2.3   Working Units

A.   Roadway Design Files

The current Caltrans standard design presentation software (MicroStation CONNECT) defines a design file by U.S. Survey Foot with Master Unit set to "US Survey Feet" and Sub Unit set to "Survey Tenths". The resolution for roadway design files is "10,000 per Distance US Survey Foot". These standard values define the size of the working area of the design file. Caltrans roadway seed files have the settings shown below:
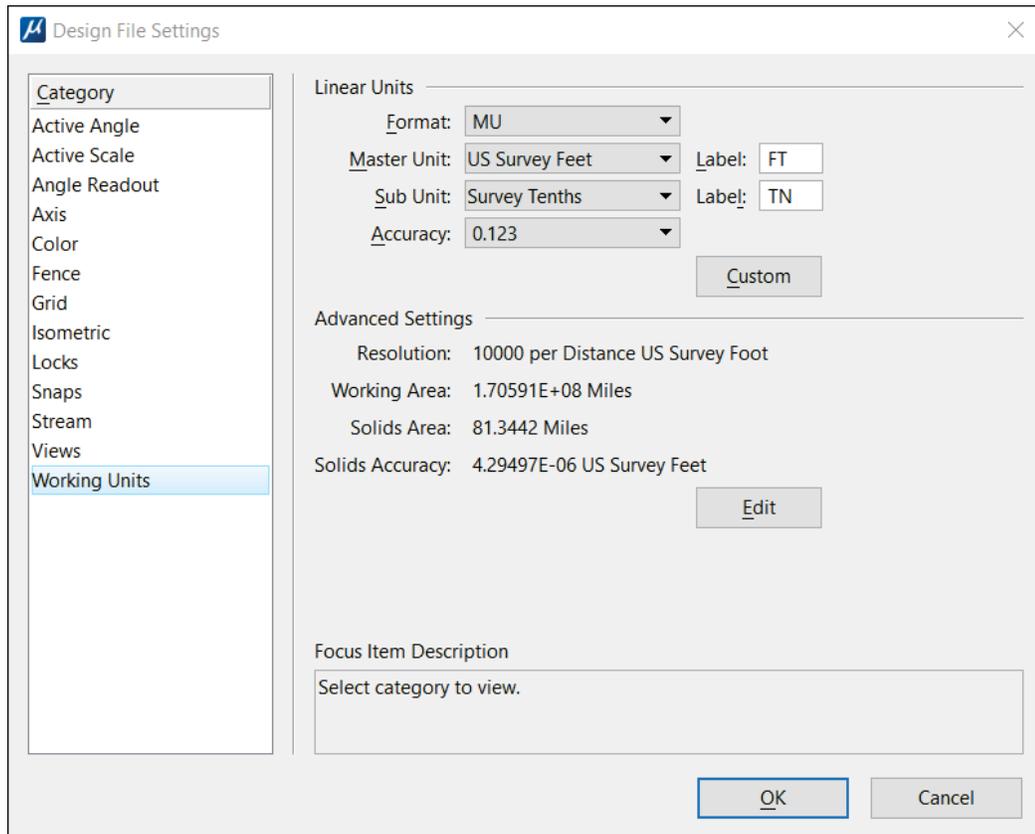

Figure 1 – Current roadway design file working unit settings

Older Caltrans roadway MicroStation seed files used Master Unit and Sub Units as shown in the following picture:
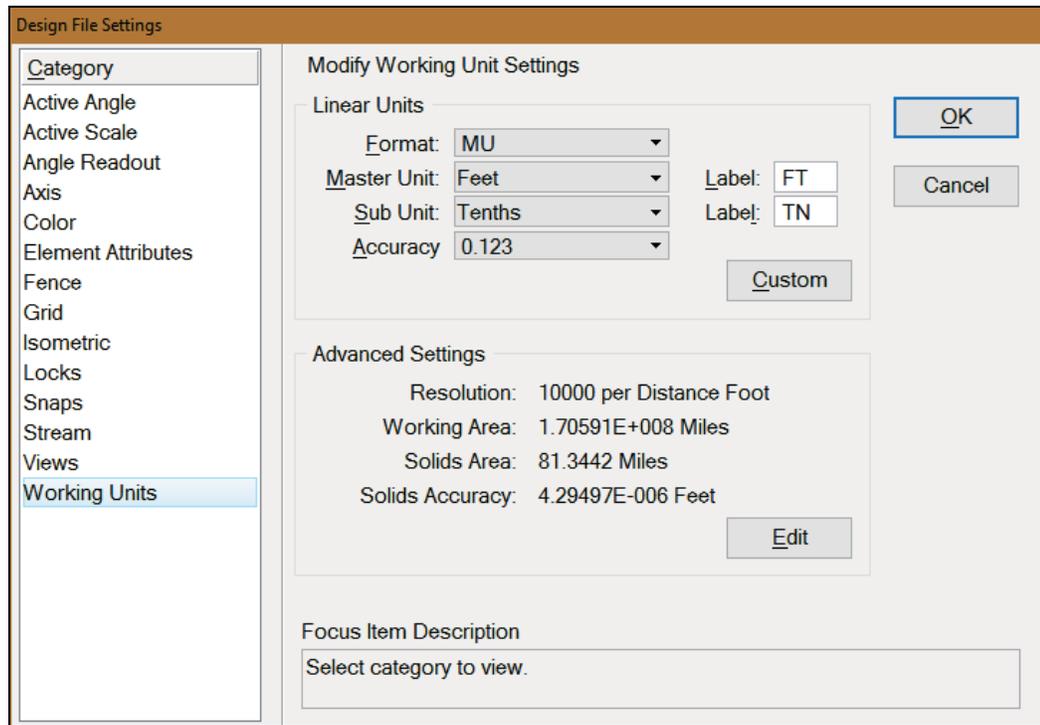
Figure 2 – Older roadway design file working unit settings

