

**Revision Date:**        **October 2012**

## **Introduction**

MicroStation v8 represents the first change to the MicroStation design file format in 25 years. The changes to the design file format are significant and numerous. The major changes are summarized below:

- **New Design File Format**
  - All data stored using double precision coordinates
  - Virtually unlimited design plane
  - Element parameters like number of vertices and number of characters in names has been dramatically increased
  - Unlimited levels
  - Unlimited reference attachments
  - Unlimited undo
  - The new file format will reduce file size by approximately 50%
  
- **DWG Support**
  - Native DWG Support
  - File translations are no longer needed
  - Directly reference DWG files

Although MicroStation v8 provides direct compatibility with AutoCAD DWG files, MicroStation v7 design files are not directly compatible with the MicroStation v8 design file format. MicroStation v8 does provide the capability to open v7 files directly in v8, however, to open a v7 design file in MicroStation v8 the file must be translated from v7 design file format to v8 design file format. The procedure to translate a MicroStation v7 file to MicroStation v8 format is detailed starting on page 2 of this document.

## **ODOT's CADD Standards for MicroStation v8**

The Office of **CADD and Mapping Services**, CADD Section, with input from ODOT's Districts and the consultant and construction community, has developed a set of CADD Standards for MicroStation v8. The new CADD Standards have been developed to take advantage of the new MicroStation v8 design file format. These standards are not compatible with ODOT's previously published MicroStation J CADD Standards.

A new CADD Standards Manual has been developed for MicroStation v8. The [ODOT CADD Engineering Standards Manual](#) is available to download from the following website:

**<http://www.dot.state.oh.us/Divisions/Engineering/CADDMapping/CADD/Pages/CADDManual.aspx>**

It is recommended that you become familiar with the new CADD Standards before starting a v8 project, or before attempting to translate a project from v7 to v8. Adherence to the new CADD Standards is not optional.

**Translating v7 files to v8 Format**

There are two ways to translate a v7 design file to v8 design file format, summarized below:

**“On the Fly” Translations**

This type of translation occurs automatically when the user opens a MicroStation design file in MicroStation v8. This translation method is very quick and easy; however, the newly translated design file is not compatible with ODOT’s CADD Standards for MicroStation v8 as summarized in the table below:

	<b>MicroStation v8 Standards</b>	<b>“On the Fly” translation results.</b>
<b>Levels</b>	600 +/- Named Levels	The v7 levels are mapped as named levels “Level 1” to “Level 63”. Elements are not remapped to the correct level according to ODOT’s CADD Standards for MicroStation v8.
<b>Custom Line Styles</b>	The Right-of-Way line styles were modified and renamed for v8.	The old line RW line styles are not in the v8 resource library. Elements using old line styles will display as line code 0.
<b>Fonts</b>	The v8 font library contains only the following fonts: 30, 31, 57, and 70.	The old fonts are not in the v8 font library. Text elements using the old fonts will display with the MS Default font in v8.
<b>File Names</b>	Standard design file names are detailed in the <a href="#">ODOT CADD Engineering Standards Manual</a> .	File names must be manually changed to conform to the new CADD Standards. Reference attachments will be lost as the file names are changed.
<b>Directory Structure</b>	The standard directory structure is detailed in the <a href="#">ODOT CADD Engineering Standards Manual</a> .	Files must be moved to the new directory structure. Reference attachments will need re-attached after the files have been renamed and moved to the new directory structure.

Because of the incompatibilities between ODOT’s CADD Standards for MicroStation v7 and v8, it is recommended that projects started in v7 be completed in v7.

In order to discourage the use of on the fly translations, when a v7 file is opened in MicroStation v8, ODOT Standards have been configured to open v7 files in “read only” mode. If you intend to translate a v7 for into v8, the second translation method, described below, is preferred.

**Translations using a Translation Table**

The second form of file translation uses a translation table to “remap” the project data from ODOT’s v7 CADD Standards to the new v8 CADD Standards. For example, the translation table has been configured to move all elements on level 21, color 0, weight 2, and line code 0 to the new v8 level PV\_P\_EOP. While the translation table will resolve the Level, Custom Line Style, and Font problems listed in the table above, the user must still resolve the File Name and Directory Structure problems.

Even though the use of a translation table resolves many problems, there are still some additional concerns to be considered, as summarized below.

**Fonts**

- Font 30 and 31 are narrower than v7 fonts 81, 83, 84, and 85. Text strings that are translated to use Font 30 and 31 will be approximately 30% shorter than they originally appeared in v7.

