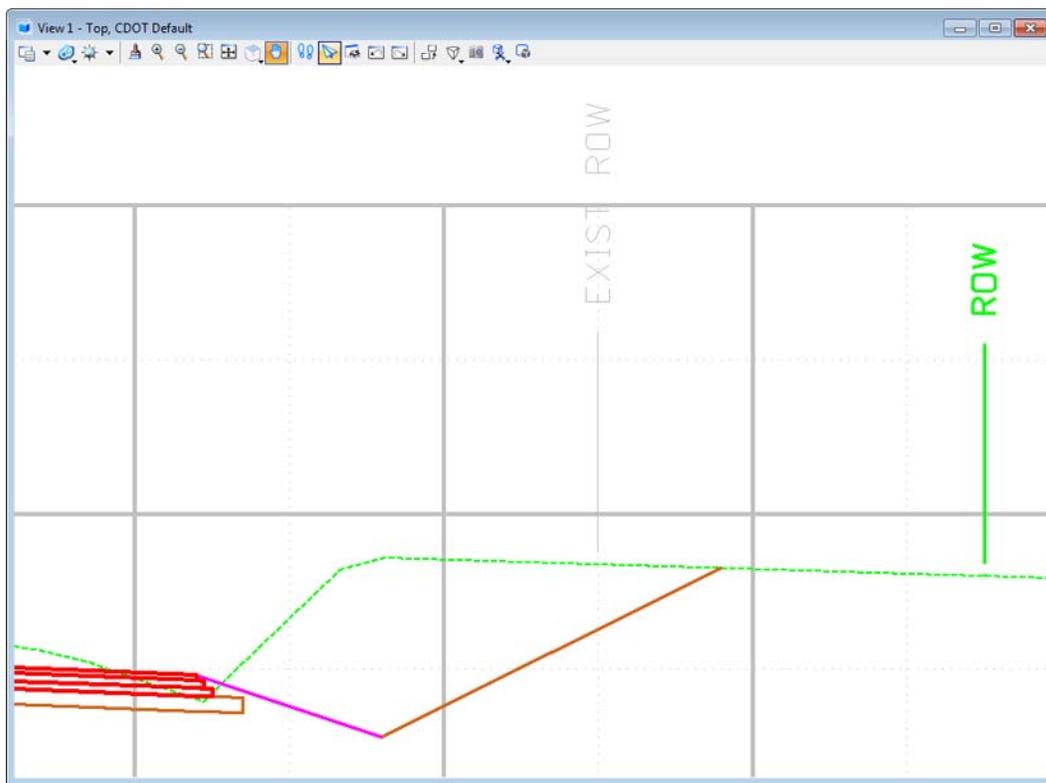


Workflow IR 4 - Alignment Display in Cross Section

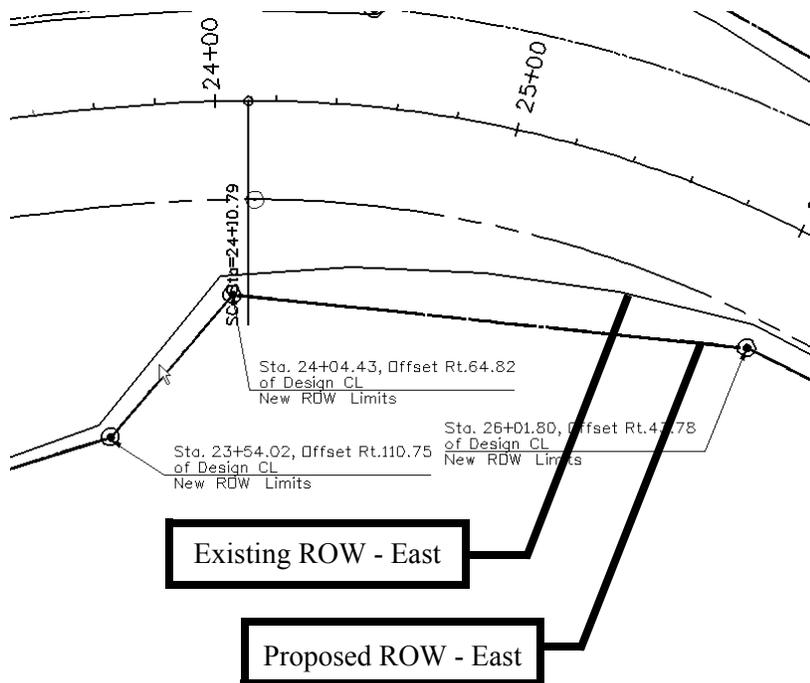
This document guides you through the process of displaying the location of alignments such as Right-of-Way locations in cross section or profile views.

