

# CDOT Converting AutoCAD Files to MicroStation

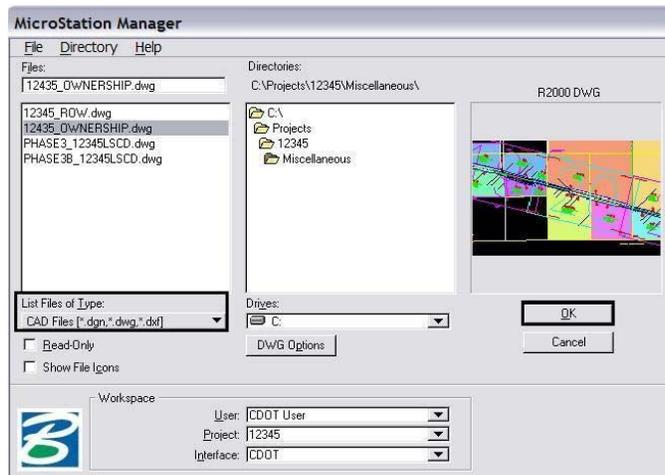


This document guides you through translating AutoCAD files into MicroStation using a .CSV remapping file. Steps 1-4 listed below should be followed when saving an AutoCAD file to MicroStation manually, without the use of a remapping file. The manual method should only be used on small files where a limited number of levels will need to be changed. In this case, use the change symbology tools in MicroStation as outlined in the Roadway Drafting Using MicroStation training manual. Once the levels have been changed manually, follow the steps listed under “Other Drawing Elements”, beginning on page 9, for updating text, cells, patterning, dimensioning, and models. For plotting AutoCAD files only, see the workflow, **CDOT Printing AutoCAD Files in MicroStation**.

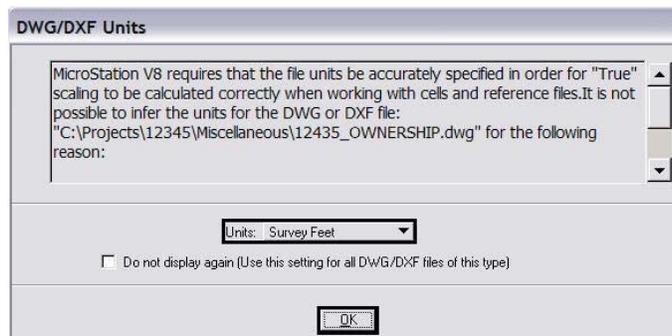
For this workflow not only will you be bringing the files into MicroStation, you will be updating the files to the CDOT configuration. This means all levels in the MicroStation drawing file will be standard CDOT levels having bylevel symbology and all drawing files you are translating will be set up using the standard CDOT workflows. For any questions about the CDOT standard procedures and workflows please contact the CDOT Help Desk at 303-757-9317 for additional support on translating your files.

## Opening an AutoCAD file in MicroStation

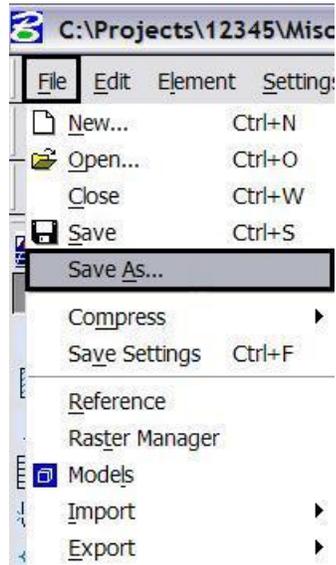
1. From the **MicroStation Manager**, open an AutoCAD (\*.dwg) drawing file. Change **List Files of Type** to **CAD Files (\*.dwg, \*.dgn, \*.dxf)** to view AutoCAD files. Highlight the desired file and select **OK**.



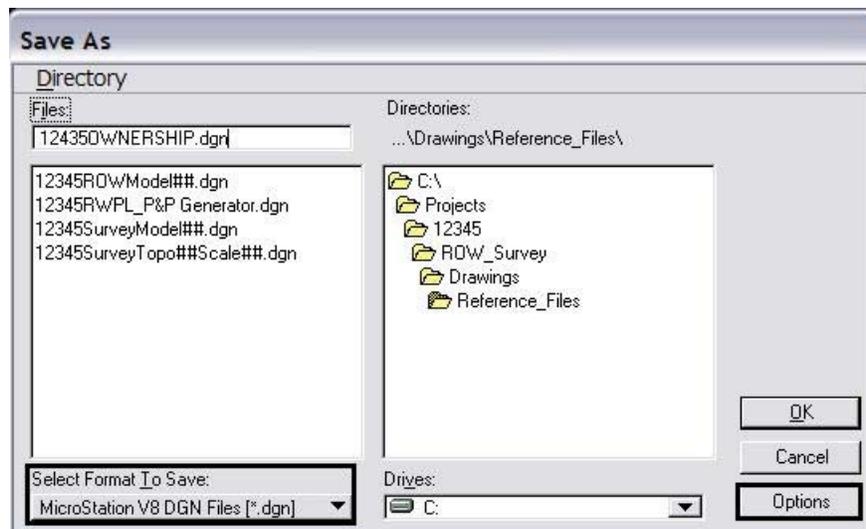
2. The **MicroStation DWG/DXF Units** dialog box will appear. Verify the **Units** are set to **Survey Feet** and select **OK**.



3. Select **File > Save As**.



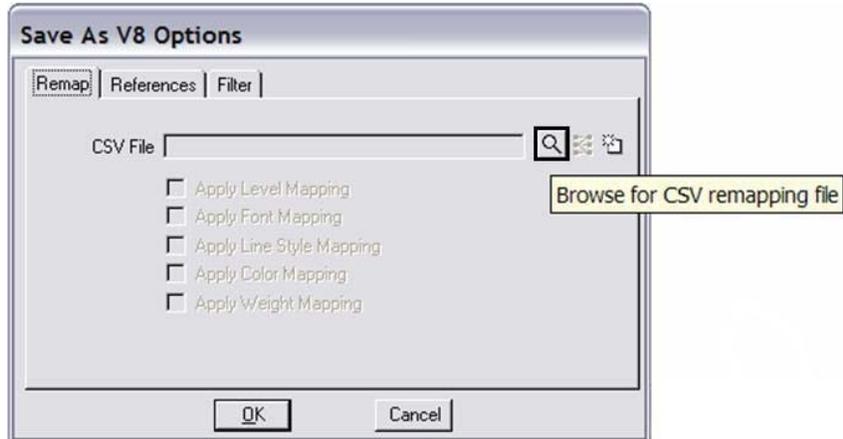
4. Change the **Select Format to Save** to **MicroStation V8 DGN Files (\*.dgn)**, and browse to the appropriate folder under the Projects directory. The file will be automatically saved with the same name as the AutoCAD file with a different extension. You can rename the file at this time if you choose to do so. Select **Options**.