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## MicroStation v7 to v8 Design File Translations – User Documentation

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### Adherence to the v7 CADD Standards

- How closely did you following the v7 CADD Standards?
- Elements on the v7 design file that do not pass the translation are left on the original level, named “Level ##”, in the new v8 file (where ## = the v7 level number).

### MDL Applications

- BRSTAND.MA has not been ported to v8. A new procedure for drafting structural details using references is recommended rather than changing working units.
- FEATBL.MA has not been ported to v8. We will transition to using MicroStation v8's ByLevel attributes, or the GEOPAK Design and Computation Manager to set element attributes.

While the Office of **CADD and Mapping Services** does not recommend a blanket conversion of all current projects from v7 to v8, the decision on whether to translate a project will be left to the individual District/Project Manager. Each project should be evaluated individually on a case-by-case basis before deciding to translate. Before making the decision to translate a project from v7 to v8, the project manager should consider the following:

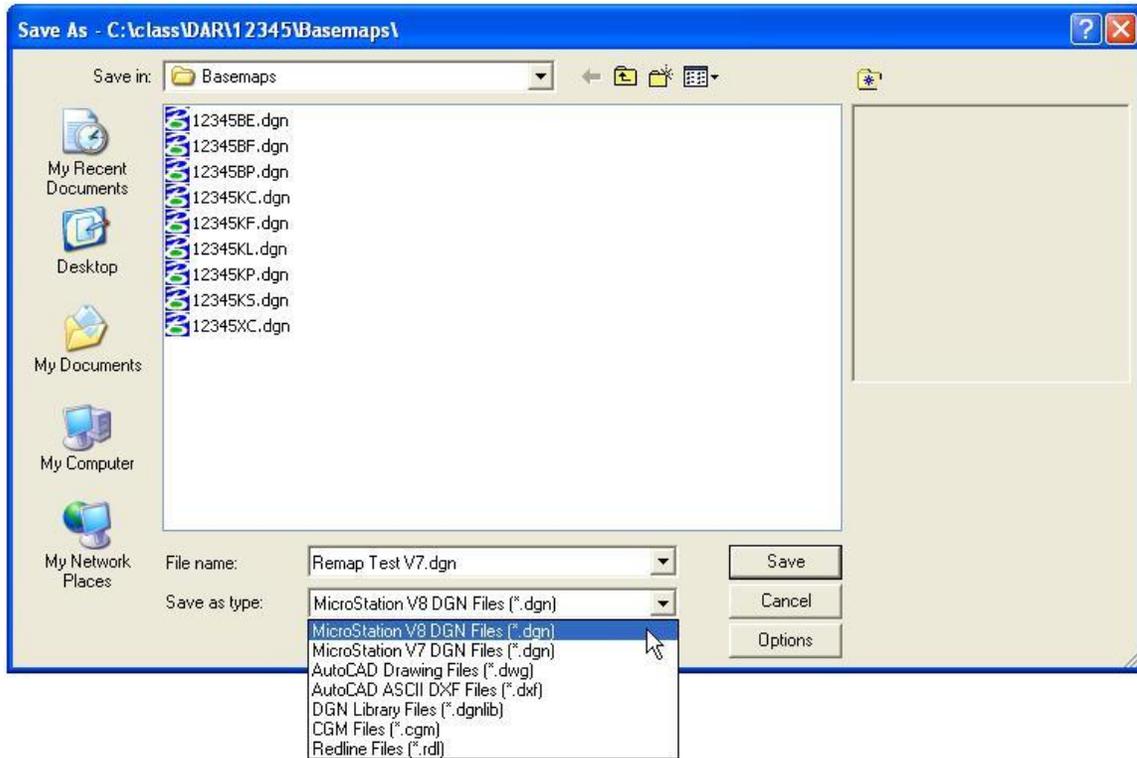
- What is the complexity of the project?
- Where are you at in the project development process?
- When is the project scheduled to be completed?
- Does the project timeline allow extra time for the project conversion and the learning curve associated with learning MicroStation v8 and the new ODOT CADD Standards?
- Will additional Survey Data be required at some point? Is the District Survey Crew ready to provide v8 data?
- Does v8 provide opportunities to improve project development?