Desired Result

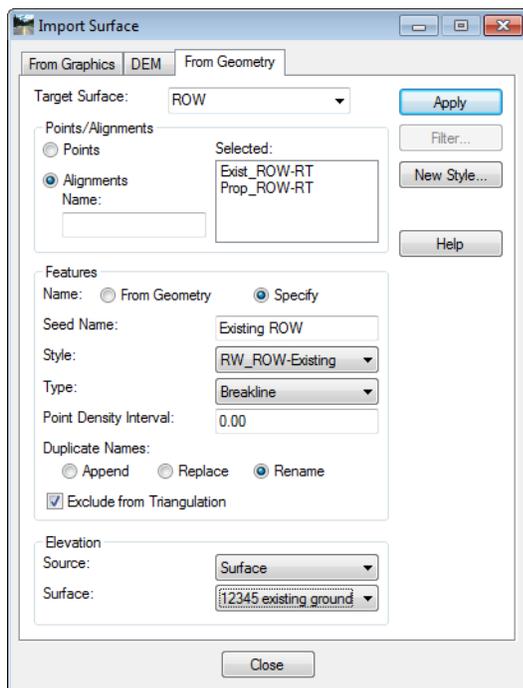
The overall workflow is to export horizontal alignments to a surface as features with the appropriate feature styles assigned. A surface feature that is defined as having breakline properties can be displayed as a 'crossing point' in cross sections or profiles. A cell is used to indicate this 'crossing point'.



Exporting the Alignment



1. Once the alignment has been created, as shown above, select **File > Import > Surface** from the InRoads menu. The *Import Surface* dialog will appear.
2. Select the **From Geometry** tab.

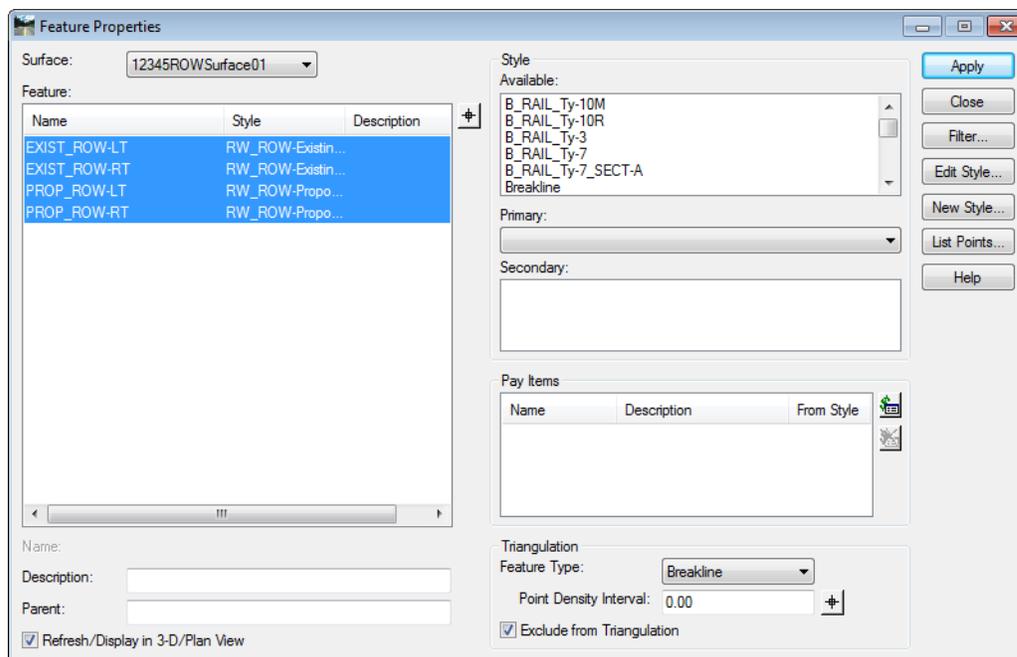


- ◆ **Target Surface:** Surface to be created or appended that will contain the alignment features

- ◆ **Alignments:** Alignments identified for importing
- ◆ **Name:** Set to Specify
- ◆ **Seed Name:** key-in the name of initial feature to be created. InRoads will automatically increment the seed name for multiple features.
- ◆ **Style:** Select RW_ROW-Existing or RW_ROW-Proposed
- ◆ **Type:** Breakline
- ◆ **Point Density Interval:** 0
- ◆ **Duplicate Names:** Rename is a good default setting
- ◆ Under **Elevation:** Set **Source** to **Surface**
- ◆ Under **Elevation:** Select the **Surface** for extraction of Elevation information for placement of the annotation.

