



Application Name:	ODOT_SheetManager.mvba
Tested MicroStation Version:	MicroStation V8i (SELECTseries 3)
Tested GEOPAK/OpenRoads Version:	Not Applicable

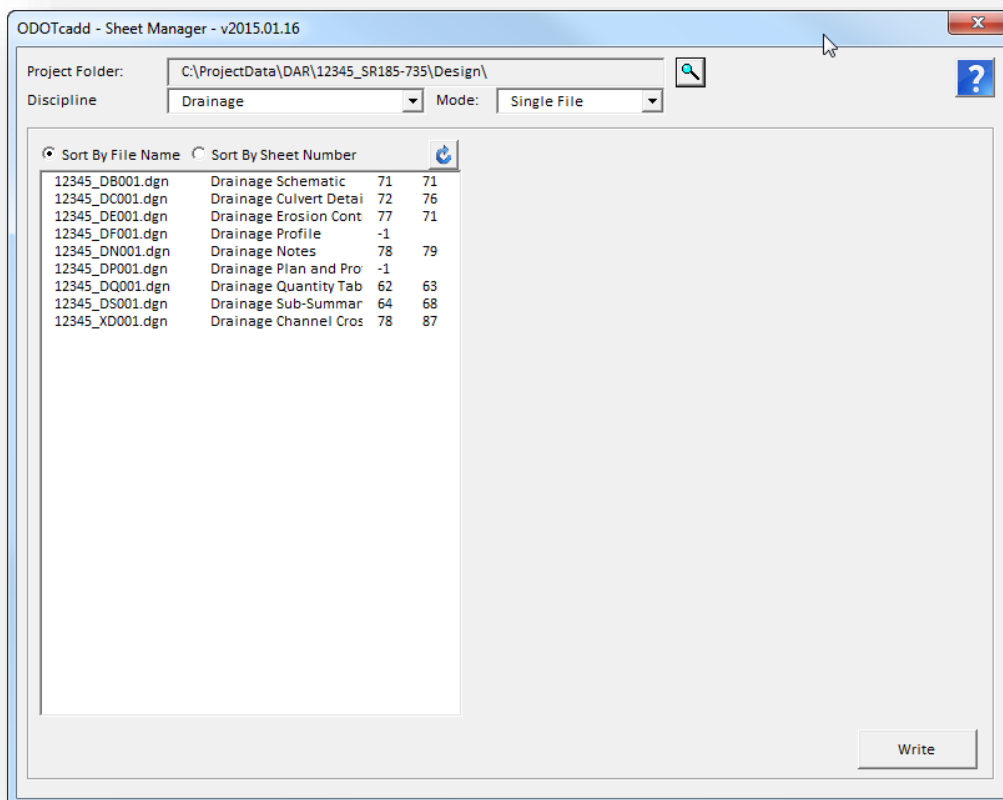
Application Description

The January 16, 2015 update to ODOT’s CADD standards includes an update to the ODOT_Sheets.cel cell library. The data entry regions in the title block portion of each sheet cell were removed and replaced by MicroStation Tag elements. The value of these Tag elements can be edited to update the text that is displayed for each Tag element in the sheet title block by using MicroStation’s **Edit Tags** command. These Tags can also be reviewed and edited using the ODOT_SheetManager.mvba MicroStation Visual Basic application.

The application can be accessed from the MicroStation pull-down menu by selecting **ODOT > Sheet Management > Sheet Manager**. The application can also be accessed with the following key-in command:

vba load ODOT_SheetManager.mvba; vba run modMain.ODOT_SheetManager

When the application is accessed, a dialog similar to the example below is opened.





Application Operation

The dialog has the following functions:

Project Folder

The **Project Folder** is defined by the MicroStation configuration variable **_USTN_PROJECTDATA**. If this variable is not defined, the user must use the **Browse** icon to the right of the **Project Folder** item in order to choose the \Design folder for the project.

The program assumes that an ODOT Folder Structure is in place as defined in the **ODOT CADD Engineering Standards Manual**.

The default parent folder for design file creation is the \Design folder.

