



FEMA

DFIRM Annotation User Guide FEMA DFIRM Production Tools Version 4.0

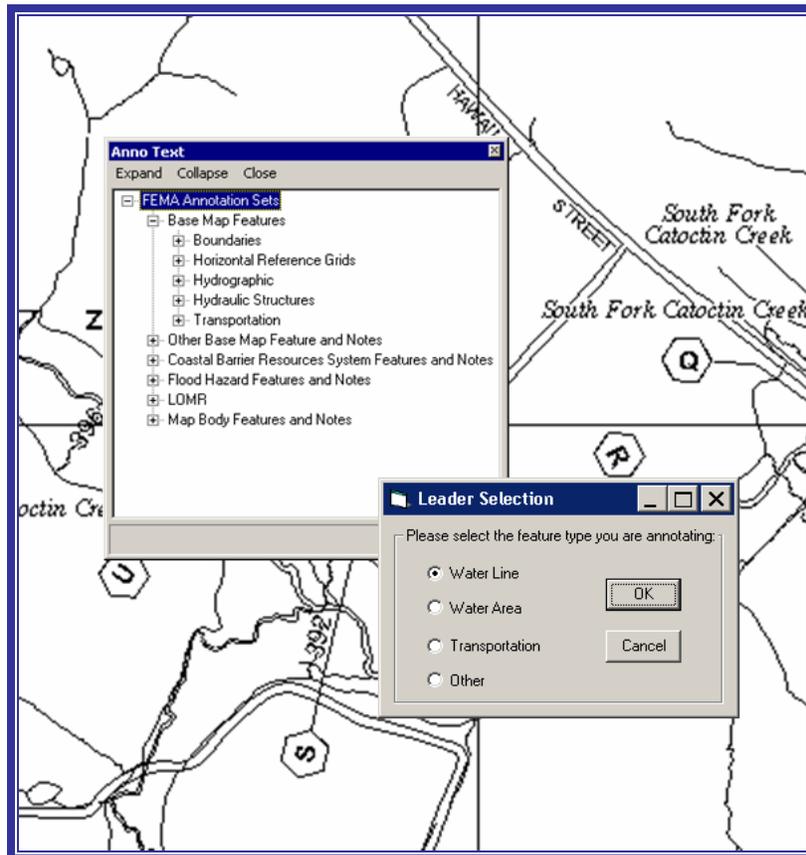


Table of Contents:

What is DFIRM Annotation? 1

Quick Reference Guide 3

Tool Controls 4

	Add Anno Text.....	4
	Add Line Leader.....	11
	Add Dot Leader.....	13
	Add Arrow Leader	15
	Add Vector Gutter	18
	Add Ortho Line Leader	19
	Add Ortho Dot Leader	21
	Add Ortho Arrow Leader.....	24
	Add Ortho Gutter	26
	Add Interstate Shield.....	27
	Add US Shield	30
	Add State Shield	31
	Add County Shield.....	33
	Add Masked Interstate Shield	34
	Add Masked US Shield.....	36
	Add Masked State Shield	37
	Add Masked County Shield	39

	Add Leadered Hexagon	40
	Add Hexagon	42
Troubleshooting		48

What is DFIRM Annotation?

DFIRM Annotation is a set of tools which assist in adding leader lines, highway shields, cross section hexagons, and other notes on FIRMs or LOMRs. These tools are intended to create annotation features which supplement the annotation generated via the **LabelPanel** tool. The tool creates annotation that meets FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners Appendix K: Format and Specifications for Flood Insurance Rate Maps* (hereby referred to as *Appendix K*).

The text, leaders, and other annotation features you create with this set of tools are added to the annotation feature class associated with the panel scale. Annotation text features, highway shield features, and annotation hexagon features are stored in the Anno_<scale>_TXT layers (e.g., Anno_12000_TXT). When the annotation feature is created, many of the attribute fields in the annotation layers are automatically populated. In all cases, the annotation feature's LBZSTATUS field value is set to "FIXED", and the WORDNO field value is set to "1". The LAYERNAME field value is calculated automatically and is dependent upon the inherent associated layer and user-provided input. The ORIGLABEL field is populated with the annotation feature's text (e.g., Big River) or the annotation feature's description (e.g., Comments or Concerns Regarding CRBS Label) depending on the annotation feature type. The LBZTEXTOBJECTNAME field is populated with the general type of annotation (e.g., "Political Area label" for community name text, "us highway" for a U.S. Highway shield). The LBZMAPID field value is always set to "DFIRMAnnoToolText". The DFIRM_ID field value is calculated from your study's properties (e.g., 13311C). The FIRM_PAN_NUMBER field value stores the full panel number of the panel on which the annotation feature was created. This value (e.g., 13311C0025A) is generated from the *FIRM PANEL NUMBER* (FIRM_PAN) field in the *FIRM Panel Index* (S_FIRM_Index) layer. All other field values are <Null>.

Annotation leader features and annotation gutter features are stored in the Anno_<scale>_LDR layers (e.g., Anno_6000_LDR). The LAYERNAME field value is based on the user-provided input (e.g., WATER LINE). The ARROWSTYLE is determined by the type of leader/gutter selected. The LBZMAPID is always "DFIRMAnnoToolLeader". The DFIRM_ID field value is calculated from your study's properties (e.g., 13311C). The FIRM_PAN_NUMBER field value stores the full panel number of the panel on which the annotation feature was created. This value (e.g., 13311C0025A) is generated from the *FIRM PANEL NUMBER* (FIRM_PAN) field in the *FIRM Panel Index* (S_FIRM_Index) layer. All other field values are <Null>.

It is important to understand the impact of storing the correct panel number in the FIRM_PAN_NUMBER field. When a FIRM panel or LOMR layout is generated with the tools on the **DFIRM Map Production Pro** toolbar, the definition query on the Anno_<scale>_TXT, Anno_<scale>_SUP, and Anno_<scale>_LDR layers is modified to refine the visible annotation data to that which falls on the selected panel number. Specifically, the FIRM_PANEL_NUMBER value is added as a parameter of the query. For instance, in the situation where you are generating a layout for panel 12345C2018D, **DFIRM Map Production Pro's** *Generate Layout* tool updates the definition query for the Anno_6000_TXT, Anno_6000_SUP, and Anno_6000_LDR layers to be "DFIRM_ID = '12345C' AND FIRM_PAN_NUMBER = '12345C2018D'". With this definition query in place only annotation features (*TXT, *SUP, and *LDR) whose FIRM_PAN_NUMBER value is "12345C2018D" will be visible on the panel layout. Therefore, it is important that you generate annotation features on the panel in which they will reside. You should not move annotation from one panel to another panel. If you do move an annotation feature to another panel, the FIRM_PAN_NUMBER value will not be automatically updated, and when the layout is generated, the annotation feature will not be displayed correctly.

Although the annotation features created with **DFIRM Annotation** are stored in the same feature classes as the annotation created with *LabelPanel*, the two tools do not consider each other when creating new annotation features. For instance, *LabelPanel* will generate annotation that overlaps the **DFIRM Annotation** features and vice versa.

Actions, such as redrawing, editing, and creating new features, related to annotation feature classes, in general, are time consuming. To minimize the processing time, you may want to utilize definition queries and the *Suspend Drawing* tool. One way to reduce the visible annotation and to concentrate the annotation creation process to a specific panel is to generate a layout with *Design Map Layout* tool on the **DFIRM Map Production Pro** toolbar. When the layout is generated, the existing definition query on the appropriate annotation layers (e.g., the annotation layers that relate to the scale of the selected panel) is refined to show just annotation that is associated with the selected panel. For additional information on **DFIRM Map Production Pro**, refer to the *DFIRM Map Production Pro User Guide*.

The *Suspend Drawing* tool freezes the redraw of the map view but allows you to access the spatial features. While the view is frozen you can, for example, add multiple pieces of annotation and not need to wait for the view to refresh. Once you are finished with an area/action and would like to see the results, you can select to unfreeze the map view. For additional information on the *Suspend Drawing* tool, refer to the *DFIRM Layer Loader User Guide*.

Note: When creating new annotation features or editing annotation features, it is important that you do so while in Data View.



DFIRM Annotation toolbar

Quick Reference Guide

The following is a quick reference guide to all the tools available on the **DFIRM Annotation** toolbar. In addition, positioning your cursor over a button on the toolbar will display its name.

	Add Anno Text	Creates annotation text
	Add Line Leader	Creates a leader line
	Add Dot Leader	Creates a leader line with a dot at the terminal end
	Add Arrow Leader	Creates a leader line with an arrow at the terminal end
	Add Vector Gutter	Creates a cartographic gutter (symbolized by a white line)
	Add Ortho Line Leader	Creates a leader line for a orthophoto base
	Add Ortho Dot Leader	Creates a leader line with a dot at the terminal end for a orthophoto base
	Add Ortho Arrow Leader	Creates a line with an arrow at the terminal end for a orthophoto base
	Add Ortho Gutter	Creates a cartographic gutter (symbolized by a white line) for a orthophoto base
	Add Interstate Shield	Creates an interstate highway shield with a hollow background
	Add US Shield	Creates a US highway shield with a hollow background
	Add State Shield	Creates a state highway shield with a hollow background
	Add County Shield	Creates a county highway shield with a hollow background
	Add Masked Interstate Shield	Creates an interstate highway shield with a solid background
	Add Masked US Shield	Creates a US highway shield with a solid background
	Add Masked State Shield	Creates a state highway shield with a solid background
	Add Masked County Shield	Creates a county highway shield with a solid background
	Add Leadered Hexagon	Creates a hexagon which is leadered from the cross section feature
	Add Hexagon	Creates a hexagon

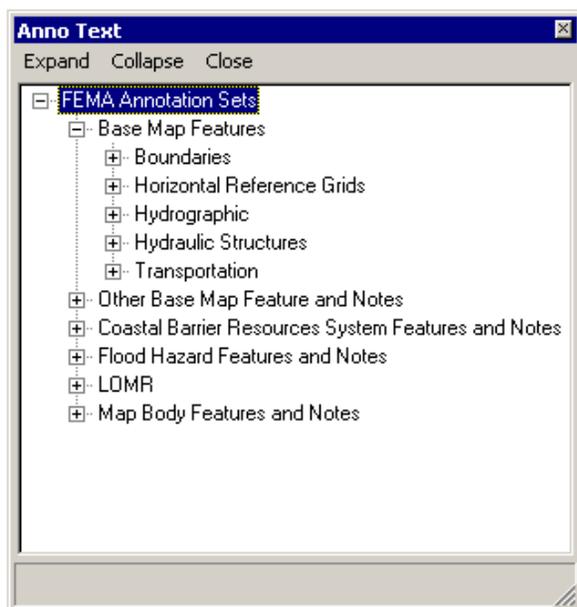
Tool Controls

This section describes the functionality of each of the tools available on the **DFIRM Annotation** toolbar and provides instructions for their use.