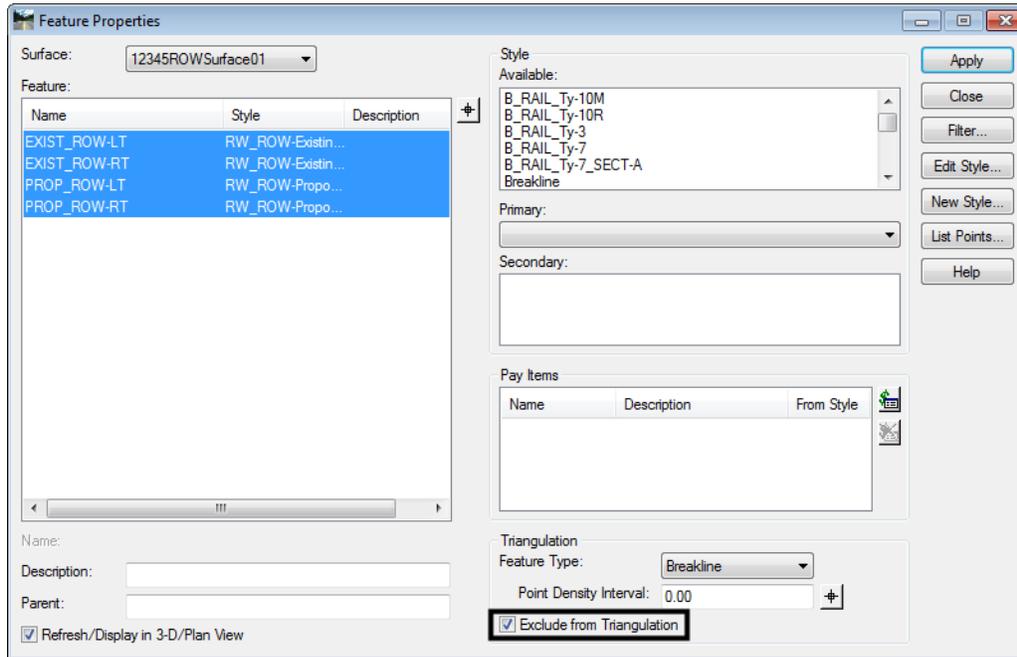
Note: Existing and proposed alignments should be exported separately as they require different feature styles assignments.

3. <D> **Apply** to create or append the target surface
4. Repeat above steps to export additional alignments. Continue to Step 5 when all alignments have been exported.
5. Make sure that 12345ROWSurface01 is the **Active Surface**. From the InRoads pull down menu select **Surface > Feature > Feature Properties** the **Feature Properties** dialog box will appear.



