_(USTN_PROJECTDATA) #Project Location Start
MS_BACKUP = $_(DGNDIR) #Backup to same location as dgn
MS_SEEDFILES = $_(USTN_PROJECTDATA)Standards/seed/ # Search directory for Project specific seed files.
MS_DESIGNSEED = 11111_Seed2d.dgn # Default Seed File.
MS_GEOCOORDINATE_USERLIBRARIES = $_(USTN_PROJECTDATA)Survey/GCS/11111_Custom.dty
CIVIL_ROADWAY_TEMPLATE_LIBRARY = $_(USTN_PROJECTDATA)Geopak/11111_Templates.itl
MS_PRINTDEF_PATH = $_(USTN_PROJECTDATA)Standards/plotdrv/
MS_PLTFILES = $(ODOT_PROJECTROOT)ProjectAdmin/PlanPackage/ # Output Directory for Print Files.
MS_REF_DEFAULTATTACHDIRECTORY = $_(USTN_PROJECTDATA) # Set the default directory when attaching references instead of the last directory
%lock MS_PLTFILES
%lock MS_SEEDFILES
%lock MS_DESIGNSEED
%lock MS_GEOCOORDINATE_USERLIBRARIES
%lock CIVIL_ROADWAY_TEMPLATE_LIBRARY
#-----

```

PCF File Location

PCF Files are stored in the location specified by the variable **ODOT_PROJECT**, which is defined in the configuration file **z_ODOT_redirect_network.cfg** or **z_ODOT_redirect_local.cfg**. For a typical ODOT installation, the PCF files are stored in the following location:

I:\ProjectPCF

The **Project** drop-down menu in the MicroStation **File Open** dialog will display all of the PCF files that are contained in the folder specified by the ODOT_PROJECT variable. When a PCF file is selected, the MicroStation **File Open** dialog will default to the **\Design** folder for the selected project.

Project Directory Structure and Design File Names

Standard Directory Structure

ODOT is in the process of re-defining the standard project directory structure that will be used by all twelve Districts for all projects that have been assigned a Project Identification number (PID).

This directory structure will be used for all projects started in SELECTseries 3 or later using the new ODOTcadd standards.

To facilitate the creation of new projects, the ODOTcadd standards include a new program that can be used to create the project folder structure as well as the MicroStation PCF file for the project. The program is provided for review and evaluation purposes only and should not be used on new projects until the directory structure is finalized. This program can be found in the following location:

..\ODOTcadd\Standards\ODOT\ProjectTools\ODOTcadd_CreateNewProject.exe

The directory structure contains folders for multiple ODOT Offices. Plan preparation and CADD related folders are housed under the *\Design* folder. See the documentation for the **ODOTcadd_CreateNewProject** program for more information.

Standard Design File Names

The **ODOT CADD Engineering Standards Manual** defines standard design file names for ODOT projects. The file names will remain the same for MicroStation (SELECTseries 3) projects with one exception. An underscore character will be inserted between the PID number and the two character abbreviation.

Example: 12345_BE001.dgn

This is being done for improved readability when looking at a large directory of file names.

The ODOT VBA application to create new design files has been modified to accommodate this change. In addition, the program has been updated to work with the draft project directory structure. The program can be found in the following location in the ODOTcadd standards:

..\ODOTcadd\Standards\vba\ODOT_Files.mvba

SS3 Compatibility with Current SS2 Projects

ODOTcadd Compatibility with SS2 and legacy ODOT V8iSTD CADD Standards

With the release of the draft ODOTcadd Standards in October 2014, it was stated that the new ODOTcadd Standards for SS3 and higher are compatible with existing projects that had been started with the ODOT V8iSTD CADD Standards. With the changes that have been made to ODOTcadd Standards since the October draft release this is no longer true. **Projects currently under development using the legacy ODOT V8iSTD CADD Standards should be completed using those standards.** These projects can be migrated to MicroStation/GEOPAK SS3 for use with the legacy ODOT V8iSTD CADD Standards without any issues.

Migrating to MicroStation and GEOPAK SS4

ODOT will migrate internal CADD users to MicroStation and GEOPAK SS4 over the coming months. MicroStation/GEOPAK SS2 will be removed from ODOT's computer systems.

Before making the decision to migrate to SS4, it should be noted that GEOPAK SS4 removes the following functions:

- Corridor Modeling and related functionality
- Roadway Designer and related functionality
- GEOPAK Site

These tools are superseded by the new OpenRoads tools.

