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CHAPTER 4 - ANNOTATION

4.1 – Introduction to Annotation

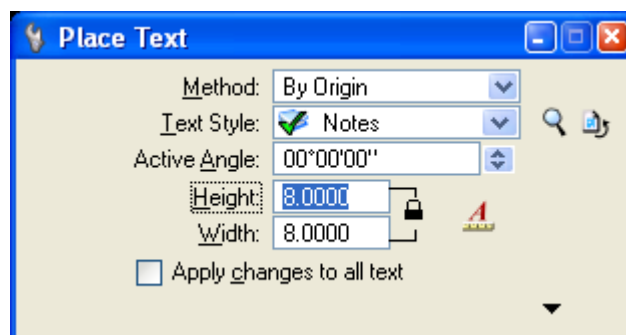
Annotation, as it pertains to this chapter, includes both text and dimensions.

This chapter will outline the text styles and dimension styles in use at EFLHD, as well as some of the key settings associated with these styles.

4.2 - Text

MicroStation supports and recommends TrueType fonts since version V8 (2004), and thus is continued for use in V8i versions. Additionally, and AutoCAD .shx fonts are accepted. MicroStation will automatically find true type fonts installed on each computer in the operating system \fonts directory, and will find AutoCAD .shx file in the AutoCAD system \fonts directory. The original MicroStation fonts are still available for use.

Text Styles are customized sets of attributes for text, including: fonts, width, height, etc. This allows for easier automation and placement of “standardized” text. With the use of text styles, the user no longer needs to set text parameters such as text font, height, width, etc. each time text is needed. Each of these settings is saved within a text style. Styles are created and stored within DGN Libraries (.dgnlib).

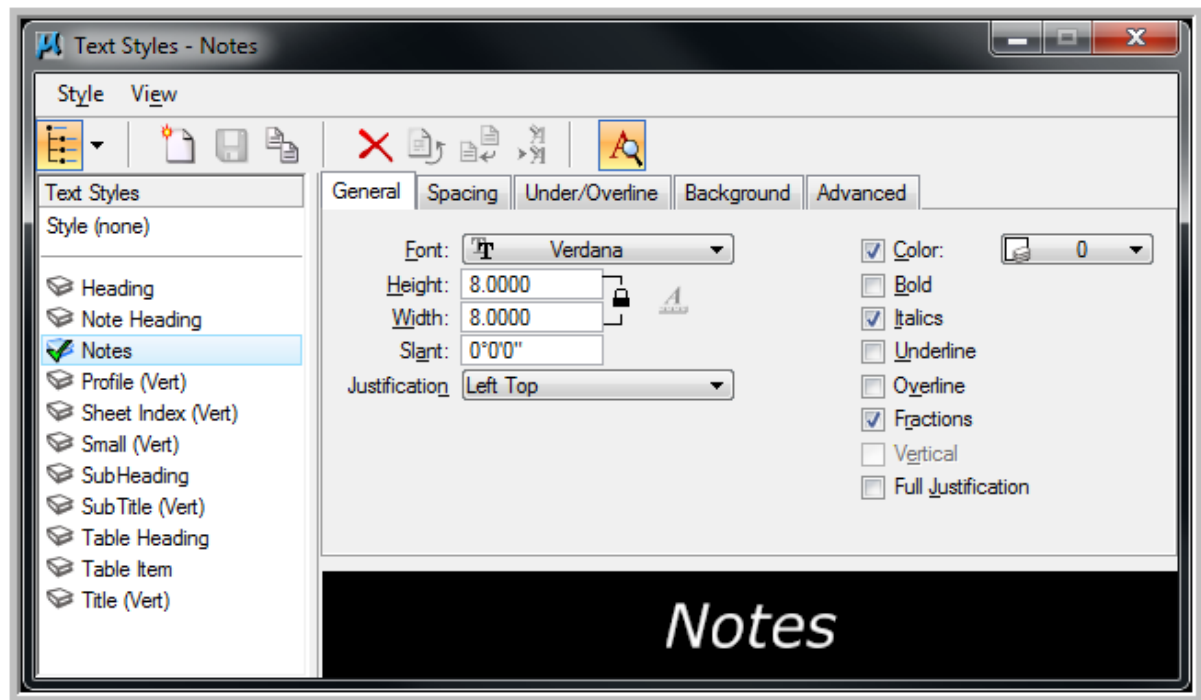


In the example above, the user has selected “Notes” as the text style and all of the parameters stored with this style will be active.