Discipline

The **Discipline** drop-down menu displays the name of each discipline specific folder found under the \Design folder that contains a \Sheets folder. When a particular discipline is selected, the list of files is updated to show any MicroStation design files that are contained in the \Sheets folder for that discipline. **There is also an All option in the Discipline drop-down. When this is selected the list of files is updated to show any MicroStation design files that are contained in the \Sheets folder for all discipline folders for that project.**

Mode

The program includes the operation modes listed below. Each mode is described in further detail later in this document.

Single File

This mode allows users to manually review and update all of the sheet attributes found in the selected design file.

Multi-File

This mode allows users to select multiple files from the file list in order to update sheet title block parameters that are common to multiple sheet types.

Excel Output

This mode will read all of the design files in the currently selected **Discipline** \Sheets folder and write all the sheet attributes to Excel. If the Discipline is set to All then all design files found in all the Discipline's \Sheets folders are read.

Excel Read

This mode is used to read sheet attributes from an Excel file and write the values to the design files.

Sort by File Name / Sort by Sheet Number / Refresh

The file list can be sorted by file name or sheet number. The **Refresh** button is used to reread the file list.



File List

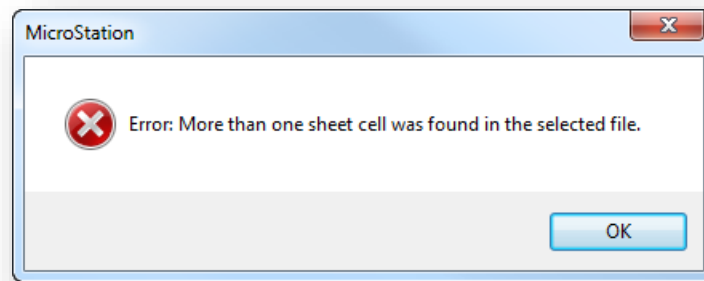
The file list contains a listing of all the MicroStation design files found in the \Sheets folder for the selected **Discipline** unless the Discipline is set to All, then all design files found in all the Discipline's \Sheets folder for that project will be listed. The file name, Title Property, first Sheet Number, and last Sheet Number are displayed in the list. Note: The last sheet number will be the same as the first sheet number for design files that contain only one sheet model.

To the right of the **File List** is the list of attributes for the sheet cell found in the sheet model of the selected design file.

If the sheet number has not been defined, a value of 0 is displayed.

If no sheet cell is found in the selected Sheet Model, a sheet number value of -1 is displayed.

If more than one sheet cell is found in the selected model, the user is notified that the program cannot be used for this file as shown below. Only one sheet per model is permitted.



Double-clicking on a file name in the **File List** will open the file and the selected **Sheet Model** in the file. It is not necessary to open the file in order to update the sheet attributes.

Write

The **Write** button is used to write the sheet attribute values to the selected file in **Single File** mode, or the selected files in **Multi-File** model.