6. Verify that the features were added to the surface.

7. Select the features created and place a check in the **Exclude from Triangulation** check box

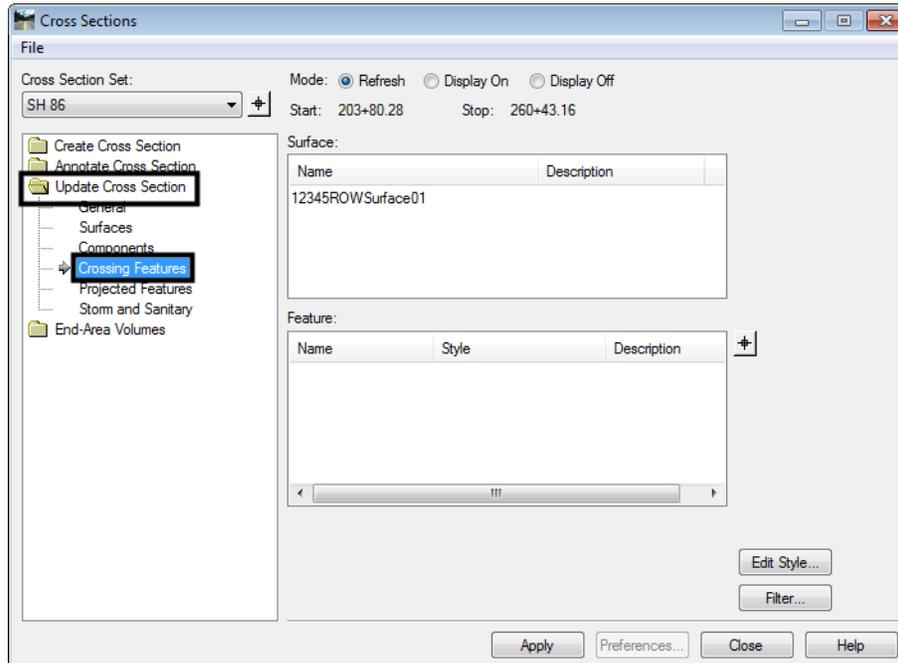


8. <D> **Apply** then <D> **Close**.

Note: Excluding the features from triangulation eliminates the possibility of the exported alignments becoming part of a surface (contoured) model. Features excluded from triangulation can be displayed in