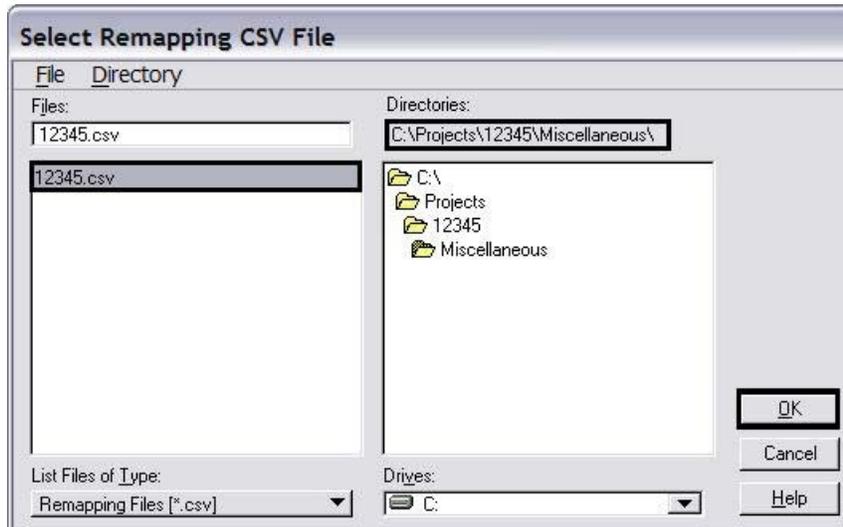
**Note:** Model files are saved to the specialty group's Reference\_Files folder. Sheet files are saved under the specialty group's Drawings folder.

## Editing the CSV file

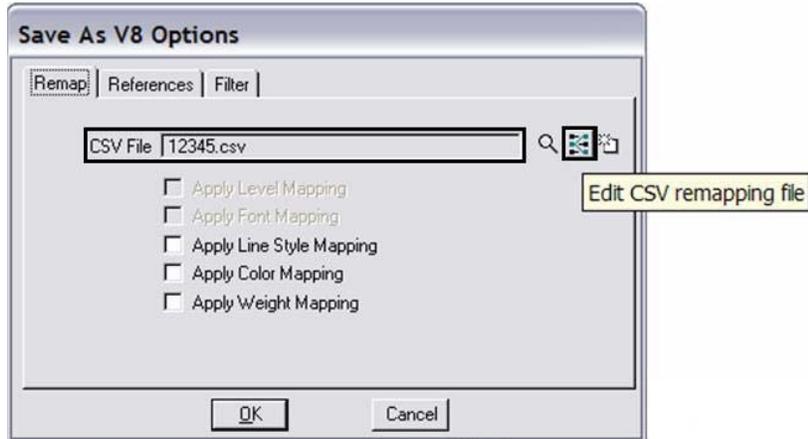
5. In the **Save As V8 Option** dialog box, open the template CSV file that is created when you run the **CDOT – Create Project Directory** application. The CSV file maps all of the previous AutoCAD layers to the standard CDOT MicroStation levels. Select the **Browse for CSV remapping file** icon to edit the CSV file.



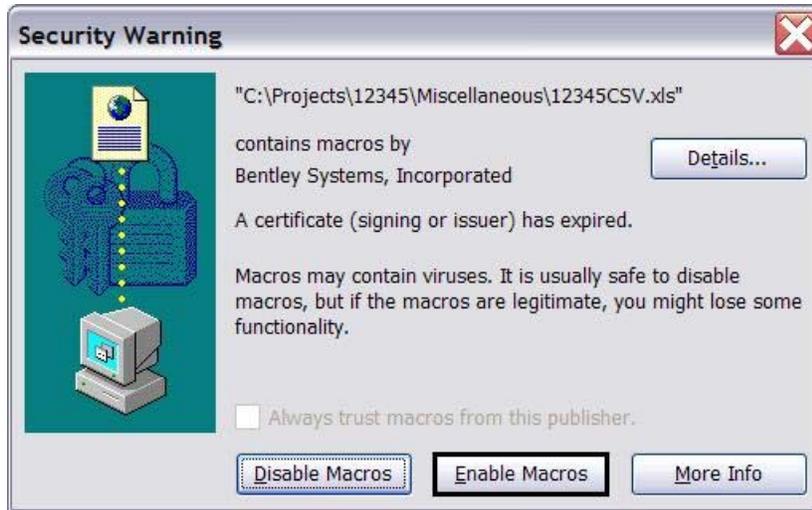
6. Browse to C:/Projects/12345/Miscellaneous. Select the file **12345.csv** and select **OK**.



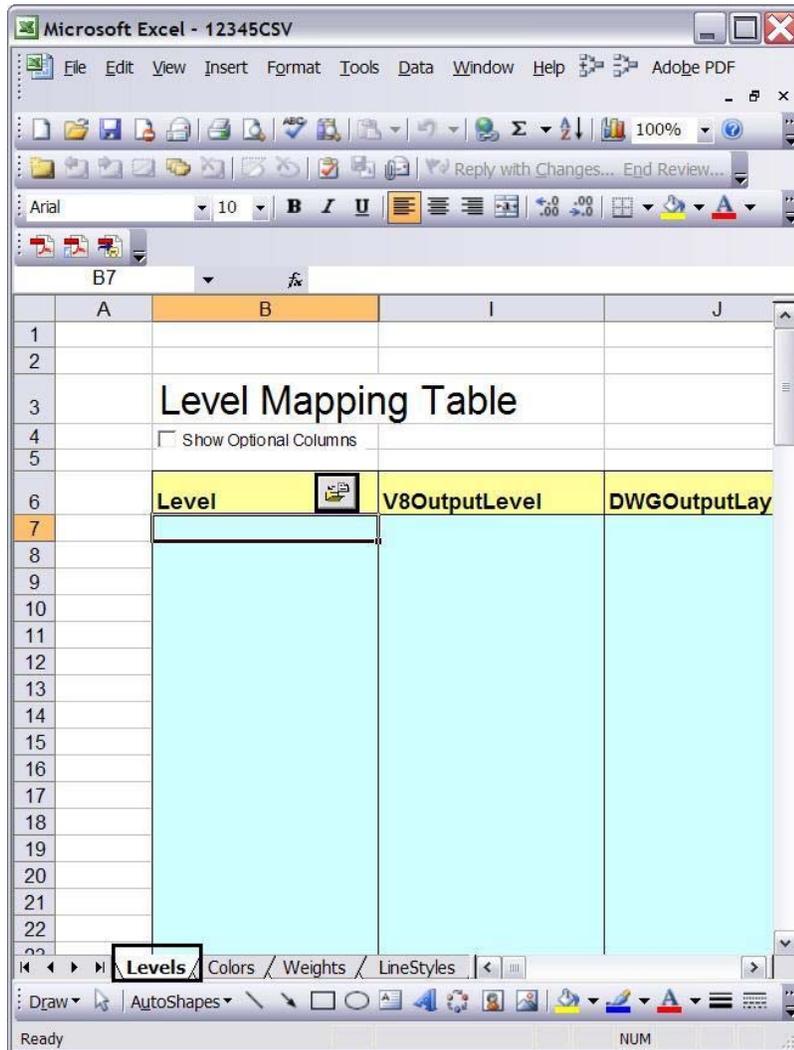
7. The **CSV File** field will be populated. In the **Save As V8 Options** dialog box, select the **Edit CSV remapping file** icon.