Add Anno Text

The **Add Anno Text** tool creates an annotation text feature based upon user-input. When the button is clicked, the tool opens the **Anno Text** dialog. Within the **Anno Text** dialog, there are many different types of labels and notes that may be added as an annotation text feature. For ease of use the labels/notes are classified into categories. The categories loosely follow the sections defined in *Appendix K*. The categories are: Base Map Features, Other Base Map Features and Notes; Coastal Barrier Resources System Features and Notes, Flood Hazard Features and Notes; LOMR; and Map Body Features and Notes. The Base Map Features category is broken down into several smaller sub-divisions: Boundaries; Horizontal Reference Grids; Hydrographic; Hydraulic Structures; and Transportation.



The **Add Text** dialog.

Each category/sub-category contains a list of available labels/notes. So that the annotation text is tailored to your study/feature, some of the label types require additional input which is gathered from you via dialog prompts. For instance, the *Section Number* label type prompts you to supply the section number value. Other labels are static as the text is applicable as is. These labels do not require additional user input. The *Unnamed Road Label*, for example, places the text "UNNAMED ROAD" without requesting any additional information.

Note: Neither the properties nor attribute field values of existing spatial features are considered by the tool; the annotation is not feature-linked.

The label's/note's text font size and style is pre-set by the tool. The label properties are based on the guidelines in *Appendix K* and cartographic best practices. In all cases the text is haloed (i.e., masked) so that the text is clear and legible. In some instances, *Appendix K* defines an acceptable

range of label font sizes to accommodate various scenarios. So that this flexibility is available in the **Add Anno Text** tool, some of the label types allow you to select the relative font size. For instance, for the label type *Name of Large Island*, the user has the option of selecting the text font size “Small”, “Medium”, or “Large”. You should select the size that is most appropriate for the feature and available space.

Similarly, in some cases, you have the opportunity to select whether the label text is displayed in all upper case letters (CAPS) or in upper and lower case letters (CLC). The label type *Abandoned Railroad*, for instance, allows you to select CAPS (i.e., “ABANDONED RAILROAD”) or CLC (i.e., “Abandoned Railroad”). You should select the style that is most appropriate for the feature and available space.

Some of the annotation labels are inherently associated with specific spatial layers. In the Anno_<scale>_TXT layer, the LAYERNAME attribute field stores this association. The *Railroad* label, for instance, is always related to the Transportation (S_Trnsport_Ln) layer, and the text “TRANSPORTATION” is stored as the LAYERNAME field value. For annotation labels related to water features, it is difficult to associate the label type with just one spatial layer since both the *Water Line* (S_Wtr_Ln) or *Water Area* (S_Wtr_Ar) layer may be applicable. In this situation, a prompted dialog requests that you select the appropriate feature type. If you select Water Line, the text “WATER LINE” is stored as the LAYERNAME value. If you select Water Area, the text “WATER AREA” is stored as the LAYERNAME value. Most of the notes do not pertain to a particular spatial layer and, therefore, are associated with the *FIRM Panel Index* (S_FIRM_Pan) layer for ease. For this relationship, the LAYERNAME value is “FIRM PANEL INDEX”.

According to FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners Appendix L: Guidance for Preparing Draft Digital Data and DFIRM Database* (hereby referred to as *Appendix L*), all labels associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is “TRANSPORTATION”, “WATER AREA”, or “WATER LINE” are converted into reference points. Therefore, the association between the spatial layer and the annotation text feature must be captured accurately in order to correctly create the *Label Point* (S_Label_Pt) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation text features. Using the standard **Draw** tools or ESRI labeling functionality will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Point* (S_Label_Pt) features.

You must be in an editing session to access this tool.

The general usage of the tool is as follows:

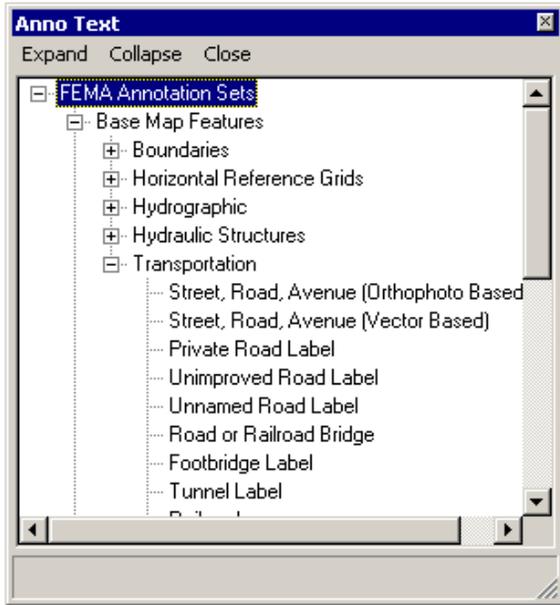
1. Switch to Data View, if you are in Layout View.

Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

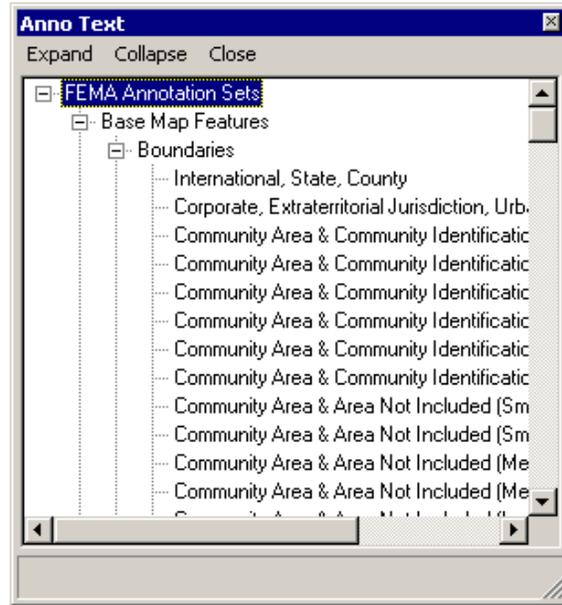
2. Click **Add Anno Text**.

3. Within the **Add Anno** dialog, expand the categories until you locate the desired label type.

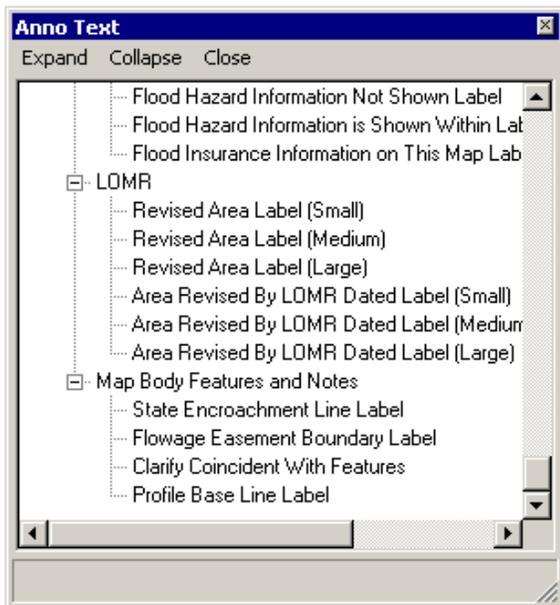
The **Add Anno** dialog also contains two menu items which may assist you in selecting the label type. The **Expand** Expand item expands all categories so that you may review all available label types. The **Collapse** Collapse item closes all categories. You may find this tool helpful when you wish to start anew and only expand one or two of the categories.



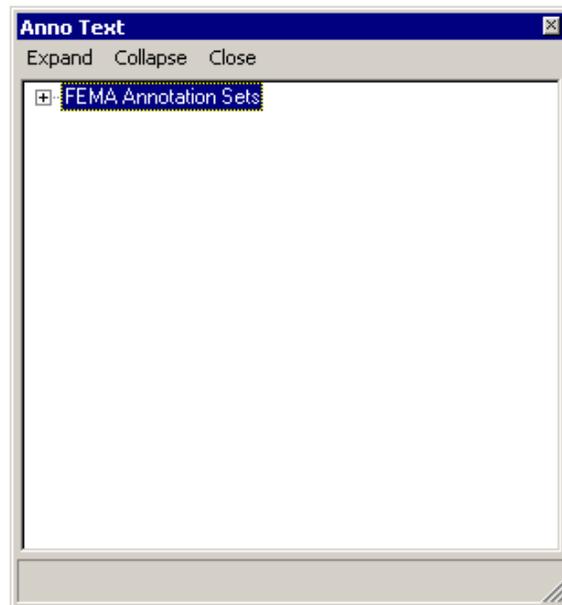
An example of the **Add Text** dialog before the **Expand** menu item is clicked.



An example of the **Add Text** dialog after the **Expand** menu item is clicked.



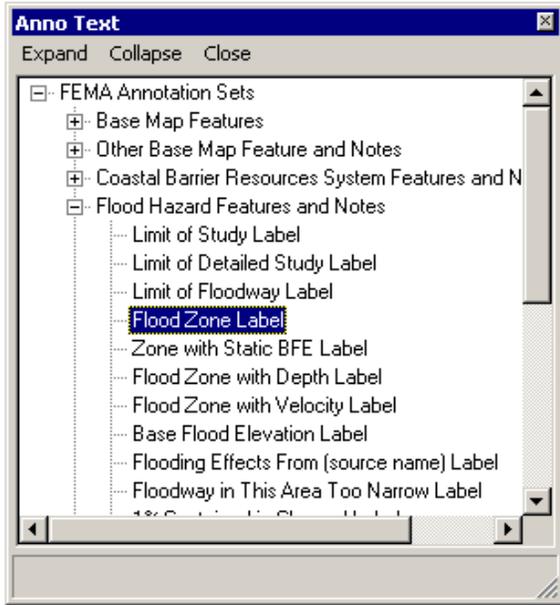
An example of the **Add Text** dialog before the **Collapse** menu item is clicked.



An example of the **Add Text** dialog after the **Collapse** menu item is clicked.

If you prefer to exit the **Add Anno Text** tool at this point, click either the *Close*  menu item or click the "X" in the upper right-hand corner of the dialog.

4. Select the appropriate label type.



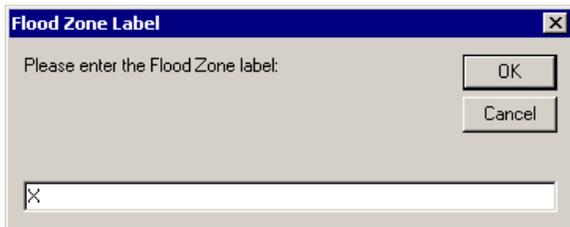
An example of a selected label type in the *Add Anno* dialog.

5. Click once on the map at the location where the annotation or text should be added.

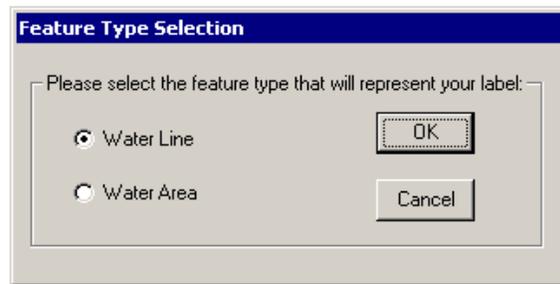
Note: You must click within the spatial extents of the *FIRM Panel Index (S_FIRM_Pan)* layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

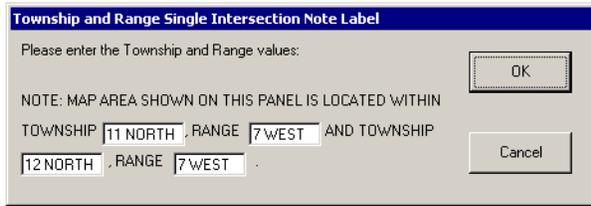
6. If user input is required, the relative dialog(s) will be prompted. Enter the suitable information and click *OK*.