### Translation Table

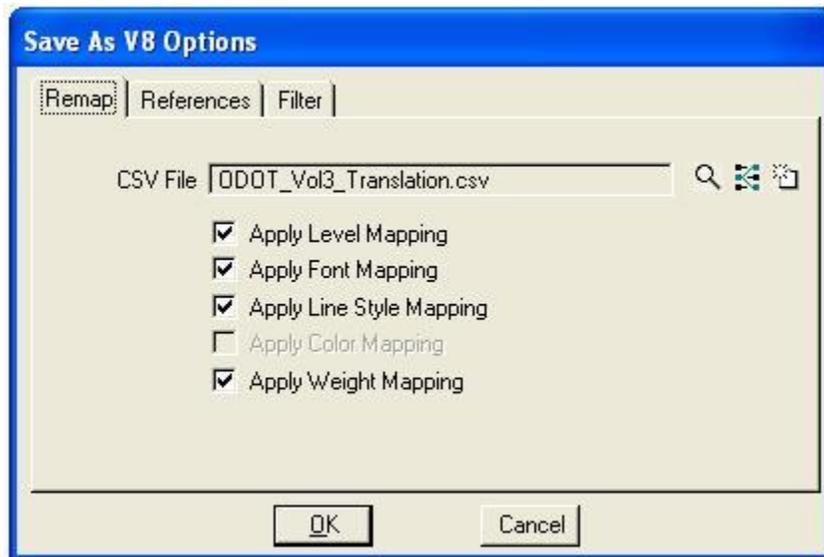
The Office of **CADD and Mapping Services** will provide a translation table for use on ODOT projects. The following procedure outlines the steps to translate a file from v7 to v8 using the translation table. The Office of **CADD and Mapping Services** does not guarantee the results of this translation table.

To translate an individual file:

1. Open the v7 file in v8. The file is automatically translated to v8 with 63 named levels. Also, note that the file is opened “*read only*”.
2. Select **File > Save As...** from the MicroStation pull down menu.
3. Key in a new **File name** for the new v8 file.
4. Set the **Save File Type** option to **MicroStation V8 DGN Files (\*.dgn)**.



5. Select the **Options** button to access the *Save As V8 Options* dialog shown below.



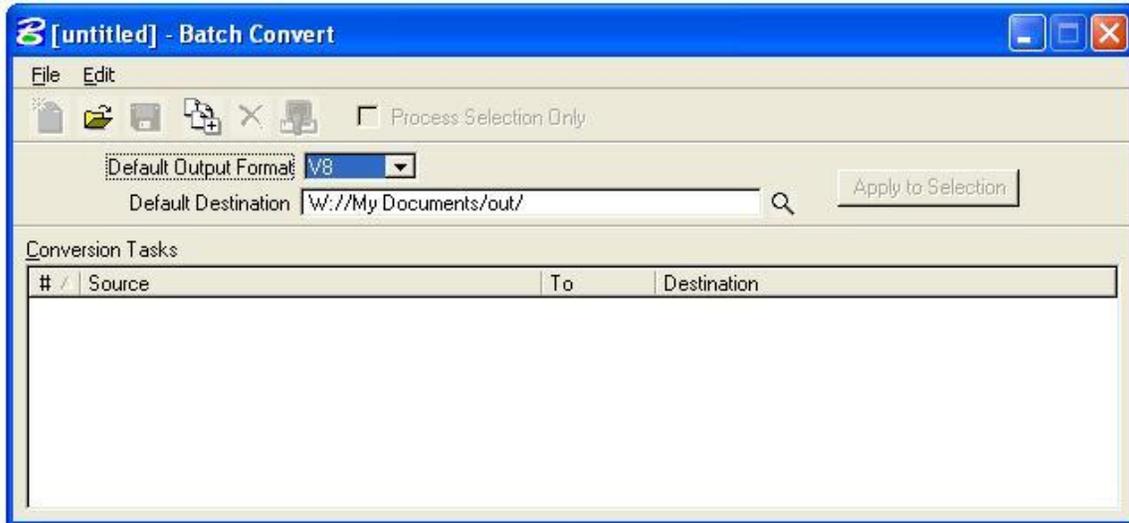
The **CSV file** should default to ODOT\_Vol3\_Translation.csv as shown above. Toggle on all the **Mapping** options as shown above.

See the MicroStation online help for information on the **References** and **Filter** tabs.

6. Select **OK** to return to the *Save As* dialog.
7. From the *Save As* dialog, select the **Save** button to initiate the process.

A batch conversion utility is also available to translate multiple files simultaneously.