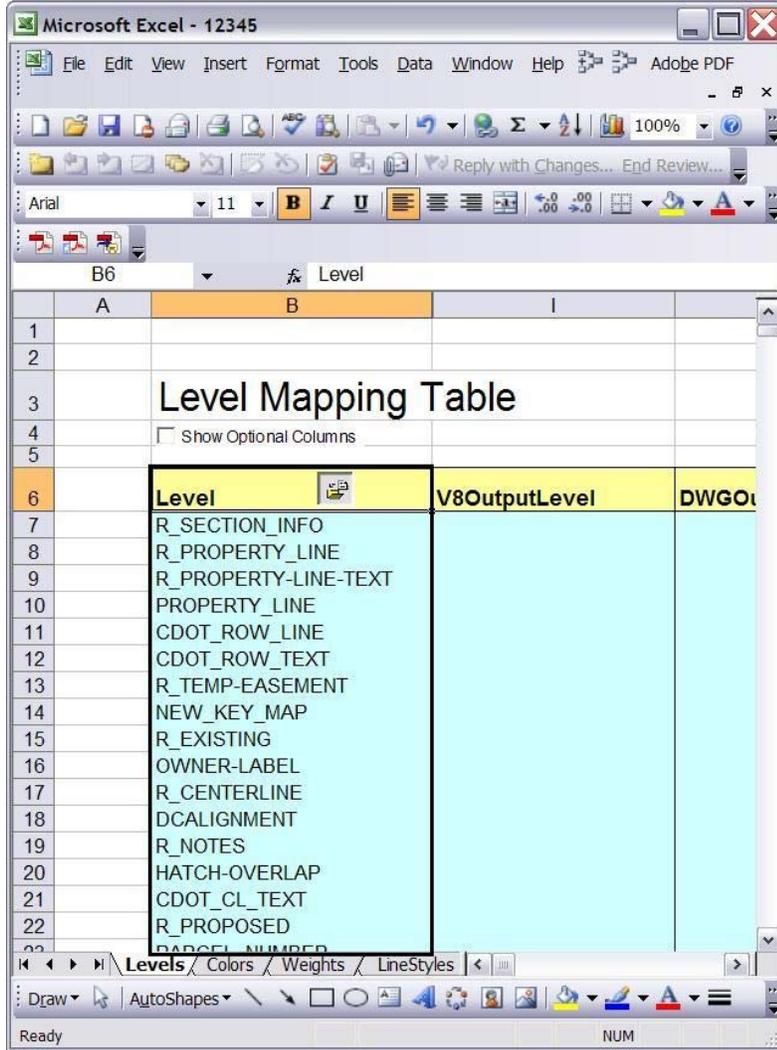
8. Microsoft Excel will activate. If the **Security Warning** dialog box appears, select **Enable Macros**.



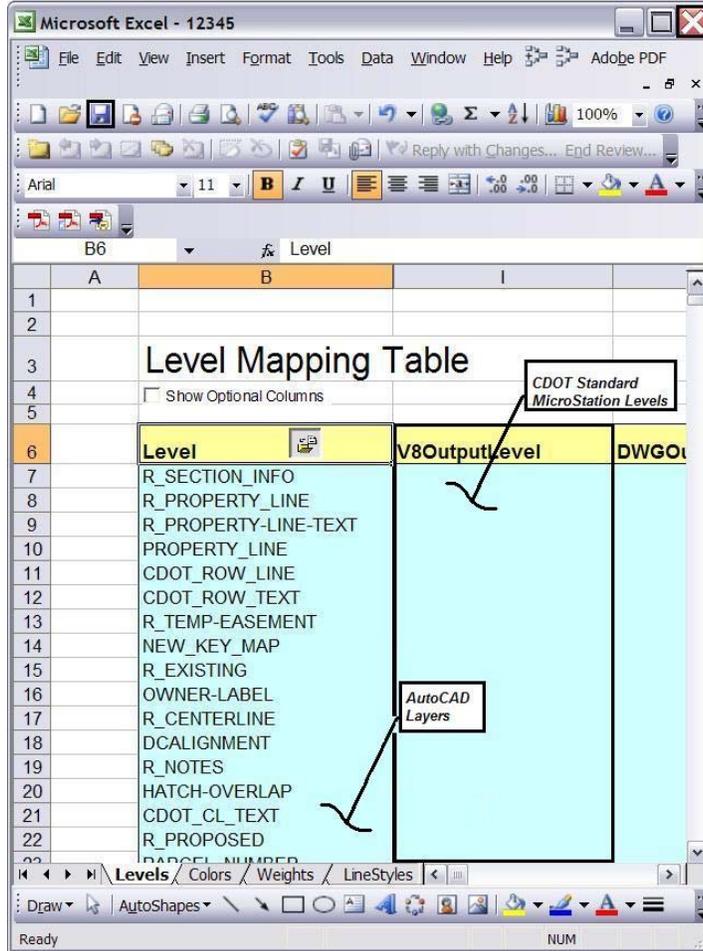
9. In Excel, the **Level** tab will be active. Select the  icon that is embedded in the **Level** cell.



- The fields under **Level** will be populated with the layers that are defined in the AutoCAD file.