cross sections or profiles as crossing features, which is why these alignments were imported into the Surface as features.

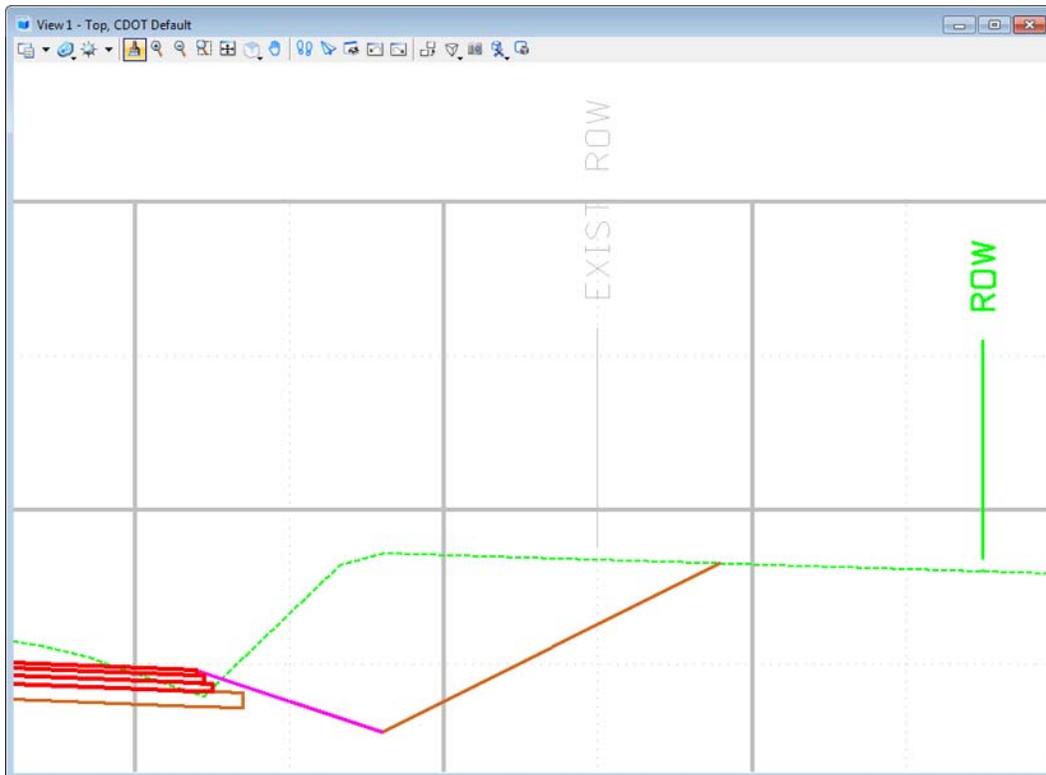
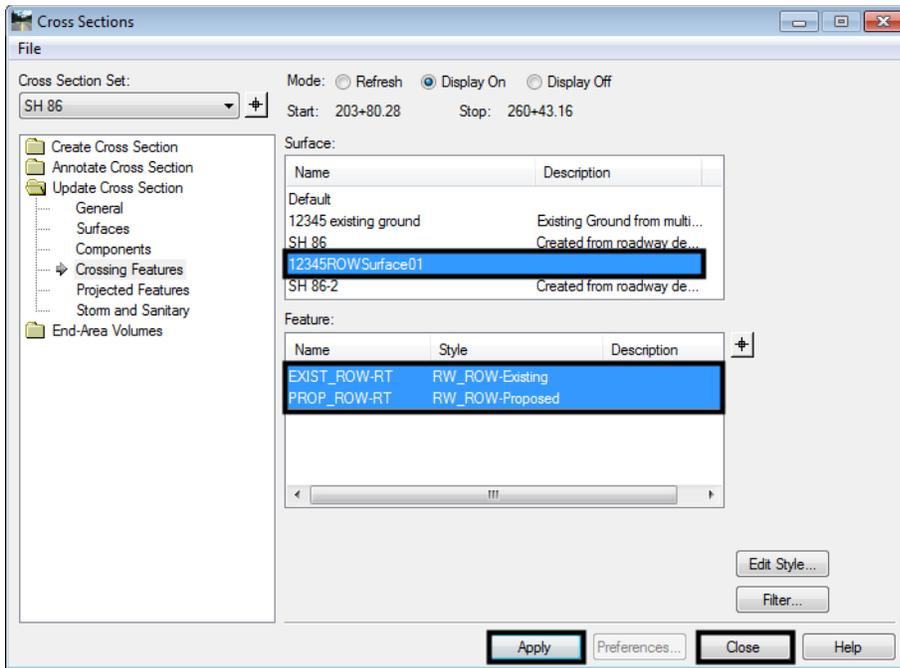
9. Select **Evaluation > Cross Section > Cross Sections** (or **Evaluation > Profile > Update Profile**) to add, remove, or update the display for the new features.
10. <D> the **Update Cross Section** folder from the dialog box explorer.