ODOT users do not typically use these tools making the migration to SS4 easier. For current projects using these tools it is necessary to simultaneously install GEOPAK SS2 and GEOPAK SS4 if you wish to continue using the old tools on current projects.

Installing GEOPAK SS2 and GEOPAK SS4

It is not possible to install both MicroStation SS2 and MicroStation SS3 with GEOPAK SS2 and GEOPAK SS4 on the same computer. You can install GEOPAK SS2 and SS4 on the same computer on top of MicroStation SS3

If you elect to install GEOPAK SS2 and SS4 on the same computer with MicroStation SS4, you must start MicroStation using the appropriate shortcut.

PowerGEOPAK users can install both PowerGEOPAK SS2 and SS4 on the same computer since each version is installed to a unique location. The appropriate version is accessed from the Windows Start menu.

Configuring MicroStation and GEOPAK SS3 for use with ODOTV8i

ODOTv8istd Configuration Files

For existing projects that have been started prior to the January 16, 2015 ODOTcadd Standards release it is recommended that these projects are completed using the legacy V8istd CADD Standards.

This document assumes that the legacy ODOT V8istd CADD Standards have previously been installed and configured. The steps detailed here document the procedure to gain access to the ODOT V8istd CADD Standards with MicroStation and GEOPAK SS3 installed. Complete configuration information for V8istd is available in the following file:

[..\ODOTstd\V8istd\config\Doc\ODOT_Config.pdf](#)

The following configuration files are used to access the legacy ODOT V8istd CADD Standards:

- 📌 **z_ODOT_redirect_local.cfg** or **z_ODOT_redirect_network.cfg**
The redirect is used to set various custom configuration variables for the ODOT V8istd CADD Standards. These variables define the paths where ODOT specific data is located.

The redirect file is split into two sections, each defined with an opening If statement to determine whether the ODOTcadd Standards or the ODOTV8i Standards are executed. The desktop shortcut that is used to open MicroStation/GEOPAK has the variable defined. If the variable ODOTv8istd is defined, the redirect file will define the following variables:

ODOTSTD

This variable is defined to specify the root folder location for the [\ODOTstd](#) folder

V8iSTD

This variable is defined to specify the location for the [\V8istd](#) folder

HOMEV8i

This variable defines the path to the user preference (.upf) and user configuration (.ucf) files

V8iSTD_PROJDIR

This variable defines the path to the MicroStation project configuration files (.pcf)

Set-up Steps for GEOPAK SS3 with the legacy V8iSTD CADD Standards

The following steps are for a typical MicroStation/GEOPAK SS3 installation.

- 📌 Copy: [..\ODOTcadd\Standards\config\Standards\redirect\z_ODOT_redirect_network.cfg](#)
To: [C:\ProgramData\Bentley\MicroStation V8i \(SELECTseries\)\Workspace\Standards](#)

Note: It may be necessary to edit the redirect file to use the correct drive letters for your installation.

Note: If the file v8iODOTstandards.cfg, or V8iODOTstandardSS3.cfg exists in the folder listed above, delete the file(s).

- Copy the following folder and all its contents:

`..\ODOTcadd\Standards\config\Standards\ODOTv8iSTD_User\`

To:

The location specified by the variable **HOMEV8i**, which is defined in the configuration file **z_ODOT_redirect_network.cfg** or **z_ODOT_redirect_local.cfg**.