11. In order to remap to the standard CDOT levels, you will need to manually populate the **V8OutputLevel** fields. Use the standard CDOT levels that are located under the AutoCAD layers in the **Level** column to copy/paste to the **V8OutputLevel** column. When this is complete, **Save** the CSV file in Excel and **Exit** the Excel application window.

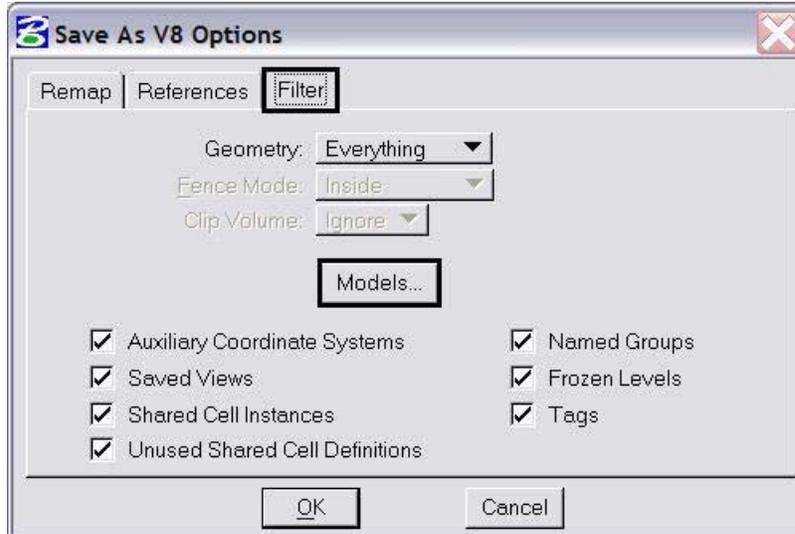


**Note:** Not all levels need to be populated. Blank entries in V8OutputLevel column will be ignored when processed and the AutoCAD level (if occupied) will be brought into the MicroStation file. Be aware that some of the MicroStation levels are not in alphabetical order. And take care to search the entire list for the desired level.

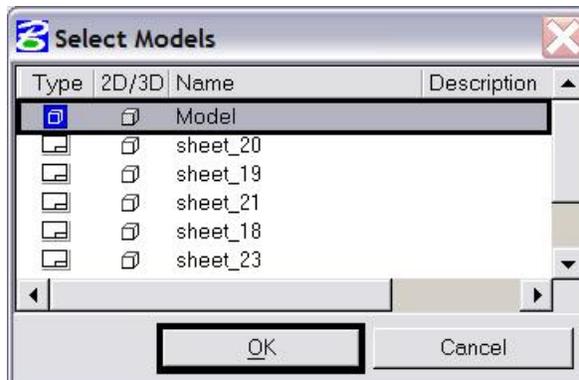
Layers generated in AutoCAD that will be recreated as cells in MicroStation such as the Border, North Arrow, and Bar Scales do not need to be remapped because they will automatically come in on the correct levels when the standard CDOT workflows are followed. Also, the levels used for creating AutoCAD viewports do not need to be remapped. Items on the Defpoints layer should be remapped to the level DRAFT\_INFO\_No-Plot.

The line styles, color, and weight of each level has already been taken into account through the CSV file. The translation variables in the CSV file have been set to remap all levels to bylevel symbology.

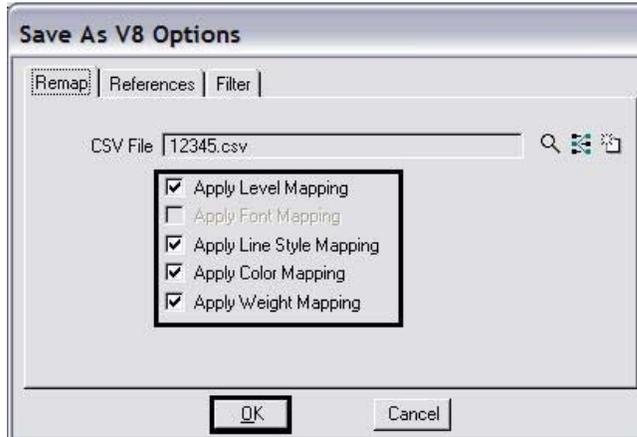
- In the Save As V8 Options dialog, select the **Filter** tab. Select **Models**.



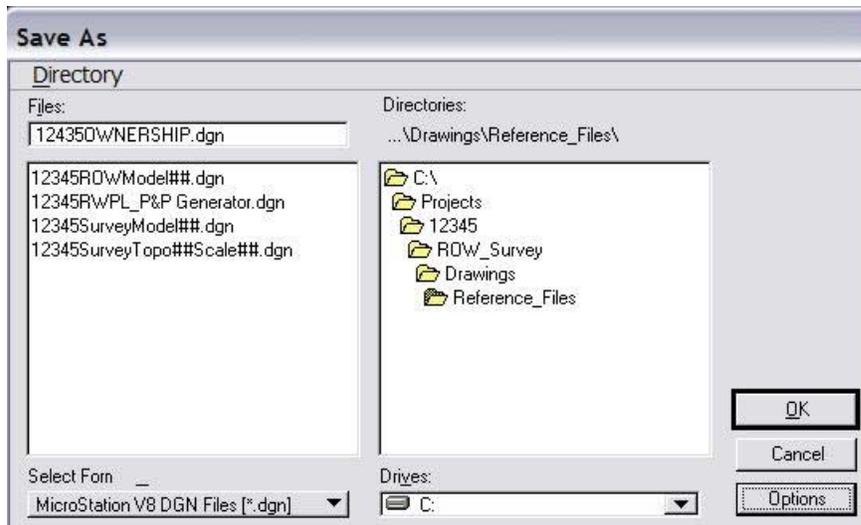
- From the **Select Models** dialog, you can isolate the Sheet Layouts from the Model file. Sheet Layouts are carried over from the AutoCAD Paper Space functionality. Sheet Layouts are not used in the standard CDOT workflow. However, they may contain information that will need to be copied to the model file or to the sheet file. If this is the case, the information will also need to be translated to CDOT's standards using the same procedure outlined in this workflow. The CSV file will only run for the file selected. Highlight the **Model** file and select **OK**.



14. Check on the fields for **Apply Level Mapping**, **Apply Line Style Mapping**, **Apply Color Mapping**, and **Apply Weight Mapping**. Select **OK**.