11. Highlight the **Crossing Features** leaf.



12. Select the desired **Cross Section Set** from the drop-down list.
13. Highlight the **Display On** radio button.
14. From within the **Surface** list box, highlight the surface containing the alignment features.

- 15. In the **Features** list box, highlight the features to be displayed then <D> **Apply**. <D> **Close** to dismiss the window.



Note: The InRoads global scale factor values should be set as they were when the cross sections were originally created. Additionally, the default vertical exaggeration for CDOT cross sections is a factor of 2:1. The feature styles used to place the cells depicting the ROW locations have been created at this ratio. See the following workflow to accommodate varying ratios.

Adjusting vertical distortion

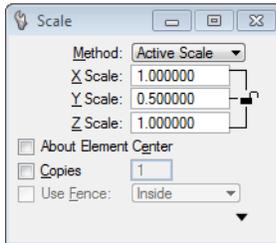
Adjusting vertical scale of cells representing ROW limits can be accomplished in 2 ways. First is scaling the cells placed, second is temporarily modifying the named Symbologies used to place the cells.



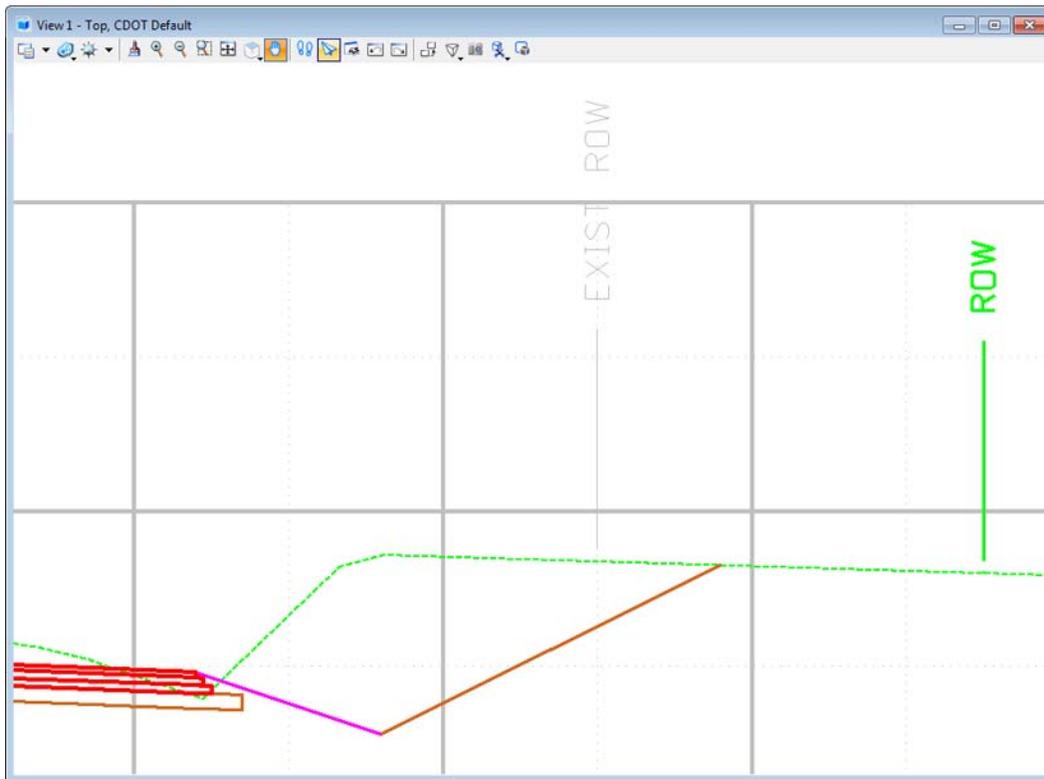
Method One

1. Select the cells for scaling using the **Element Selection**, **Power Selector**, **Select by Element**, or by isolating the level(s) and using a **Fence**.
2. Select the MicroStation **Scale** command
3. Ensure that the scale lock is opened as shown in graphic under Step 5. Set **X** & **Z** scale factors to **1**.
4. Set the **Y** scale factor to the appropriate value (**2:1** is the default in the configuration). This example used **1:1** for the cross sections. Consequently, the cells are scaled (distorted) $\frac{1}{2}$ the required amount.

- Place a check in the **About Element Center** check box (scales about the cell origin) .



- <D> in the MicroStation view to execute the scale command.



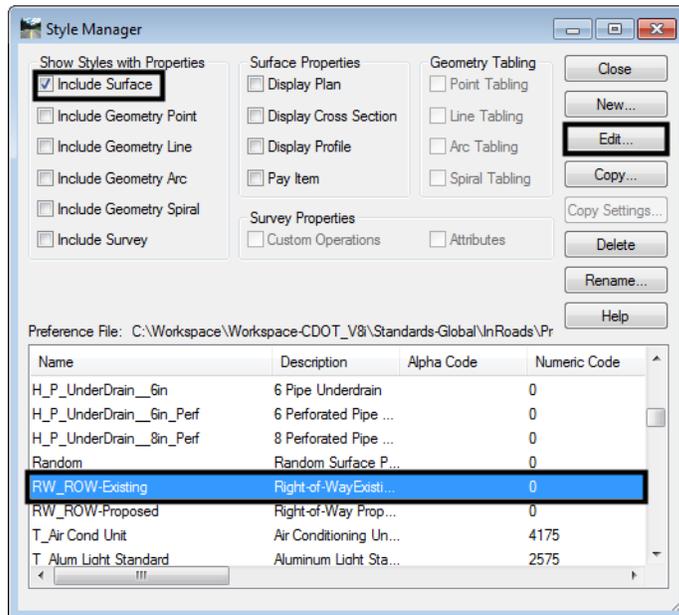
Note: The cells should now be updated to the desired scale factor.

Method Two

The second method is to temporarily modify the named symbology used to place the annotation.

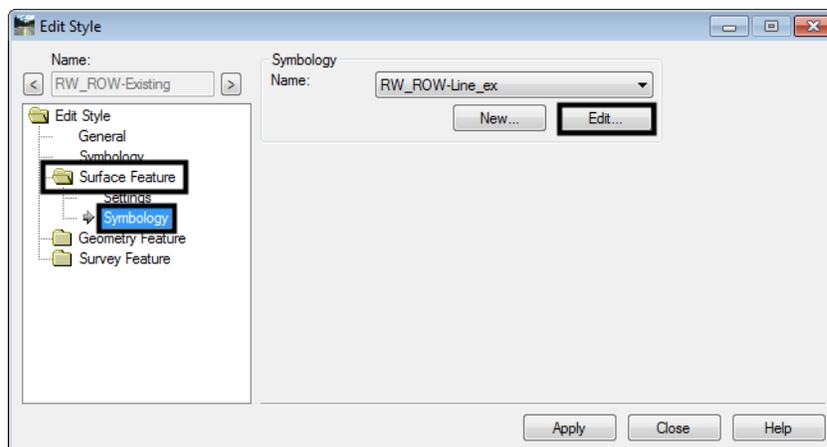
- Select **Tools > Style Manager** to display the **Style Manager** dialog box.
- Toggle on **Include Surface** in the **Show Styles with Properties** area.