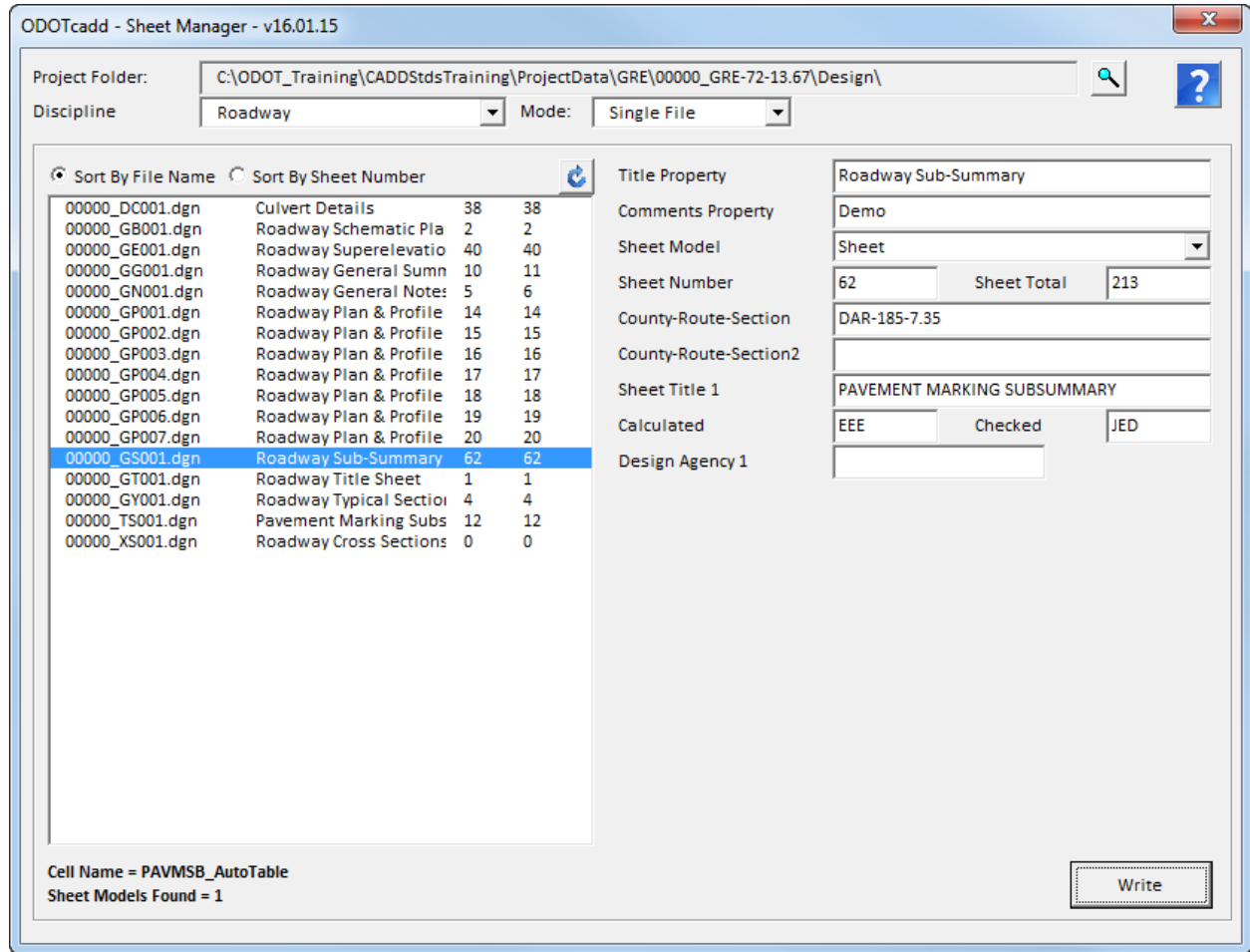
The selected file does not have to be opened in order to write the sheet attributes, however, the user does need to have write access to the file in order to update the sheet attributes.

As the attributes are written to the file, the sheet number in the **File List** is updated if it has been changed. If you are currently sorting the file list by using the **Sort by Sheet Number** option, the file will be resorted into the correct order according to the newly assigned sheet number. The sheet model properties, Sheet Name and Sheet Number are also set. The Sheet Number model property is set from the sheet number tag for that sheet cell. The Sheet Name model property is set from the Sheet Title 1, Sheet Title 2, and Sheet Title 3 tags for that sheet cell, unless the sheet cell is TITLE1 or TITLE2 then the Sheet Name model property is set to GENERAL TITLE.



Single File Mode

When **Single File** mode is selected, and a design file is selected that contains an ODOT sheet cell, the dialog appears similar to the example shown below.



The right side of the dialog displays design file properties and sheet attributes for the selected file. The sheet attributes will vary depending on the file selected and the sheet cell that is found in the file.

The January 15th 2016 update added the County-Route-Section2 parameter as imaged above. This parameter will only show up if the sheet cell contains the new tags. There were two new tags added to all applicable sheet cells. The two new tags represent each line of a two line C-R-S on the sheet cell. Note that there is still the existing C-R-S tag for a County-Route-Section that fits on one line. The code will know which C-R-S tags to use by if the Count-Route-Section2 parameter is filled out or not. The older sheet cells without the new tags will still work with this application.



Parameters that are common to all design files are defined below:

Title Property

This item displays the MicroStation Title property for the selected design file. The value can be edited and is updated when the Write button is selected.