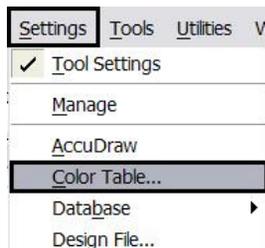


15. Select **OK** in the **Save As** dialog box. The CSV file will execute and the AutoCAD drawing file will be converted to a MicroStation file.

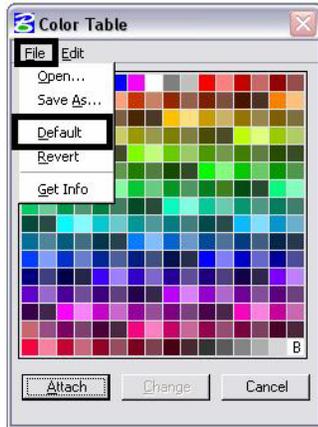


The file that is now open in MicroStation is the converted file. Running the CSV file changed the levels in the Model file to the CDOT Standard levels with bylevel symbology.

16. From the MicroStation menu, selected **Settings > Color Table** after the MicroStation drawing file has been created.



17. Select **File > Default**.



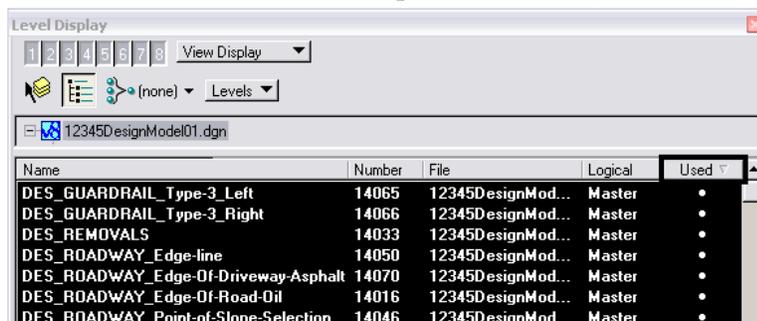
18. In the **Color Table** dialog, select **Attach**.



19. Verify that the conversion was successful. Select the **Level Display** icon from the MicroStation **Primary** toolbar.

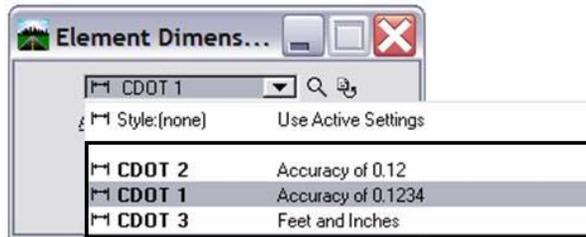


20. In the **Level Display** window, **Data** on the **Used** tab to sort the levels by those that have elements. (Note: levels with elements will have a dot in this column. If no used elements are visible, Data on the tab again. If the triangle on the tab is pointing down, the used levels are at the top of the window.)



## Other Drawing Elements

21. Other updates will need to be made to the files so all drawing elements and sheet setups conform to the CDOT standards.
22. All of the Sheet Layouts will need to be recreated using CDOT standard workflows. This means there can only be one Model for each MicroStation file. All of the sheet borders will need to be placed in their own separate file, called a Sheet File. Then, the Model file will be referenced to the Sheet File. Please refer to the documents *CDOT Sheet File Creation*, *CDOT Sheet File Creation Multiple Scales*, and *CDOT Creating Multiple Plan Sheets* for additional information about this procedure. They are all accessed from the Windows Start menu under > **All Programs** > **\_CDOT\_CADD\_Information** > **Workflows**.
23. Recreate all Dimensions and leader lines (placed by AutoCAD) using the standard CDOT dimension styles.



24. Erase all hatch patterns generated in AutoCAD recreate using the MicroStation **Patterns** tools, shown below, or using the CDOT Menus.



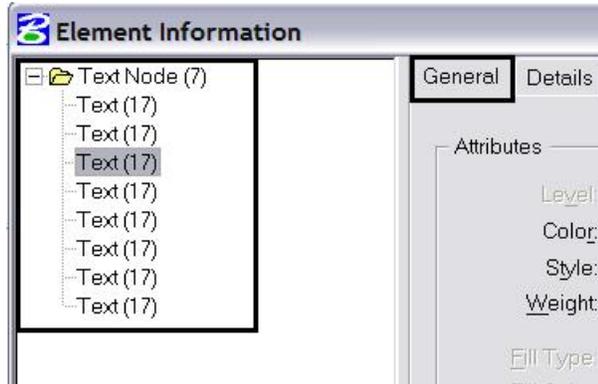
25. All blocks generated in AutoCAD will need to be replaced with the standard CDOT MicroStation Cells. Cells may be placed using the MicroStation tools or the CDOT menus.



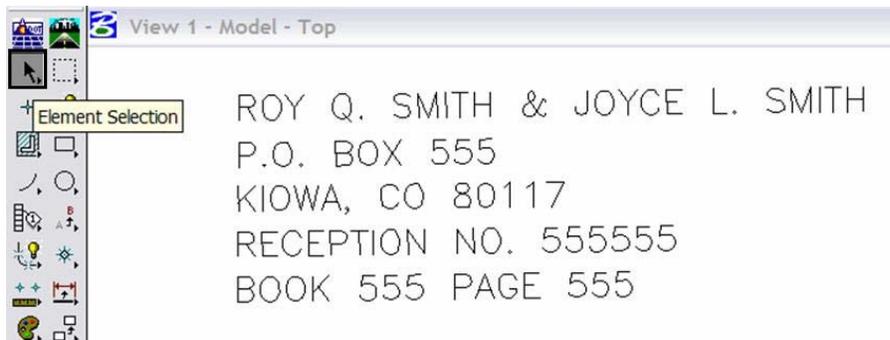
## Updating Text

26. Text created in AutoCAD with multiple text strings can be converted to a text node in MicroStation. Some multiple text strings created in AutoCAD will be translated into a text node when the file is converted.

