Setting Up Design Standards

Overview

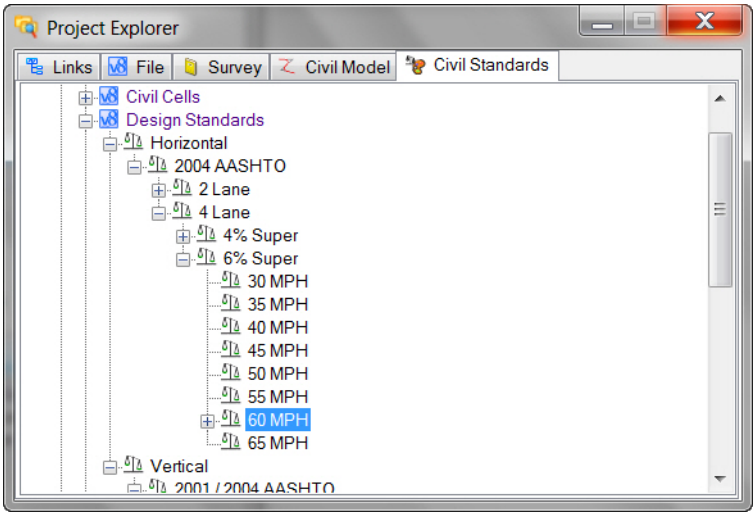
Design standards are used to monitor required curvature and other alignment checks on horizontal civil geometry elements and slopes and K values on vertical geometry elements.

The standards are stored in a design library (dgnlib) which can be read only and stored in a central location for use by all users and referenced by the configuration variable MS_DGNLIBLIST. A dgnlib is an empty file similar to a seed file where you can set up various MicroStation and Civil resources. An organization can utilize numerous dgnlibs, so it is recommended that both horizontal and vertical standards are stored in one dgnlib, but separate from other dgnlib-type data. If your organization utilizes both Metric and English units, you may want one dgnlib for each.

The standards are set up within the Project Explorer. Note the hierarchy from the Project Explorer is mirrored in the Design Standards Tool Bar pick lists. The hierarchy is customizable to conform to your organization's standards.

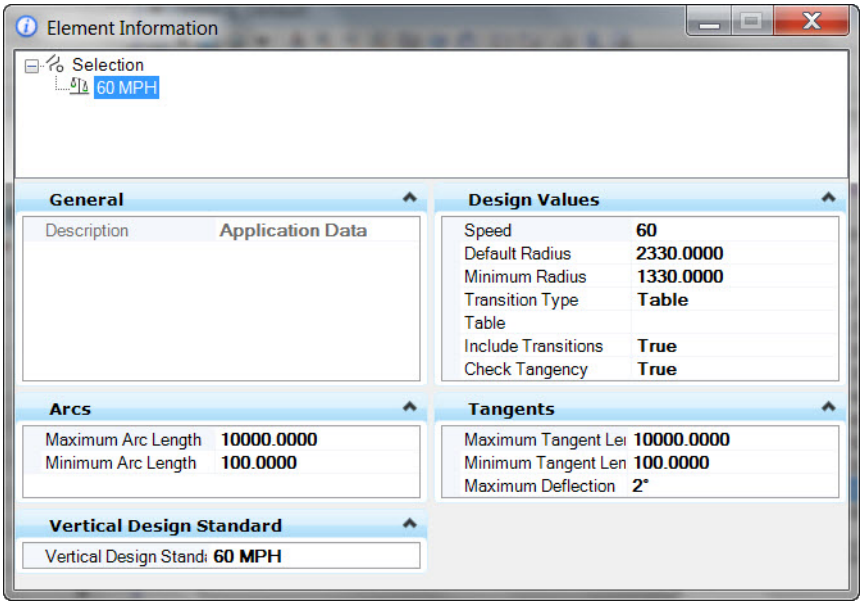
As most organizations utilize AASHTO standards, the default libraries included in the installation package are based on the 2001 and 2004 versions of "A Policy on Geometric Design of Highways and Streets."

The Project Explorer is accessed by selecting File > Project Manager from the main menu or from the Primary Tools menu bar. It is more efficient to complete the vertical standards first, as they are referenced when building the horizontal standards.