Comments Property

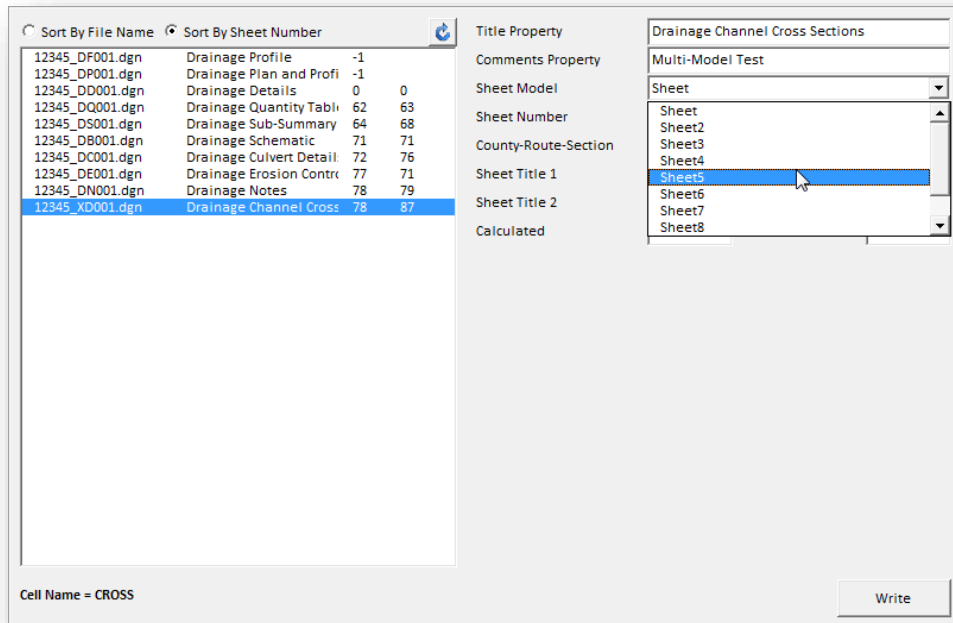
This item displays the MicroStation Comments property for the selected design file. The value can be edited and is updated when the Write button is selected.

Sheet Model

This item contains a list of all the sheet models that are found in the selected design file. The sheet attributes for a sheet cell found in the selected model are listed below this item.

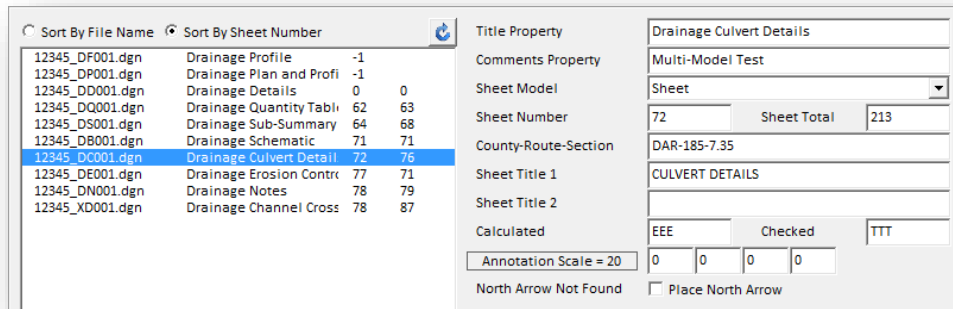
ODOT recommends that cross section files processed with GEOPAK use the **One Sheet Per Model** option. An example of a cross section file generated with this option is shown below.

When a design file with multiple sheet models is encountered, the sheet number displayed in the File List is read from the sheet cell found in the first sheet model. The last sheet number is also displayed.





Below the **Sheet Model**, sheet parameters are displayed according to the ODOT sheet cell found in the selected sheet model. An example is shown below.



Values entered are written to the file when the **Write** button is selected. Two of the parameters merit additional documentation.