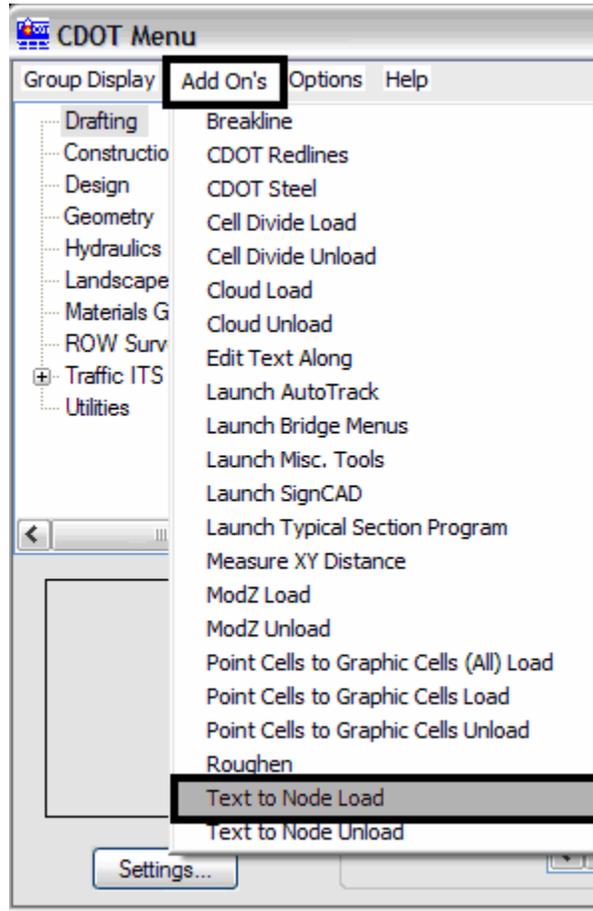
To verify this, select the **Element Information** icon . Text Nodes will display under the General Tab.



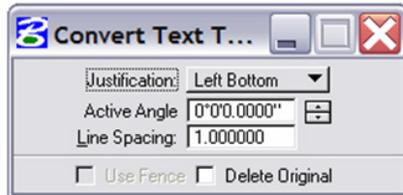
27. If not, select all text that will be combined into a text node using the **Element Selection** tool. While in the **Element Selection** command, hold down the **Ctrl** key to select individual text strings. Highlight them in the order they are to be placed into the text node. Do not *Window* around the multiple lines of text because the text strings may not merge in the desired order.



28. Select the **TXT to Node** utility from the CDOT Menu under **Add On's**.



29. Select the TXT to Node icon
30. The following dialog box will appear. The selected text will be anchored to the cursor.



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31. Check on **Delete Original**, set the **Justification**, and leave the **Line Spacing** set to **1.00**. Place the text in the desired location.

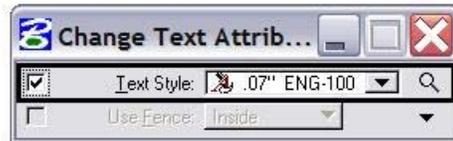
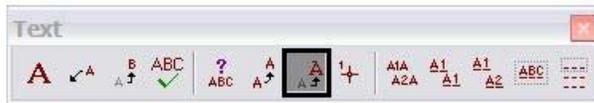


**Note:** If the Justification is set to anything other than Left Bottom, double click on the text after it is placed. The text will be brought into the Text Editor dialog. Click again on the screen to place the text to its proper location and close the dialog.

32. Select all text and key-in **annotationscale add**. The text will now recognize the MicroStation Annotation Scale Factor.



33. Update the text style by selecting **Change Text Attributes**. Select the desired CDOT **Text Style** and select the text placed previously in AutoCAD.

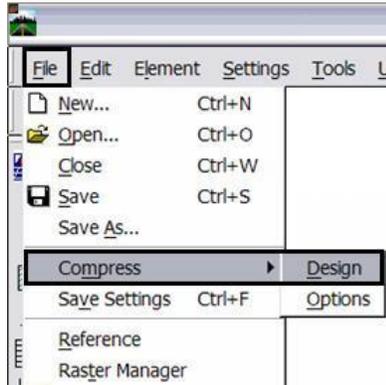


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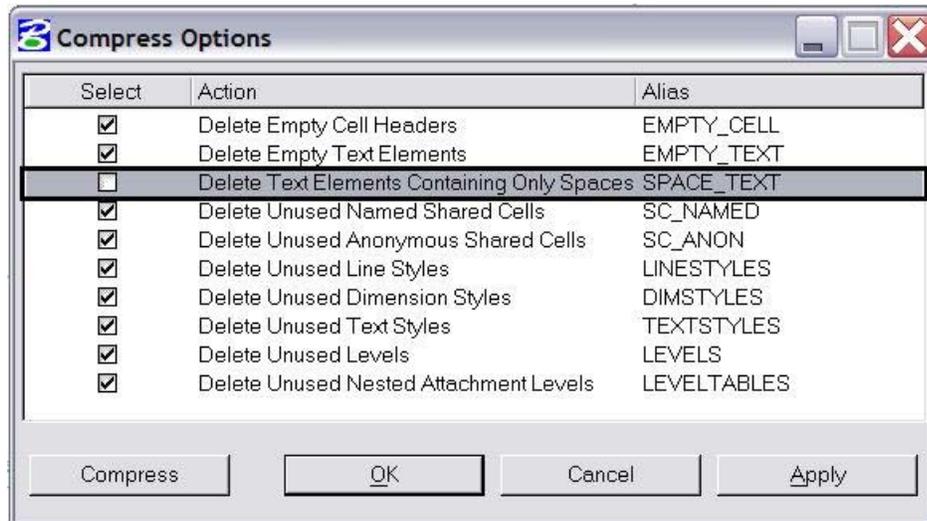
34. All fractions placed in AutoCAD will need to be re-typed in MicroStation so the format conforms to CDOT standards.

### Compressing the Model File

35. After all changes and updates have been made to update the drawing into MicroStation using CDOT standards and standard workflows, select **File > Compress Design**. This will remove all AutoCAD information stored in the drawing buffer. This will ensure that AutoCAD data does not get repopulated into the drawing.