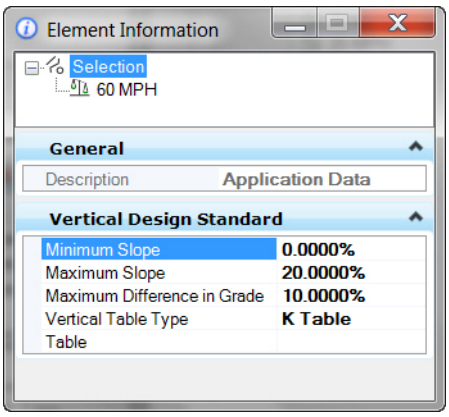


Project Explorer with expanded Horizontal Design Standards

Right-click on the individual entry and select Properties from the pop-up menu to review the settings. For a description of each field, review the Online Help.



Horizontal Design Standards Properties

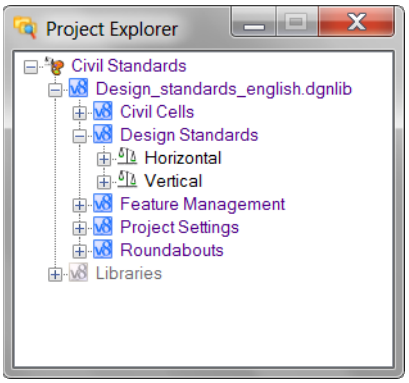


Vertical Design Standards Properties

General Procedure

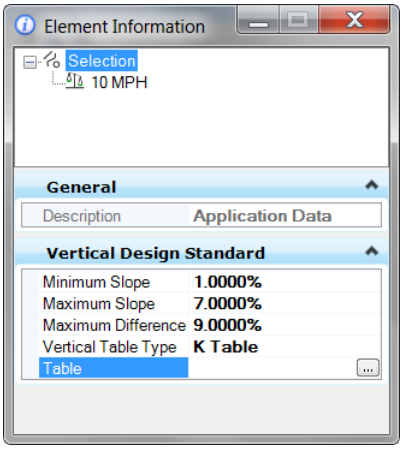
The general procedure is:

1. Gather the information on your organization's standards? For U.S. clients, do they mirror AASHTO? If they do, you can use the standards delivered with the installation package. If not, where does your organization deviate, so the necessary adjustments can be made.
2. Determine the hierarchy for vertical and horizontal standards. This will also determine how much to create from scratch and how much to copy and paste. Keep in mind the users will see the hierarchy you build, so keep the names intuitive.
3. Open the dgnlib file with one of the Civil products. The tools cannot be accessed with only MicroStation loaded. Select **Tools > Project Explorer** from the main menu or General Geometry panel within Civil Tools.
4. Within Project Explorer, click on the Civil Standards tab. (Note your tabs may be configured differently than the illustrations. Tabs can be changed under Settings > Project Explorer on the main menu.)
5. Navigate the hierarchy to Horizontal and Vertical. This is your starting point if you are building from scratch.

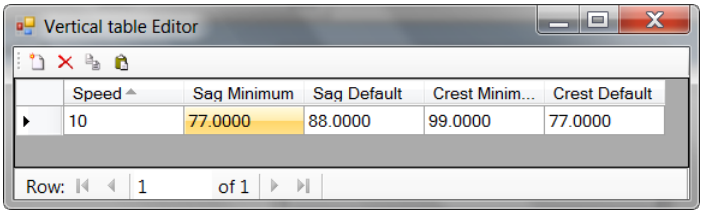


6. Create the first part of the hierarchy. Avoid the inclination to build the entire hierarchy when you begin. It's easier to build the first standard, then copy and paste into the next standard as many of the field values are the same. For example, the entries for 2 lane vs. 4 lane road are the same, and the values are slightly different. So, rather than typing everything twice, set up the 2 lane folder, then copy and paste the completed folder to 4 lane and change the values as needed.
7. Select the location where you want to begin, right click and select New from the pop-up menu. A new entry is made in the table entitled Vertical Design Standard. To rename, right click and select Rename and change the name. The hierarchy can be nested.