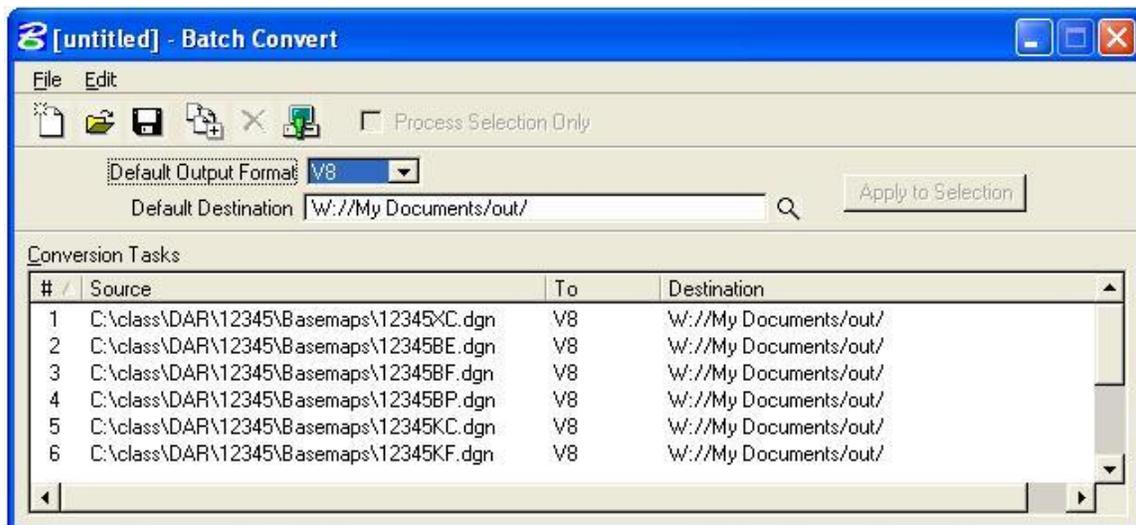
1. From the MicroStation pull down menu, select **Utilities > Batch Converter....** to access the *Batch Convert* dialog shown below.



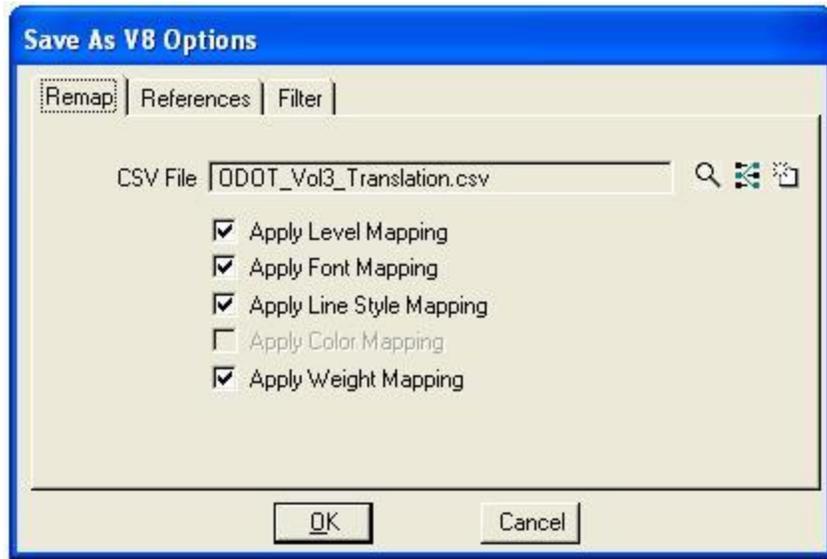
2. The Batch Converter will allow you to build a list of files to be converted. Select the files or the directories containing the files that you wish to convert using the icon shown below.



The files will be added to the Batch Converter list box as shown in the example below.



3. Select the ODOT translation table by selecting **Edit > V8 Save Options...** from the *Batch Convert* dialog. The Save As V8 Options dialog, shown below, is opened.



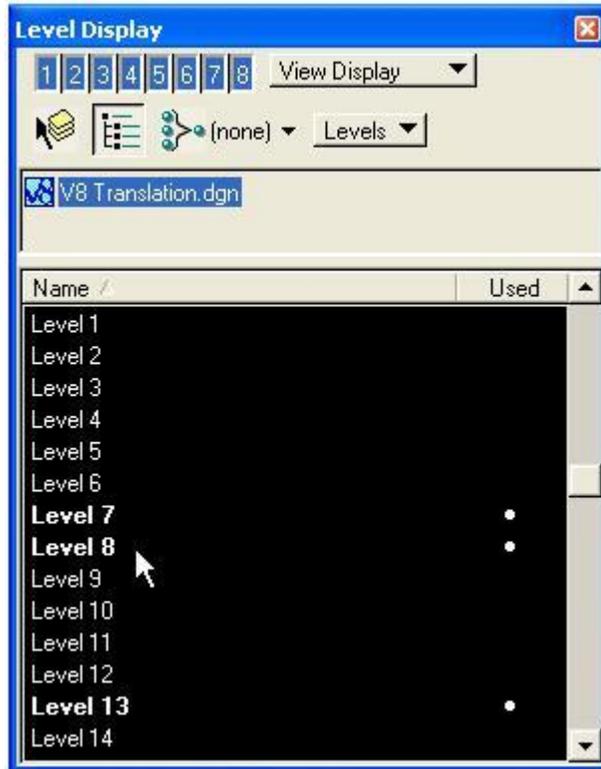
The **CSV file** should default to ODOT\_Vol3\_Translation.csv as shown above. Toggle on all the **Mapping** options as shown above.