36. Under **Compress > Options**, verify that all options are checked **ON**.

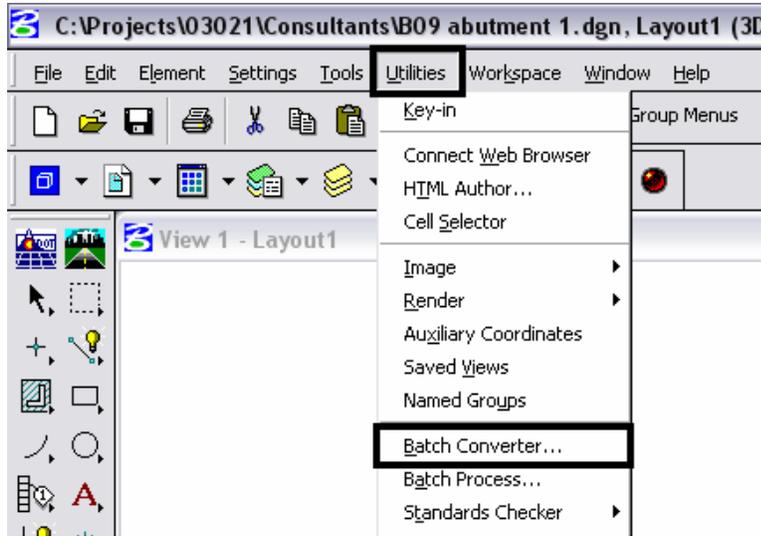


### Batch Conversion Of AutoCAD Files

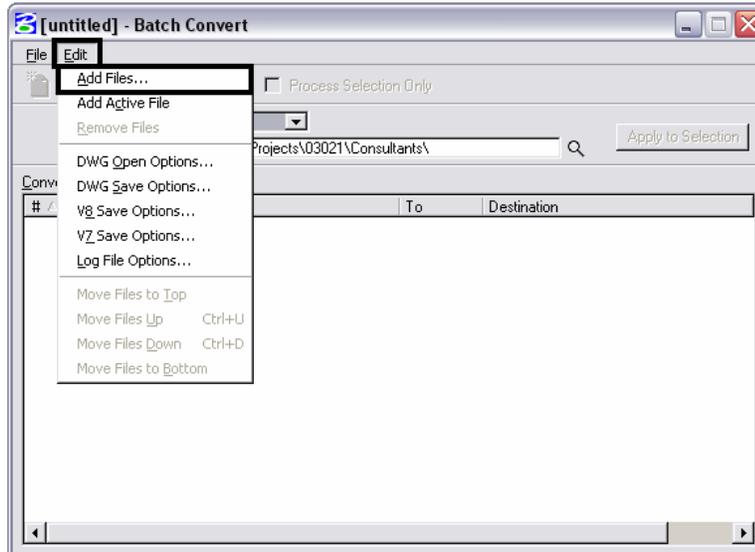
Entire directories can be processed at one time using the Batch Converter. Using this option, a large number of files can be processed quickly. However, because only one of the files can be used to create the csv file (the open file), many AutoCAD levels may be transferred to the MicroStation files. As the user finds MicroStation files with AutoCAD levels, those files can be used to create a new csv file and the Batch Converter can be re-run on all the files. By repeating this process all of the AutoCAD levels will be gradually eliminated.

The steps below describe how to set up and run the Batch Converter.

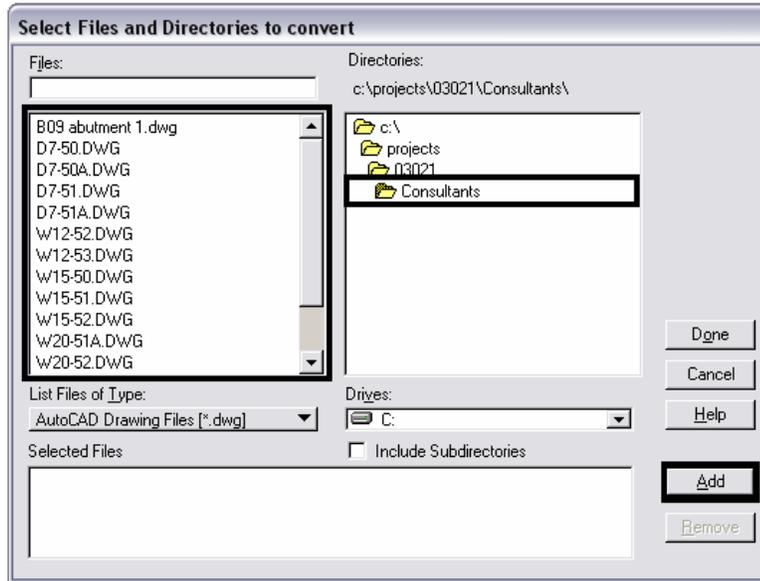
37. Open one of the AutoCAD drawings to be converted with MicroStation as described in steps 1 and 2 above.
38. Select **Utilities > Batch Converter** from the MicroStation menu. The **Batch Converter** dialog box is displayed.



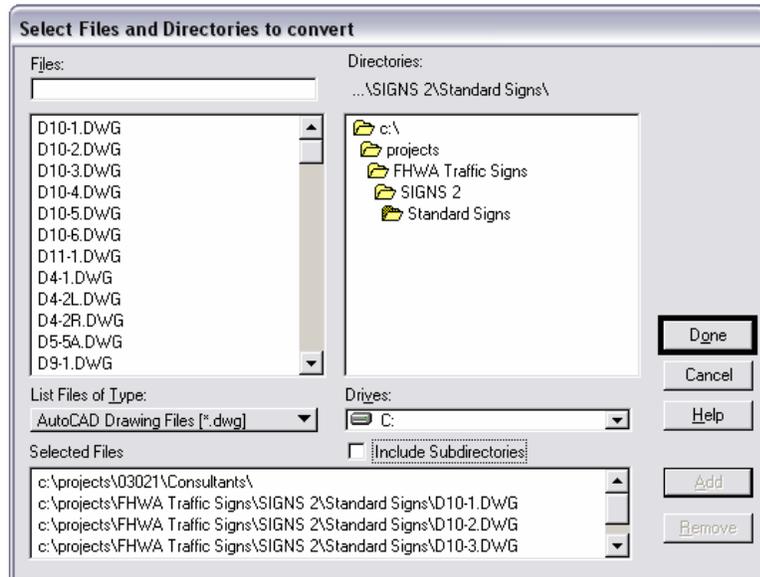
39. Select **Edit > Add Files** from the menu.



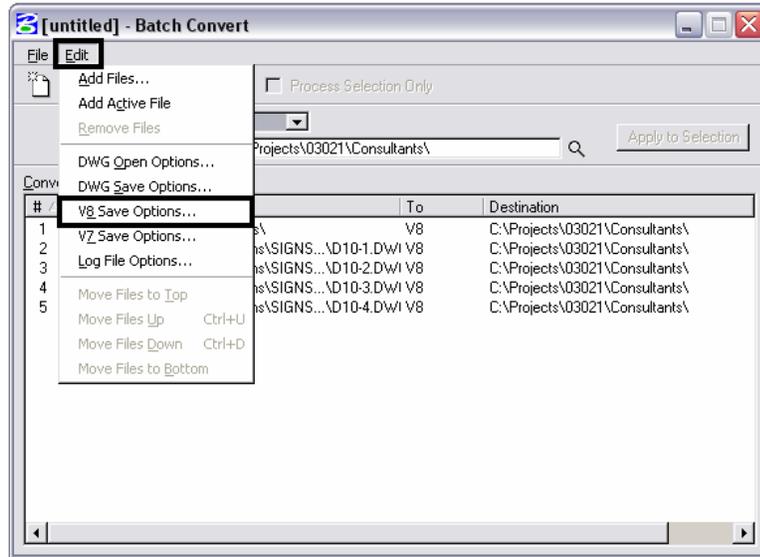
40. From the **Select Files and Directories to Convert** dialog box, highlight the directory containing the files to be converted on the right side of the dialog box. Select the **Add** icon to add the directory to the **Selected Files** list at the bottom of the dialog box. Individual files can be selected from the list on the left side of the dialog box. Be sure to select the **Add** button after each Directory or group of files from a directory is highlighted.