4.2.1 - FLH & EFLHD Text Styles

EFL, in collaboration with the WFL and CFL Division offices of FLH, have revised and updated the Text Styles in use for V8i. There are a total of 11 styles. The former V8 styles used at EFL have been continued into this new set, but have been renamed. All text styles are stored in the DGN Library, **Text-Dimensions.dgnlib**, which is located at: M:\Engineering_Software\Cadd_resource_v8i\X_30\Standards\Library_Files\.

Text Style attributes such as text height, width, and line spacing, have been established for a scale of 1"=100' for U.S. Customary and 1:1000 for Metric, and the font. E F L H D uses the Verdana true type font for most text on EFLHD projects.



EFLHD text styles are to be used in EFLHD plan packages. Each style has specific purposes. Examples of these uses can be found in the FLH Standard Plans, the EFL Text Style Sample Sheet (<http://eflnet.flhd.fhwa.dot.gov/tools/cadd-support.aspx>) and the list below:

Text Styles

Style	Size	Justification	Other	Usage
Small (Vert)	0.06" [1.5 mm]	Center Center	Vertical (non-italicized) text	Sheet number blocks and miscellaneous mapping text
<i>Notes</i>	0.08" [2 mm]	Left Top		Typical FLH italicized text
Sheet Index (Vert)	0.08" [2 mm]	Left Top	Vertical text	Used on title sheet Sheet Index and other vertical text
Profile (Vert)	0.08" [2 mm]	Center Center	Vertical text	Station and elevation text on profile sheets
<i>Table Heading</i>	0.08" [2 mm]	Center Center		Plan sheet table column headings
<i>Table Item</i>	0.08" [2 mm]	Center Top	Line spacing equals size	Plan sheet table items
<i>Note Heading</i>	0.12" [3 mm]	Left Top		Note and footnote (WFLHD) heading
<i>Heading</i>	0.12" [3 mm]	Center Center	Bold text	Plan sheet headings
<i>SubHeading</i>	0.10" [2.5 mm]	Center Center		Plan sheet subheadings
Title (Vert)	0.12" [3 mm]	Center Center	Vertical, bold text	Sheet title in title block
SubTitle (Vert)	0.10" [2.5 mm]	Center Center	Vertical text	Sheet subtitle in title block

4.3 – Dimensions

Once a drawing's objects have been established at the proper size, scale, and orientation, annotation generally begins. A dimension is a label in a design showing a linear, angular, or radial measurement. Adding dimensions, symbols, and notes to a drawing (sometimes referred to as detailing) conveys intent.

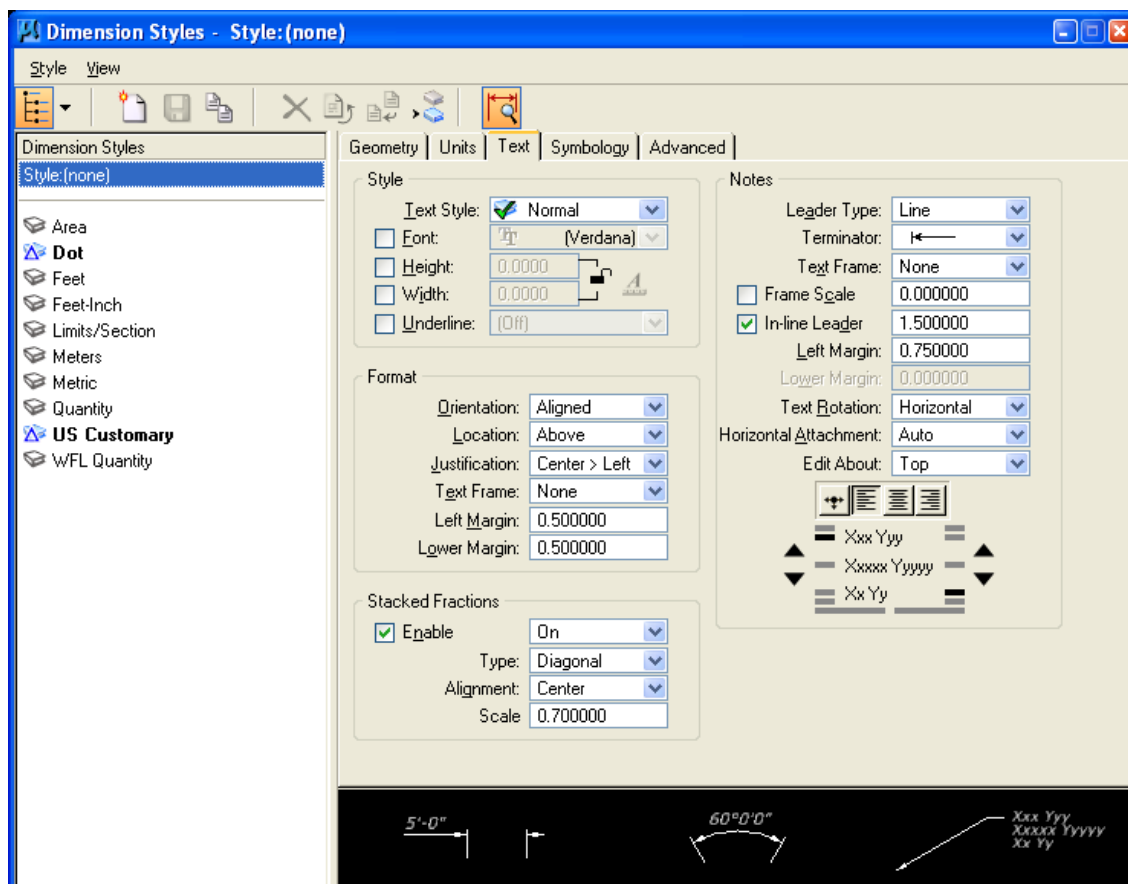
MicroStation has many dimensioning tools. For example, the Dimension Element tool can be used to quickly dimension most elements.