When an existing MicroStation design file created using older Caltrans MicroStation V8i seed file is opened using MicroStation CONNECT, the Master unit and Sub unit should automatically switch to US Survey Feet and Survey Tenths. If working units for an existing MicroStation design file opened using MicroStation CONNECT does not display the Working Unit settings as shown in Figure 1, the file may have been created using International feet.

To maintain the California coordinate system in the design files for all roadway projects, the resolution must remain at 10,000. Changing this value will change the coordinates and the linear measurement of elements.

B.   Structure Design Files

Current design files for Structures bridge design are based on 1'-0" = 1'-0" with the Master Unit set to "US Survey Feet" and the Sub Unit set to "US Survey Inches." The resolution and working area are set as shown in the following picture:
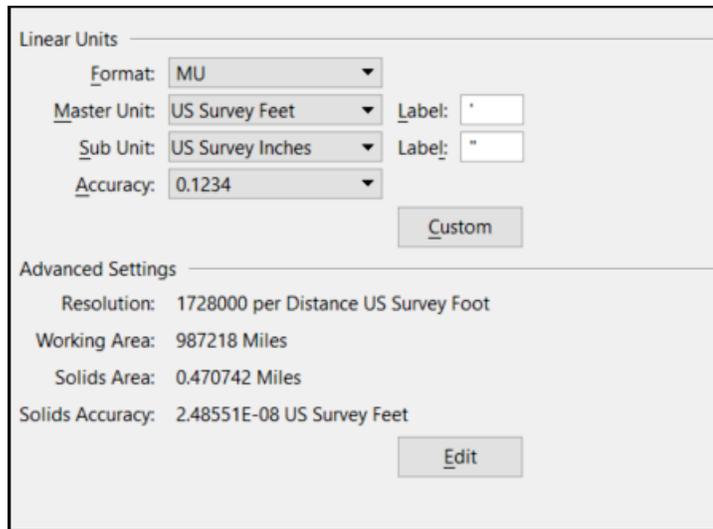
Figure 3 – Current structures design file working unit settings

Older Caltrans structures MicroStation files used different Master Unit and Sub Unit as shown in the following picture:
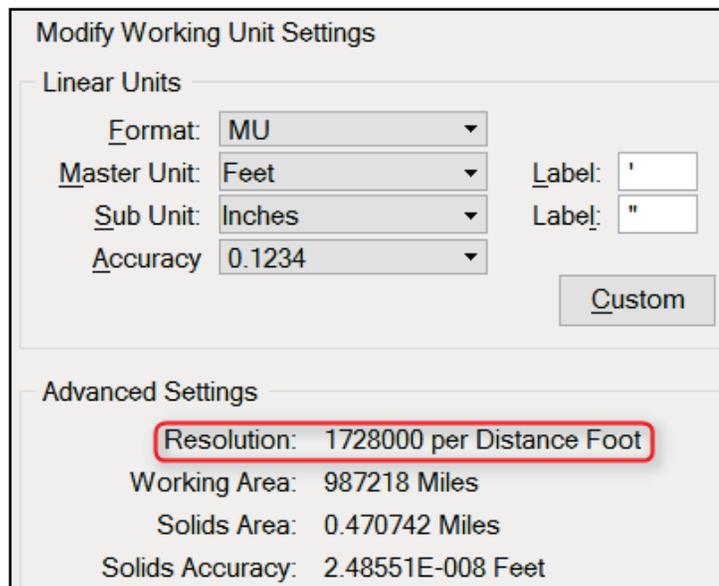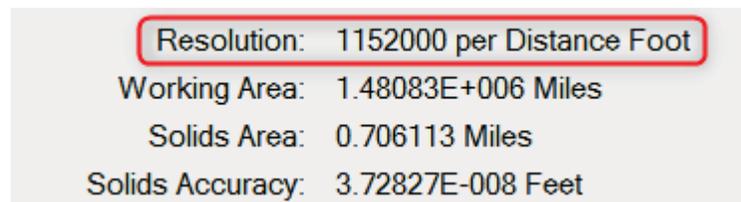

Figure 4 - Older Structures design file working unit settings

There are much older versions of Structures seed files that used a different resolution and working area too. Those settings are shown in the following picture:

Resolution: 1152000 per Distance Foot
Working Area: 1.48083E+006 Miles
Solids Area: 0.706113 Miles
Solids Accuracy: 3.72827E-008 Feet

Figure 5 - Obsolete structures design file working unit settings

It is not necessary to update structures files already created with the older settings shown in figure 4 and 5 above. The project should be completed using those settings.

The resolution and working area for a Structures design file differs from a roadway design file.