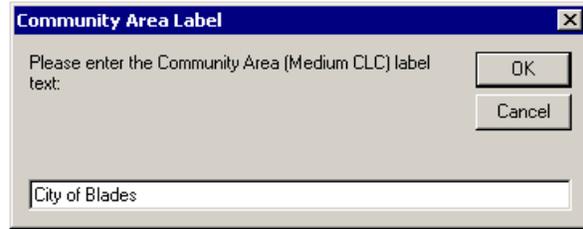
An example of a user input dialog.



An example of a user input dialog.



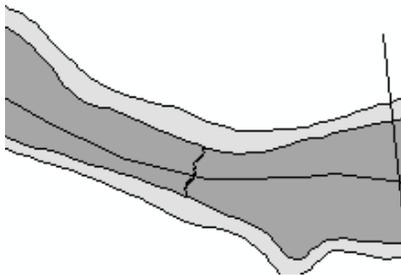
An example of a user input dialog.



An example of a user input dialog.

- The annotation text feature is created in the location where you clicked.

ZONE X



An example of a newly created annotation text feature.

- The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

LABELNO	WORDNO	LAYERNAME	LBZSTATUS	LBZFID	ORIGLABEL	LBZLA	LBZ	LBZ	LBZTEXTOBJECTNAME	LB	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	1	FLOOD HAZARD AREA	FIXED	<Null>	ZONE X	<Null>	<Null>	<Null>	FLOOD HAZARD AREA label	<Nu	DFIRMAnnoToolText	13311C	13311C0202A

An example of the populated attribute record for the newly created annotation text feature.

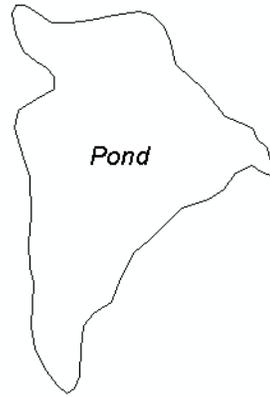
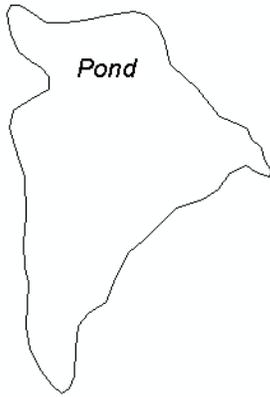
Note: To add the same label type again, simply click again in the map view and enter in the user-input information, if necessary; you do not need to re-select the label type from the **Add Text** dialog.

If you are prompted to select Water Line or Water Area as the associated layer and you continue to click within the map view to create multiple annotation features, you will not be prompted again to select the associated layer; your original selection is used for all subsequent creations. If you wish to select a different associated layer for that label type, click on the label type again in the **Add Text** dialog and then click in the map view; you will be prompted to select the layer.

To edit the spatial location of an annotation text feature, use the **Select Elements** tool. This editing method is appropriate for annotation created with the **Add Anno Text** tool and the **LabelPanel** tool. While in an editing session, follow these steps:

- Switch to Data View, if you are in Layout View.

2. Select the annotation text feature with the *Select Elements* tool on the **Tools** toolbar.
3. Hold down the left mouse button and drag the feature to the desired location.
4. To set the location, let go of the left mouse button.

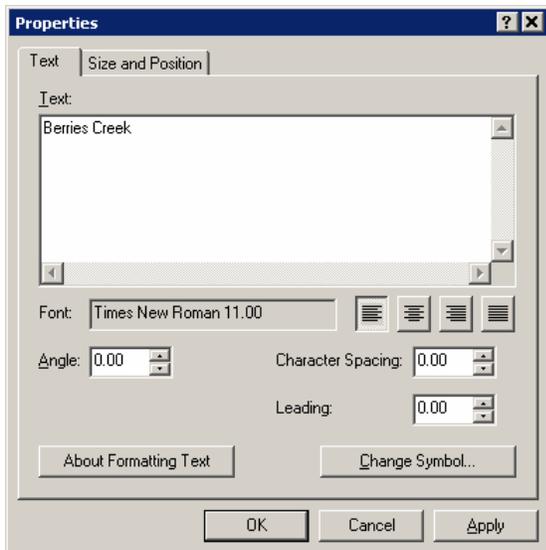


An example of an annotation text feature before it is moved.

An example of an annotation text feature after it is moved.

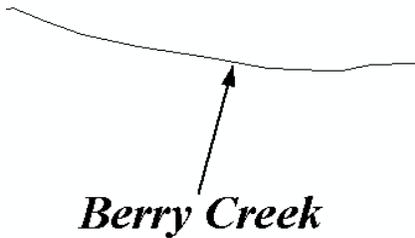
If you wish to edit the text value, font, or style of an annotation feature created with the **Add Anno Text** tool, you can easily do so via the *Properties* dialog. While in an editing session, follow these steps:

1. Switch to Data View, if you are in Layout View.
2. Double-click on the annotation text feature with the *Select Elements* tool on the **Tools** toolbar.
3. Within the *Properties* dialog, change the value(s) as appropriate.

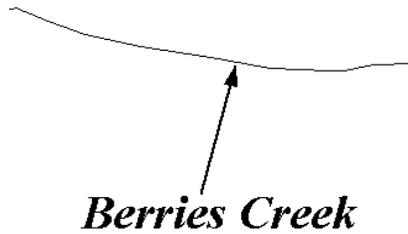


An example of the *Properties* dialog for an annotation text feature.

4. Click *OK*.
5. The changes are applied to the annotation text feature.



An example of the annotation text feature before the properties are changed.



An example of the annotation text feature after the properties are changed.

Note: If you alter the text font size or type, be careful that your changes adhere to the specifications defined in *Appendix K*.

Note: Be very careful when altering the text value. The annotation should always match that which is stored in the spatial layer. For instance, if a *Water Line* (S_Wtr_Ln) feature's name is "Berry Creek" but should be "Berries Creek", it is not sufficient to simply update the annotation to "Berries Creek". You must also edit the spatial feature so that the water line name is accurately stored as "Berries Creek".

Note: Do not alter the ORIGLABEL field value in the Anno_<scale>_TXT layer. This attribute field captures the original text value and is not updated when the text value is altered.

Annotation text features created with the **Add Anno Text** tool are placed horizontally. If you wish to alter the angle of the annotation features, you should do so with the *Rotate* tool on the **Editor** toolbar. While in an editing session, follow these steps:

1. Switch to Data View, if you are in Layout View.
2. Select the annotation text feature with the *Select Features* tool on the **Tools** toolbar.

Note: If you select more than one annotation text feature, all of the selected features will be rotated.

3. Click the *Rotate* tool.
4. Click in the map view and hold down the left mouse button. Move the mouse until the feature has the desired angle.
5. To set the angle, let go of the left mouse button.



An example of a feature before it is rotated.



An example of a feature after it is rotated.

Note: After you rotate the annotation text feature, you may need to move the annotation so that is more cartographically pleasing.



Add Line Leader

The **Add Line Leader** tool creates a leader annotation feature. The leader feature does not have a symbol at its terminal end. The leader style cannot be modified. The **Add Line Leader** tool should be used to leader into very small polygon features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of spatial features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you have the option to select “Water Line”, “Water Area”, “Transportation”, or “Other”. If you select Water Line, the text “WATER LINE” is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is “WATER AREA”. If you select Transportation, the text “TRANSPORTATION” is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is “FIRM PANEL INDEX”.

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is “TRANSPORTATION”, “WATER AREA”, or “WATER LINE” are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

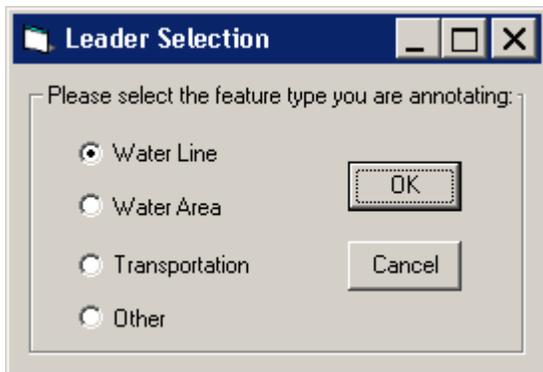
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Line Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Line Leader* dialog, select the associated feature type.



An example of a selected feature type in the *Leader Selection* dialog.

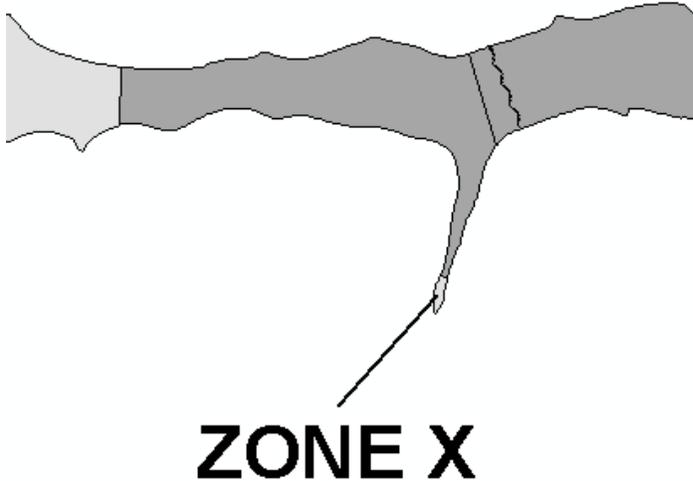
5. Click *OK*.

Note: Clicking *Cancel* will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leadered.
7. Double-click to end the feature.

Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, a leader line should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation line leader feature.

- The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.

LABELNO	LAYERNAME	LBZFLD	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	FIRM PANEL INDEX	<Null>	0	DFIRMAnnoToolLeader	51107C	51107C0355D

Record: 1 Show: All Selected Records (1 out of 1 Selected.) Options

An example of the populated attribute record for the newly created annotation line leader feature.

If you need to alter the length of the leader, you can resize it after selecting it with the *Select Elements* tool on the **Tools** toolbar.



Add Dot Leader

The **Add Dot Leader** tool creates a leader annotation feature with a dot (or meatball) at its terminal end. The leader style cannot be modified. The **Add Dot Leader** tool should be used to leader into polygon features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you have the option to select “Water Line”, “Water Area”, “Transportation”, or “Other”. If you select Water Line, the text “WATER LINE” is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is “WATER AREA”. If you select Transportation, the text “TRANSPORTATION” is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is “FIRM PANEL INDEX”.