Also available in MicroStation V8i Edition, is the inclusion of Dimension Styles. This is a beneficial feature for users of the dimensioning tools in MicroStation to improve efficiency and create standardization.

4.3.1 – FLH & EFLHD Dimension Styles

Along with the development of V8i Text Styles, the Divisional offices of FLH, coordinated updates to the Dimension Styles used on FLH projects. EFLHD has adopted these defined dimension styles for use on EFLHD project plans. Dimension Styles are contained in a DGN Library that will be attached automatically for EFLHD employees, and will be attached through a project configuration variable for consultants working on EFLHD projects. The **Text-Dimensions.dgnlib**, is located at:

M:\Engineering_Software\Cadd_resource_v8i\X_30\Standards\Library_Files.



As with text, dimension styles also use the Annotation scale to control the size of dimension text. Currently there are 7 dimension styles used for dimensioning in each Metric and U.S. Customary units. A description of each style is shown below:

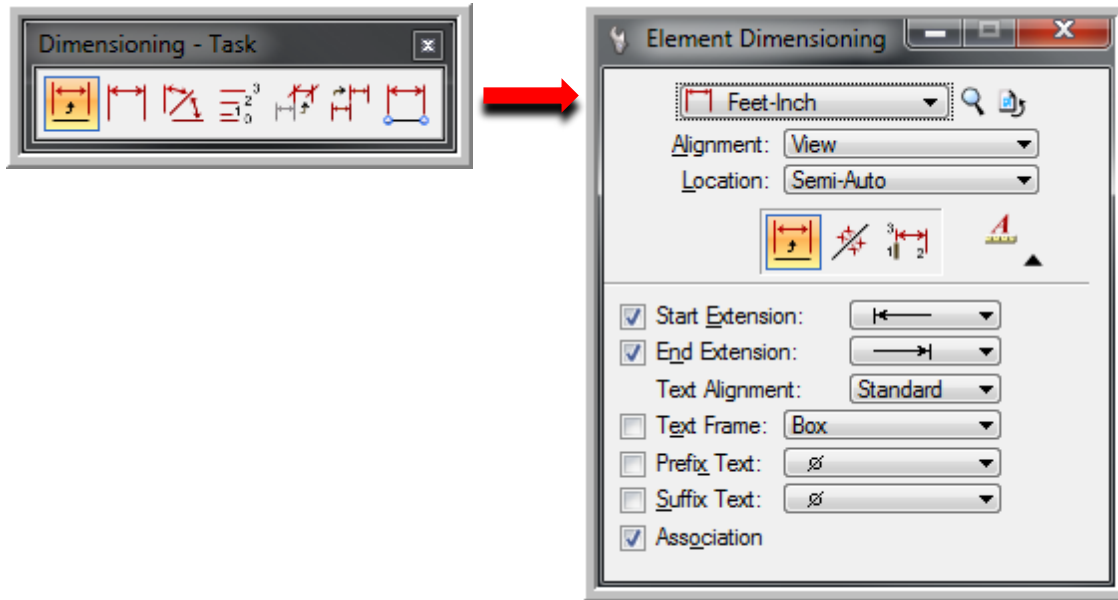
Dimension Styles

Name	Use w/Place Note	Use w/Place Dimension	Usage