Annotation Scale

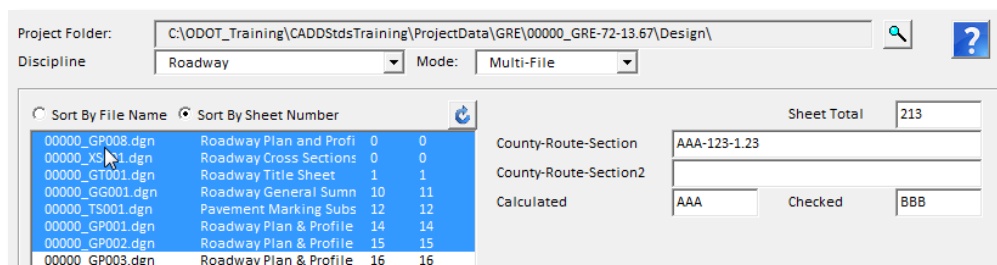
If the ODOT sheet cell that is found in the select **Sheet Model** contains a scale bar, the **Annotation Scale** and the current values of the scale bar are displayed. If the values have not been assigned, values of 0 are displayed. Click on the **Annotation Scale** item to compute the appropriate scale values for the scale bar. These values will be written to the file when the **Write** button is selected.

North Arrow

If the ODOT sheet cell that is found in the selected Sheet Model contains a north arrow insertion point, the program will search the selected file/model for a cell placed within 0.1 Master Units from the north arrow insertion point. If a cell is found, the name of the cell will be displayed. If no cell is found, the user has the option to place the standard ODOT north arrow cell, "NARROW", at the insertion point. The cell is scaled by the Annotation Scale value and is placed at a zero degree rotation in the file.

Multi-File Mode

Multi-File mode allows users to update a limited set of sheet attributes for multiple files. To update multiple files, select the **Discipline**, and then select the file(s) you wish to update in the **File List**. The available sheet attributes are displayed similar to the example below.





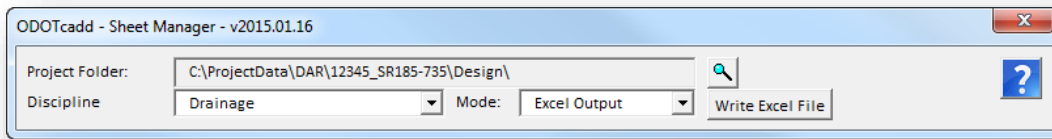
The January 15th 2016 update added the County-Route-Section2 parameter as imaged above. There were two new tags added to all applicable sheet cells. The two new tags represent each line of a two line C-R-S on the sheet cell. Note that there is still the existing C-R-S tag for a County-Route-Section that fit on one line. The code will know which C-R-S tags to use by if the Count-Route-Section2 parameter is filled out or not. In **Multi-File Mode** if the sheet cell is an older cell that does not contain the new tags then the text from the County-Route-Section parameter and text (if any) from the County-Route-Section2 parameter will be combined together and placed to the existing single line C-R-S tag for that sheet cell.

Select the **Write** button to write the sheet attributes to the selected files.

If the selected file(s) contain multiple sheet models with an ODOT sheet cell, the sheet cell in each sheet model is updated.

Excel Output Mode

Sheet attributes for a selected discipline, or for the entire project, can be read and exported to an Excel file by use of the **Excel Output** mode. When the **Excel Output** modes is selected, the dialog appears similar to the example below.



Select the **Excel Output** mode to generate an Excel file containing the sheet attributes for the selected **Discipline**. To generate an Excel file containing the sheet attributes for the entire project set the **Discipline** to All.

Select **Write Excel File** to initiate the process. Excel is opened and the values are written to the file as each design file is read. An example of the Excel file is shown below.