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

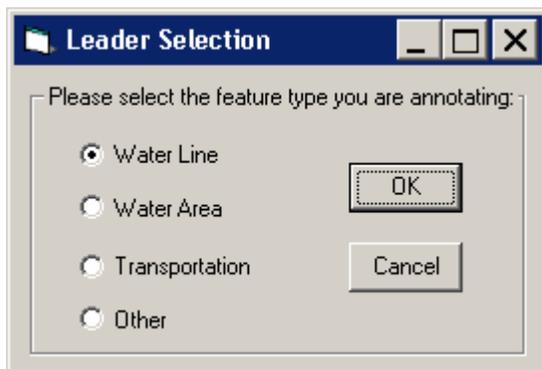
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Dot Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Dot Leader* dialog, select the associated feature type.



An example of a selected feature type in the *Leader Selection* dialog.

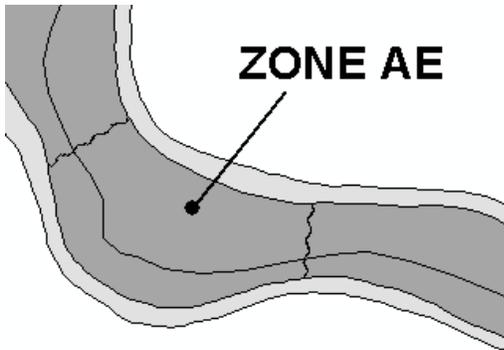
5. Click *OK*.

Note: Clicking *Cancel* will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leaded.
7. Double-click to end the feature.

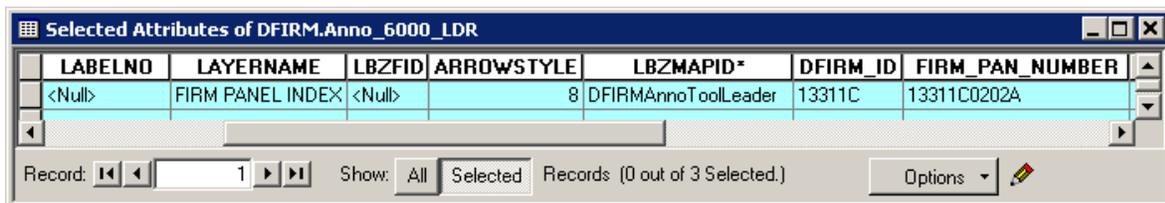
Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, leader lines should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation dot leader feature.

9. The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.



LABELNO	LAYERNAME	LBZFID	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	FIRM PANEL INDEX	<Null>	8	DFIRMAnnoToolLeader	13311C	13311C0202A

Record: 1 Show: All Selected Records (0 out of 3 Selected.) Options

An example of the populated attribute record for the newly created annotation dot leader feature.

If you need to alter the length of the leader, you should delete the existing feature and re-create it. Do not resize the annotation leader as you will also resize the associated dot.



Add Arrow Leader

The **Add Arrow Leader** tool creates a leader annotation feature with an arrow at its terminal end. The leader style cannot be modified. The **Add Arrow Leader** tool should be used to leader to line features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you

have the option to select "Water Line", "Water Area", "Transportation", or "Other". If you select Water Line, the text "WATER LINE" is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is "WATER AREA". If you select Transportation, the text "TRANSPORTATION" is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is "FIRM PANEL INDEX".

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

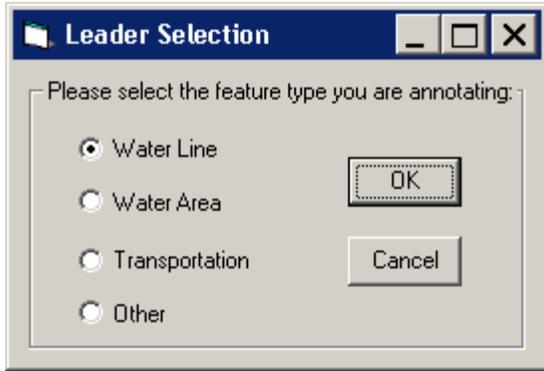
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Arrow Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the **Arrow Leader** dialog, select the associated feature type.



An example of a selected feature type in the *Leader Selection* dialog.

5. Click *OK*.

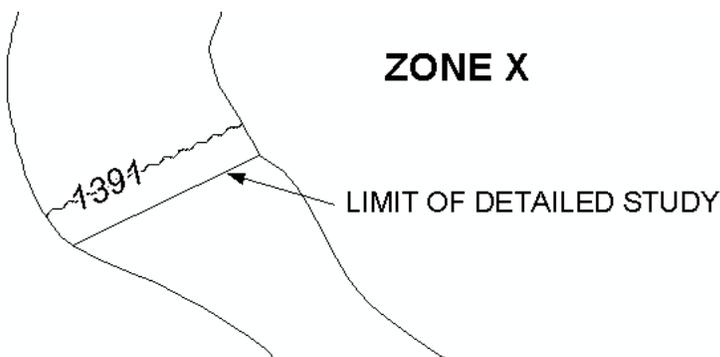
Note: Clicking *Cancel* will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leaedered.

7. Double-click to end the feature.

Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, leader lines should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation arrow leader feature.

9. The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.



An example of the populated attribute record for the newly created annotation arrow leader feature.

If you need to alter the length of the leader, you should delete the existing feature and re-create it. Do not resize the annotation leader as you will also resize the associated arrow.



Add Vector Gutter

Gutters are used to denote a boundary between flood hazard zones. Generally, gutters are stored in the *Flood Hazard Line* (S_Fld_Haz_Ln) layer and are symbolized appropriately. However, in the case where the *Flood Hazard Line* (S_Fld_Haz_Ln) is both a floodway boundary line and a gutter line, the floodway boundary line takes precedence. In this situation, a cartographic gutter is needed to indicate the change in flood hazard zones. The cartographic gutter is added parallel to the *Flood Hazard Line* (S_Fld_Haz_Ln) feature and is drawn outside of the floodway zone.

The **Add Vector Gutter** tool adds this cartographic gutter and stores it in the Anno_<scale>_LDR layer. The leader annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since the gutter leader is not used to label water or transportation features, the LAYERNAME field value is automatically set to "FIRM PANEL INDEX". When the *Label Leader* (S_Label_Ld) layer is created via the tools on the **DFIRM Database Exporter** toolbar, the gutter leader annotation feature will not be part of the exported data and will not be converted into a *Label Leader* (S_Label_Ld) reference line.

This leader gutter feature is a white line. This symbol style cannot be modified. You must be in an editing session to access this tool.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

1. Switch to Data View, if you are in Layout View.

Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select the **Add Vector Gutter** tool.

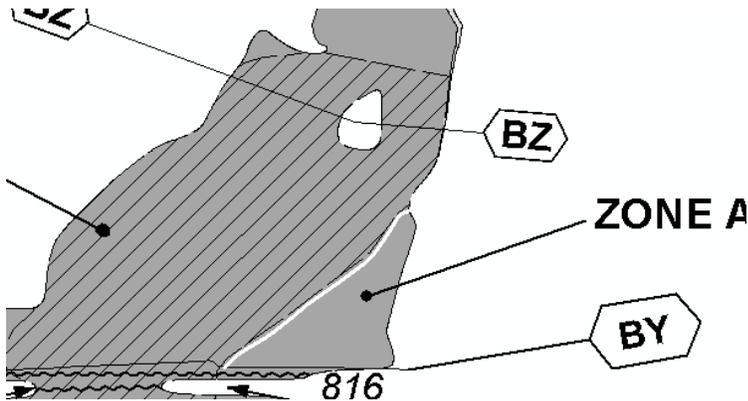
3. Click on the map at each point where you want to add a vertex to the gutter.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Double click to end the line.

5. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation vector gutter leader feature.

6. The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.

LABELNO	LAYERNAME	LBZfid	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	FIRM PANEL INDEX	<Null>	13	DFIRMAnnoToolLeader	55089C	55089C0111F

An example of the populated attribute record for the newly created annotation vector gutter leader feature.

Add Ortho Line Leader

The **Add Ortho Line Leader** tool creates a leader annotation feature. The leader is a thicker line width so that it is more visible on an orthophoto basemap. The leader feature does not have a symbol at its terminal end. The leader style cannot be modified. The **Add Ortho Line Leader** tool should be used to leader into very small polygon features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you have the option to select “Water Line”, “Water Area”, “Transportation”, or “Other”. If you select Water Line, the text “WATER LINE” is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is “WATER AREA”. If you select Transportation, the text “TRANSPORTATION” is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is “FIRM PANEL INDEX”.

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated

automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

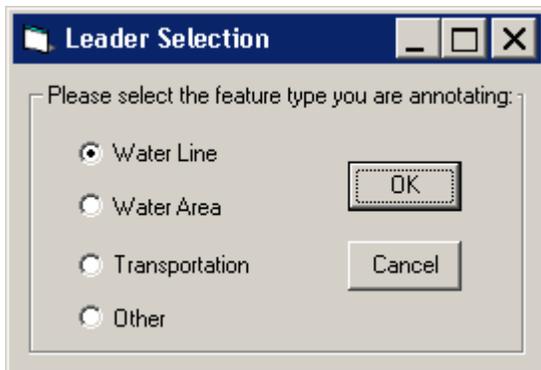
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Ortho Line Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Ortho Line Leader* dialog, select the associated feature type.



An example of a selected feature type in the *Leader Selection* dialog.

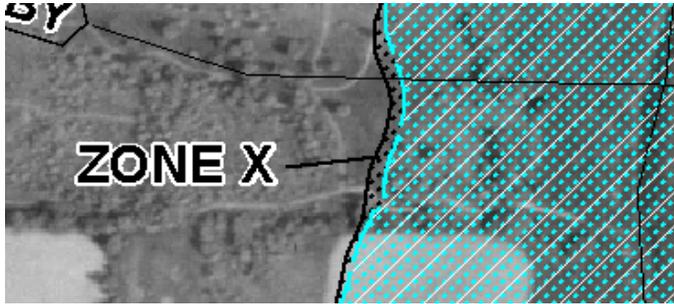
5. Click *OK*.

Note: Clicking *Cancel* will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leaedered.
7. Double-click to end the feature.

Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, leader lines should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation ortho line leader feature.

9. The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.

 A screenshot of a software dialog box titled "Selected Attributes of DFIRM.Anno_6000_LDR". It contains a table with the following data:

LABELNO	LAYERNAME	LBZfid*	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	FIRM PANEL INDEX	<Null>	0	DFIRMAnnoToolLeader	55089C	55089C0128F

 Below the table, there are controls for "Record: 1", "Show: All Selected", and "Records (1 out of 1826 Selected.)".

An example of the populated attribute record for the newly created annotation ortho line leader feature.

If you need to alter the length of the leader, you can resize it after selecting it with the *Select Elements* tool on the **Tools** toolbar.



Add Ortho Dot Leader

The **Add Ortho Dot Leader** tool creates a leader annotation feature with a dot (or meatball) at its terminal end. The leader is a thicker line width so that it is more visible on an orthophoto basemap. The leader style cannot be modified. The **Add Ortho Dot Leader** tool should be used to leader into polygon features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you have the option to select "Water Line", "Water Area", "Transportation", or "Other". If you select

Water Line, the text "WATER LINE" is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is "WATER AREA". If you select Transportation, the text "TRANSPORTATION" is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is "FIRM PANEL INDEX".