Area	Yes	Rarely	To denote a large area with a tilde arrowhead
Dot	Yes	Rarely	To denote a small area with a dot arrowhead
Feet	Yes	Yes	Basic note and dimension (0.1 MU) style. Automatic dimensioning optimized for US Customary units.
Feet-Inch	Yes	Yes	Basic note and dimension (MU-SU) style. Automatic dimensioning optimized for US Customary units.
Limits/Section	Yes	Rarely	Project limits and section lines
Meters	Yes	Yes	Basic note and dimension (0.001 MU) style. Automatic dimensioning optimized for Metric units.
WFL_Quantity	Rarely	Yes	In WFLHD used for excavation and embankment quantities in profile view

This information can also be viewed on the FLH public webpage:

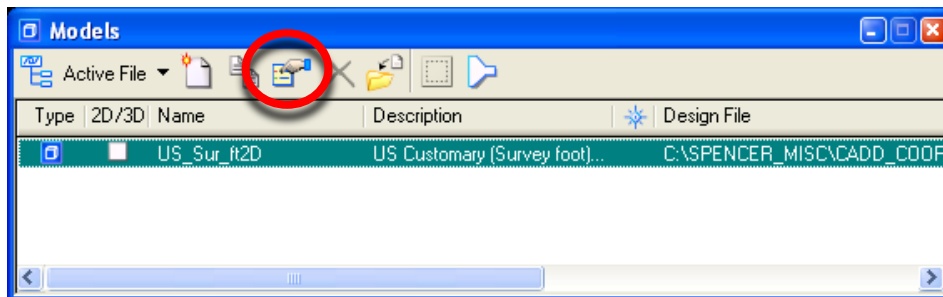
<http://flh.fhwa.dot.gov/resources/pse/cadd/styles.htm#dimension>

These dimension styles use the correct levels and text styles for EFLHD work. As with Text, simply select the Dimensioning tool, then from the Element Dimensioning dialog box, select the correct dimension style, as shown below.

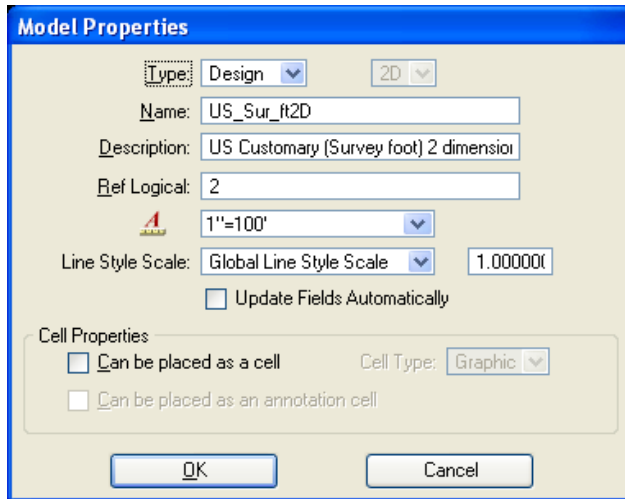


4.4 – Set the Annotation Scale in a Model

1. Open the Models dialog.



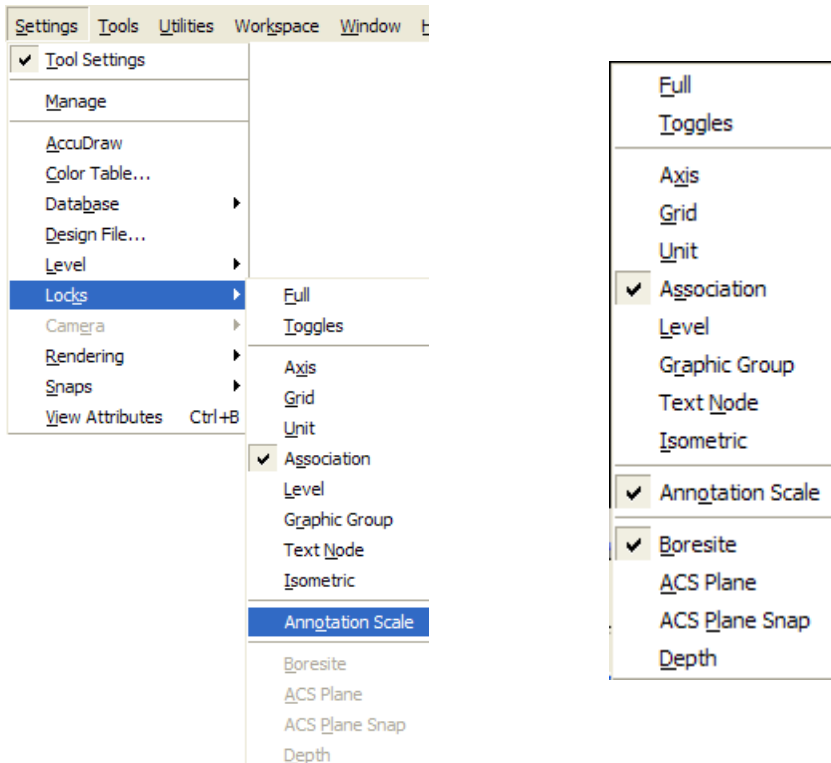
2. Select the **Edit Model Properties** icon.