Note: If you are using PowerGEOPAK, rename dfltuser.cfg to dfltuser-PowerGEOPAK.cfg

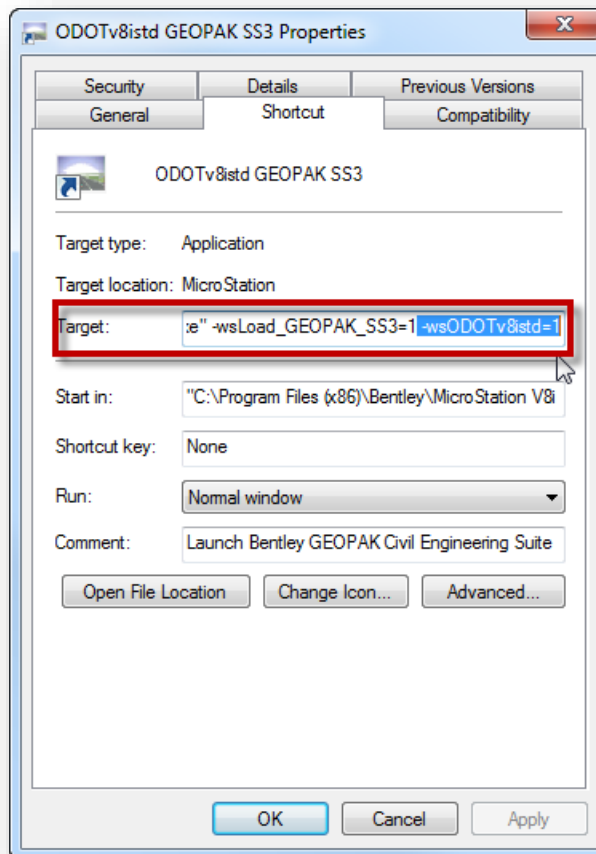
Opening MicroStation/GEOPAK SS4 with the legacy V8iSTD CADD Standards

A desktop shortcut is available in the ODOTcadd Standards to open MicroStation/GEOPAK SS4 with the legacy ODOT V8iStd CADD Standards:

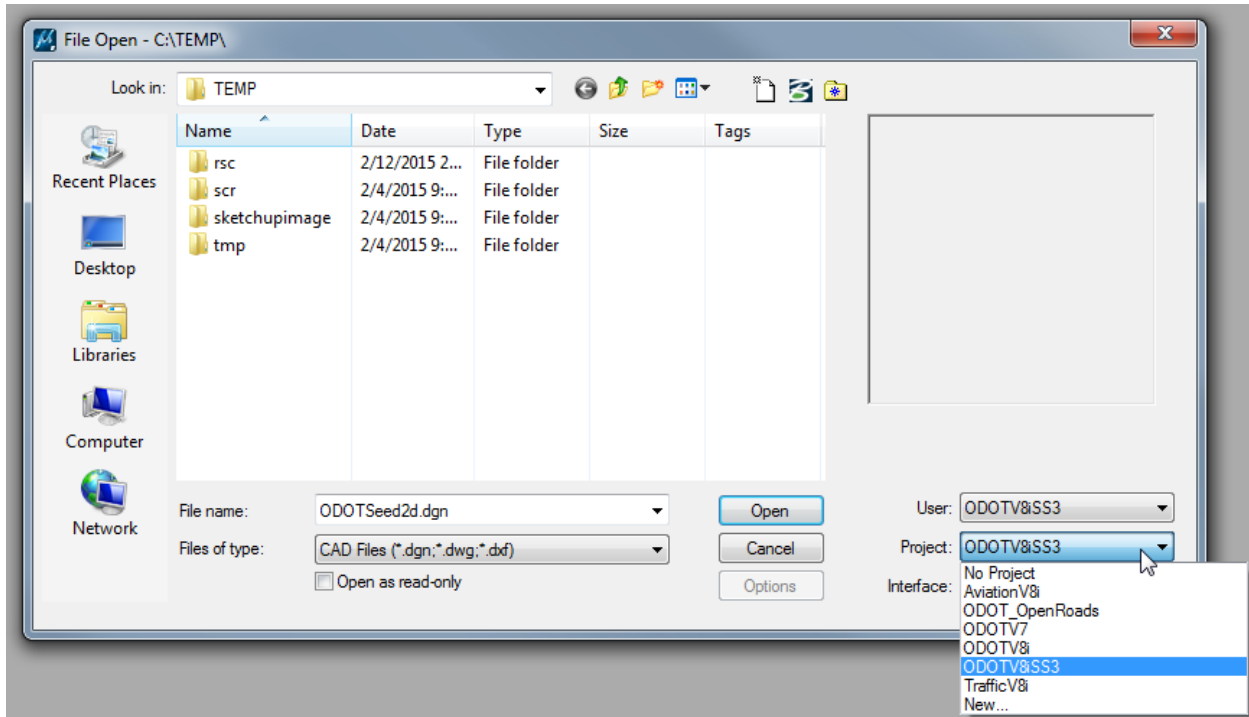
`..\ODOTcadd\Standards\config\shortcuts\ODOTv8iStd GEOPAK SS4`

Copy the shortcut from the folder listed above to your desktop.

The **Target** value for the ODOTV8iStd shortcut has been appended with **-wsODOTv8iStd=1** as shown below.



When MicroStation is opened with the **ODOTV8istd** variable defined, the **User** will default to **ODOTUser_V8iSTD**. The **Project** menu will list the available .pcf files found in the folder defined by the variable **V8iSTD_PROJDIR** as shown below:



Questions and Suggestions

Questions and suggestions for improvements to the ODOTcadd Standards should be addressed to the ODOT CADD Services team using the following form on the ODOT website:

http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Support/Pages/ServiceRequest.aspx