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

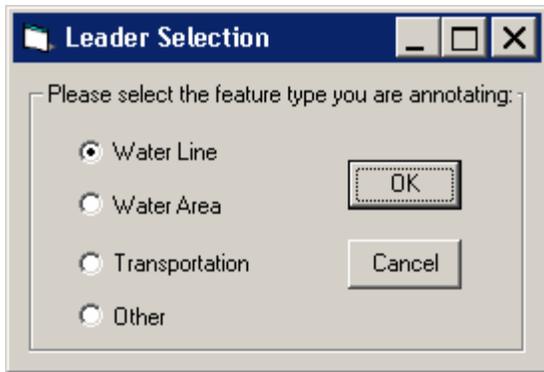
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Ortho Dot Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the **Ortho Dot Leader** dialog, select the associated feature type.



An example of a selected feature type in the *Leader Selection* dialog.

5. Click *OK*.

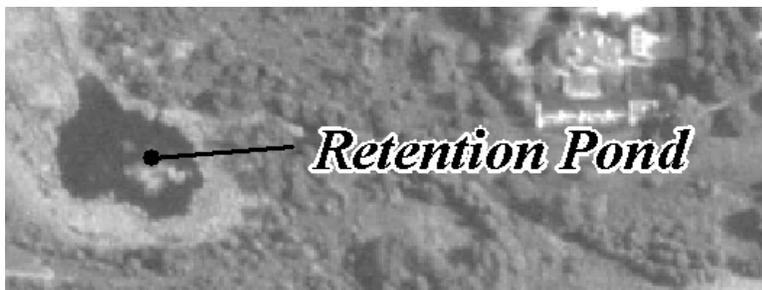
Note: Clicking *Cancel* will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leaedered.

7. Double-click to end the feature.

Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, leader lines should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation ortho dot leader feature.

9. The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.



An example of the populated attribute record for the newly created annotation ortho dot leader feature.

If you need to alter the length of the leader, you should delete the existing feature and re-create it. Do not resize the annotation leader as you will also resize the associated dot.



Add Ortho Arrow Leader

The **Add Ortho Arrow Leader** tool creates a leader annotation feature with an arrow at its terminal end. The leader is a thicker line width so that it is more visible on an orthophoto basemap. The leader style cannot be modified. The **Add Arrow Leader** tool should be used to leader to line features.

Like the annotation text, annotation leaders store a reference to the associated feature type in the LAYERNAME field. Since a leader may be associated with many different types of features, every time a leader is created, a dialog prompts you to select the related feature type. In this dialog, you have the option to select "Water Line", "Water Area", "Transportation", or "Other". If you select Water Line, the text "WATER LINE" is stored as the LAYERNAME value. If you select Water Area, the LAYERNAME field value is "WATER AREA". If you select Transportation, the text "TRANSPORTATION" is stored as the LAYERNAME value. If you select Other, the LAYERNAME field value is "FIRM PANEL INDEX".

According to *Appendix L*, all leaders associated with transportation, water area, and water line features must be converted into reference lines in the *Label Leader* (S_Label_Ld) layer. In the DFIRM Production Tools environment, the *Label Leader* (S_Label_Ld) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_LDR annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference lines. Therefore, the association between the spatial layer and the annotation leader feature must be captured accurately in order to correctly create the *Label Leader* (S_Label_Ld) features.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

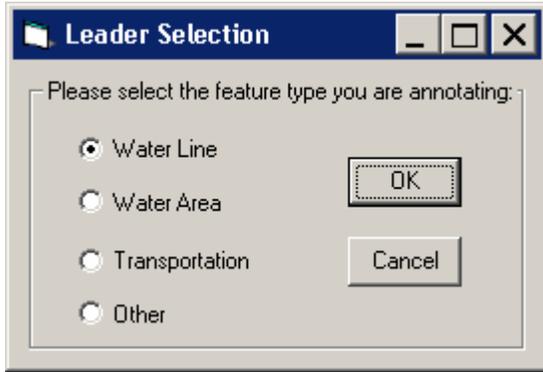
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Select **Add Ortho Arrow Leader**.
3. Click near the annotation you would like to leader.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the **Ortho Arrow Leader** dialog, select the associated feature type.



An example of a selected feature type in the **Leader Selection** dialog.

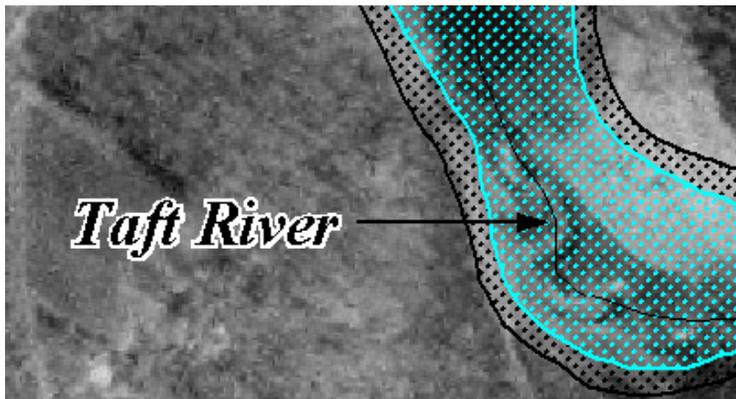
5. Click **OK**.

Note: Clicking **Cancel** will exit you out of the leader creation process.

6. Move the mouse to stretch the leader line to the appropriate location near/in the spatial feature being leadered.
7. Double-click to end the feature.

Note: If you single-click you will create a vertex in the leader line. According to cartographic best practices, leader lines should be a straight line between two points.

8. The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation ortho arrow leader feature.

- The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.

LABELNO	LAYERNAME	LBZPID	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	WATER LINE	<Null>	2	DFIRMAnnoToolLeader	13311C	13311C0202A

An example of the populated attribute record for the newly created annotation ortho arrow leader feature.

If you need to alter the length of the leader, you should delete the existing feature and re-create it. Do not resize the annotation leader as you will also resize the associated arrow.



Add Ortho Gutter

Gutters are used to denote a boundary between flood hazard zones. Generally, gutters are stored in the *Flood Hazard Line* (S_Fld_Haz_Ln) layer and are symbolized based appropriately. However, in the case where the *Flood Hazard Line* (S_Fld_Haz_Ln) is both a floodway boundary line and a gutter line, the floodway boundary line takes precedence. In this situation, a cartographic gutter is needed to indicate the change in flood hazard zones. The cartographic gutter is added parallel to the *Flood Hazard Line* (S_Fld_Haz_Ln) feature and is drawn outside of the floodway zone.

The **Add Ortho Gutter** tool adds this cartographic gutter and stores it in the Anno_<scale>_LDR layer. The leader annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since the gutter leader is not used to label water or transportation features, the LAYERNAME field value is automatically set to "FIRM PANEL INDEX". When the *Label Leader* (S_Label_Ld) layer is created via the tools on the **DFIRM Database Exporter** toolbar, the gutter leader annotation feature will not be part of the exported data and will not be converted into a *Label Leader* (S_Label_Ld) reference line.

This leader gutter feature is a white line. The leader is a thicker line width so that it is more visible on an orthophoto basemap. This symbol style cannot be modified. You must be in an editing session to access this tool.

Note: It is important to use the tools on the **DFIRM Annotation**, **LabelPanel**, and **Label-Edit** toolbars to create all annotation leader features. Using the standard **Draw** tools will simply create graphics which will not be stored in the annotation feature classes and will not be converted to *Label Leader* (S_Label_Ld) features.

- Switch to Data View, if you are in Layout View.

Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

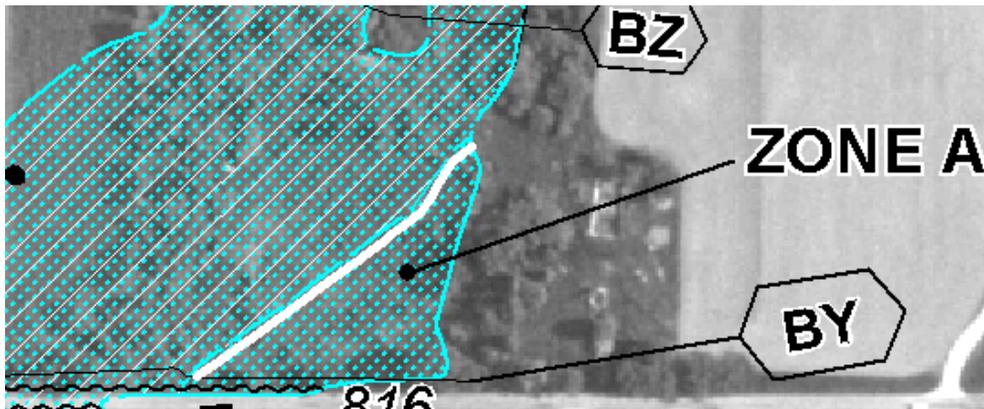
- Select the **Add Ortho Gutter** tool.

- Click on the map at each point where you want to add a vertex to the gutter.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_LDR layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

- Double click to end the line.
- The annotation leader feature is created in the location where you clicked.



An example of a newly created annotation ortho gutter leader feature.

- The appropriate attribute fields in the Anno_<scale>_LDR layer are populated; no additional field population is needed.

Selected Attributes of DFIRM.Anno_6000_LDR						
LABELNO	LAYERNAME	LBZPID*	ARROWSTYLE	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<Null>	FIRM PANEL INDEX	<Null>	13	DFIRMAnnoToolLeader	55089C	55089C0111F

Record: 1 Show: All Selected Records (1 out of 1825 Selected.) Options

An example of the populated attribute record for the newly created annotation ortho gutter leader feature.



Add Interstate Shield

The **Add Interstate Shield** tool adds an interstate highway shield with a hollow fill to the map. The text within the shield is haloed (i.e., masked) for ease of use. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

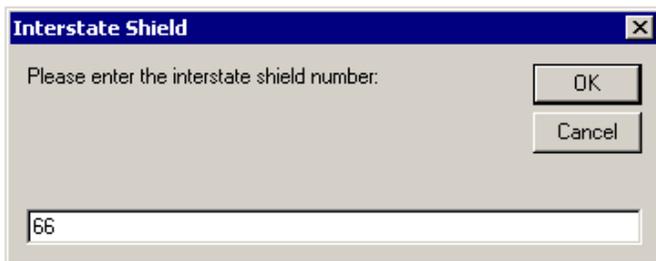
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add Interstate Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Interstate Shield* dialog, enter the highway number.



An example of the *Interstate Shield* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation interstate shield feature.

- The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

L	WORDNO	LAYERNAME	LBZSTATUS	L	ORIGLABEL	L	L	LBZTEXTOBJECT	L	LBZMAPID*	DFIRM_ID*	FIRM_PAN_NUMBER
<	1	TRANSPORTATION	FIXED	<	66	<<	<	interstate highway	<	DFIRMAnnoToolText	55089C	55089C0103F

Record: 1 Show: All Selected Records (1 out of *2000 Selected.) Options

An example of the populated attribute record for the newly created annotation interstate shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. While in an editing session, follow these steps:

- Switch to Data View, if you are in Layout View.
- Select the annotation shield feature with the *Select Features* tool on the **Tools** toolbar.