You can rename the Model, give a new description and select the annotation scale from the dialog above. In the example above, the annotation scale has been set to 1"=100'. Once the Model properties have been set, select **OK**.

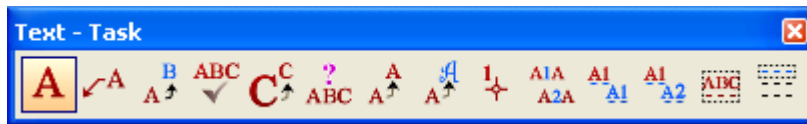
4.5 – Annotation Scale, Setting Annotation Lock and Placing Text

Annotation Lock can be selected from the main MicroStation pull down menus by selecting **Settings > Locks > Annotation Scale**, as shown on the left below, or by using the locks menu on the MicroStation status bar, as shown on the right below.

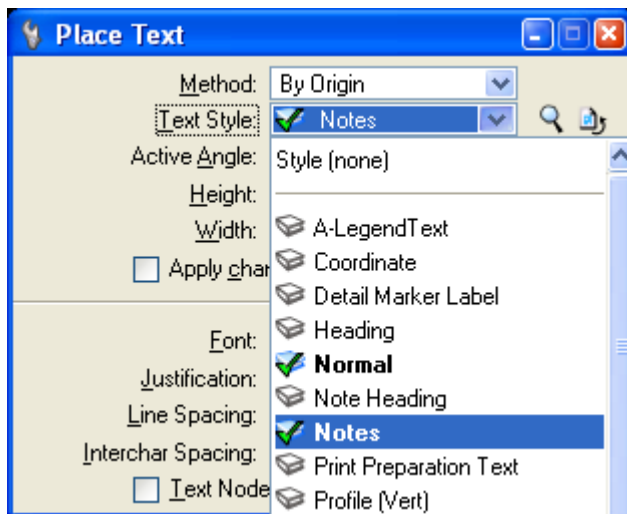


With Annotation Scale lock on, text will now be placed at the proper size for the output scale.

1. Select the Place Text tool.



2. From the tool settings window, select the desired text style.



When selecting a text style, the proper text size, font, line spacing, etc. will be set automatically.

3. Begin placing text.

4.6 – Text Sizes

The following tables outline the text sizes to be used on EFLHD plans.

These text sizes have been incorporated into the use of annotation scale.

English Text sizes							
11x17 Sheet size	Scale ft/in						
Description	10	20	40	50	100	200	500
Standard Text	0.8	1.6	3.2	4	8	16	40
Text Spacing	0.4	0.8	1.6	2	4	8	20
Title/Heading Text	1.2	2.4	4.8	6	12	24	60
Title Sub-Heading Text	1	2	4	5	10	20	50
Sheet Layout Information							
Feet per plan sheet	140	280	560	700	1400	2800	7000
Major tick spacing	50	100	100	100	500	1000	1000
Minor tick spacing	10	25	50	50	100	100	500

Metric Text sizes									
11x17 Sheet size	Scale n:1								
Description	50	100	200	250	300	400	500	1000	2000
Standard Text	0.1	0.2	0.4	0.5	0.6	0.8	1	2	4
Text Spacing	0.05	0.1	0.2	0.25	0.3	0.4	0.5	1	2
Title/Heading Text	.015	0.3	0.6	0.75	0.9	1.2	1.5	3	6
Title Sub-Heading Text	.125	.25	.5	.625	.75	1	1.25	2.5	5
Sheet Layout Information									
Meters per plan sheet	17.5	35	70	75	100	140	175	350	700
Major tick spacing	2.5	5	10	25	25	25	25	50	100
Minor tick spacing	0.5	1	2	5	5	5	5	10	20



The standard text height for English drawings is calculated as:
 Scale x 0.08. Text width will always = text height.
 Text spacing = text height x .5