- Identify and highlight the appropriate feature style from the list and <D> **Edit**.

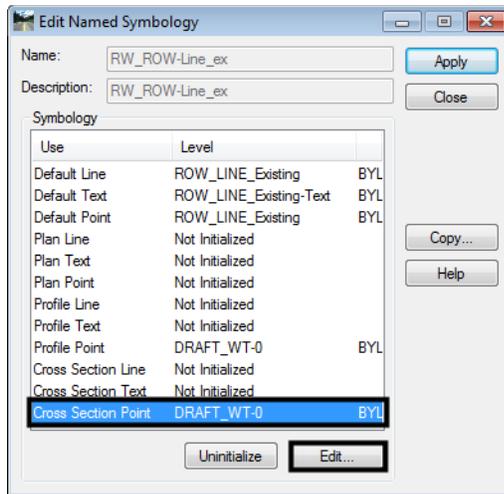


The named symbology that is associated with the feature style(s) used to create the features will be edited. In this example RW_ROW-Existing and RW_ROW_Proposed will be modified.

- <D> the **Surface Feature** folder in the dialog box explorer.
- Highlight the **Symbology** leaf.
- <D> **Edit** in the **Symbology** section of the **Edit Style** dialog box. The **Edit Named Symbology** dialog box will appear.

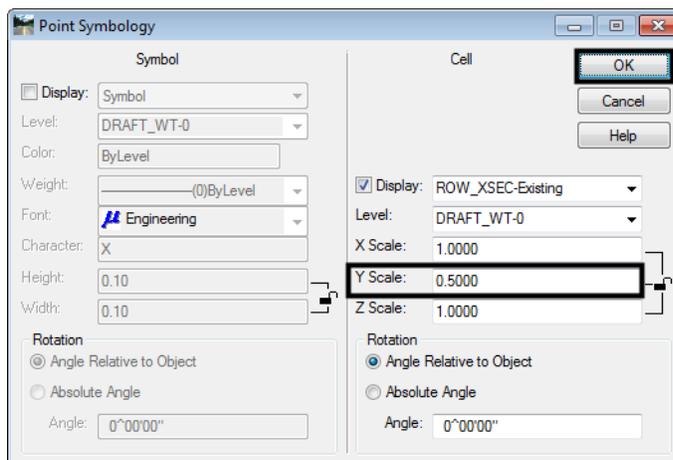


7. In the **Edit Named Symbology** dialog box, highlight the **Cross Section Point** and <D> **Edit**. The **Point Symbology** dialog box now appears.



Note: The **Y Scale** is set to **0.5** by default to compensate for the default vertical distortion of 2:1 as the cell is created proportionally correct as a 1:1 graphic. In other words, when creating a cross section at 2-Vertical:1-Horizontal, the cell would be stretched a factor of 2. The **Named Symbology** compensates for this by ‘offsetting’ the effect of vertical distortion.

8. Set the appropriate **Y Scale** For a cross section without a vertical exaggeration (1:1), input a value of **1** in the **Y Scale** field.
9. <D> **OK** in the **Point Symbology** dialog box. This closes the **Point Symbology** dialog box.