File Name	Model Name	Cell Name	Title Property	Comments Property	Sheet Number	Sheet Total	Subset Number	Subset Total	County-Route-Section
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DB001.dgn	Sheet	SCHEMA	Drainage Schematic	testing	138	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DB002.dgn	Sheet	SCHEMA	Drainage Schematic	testing	139	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DB003.dgn	Sheet	SCHEMA	Drainage Schematic	testing	140	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DC001.dgn	Sheet	BLKW	Drainage Culvert Details	testing	144	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DE001.dgn	Sheet	BLKW	Drainage Erosion Control	testing	146	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DE002.dgn	Sheet	BLKW	Drainage Erosion Control	testing	147	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DE003.dgn	Sheet	BLKW	Drainage Erosion Control	testing	148	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DE004.dgn	Sheet	BLKW	Drainage Erosion Control	testing	149	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DN001.dgn	Sheet	GENNOT	Drainage Notes	testing	141	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DP001.dgn	Sheet	PLPRO1	Drainage Plan and Profile or Plan	testing	151	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DP002.dgn	Sheet	PLPRO1	Drainage Plan and Profile or Plan	testing	152	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DP003.dgn	Sheet	PLPRO1	Drainage Plan and Profile or Plan	testing	153	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DP004.dgn	Sheet	PLPRO1	Drainage Plan and Profile or Plan	testing	154	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DP005.dgn	Sheet	PLPRO1	Drainage Plan and Profile or Plan	testing	155	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DS001.dgn	Sheet	ESTQS	Drainage Quantity Table	testing	145	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DS002.dgn	Sheet	DRNSB	Drainage Sub-Summary	testing	142	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_DS003.dgn	Sheet	DRNSB	Drainage Sub-Summary	testing	143	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_XD001.dgn	Sheet	CROSS	Drainage Channel Cross Sections	testing	156	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_XD002.dgn	Sheet	CROSS	Drainage Channel Cross Sections	testing	157	178	---NA---	---NA---	DAR-185-7.35
C:\ProjectData\ DAR\12345_SR185-735\Design\Drainage\Sheets\12345_XD003.dgn	Sheet	CROSS	Drainage Channel Cross Sections	testing	158	178	---NA---	---NA---	DAR-185-7.35



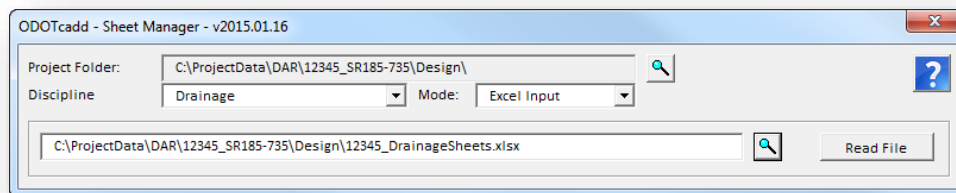
Note that the Excel file has not been saved when it is initially generated and must be manually saved by the user.

The first row in the Excel file is a header row that describes the content of each column. If a particular item is not applicable to a particular sheet cell, the value is listed as “---NA---”.

Items that do not have a value defined are blank in the Excel file.

Excel Input Mode

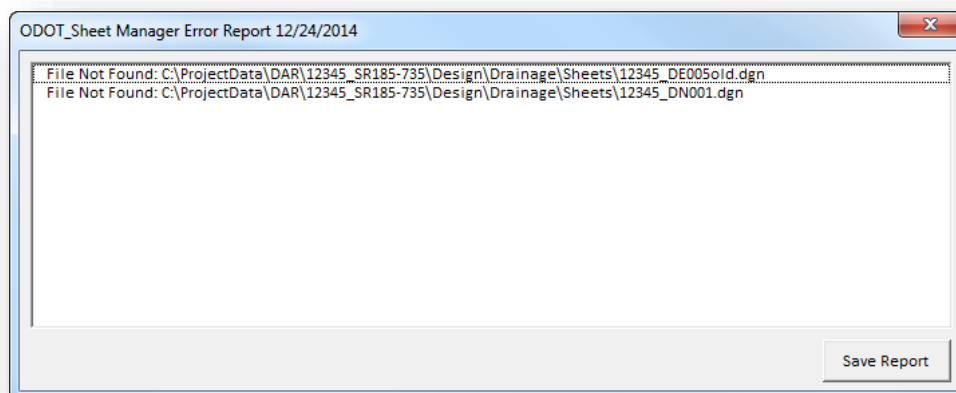
An Excel file generated by use of the Excel Output modes can be edited and re-read in order to update the sheet title attributes for each file listed in the Excel file. The **Excel Input** mode is used for this purpose.



Use the **Browse** icon to select the Excel file to process.

Choose the **Read File** command button to initiate the process.

You must have read access to all of the files in order for the program to update the files. If a problem is encountered, an error report is generated similar to the example below.





Contacts

If you have any questions, suggestions, or problem with this application please contact the ODOT Office of CADD and Mapping Services by use of the following form on the ODOT website:

<http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD/Pages/Suggestions.aspx>

Acknowledgements

This program was written for the Ohio Department of Transportation, Office of CADD and Mapping Services by Eric Thomas, Eric Thomas Consulting, LLC.



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