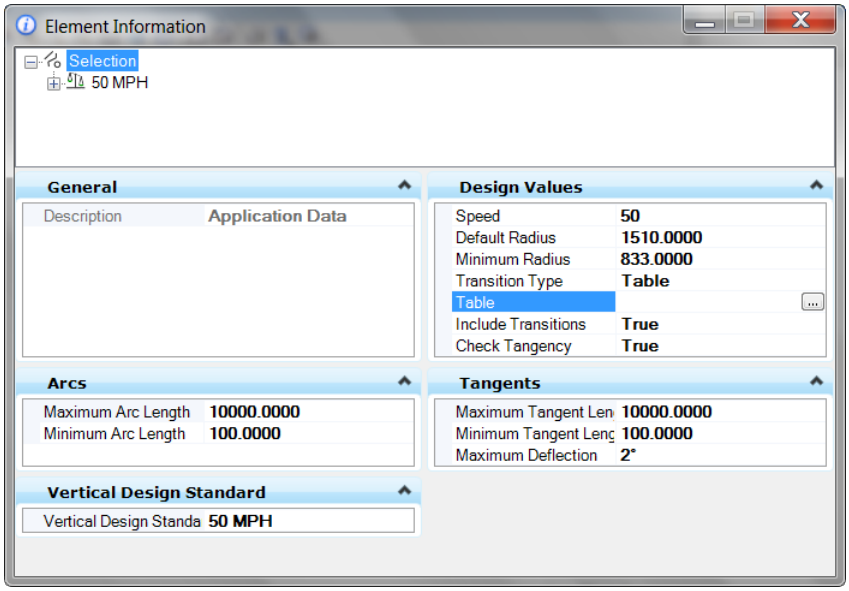
8. To set the values for each entry, highlight the entry, right click and select Properties from the pop-up menu.



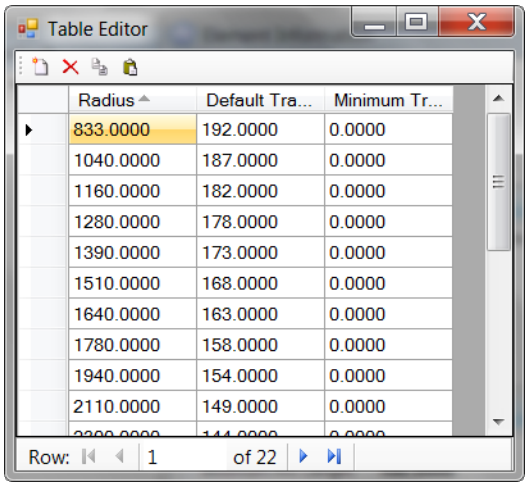
9. Click on each field and adjust the values. To set the K Value, set the Vertical Table Type to K Table, then click on Table to display the icon (three dots). Click to open the pop-up Table Editor.



10. Add the information to the Table Editor (one line) and close.
11. Continue adding the rest of the Vertical Standards.
12. When the Vertical Standards are complete, move onto the Horizontal Standards. The process is exactly the same adding new entries and populating the standards. The Transition Table is done using the Table Editor.



Horizontal Standards Entries



Transition Table – note the Green Book has Default Transitions, but not Minimum Transitions.

13. Once you have completed a set of entries for one superelevation value (i.e., 4%) it's easiest to copy the entire grouping and paste into your standards. Rename (i.e., from 4% to 6%) then adjust the values within the 6% grouping. This maintains the values within each entry, so you only have to adjust the Transition Table.

Frequently Asked Questions

1. Can the standards/tables that I have already developed in SELECT series 2 be used in SELECT Series 3? (21 Sept. 2011)

   Since we are adding to the standards, rather than changing what we already have or deleting an option, the current (SS-2) standards can be used. They will be accessed slightly different than in the past, but that doesn't impact the format of the file.
   The administrative workflow would be to take the existing SS2 DGNlib, add in the vertical standards (which could be copied from one of the default sample libraries, then go back into each horizontal standard and select the associated vertical standard from the pick list. While it means touching every horizontal entry, it goes fairly quickly.