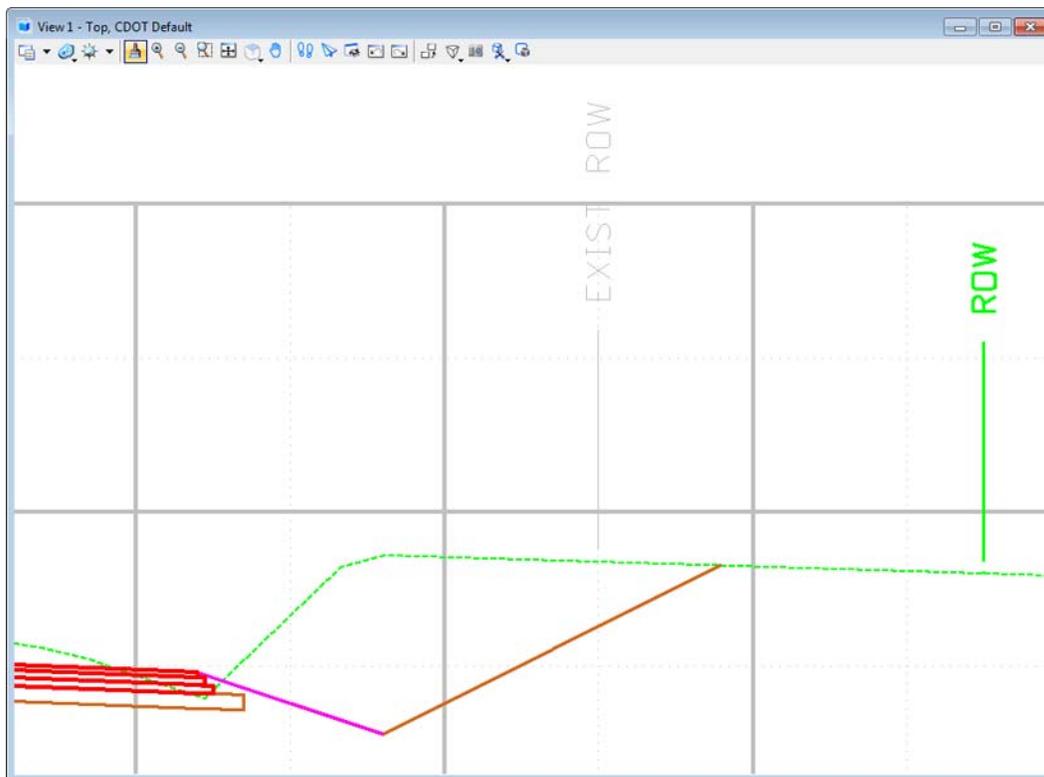
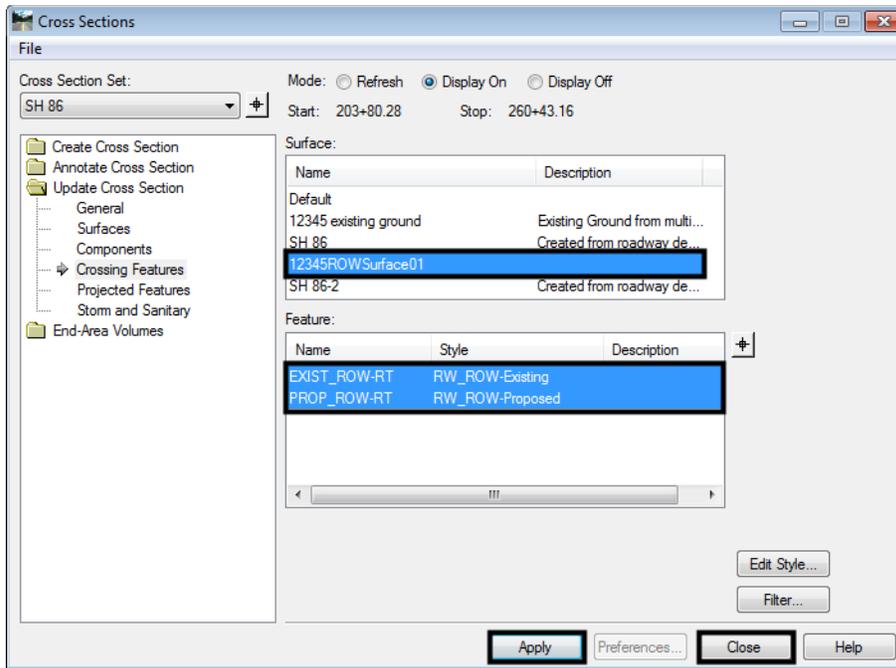


Note: Other useful values for scaling cells with MicroStation or symbology modification would be:

- Vertical exaggeration - Y Scale
 - 1:1 – 1.0
 - 2:1 – 0.5
 - 5:1 – 0.2
 - 10:1 – 0.1

10. <D> **Apply** then **Close** in the **Edit Named Symbology** dialog box.

- Use the update commands for Cross Sections or Profiles to add, remove, or update the display for the required features.



- Repeat the above steps for the Feature Style **RW_ROW-Proposed**.

