CADD Standards and Procedures Manual

SECTION 5 – DRAWING ENVIRONMENT

5.1 Model and Paper Space

There are two distinct working environments, or "spaces," in which you can create objects in an AutoCAD drawing. These are represented by the Model (Model Space), and Layout Tabs (Paper Space). A drawing can have several layout tabs or just one layout within it. These layout tabs are within the paper space views of a drawing.

It is the City's standard to use model space for creating and editing your drawing model, and use paper space for composing your drawing sheet, defining views, and plotting. See below for more detail.

5.2 Model Space

The drawing is always drawn in model space and at full scale (1:1). Any additional items that help define the drawing data such as details, schedules or sections must also be drawn at full scale in model space. All dimensions and text shall be drawn in Model Space except that which is allowed in the Paper Space section that follows.

5.3 Paper Space

General project graphic elements such as titleblocks, legends, callouts and labels, plan titles, and sheet specific notes should be drawn or inserted as blocks within paper space. Dimensioning should be done in model space and should only be used in paper space when appropriate.

5.4 Layout

A drawing can have multiple layout tabs or just one layout within it. These layout tabs are within the paper space views of a drawing.

5.5 Layout Viewport

You can create a single layout viewport that fits the entire layout or create multiple layout viewports in the layout. When you create a layout, you can add layout viewports that act as windows into model space. In each layout viewport, you can control the view that is displayed by changing their scale size by using the "viewport scale control" within paper space. This "viewport scale control" will determine your plot scale. Plot Scales will already be set-up within the City standard drawing files. Viewports shall be created on layer "Z-Viewports" or some other, preapproved, non-plotting layer.

5.6 Drawing Rotation for Plotting

If you rotate a drawing in model space for design purposes, you must rotate it back before submitting it to the City. Model space rotation and view must be set to UCS>World. Drawing rotation for plotting purposes must be done within a viewport in paper space. **Each viewport shall have a horizontal visual scale and each plan viewport shall have a north arrow that corresponds to true-north.**

5.7 Drawing Units

All drawings shall be generated using precision input with an accuracy of at least four (4) decimal places. Whenever possible, all CADD drawings should reflect true design dimensioning and should NOT be simple graphic representations of the design model. All linework shall be drawn at a 1:1 scale. Drawings should be setup in decimal units with the insertion scale set to unitless. Any and all data exported and imported shall be to the 4th decimal place.
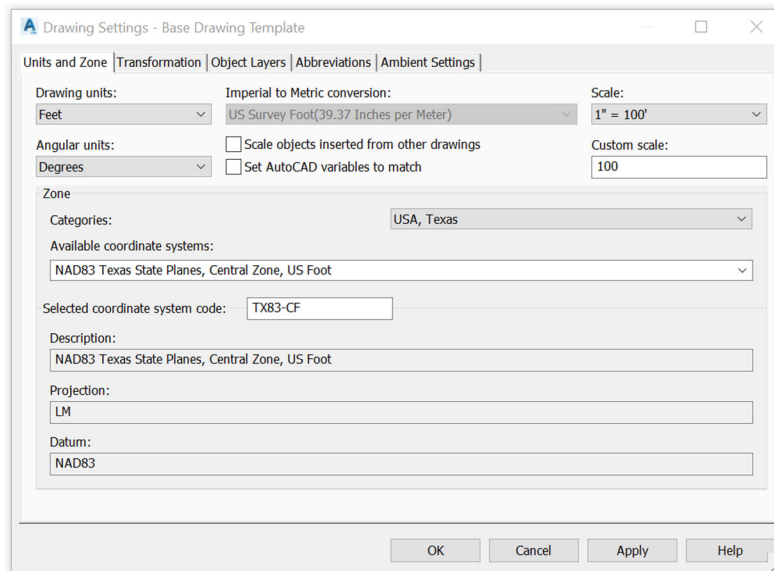
5.8 Standard Coordinate System:

The use of state plane coordinates is REQUIRED for the preparation of all projects:

NAD83 Texas State Planes, Central Zone **4203**, US Foot (TX83-CF) **Grid**.

If DWG is Surface coordinates, convert to GRID prior to submitting to the City.

See the image below for coordinate settings for City projects.

Points should NEVER be rotated and/or translated.

5.9 BENCHMARK:

All projects shall use appropriate benchmarks for vertical and horizontal control. A benchmark table shall be included with every project submitted to the City.