Note: If you select more than one annotation feature, all of the selected features will be rotated.

- Click the *Rotate* tool.
- Click in the map view and hold down the left mouse button. Move the mouse until the feature has the desired angle.
- To set the angle, let go of the left mouse button.



An example of a shield feature before it is rotated.

An example of a shield feature after it is rotated.

Note: After you rotate the annotation text feature, you may need to move the annotation so that is more cartographically pleasing.



Add US Shield

The **Add US Shield** tool adds a US highway shield with a hollow fill to the map. The text within the shield is haloed (i.e., masked) for ease of use. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

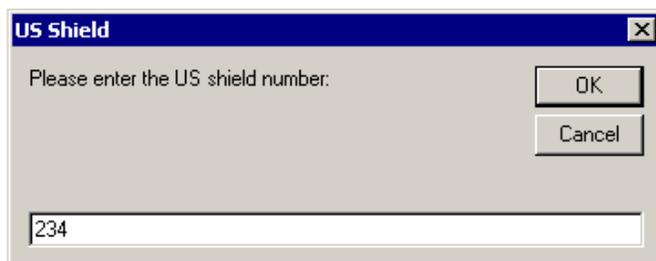
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add US Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the **US Shield** dialog, enter the highway number.



An example of the **US Shield** dialog.

5. Click **OK**.

6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation US shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

L	WORDNO	LAYERNAME	LBZSTATUS	L	ORIGLABEL	L	L	LBZTEXTOBJECTNAME	L	LBZMAPID*	DFIRM_ID*	FIRM_PAN_NUMB	
>	<	1	TRANSPORTATION	FIXED	<	234	<<	<	us highway	<	DFIRMAnnoToolText	55089C	55089C0103F

Record: [Navigation icons] 1 [Navigation icons] Show: All Selected Records (1 out of *2000 Selected.) Options [Dropdown] [Edit icon]

An example of the populated attribute record for the newly created annotation US shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add State Shield

The **Add State Shield** tool adds a state highway shield with a hollow fill to the map. The text within the shield is haloed (i.e., masked) for ease of use. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

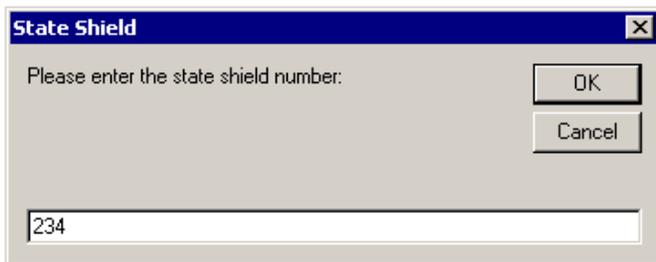
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add State Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *State Shield* dialog, enter the highway number.



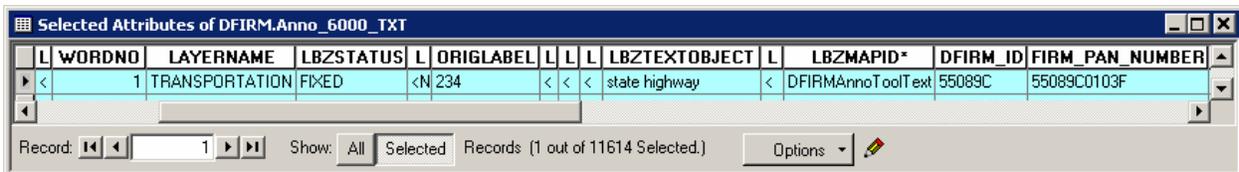
An example of the *State Shield* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation state shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.



An example of the populated attribute record for the newly created annotation state shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add County Shield

The **Add County Shield** tool adds a county highway shield with a hollow fill to the map. The text within the shield is haloed (i.e., masked) for ease of use. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

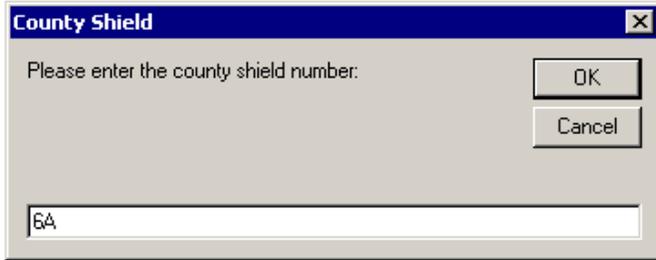
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add County Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

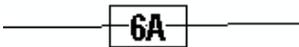
Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *County Highway* dialog, enter the highway number.



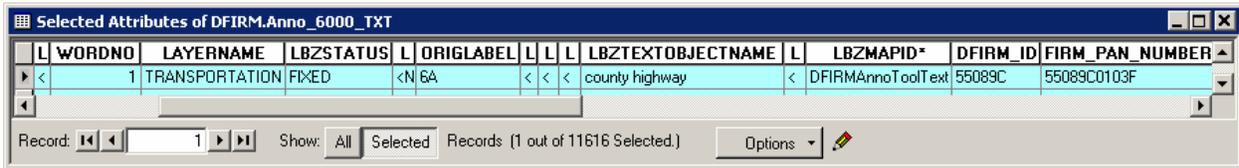
An example of the *County Highway* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation county shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.



An example of the populated attribute record for the newly created annotation county shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add Masked Interstate Shield

The **Add Masked Interstate Shield** tool adds an interstate highway shield with a solid white fill to the map. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point*

(S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

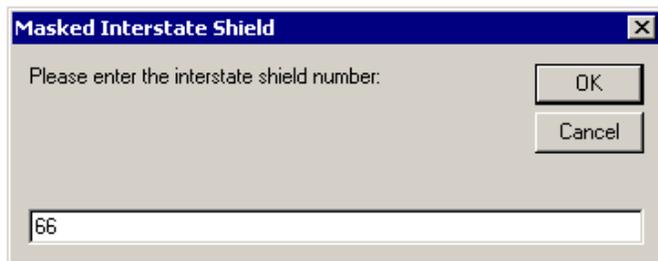
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add Masked Interstate Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Masked Interstate Shield* dialog, enter the highway number.



An example of the *Masked Interstate Shield* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation masked interstate shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

WORDNO	LAYERNAME	LBZSTATUS	ORIGLABEL	LBZTEXTOBJECTNAM	LBZMAPID*	DFIRM_ID*	FIRM_PAN_NUM
1	TRANSPORTATION	FIXED	66	interstate highway hold out	DFIRMAAnnoToolText	55089C	55089C0103F

Record: 1 Show: All Selected Records (1 out of *2000 Selected.) Options

An example of the populated attribute record for the newly created annotation masked interstate shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add Masked US Shield

The **Add Masked US Shield** tool adds a US highway shield with a solid white fill to the map. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

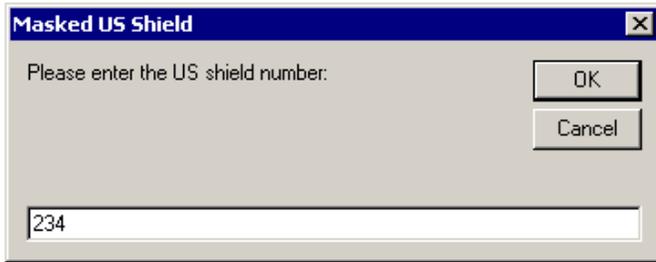
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add Masked US Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Masked US Shield* dialog, enter the highway number.



An example of the *Masked US Shield* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation masked US shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

WORDNO	LAYERNAME	LBZSTATUS	ORIGLABEL	LBZTEXTOBJECTNAME	LBZMAPID*	DFIRM_ID*	FIRM_PAN_NUMB
1	TRANSPORTATION	FIXED	234	US highway hold out	DFIRMAnnoToolText	55089C	55089C0103F

An example of the populated attribute record for the newly created annotation masked US shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add Masked State Shield

The **Add Masked State Shield** tool adds a state highway shield with a solid white fill to the map. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with

transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

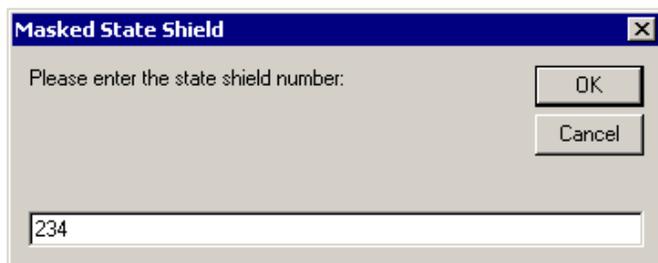
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add Masked State Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

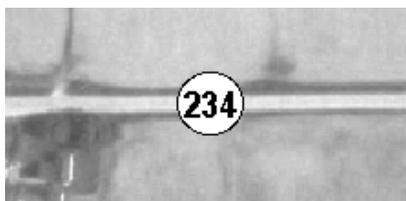
Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the *DFIRM SDE Data Loader* tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. Within the *Masked State Shield* dialog, enter the highway number.



An example of the *Masked State Shield* dialog.

5. Click *OK*.
6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation

masked state shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

WORDNO	LAYERNAME	LBZSTATUS	ORIGLABEL	LBZTEXTOBJECTNAME	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
1	TRANSPORTATION	FIXED	<N 234	state highway hold out	DFIRMAnnoToolText	55089C	55089C0103F

An example of the populated attribute record for the newly created annotation masked state shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add Masked County Shield

The **Add Masked County Shield** tool adds a county highway shield with a solid white fill to the map. The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The shield annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since these shields are only used to label transportation features, the LAYERNAME field value is automatically set to "TRANSPORTATION". According to *Appendix L*, all text associated with transportation, water area, and water line features must be converted into reference points in the *Label Point* (S_Label_Pt) layer. In the DFIRM Production Tools environment, the *Label Point* (S_Label_Pt) layer is generated automatically when the data is exported via the tools on the **DFIRM Database Exporter** toolbar. During the creation process those Anno_<scale>_TXT annotation features whose LAYERNAME field value is "TRANSPORTATION", "WATER AREA", or "WATER LINE" are converted into reference points. Therefore, all of the shield annotation features will be converted into reference points.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

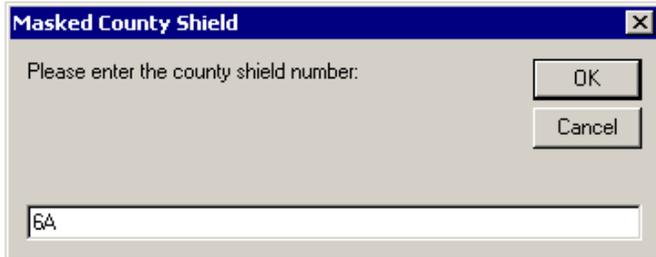
Note: The *FIRM Panel Index* (S_FIRM_Pan) layer must be loaded into the current ArcMap session. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

2. Click on the **Add Masked County Shield** tool.
3. Click on the map at the location where you want to add the shield.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the [DFIRM SDE Data Loader](#) tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

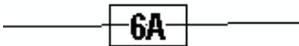
4. Within the *Masked County Shield* dialog, enter the highway number.