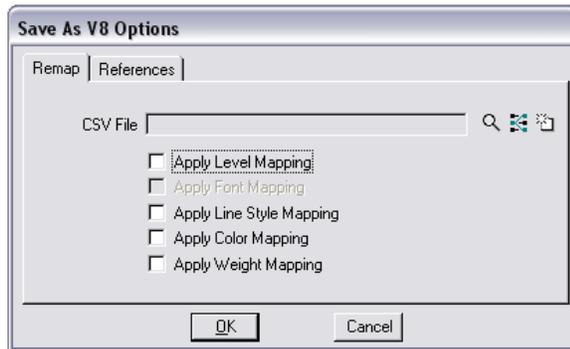
41. After all of the desired files and directories have been added, select the Done icon. The **Select Files and Directories to Convert** is dismissed.



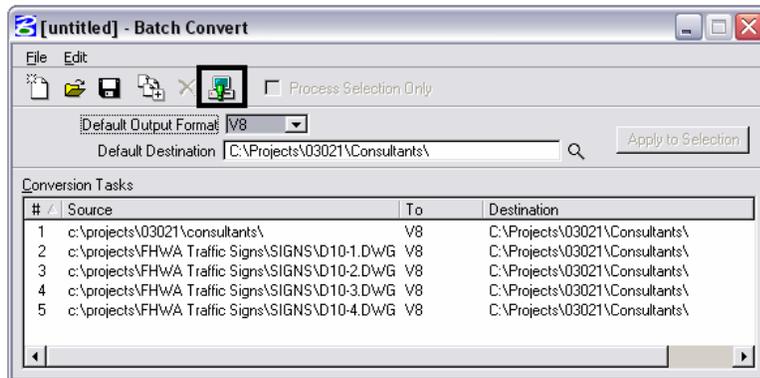
42. Back on the **Batch Converter** dialog box, select **Edit > V8 Save Options** from the menu.



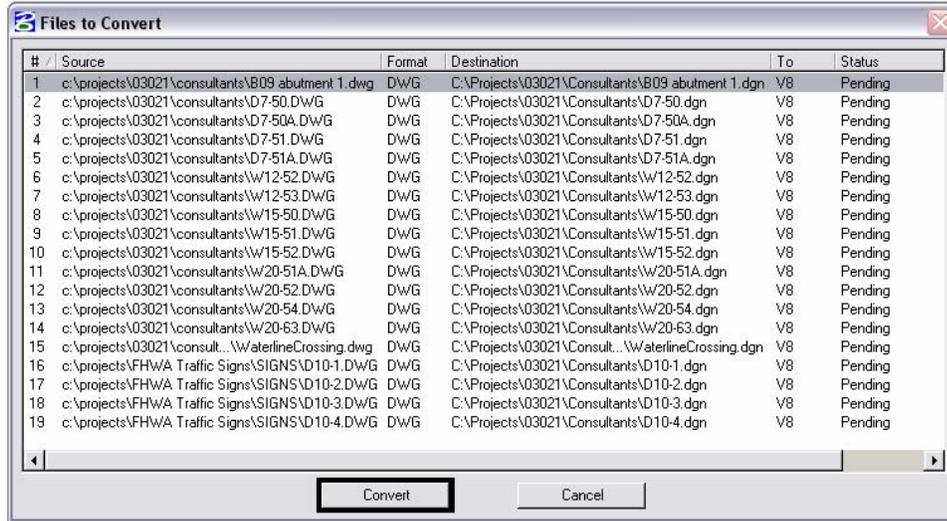
43. Follow steps 5 through 18 described above to edit the csv file that will be used to remap the levels of the selected files.



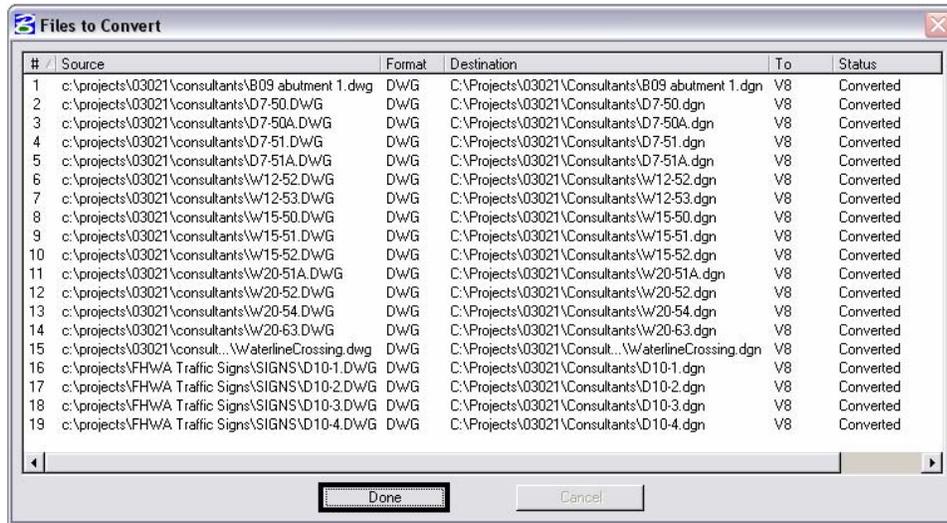
44. From the **Batch Converter** dialog box, select the **Process Batch Convert Job** icon.



45. The **Files To Convert** dialog box is displayed. From this dialog, select the **Convert** icon.



46. When the processing is complete, select the **Done** icon to dismiss the dialog box.



This will convert all of the levels in the active file (as specified in the csv file) and convert the same levels in the other specified files.

It is possible that the other files processed will have other AutoCAD levels. When these are discovered, repeat this conversion process on the previously converted MicroStation files. This will clean up the file that is currently being used and update the levels in other specified files.