4. Select the **Process Batch Convert Job** icon as shown below to initiate the process. The converted files will be created in the **Default Destination** directory specified by the user.



### Reviewing the Results

After the translation from v7 to v8 has been completed, it is advisable to review the new v8 design file to ensure the elements are on the correct levels according to ODOT Standards. The *Level Display* dialog, shown below, can be used to review the results.



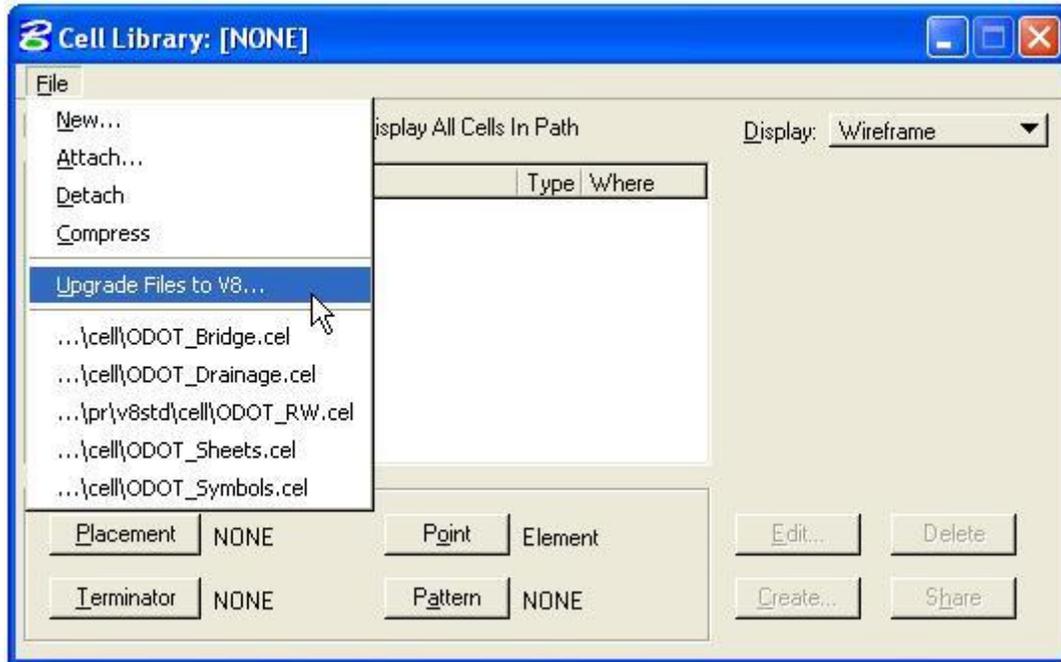
In addition to the standard ODOT levels, the newly translated v8 dgn file will contain 63 levels corresponding to the original 63 levels in the MicroStation v7 dgn file. These levels are named “Level 1”, “Level 2”, “Level 3”, etc... as shown in the example above. If the translation is 100% successful, these 63 levels will not contain any elements. However, there will usually be some elements that are not translated to the new levels that will need to be manually moved to the correct v8 level. In the example above, levels Level 7, Level 8, and Level 13 contain graphics that must be manually moved to the correct v8 level.

The results from file translations are only as good as the input data and the translation table settings. Always remember the golden rule of file translations: **Garbage in, garbage out!**



**v7 to v8 Cell Library Translation**

The process to translate cell libraries from v7 to v8 is similar to translating design files. From the MicroStation pull down menu, select **Element > Cells** to access the Cell Library dialog.



After the cell library has been converted to v8 format, it is necessary to review each cell to ensure that the graphics are on the correct level for v8. The Batch Convert dialog can also be used to translate v7 cell libraries to v8 using a translation table.

**Contact Information:**

If you have any questions, suggestions, or problems please contact the ODOT Office of **CADD and Mapping Services** CADD Support team or use the following form on the ODOT web site at:

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