An example of the *Masked County Shield* dialog.

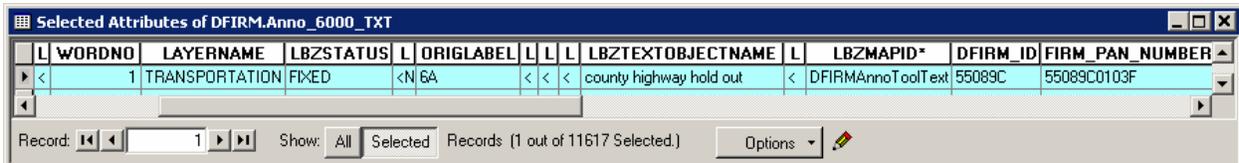
5. Click *OK*.

6. The annotation shield feature is created in the location where you clicked.



An example of a newly created annotation masked county shield feature.

7. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.



An example of the populated attribute record for the newly created annotation masked county shield feature.

If you would like to alter the angle of the highway shield, you may easily do so via the *Rotate* tool on the **Editor** toolbar. Refer to the instructions in the [Add Interstate Shield](#) section of this document.



Add Leadered Hexagon

The **Add Leadered Hexagon** tool creates a hexagon annotation feature after leadering from the cross section feature. It is acceptable to extend the cross section to place the hexagon in a less

busy location for better visibility and readability. The **Add Leadered Hexagon** tool assists you in this by visually extending the *Cross Section* (S_XS) feature with an annotation feature. At panel scale, the leader feature is the same width as the cross section feature symbology. At the end of the leader a hexagon is placed at the same angle as the leader. The hexagon is hollow filled, and the text is haloed (i.e., masked). The tool will accommodate adding the hexagon to either end of the cross section.

The **Add Leadered Hexagon** tool automatically populates the hexagon with the cross section letter by reading the *XS LETTER* (XS_LTR) field value of the *Cross Section* (S_XS) feature to which it is associated. Therefore, before creating hexagon annotation features, you should verify that the *XS LETTER* (XS_LTR) field is correctly populated. The hexagon size will expand to accommodate approximately 5 characters.

The leadered hexagon is a single annotation feature and is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

The hexagon annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since the hexagons are only used to label cross section features, the LAYERNAME field value is automatically set to "CROSS SECTION". When the *Label Point* (S_Label_Pt) layer is created via the tools on the **DFIRM Database Exporter** toolbar, the hexagon annotation feature will not be part of the exported data and will not be converted into a *Label Point* (S_Label_Pt) reference point.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

Note: The *FIRM Panel Index* (S_FIRM_Pan) and *Cross Section* (S_XS) layers must be loaded into the current ArcMap session. If these layers are not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add them to the Table of Contents.

2. Click on the **Add Leadered Hexagon** tool.
3. Click near the end of the *Cross Section* (S_XS) feature for which you would like to create a hexagon.

Note: You must click within the spatial extents of the *FIRM Panel Index* (S_FIRM_Pan) layer.

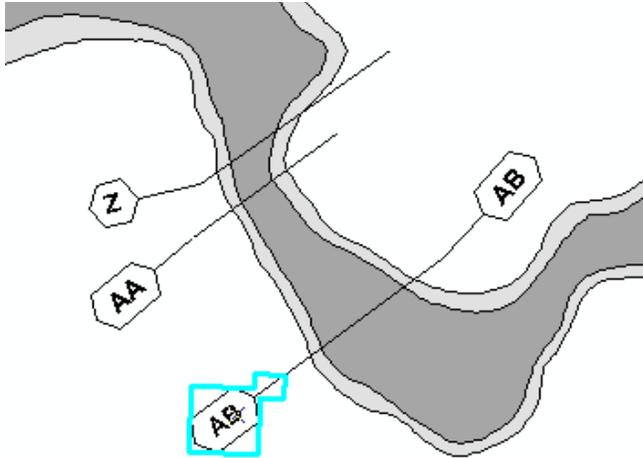
Note: When you click in the map view, the tool determines the appropriate scale in which that annotation feature will be placed. If the Anno_<scale>_TXT layer for that scale is not loaded into the current ArcMap session, you will receive an error. If the layer is not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add it to the Table of Contents.

4. The **Add Leader Hexagon** tool automatically snaps to the endpoint of the nearest *Cross Section* (S_XS) feature.

Note: The tool snaps to both lettered and non-lettered *Cross Section* (S_XS) features so take care when clicking.

5. Move the mouse to stretch the leader line to the desired location.

6. Double-click to end the leader and create the hexagon.
7. The leadered hexagon is created where you clicked. The hexagon is automatically populated with the cross section letter.



An example of a newly created leadered hexagon annotation feature.

8. The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

L	WORDNO	LAYERNAME	LBZSTATUS	L	ORIGLABEL	L	L	LBZTEXTOBJECTNAME	L	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
<	1	CROSS SECTION	FIXED	<	AB	<	<	Hexagon	<	DFIRMAnnoToolText	13311C	13311C0216C

Record: 0 Show: All Selected Records (1 out of 78 Selected.) Options

An example of the populated attribute record for the newly created leadered hexagon annotation feature.

Note: Once the leadered hexagon annotation feature is created, you cannot modify it. If you need to alter its angle or hexagon letter, you should delete the annotation feature and re-create it.

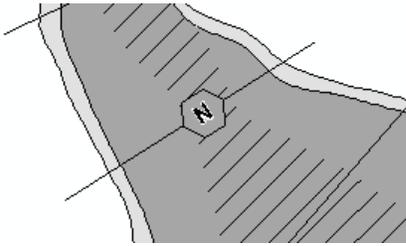


Add Hexagon

The **Add Hexagon** tool creates a hexagon annotation feature. This feature is not leadered. This type of hexagon should only be used when a leadered hexagon cannot be added to at least one end of the cross section feature due to extreme congestion on the panel.

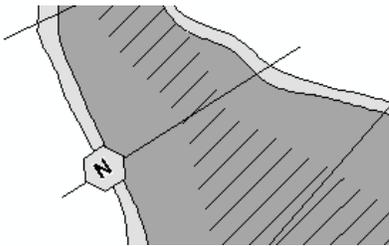
The hexagon's fill color is based upon the flood zone on which the annotation feature was created. In the location where you opt to place the hexagon, the tool assesses the *FLOOD_ZONE* (FLD_ZONE) field value of the *Flood Hazard Area* (S_Fld_Haz_Ar) polygon. If the *FLOOD_ZONE* (FLD_ZONE) value is one of the following values, the hexagon is filled appropriately for the zone, and the cross

section letter is haloed: A, AE, AH, AO, AR, 1 PCT ANNUAL CHANCE FLOOD HAZARD CONTAINED IN CHANNEL, A99, V, or VE.



An example of a hexagon annotation feature created on an AE zone.

If the *FLOOD_ZONE* (FLD_ZONE) value is one of the following values, the hexagon is filled appropriately for the zone, and the cross section letter is haloed: 1 PCT FUTURE CONDITIONS, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD CONTAINED IN CHANNEL, or X PROTECTED BY LEVEE.



An example of a hexagon annotation feature created on a 0.2 PCT ANNUAL CHANCE FLOOD HAZARD zone.

If the *FLOOD_ZONE* (FLD_ZONE) value is one of the following values, the hexagon is hollow, and the cross section letter is haloed: AREA NOT INCLUDED, D, X, OPEN WATER, NP, or NSPNULL.



An example of a hexagon annotation feature created on an X zone. Note that the background is colored blue to emphasize the hollowness of the hexagon.

Since non-leadered hexagons are only used in cases of extreme congestion, the fill assists in visibility and readability. Note that whether your study is vector- or orthophoto-based, the fill color is the same.

The **Add Hexagon** tool automatically populates the hexagon with the cross section letter by reading the *XS LETTER* (XS_LTR) field value of the selected *Cross Section* (S_XS) feature.

Therefore, before creating hexagon annotation features, you should verify that the *XS LETTER* (XS_LTR) field is correctly populated. The hexagon size will expand to accommodate approximately 5 characters.

The annotation feature is stored in the Anno_<scale>_TXT layer. This symbol style cannot be modified.

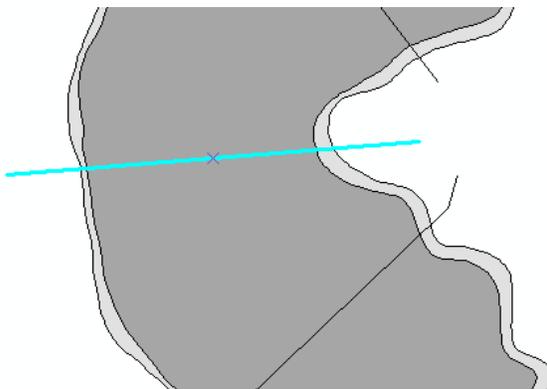
The hexagon annotation feature stores a reference to the associated feature type in the LAYERNAME field. Since the hexagons are only used to label cross section features, the LAYERNAME field value is automatically set to "CROSS SECTION". When the *Label Point* (S_Label_Pt) layer is created via the tools on the **DFIRM Database Exporter** toolbar, the hexagon annotation feature will not be part of the exported data and will not be converted into a *Label Point* (S_Label_Pt) reference point.

You must be in an editing session to access this tool.

1. Switch to Data View, if you are in Layout View.

Note: The *FIRM Panel Index* (S_FIRM_Pan), *Cross Section* (S_XS), and *Flood Hazard Area* (S_Fld_Haz_Ar) layers must be loaded into the current ArcMap session. If these layers are not present, use the **DFIRM SDE Data Loader** tool on the **DFIRM Layer Loader** toolbar to add them to the Table of Contents.

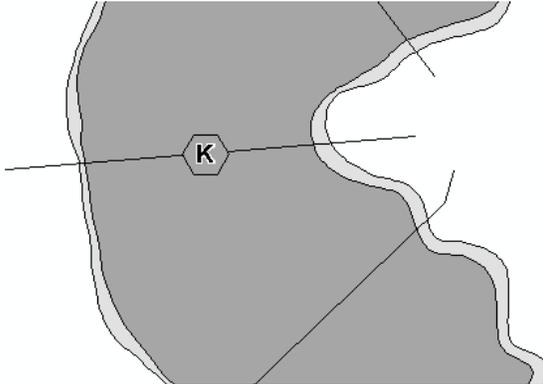
2. Select the *Cross Section* (S_XS) feature for which you wish to create a hexagon. Only one *Cross Section* (S_XS) feature may be selected at a time.



An example of a selected cross section.

3. Click on the **Add Hexagon** tool.
4. Double-click in the map view to create the hexagon.

- The hexagon is created where you clicked. The hexagon is automatically populated with the cross section letter.



An example of a newly created hexagon annotation feature.

- The appropriate attribute fields in the Anno_<scale>_TXT layer are populated; no additional field population is needed.

WORDNO	LAYERNAME	LBZSTATUS	ORIGLABEL	LBZTEXTOBJECTNAME	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBE
1	CROSS SECTION	FIXED	K	Hexagon	DFIRMAnnoToolText	13311C	13311C0217C

Record: 0 Show: All Selected Records (1 out of 81 Selected.) Options

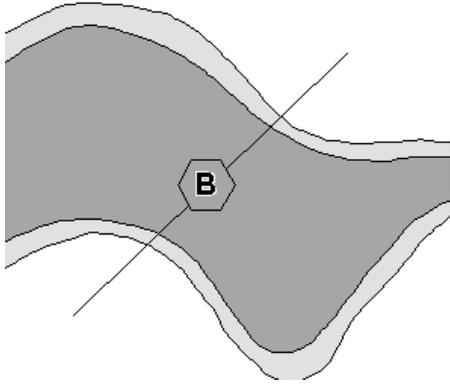
An example of the populated attribute record for the newly created hexagon annotation feature.

The **Add Hexagon** tool always places a horizontal hexagon. If you wish to alter the angle of the hexagon annotation feature so that it is consistent with the angle of the cross section feature, you can easily do so via the **Rotate** tool on the **Editor** toolbar. While in an editing session, follow these steps:

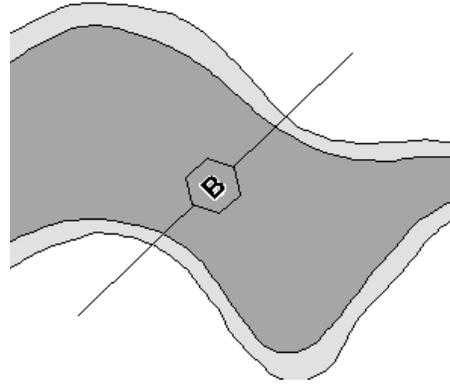
- Switch to Data View, if you are in Layout View.
- Select the hexagon feature with the **Select Features** tool on the **Tools** toolbar.

Note: If you select more than one annotation feature, all of the selected features will be rotated.

- Click the **Rotate** tool.
- Click in the map view and hold down the left mouse button. Move the mouse until the feature has the desired angle.
- To set the angle, let go of the left mouse button.



An example of a hexagon before it is rotated.



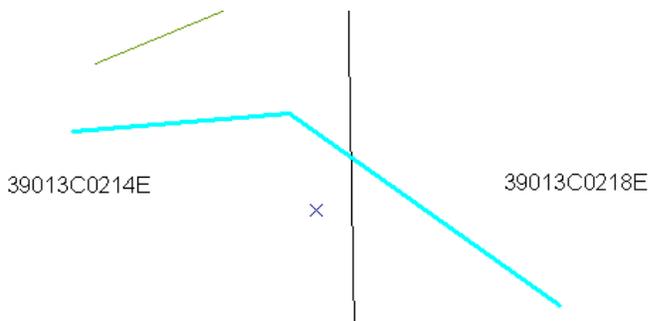
An example of a hexagon after it is rotated.

Note: After you rotate the hexagon, you may need to move the annotation so that is more cartographically pleasing.

If you need to alter the hexagon letter, you should delete the existing annotation feature and re-create it.

In some cases, the cross section for which you wish to create a hexagon annotation feature falls on two *FIRM Panel Index* (S_FIRM_Pan) features. So that the **Add Hexagon** tool is able to populate the FIRM_PAN_NUMBER field value in the annotation feature class, the tool will prompt you to select the panel number for which you would like to associate the hexagon annotation feature. In this situation, follow these steps:

1. When the tool recognizes the situation, the tool will prompt the **Choose Panel** dialog.

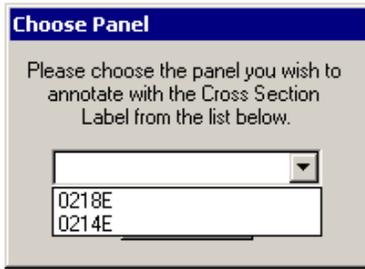


An example of a cross section feature which falls on two panels.



The **Choose Panel** dialog.

- The dropdown list contains all of the panel numbers in which the selected cross section feature falls.



An example of the panel numbers on which the selected cross section falls in the *Choose Panel* dialog.

- Select the appropriate panel number.



An example of a selected panel number in the *Choose Panel* dialog.

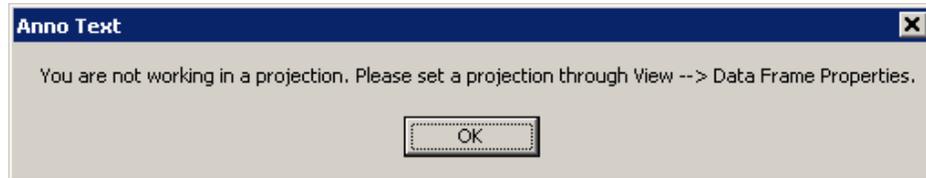
- Click *OK*.
- The hexagon annotation feature is created and is associated with the selected panel number.

LAYERNAME	LBZSTATUS	ORIGLABEL	LBZTEXTOBJECTNAME	LBZMAPID*	DFIRM_ID	FIRM_PAN_NUMBER
CROSS SECTION	FIXED	B	Hexagon	DFIRMAnnoToolText	39013C	39013C0214E

An example of the attribute values for the newly created hexagon feature that fell on several panels.

Troubleshooting

Problem: I received an error stating that I am not working in a projection, and no annotation feature is created.



Solution: The tools on the **DFIRM Annotation** toolbar require that the Layers data frame be projected. Most likely the data frame is not projected because the projection zone is not properly defined in Study_Info. You should use the **Add New Row** tool on the **DFIRM GeoPop Pro** toolbar to set your projection zone in Study_Info and then re-launch ArcMap so that the data frame is projected to that which you selected. If you had manually altered the projection of the Layers data frame, you should reset it to its original projection value.

Problem: I received an error stating that I am working in the wrong view; no annotation feature is created.



Solution: The tools on the **DFIRM Annotation** toolbar require that you work within the Data View. Once you are in Data View, the tools will function properly.

Problem: I received an error stating that there is no panel scale; no annotation feature is created.



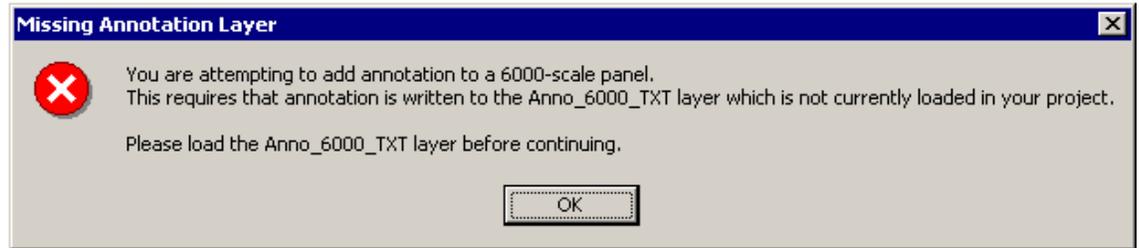
Solution: In the DFIRM Production Tools environment, there are three annotation text feature classes and three annotation leader feature classes – one for each possible panel scale (i.e., 6000, 12000, 24000). To determine which scale annotation feature class the new annotation should be placed, the tools on the **DFIRM Annotation** toolbar refer to the *PANEL SCALE* (SCALE) field value for the *FIRM Panel Index* (S_FIRM_Pan) polygon which lies where you click in the map view. If the *PANEL SCALE* (SCALE) field is not populated (or if the value is “NP”), the tools are unable to determine a scale and are, thus, incapable of creating an annotation feature at that location. You should use the *Attribute Selected Features* or *Attribute All Selected Features* tools on the **DFIRM GeoPop Pro** toolbar to correctly populate the *PANEL SCALE* (SCALE) field before attempting to create annotation.

Problem: I received an error stating that I attempted to add annotation outside of the panel extents; no annotation feature is created.



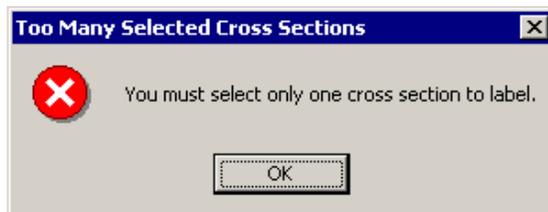
Solution: In the DFIRM Production Tools environment, there are three annotation text feature classes and three annotation leader feature classes – one for each possible panel scale (i.e., 6000, 12000, 24000). To determine which scale annotation feature class the new annotation should be placed, the tools on the **DFIRM Annotation** toolbar refer to the *PANEL SCALE* (SCALE) field value for the *FIRM Panel Index* (S_FIRM_Pan) polygon which lies where you click in the map view. If you click in an area which does not have an underlying *FIRM Panel Index* (S_FIRM_Pan) polygon, the tools are unable to determine a scale and are, thus, incapable of creating an annotation feature at that location. You should only click within the spatial extent of the *FIRM Panel Index* (S_FIRM_Pan) layer.

Problem: I received an error stating that the application annotation feature class is not loaded into the Table of Contents; no annotation feature is created.



Solution: In the DFIRM Production Tools environment, there are three annotation text feature classes and three annotation leader feature classes – one for each possible panel scale (i.e., 6000, 12000, 24000). To determine which scale annotation feature class the new annotation should be placed, the tools on the **DFIRM Annotation** toolbar refer to the *PANEL SCALE* (SCALE) field value for the *FIRM Panel Index* (S_FIRM_Pan) polygon which lies where you click in the map view. If the appropriate scale annotation feature class is not present, the tools cannot create the annotation. For instance, if you click within a 6000-scale panel with the **Add State Shield** tool, but the Anno_6000_TXT layer is not loaded into the Table of Contents, the tool will generate an error and will not create the annotation feature. To avoid receiving this error, you should add the necessary annotation layers (*TXT and *LDR) with the **DFIRM Reference Data Loader** tool on the **DFIRM Layer Loader** toolbar.

Problem: I received an error stating that more than one cross section is selected; no annotation feature is created.



Solution: The **Add Hexagon** tool creates a hexagon annotation feature automatically populated with the hexagon letter. The tool uses the selected *Cross Section* (S_XS) feature to obtain the hexagon letter value. If more than one *Cross Section* (S_XS) feature is selected, the tool is unable to determine the cross section letter and will generate an error. Select only one *Cross Section* (S_XS) feature before creating a hexagon annotation feature with the **Add Hexagon** tool.

Problem: I received an error stating that the cross section letter is not populated; no annotation feature is created.



Solution: The *Add Hexagon* tool and the *Hexagon* tool create a hexagon annotation feature automatically populated with the hexagon letter. The tool uses the *XS LETTER* (XS_LTR) field value for the selected feature in the *Cross Section* (S_XS) layer to obtain the hexagon letter value. If the *XS LETTER* (XS_LTR) field is not populated, the tool will not be able to determine the value and will generate an error. Before attempting to create a hexagon annotation feature with the *Add Hexagon* tool or *Hexagon* tool, you should populate the *XS LETTER* (XS_LTR) field in the *Cross Section* (S_XS) layer with the *Attribute Selected Features* tool on the **DFIRM GeoPop Pro** toolbar.